

**REPORT**  
OF THE  
**LAND REVENUE REFORMS COMMITTEE**  
1958-1959  
PART I— Volumes (i) & (ii)

K. N. ANANTA RAMAN, I. C. S.  
*Chairman.*

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LAND REVENUE DEPARTMENT  
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**REPORT**  
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**PART I—Volume (i)**

## CHAPTER I

### INTRODUCTION

As there are wide disparities in the pitch of land revenue assessments and irrigation charges in the different regions of the State, which have arisen partly due to the adoption of different methods of levy in different tracts and at different times, the Government in their Order Ms. No. 2417, Revenue Department dated 23-12-1957 (copy appended), appointed the Land Revenue Reforms Committee to examine the existing systems and rates of land revenue assessments and irrigation charges obtaining in the various regions of the State and to make suitable recommendations for their rationalisation, with :

Sri K. N. Anantaraman, I.C.S., a member of the Board of Revenue as a whole-time Chairman,

*with*

1. Sri H. Sitarama Reddy, Former Revenue Minister of Composite Madras State, Halaharvi, Alur taluk, Kurnool district.

2. Sri C. Vivekananda Murty, I.A.S. (Retd.), Retired Chairman, Andhra Pradesh Public Service Commission, Kakinada.

3. Sri D. V. Rao, B.Sc. (Lond.), M.I.E., Retired Chief Engineer, Hyderabad, and

4. Sri J. Raghotham Reddy, M.L.C., Vice-President, Hyderabad Farmers' Union, Mahbubabad, Warangal District, as members.

Sri D. Basava Raju, I.A.S., was appointed as the Secretary.

The terms of reference to the Committee are :

(1) to examine the principles and methods of levy of land revenue assessments, followed in the various regions of the State and make recommendations for their rationalisation ;

(2) to examine the rates of assessment levied, in respect of different classes of land, in the various regions of the State, and to make suggestions for their revision, in the light of its recommendations, under item (1) above, with a view to reduce inequities in their incidence ;

(3) to take account of the principles and methods followed in the various regions of the State in regard to the levy of charges

for irrigation of lands under various sources of irrigation and make recommendations for their rationalisation ;

(4) to examine the rates of irrigation charges levied in respect of various classes of crops under different sources of irrigation in the various regions of the State and to make suggestions for their revision, in the light of its recommendations under item (3) above ; and

(5) to examine all other matters incidental to the levy of land revenue assessment and irrigation charges and make appropriate recommendations thereon.

2. The Chairman initiated the work of the Committee on 10th January 1958, by reading the procedure for the fixation of Government demand and explained briefly the principles of settlement, in force, in Andhra and Telangana regions of the State. It was decided by the Committee that the quorum for the meeting should be three including the Chairman.

The Chairman requested the members to examine the existing systems of taxation, carefully, to make any far reaching and practical recommendations in conformity with the principles of simplicity, uniformity and equity. He emphasised that the ability of the ryot to bear the assessment should be an important consideration and that would depend upon the cost of cultivation, and the net profit realised by the ryots.

In order to have a comparative idea of the systems of settlement followed in both the regions of the State and to issue a questionnaire to the public and elicit their opinion in the matter, the Committee decided to undertake a preliminary tour in two or three districts in each region. The Committee toured in the following districts before issuing the questionnaire.

<i>District</i>	<i>From</i>	<i>To</i>
Mahabubnagar .. .. .	27-1-58	30-1-58
Kurnool .. .. .	8-2-58	14-2-58
Nizamabad .. .. .	27-2-58	4-3-58
East and West Godavaries .. .. .	27-3-58	3-4-58

The places visited and witnesses examined are shown in Appendix 4.

3. After examining the systems of settlement in force, in both the regions of the State and also ascertaining the current problems relating to land taxation, irrigation and agriculture, in both the regions of the State, a questionnaire was issued (Appendix 2) in English, Telugu and Urdu, for eliciting the information relevant

to our enquiry. Besides giving wide publicity through press, the questionnaire was sent to all persons, institutions and associations interested in evolving a rationalised system, common to both the regions, for the levy of land revenue assessment and charges for irrigation. 6,080 copies of the questionnaire were issued in the three languages. The officials, non-officials, institutions and Associations to whom the questionnaire were sent were requested to return the questionnaire with answers, as adequate space was provided in the questionnaire books to record answers. The last date for the receipt of the replies was originally fixed as 15-6-58, but it was later extended to 30-6-1958 on the receipt of representations from the M.L.As. and the Public.

4. In all 872 questionnaires were received with replies, from non-officials, officials, Associations and institutions. A statement analysing the Persons, the Institution or Association from whom replies to questionnaires have been received, in each district, is given in Appendix 3. Among all the Committees formed by the Governments of Madras, Andhra and Hyderabad, it may be said, that this Committee received the largest number of answers to the questionnaire. This also reveals the interest which the public evinced in the work of the Committee.

5. After receiving the replies to the questionnaire, the Committee undertook a further tour in the districts of Chittoor, Nellore, Hyderabad and Guntur to elicit further information and clarification from the public and persons who sent replies. The places visited and the number of witnesses examined, in the tours, are given in Appendix 4. In all, 37 days were spent on tour, 4,087 miles travelled and enquiries made at 66 places. The Committee had 58 sittings at headquarters.

6. A list of books referred to by the Committee is also given in the Bibliography in Appendix 27.

7. We thank the Government for the instructions given by them in G.O.Ms. No. 2417, Revenue Department, dated 23-12-1957 to the Board and all the Collectors to supply the information required by us. The Director of Agriculture, the Director of the Bureau of Economics and Statistics, the Director of Settlements, the Director of Animal Husbandry and Fisheries. The Registrar of Co-operative Societies and the Chief Conservator of Forests willingly supplied the information required by us. We also place on record our thanks to all the officials and non-officials who sent with replies the copies of the questionnaire and enlightened us in our tours. The cultivators who attended the enquiries made by us at different places had to undertake long journeys spending probably considerable amounts. We are grateful to all of them for their co-operation. We appreciate

the co-operation extended to us by the Inspector-General of Police by deputing the police reporters to work with us from time to time. We also appreciate the help rendered by the Planning and Development Department of the Government, Board of Revenue, Special Chief Engineer for Irrigation, Director of Agriculture, Director of Animal Husbandry and Fisheries, the Special Collector, Nagarjunasagar Project and other district officials by placing their vehicles at our disposal, for use in our tours outside Hyderabad.

We have great pleasure in acknowledging the very valuable help we have received from the Secretary of our Committee Sri D. Basava Raju, I.A.S., and both the Deputy Collectors, Sri Mohd. Mazharul Huq, and Sri M. Satyanarayana who assisted him. We wish to place on record the work of the staff who discharged their duties very efficiently and with enthusiasm.

## CHAPTER II

### History of Andhra Pradesh

1. The Andhras are an ancient race well known even from the prehistoric and early historic periods. The disintegration of the Vijayanagar Empire commenced in the 16th Century A.D. after the Battle of Thalikota in 1565 A.D. In the struggle for national independence, Andhra leaders played an important role and after attaining Independence they were able to form the first Linguistic State of their own in 1953 which later expanded in 1956 by the merger of the Telangana region of the erstwhile Hyderabad State. Telugu which is the language of the Andhras is the third largest spoken language in India.

2. A mention is made of Andhras in the Aitareya Brahmana of the Rig Veda period. The Andhras inhabited the land south of the Vindhya at that time. At the time of Chandragupta Maurya, the Andhra Kings ruled in the South. They had a big Army and a number of Forts. In the edicts of Asoka, mention is made of Andhras. Later the Satavahana dynasty attained political power. The founder of this dynasty, Simukha, established his kingdom in 225 B.C. at Dhanyakataka (Amaravati) on the southern bank of the river Krishna. The dynasty flourished for nearly 450 years. Their empire extended to the Arabian Sea in the West and included in it, the modern Hyderabad State which was then known as Vidarbha. The Satavahanas became so powerful that they invaded Magadha and conquered Pataliputra. The most famous amongst these rulers was Gauthamiputra Satakarni who extended the empire over the Maharashtra, North Konkan, Gujarat, Kathiawar and Malwa.

3. The rule of the Satavahanas ended early in the third century A.D. They were followed by the Pallavas who ruled over the area extending to Bellary, Amaravati and Kanchipura. The Ikshvakus, who were feudatories of the Satavahanas, became independent and ruled over the tracts around the Krishna and the Godavari, with their capital at Vijayapuri in the Nagarjunakonda valley. The Brihatpalayans ruled over the area around Masulipatam. The Salankayanas had their capital at Vengi near Eluru. Later the Vishnukundins ruled from 260 to 610 A.D. with their capital at Lenduluru (Denduluru) near Vengi. One of the Pallava rulers, Mahendravarman, was defeated in a battle with the Chalukya ruler Pulakesi-II, and fled to Kanchipuram.

4. With the victory of Pulakesi-II over Mahendravarman in 615 A.D. the rule of the Chalukyas was established around Vengipura. They had two branches, the Western and Eastern Chalukyas. One of the Eastern Chalukyan kings left Vengi and built another capital on the northern bank of the Godavari at Rajamahendravaram.

5. The great Telugu epic, Mahabharata, written by the famous poets Nannaya and Thikkana was dedicated to Raja Raja Narendra, one of the Eastern Chalukya kings who ruled from 1022 to 1063 A.D. at Rajamahendravaram. His son who was also a grandson of a Chola king, ascended the Chola throne at Tanjore and became the famous Kulottunga Chola.

6. Another dynasty which rose to power in the area between the Mahanadi and the Godavari was that of the Eastern Gangas, Anantavarma Choda Gangadeva reigned for over 60 years, conquered Utkala and transferred his capital from Mukhilingam to Cuttack.

7. *The Kakatiyas.*—After the fall of Chalukyas, the Kakatiyas of Warangal came into prominence and continued for two and a half centuries. Trade and Commerce flourished during the period. The rulers were great patrons of fine arts and literature. The Kakatiyas were subdued by the Mohamedan Rulers in 1323 A.D. but they could not subjugate the Andhra people. Reddi kingdoms were established around the Krishna, while the Hindu Empire of Vijayanagara was established on the banks of Tungabhadra at Hampi. The Bahmani kingdom was established in 1347 A.D. by Allauddin Hasan Shah Gangu Bahmani. There were frequent wars between the Emperors of Vijayanagar and the Sultans of the Bahmani kingdom. The most famous among the Vijayanagar emperors was Krishnadevaraya who ruled from 1509 to 1530 A.D. During his time, the political power as well as the literary talents of the Andhras were shining “like the midday Sun”. At the battle

of Talikota fought in 1565 A.D. the united force of the Mohammedan rulers of the Deccan defeated and slew Ramaraya, the Vijayanagara ruler and destroyed the city of Hampi. The survivors of the Vijayanagara dynasty continued to rule over a progressively diminishing empire from different places. One of the more prominent among these was Venkatapatiraya who ruled from Chandragiri. The Mohammedan rulers of Golkonda occupied large areas of Andhradesa. The British and the French established their power in the South. With this, the power of the Andhra rulers vanished.

8. The Golkonda kingdom which was established by Sultan Kuli Kutb-ul-Mulk, a Governor under the Bahmanis who declared his independence was ruled by the Kutb-Shahi dynasty from 1512 to 1687 A.D. Shah Abbas, the king of Persia, sent an Ambassador to Hyderabad in 1603 A.D. with valuable presents. Shah Jahan, after rebelling against his father, fled from Burhanpur and was welcomed at Golkonda by Abdulla Kutb Shah. After ascending the throne, Shah Jahan sent a Firman or Khutba to Golkonda, where it was read in the name of the emperor in the chief mosque and coins were struck in his name. Aurangzeb invaded and plundered Golkonda in 1655 A.D., Abdullah sued for peace and got back his kingdom. In 1674 A.D. Abdullah was succeeded by his nephew, Abdul Hasan, more popularly known as Tana Shah. In his reign, occurred the famous episode of Gopanna or Ramadas of Bhadrachalam. Aurangzeb reconquered Golkonda in 1687 A.D. and imprisoned Tana Shah at Daulatabad where he died in 1704. Thus ended the Kutb Shahi kingdom of Golkonda, which became a part of the Moghul empire.

9. *The Asaf Jahis.*—Asaf Jah, a general of Aurangzeb, who was appointed Subedar of the Deccan in 1713 A.D. with the title of Nizam-ul-Mulk, asserted his independence and founded the Asaf Jahi dynasty, with its capital at Hyderabad. After his death, Nasir Jung, his second son and Muzaffar Jung, his grandson by one of his daughters, fought for the succession and they were supported by the English and the French respectively. After a series of battles Salabat Jung became the Nizam. He gave four districts known as the Northern Circars to the French but the English soon conquered them from the French. There was a fresh treaty between the Nizam and the British in 1800 A.D. by which the subsidiary force assigned to the Nizam's service was augmented and in return for it, the Nizam ceded to the British the territories now known as the Ceded districts. Thus the area comprising the eleven districts of the former Andhra State were annexed administratively to the Madras State and continued in it, till October 1, 1953 when Andhra State was formed. Nine Telugu districts known as Telangana remained in Hyderabad State.

10. The State of Andhra the tenth A class State in the Union of India and the first linguistic State since Independence came into being on the 1st October, 1953. Subsequently, as a result of the States Reorganisation Act, the Telugu parts of Hyderabad along with Andhra State came to be formed into Andhra Pradesh on 1-11-1956.

11. *Physical Features.*—Andhra Pradesh is the fourth largest State in India with an area of 1,10,250 sq. miles and a population of 3.22 crores. It has a long coast line of 540 miles along the Bay of Bengal.

12. The State lies between latitude 15° and 20° N. and longitude 78° and 85° E. Extending over part of the Deccan Plateau and the Eastern coast land the terrain of the State is generally sloping from the West to the fertile plains on the East coast. It has ports at Barua, Calingapatnam, Bhimunipatnam, Kakinada, Masulipatam and a natural harbour at Visakhapatnam.

13. The highest peak in the State is Galikonda in Vizag district near Anantagiri. The largest river flowing through the State is the Godavari which has a total length of 870 miles having its catchment in the western-ghats, south of Vindhya, Eastern Ghats and the Deccan plateau. Next comes the Krishna.

14. Rainfall varies from region to region. The maximum is in the East Godavari district, being 55 inches. The minimum is in Anantapur being 22 inches. The south-west Monsoon commences in June and ends in September, and the north-east monsoon brings rain to the coastal districts and the southern districts from October to December. Both the monsoons are active on the eastern portion of the State. The Ceded districts and the western belt of Telangana receive inadequate rain as they are situated practically at the tail-end of the zones benefitted by either monsoon. During the north-east monsoon, the east coast suffers from cyclones and floods.

15. *Climate.*—The summer is rather severe in Vijayawada, Guntur, Khammam and Sirpur. In Bhadrachalam the temperature sometimes shoots up to 126° F. The winter is pleasant all over the state. Waltair and Madanapalli are the summer and health resorts in the State.

16. *Hills and Forests.*—On account of the gradual slope of the country to the east and on account of the rich silt carried by the several rivers, the coastal districts are rich and fertile. There are thick forests on and along the eastern ghats and in the Nallamalais of Kurnool district. The forests in the north and east of the State form part of the Dandakaranya of the Ramayana fame.



17. *Agency*.—Tribal people like Koyas, Savaras, Cadabas and Gonds live in these forests which produce teak, and other timber trees and bamboo. In the East Godavari district there are the Papi and Bhadrachalam hills in the Agency areas inhabited by tribal people and contain thick forests. In East Godavari there are three plains taluks where there are no hills. These are Ramachandrapuram, Amalapuram and Kakinada. In the first of these taluks, almost every inch of land is cultivated, crops growing even adjacent to the walls of houses in villages.

18. In the West Godavari district there are hillocks near Kovvur and Dwarka Tirumala. Chintalapudi and Kovvur are the dry taluks, in the district. The rest are wet and the main crop is rice.

19. In the Krishna district, there are hills in and around Vijayawada. In Guntur district, there are Canikonda, Nagarjunakonda, Bellamkonda, Kondavidu, Kotappakonda, Vinukonda, Chimakurthi, Mangalagiri, Sitanagaram and Undavalli hills.

20. There are thick forests in the Nirmal or Satmala range of hills in Adilabad district. The bamboo grown in this district is used for the manufacture of paper in the Sirpur Paper Mills.

21. The North Balaghat range stretches into Vikarabad area in Medak district as Anantagiri hills, while the South Balaghat range of the Golconda watershed runs from Ashti in Bhir district of Bombay to Nalgonda in south-western and south-eastern directions. This range passes through the districts of Hyderabad, Mahabubnagar and Nalgonda. In the last mentioned district there are other hills like Devarkonda and Bhongir.

22. Along the river Godavari on its banks in Adilabad, Karimnagar, Warangal, Khammam, East and West Godavari districts there are extensive forests which, besides timber and other usual forest products, yields bamboo which is floated down the Godavari to Rajahmundry. It is used not only in house construction but also in the Andhra Paper Mills.

23. Sandal, teak, shisham, ebony, mahua, nallamaddi, regu and sandra are some of the timber species grown in these forests. The scrub jungle regions in Mahbubnagar, Hyderabad, Nalgonda and Medak districts, have mostly stunted trees like Seethaphal and Jungli Anar and toddy palms. Some of the grasses like Rusa grass in Nizamabad district yield fragrant oils. Spear and Koorpri grasses found in Adilabad district yield valuable fibres for making paper.

24. Besides timber and firewood, these forests yield honey, lac, gums, bark for tanning, wax, canes and medicinal herbs. Indigenous vegetable dyes for dyeing cloth and toys are prepared from some types of wood available in the forest.

25. The Cuddapah district has Seshachalam and Palakondalu. In Kurnool district there is the Nallamala Range which is 70 miles long and 25 miles broad, and has a height of 3,000 feet. The highest peak in the range, Bairenikonda, is 3,150 feet high.

26. In the centre of Anantapur district there are the Penugonda hills which are 3,091 feet high, Madakasira and Mallappa hills.

27. North-west of Madanapalli in Chittoor district is the Horsley Hill which is 4,100 feet above sea level. There is another Hill called Enuga Ellamma hill. According to the local legend one Ellamma who lived, on the hill, a long time back used to feed elephants. There is a plateau in the District, comprising the Kuppam, Palmaneru, Punganur, Madanapalli and Vayalpadu taluks. Adjacent to the plateau are the Avulapalli hills which join the Tirupati Venkateswara Hills in Chandragiri taluk. Kalahasti and Karvetinagar are in a hilly area. In all the big hills there are passes, of which the more well-known are Mamandur, Kallur, Mogali Sainagunta Passes. There are forests in Avulapalli and Tirupati Hills.

28. In the hill regions generally, a large variety of wild animals like tigers and leopards are found. Perhaps next to Mysore State, Andhra Pradesh contains greatest variety of wild animals and birds. Bison are found in the thick jungle around Pakhal lake in Warangal district; four-horned antelope, hogs, deer and ravine deer or gazelle are found in highlands in different parts of the State; wild hogs are plenty in the jungles. Other animals found are bears, hyenas, wolves, tiger, and leopards. Among birds of interest are snipe, painted partridge, blue rock and green pigeon, sandgrouse, quail, bustard, peafowl, jungle-fowl, wild duck, wild geese and teal. On the banks of the big rivers are sometimes seen the florican and the flamingo. There are no elephants in any of the forests in this State.

29. *Rivers.*—The biggest river that flows through the State, the Godavari, has its origin at Triambak hills near Nasik in the Western Ghats and runs through the districts of Nizamabad, Adilabad, Karimnagar, Warangal, Khammamet, East Godavari and West Godavari. The Godavari Basin has a catchment of 1,19,926 sq. miles in Bombay, Orissa, Andhra Pradesh and Madhya Pradesh. At Kaleswar, the biggest tributary Pranhita joins it. At Kunavaram it takes in the tributary Sabari. There is an anicut

across the Godavari at Khanapur and Dummigudem. The river flows through a gorge in the Papi Hills, and later widens and forms several islands. At Dowleswaram, an anicut four miles long has been built across the river in 1852. In its final stage the river splits into two arms and joins the Sea in seven branches, known as the Sapta Godavari. The Godavari irrigation system is one of the biggest in the country. The river and its canal system provide navigation and irrigation.

30. The Krishna, which is 800 miles long, rises near Mahabaleswar in the Western Ghats, and flows through the Sholapur and Raichur Doabs. It passes Srisailam where it is known as Patalaganga. Then the river flows through the valley of the Nallamala hills, passes Nagarjunakonda and Eleshwaram, and Nandikonda village near the site of the Nagarjunasagar dam, and running further east, passes by Muktyala, Dhanyakataka-Amara-vati an ancient Andhra capital—Vijayawada, and after flowing another 40 miles east, joins the Bay of Bengal. Through a net work of canals, taking off from the Krishna barrage at Vijayawada it provides irrigation as well as transport facilities over an extensive area

31. The Tungabhadra, as it is called after the confluence of the twin rivers Tunga and Bhadra, which rise in the Western Ghats at gangamula on the northern border of Mysore State, joins the Krishna at Sangameswar in Kurnool. The Tungabhadra Project provides the much-needed irrigation facilities in Rayalaseema.

32. The Pennar or Pinakini rises in Nandidrug hills in Mysore State, flows through Anantapur and Cuddapah districts, and enters the Nellore district through the Somasila pass in Western Veligondalu. It flows all through the length of Atmakur taluq, takes in Boggeru and Biraperu, runs as the boundary between Nellore and Kovvur taluks and falls in the sea. In the Pennar Delta, paddy is grown in extensive areas. There are two anicuts—the Sangam and Nellore diverting water to three big reservoirs and a series of tanks.

33. The river Pranhita, formed by the confluence of the Wardha, the Penganga and the Wainganga which rise in the Satpura hills in Madhya Pradesh, flows along the eastern border of Adilabad district and joins the Godavari near Kaleswar in Karimnagar district.

34. The Manjira has its source in the Balaghat Range in Patoda, Bhir district. It forms the boundary between Nizamabad and Nanded districts and discharges its waters into the Godavari near Sangam in Nizamabad district. Across this river is built the Nizamsagar dam designed to irrigate 2.5 lakhs of acres.

35. The Manair, 80 miles long, has its origin in the Sirsilla Hills in Karimnagar district and as it flows through isolated hills and stony wastes numerous streams join it on either side. Karimnagar town is on the northern bank of this river. It joins the Godavari near Mahadevpur in the same district.

36. The Dindi river or the Dandivagu also known as Meenam-baram, 95 miles long, emerges from the Shahabad Hills in Mahbubnagar district, flows south through Amrabad and Nandikonda Hills and joins the Krishna south of Yeleshwaram. A small project across the stream provides irrigation facilities for fourteen villages in Nalgonda district.

37. The Musi, 157 miles long, rises in Anantagiri hills and flows through the districts of Hyderabad and Nalgonda. Its upper course for about sixty miles is through a hard bed of granite boulders. It enters the Osmansagar near Hyderabad city where a dam has been constructed for controlling floods and supplying drinking water to Hyderabad City. The Musi takes in the Aler stream near Chittur and joins the Krishna near Vadapalli in Nalgonda district. Hyderabad, capital of Andhra Pradesh is on the banks of the Musi.

38. The Paler, which is 92 miles long, rises near Ghanapur in Nalgonda district, and running as the boundary between Nalgonda and Khammam districts, joins the Krishna south of Jaggayyapet. The Paler Project provides irrigation to 13,000 acres in Khammam district.

39. Similarly, the reservoir on the Wyrā river in Khammam district irrigates 13,000 acres. The Wyrā river later falls into Muner which is a tributary to Krishna.

40. The 120-mile long Munneru has its source in Pakhal tank in Warangal district and joins the Krishna in Nandigama taluk of Krishna district.

41. There are many small rivers flowing through the Visakha-patnam district. The Bahuda rises in Peddakimidi Maliahs and joins the sea at some distance from Ichchapuram. The Mahendra-tanaya rises in the Mahendra Hills and flows into the Sea at Barua. There is another Mahendratanaya which rises in the same hills and joins the Vamsadhara in Pathapatnam taluk.

42. The Vamsadhara which emerges as a stream from bamboo bushes, as its name indicates, in Nimmagiri hills, passes south through Gunupuram taluk and then running east, joins the Sea at Kalingapatnam. Many open-mouth river channels taking off

from this river irrigate large extents of land in Srikakulam district. Nagavali or Longulya, which is 115 miles long, has tributaries like Swarnamukhi, Vegavati and Kumbhikotagadda. Rising in Nimmagiri hills, it flows southwards through Parvatipuram and Palakonda taluqs and joins the Sea at Mofas Bandar. It is proposed to construct an irrigation project across the Vamsadhara.

43. The Champavati rises in the Andhra hills in Salur taluq, passes through Vijayanagaram and Bhimunipatnam taluqs and joins the Sea at Konada.

44. The Gosthani flows through stones resembling the teats of cow, from Kasipuram hills in Sringavarapukota taluq, and through the Bhimunipatnam taluq and joins the Sea at Bhimunipatnam.

45. The Sarada, 45 miles long, rises in Madugula Hills in Viravalli taluq, passes through Anakapalli and Yellamanchili taluqs, and joins the Sea at Vakada.

46. The Varaha rises in Golugonda and flows through Yellamanchili taluq and joins the Sea at Vakada.

47. The Thandava river also rises in Golugonda Hill and flowing as the border between the Visakhapatnam and East Godavari districts, joins the Sea at Pentakota.

48. The Yeleru in East Godavari irrigates about 60 thousand acres with channels taking off from it.

49. In the Krishna District, the Budameru creates a drainage problem every year during floods. The construction of a diversion work is in progress now.

50. The Palar rising from Nandi Hills in Mysore flows through the Chittoor district.

51. In the Chittoor and Nellore districts there is the River Suvarnamukhi.

52. The Kondakarla Ava, near village Kondakarla in Sarvasidhi taluq, is a vast perennial lake and thousands of water birds live there. It receives water from the Sarada river through a big canal. It is a centre of boat recreation. The Komaravolu Ava, a branch of Varaha river in Golugonda taluq joins this 'Ava'.

53. The Kolleru in West Godavari district, is a natural depression, being the only large natural fresh water reservoir along the Andhra coast line. It is a large shallow depression, roughly elliptical in shape, and was originally a part of the Bay of Bengal. It is

half-lake and half-swamp. It also receives the drainage from the canal systems of both the Godavari and the Krishna. The lake being connected to the Sea and liable to tidal action would be brackish but three big streams flowing into it make the water sweet and silt which they bring in is rapidly filling it up. The extent of the Kolleru lake varies greatly during the different seasons of the year. During the monsoon it exceeds 100 sq. miles but in the dry season it shrinks considerably and sometimes as in the drought of 1900 the lake became bone-dry. Reclamation, widening and improving the drain are also gradually reducing its extent.

54. The Kolleru is well stocked with fish and abounds in water fowl of every description. A regular export trade in birds and skins existed at one time but the birds were so mercilessly pursued that they have greatly declined in numbers.

55. In the lake are many fertile and highly cultivated islands which are included in 26 villages.

56. The Pakhal, Ramappa and Lakhnnavaram lakes in Warangal district are big sources of irrigation in Telengana. The Andhra Pradesh State has been aptly described as a "River State" with unlimited possibilities of irrigation.

57. *Administrative Units.*—There are 20 districts in the State with 183 taluqs and 1,000 revenue firkas or circles. There are 293 towns and cities and 26,450 villages in the State.

58. *Population.*—The State has a population of 3,12,60,135 consisting of 1,57,42,912 males and 1,55,17,221 females. The total rural population of the State is 2,58,12,679 or 82.6 per cent of the total population. The population depending on agriculture is 2,10,40,324 or 67.3% of the total population. Scheduled Castes in the State constitute 14.63% of the population whereas there are about 7.67 lakhs of tribals forming 2.45% of the population.

59. The Classification of the population by livelihood Classes is as follows :—

Particulars	Population in thousands
<b>Population depending for livelihood on—</b>	
1. Agricultural sources: .. ..	21,040
(a) Cultivation of owned land .. ..	12,238
(b) Cultivation of unowned land .. ..	2,413
(c) Agricultural labour .. ..	5,755
(d) Renters (Agriculture) .. ..	634
2. Non-agricultural sources : .. ..	10,220
(a) Occupation other than cultivation.. ..	3,974
(b) Commerce .. ..	1,695
(c) Transport .. ..	448
(d) Other services .. ..	4,103
<b>Total</b> .. ..	<b>31,260</b>

60. *Land Utilisation.*—The major occupation of the people in the State is agriculture which provides livelihood for over 210.4 lakhs of population. The per-capita average of the area sown works out to 1.29 acres as compared to 1.26 acres for All India.

61. The total cropped area in the State is 2,70,22,000 acres or 14.4 per cent of the total geographical area. The table below will give the classification of the land according to its utilisation.

Particulars	Area in lakhs of acres
1. Total geographical area (according to village papers).	664.32
2. Forests .. ..	140.26(21.1)
3. Barren and uncultivable land .. ..	72.38(10.8)
4. Land put to non-agricultural use .. ..	33.33( 5.0)
5. Cultivable waste .. ..	41.09( 6.2)
6. Permanent pastures and other grazing lands .. ..	28.78( 4.3)
7. Land under miscellaneous crops, tress and groves not included in the net area sown .. ..	6.23( 0.9)
8. Current fallows .. ..	54.88( 8.3)
9. Other fallow land .. ..	17.38( 2.6)
10. Net area sown .. ..	270.22(40.6)
11. Area sown more than once .. ..	23.81
12. Total cropped area .. ..	293.81

NOTE.—Figures in brackets indicate the percentage to the total geographical area.

62. *Soils.*—The principal soils of Andhra Pradesh are as follows :

1. The fertile alluvial soils at the mouths of the rivers on the coast.
2. The Deccan-trap consisting of fine Black soils.
3. Red ferruginous soils.
4. The arenaceous soils consisting of sand on the Sea coast.

63. *Sources of Irrigation.*—Andhra Pradesh has relatively better irrigation facilities than many other States in India. The net irrigated area in the State in 1955-56 was about 66.8 lakhs of acres which constituted about 24.7 per cent of the net area sown. Canals command 46.5 per cent of the irrigated area whereas tanks accounted for 38.4 per cent of the area. Canal irrigation is predominant in the districts of East Godavari, West Godavari, Krishna, Guntur and Nellore and these together accounted for about 22 lakhs of acres or 71 per cent of the area irrigated by canals. The area irrigated by different sources are given in the following table:—

Sources of irrigation	Area in lakhs of acres
1. Net area irrigated by	
(a) Canals .. .. .	31.02(46.5)
(b) Tanks .. .. .	25.67(38.4)
(c) Wells .. .. .	7.54( 3.8)
(d) Others .. .. .	2.54( 3.8)
2. Area irrigated more than once .. .. .	11.57
3. Gross irrigated area .. .. .	78.34
4. Percentage of net irrigated area to net area sown .	24. 7

NOTE.—Figures in the brackets indicate the percentage of the net area irrigated.

64.—*Land Holdings.*—The total number of holdings in Andhra Pradesh is 43,66,272 comprising an area of 3,40,43,220 acres. The average size of a holding is about 7.8 acres. The census revealed 39.89 lakh holdings are under the personal cultivation of the owners and that they include lands put to non-agricultural uses.



65. *Crop-Pattern and Production.*—The principal crops grown in the State and the percentage of the total cropped area occupied by each and the average yields are shown below for the year 1955-56.

66. 63.2 per cent of the total cropped area in 1955-56 was under cereals, 10.9% under pulses, and 16.0% under oil seeds. Amongst other principal cash crops, cotton accounted for 3.4% of the total cropped area, groundnut 10.4, tobacco 1.3 per cent, chillies 1.4% and sugarcane 0.6 per cent. The area under principal crops and their production during 1955-56 are given below :

Name of the crop	Area in acres	Percentage	Production (1955-56 estimates)
<b>FOOD CROPS :</b>			
1. Paddy .. ..	71,04,000	23.6%	2,907,530 tons
2. Other Cereals ..	1,60,93,530	39.6%	2,113,470 tons
3. Pulses .. ..	32,56,257	10.9%	246,000 ..
4. Sugarcane .. ..	1,74,963	0.6%	..
5. Chillies .. ..	4,35,899	1.4%	101,000
6. Fruits and vegetables ..	3,78,860	1.2%	..
7. Other food crops ..	3,55,898	1.2%	
	<u>2,33,99,407</u>	<u>78.5%</u>	
<b>NON-FOOD CROPS :</b>			
1. Cotton ... ..	10,05,442	3.4%	133,000
2. Groundnut ... ..	30,54,174	10.4%	..
3. Tobacco .. ..	3,94,857	1.3%	
4. Cocoanut .. ..	88,019	0.3%	
5. Castor .. ..	8,56,150	2.8%	
6. Gingelly .. ..	6,67,488	2.3%	
7. Fodder crops .. ..	3,03,587	1.0%	
	<u>63,79,726</u>	<u>21.5%</u>	

67. Food crops occupy nearly (2,33,99,407) acres or 78.5% of the total cropped area. The most important food crop of the State is white paddy and this occupies 71,04,000 acres *i.e.* 22.1 per cent of the total area under all crops.

68. Millets come next in order of importance with an estimated output of 21,13,470 tons of which the entire quantity is consumed in the State leaving no exportable surplus. A considerable area is under pulses, and the production is not sufficient for local consumption.

69. Sugarcane is an important cash crop of the State. The estimated average production of Jaggery in the State, is about 5,28,046 tons. As the consumption in the State is only 4,12,846 tons there is an exportable surplus of 1,15,200 tons. The other crops with exportable surpluses are groundnut, chillies, tobacco, onions, turmeric and fruits like mango, banana and citrus.

70. Details of the production, local consumption, and exportable surpluses in the case of each of these non-food crops are given below :—

Name of the commodity	Average production (tons)	Requirements for the State (tons)	Exportable surplus (tons)
1. Groundnut .. ..	1,07,01,120	97,61,270	93,400
2. Tobacco .. ..	1,31,100	49,900	81,200
3. Chillies .. ..	1,10,490	1,03,651	6,839
4. Onions .. ..	1,70,532	1,26,532	44,000
5. Turmeric .. ..	64,497	54,497	10,000
6. Coconut (number) ..	233 millions	183 millions	50 millions
7. Castor .. ..	62,426	40,106	22,320 tons
8. Cotton (raw) .. ..	1,35,400 bales of (392 lb. each)	29,493 bales	1,05,457 bales of cotton raw.
1. Mango .. ..	Exportable surplus	1,83,000 tons.	
2. Banana .. ..	.. ..	22,900	
3. Citrus .. ..	.. ..	11,650	

The State has reached self sufficiency in the matter of food production and has exportable surplus in the order of Five lakhs tons of rice per annum.

71. *Minerals.*—The State is rich in minerals. At present, it is the principal supplier of Coal to South India. The State accounts for all the production of Barytes and more than half the output of Asbestos in the country comes from this State. Manganese and Mica production account for about 12 and 11 per cent respectively of the total production in the country. It has Iron ore, Steatite, Graphite, Felspar and Chromite also. Nearly 12 per cent of the Country's Graphite and 30 per cent of Felspar is produced in Andhra Pradesh. The potentialities for increased mineral production are great and will improve after a systematic and detailed exploration of the area.

72. *Industry.*—The principal industries of Andhra Pradesh are Cotton-Textiles, Jute, Sugar, Paper, Cement and Cigarettes besides Rice-milling and Vegetable oil production. Over 23 millions lb. of cotton yarn and 42 million yards of cotton cloth valued at about 71 million rupees were produced during 1955. The sugar production in the State was of the order of 118 thousand tons valued at 74 million rupees. 15 thousand tons of paper was produced with an estimated value of 18 million rupees. The quantity of cement produced in the State was 203,901 tons costing Rs. 17 millions. 35 million rupees worth of cigarettes were also produced in the State. 285 million k.w. of electricity was generated in the State during the year 1956.

73. *Cottage Industries.*—Among the important cottage and small scale industries, handloom industry occupies the pride of place with about four lakhs of handlooms at work in the State as a whole. In addition, there are 14,000 looms for woollen fabrics. On the whole the State has the largest number of looms in India providing employment for about 3.23 lakhs of persons and livelihood for 16.15 lakhs of persons. Other important cottage industries are kambli weaving, coir making, basket making, etc. The State is noted for its handicrafts which have an international market. Notable amongst these are the silver filigree articles of Karimnagar, the exquisite toys of Nirmal, Kondapalli, Nakkapalli and Tirupati the carpets of Warangal and Eluru and lace goods of Narsapur.

74. *Transport and Communications.*—The total railway route mileage in Andhra Pradesh is 2,902 miles out of which 1,633 miles are by Broad gauge, 1,244 miles meter gauge and 25 miles narrow gauge. The State has 1,409 miles of National Highways, 2,072 miles of State Highways, 8,527 miles of major district roads and 3,458 miles of other district roads. There were 20,232 motor

vehicles in the State in 1955-56 of which 9,180 were motor cars, 5,567 lorries, 216 taxis, 3,384 motor-cycles, 1,801 buses and 84 other vehicles. The Road Transport Department of the State owned a fleet of 442 buses in 1956 with a gross earnings of Rs. 1.80 crores. Over 47 million passengers were carried during the year 1955-56. There were during 1953-54—5,905 post and telegraph offices in the State. The existing facilities of communication are inadequate.

75. *Literacy and Education.*—Only 13.1 per cent of the population are literate in the State as against the All-India average of 16.6 per cent. There are about 28,000 schools and 47 colleges besides 31 professional Colleges in the State.

76. *Medical facilities.*—There are 776 hospitals and dispensaries in the State—183 in urban areas and 593 in rural areas with a total bed strength of 16,128. The number of doctors, nurses and midwives in the State are 923, 1,224 and 538 respectively.

77. *National Income.*—The National Income of Andhra Pradesh is provisionally estimated at Rs. 823-10 crores, in 1955-56 as against Rs. 691.47 crores in 1950-51 thus indicating an increase of 19 per cent. Likewise, the per capita income has risen from Rs. 221 in 1950-51 to Rs. 249 in 1955-56. The estimates of National incomes of Andhra Pradesh under different items of production and services will be found in the following table. Agriculture and small enterprises which are the principal means of livelihood of a very large section of the population account for about Rs. 557 crores or 68 per cent of the total income. The income from organised industry (mining and factory establishment) accounts for Rs. 29 crores or 3.5 per cent and income from Commerce, Transport and Communications accounts for Rs. 129 crores or 15.7% of this total income. Income from other services constitute Rs. 108 crores or 13 per cent of the National Income of the State.

## ESTIMATES OF NATIONAL INCOME FOR ANDHRA PRADESH

(Provisional)

	<i>Rs. in crores</i>	
	1950-51	1955-56
1. Agriculture and Animal Husbandry ..	411.77	474.44
2. Mining, Manufacturing and Hand trades	85.79	111.75
(a) Mining .. .. .	2.51	5.68
(b) Factory Establishment .. .. .	14.75	23.47
(c) Small enterprise .. .. .	68.53	82.60
3. Commerce, Transport and Communica- tions.	106.81	129.33
4. Other services		
(a) Professional and liberal arts ..	27.82	33.53
(b) Govt. services (administration) ..	17.32	24.05
(c) Domestic services .. .. .	4.12	4.97
(d) House property .. .. .	37.84	45.03
Total income ..	691.47	823.10
Population ( <i>in lakhs</i> ) ..	313	331
Per capita income ..	221	249

78. *Tourist Centres.*—The tourist centres in Andhra can be classified into two broad categories, namely, the centres of interest to foreign tourists and the pilgrim centres. Amaravati, Tirupati, Kalahasti, Srisailam, Ahobilam, Mangalagiri, Sindhachalam, Chandragiri and Tiruttani are a few of the many pilgrim centres of the State. The Nagarjunasagar Project and the Machkund Project sites are some of the tourist centres of all India importance.

#### Land and its tenures in other Countries and States

In India, we have the longest record of a highly organised and vast agricultural population and it would be worse than folly to ignore that experience—experience with its successes and failures. Agricultural production, is the winning of wealth from land by means of labour. Land is an essential item in the economy of production and as such, it becomes a desirable asset and the system of land tenures becomes of primary importance. Land differs

fundamentally from other forms of wealth as it is usually defined, but it is of prime importance for the conversion of inorganic into organic and in consequence, must be the ultimate factor controlling the development of the human race. Land, with air and water, form the inorganic, bases from which all organic and living matter derives its existence. It is the vegetable kingdom, which alone is capable of converting the inorganic, non-living, into the organic and the living. It is on the vegetable kingdom that all animals, man including, ultimately depend for their subsistence. Land is therefore one of the country's most important resources. Human nature being what it is, production, even of essentials to life will only be achieved if an attractive return is obtained for the labour involved and it is the system of land tenures which largely determines the distribution of rewards for agricultural labour.

2. Agriculture, therefore, continues to be the leading industry and the source of employment for a very large section of our population. Under the Hindu and Muslim rule, the ryot was recognised as the owner and proprietor of the soil. The person who first reclaimed and cultivated the land was considered to be the proprietor thereof. According to Manu "cultivated land is the property of him, who cuts away the wood or who first clears and tills it." The king had only a right to levy tax on land by way of a share in the produce.

3. According to the Moslem Rulers in India from the 13th to 18th century, a kingdom had three essential constituents: the sovereign who ruled it, the army which supported the throne and the peasantry which paid for both. The relation subsisting between these entities is comprised in the pithy statement, "Troops and peasants are the two arms of the kingdom". In Moslem India as in India under the Hindu kings, the agrarian system was more a matter of duties rather than rights. It may thus be seen that assessment from land was the principal source of Revenue to the State from very ancient times.

4. In the history of Land Tenures, the question resolves itself into one of the rights of an alien authority which gains control or possession of a country by treaty, conquest or other means. In the earlier period of the world's history, the conqueror was the sole arbitrator in this matter, and his word was in effect, the Law. The conqueror was considered the sole owner of the soil, in the area conquered. The Normans, when they conquered England, adopted this view and distributed the land among themselves and their adherents, ignoring the rights of the conquered. The same is true of the conquests which followed the discovery of the new world; full possession of the land was taken by the conquerors;

and in the absence of amenable population willing to serve, such population was exterminated or absorbed. India and China alone form the exceptions to this rule, due to the magnitude of the problem involved.

5. *Historical. Development of tenures in India.*—The King's share was usually  $\frac{1}{6}$ th of the gross produce and in times of war, it was  $\frac{1}{4}$ th. The Kings considered that it was their paramount duty to protect the ryots from enemies and marauders. The peasant considered that it was his sacred duty to give the King's share and his right to enjoy the King's protection. It must be admitted that in those ancient days when Kingdoms were small and often at war with each other, the kings found it a very arduous task to protect the agriculturists.

6. It is seen from the land systems in South India by K.M. Gupta that the Arthashastra gave an elaborate account of the territorial organisation for the collection of revenue. A gopa or circle officer was in charge of a number of villages, usually from five to ten in number. His duties were to classify the village-lands into different groups for the purpose of taxation, to register gifts sales, charities and remission of taxes regarding fields, and to keep all statistics connected with the village. There were Sthanikas, in charge of districts who also attended to revenue accounts. Both under the Chalukyas and Cholas there were elaborate administrative divisions for general administration and collection of revenue. There is a reference in the Jatakas about survey. The Mauryan Government had an elaborate survey of the land in its diverse aspects, so that the taxable capacity of each village was very accurately ascertained. The Jatakas made it clear that the King had a right to a portion of the income from land. The Arthashastra mentioned seven principal sources of income and six of them relate to land. Manu's canon of taxation is that the King should fix the taxes in such a way as would enable both the king and the tax-payer to receive their due reward. "As the leech, the calf and the bee take their food little by little, even so, must the king draw from his realm moderate annual taxes." Sukras's canon of taxation is that the king should realise his revenues in such a way that the cultivators are not destroyed. In other words, he should do so like the garland-maker, who does not destroy the flower plants, and not like the charcoal-maker, who destroys the tree.

7. However, oppressive taxation and the consequent desertion of villages seem to have been known in India from very early time, from the time of Jathakas. Severe measures were adopted even at the time of Cholas for the realisation of land revenue. During bad seasons, however, remissions were given by the Cholas and when villagers were rehabilitated there were progressive rules of taxation to encourage people to reclaim land.

8. At the beginning of the Moslem period, the local chiefs or Rais had most of the lands under them, dealing directly with the peasants and gave only a tribute to the Moslem ruler. As long as he was loyal and paid the tribute punctually, he was allowed to collect the share from the peasants in his own way. The Moslem Kings also assigned in lieu of cash payment for salaries for civil and military services, the revenue or rather the King's share of the produce in specified areas. Grants were also made as rewards and also for maintenance of charitable and religious institutions. These grants and assignments were held at the pleasure of the King who could terminate them at his will. The Hindu inhabitants were not generally dispossessed and only "Khiraj" or tribute was levied which in practice became the land revenue. The Moslem rulers considered that instead of sticking on to a uniform scale of 1/6th of the gross produce for all crops, a differential rate, making allowances for irrigation, was permissible. In practice, however, Allaudin, Sher Sha and Akbar followed the Hindu method of taking a share of the gross produce.

9. Firoze Sha undertook irrigation works on a considerable scale. In consultation with the Jurists, he claimed special irrigation revenue on the specific ground that the king was entitled to some return on the outlay. He abolished all miscellaneous cesses. During the early Moslem period, the chief stood between the peasants and the Government and it is not clear whether the peasants enjoyed the security of tenure which is now-a-days regarded as a primary condition.

10. Sher Sha took an important step in dealing directly with the peasants. He gave them the choice of the basis on which demand should be made by measurement or sharing—and gave them written documents defining their tenure. For all staple crops, the lands were divided into good, middling and bad, the yields of all the three were added up, divided by three and the revenue demand was 1/3 of this average. Akbar succeeded to the throne in 1556 when he was only fourteen. The period of his personal rule began in 1562 and lasted until his death in 1605. For the first 24 years, his revenue administration may be said to be a series of experiments. After that, a stable system was evolved. Akbar superseded the farming system of collecting revenue, wherever possible, and endeavoured to settle it with the village communities. The amount to be paid by each village was calculated. At the same time, a statement of dues payable by each cultivator was also prepared for the guidance of the village authorities. There was a survey. The unit was a yard-rod-gaz of 41 fingers or 33 inches. Land was divided into three classes, Pulaj that was continuously cultivated, (2) Phirawati, which required



a periodical fallow period, (3) Chicher which lay fallow for three or four years and (4) Banjar that lay fallow for four or five years. The first three kinds were again classed into best, middling and worst. The share of the Government was  $\frac{1}{3}$  of the produce and to ascertain the share on average Bigha of each kind was taken as a sample and  $\frac{1}{2}$  of the aggregate produce was considered to be the average.  $\frac{1}{3}$  of this gave the Government's share. The "Aini Akbari" contains tables of the average yield of various crops. The assessment under Akbar was less than that under the former Rulers but it was anticipated that it would be made up by increased punctuality of payments. Joint responsibility of the community was a condition on which the reduced rates and other advantages were accorded to the villagers. The community managed its own affairs and disposed of the waste. The Government, however, reserved the right to take land from those who would not cultivate, and give it to others. It must, however, be said that these arrangements were rather theoretical than practical and after a very short time, the old farming system re-established itself, all over the country. Aurangzeb issued Firmans which were directed to increase the cultivation and the welfare of the peasants. The Firmans throw interesting light on the system of assessment. Group assessment was almost the rule and the demand on individual peasants was fixed by the Headman. The burden of the strong fell on the weak. Cash payments were insisted. By Aurangzeb's time, the problem of absconding ryots had become a serious matter for the administration, and this was attributed by Bernier to the severity of the administration.

11. The Emperor issued two Firmans or general orders — the first in 1665-66 which was characterised by the prices and logical arrangements of Akbar's rules for Collectors. The second order was issued in 1668-69 with the specific object of ensuring that revenue was assessed and collected in accordance with the principles of Islamic Law. There is no provision for the dispossession of an inefficient or defaulting peasant as probably because there was a scarcity of peasants.

12. In the Deccan, one of the land marks in the agrarian history is the system of assessments introduced in Ahmed Nagar by Malik Amber. Malik Amber's demand was probably a cash demand fixed on the basis of cultivation. The Deccan was desolated by a great famine in 1630. There was an entire reorganisation of the land revenue system when it came under the Mughals. The officer who undertook this work was Murshid Quali Khan who introduced the measuring and sharing system in addition to the existing "Plough system". The system introduced was the "differential system". For crops depending on rain, the State took one half as its share for those under wells  $\frac{1}{3}$ , and for high grade crops, like sugarcane etc.,  $\frac{1}{4}$ . The sagacious policy of Murshid Quali resulted in progressive increase of cultivation.

## Vijayanagara Empire

13. *Survey and Settlement.*—As the land assessment or tax was the main source of the State's revenue, it was of the utmost importance to ascertain the exact extent of land each ryot held. The lands were carefully measured every year, the names of the holders, and the extent of their holdings were entered in registers. The instrument that was made use of in measuring lands was a bamboo pole whose length seems to have varied with the locality. The Kesari-patighada of 32 vitastis or 42 feet 8 inches was in use in the province of Kondavidu; the measuring pole of 32 padas referred to in the Nagulavaram grant of Krishnadevaraya appears to have been shorter in length than the above. Dore or doraghada is mentioned in several inscriptions of the Ceded districts; its length, however, is not known. A measuring rod called 'the manadanda, 18 padas in length' was in use in the Canarese districts. The 'standard rod' which was employed in the Chola country is mentioned in an epigraph of Tayanur. It is said to have measured 34 feet. There is reason to believe that there was a general survey of lands in the Canarese districts during the reign of Krishnadevaraya. Timmarusu's name is associated with the survey of certain Telugu districts. The names of other officers who surveyed the lands and settled the revenue are also preserved in the inscriptions. As it was customary to measure the land and assess the revenue every year, no special significance need be attached to the survey conducted by the officers mentioned above.

14. The land in every village was divided into two main classes, the arable fields and the pastures. The former were further subdivided into 'Niraramba' and 'Kadaramba' fields. 'Niraramba' fields are defined as 'wet lands, lands irrigated artificially for rice cultivation'. This definition, however, is too narrow, as several crops other than rice must have been dependent upon artificial irrigation. In a "rayarekha" of the time of Vira Narasimha, a king of Vijayanagar fields in which sugarcane, betel, and kitchen vegetables were cultivated, were included in the 'niraramba' land. Similarly, the Kaifiyat of Sirivolla included in it fields in which all kinds of kitchen vegetables, fruit bearing trees, sugarcane, plantain, and betel creeper were cultivated. The niraramba lands were, therefore, divided in the "rayarekha" mentioned above into rice lands and gardens, the latter being further subdivided into sugarcane, betel, vegetable, and plantain gardens. The 'kadaramba' is said to mean 'dry land or land which depends entirely upon rain for watering; the cultivation of such land'. All the dry crops such as Ragi, Cholan, Javari, and pulses might be described as 'kadaramba' crops. This minute classification of the village land was made for the purpose of assessing revenue. The arable fields seem to have been classified further into, 'best, middling, and inferior'. And very probable taxes were assessed according to the yield of the crops.

15. It is not, however, possible to assert definitely the exact proportion of the produce which the several governments which ruled the areas in this State claimed as their share. Some writers believe that one-sixth of the produce was taken by the State as its due. The belief is based upon theoretical statements contained in the Dharma Sastras; but it does not seem to correspond to the real state of affairs obtaining in the 16th Century. According to some inscriptions the Government claimed 'muggoru' (one-third) and even 'sangoru' (half) from certain types of land. These terms are explained by the author of the Athavana Tantram :

16. By "muggoru" it is meant an arrangement according to which the Government claim one-third of the produce, leaving the remaining two-thirds to the ryot. Similarly, by 'Sangoru' it is meant an arrangement by which the Government take half of the produce leaving the other half to the ryot". Again, in newly formed villages, and in the villages built after clearing the jungles and on ruined sites, the State's share of revenue varied with the time and place. It appears from this that no uniformity was observed regarding the proportion of the production which the Government claimed as the share due to them.

17. The measurement of lands, and several details pertaining to it were entered in palm leaf registers called 'kavilas'. Each village had a 'kavila' of its own which was maintained by the karnam or the village accountant. In this register were recorded the gudit or the total extent of the village, the extent of the lands given to the Gods and the Brahmans, the names of the donors, the Saka and the cyclic years in which the donations were made, the extent of the land cultivated by each ryot, the tax which he had to pay thereon to the government, the boundaries of the villages and several other particulars of the kind. The village boundaries were zealously guarded by the villagers against encroachments by the ryots of the neighbouring villages. Several disputes regarding the boundaries of villages are recorded in the inscriptions. It is said that the village boundaries were minutely described in the government records. Copies of village kavilas were preserved in the chavadis or offices of the 'sthala', and 'sima'. Probably copies were also kept in the Athavanam or the imperial revenue secretariat.

18. It should be noted that taxes on 'kadaramba' and several 'niraramba' fields were paid not in coin, but, in kind ; but taxes on certain types of 'niraramba' fields, e.g., gardens where vegetables, sugarcane, plantain, and betel were grown, were received not, in kind, but, in coin, probably because their products being perishable, could not be stored for long periods.

19. *The pasture and the forest.*—Though the waste lands and jungles were useless for agricultural purposes, yet they yielded considerable revenue to the State. The staple industry of the country being agriculture, the maintenance of large numbers of cattle became a necessity. Again, the Kurubas and other pastoral communities reared large flocks of goats and sheep on which they depended for their livelihood. The pastures required for grazing cattle were owned by the government who let them to the cattle-breeders on rent. The rent paid by them was known as ‘pullari’ or ‘hulluhanni’. The ‘adateru’ or the goat-tax which is so frequently mentioned in the inscriptions of the time must be assigned to this class. Moreover, the wood-cutter who cut wood in the forests for the purpose of selling it in towns and villages had also to pay a tax, which was called kondagutta or the hill rent. These taxes were not directly collected by the State ; but the right of collecting them was sold in auction to contractors or tax-farmers.

20. *The Jamabandi.*—The word jamabandi is defined by Kittel as ‘the general assessment of land and the settlement of the Government dues. / Wilson gives a fuller definition of the term.

21. It is said to mean “settlement of the amount of revenue assessed upon an estate, a village or district, annual settlement of revenue with cultivators or an annual settlement modified according to the circumstances under which the revenue is paid whether by individuals or by communities and whether to a zamindar or to the government.” It also means “the annual tour of a revenue officer, village by village, for the settlement of assessment.”

22. There is no evidence in the inscriptions, to show that jamabandi was known during the early period of the Vijayanagaram empire ; but the constant enquiries made by the emperor and his officials about the condition of the ryots, and the frequent remission of taxes registered in the lithic records indicate that there must have been something corresponding to the jamabandi. This belief is confirmed by an explicit statement of the Atthavana Tantram which refers to the jamabandi, settlement every year (with the government). Again the government are spoken of as preparing a consolidated list of all the babs (items of revenue) for jamabandi. If it were not possible to collect all the dues of the year completely, the arrears were entered in next jamabandi accounts under the head of ‘silusila-baki’, which was collected with the taxes of the succeeding year.

23. In his report on the land revenue of Canara, Mr. Thackeray states that the settlement made by Harihar Roy, Raja of Bijanagar, between the year of the Christian era 1334 and 1347 was based on the

rules prescribed by the Shastras and that it divided the gross produce in the following proportions :—

To the landlord ..	$7\frac{1}{2}$ or $\frac{1}{4}$ or 25 percent.
To the cultivator or labourer	15 or $\frac{1}{2}$ or 50 percent.
To the sarkar	$7\frac{1}{2}$ or $\frac{1}{4}$ or 25 percent.
Total ..	<hr/> 30                      100 <hr/>

The sarkar's share was again subdivided as follows :—

Sarkar, one-sixth of the gross	5
Devadayam, one-thirtieth ..	1
Brahmadayam, one-twentieth	$1\frac{1}{2}$
Total ..	<hr/> $7\frac{1}{2}$ <hr/>

#### 24. *Early Settlement in Madras under the British Government.*—

It is interesting to note that the Government of Madras in 1855 considered that the assessment should not exceed 30 per cent of the gross produce, "under the most favourable circumstances" subject to progressive deductions according to the absence of advantages. But the Court of Directors in their reply dated 17th December, 1856 declined to accept this rule of assessment upon the gross and in view of the probable inequalities of the assessment, ordered that it should be a proportion of the net. The matter was subsequently discussed with the Home Government, and in 1864 it was finally decided that the rule should be one-half of the net produce. In re-settlements also the full advantage was not taken of the increase in prices, for example, in Godavari, in the first resettlement when the prices had been doubled the increase imposed was only 24 per cent.

25. Salem (or Baramahal) in Madras was taken up for settlement first. Captain Read was sent there with instructions to grant leases. Leases were offered to the headmen of single villages on the basis of the recorded assessment in Hyder's reign. In order to protect the cultivator a detailed field survey was also undertaken. The experiment was not successful. The cause of failure was over-assessment. In 1817, the Court of Directors issued instructions for the abolition of the village lease system and the ryotwari system was reintroduced. All the arable land under the ryotwari system was divided into fields and the assessment for each field was fixed. The occupant pays the revenue and deals directly with the Government, and is responsible only for his holding. He is given a patta which sets forth the extent and assessment.

The occupant enjoys all the advantages of the proprietorship subject only to the payment of land revenue. In the beginning there was considerable reluctance on the part of the cultivator to accept the responsibility of paying a fixed revenue. It had therefore to be made clear that the ryot was bound to pay the assessment only as long as he held the land, but that he was at full liberty to relinquish the land if he so desired. Any other ryot could apply for the land if he is willing to pay the assessment. In the early settlements much importance was attached to the then existing rates, which were very high. There were numerous downward revisions. Though the ryotwari system was attempted to be established as early as 1820, the scheme was not initially a great success. Even in 1855 only less than one-fifth of the area of the Madras Province was cultivated. In spite of uninterrupted peace, there was no extension of cultivation. The early surveys were also defective. Taking all these facts into consideration, it was decided in 1865 that a general revision of assessments should be made based on an accurate survey and classification of soils. Under the ryotwari system of settlement the soil of every field is classified under one of the fourteen classes with reference to its nature and composition. Each class was sub-divided into one of the five sorts—best, good, ordinary, inferior and worst. The actual yield was determined either by crop cutting experiments or by comparison with similar lands for which data was available. In determining the yield, the standard grains of paddy in the case of wet lands and cumbu, cholam and ragi in the case of dry lands were taken into account. The money value of the crop was worked out at the commutation rate which was the average of twenty non-famine years preceding the settlement. An allowance of 10 to 28 per cent was made towards transport and merchants profits. From the money value of the gross produce thus determined, was deducted (i) a percentage for the vicissitudes of season and unprofitable areas included in the holdings, and (ii) an amount equal to the estimated cost of cultivation. The State was entitled to one-half of the grain outturn thus arrived at, but in practice, the assessment was fixed at a much lower percentage. Soils of similar grain yields were bracketted together under Tarams. Villages were placed in groups taking into consideration their location, facilities for transport and marketing. It is obvious, therefore, that for the same class and sort of soil occurring in two villages one which has got excellent facilities for communication and another situated in an inaccessible place the same rate cannot be applied.

26. The ryotwari system was evolved after trying a number of other systems mentioned below :

1. *The Renting System*.—Villages were let on lease either to the highest bidder or on a rental based on the average collections

of past years. Under this system, individual distribution would be iniquitous and arbitrary and there would be scope for illegal exactions.

2. *The Asara*.—Conversion into money of the Government share of the crop as ascertained by estimate or actual measurement at the threshing floor. Under this system the ryot would be the victim of inquisitorial visits and extortionate demand of a host of petty officials. The public revenue would be at the mercy of ill-paid and unscrupulous subordinates to whom the system would afford a most easy opportunity for embezzlement. The cost of collection would be great.

3. *Visabadi*.—Distribution with the sanction of the Collector of the total demand of the village on the lands of each ryot.

4. *Joint Rent System*.—The whole body of the villagers was jointly and severally responsible for the rent which was revisable. Adjustments of individual responsibilities were left to the ryots.

5. *Mucta System*.—Rent was fixed on the village as a whole on the consideration of its resources. Details were left to the ryots. The demand was fixed so long as the system continued.

6. *The Olungu System*.—Confined to the districts of Tanjore, etc. Grain rent was commutable into money every year at the current market price.

7. *The Motta Faisal System*.—This prevailed only in Tanjore district.

8. *Tharao or Sarasari*.—This obtained only in South Kanara. The demand was based on the average collections realized from each estate for the preceding 16 or 17 years.

27. The initial survey and settlements of the districts in the erstwhile Andhra State were undertaken between the years 1864-1898. The initial settlements were in force for a period of thirty years after which resettlements were undertaken. There was no reclassification of the soil or even of the grain outturns, during resettlements. A new commutation rate based on the prices of twenty non-famine years before the year of resettlement was compared with the commutation rate adopted at the old settlement. Only if there was a marked increase, assessment was increased. But even then, not at the same rate as the increase in prices, as a good portion of it would have been absorbed as cultivation expenses and as it was also necessary to promote higher standards of living for the ryot.

28. Re-settlement operations were never popular with the ryots, as in all cases due to the steady increase of prices, resettlements always led on to an increase in land revenue assessment. They were finally ordered to be abandoned in 1939. The early ryotwari

settlements had many defects. There were great inequalities and the assessment was very high especially on garden lands irrigated by wells.

29. The assessments were dependent not so much on the estimates of the produce, as on former assessments which were rather high. It was calculated that on an average, Government at that time, took as its share, 50 per cent of the gross produce of irrigated land and 35 per cent of that of unirrigated land, while, to give the ryot any real proprietary interest in the land and to induce an extension of cultivation, from 25 to 30 per cent of the gross produce was believed to be the utmost that the Government should claim.

30. About the middle of the last century, *i.e.*, before the Mutiny, the question of relative shares of the State and of the landlords in the net produce of the soil came again for careful review in Northern India ; and the result of this further consideration of the matter was embodied in what are known as the "Shaharanpur Rules" (so called because they were issued in connection with the resettlement of the land revenue of the Shaharanpur district of the North-Western Provinces). The settlement rules previously, in force, authorised the demand of two-thirds of the net produce of an estate or rather of its value in money, as the Government share in respect of land revenue. The Shaharanpur Rules, issued in 1855, laid down "not that the revenue of each estate is to be fixed as one-half of the net average assets, but that in taking these assets with other data into consideration, the Collector will bear in mind that about one-half, and not two-thirds as heretofore, of the well-ascertained net assets should be the Government demand." There has been a progressive reduction in all States of the assessments during the last century, for example, in Orissa in 1822 it was 83.3 per cent of the assets, in 1833 it was lowered to 70.75 per cent; in 1840 to 65 per cent and later brought down to 54%.

31. Though, as mentioned above, resettlements were not popular with the ryots, it has to be recognised that in some of the earlier settlements the rates were very high.

32. In Madras too, the original average rates in general must have been much higher than those of the new settlement, while it is known that wet and garden rates were both excessive. As an example, in North Arcot, a typical ryotwari district, in 1805 the average assessments per acre were Rs. 11-1-0, Rs. 3-10-0 and Rs. 21-9-0 for wet, dry and garden lands respectively in the Southern Division, and Rs. 15-3-0, Rs. 3-12-0 and Rs. 18-9-0 in the Northern Division ; the maximum rates were of course far higher ; apparently, however, no charge was made for a second crop if grown, but no



reduction was made if it was not grown. These enormous rates, which threw all the higher assessed and best lands out of cultivation, were incessantly under heavy reduction up to 1864, but the reductions were only temporary expedients, while the areas and rates were doubtful and unequal, the areas being in many cases much against the ryot, as in Palmaner taluq, where the correct area was found to be 33 per cent less than the nominal area. Hence the new survey and settlement which began in 1871 the result of which is an average assessment of Rs. 4-15-2 per acre of wet land *plus* one-half extra for a second crop when grown, and Rs. 1-4-2 on dry land, in which latter are included all the gardens which bore the excessive assessments mentioned above. The contrast is appreciable.

33. *Land tenures in other States in India.*—Lands held in most parts of India, before the abolition of estates fell under one or other of the following three major systems:—

- (1) the permanently settled estates system,
- (2) the temporarily settled estate system, and
- (3) the ryotwari system.

34. Apart from these three major systems, there are a number of minor systems in different parts of the country. The total area under the latter, however, is only a small portion of the area under the former. The permanently settled estate system was followed in most parts of the provinces of Bengal and Bihar, about one-half of Orissa, about one-third of Madras and smaller portions of the provinces of Assam and the United Provinces, nearly the whole of the Central Provinces (but not Berar), about a fourth of the province of Orissa and in some areas in provinces where the permanently settled estate system prevails. Subject to what has been said about the minor systems, the ryotwari system, generally speaking, prevails in the rest of the country. But certain areas which are not usually referred to by name as ryotwari (*i.e.*, Government estates or Khasmahal estates of Bengal and Orissa) are really of this category, since they differ in no essential respect from areas under the ryotwari system.

35. The features which distinguish the three major systems owe their origin primarily to differences in the character of the settlements of land revenue made in the course of the 18th and 19th centuries. The fact that the revenue was fixed in perpetuity under the permanently settled estate system and is revisable under the other two is a well known distinguishing feature. The other important difference between the ryotwari system on the one hand and the permanently and temporarily settled estate systems on the other, lies in the unit which was adopted for the purpose of settlement. Under the former, the revenue was fixed on individual pieces

of land and the actual occupants, who were recognised as possessing a permanent and heritable right of occupancy, became liable for its payment. Under the latter, the 'estate' was the unit and the holder of the estate (commonly called the proprietor) not the actual occupant of the land, became responsible for the payment of land revenue. The actual occupants were not, however, all tenants at will. It has always been an accepted principle in India that the occupant of the soil is entitled to remain in possession from generation to generation, provided he pays the customary dues either to the sovereign power or to the person recognised by that power as entitled to receive such payments. At the time of the original settlements, therefore, a large proportion of the occupied lands in the majority of the estates was held by persons who had a permanent and heritable right to occupy and cultivate the land, subject to the payment of the customary rent. In the early days of the British administration there was a tendency for the occupancy right to become obscured and obliterated. Many legislative measures have, however, been passed during the last 100 years extending this right of occupancy, with the result that today the great majority of tenants holding under proprietors (or sub-proprietors) possess a permanent and heritable right of occupancy in the lands of their tenancies. Home farm lands in which the holder of the estate enjoyed the right of occupancy, were the exception and were specially delimited by law as such.

36. Thus under the three systems, there was in respect of every individual piece of land, one person who was called the 'occupancy-right holder'. This occupancy-right holder is generally called a ryot under the ryotwari system, while under the other systems he is sometimes described as a tenant. The occupancy-right holder holding land under the ryotwari system pays land revenue direct to the Government, while the occupancy-right holder under the other two systems pays rent to the proprietor of the estate. Both payments are similar in character in the sense that they are not determined on a purely contractual basis. Under the ryotwari system, as well as the temporarily settled estate system, the amount of these payments is fixed at settlements carried out periodically by Government. The payments due on the lands held under the permanently settled estate system are less often settled in this manner. The original basis of the level of rents under this system was custom, modified partly by contract in the past and largely by legislation regulating the conditions under which rents may be altered.

37. It is not unusual to suppose that under the ryotwari system the land is held by a large number of small peasants in their own right, while under the other systems the land is held by

a relatively small number of large landlords whose lands are cultivated by tenants without any statutory rights. This is not the case. The central figure in all the three systems is the occupancy-right holder. The proprietors of estates are not occupancy-right holders in respect of the greater part of lands in their estates.

38. The various systems of land tenure prevalent in the several States are as follows :—

1. *Bengal*.—The principal system of land tenure is the Permanent Settlement created by the Regulation I of 1793. The revenue was fixed in perpetuity and all zamindars were placed in the same category. While some farmers obtained proprietary rights which they had never possessed, the independent chiefs and the old landholding families were confirmed in the position they had occupied for centuries. In certain cases, revenue free grants made by former rulers which were subsequently recognized and confirmed, are held as revenue-free estates. Later when the policy underlying the permanent settlement was abandoned, new estates were created with either Government or private persons as proprietors, liable to periodical revision of land revenue.

The “Estates held direct by Government” are the same as ryotwari tracts elsewhere. Most of the lands in the zamindari estates are held by ryots whose rights in the land and obligations to the zamindar have been regulated by a long series of tenancy laws, the net effect of which is that the ryot possesses substantially the same rights in his holding as ryots holding land direct from Government in Government estates in Bengal, and these again are practically identical with those of ryots holding direct from Government under the ryotwari settlement in other provinces. The incidence of rent payable by the ryot to the zamindar in Bengal compared, in general, favourably with the incidence of land revenue payable to Government by ryots in ryotwari areas. The land held by a ryot could be cultivated either by himself or by crop-sharing tenant, or by under-ryots. Under-ryots fall into three classes, of which the first possesses practically all the rights of ryots except transferability; the second and the third differ from the first mainly as regards liability to ejection in certain circumstances. The tenant who is not an under-ryot is usually a crop-sharer (called bargader) and his relations with the ryot are purely contractual.

The characteristic feature of the condition of proprietary rights in estates was the prevalence of sub-division and sub-infeudation to a large extent. The zamindars were free to transfer their rights to whomsoever they might think proper by sale, gift, or otherwise.

The West Bengal Estates Acquisition Bill passed in November 1953 provided: (i) to eliminate the interests of all Zamindars and

other intermediaries by the acquisition on payment of compensation ; (ii) to permit the intermediaries to retain possession of their 'khas' lands up to certain limits and to treat them as tenants holding directly under the State ; (iii) to acquire that interests of zamindars and other intermediaries in mines ; and (iv) to provide for certain other necessary and incidental matters. It has also provided that the estates should vest in the State within a definite period from the date of the passing of the Bill, irrespective of whether the record of rights or Compensation Assessment Roll has been finalised or not. The Government have been given the power to collect, if so requested by intermediaries, all arrears of rent in consideration of appropriating half of the amount collected.

2. *Bihar*.—The systems of land tenure prevalent in Bihar were substantially the same as in Bengal, the system of permanently settled estates being the predominant form to an even larger extent.

Under the provisions of the Bihar Land Reforms Act, 1950, the State Government acquired the rights of proprietors and tenure-holders in their estates and tenures respectively by notification from time to time. To dispel suspicion about discriminatory treatment to zamindars in taking over the zamindaris, the Act provided that when the interests of a particular zamindar having a gross income above a certain amount are acquired, the interests of all other zamindars whose income are within that income group will have simultaneously to be notified for acquisition.

3. *Orissa*.—Tenures prevailing in this province were substantially similar to those in Bengal, the area of permanently settled estates being relatively similar to in Bengal.

There are some distinctive features not present in Bengal which are described below :—

(i) Revenue-free estates in the northern districts of the province were of the same type as in Bengal; that is, a bifurcation of proprietary rights and occupancy rights existed, and cultivators acquired occupancy rights as in zamindaris. In the districts transferred to the province from Madras, this was not invariably the case. Cultivators holding under the revenue-free proprietors might acquire occupancy rights in some estates but not in others.

(ii) Though cash rent is the common feature in the province, a considerable area is held on produce rent which is generally of two kinds. The commonest form is known as the Dhuli-bhag, meaning an equal division of the grain and the by-products. The second form is that known as the Sanja (*i.e.*, contract), under which a fixed quantity of the produce is payable.

The following measures were passed by the Orissa Government in the course of the last few years for the abolition of the system of intermediaries and for regulation of the tenancy system :

(i) The Orissa Tenancy (Amendment) Act, 1946, confers occupancy right on non-occupancy ryots, under-ryots, service-tenure holders, etc., in respect of their home-stead lands.

(ii) The Orissa Tenancy (Amendment) Act, 1947, under which sub-division of holdings by metes and bounds becomes binding on the landlord to accept.

(iii) The Madras Estates Land (Orissa Second Amendment) Act, 1946, conferred occupancy right on tenants in whole inam villages (Inam estates).

(iv) The Madras Estates Land (Orissa Amendment) Act, 1947, empowered Government to fix fair and equitable rent in the proprietary estates of South Orissa where rents were abnormally high.

(v) The Orissa Tenancy (Second Amendment) Act, 1947, conferred occupancy right on Chandandars in respect of their home-stead lands.

(vi) The Orissa Communal, Forest and Private Lands (Prohibition of Alienation) Act, 1948, prevents landlords from alienating certain classes of lands on the eve of the abolition of zamindaries without the previous permission of the Collector. This has specially benefited the cultivating tenants on the private lands of zamindars.

(vii) The Orissa Tenants Protection Act, 1948, gives temporary protection to under-tenants against eviction and fixes the rate of produce rent payable by them.

(viii) The Orissa Tenancy (Amendment) Act, 1948 makes provision for reservation of adequate communal lands in a village.

(ix) The Orissa Tenants Protection (Amendment) Act, 1947, makes provision for division of hay and subsidiary crops between under-tenants and landlords.

(x) The Orissa Merged States (Laws) Act, 1950, confers rights of free transfer, full rights over trees and certain other tenancy rights on occupancy tenants in the merged States.

(xi) The Orissa Tenancy (Amendment) Act, 1950 gives option to service jagir holders to cease rendering personal service and to apply to the Collector for fixation of fair and equitable rent in respect of their jagir lands. It also made provision for settlement of fair and equitable rent in respect of the service jagir lands and the 'Khamar lands' of Rulers and Members of their family.

The Orissa Tenancy Act, applies to the 'Khasmahal' areas in the districts of Cuttack, Puri and Balasore and the amendments to that Act, referred to above are also applicable to those areas. Similarly, the Orissa Tenants Protection Act cited above also applies to the ryotwari areas of the State. The Orissa Merged States (Laws) Act, 1950 also applies to the ryotwari areas in the merged States.

In 1952, the Orissa Estates Abolition Act came into force, and it is modelled more or less on the lines of the report of the Land Revenue and Land Tenure Committee. The Act did not approve the Malikana Scheme of the Land Tenure Committee for compensating the dispossessed intermediaries.

4. *Assam*.—The major portion of two districts in this province (Sylhet and Goalpara) was settled under the zamindari system as in Bengal. The rest of the province was settled under the ryotwari system. The actual cultivator was a ryot either under the Government or the zamindar or a tenant under a ryot paying a share of the produce called Adhi-bhagi.

Under the Assam State Acquisition of Zamindari Act, 1949 rights of the tenure holders ceased and vested in the State.

5. *Uttara Pradesh*.—The system of permanently settled estates prevailed in the Banares Division, parts of Azamgarh district, and in parts of the districts of Gonda and Baharaich.

In accordance with the provisions of U.P. Zamindari Abolition and Reforms Act, 1951 all the Zamindaris in Uttara Pradesh vested in the State. It liberated the Uttara Pradesh peasantry from centuries of landlord exploitation. Under the new tenure there will be two main classes of tenure holders—the Bhumidars and Sirdars, and two minor classes namely Asamis and Adhivasi. All the existing Zamindars will be given 'Bhumidari' rights in respect of their 'Sir', 'Khud-Kasht' and grows. All the tenants of 'Sir', the Sardars will have the rights to become Bhumidars by paying ten times the rent.

6. *Old Madhya Pradesh now in Bombay and Bihar*.—In this province there were no permanently settled estates. The principal system in the Central Provinces was that of the temporarily settled estates similar to those in the United Provinces. The proprietors are known as *Malguzars*.

The Madhya Pradesh Abolition of Proprietary Rights (Estates, Mahals Alienated Lands) Act, 1950 eliminated the various categories

of intermediaries namely, Zamindars, Malguzars and their under tenures in what was formerly known as the Central Provinces and 'Jagirdars', 'Izaradars' and 'Palampatdars' in Berar and thus the proprietary right in about 43,000 villages vested in the State Government by 31-3-1951.

7. *Kerala*.—In Malabar three distinct interests in land known as Janmam, Kanam and Verumpattam, were recognised, and their rights to some extent regulated by law.

8. *Bombay*.—The predominant form of tenure in this province is the ryotwari system. Out of 32.29 million acres of occupied assessed land, 24.44 million acres are held on this tenure. A small proportion of this area, 1.22 million acres, is held on what is called the restricted ryotwari tenure under which the holder is subject to the condition that the land cannot be transferred except with the permission of the Collector. The restricted tenure is generally made applicable only to Backward classes of cultivators.

9. *Punjab*.—Under the Punjab Occupancy (Vesting of Proprietary Rights) Act, 1952 and Abolition of 'Ala Malikiyat' and Talukdar Rights Act, 1952 all titles, rights and interests, etc., of such landlords and 'alamalics' were extinguished and vested in occupancy tenants and 'adana malikas' respectively. The occupancy tenants were given share in "Shamilats" with respect to the land concerned under the Punjab Occupancy Tenants (Vesting of Proprietary Rights) Act, 1952. A Bill was passed in 1953 for the abolition of the system of "Jagirdari" in the State which existed in certain areas.

39. *System of Ryotwari Settlement in Bombay State*.—It is necessary to give an account of the Bombay system of settlement since the erstwhile Hyderabad followed it very closely. The Bombay system has points of resemblance to that of Madras in as much as it proceeds on the same general plan, there is a survey of the land, division between the survey numbers and the determination of the revenue rate to be fixed on each field. The ryot has the privilege of relinquishing fields which he does not want and can apply for assignment of waste lands. Here also there is the jamabandi or the settlement of the annual revenue due from each ryot. Lands in the Deccan, as already mentioned, were measured and assessed at 1/4 of the annual average produce during the time of the Moghuls. Murshid Quali Khan was employed on this work for 20 years. The assessment made on each village was known as "Tankah". In the independent kingdom of Ahmednagar, a similar but not identical system was followed by Malik Amber. Though there was a lumpsum assessment for each village,

it was based on the crop. The Maharathas took into account the measurements but ignored the fixed assessment or "Tankah". They fixed a new "Karnal" assessment based on classification of soils, and the assessment became nearly double that of the 'Tankah' assessment. They fixed for irrigated and garden lands rates varying between Rs. 5 to 10. Sugarcane was charged at Rs. 10 per Bigha. The Maratha assessment could not be realised. A great part of the Deccan when the British took over, had been left waste and a cycle of very low prices set in. This caused great confusion in revenue administration. Mr. M. S. Elphinston laid down principles of abolishing farming but otherwise maintaining the whole system, levying revenue according to the actual cultivation, not imposing new taxes, and not writing off old taxes. In order to remedy the state of affairs it was decided to introduce the ryotwari system based upon a proper land survey accompanied by an assessment of land revenue upon certain fixed principles. Mr. Pringle was appointed as a special officer. The survey of the cultivated fields was done by the 16 anna, 50 links or 33 foot chain. The standard was the acre and the square with one chain as the side which was 1/40 of an acre. There were also detailed calculations about the items of cultivation expenses. Unfortunately the data collected was not reliable, and therefore the conclusions reached were not of much value. Instead of a reduction in the assessment which was then quite necessary, there was a marked increase. Things went from bad to worse and it was almost impossible to realise the full revenue. In some districts only about half was realised. Every effort, lawful or unlawful was made to get the utmost out of the wretched peasantry who were subjected even to torture. Many of them fled to the neighbouring native States. In 1835 a recommencement was made that the depth and character of the soil, the capability of the soil and the general circumstances of the district should be taken into consideration in fixing the assessment. Later it was wisely decided to pool together the experience gained and formulate it into a system. In 1847 three settlement superintendents Wingate, Goldsmith and Davidson met together and drew up a practical and clear report known as the 'Joint Report of 1847' which was followed in the new system. The success which followed the new system was extraordinary and cultivation increased enormously. The revenue demand rose considerably, in spite of the low individual assessment and arrears were kept low and land acquired a value.

40. The real secret of the success was moderation in demand and of allowing to the ryot the utmost that the Government would leave with him. The early survey officers did not regard themselves as officials engaged in a technical and laborious duty, but as reformers in every sense of the term. They did a lot to improve the communications and to put before the Government schemes



for building bridges, constructing irrigation sources and even schemes for education and sanitation.

41. Coming to the details, soils were divided into three series, black, red and gravelly and each divided into three classes depending on the fertility. Each class of land was given an assessment rate per acre which was expressed at the out-set for the purposes of easy manipulation in "Reas" a Portugese coin 25 of which went to make the anna. The assessment was fixed after inspection and detailed inquiries at a level which the land can bear. The results fully justified the reduction in the assessments, because there was a marvellous increase in the prosperity of the tract.

42. In 1839, another important forward step, preparation of maps to scale was undertaken on the suggestion of Lt. Col. Davidson. This was also followed by the erection of special boundary marks to the fields. It was found that the nine classes of soil based upon colour did not cover the extraordinary variety resulting from variations in depth. Besides there were also defects caused by the presence of nodules of lime-stone, slope, admixture of sand, lack of cohesion, excess of water, excess of clay, etc. Different procedures were adopted in fixing relative value of what may be called Single factor.

43. The scale of soil classification is given below :—

Class	Relative value of class in annas or 16ths of a rupee	Soils of the		
		1st Order	2nd Order	3rd Order
		Of a fine uniform texture, varying in colour from deep black to dark brown	Of uniform but coarser texture than the preceding, and lighter in colour which is generally red.	Of coarse, gravelly or loose friable texture, and colour varying from light brown to grey.
		Depth in cubits	Depth in cubits	Depth in cubits
1	16	$1\frac{3}{4}$	..	..
2	14	$1\frac{1}{2}$	$1\frac{3}{4}$	..
3	12	$1\frac{1}{4}$	$1\frac{1}{2}$	..
4	10	1	$1\frac{1}{4}$	..
5	8	$\frac{3}{4}$	1	..
6	6	$\frac{1}{2}$	$\frac{3}{4}$	1
7	$4\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$
8	3	..	$\frac{1}{4}$	$\frac{1}{2}$
9	2	..	..	$\frac{1}{4}$

In the joint report two extraneous factors were taken into account—first the factor of distance from the village site, and the second situation value with respect to fields in other villages. The advantages of having land near the village site are very obvious—carting of manure, watching and carrying the crops are comparatively easy. Fields lying within  $\frac{3}{4}$  mile bear a higher rate of assessment. Another special feature in Bombay Settlements is the special allowance made for “pot kharab” areas included in a holding which are not fit for cultivation due to a number of reasons.

45. In the Bombay system no attempt is made to represent in money, a definite fraction of the produce, or ‘assets’. The basis of calculation is, in fact, the existing or former rates considered with reference to altered circumstances, the rise or fall of prices, improvement in population, means of transport, and other advantages. There has never been any attempt, as (in theory) is the rule in Madras, to fix, first, an average ‘gross produce’, and then an average ‘cost of cultivation’, by deducting which a ‘net produce’ for each class of land is arrived at; nor is it attempted, further, to value a given percentage of net produce in money after ascertaining fair commutation prices.

46. In this matter the Bombay system is different. As Mr. Pedder remarks :

‘The Bombay method is avowedly an empirical one. When a tract (usually a taluq or sub-division of a district) comes under Settlement... its revenue history for the preceding thirty or more years is carefully ascertained and tabulated in figured statements and diagrams. These show, in juxtaposition, for each year of the series, the amount and incidence of the assessment; the remissions or arrears; the ease or difficulty with the revenue was realized; the extension or decrease of cultivation, and how these particulars are influenced by each other; the effect of any public improvements, such as roads, railways, or canals and markets on the tract, or on parts of it, is estimated; the prices for which land is sold, or the rents for which it is let, are ascertained. Upon a consideration of all these data, the total settlement assessment is determined. That amount is then apportioned pretty much in the same way on the different villages, and the total assessment of each village is then distributed over its assessable fields in accordance with the classification which represents their *relative* values in point of soil, water-supply, and situation.

47. The Revenue Officers from time to time make experiments as to outturn of crops, and the assessor makes use of them as checks—seeing how, at known prices, they would afford a proper margin of profit after paying the proposed revenue-rate; but that is the only use of such experiments.

48. The process of revenue assessment in Bombay works from aggregate to detail. An examination is made of the circumstances of each tract with special reference to those which indicate the increase in the value of land since the last preceding settlement. An estimate is framed of the revenue enhancement which may be fairly imposed on each tract—or group of villages—and this enhancement is distributed over the ryots' holdings according to the holding valuation based on a survey of the area and of the quality of the soil. The valuation is relative, not absolute, and is practically used for distribution only, the actual amount of the assessment depending on the judgment formed of the aggregate assessment which can be fairly imposed on the tract or group of villages. The total enhancement is not framed with exclusive regard to prices, but prices are among the factors considered, and it can be shown that enhancements have commonly fallen short of the limit which the rise in prices would have justified. The general rule in connection with the revision is that the increase in taluqs must not exceed 33% in a village, 66-2/3% and 100% in the case of an individual holding.

49. Previous to the year 1910 no official instructions existed, laying down the principles upon which settlement officers were to proceed in submitting proposals for Revision Settlements. The officers were, in fact, left to draw their own conclusions as to the methods to be followed from a study of the reports relating to preceding settlements. In 1910, however, under the authority of Bombay Government Resolution No. 9623, dated the 22nd October, a set of instructions, which had been agreed upon by the Commissioners of the three divisions and the Settlement Commissioner in conference, were issued for the future guidance of Settlement Officers. These instructions are by no means elaborate and simply lay down the general principles to be followed. They are summarised as follows :

(a) The problem for the Settlement Officer is stated to be “to revise the old maximum rates and to fix up a new set of rates for each group in the taluqs.”

(b) In carrying out this task “it is necessary for him first to ascertain to the best of his ability what is now the incidence of the existing assessments on the profits of cultivation.”

(c) Two lines of inquiry are then suggested an indirect and a direct line.

(i) The direct line enquiry :—

This comprises an investigation of the following subjects :—

(1) the statistics of cultivation and occupation ;

(2) the collection of the land revenue, whether it has been made with ease or difficulty ;

- (3) The material condition of the people in general.
- (4) Markets and communications ;
- (5) The history of prices ;
- (6) The statistics of the selling, letting and mortgage value of land.

Under this last head the importance of the Record-of-rights is emphasized, as furnishing a large body of information with regard to land values, though caution is enjoined in the use of the statistics obtained therefrom.

From a study of the information obtained under each of these heads the Settlement Officer will be able to draw broad general conclusions as to the direction which his proposal should take.

(ii) The indirect line of enquiry :—

This consists of an investigation of the subjects of rents and the ratio of incidence of the assessment upon them. Rents are divided into two classes, *viz.*, produce rents and cash rents.

(1) *Produce Rents.*—These again are sub-divided into two classes :—

(a) rents consisting of a fixed amount of produce the money equivalent of which can easily be ascertained ;

(b) rents consisting of a definite share of the gross produce.

(2) *Cash rents.*—These are described in the record of rights.

In the Bombay system of settlement the basis of assessment is modified according to any changes in the local conditions in population, improved means of transport, etc., no attempt is made to fix the assessment at a certain fraction of the net assets after determining the money value of the produce of a field. Crop experiments are made by Settlement Officers and the outturn of crops is determined, but the results are utilised only for checking the margin of profit that would be left to the cultivator after paying the revenue.

50. *Assessment of Land Tax in the other countries of the World.*—It will be useful to give an idea of the History of land taxation in other countries so as to indicate the points of similarity between them and the Indian Systems and to bring out by contrast the distinctive features of the latter. The income of the State from land in most countries is derived from two main sources—(1) State domains, (2) taxation of property in land or income derived from land.

51. In the earlier Middle Ages the royal domain was in most European countries the main basis of public income, but owing

to the extravagance of kings, which often took the shape of generous gifts to court-favourites, to the growth of new ideas, to changes in the systems of Government, and to various other causes, the State revenue from this source dwindled in most cases to a comparatively insignificant figure. In the case of the local revenues, however, public lands continued, particularly in France and Germany, to be a very important source of income.

52. The land tax is one of the oldest taxes, and there is hardly any country in the world that does not levy it in some form or other. The methods adopted, however, vary considerably.

53. Thus, it may be based on (a) the capital value, which is usually determined periodically with reference to the sale value ; (b) the unimproved or public value, *i.e.*, such part of the capital value as is not due to the efforts or investment of the owners or occupiers ; (c) the net produce, *i.e.*, the gross produce less the cost of production ; (d) the annual value, *i.e.*, the gross produce less the cost of production and earnings of management ; or (e) the net income of the farmer, *i.e.*, the earnings of management plus the value of the labour of the farmer and his family.

54. In France, the apportionment of tax was on the net produce of the land after deducting from the gross produce, the cost of cultivation, sowing, harvesting and maintenance of the cultivator and his family. The system was based on a cadastral survey begun in 1807 and completed in 1850. The survey, however, became completely out of date, and the whole system of land taxation was reformed between the years 1907 and 1914. It was converted into a uniform tax at 4 per cent of the annual value. It was raised to 5 per cent in 1917. Lands are divided into 13 classes, and in determining the class, rent is the principal factor. The rent paid to the landlord or in cases in which the cultivator is himself the owner, the competitive rent for similar land in the locality is the standard. Income derived from land is liable to general income-tax. In Italy there were two scheduled taxes :—(1) A tax at a flat rate of 10 per cent of the economic rent assessed according to a system of cadastres, (2) a tax at 18 per cent on the income of the cultivating farmer. Income up to a small limit are exempted. Both the landlord and tenant were liable to income-tax. The land tax in Hungary was based on an absolute survey. The nominal rate was 25 per cent of the cadastral yield, but really the incidence was only between 8 to 12 per cent. In addition to this, there were (1) A general income-tax varying from 1 per cent to 40 per cent with the size of the income. (2) A capital tax, the rate of which varies from 1 to 20 per cent of the net revenue on the capital. (3) Certain local surcharges, the rates of which vary in different places.

55. Land tax in Austria was also levied on similar basis at 26½ per cent of the net cadastral yield which was equivalent to about 10 to 15 percent of the real yield. There was also a local land tax and an income tax. In the case of large estates, the combined rate of taxation approaches 70 per cent of the return, while a land-owner enjoying an income of about £ 400 pays 25 to 30 per cent if the assessment is made accurately.

56. Up to the year 1921, the Bulgarian land tax was based on annual value as arrived at with the aid of the cadastre. This tax was abolished in 1921 and an income-tax introduced. In Sweden, the land taxes were abolished and a progressive income-tax at rates varying from 5 to 22 per cent have become the main tax of the country. The English land tax in its present form dates from the year 1692 and was originally both a property and an income-tax assessed at 4 shillings in the pound on the annual value of all land and houses on the stipends of public officials and on movable property. This was later converted into an apportioned tax in 1697 and later in 1798 it was converted into a perpetual redeemable rent charge. The farmer's profits are assumed to be a multiple of the annual value of the land unless accounts were produced showing them to be less. The land is also subject to a heavy local rate which is the chief source of tax revenue for local purposes in rural areas. In Australia it was based on the unimproved value of the land. In New Zealand, there is an exemption on holdings of small farmers whose lands are worth less than £ 500, but there is a progressive tax on the larger estates. In China, before 1925 land was divided into 3 classes each of which was sub-divided into three grades, and the tax consists of two parts, one payable in money and the other in produce. In Japan, the estimate was based on the capital value. There was also an income-tax on agricultural income. The Indian system has been evolved from a number of local indigenous practices, and has also been moulded by local Officers to suit local circumstances.

57. Some features of the present system of land revenue which are considered as defects have been mentioned by the Economic Enquiry Committee of 1931. The first point on which emphasis has been laid is that the assessment is made with reference to the capacity of the land and not with reference to the circumstances of anybody who holds the land. It also does not take into consideration the ability of the person taxed to pay. It is also said that this system of assessment is not only not progressive but also actually tends in the other direction. The income from land on which assessment of land tax is based is not the net income after meeting the requirements of the land holder and his family and in consequence even low incomes and no incomes are not exempted from taxation.

58. Besides revenue from land, Government from very ancient times have been getting revenue from irrigation and have accepted the responsibility of constructing irrigation works. A study of the development of irrigation from ancient times is also relevant from the point of view of taxation for the provision of such facilities. The science of irrigation is believed by some students of history and literature to have been known in prehistoric times. Plato's writings include a detailed description of an elaborate and extensive system of irrigating canals in the sunken island of Atlantis.

59. Many of the early Egyptian rulers were instrumental in the development of technical knowledge in the field of irrigation. The fertility for which Egypt was known throughout the recorded past must be attributed to the utilization of the waters of the Nile for irrigation. In about 2000 B.C., the Nile was diverted through a channel twelve miles long into lake Moeris. During flood periods, excess river waters were stored in the lake; in times of drought, the lake waters irrigated adjoining farm lands. Thus we find record of what was probably the world's first artificial lake and storage reservoir for irrigation water. Other irrigation developments in which Egypt was the first included the artesian well, the millimeter for gauging streams, and great canal systems for both irrigation and navigation.

60. In Egypt, also, the earliest known mechanical aids for lifting water from one level to another were developed. The simplest method was the use of water-proof baskets to lift water from a stream into an irrigation ditch. A more complicated device used in Egypt and India was the "Shadoof". It consisted of a pole balanced on a crossbeam with a bucket at one end and a counterweight at the other. The counterweight eased the labour of lifting the water to a higher level. Sometimes a number of "shadoofs" were used in a series when the height of lift was too great for one. This ancient device is still in daily use in the valley of the Nile.

61. Other mechanical devices in use early in the history of irrigation include water wheels rotated by the current of moving streams, water wheels driven by man power or animal power, a trough equipped with paddles on an endless belt and powered by a man on a treadmill, and a screw rotating in an enclosed cylinder.

62. Much of the success of the Babylonian Empire more than four thousand years ago was due to a stable and productive agriculture based on irrigation. Hammurabi, great builder of the Babylonian Empire, counted the extensive irrigation systems among

his proudest accomplishments. Records have been unearthed expressing his personal pride in having "changed desert plains into well-watered lands." The ancient works of Babylonia included a lake 42 miles in circumference and 35 feet deep to store the flood waters of the Euphrates River for irrigation. The great Nahrawn Canal which diverted water from the Tigris River was more than four hundred miles long, varied in width from two hundred and fifty to four hundred feet, and was used for both irrigation and navigation.

63. Semiramis, until recently considered a legendary Assyrian queen, appears in Babylonian history about 1,200 years after Hammurabi. She also evidenced considerable pride in the irrigation developments under her regime. The proclamation on her tomb reads ; "I constrained the mighty river to flow according to my will and led its waters to fertilize lands that had before been barren and without inhabitants."

64. Great irrigation works were developed in Persia during the rule of Darius some five hundred years before Christ. The method used to bring water to lands where no streams or other water supplies were available is a first class engineering marvel by any standards. Tunnels were dug for many miles into the surrounding mountains to tap underground sources from which the water flowed by gravity. These tunnels or "kanats" often extended hundreds of feet below the surface. All digging was done by hand and vertical shafts or wells were dug at frequent intervals so that excavated material could be removed. "Kanats" are still constructed and used in Iran (formerly Persia) in much the same way as they were twenty-five hundred years ago.

65. Irrigation structures in China and India are probably as ancient as those in Egypt. At first, irrigation in China was limited to the delta lands of the Yellow River, but as more complicated systems were devised, irrigation was extended to other arable lands. The most extensive irrigation systems were planned by Li Ping, Governor of Chengtufu, in the third century before the Christian era, and completed by his son. The Imperial Canal is one of the greatest works of all time, being 700 miles long and usable for both irrigation and navigation.

66. Large-scale reservoirs and irrigation canals were constructed in India many centuries prior to the Christian era. By 300 B.C. India had developed irrigation to a point where reports on the advantages of growing two crops a year on irrigated lands became a part of written history.

67. As early as the first century A.D., the Romans practised irrigation on an extensive scale. The importance of irrigation in



the Roman economy is indicated by the attention given to irrigation in the famous codes of law formulated in the fifth and sixth centuries after Christ. Certain hours of the day were specified when water from the famous Roman aqueducts could be used for watering of gardens and farms in much the same way that many present day American cities establish irrigation hours. Also, as is characteristic of many of our cities today, considerable difficulty was experienced in getting some water users to comply with the regulations.

68. Julius Caesar took the practice of irrigation with him wherever he went in the process of conquering and colonizing. Irrigation was fostered in all the Mediterranean countries with many remains still in evidence. A type of flood irrigation grass land was introduced into England by the Romans and is still practised along the Avon River.

69. Greece also paid considerable attention to the development of water resources. Masonry aqueducts were numerous and one canal included a mile-long tunnel through a hill.

70. The Arabs were among the leaders in spreading knowledge of irrigation, and it was the Arabian People and the Moors, who introduced irrigation in Spain when they invaded that country. The Moors developed extensive irrigation systems in Spain during the tenth century A.D. with the result that some of the most arid regions of the country became her most productive ones.

71. *Water rates in other States in India.*—The present system of irrigation charges has developed differently in different States with the result that there is multiplicity both in the principles and in the rates of levy. A broad classification of the charges would be :

Systems of  
irrigation  
charge.

(1) those payable by cultivators in return for the service of irrigation and thus forming an item in the cost of production ; and

(2) those payable by the owners of lands benefited, in consideration of the increase in the value of the land.

72. The system of water rates, water cess or occupier's rates, as they are variously termed, constitute the bulk of irrigation revenue. Except on projects in scarcity areas which are undertaken with definite protective intent, water charges on the productive schemes vary both in the method and the rates of levy. A rough indication of the variation in charges for the principal crops or classes of crops in different areas as well as the basis of

their assessment is given in the statement below. The more important systems of levying water charges may be grouped under the following heads :

(i) Volumetric rate, *i.e.*, a charge according to the quantity of water delivered.

(ii) Consolidated rate, *i.e.*, water charge which is consolidated with the land revenue assessment and fixed on the settlement principle.

(iii) Differential rate, *i.e.*, a rate for water taken on dry land from Government sources of irrigation corresponding to the differences between the assessments on dry lands and wet lands.

(iv) Occupier's rate, *i.e.*, a fixed rate charge on the area actually irrigated and which usually varies with the nature of crop or crops.

(v) Agreement rate, *i.e.*, a charge based very much on the same lines as in (iv) above, but which is fixed by agreement for a period of years and paid for, whether water is taken or not.

SYSTEMS OF WATER CHARGES AND PRESENT SCHEDULES OF WATER RATES IN CERTAIN STATES

State	Types of prevailing systems	Schedule of Rates.
1	2	3
1. Bihar	<ul style="list-style-type: none"> <li>.. 1. Acreage rates (lease and demand) Fixed with reference to price of crops; economic value of crop and increase in yield.</li> <li>2. Volumetric rates on tube wells.</li> </ul>	<ul style="list-style-type: none"> <li>Long term rates Rs. 6 to 9</li> <li>Rabi .. Rs. 4 to 7</li> <li>Kharif .. Rs. 8 to 10</li> <li>Hot weather crops Rs. 4 to 15</li> </ul>
2. Bombay	<ul style="list-style-type: none"> <li>1. Consolidated rate on old works.</li> <li>2. Acreage rates varying with crops and seasons.</li> </ul>	<ul style="list-style-type: none"> <li>Sugarcane .. Rs. 120 per year.</li> <li>Other perennial crops Rs. 80 ,,</li> <li>Kharif Rs. 6 ,,</li> <li>Rabi Rs. 8 ,,</li> <li>Hot weather crops Rs. 15 ,,</li> </ul>
3. Madras	<ul style="list-style-type: none"> <li>.. 1. Consolidated rate on old works.</li> </ul>	<ul style="list-style-type: none"> <li>1. For six months crops:               <ul style="list-style-type: none"> <li>1st Class source Rs. 6</li> <li>2nd Class source Rs. 4</li> </ul> </li> </ul>

1	2	3
3. Madras ( <i>Contd.</i> )	2. Water cess on dry lands irrigated from Government sources (fixed or differential)  3. Special project rates on major river projects.	2. For other crops: (a) 1st and 2nd crop: 1st class Rs. 4 to 6 2nd class Rs. 3 to 4-8-0 (b) 3rd crop: (Both sources) Rs. 0-12-0 to 2-0-0
4. Punjab	.. 1. Occupier's rates (crop rates) 2. Canal advantage rate fixed with reference to increased rental value. 3. Volumetric rate (contract basis).	Sugarcane .. Rs. 13 8-0 to 16-8-0 Wheat .. Rs. 6-6-0 Cotton .. Rs. 6-12-0 Rice .. Rs. 9-12-0 (Half the flow rates on lift irrigation schemes)
5. Uttar Pradesh	.. 1. Owner's rate (on increased rental value) 2. Occupier's rate 3. Volumetric rate on tube-wells	Sugarcane Rs. 8 to 32 Wheat .. Rs. 10 to 12 Rice .. Rs. 4 to 14 Cotton .. Rs. 2 to 4-8-0 Rate on tube wells .. Rs. 1 per 11,000 to 16,000 gallons of water. (Half the flow rates on lift irrigation schemes).
6. West Bengal	.. 1. Improvement levy (based on net additional yield)  2. Agreement rates	Long lease (up to 6 years) Rs. 6 Rabi and converting lease Rs. 6-8-0 Improvement levy on Damodar Canal. Rs. 5-8-0
7. Orissa	.. 1. Lease rates  2. Water cess (based on price of crop and ability to pay).	Sugarcane .. Rs. 5-8-0 to 7-8-0 Rice .. Rs. 4-4-0 Cotton, Wheat Rabi Crops Rs. 2
8. Pepsu	.. 1. Acreage rates varying with crops.	Sugarcane Rs. 9-14-0 to 15-0-0 Cotton Rs. 6-14-0 Wheat Rs. 6-4-0 Maize Rs. 6-0-0 Oil seeds Rs. 5-6-0 to 6-0-0
9. Mysore	.. 1. Acreage contributions	1. Acreage contribution Rs. 100 to 300

1	2	3
9. Mysore (Contd.)	2. Water cess	2. Water rates Sugarcane Rs. 25 } Proposed Wet lands Rs. 10 } rates on Dry con- } new versions Rs. 15 } schemes Dry to semi- dry lands Rs.7 }
	3. Water rates (based on capital cost, class of water supply and payment ability).	3. Irrigation cess at one anna per rupee of assessment on minor works.
10. Hyderabad	.. Consolidated rate	Sugarcane Flow Irrigation Rs. 60 to 43. Flow Irrigation Rs. 7 to 16 Lift Irrigation Rs. 2-8-0 to 10-8-0
11. Travancore- Cochin.	Consolidated rate	Wet lands Rs. 2 Dry conversions Rs. 7-0-0 Lift Irrigation (All lands) Rs. 25
12. Saurashtra	.. 1. Crop rates	Wheat, Jowar, Barley, Kharif. Rs. 5 per bigha. Linseed, Turmeric etc., Rs. 10 per bigha.
	2. Monthly rates	Sugarcane .. Fruits and Gardens Rs. 3 per bigha'

NOTE :— Except as otherwise stated, water rates under col. (3) are charged per acre per season.

73. The principle of appropriating a part of the value created by a public project is not new, for in the States which were not permanently settled, it was customary to appropriate to Government a share of the rise either by an increase in land revenue at the revision of the settlement or by the imposition of special levies such as 'owner's rates' in Uttar Pradesh or a 'canal advantage rate' in Punjab. The "owner's rates" and the canal advantage rate differed from the present day betterment levies in that the incidence was very much lower and the charge was permanent. The 'inclusion fee' sometimes levied on projects in Madras for the privilege of inclusion in the guaranteed area is also a fixed charge representing Government's share of unearned value. A system of betterment levy, in the sense in which it is understood at present, was in vogue in Mysore as far back as 1888. The principle of the beneficiaries contributing to the cost of a development scheme was

recognised and provision was made to levy acreage contributions which are analogous to a betterment levy, varying from one-third to one-fifth of the difference between the local market value of an acre of dry land and an acre of wet land. Besides, the difference in market value, other factors such as character and permanence of irrigation water supply, nature of soil, availability of agricultural labour, etc., were also taken into consideration while computing the market value of wet land.

### Abolition of Estates

The Madras Estates Land Act (I of 1908) was intended to declare the rights of the cultivators and the land-holders in a clear and unambiguous manner. But sections 27 and 28 relating to presumptions about fair and equitable rent, sections 30 to 35 relating to enhancements and sections 40 and 41 relating to commutations which were intended to apply only to non-occupancy lands had been mis-applied as against occupancy lands also. The ryots had been subjected to the payment of ever-increasing land revenue assessment on account of the arbitrary exercise of the power of land-holders to enhance the land revenue assessment according to their will and pleasure. The ryots had on that account become heavily indebted to their creditors and in many cases were obliged to surrender their rights in favour of their creditors, having been unable to pay the unbearable land revenue assessment and also the illegal exactions on the part of the officials of the land-holders. The composite Madras State was anxious to remove the zamindars who were mere farmers of Revenue but who were rack renting the tenants. In 1937, the Prakasam Committee examined the conditions in the zamindari and recommended to the Government to abolish them. During World War II, the ministry went out of office. After the war, when the free Government took office the estates in the composite Madras State were abolished through the Madras Estates (Abolition and Conversion into Ryotwari) Act, 1948. To give relief to the ryots, even when this Act was under discussion, the Government passed the Rent Reduction Act 1947.

2. It came into effect from 1st July, 1947. After a quick examination of the village accounts, the Special Officer for Rent reduction fixed reduced rents and reported to Government. The Special Officer adopted the following procedure in fixing the reduced rents.

(1) He called for detailed statement showing the rates of rent then prevailing for wet, dry and garden lands together with the extents under each rate. He calculated the average rates for the wet, dry and garden lands with the help of the detailed statement obtained from the villages.

(2) He made similar calculation in respect of a typical ryotwari village as near as possible and arrived at the average wet, dry and garden rates. The ryotwari village to be selected by him was to contain lands similar to those in the village for which the rent reduction was being applied. In arriving at the wet rate, he took into consideration the similarity of the classification of the sources also.

(3) He then compared the rates of rent prevailing in the village with the adjoining ryotwari village arrived at by the calculation mentioned above. Then he suggested the reduction called for in the rents existing in the village and proposed reasonable reduced rates that should be applied.

(4) In the case of villages where grain rents were existing the Special Officer converted them into cash and proposed the reduced rates in cash.

(5) Where money rates varying with the crop, were charged, like Rs. 23 for Sugarcane and Rs. 30 for betel vine, such rates were treated as garden rates and reduction proposed.

3. The Government notified the reduced rents in the official Gazette. From that date, the occupancy ryots were required to pay the reduced rents. These reduced rents were to continue till the rates of assessment were fixed after survey and settlement, in the estate areas taken over by the Government, under the Estates (Abolition and Conversion into Ryotwari) Act XXVI of 1948.

4. The next step has been the abolition and taking over of the estate areas under the Act quoted above. This was necessitated for the following reasons.

The zamindari system, in force, in the province outlived its usefulness. In many estates, in the province, the rent levied by the landholder from his ryots was substantially in excess of the assessments charged by the Government on similar land in the neighbouring ryotwari area and the rent was in certain cases beyond the capacity of the tenants to pay. The zamindari system perpetuated an assessment which has no relation to the productive capacity of the land. It further led to loss of contact between the Government and the actual cultivator and has acted as a brake in regard to agricultural improvement. Most of the irrigation works in estates were in a state of disrepair. The complexities of the zamindari system have led to an immense volume of litigation. Many of the records in the offices of zamindars were indifferently maintained and the peasantry, most of whom are illiterate, were at the mercy of unscrupulous agents. Zamindari administration has rarely if ever been as efficient as administration in Government areas. There was thus an acute discontent among estate ryots and

there was a good deal of agitation by them. Most of the Estates in the State have been taken over in batches, from 1949 to 1951, after notifying the date in the Gazette. About a fifth of the estate area abolished was surveyed and the rates of assessment, in force, in the district according to the latest resettlement, were applied to the lands in the estates surveyed. The survey and settlement operations would be completed by 1-7-1962. The tenants were given relief under the Rent Reduction Act 1947, even though the settlement rates have not yet been introduced in them.

### Abolition of Jagirs and Inams in Telangana

The lands of the composite Hyderabad State may be broadly divided into two groups, according to the nature of the management and revenue administration.

(1) Areas which are under the direct management of the Government and the revenue from which goes to the Government. Such tracts are called Diwani or Khalsa areas.

(2) Areas, the revenue from which had been wholly or partly assigned to some person or institution. Land of the second group may further be divided into the following three classes :

(1) Sarf-e-khas lands, which were till recently the property of the Nizam, and the revenue from which went to his privy purse, were merged in Diwani areas in February 1949. The Sarf-e-khas tracts which comprised 1961 villages, covering an area of 8,000 sq. miles, have now become an integral part of the State and the distinction between Diwani and Sarf-e-khas no longer exists.

(2) Estates which have been the subject of State grants, and the revenue from which had been assigned wholly or partly are the Jagirs, Paighas and the Samasthans. The Jaghirdhars and Rajahs in charge of these estates functioned as zamindars in the Andhra region but some of them had also powers to dispense civil and criminal Justice, and

(3) Lands which have been granted to persons to whom the revenue from such lands was alienated partly or in full for the services already rendered to the State or to be rendered to the State and the community are called Inams and 'Manyams'.

*Ryotwari tenure in Diwani.*—Diwani lands as well as most of the Sarf-e-khas lands are generally held by the cultivators on purely Ryotwari tenure. Over 20 million acres or nearly 60% of the erstwhile Hyderabad State area was held by the ryots on this tenure. With the addition of Sarf-e-khas lands, nearly 70% of the total area of the State came directly under Government control.

*Ryotwari tenure.*—Theoretically, the Ryotwari tenure does not contemplate any middleman between the cultivator and the State ; yet as the registered occupant need not always and necessarily be the actual cultivator, certain tenures inferior to that of the registered occupant (pattedar) based on contract or custom, do occur in Ryotwari Villages. The forms in which land was actually held and worked under the Ryotwari system may be classified as below :—

1. Pattedar.—Pattedari or simple occupancy, where the occupant cultivates personally or through hired labour.

2. Pot Pattedari.—Pot Pattedari, in which two or more cultivators hold a joint patta. The pattedar can neither evict the pot-pattedar nor enhance the assessment payable by him.

3. Shikmidari.—Shikmidari, where the occupant makes over the land to cultivators on certain terms. Such cultivators are known as Shikmidars and they cannot be evicted as long as they fulfil the terms of their agreement with the registered occupant.

4. Asami Shikmi.—The Asami Shikmis are tenants-at-will. In 1354 F. the Asami Shikmis Act was enacted on the lines of Bombay Tenancy Act, 1939, to protect the interests of such tenants.

*Other tenures of lands.*—Besides the ryotwari tenure there were other tenures of Khalsa land namely 'Pan-Maqta', 'Tahud' or 'Sarbasta' and 'Ijara'.

1. Panmaqta.—Panmaqta is kowl or tenure by contract in which lands were given to the holders on a fixed cash rent without liability to enhancement. The rights of these holders were examined by the Inam Commission and only those which were proved to be valid were confirmed in favour of the holders.

2. Tahud or Sarbasta.—Prior to the introduction of Ryotwari system, the land revenue of the State together with certain other cesses used to be farmed out to contractors. This system was called "Tahud". If the revenues were farmed out to an influential resident of the district, as was frequently the case in Telangana, the transaction was termed "Sarbasta" or "Bilmaqtha". The 'Tahud' or 'Sarbasta' tenure was a lease for a specified period and the amount to be paid was liable to alteration after the expiry of the period of kowl. This system was abolished by Sir Salar Jung I, as it proved to be prejudicial to the interests of both the peasantry and the Government.

*Ijara.*—The Ijara tenure was introduced by Sir Salar Jung with a view to rehabilitate the deserted villages and to bring under cultivation large tracts of cultivable land which were lying fallow



Under this system, the land was assessed at favourable rates subject to progressive increase till the full assessment was levied, the period of concession varying from five to thirty years. After the expiry of the concession period, the land was fully assessed. This system was also abolished in 1318 F. (1909 A.D.).

*Non-Khalsa lands.*—The most important of this class of lands were the Sarf-e-Khas lands which have now become a part of Diwani.

*Peshkash.*—It was customary with Muslim conquerors to levy annually a certain fixed amount as tribute from conquered rulers, and chiefs. This tribute was called Peshkash. The Rajas of Gadwal, Anagundi (now in Mysore) and Gurugunta were paying the Peshkash.

The tax or quit-rent levied from pan-maqthas held by local zamindars, who were revenue farmers under previous Governments was also called "Peshkash". The Rajas of Wanparthi, Jetpole, Gopalpet and Palvancha belonged to this category.

*Jagir.*—A Jagir is a free grant of one or more villages as a reward for some conspicuous service rendered, or for maintaining the status and dignity of the grantee. This tenure may be classified under six heads.

(a) Paigah or Jamiat Jagirs.—These were originally assigned by the then Ruler, His Highness Nizam Ali Khan Bahadur to Abdul Khair Khan for the maintenance of troops known as His Highness house-hold troops, and hence they were designated Paigah Jagirs, the word Paigah meaning, "Stables". These Jagirs covered an area of 3452 sq. miles and were divided among three branches of the family of the original grantee and were known as the Paigahs of Asman Jah, Khurshid Jah and Viqar-ul-Umra.

(b) Al-tamga Jagirs.—The word Altamga signifies a revenue free grant made under the Royal seal. It is a perpetual and hereditary grant and the right of interest conveyed by it is not transferrable by sale, gift or bequest.

(c) Zat-Jagirs.—Zat-Jagirs are grants of large areas of land for the maintenance of the grantee without any stipulation of service.

(d) Tankha-Jagirs.—Tankha-Jagirs, as their name implies, were grants of land made to meet the salaries due to the grantees for service rendered. A large number of these have been resumed or redeemed.

(e) Mashrooti Jagirs.—Mashrooti Jagirs were granted for the performance of some definite service, religious, civil or military and are continued only so long as the conditions of the grant are fulfilled.

(f) Maddad-Maash Jagirs.—Maddad-Maash Jagirs were granted either as the sole means of maintenance for the donee, who may be the holder of Mashrooti grant or as a supplement to his other income.

*Minor Inam.*—The word 'Inam' means a favour or reward. An Inam holding is thus a grant of land in which the State has alienated its right to the land revenue, or to a portion of it, in return for the performance of certain duties or as a charitable endowment. Inam lands are found in almost all villages. In some cases the whole village belongs to the Inamdar and is called an 'Umli'. Umlies are included in the definition of a Jagir according to the Abolition of Jagirs Regulation and have now been taken over by the Government. The total number of Inamdars in the State, was 83,000 of whom 57,000 were in Diwani and 26,000 in Jagirs.

### Abolition of non-Ryotwari tenures

The abolition of non-Ryotwari tenures like Sarf-e-khas and Jagirs has been the most striking land reform in Hyderabad by the Military Government. Sarf-e-khas was the estate of H.E.H. the Nizam, and Jagirs were areas granted by the Nizam from time to time in recognition of the meritorious services performed or on the condition of continuing to render some services to the State or to some religious or charitable institution. In all, these areas covered about 40% of the area of the erstwhile Hyderabad State.

The status of Jagirdars in Hyderabad State was quite different from that of the Zamindars of the permanently settled areas in Andhra region. The Jagirdars were assignees of the land revenue and did not have any proprietary right in the soil. In addition to collection of land revenue through their subordinate officials, they had jurisdiction over excise, forests, fisheries, etc. Some of them also had judicial and police powers. These powers were taken away and the Jagirs were finally abolished and their administration was taken over by the State in 1949 under the Hyderabad (Jagirs) Abolition Regulation. Sarf-e-khas was taken over earlier under Hyderabad Sarf-e-khas (merger) Regulation. All these areas have now been completely integrated with the other Diwani areas.

### Inams

In the erstwhile Hyderabad State, some lands were held by paying a part or no land revenue assessment to the State. They were called Inams. In these cases the State gave up its right to the whole or part of the land revenue in favour of an individual or an institution as remuneration for the performance of certain duties, or endowments for the maintenance of Charities. These grants

varied from small isolated fields to whole village. They had multiplied in the period when the central power was weak and many illegal claims were set up. Detailed enquiries were therefore, undertaken by an Inam Commission which worked from 1865 to 1903. The Inams which were proved to be valid were confirmed and fresh title deeds were issued. In other cases, the Inams were resumed or charged with a portion (called Judi) of the full revenue at the discretion of the Government. Inam lands did not come under the purview of the Jagir (Abolition) Regulation.

Inam was held to be a restricted tenure. The restrictions were that Inam lands were not transferable and that at each succession the grant made by the Ruler had to be confirmed. They were also subject to the following conditions:—

- (i) Performance of service wherever it was prescribed as a condition for grant of Inam;
- (ii) At each succession the grant was presumed to be a fresh grant made at the discretion of the grantor;
- (iii) Inam land could not be alienated without the permission of the Government.

With a view to converting the Inam tenure into Ryotwari tenure by removing the restriction (ii) and (iii) above, the Hyderabad Enfranchised Inams Act was enacted in 1952. A quit-rent or Judi at 1/8 of the land revenue assessment was charged in lieu of relinquishment of the reversionary rights of the Government. Later on it was considered that the Scheme envisaged under the 1952 Act was not in keeping with modern trends as the said Act while making no provision for the rights of the tenants on the Inam lands, allowed to the Inamdar the remission of assessment to the extent of 7/8 of the land revenue. To remedy the above mentioned defects the Abolition of Inams Act of 1954 was amended in 1956, and subsequently when some basic amendments to the Act were under consideration, it was found necessary to postpone the application of the Act.

### **Levy of Full assessment on Inam lands**

The origin of the inam tenure can be traced to grants made by Hindu Rulers for the support of temples and charitable institutions, for the maintenance of holy and learned men and as rewards for past public services rendered. This practice was followed by the Mohammedan rulers and by the British Administrators until about a century ago. According to the ancient Hindu law, there were two beneficial interests in land, namely, (1) that of the sovereign or his representative, and (2) that of the cultivator holding the land.

The sovereign's right to collect a share of the produce of the cultivated land was known as 'melvaram', the share of the ryot or cultivator being known as 'Kudivaram'. The grant of an inam did not touch, and could not have touched the cultivator's right in the land, namely, the Kudivaram, except in rare case where the grantee was also holding the cultivator's interest at the time of the grant. Inams therefore fall under two classes (1) those in which the grant was of the land and land revenue and (2) those in which the grant consisted of only the land revenue. Generally the presumption is that they fall under the second category unless it could be proved that at the time of the grant, the inamdar was in occupation of the land or that it was waste at the time of the grant. The Madras Inams Act VIII of 1869 declared that the enfranchisement of an inam and the grant of a title deed to the inamdar should not be deemed to define, limit, infringe or destroy the rights of any description of holders or occupiers of the lands from which the inam was derived or to affect the interests of any person other than the inamdar named in the title deed, or to confer on the inamdar any right in the lands which he would not otherwise possess. Thus, the right of the inamdar did not ordinarily extend to the occupancy right of the land especially in the case where the inam consisted of an entire village, for it was extremely unlikely that the inamdar was occupying the whole village as an occupancy ryot at the time of the grant or has lawfully acquired the entire kudivaram right in the whole village by reclaiming the waste land and growing a village in his holding. Until the 1st July, 1918, the Government and the Courts held that the burden of proving that the inamdar had the kudivaram right lay on him. This position was altered by the decision of the Privy Council of that date and it was laid down that the burden of proof did not lie either on the inamdar or on his tenant but that each case should be decided on its merits. This decision was in favour of the inamdars as ryots could not support their claims with documents. To remedy this defect the Madras Government passed Act XVIII of 1936 namely the Madras Estates Land (Third Amendment) Act, 1936. According to this act, the burden of proving that any land in which the inamdar claims that the tenant does not have the occupancy right and his "private land", was on the inamdar. The holder of an entire inam village was considered to be the farmer of the melvaram only as in the case of a zamindar and that he did not hold the kudivaram right until he was able to establish it.

2. The inams fall into two broad classes—major and minor. The major inams consist of the grant of whole villages on favourable tenure with or without conditions of service attached to them. These are whole inam villages. The minor inams consist of grants of isolated fields or plots on favourable tenure to the inamdar and subject to the rendering of some service or other in most cases or

as a reward for past service, etc. Before the amending Act of 1936, only those major inams which consisted of the melvaram only and not the kudivaram or the cultivating rights in the land were subject to the provisions of the Madras Estates Land Act 1908. But after the amendment, all the whole inam villages became estates, within the meaning of the Madras Estates Land Act, 1908. Under the Madras Estates (Abolition and Conversion into Ryotwari) Act, 1948, only the major inams where the grant consisted of the melvaram, stood abolished. The other major inams consisting of both the Melvaram and Kudivaram rights fell outside the purview of the Abolition Act, 1948.

3. Under the terms of the Inam settlement, a large number of minor inams particularly those that were classified as personal benefit inams and inams granted as a reward for past services, or those granted for the rendering, or continued rendering of revenue or police services in the villages have all been enfranchised. The effect of enfranchisement, has been that in exchange for an annual payment called quit-rent, calculated at a fraction of the normal assessment on the land at that time, the Government conferred absolute title on the holders, and also made a categorical declaration that there would be no further interference with the holdings. The implication is that there would be no further enhancement in the levy on the land by way of assessment proper. The unenfranchised inams consist largely of religious and charitable service inams and artisan service inams (for services to be rendered to the village community, *i.e.*, by carpenters, blacksmiths, washermen, potters, barbers, etc.) In addition to this, there are also public utility inams and also a few inams for the maintenance of irrigation sources yielding public revenue. The religious and charitable service inams and artisan service inams are held free of assessment on the payment of jodi or kattubadi, but they are liable for resumption for breach of conditions of service including alienation of land. The difference between the assessment due from the land and the jodi or kattubadi represented the annual value of the grant made to the inamdar. If the assessment due from a land was Rs. 500 and if the Ruler wanted to give as a gift only an annual value of Rs. 300 the balance of Rs. 200 was fixed as jodi or kattubadi which the inamdar had to pay. In cases of village services or artisan inams, the rules particularly provide that in case of breach of any of the conditions of service, an attempt should be made for the continuance of service as far as possible by a regrant of the resumed inam to some other artisan willing and capable of rendering the service. The regrant in these cases consisted of the net assessment which represented the assessment, if the land was free from any payment and by the difference between the assessment and the jodi or kattubadi payable on the inam land.

4. As far as enfranchised or quit-rent inams are concerned, there is no objection at all in principle to terminate the favourable assessment and levy the full assessment. They have been obviously undisturbed for a long time because of the implication of the enfranchisement, which was understood to be that the quit-rent was in complete quittance of not merely the existing but the reversionary claims of the Government to the land and the only difficulty was the question whether compensation would be payable if full assessment is levied. Under the Constitution, no citizen can claim immunity from taxation and the State is not competent to alienate public revenue or to grant such immunity; and in so far as the levy of full assessment partakes of the nature of a tax on the land, to that extent immunity cannot be claimed. The mere fact that some concessions shown in the past cannot bind the hands of the Government from levying full assessment on the land and therefore, no compensation would be payable for levying full assessment on quit-rent inams.

5. There remains the category of unenfranchised inams, the bulk of which relate to religious and charitable services and to artisan services. These inams have to be deemed to consist of both the land revenue assessment and the land itself and there is therefore no difficulty in levying full assessment in respect of these lands also. But in respect of service inams which are granted subject to the condition of rendering certain specific prescribed services to the village community, there is some justification to retain them as inams subject to payment of quit-rent or jodi or kattubadi, etc., as the case may be. Such service inams are (i) village carpenter, (ii) village blacksmith, (iii) village barber, (iv) village washerman, (v) village potter, (vi) village purohit or priest, (vii) village astrologer, (viii) village archaka, (ix) village vetti, (x) village nirganti, (xi) village madiga, etc.

6. In the above circumstances, the Government have abolished all other inams in respect of which the grant has been made confirmed or recognised by the Government and which were not included as inam constituting estates under the Madras Estates Land Act 1908 and converted them into ryotwari lands under the provisions of the Andhra Inams (Abolition and Conversion into Ryotwari) Act, XXXVII of 1956. According to this Act, the person or institution holding such land as inamdar shall be entitled to a ryotwari patta in respect thereof in a ryotwari or zamindari village. In the case of an inam land in an inam village, 1/3rd share of the inam land, if the land is under the occupation of any tenant, is allowed to the inamdar and the balance of 2/3rd of the land is given away to the tenant on a ryotwari patta. With the introduction of the above Act, it may be said that the inam tenure is almost extinct at present in the Andhra region.

7. The Government have also levied full assessment on inam lands in the State of Andhra by promulgating Act No. XVII of 1955, (The Andhra Inams (Assessment) Act, 1955). For all these inams the assessment levied is the same as in the case of similar ryotwari lands.

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### CHAPTER III

#### Principles and Method of the Existing Settlement in the Andhra Region

In the ryotwari system, the ryot pays his fixed assessment, in money, direct to the Government and the assessment is not liable to arbitrary fluctuations, from year to year. Water-rate, is however charged on dry land, when irrigated from a Government source. The ryot cannot be evicted from his land so long as he continues to pay the assessment, and he can transfer his rights in the land to others by sale, gift, partition, etc. He can, moreover, relinquish his land when he finds that its cultivation is no longer profitable, and in that case he would not be liable to pay the assessment, once his relinquishment has been accepted. In unfavourable seasons, remissions are granted on liberal principles. In short, under the ryotwari system, a ryot enjoys all the advantages of a perpetual lease, without its disadvantages and responsibilities, so long as he pays to the Government, their share in the produce, which represents the land Revenue due from the land.

2. The first attempt, at a systematic survey and settlement, was made in 1802, in the ceded districts. The ryotwari system, was in a state of flux till 1855, when the unequal and heavy incidence coupled with the incessant but unsystematic reductions compelled the Government to introduce a new method of survey and settlement in all the districts. This system was modified from time to time in the light of experience gained. During the early period, the assessment was based on the gross produce of the land approximating to 30%. But since the procedure was considered as favouring the most fertile lands and pressing with increasing severity, on the poorer lands, the present system of fixing it on the basis of net produce was introduced in 1864.

3. The basic principles, laid down from time to time by the Government for the settlement of assessment of ryotwari lands are:

(1) The assessment shall be on the land, and shall not depend upon the description of produce, or upon the religion, or profession of the landholder.

(2) The classification of soils is to be as simple as possible, and is to be alike everywhere instead of each village having its own.

(3) The assessment is to be fixed so as not to exceed half the net produce after deducting from the gross, the expenses of cultivation and allowances made for the vicissitudes of season and merchants' profits.

(4) No tax is to be imposed for a second crop on dry land, but wet lands which in all ordinary seasons have an unfailling supply of water for two crops are to be registered as double crop, the charge for the second crop being generally half the first crop assessment. Remissions may be given when the supply of water fails. Some abatement is allowed in cases where water is raised by baling.

(5) The Tahsildar, or in the course of a resettlement the Special Settlement Officer or Special Assistant Settlement Officer, may allow the charge for second crop to be compounded in respect of all irrigated lands for which the supply of water is ordinarily unfailling. The rates of composition were generally as follows:—

For wet land irrigated from a second class irrigation source—  
one-third.

For wet land irrigated from a third class irrigation source—  
one-fourth.

For wet land irrigated from a fourth class irrigation source—  
one-fifth.

For wet land irrigated from a fifth class irrigation source—  
one-sixth.

Where the irrigation is precarious and the supply is supplemented by wells, the Divisional Officer, or in the course of a resettlement the Special Settlement Officer or Special Assistant Settlement Officer, may allow the charge for second crop to be compounded at one-half of the rates referred to above, except under sources grouped in class 1 or 2 for settlement purposes. Composition at such favourable rates may be allowed to lands for which the charge for second crop has already been compounded at the ordinary rates. If the wells, however, fall into disrepair, the land should be transferred from compounded double crop to single crop wet. Ryots may be permitted to compound at any time and to any extent even after the settlement. It is immaterial whether the well, from which the supplementary supply is received, lies within the wet lands or not, but before granting composition at the special rate, the Divisional or Settlement Officer must satisfy himself that the well water is actually used to supplement the supply from the irrigation



source. It will also be necessary to ascertain by annual inspection that the well is properly maintained and that it is used to supplement the supply from the irrigation source.

(6) Collectors may sanction transfers of registered and compounded double-crop wet lands to single crop wet lands on the application of the holders of such lands, in cases where the supply of water from the registered source is sufficient for raising only one wet crop.

(7) As a rule, all lands are classed under the two general heads "wet and dry". In some districts, however, another class of lands called "manavari" has been recognized by Government. These are lands upon which wet crops are grown with the aid of rain water impounded on the land or with the water of swamps, small ponds or the like, or in some cases tank bed lands. Manavari lands are usually assessed at special rates which are intermediate between the dry and the wet rates otherwise applicable.

Collectors are authorized to sanction *with the consent of the registered holder during the term of a settlement*, transfers of ryotwari lands from "dry to wet" and *vice versa* and from manavari to "dry" or "wet" and *vice versa*.

(8) Lands forming the ayacut of "doruvu" wells should be charged with water-cess at one-fourth or one-eighth of the water-cess that would be leviable for irrigation by direct flow of a first wet crop on dry lands irrigated from the sources on the banks of which the doruvu wells are situated according as the water is raised by single or double lift.

When different rates have been prescribed for a first wet paddy crop and any other first wet crop, the rate applicable to a first wet crop of paddy should be adopted for the purpose of this rule. No water-cess shall be levied for the irrigation of a second or third crop with water from doruvu wells.

4. Under the existing system, survey always precedes settlement. After a detailed and accurate survey of all the lands in each village, the settlement operations are commenced. The main stages in the settlement operations are briefly as follows :—

- (1) The classification of soils.
- (2) The determination of grains to be adopted as standards.
- (3) The valuation of soils, in standard grains, or as they are technically termed "grain out-turns".
- (4) The determination of commutation prices and the conversion of grain outturns into money.

(5) The determination of the allowance to be made for vicissitudes of season and unprofitable areas.

(6) The calculation of the expenses of cultivation.

(7) The determination of money-rates.

(8) The grouping of villages in respect of dry lands.

(9) The classification of sources of irrigation, as judged by the certainty and efficiency of water supply.

(10) The merging of soils.

5. The rate of assessment on land is based on its productive capacity, which depends on the nature of the soil, its physical and mechanical composition and some other factors which affect the fertility of the land. Lands are, therefore, to be classified according to these characteristics. There are five main series of soils. They are—

I. The alluvial and exceptionally rich Delta soils as well as garden and other permanently—improved soils of more than ordinary productiveness.

II. The regar or black-cotton soil with all its varieties of 'masab', etc.

III. The red ferruginous soil originating from sandstone, laterite, etc.

IV. The calcareous soil, originating from underlying strata of chalk or lime. This soil is of very rare occurrence in this region.

V. The arenaceous soil, consisting of more or less pure sand and found as a rule, on the Sea coast.

With reference to the physical properties, each of these five series is divided into three or five classes according to the proportions of clay and sand or other organic matter found in the soil. Even among the soils of the same series and class, some lands may be better than other lands, in point of production. A further division into best, good, ordinary, inferior or worst is, therefore, made. These divisions are called sorts of the soil. The broad principle laid down by the government is that though exact accuracy is not possible, in the classification of lands, the classes should be few and based on real and distinguishable differences of soil and the sub-soil.

The recognized table of soils is given below :—

Series	Class	Description	Sorts
Alluvial and exceptional	I	Clayey (upwards of two-third clay).	(1) Best (2) Good (3) Ordinary (4) Inferior (5) Worst
	II	Loam (containing less than two-third clay) permanently improved. <i>i.e.</i> , lands in the beds of ruined tanks and sites of ruined villages, and Lankas in the bed of Godavari and Krishna	1 to 5.
Regar	III	Clay regar, containing upwards of two-thirds clay.	do.
	IV	Mixed or loamy regar containing from one-third to two-thirds clay	do.
	V	Sandy regar, containing not more than one-third clay.	do.
Red ferruginous	VI	Clay containing upwards of two-third clay.	do.
	VII	Mixed or loamy, containing from one-third to two-third clay.	1 to 5.
	VIII	Sandy or gravelly, containing not more than one-third clay.	do.
White and grey calcareous.	IX	Clay, containing upwards of two-third clay.	do.
	X	Mixed or loamy, containing from one-third to two-third clay.	do.
	XI	Sandy or gravelly, under one-third clay.	do.
Arenaceous	XII	Loamy or mixed one-third to two-third clay.	do.
	XIII	Sandy containing from one-third to one-tenth clay.	do.
	XIV	Sandy under one-tenth clay.	do.

The main purpose of 'sorting', in settlement work, is to allow for various local peculiarities and other defects that may exist in

respect of lands falling in the same settlement class in a village in order that some discretion may be exercised in deciding the rate of assessment to be adopted for individual fields. The money rates for the higher sorts are higher than those for the lower sorts. Only a minimum number of sorts are adopted in a village and they are applied to fairly large blocks. The principles of sorting differ for dry and wet lands.

(a) The disadvantages common to dry and wet lands are:

- (i) The intrinsic fertility of the land.
- (ii) The liability of the land to submersion, erosion, and
- (iii) The distance from the village site.

(b) The principles specially applicable to dry lands are those for removing the anomalies that arise due to dry grouping.

(c) The principles specially applicable to wet lands are:

- (i) The level of sluices through which water is made available.
- (ii) The distance from the irrigation source.
- (iii) The drainage facilities and
- (iv) Other factors, like nearness to village, distance from threshing floors and ravages by wild beasts.

At the initial settlement considerable time, attention and care were bestowed on the soil classification. Later on at the resettlement, it was checked in a general way and any glaring errors were rectified. The result is that the classification and sorting of soils in Andhra is now fairly accurate. This is evident from the lease and sale values of lands under different tarams or rates of assessment. It is found that lands under higher tarams generally fetch higher lease and sale values.

6. The next step, in the operations is the ascertainment of the standard staple grain for each tract or district. The main principle governing the selection of the grain is that it should be the most widely grown and consumed food-crop. The reason underlying this principle is that food products are the ultimate standards of value and that it is not also easy to ascertain and check the out-turn of some of the non-food crops without relying on the estimates of the growers. White Paddy is the staple standard grain for wet lands and Cholan, Cumbu, Korra, Arika and Ragi are the standard crops for dry lands.

7. Having determined the standard grain for each tract, the next step is to ascertain the outturn of such crop on lands of different classes and sorts of soils. In the early stages of the

settlement work this was done after numerous crop-cutting experiments on different classes of soils. But after 1882, the actual crop-cutting experiments were dispensed with generally and the average of the outturns of the adjoining districts was adopted. Actual experiments of outturns were conducted only in special cases.

8. As the assessment is payable, in cash, the grain outturns require to be commuted into money values. There was no uniform method adopted for computing the commutation rate in the settlements conducted in the earlier years. In those settlements, the prices for as many years as were available were taken into account in calculating the commutation rate. But after 1885 this method was modified and the prices of 20 non-famine years preceding the year of settlement were taken into account in working out the commutation rate. In some cases, the prices of some years immediately preceding the settlements were left out when such prices were not considered normal. A percentage varying from 10 to 25 for paddy and 10 to 28 for dry grain was allowed for cartage and merchants' profits and the resultant figures were adopted as the commutation rates. This deduction, has, however, been 15% generally, in the case of all Andhra districts.

9. From the commuted value of the crop thus fixed, deductions were made for arriving at the net value of the produce, (1) for unprofitable areas in the holdings called 'Pot Kharab' in Telangana and for the vicissitudes of the seasons and (2) cultivation expenses. In regard to the cultivation expenses, the old practice was to work out separately for wet and dry lands, the expenses of cultivation of lands of the best soil and then proportionately reduce them for lands of the lower sorts. For purposes of calculation, the cost of cultivation was worked out under five main items, viz., (1) ploughing, (2) agricultural implements, (3) seeds, (4) manure and (5) labour. In the composite Madras province the labour contributed by the pattadar and his family is also included in calculating the cost of cultivation. It is, however, very difficult to determine it accurately but only a careful estimate is aimed at after local enquiry.

10. From the net value of the produce, money rates for different classes and sorts of soil were calculated.

In 1864, the Government's share was fixed so as not to exceed one-half of the net produce. In fixing the actual rates of assessment, it is usual to adjust half the net amount so as to produce an even gradation from one rate to another. In no case, however, are they equal to or in excess of half the net amount.

11. The rates thus determined would reflect the relative value of the lands with reference to their soils, productive capacity and other inherent defects and advantages of the lands concerned. But there are other circumstances which affect the relative value of the lands. These are facilities for communications, nearness to the markets, healthiness of the localities and ravages by wild animals. The presence of one or more of these factors will affect the relative net value of the produce in different localities. To Remove such inequalities and difficulties the device of grouping is resorted to. Different groups are assigned for villages containing lands of the same soil, class and sort when such factors distinguish one tract from another. This is a valuable device adopted to equalize the burden and is an important element in the process of settlement.

12. The following narration shows how the staple crops are selected, the grain outturns determined, the commutation rates fixed, the costs of cultivation allowed and finally the money rates are worked out.

The percentage area of each crop, raised in each taluk, is examined; those foodgrains, which show a higher percentage are taken to be the standards; then the prices of those occupying a subordinate position, the area of those of equal or approximate value is distributed under each of the standards; and lastly the percentages of areas of the staples thus arrived at will be the proportion of each standard, the outturn of which is calculated on an area of land, as illustrated below:--

			Acres	percentage of cultivated area	Represented by
Ragi	..	..	11,614	13 $\frac{1}{2}$	} Ragi.
Paddy	..	..	17,839	20 $\frac{3}{4}$	
Indigo	..	..	11,743	13 $\frac{3}{4}$	
Total	..		41,196	48	
Varagu	..	..	11,631	13 $\frac{1}{2}$	} Varagu.
Cumbu	..	..	7,561	8 $\frac{3}{4}$	
Cholam	..	..	3,242	3 $\frac{3}{4}$	
Gram	..	..	1,951	2 $\frac{1}{4}$	
Topes	..	..	13,546	15 $\frac{3}{4}$	
Oil-seeds	..	..	6,475	8	
Plantations and Vegetables					
Total	..		44,406	52	

Having thus obtained the standards wherewith to work out the money rates, the estimated outturn of each soil is assigned thereto, half in ragi and half in varagu, thereby equalizing the value of the crop by taking the mean of the two grains most extensively grown. The following will explain the course pursued :—

Class	Sort	Crops	Extent	Outturn	Value at Rs. 142 for ragi and Rs. 89 for Varagu.		
					Rs.	As.	Ps.
			Acres	M.M.			
4.	2	Ragi	0.50	160	7	1	7
		Varagu	0.50	220	6	1	11
Total value of gross outturn ..					13	3	6

Paddy being the only standard for wet, Ragi and Varagu can be taken as the standards determined for dry lands upon the foregoing considerations.

13. Sometimes, the areas of special products of higher value may need to be added to the area of the standard of a lower value in order to equalize the burden of assessment on all kinds of soils. To arrive at the grain values, much consideration is given, and every precaution is taken to obtain as fair results as possible.

14. The Settlement Officer and his subordinates made numerous experiments for the purpose of ascertaining the actual outturn, or yield of land, sown with staple products, taking full, ordinary, indifferent crops ; and, with the aid of intelligent and respectable ryots, an average outturn per acre, such as will apply to a series of years, good and bad, and to ordinary tillage, was eventually fixed for each kind of soil for one class of land as specified on the next page by way of example :—

## REGAR LOAM, CLASS IV WET—OUTTURN IN M.Ms. PER ACRE IN SORT 1

	Best	Good	Ordinary	Inferior	Worst
	(1)	(2)	(3)	(4)	(5)
1. As per opinion of villagers ..	516	464	414	359	307
2. As per opinion of Tahsildars ..	528	504	565	439	372
3. As per experiments in procedure—					
(a) Good—					
(1) By Revenue Department	953	790	760	782	547
(2) By Settlement Department	1,076	936	773	689	567
(b) Middling—					
(1) By Revenue Department	688	595	408	524	298
(2) By Settlement Department	794	643	527	455	382
(c) Bad—					
(1) By Revenue Department	533	511	438	301	392
(2) By Settlement Department	581	480	402	318	283
(d) Average—					
(1) By Revenue Department	775	681	529	522	331
(2) By Settlement Department	853	701	581	491	422
4. Proposed grain value for wet ..	840	720	600	530	460
5. Proposed grain value for dry ..	444	380	316	286	246

The same process is repeated for all classes of soils of wet as well as dry lands.

15. The yield thus arrived at is converted into money at the commutation price, to be determined according to the average of prices prevailing during the series of twenty non-famine years preceding the settlement. The average prices are, say, Rs. 120 for white paddy, Rs. 161 for ragi and Rs. 97 for varagu.

These quotations, however, represent the merchants' selling prices, and if applied to the transactions of the ryots, would, obviously, tend to over-assessment, but in order to obtain the whole-sale, or ryots' prices, a deduction of 15% in the case of all Andhra



districts, is usually made from the market prices. This not only meets the cost of cartage and the merchants' profits, but fixes for the ryots, with a liberal margin, the approximate wholesale prices he really obtains. Supposing it to be  $12\frac{1}{2}$  per cent, the commutation prices resolve themselves into—

Rs. 105 for white paddy,

Rs. 142 for ragi, and

Rs. 89 for varagu.

From the results thus obtained, a deduction of from 5% to 25% is usually made in order to compensate for vicissitudes of seasons, as well as to allow for such portions of fields, as being occupied by bunds, pathways, water-courses, etc., which are unproductive, but which are nevertheless, included in the area of the "survey field".

16. The fields having been classified, according to their physical and mechanical composition, their productive powers having been ascertained by experiment, etc., and these results having been converted into a money equivalent based on the average selling prices of a series of twenty years, and a percentage deduction having been made on account of transport charges and merchants' profits, the next operation is the estimation of the cultivation expenses, which used to be one of the most difficult and most conjectural of the various steps in connection with a settlement.

17. The manner in which this was done was to ascertain, separately, what extent of wet land and that of dry could be, under ordinary conditions of the district, cultivated by one plough and a pair of bullocks.

The result was, to a certain extent, checked by the average acreage per plough. The results were reduced to acres and decimals. The items of cost usually included in the estimate were—

- (1) Cost of ploughing cattle.
- (2) Cost of agricultural implements.
- (3) Seed.
- (4) Manure.
- (5) Wages of labour required for sowing, transplanting in wet, reaping, threshing, etc.

The method of calculation varied according to the description of crops grown and of culture of ryots, as well as according to the practice of making the various payments in each district. In some, these are made in grain, in others in money and in some in both grain and money. The payments made in grain were converted into money at the commutation price adopted for the settlement.

The cost of bullocks and of the implements of husbandry was distributed over the number of years during which they were estimated to be serviceable and the other items were calculated for each year.

It must be remembered that as already stated, these calculations were made for the area which one plough can cultivate and then reduced to terms of an acre.

The usual practice was to work out the expenses for the best soil and then to proportionately diminish this standard, as the quality of soil descends.

The cost of feeding cattle was not provided for in the estimate of cultivation expenses, as the straw was taken as a set-off against this item. If, however, in any district or tract, the feeding charges were known to be specially higher, owing to grain being given to ploughing cattle, this was taken into account.

18. The cultivation expenses were calculated, say, at Rs. 11 for IV-1 class and sort of soil. They would run something as under :—

Wet land	Cost per acre
	Rs. a. p.
Ploughing cattle .. .. .	1 12 0
Agricultural implements .. .	1 0 1
Seed .. .. .	1 2 5
Manure .. .. .	1 10 8
Wages .. .. .	5 6 1
Cost of cultivation per acre of wet land ..	10 15 3
	or Rs. 11 roundly.
Cost of cultivation per acre of dry land (one-half of the above).	5 8 0

These expenses being deducted from the gross assets, *i.e.*, the value of the total outturn, the result will be the approximate net produce of the land under examination. The Government demand shall not exceed half of this net produce. When this system is applied to each description of soil, we get what, is termed the "money rate" or future assessment for wet and dry lands, respectively.

The following figures will illustrate, in a concrete manner, how these money rates are arrived at :—

19. The grain values assigned to the wet and dry lands, of regar loam, irrigated by third-class source, and situated in the first dry group, are as follows :—

	White paddy in Wet third class sources.	Dry first group Varagu or Ragi.
(Madras measures.)		
Best ..	840	444
Good ..	720	380
Ordinary ..	600	316
Inferior ..	530	286
Worst ..	460	246

The commutation price is Rs. 105 for paddy and Rs. 89 and Rs. 142 for varagu and ragi, respectively, these being the market price in a series of twenty years, less  $12\frac{1}{2}$  per cent, deducted as being the difference between the market and ryots selling prices, and as allowance for cartage.

The commuted value of the gross produce per acre stands as follows :—

	Wet			Dry		
	Rs.	a.	p.	Rs.	a.	p.
Best ..	27	9	0	15	8	6
Good ..	23	10	0	15	3	6
Ordinary ..	19	11	0	10	14	7
Inferior ..	17	6	3	9	13	3
Worst ..	15	1	6	8	6	1

From these values are deducted a sixth for wet lands and a fourth for dry lands for vicissitudes of season and unprofitable

areas, the corresponding amounts being :—

			Wet			Dry		
			Rs.	a.	p.	Rs.	a.	p.
Best	..	..	4	9	6	3	14	1
Good	..	..	3	15	0	3	4	10
Ordinary	..	..	3	4	6	2	11	8
Inferior	..	..	2	14	4	2	7	4
Worst	..	..	2	8	3	2	1	6

After deduction, we are left with the following figures:—

			Wet			Dry		
			Rs.	a.	p.	Rs.	a.	p.
Best	..	..	22	15	6	11	10	5
Good	..	..	19	11	0	9	14	8
Ordinary	..	..	16	6	6	8	2	11
Inferior	..	..	14	7	11	7	5	11
Worst	..	..	12	9	3	6	4	7

From these are again deducted the cultivation expenses of the following amounts:—

			Wet			Dry		
			Rs.	a.	p.	Rs.	a.	p.
Best	..	..	11	0	0	5	8	0
Good	..	..	9	12	0	5	0	0
Ordinary	..	..	8	8	0	4	10	0
Inferior	..	..	7	8	0	4	6	0
Worst	..	..	6	8	0	4	2	0

The net values left are—

			Wet	Dry
			Rs. a. p.	Rs. a. p.
Best	..	..	11 15 6	6 2 5
Good	..	..	9 15 0	4 14 8
Ordinary	..	..	7 14 6	3 8 11
Inferior	..	..	6 15 11	2 15 11
Worst	..	..	6 1 3	2 2 7

Half these amounts, *i.e.*, the share which is the maximum that can be taken by Government, are shown below :—

			Wet	Dry
			Rs. a. p.	Rs. a. p.
Best	..	..	5 15 9	3 1 2
Good	..	..	4 15 6	2 7 4
Ordinary	..	..	3 15 3	1 2 5
Inferior	..	..	3 8 0	1 7 11
Worst	..	..	3 0 7	1 1 3

The above amounts are rounded off to the following rates, which are those finally fixed as the assessment:—

			Wet	Dry
			Rs. a. p.	Rs. a. p.
Best	..	..	6 0 0	3 0 0
Good	..	..	5 0 0	2 8 0
Ordinary	..	..	4 0 0	1 12 0
Inferior	..	..	3 8 0	1 8 0
Worst	..	..	3 0 0	1 0 0

20. Next, the villages in the tract are “grouped” for dry lands and the sources of irrigation are classified. The rates appertaining to each group, or class, are next determined. In the illustration already given, the rates arrived at are for the third class of wet and for the first class of dry, which were taken as being normal groups. The rates of the second and fourth classes in

wet are respectively obtained by raising or lowering one grade. For the first, is affixed a set of rates, one gradation higher throughout, than those of the second. In the same manner, the rates for the second and third groups in dry are worked out from the first-class rates given above. The highest rate of a lower group village is, for the same class and sort of soil, a rate lower than the assessment for the group immediately above it.

The following table shows the rates of the normal groups for wet and dry in the case for which figures were worked out above as example :—

## WET

Class	Sort	Primary taram	First class source			Second class source			Third class source			
			Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	
IV	..	.. 1	1	7	8	0	6	0	0	5	0	0
III	..	.. 1	2	6	4	0	5	0	0	4	0	0
IV	..	.. 2										
VII	..	.. 1										
III	..	.. 2	3	5	0	0	4	0	0	3	8	0
IV	..	.. 3										
V	..	.. 1										
VI	..	.. 1	4	4	0	0	3	8	0	3	0	0
VII	..	.. 2										
VII	..	.. 1										
XII	..	.. 1	5	3	8	0	3	0	0	2	8	0
III	..	.. 3										
IV	..	.. 4										
V	..	.. 2	6	3	0	0	2	8	0	2	0	0
VI	..	.. 2										
VII	..	.. 3										
VIII	..	.. 2	6	3	0	0	2	8	0	2	0	0
XII	..	.. 2										
XIII	..	.. 1										
III	..	.. 4	6	3	0	0	2	8	0	2	0	0
IV	..	.. 5										
V	..	.. 3										
VI	..	.. 3	6	3	0	0	2	8	0	2	0	0
VII	..	.. 4										
VIII	..	.. 3										
XIII	..	.. 2	6	3	0	0	2	8	0	2	0	0
XIV	..	.. 1										
III	..	.. 5										
V	..	.. 4	6	3	0	0	2	8	0	2	0	0
VI	..	.. 4										
VII	..	.. 5										
VIII	..	.. 4	6	3	0	0	2	8	0	2	0	0
XII	..	.. 3										
XIV	..	.. 2										

## WET.—(Contd.)

Class	Sort	Primary taram	First class source	Second class source	Third class source	
			Rs. a. p.	Rs. a. p.	Rs. a. p.	
V	..	.. 5	7	2 8 0	2 0 0	
VI	..	.. 5				
VII	..	.. 5				
XIII	..	.. 3				
XIV	..	.. 3				
DRY						
II	..	.. 1	1	4 0 0	3 0 0	2 8 0
II	..	.. 2	2	3 0 0	2 8 0	2 0 0
IV	..	.. 1				
III	..	.. 1				
IV	..	.. 2	3	2 8 0	2 0 0	1 12 0
VII	..	.. 1				
III	..	.. 2				
IV	..	.. 3	4	1 12 0	1 8 0	1 4 0
V	..	.. 1				
VI	..	.. 1				
VII	..	.. 2				
VIII	..	.. 1				
XII	..	.. 1				
III	..	.. 3				
IV	..	.. 4	5	1 8 0	1 4 0	1 0 0
V	..	.. 2				
VI	..	.. 2				
VII	..	.. 3				
VIII	..	.. 2				
XII	..	.. 2				
XIII	..	.. 1				
III	..	.. 4	6	1 0 0	0 12 0	0 8 0
IV	..	.. 5				
V	..	.. 3				
VI	..	.. 3				
VII	..	.. 4				
VIII	..	.. 3				
XIII	..	.. 2				
XIV	..	.. 1				
III	..	.. 5	7	0 12 0	0 8 0	0 6 0
V	..	.. 4				
VI	..	.. 4				
VII	..	.. 5				
VIII	..	.. 4				
XII	..	.. 3				
XIII	..	.. 3				
XIV	..	.. 2				
V	..	.. 5	8	0 8 0	0 6 0	0 4 0
VI	..	.. 5				
VIII	..	.. 5				
XIV	..	.. 3				

These rates are applied to the survey areas placed under each class and sort of soil.

In the early settlements the grouping of villages was applied for both wet and dry lands and was based entirely on the quality of soils, villages containing superior lands being placed in higher group than those containing inferior lands. The procedure was changed during the resettlements. Grouping is applied only to dry lands according to the modern settlement. Since the quality of the soils is liberally discounted in the soil classification through the sorts, the grouping as regards dry lands is resorted to in order to make up for inequalities in the following respects:

(a) Communications, *i.e.* roads, railways and navigable canals, which facilitate the transport of grain to the markets and railway stations.

(b) Proximity to sea-ports and markets which facilitate the export and disposal of grain.

(c) Healthiness of the locality.

(d) Immunity from damages to crops by wild animals.

Villages which are more advantageously placed than others in the above respects are placed in the first group and the remainder in the second group, not more than two being generally allowed for dry lands unless and otherwise sanctioned by the Board of Revenue in special cases.

21. When the resettlement results in an increase of more than 25 per cent in the assessment payable on any individual patta, the increment will be spread over a series of years. This concession is called 'increment remission'. If the increase of assessment in the individual cases exceeds 25 per cent of the old assessment, an amount equal to the old assessment plus 25 per cent thereof will be levied at once and the remainder by annual increments equal to  $12\frac{1}{2}$  per cent of the old assessment. Increment remission will not be granted when the total increase does not exceed Rs. 3 (three).

22. The higher soils in lower group villages and under inferior irrigation sources may come under the same tarams as the lower soils in higher group villages or under superior irrigation sources. The grading, under the same taram, of soils differing in class and sort but possessing the same productive power is called the merging of soils.

23. Over 70% of the irrigated lands are classified as wet in the revenue accounts. In this case water rate is not charged separately. A consolidated rate of assessment is fixed including



the charge for water. The basis of charge is a share in the net produce as in the case of dry lands. For purposes of calculation, paddy is taken as the standard crop raised. Such a procedure of a consolidated charge is found to prevail only in some districts of the Bombay Province and also in Burma. For theoretical and account purposes, however, the charge for water is separated from the consolidated assessment and is shown in accounts to be credited to irrigation revenue.

24. The question of periodical revision of assessment has been the subject of comment from time to time. Even before the policy of resettlement was laid down, there was keen controversy over this matter. The principles of the existing system of settlement contemplate the right to periodical revision of the settlement rates from time to time. The right of the State to take a share in the produce of the land, involves the right to the unearned increment in such value. The assessment is the commuted value of the State's share in the produce of the land. When there is a change in the value of the produce or in the value of money itself, the assessment fails to represent the value of the State's share accurately. Further for the improvement of the economic condition of the people, the State undertakes various measures such as providing means of communication, facilities of irrigation, etc. Consequent on such measures, there is a general increase in the value of the land and its produce. It is obvious that under such circumstances, the State should be entitled to the benefit of such increase in the value of the produce of the land. The resettlement is merely a re-calculation of the State's share with reference to the variation in prices of the standard grains and taking into account the changes in the economic condition of the people. To deny this increase and to have fixed rates of revenue for all time to come regardless of changes in the value of produce or the rise and fall in agricultural income will be a needless sacrifice of revenue. As was laid down in the despatch of the Secretary of State in 1869, the system of permanent rates would involve "the surrender of such a legitimate source of revenue as the government's share of the increased value which has been conferred on the land by improved administration, the construction of the public works especially works of irrigation and railways together with the improved price of agricultural produce".

The periodical revision of assessment was not unknown under the old revenue systems in the region. Under the Hindu kings, even, when revenue was realised in grain, the State's right to re-assess the revenue from time to time was recognised. Under the Muslim administration, the grain was changed to a cash payment. It was recognized as a general rule that the money payment needed to be revised from time to time, after the lapse of a suitable term of years. Mr. Baden Powell has observed "it is impossible to assert that either

by law or custom the King or Emperor was prohibited from re-assessing or raising his revenue periodically.”

25. Resettlement operations are not, however, conducted on any elaborate scale as the original settlement. The frame work of the settlement is not generally changed except in very special cases. The soil classification of the land is very rarely altered. So also the grain outturn is not modified. The classification of the irrigation sources is changed only where absolutely necessary. The main basis of the resettlement is the variation in the prices of the staple grains. The revision of assessment is generally based upon the increase or decrease in the recorded prices of the staple grains of the tract. For this purpose, the commutation rates adopted for the staple grains at the expiring settlement are compared with the rates deduced for the same grains from the average of their recorded prices during the twenty non-famine years preceding the year of Resettlement after making the usual deductions. Rates of assessment are however, enhanced only when there is a substantial increase in the prices. Even when such increase is made, the rates are not enhanced to the full measure of the rise in prices. The enhancement of rates bears only a small proportion to the percentage of increase in the value of the produce. The percentage of increase varied from district to district but in 1924 it was ordered that in no case the enhancement should exceed  $18\frac{3}{4}$  per cent of the old rates. The object of taking only a small proportion of the increase in the value of the produce is with a view to make a liberal allowance for the increased cost of living, increased cost of cultivation and for promoting a higher standard of living to the cultivator.

26. Before framing these proposals the settlement officer takes into consideration the statistics of the land value, changes in the means of communication and the improvement in the irrigation facilities and other data bearing on the general economic conditions of the tract. Besides the study of these statistics, the Settlement Officer makes personal and critical enquiries in the village into several important particulars bearing on the economic condition of the people. He examines critically the working of the expiring settlement and its effects on the economic condition of the people. Then he also considers how far and to what extent the existing conditions will justify an enhancement of rates. The proposals are greatly influenced by his general impressions formed on personal inspection and elaborate enquiries in the villages.

27. The periodical revision of rates at Resettlement has now been abandoned from 1939. There was a gradual fall in the price of foodgrains after 1930. Though the prices were higher than the commutation rates adopted in the several districts, the increase was barely sufficient to meet the increased cost of living and also to provide for higher standard of living.

Theoretically the State's claim is said to represent half the net produce ; but in actual practice the rates finally fixed are less than this percentage. The rates are supposed to be worked out (or determined) by mathematical calculations on the basis of scientific experiments. But the actual process is subject to the consideration of several complicated and varying conditions and in such circumstances it is not practicable to secure the theoretical standard rate. At every stage, when working out the rates moderation of the incidence of the burden and not the mathematical accuracy is the guiding principle. Progressive moderation in favour of the ryot has been the key note of the policy of the Government. In regard to the outturns, actual crop cutting experiments were conducted only in the early stages of the settlement operations. Even then the experiments were restricted only to a small number of lands of good soil. It was not possible to conduct experiments on all lands. For lands of inferior soils, the outturns were estimated with reference to the results of the crop cutting experiments on lands of good soils. The results of these experiments cannot be considered as a correct standard for the future as they are likely to have been affected by the seasonal conditions of the years in which the experiments were conducted. If the experiments had been conducted in years of poor or unseasonal rainfall the outturn would have been adversely affected. This was what is said to have been the case in Nellore. There, outturns adopted as a result of the crop cutting experiments are generally lower than the actual outturns realized later on. Even under normal conditions the yield cannot continue to remain constant for all years. Hence the outturn even when based on actual experiment can be taken only as an approximate standard. In later periods of settlements the outturns were based on the estimates framed with reference to the outturns adopted in the adjacent districts. Similarly while allowing for vicissitudes of seasons, unprofitable areas, cost of cultivation, etc., liberal allowances were made, invariably. The first two items cannot admit of accurate computation while the third differs widely from field to field and from person to person. The commutation rates adopted at the settlements are generally lower than those prevailing in the year of settlement as well as of those prevailing during some years preceding the settlement. The result has been that the net produce is invariably valued at much less than the current money rates. Thus final rates adopted are less than the theoretical standard of 50 per cent.

The same principle of moderation was followed even during resettlements when the old rates were revised. The enhancements over the previous rates at the time of resettlement are restricted to a reasonable percentage of the old rates taking into account not only the rise in prices, but also other relevant factors such as

economic conditions of ryots, etc. Thus after the resettlement, the proportion of assessment to the net produce is further reduced.

28. Different districts and tracts were settled and resettled at different times. Broadly speaking the continuous rise in prices during the periods of resettlement resulted in higher commutation rates being adopted in the case of the districts resettled at a later date than in the case of those which were resettled at an earlier date. As a result, the pitch of assessment varied widely in the different districts. Due to the abandonment of the resettlement operations the assessments in the several districts remained unchanged since the time of the last resettlement. Taking into consideration the recommendations of the Taxation Enquiry Commission, the Government of Andhra passed an Act to standardise the Land Revenue assessment in the year 1956. According to this Act, the rates of assessment prevailing in various tracts together with the additions shown below against each district or tract were fixed as the standardised assessments, after taking into consideration the commutation rates adopted at the resettlements and the commutation rate worked out on the basis of 20 years average prices of the years 1934-54.

#### SCHEDULE A

*(tracts resettled before 1914)*

- |   |   |  |
|---|---|--|
| <ol style="list-style-type: none"> <li>1. The Kadiri taluk of the Anantapur district</li> <li>2. The Madanapalli and Vayalpad taluks of the Chittoor district.</li> <li>3. The Cuddapah district.</li> <li>4. The Guntur district.</li> <li>5. The Kurnool district excluding the Adoni and Alur taluks.</li> <li>6. The Nellore district</li> <li>7. The Srikakulam district excluding the Bobbili, Cheepurupalli, Palakonda, Parvatipuram, Pathapatnam and Salur taluks.</li> </ol> | } | <p>An addition of two annas in the rupee, in the case of dry land and half anna in rupee in the case of wet lands.</p> |
|---|---|--|

#### SCHEDULE B

*(tracts resettled after 1914 and before 1923)*

- |   |   |  |
|---|---|--|
| <ol style="list-style-type: none"> <li>1. The Chittoor district excluding the Madanapalli and Vayalpad taluks.</li> <li>2. The Bobbili, Cheepurupalli, Palakonda, Parvatipuram, Pathapatnam and Salur taluks of Srikakulam district.</li> <li>3. The Visakhapatnam district.</li> </ol> | } | <p>An addition of one anna in the rupee in the case of dry lands and three pies in the case of wet lands</p> |
|---|---|--|

## SCHEDULE C

*(Tracts resettled after 1923)*

- |  |   |              |
|--|---|--------------|
| <ol style="list-style-type: none"> <li>1. The Anantapur district excluding Kadiri taluk.</li> <li>2. The East Godavari district.</li> <li>3. The Krishna district.</li> <li>4. The Adoni and Alur taluks of the Kurnool district.</li> <li>5. The West Godavari district.</li> </ol> | } | No addition. |
|--|---|--------------|

29. The correct legal position with regard to the levy and collection of land revenue, that assessment represents the commuted value of the government's share and that assessment is made by virtue of prerogative right of the government have been clearly laid down in a recent decision of Mr. Justice Rajagoplan and Mr. Justice Ramachandra Iyer in *S. Gopalan vs. State of Madras*. Relevant portions from this decision reported in M.L.J. 1958 II at page 117 are extracted below :

“Advocate-General conceded that the Land Revenue due is a tax and not rent. Section 3 of Act II of 1864 gave statutory authority to the levy of assessment and its collection. Explanation 1 to Article 372 of the Constitution clarified that the law in force referred to in the Article is common law as well as statute law.

It is an inherent feature of the ryotwari system that the Government has a share and as stated in B.S.O.1, para 4, the assessment represents the commuted value of the government's share of the cultivation and the assessment is by virtue of the prerogative right of the government which under the law obtaining in this country it always possessed. Such being the legal basis for the assessment the procedure adopted for the levy is what is contained in B.S.Os. Section 3 of the Revenue in Recovery Act is a charging section as it imposes a liability on the land-holder to pay the assessment”.

This decision explains the main features of ryotwari system of land tenures and the basis of assessment. The petitioner is a ryotwari pattadar.

30. The rise in prices by four times over the level of prices during the last resettlement has effectively diminished the share of the government to less than 1/4th and if there had been no other factor to be considered, has also lightened the incidence of assessment on the ryot by 3/4ths. Thus if a ryot had to sell a quantity of grain 'X' to pay the assessment then, he can now pay the same by selling '1/4 X'.

But there are also a number of other factors like the cost of cultivation, which has outstripped in its rate, the rate of rise of the

prices of foodgrains, manures and other essential articles. Further there are now also other new taxes which the farmer has to pay and which were not in existence during the period of resettlements. The effects and influences of these factors on the incidence of land revenue together with the proposals for a revision of rates will be discussed in a later Chapter.

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**Brief summary of the reports on settlement and resettlements  
made in each district together with the special  
conditions obtaining in it.**

Different tracts in each district were settled and resettled in different years, though the principles adopted in the settlements and the resettlements of the Andhra region are the same. The rainfall, soil-fertility, agricultural practices, yields of crops along with the details of commutation rates adopted at each settlement and resettlement, the facilities of irrigation available and the water rates levied are described separately for each district in the following pages of this chapter.

## ANANTAPUR DISTRICT

### Introductory

Anantapur is one of the backward districts of Andhra Pradesh. It was carved out of Bellary district at the beginning of 1882. It is neither a historical nor an ethnical entity but the product of administrative convenience. It lies between  $13^{\circ} 40'$  and  $15^{\circ} 15'$  of the northern latitude and  $76^{\circ} 50'$  and  $78^{\circ} 30'$  of the eastern longitude. It is bounded on the east by Cuddapah and Chittoor districts, north by Kurnool district and on its west and south by the State of Mysore. Due to lack of irrigation facilities and its unfortunate geographical situation at the tail end of either monsoon Zones, with poor soils in more than half of its area the whole district frequently falls a prey to famine conditions. The chief rivers in the district are the Pennar and its tributaries, the Chitravati and Papagni. Another important River is Hagari, which is a tributary to Tungbhadra. None of the hills is of any great size. The highest points in the district are Mallappa-konda (3,092 feet) four miles north of Bukkapatnam and Penu-konda (3,091 feet), Kundarpidurg (2,996 feet) and Madakasira hills (2,936 feet) above Sea level. But these four are situated on the country side which itself stands some 1,500 to 2,000 feet above

the Sea level. The district at present consists of 10 taluks and one sub-taluk comprised in three revenue divisions as noted below:

Name of the Revenue Division	Headquarters of the Rev. Division	Taluks comprised in Rev. Division
Anantapur	.. Anantapur	.. Anantapur, Tadipatri, Gooty, Uravakonda (Independent sub-taluk)
Dharmavaram	.. Dharmavaram	.. Dharmavaram, Kalyandurg, Rayadurg.
Penukonda	.. Penukonda	.. Penukonda, Hindupur, Kadiri, Madakasira.

Penukonda is generally described as the poor man's Ooty and it is also noted for Vineyards and Pomogranates.

The district has an area of 7,388 sq. miles and a population of 1,483,591, the density of the population being 201 per sq. mile. The utilisation of the area in the district is furnished below :

			<i>Acres</i>
Total geographical area	..	..	.. 47,28,329
Area of forests	..	..	.. 4,82,795
Barren and uncultivable land	..	..	.. 4,14,407
Land put to non-agricultural uses	..	..	.. 2,74,930
Cultivable waste	..	..	.. 4,36,548
Permanent pasture and other trees crops and groves not included in net area sown			} 26,346
Land under miscellaneous trees, etc.	..	..	.. 34,126
Current fallows	..	..	.. 2,90,060
Other fallow lands	..	..	.. 2,84,713
Net area sown	..	..	.. 24,84,404
Area sown more than once	..	..	.. 77,498
Total cropped area	..	..	.. 25,61,902

There are 1,577 miles of roads in the district. The particulars being as noted below :

National Highways	..	106 miles
Provincial Highways	..	253 „
Major Dist. Roads	..	624 „
Other Dist. Roads	..	157 „
Village Roads	..	371 „
Municipal Roads	..	66 „

There are 61 miles of broad gauge and 191½ miles of metre gauge railway in the district. Vajrakarur is a place, noted for diamonds, though no regular mine is now worked. About 40 years back, gold mines were worked in Ramagiri of Dharmavaram taluk and they were abandoned as not being remunerative.

2. *Soils*.—The soils of the district have been classified under six heads *viz.*, black clay, black loam, black sand and red clay, red loam and red sand. The percentages under these classifications in each taluk are given below :

Taluk	Black			Red		
	Clay	Loam	Sand	Clay	Loam	Sand
Gooty (Including Uravakonda sub-taluk)	..33.2	13.1	3.0	..	11.2	39.5
Tadpatri	..42.1	25.6	3.8	..	20.6	7.9
Kalyandurg	.. ..	3.2	0.5	..	26.5	69.8
Anantapur	.. 5.3	9.1	3.0	..	35.4	47.2
Dharmavaram	.. 0.1	5.6	0.8	..	40.3	53.2
Penukonda	.. ..	9.1	5.0	..	26.0	59.9
Kadiri	.. 0.1	0.2	..	41.0	36.8	21.9
Madakasira	.. 0.2	6.8	0.3	..	64.0	28.7
Hindupur	.. 0.6	12.8	1.1	0.2	63.8	21.5
Rayadurg	..	Black 27	Mixed 54	..	Red 19	

3. *Rainfall*.—The district has the lowest rainfall in the State. The normal rainfall is 22.4". The particulars of rain-fall during



1955-56 monsoonwise are furnished below :—

		Average rainfall (in inches)	Average rainy days
South-West Monsoon	.. ..	14.00	21
North-East Monsoon	.. ..	5.20	8
Winter period	.. ..	0.10	..
Hot weather period	.. ..	5.60	9
Total	.. ..	24.90	38

4. *Irrigation*.—Originally the district could not boast of any productive or protective systems of irrigation projects except the Yellanur, Gooty, Singanamala, Anantapur, Dharmavaram, Bukkapatnam and Parigi tanks. The rivers in the district are torrential streams and carry water only during good rains. For most part of the year they are dry. The rivers are not provided with regular anicuts. Temporary sand dams are put up across them and river and spring channels are taken from rivers and jungle streams to irrigate considerable extents. The total extent irrigated under spring channels in the district is large (Acres 29,780). There are a number of small tanks which require several fillings for a crop to mature. They are particularly numerous in Kadiri taluk. There are certain river-fed tanks such as the Singanamala tank in Anantapur taluk fed by the Tadakaleru, the Bukkapatnam tank in Penukonda taluk and the Dharmavaram tank in Dharmavaram taluk fed by the Chitravathi, the Pargi tank in Hindupur taluq fed by the Pennar and the Kumudvati and Anantapur tank in Anantapuram taluq fed by the Pandameru. The particulars of small tanks are furnished below :

Taluk	No. of tanks with ayacuts of acres			Extent irriga- ted acres	Revenue derived Rs.
	10	20	30		
Penukonda	.. 10	8	6	313-00	877-0-0
Rayadurg	.. ..	..	3	72-16	237-0-0
Anantapur	.. 2	6	1	..	..
Hindupur	.. 23	23	20	997-12	3,113-3-0
Uravakonda	.. 1	2	4	605-61	2,106-11-0
Kalyandurg	.. 9	5	13	2250-61	5,812-2-0
Madakasira	.. 13	7	6	..	..
Tadpatri	.. 1	..	2	..	..
Kadiri	.. 209	92	35	3194-53	12,427-8-0
Dharmavaram	.. 3	4	3	8205-97	3,776-8-0

The Rayadurg taluk which is transferred from erstwhile Ballary contains a large number of tanks, wells and spring channels. The spring channels dug annually from the Hagari river irrigate a few villages on the eastern border of the taluk. There are six big tanks in the taluk. The most important of which is the Kanekal tank which is fed by water from Hagari river. The Veparalla and Vagireddipalli tanks are also river fed. The rest are rainfed.

The sources of water supply and the area irrigated therefrom in the district during the year 54-1955 are furnished below :—

Sources of water supply	Number	Area irrigated (Acs.)
1. Canals.—		
(a) Government .. ..	3,385	41,011
(b) Private .. ..	166	323
2. Tube wells.—		
(a) Private .. ..	48	}
(b) Government .. ..	1	
3. Wells used for irrigation purposes only:—		}
(i) Government—		
(a) Masonary .. ..	785	
(b) Non-Masonary .. ..	291	
(ii) Private—		
(a) Masonary .. ..	29,932	
(b) Non-Masonary .. ..	27,240	
4. Wells used for domestic purposes only.	8,941	..
5. Wells not in use .. ..	2,312	..
6. Tanks.—		
(i) With ayacut of 100 acres or more. .. ..	740	}
(ii) With ayacut of less than than 100 acres. .. ..	1,497	
Other sources spring channels, etc. .. ..	..	21,118
Total net area irrigated .. ..	..	1,84,948
Percentage of net area irrigated to net area sown .. ..	..	7.4
Area irrigated more than once in the same year .. ..	..	82,727
Total gross area of crops irrigated .. ..	..	2,67,675

There are four medium and one major project out of which No. 1 was completed, Nos. 2 and 5 are practically completed and Nos. 3 and 4 are under progress.

1. Pennar-Kumudvathi Project in Hindupur taluk.
2. Upper Pennar Project in Dharmavaram and Kalyandurg taluqs.
3. Bhairavani Thippa Project in Rayadurg and Kalyandurg taluks.
4. Mid Pennar Project in Anantapur taluk (T.B. High Level Canal).
5. Chennarayaswamigudi Project in Kadiri taluk.

There are 1,132 oil engines and 199 electric pumps used for irrigation in this district.

5. *Cultivation.*—Paddy, Cholan, Cumbu and Korra are the chief food crops. Varagu Ragi and Samai are also cultivated on small scale. Horse-gram is widely cultivated. Groundnut and cotton are the chief commercial crops. There are cocoanut and arecanut gardens in Hindupur and Madakasira taluks. The area under food crops is 18,29,52 acres while the area under non-good crops is 8,46,356. The percentage area under food crops works up to 68.4. The areas sown at different periods are shown below :

1885 Original settlement	..	..	10,12,287
1926 Resettlement	..	..	19,45,017
1955-56 Present	..	..	26,76,308

Agricultural practices as elsewhere follow the nature of the soil and the character of the rainfall. The cultivation commences immediately after the advent of the South-West monsoon. The rains commence in May. The agricultural implements are of the usual variety found in the Deccan districts and do not require any special mention. In lands under well irrigation two crops are invariably secured and sometimes even three. The first crop is ragi and the second crop is either paddy or cholam. The crop calender is as below :

	<i>Sowing</i>	<i>Harvesting</i>	<i>Peak Marketing</i>
Paddy ..	.. August-Oct. Jan.-February	Jan.-March. April-June.	April-June July.
Jowar ..	.. August. September.	December. January.	February. June.
Bajra ..	.. July-August.	December.	January-March
Ragi ..	.. June-August.	October-Dec.	Jan.-March.

Korra ..	.. August-Sept.	Nov.-January.	February
Varagu	.. August-Sept.	Nov.-Dec.	January.
Sugarcane	.. Feb.-March.	Jan.-February.	March-June.
Chillies	.. September.	March.	April-June.
Groundnut	.. July-August.	Nov.-Dec.	Jan.-February.

6. *Cost of Cultivation.*—The particulars (per acre) gathered are tabulated here under :—

		<i>Paddy</i>	<i>Cholam</i>	<i>Other dry grains</i>
1. Original settlement	..	18-6-0 to 9-12-8	5-2-0 to 12-8-0	5-2-0 to 2-1-0
2. Resettlement	..	18-2-0 to 9-12-8	5-2-0 to 2-12-0	5-2-0 to 2-1-0
3. Director of Agriculture Madakasira (State seed farm)	..	204-66	68-00	..
4. District Agricultural Officer	..	220	30-0-0	..
5. Collector	..	200	20-0-0	..

7. *Prices.*—The average prices of few important crops at different periods have been as follows :—(per grace of 3200 M.Ms.)

	At the time of original settlement (average of 20 non-famine years.)	Resettlement (average of 20 years non-famine years.)	1945-46 (average of 10 years).	1956-57 (average of 10 years).
	Rs.	Rs.	Rs.	Rs.
Paddy	.. 143	191	350	1,073
Cholam	.. 152	291	..	1,537

8. *Yields.*—The gross outturn of several crops gathered from important sources are:—

	<i>Paddy</i>	<i>Cholam</i>
*1. Original settlement	.. 1100 to 320 M.Ms.	340 to 90 M.Ms.
£2. Resettlement	.. 1050 to 320 M.Ms.	340 to 90 M.Ms.

*Present times*

‡3.	Madakasira State seed farm.	742 M.Ms.	
4.	District Agricultural Officer.	1312 M.Ms.	150 M.Ms.
‡5.	Bureau of Statistics	628 M.Ms.	83 M.Ms.
(  )6.	Officials	.. 1253 M.Ms.	204 M.Ms.
(  )7.	Non-Officials	.. 1284 M.Ms.	229 M.Ms.

*Sources.*

\* ,£-Settlement and Resettlement records.

† Report of the Director of Agriculture.

‡ From the statistical abstract 1955-56 on the basis of random sampling method adopted.

(||),(||)From the Answers to the questionnaire.

There were scarcity conditions in the years 1802-04, 1805-07, 1824, 1884-85, 1900 and famines in the years 1833, 1854, 1866, 1876-78, 1891-92 and 1896-97 and floods in 1804, 1817 and 1851.

The particulars of remission granted during the past five years are as follows :—

F. 1362 Rs.	F. 1363 Rs.	F. 1364 Rs.	F. 1365 Rs.	F. 1366 Rs.
4,78,953	69,826	1,40,403	1,40,401	92,649

10. *Holdings.*—The total number of holdings and the area covered by them are as follows :—

Total No. of holdings	Area covered by them
2,18,971	Ac. 21,53,743

A statement showing the details of Pattas bearing different assessments is given below :

STATEMENT SHOWING THE NUMBER OF HOLDINGS OF VARIOUS VALUES HELD IN  
ANANTAPUR DISTRICT

Classification of holdings	SINGLE PATTAS				
	No. of holdings	Extent of holdings		Assessment Rs.	
		Dry	Wet		
1. Re. 1 and less .. ..	36,893	61,378	8,536	26,669	
2. Rs. 10 and less but over Re. 1 ..	69,901	4,52,679	37,157	2,54,885	
3. Rs. 30 and less but over Rs. 10 ..	17,874	2,66,917	21,799	2,39,712	
4. Rs. 50 and less but over ,, 30 ..	4,123	1,05,192	10,521	1,17,832	
5. Rs. 100 and less but over ,, 50 ..	2,082	80,289	7,812	1,01,909	
6. Rs. 250 and less but over ,, 100 ..	500	45,018	4,848	58,754	
7. Rs. 500 and less but over ,, 250 ..	40	11,089	1,198	12,920	
8. Rs. 1,000 and less but over 500 ..	9	779	407	783	
9. Rs. over 1,000 .. ..	..	..	..	..	
Total ..	1,31,422	10,23,341	92,278	8,13,464	

Classification of holdings	JOINT PATTAS			
	No. of holdings	Extent of holdings		Assessment Rs.
		Dry	Wet	
1. Re. 1 and less .. ..	21,398	43,894	12,990	25,688
2. Rs. 10 and less but over Re. 1 ..	46,071	5,02,951	52,324	2,18,954
3. Rs. 30 and less but over Rs. 10 ..	15,073	2,28,318	29,323	1,83,123
4. Rs. 50 and less but over ,, 30 ..	2,837	72,380	8,667	78,814
5. Rs. 100 and less but over ,, 50 ..	1,290	46,686	6,332	61,654
6. Rs. 250 and less but over ,, 100 ..	863	26,557	3,525	34,667
7. Rs. 500 and less but over ,, 250 ..	16	3,640	391	4,993
8. Rs. 1,000 and less but over 500 ..	1	246	..	545
9. Rs. over 1,000 .. ..	..	..	..	..
Total ..	87,549	9,24,672	1,13,452	66,08,538

### Number of Share Holders in Joint Pattas

Re. 1 and less	68,271
Rs. 10 and less	1,44,188
Rs. 30 and less	46,240
Rs. 50 and less	9,731
Rs. 100 and less	3,839
Rs. 250 and less	1,435
Rs. 500 and less	47
Rupees 1,000 and less	3
Rupees over 1,000	..
	2,73,754

11. *Features of the original settlement.*—Settlement was carried out in different periods in the three tracts of the district.

1. Gooty and Tadpatri.
2. Kalyandurg, Anantapur, Dharmavaram and Penukonda.
3. Hindupur and Madakasira.

The original settlement was introduced in Gooty and Tadpatri taluks in Fasli 1301 (1891-92) in the four central taluks of Anantapur, Kalyandurg, Dharmavaram and Penukonda in Fasli 1306 (1896-97) and in Hindupur and Madakasira taluks in Fasli 1307 (1897-98).

(a) The soils were divided into two main series regar and red ferruginous, and was again subdivided into three classes, (clay, loam and sand) and each into five sorts, *viz.*, (i) best (ii) good, (iii) ordinary, (iv) inferior and (v) worst.

(b) Irrigation sources were grouped mainly according to the character of the supply but none of them was actually placed in the first group. (c) For the purpose of dry assessment all the taluks were placed in a single group. (d) Paddy was taken as the standard crop for wet lands in the tracts, and for dry lands, Cholan in Gooty and Tadpatri taluks, Ragi and Horsegram in Hindupur and Madakasira taluks and Cholan and Horsegram in Anantapur, Kalyandurg, Dharmavaram and Penukonda taluks were taken as standard crops. (e) The commutation rate of paddy worked out to Rs. 139, 117 and 118 a garce respectively for the three tracts after making a deduction of 15% on account of cartage and merchant profits. The commutation rate of Cholan worked out to Rs. 135 and 129 a garce respectively in Gooty, Tadpatri and other tracts. The commutation rate of Ragi worked out to Rs. 100 a garce in Hindupur and Madakasira taluks. The cultivation expenses per

acre were Rs. 18-6-0 to 9-12-8 for paddy, Rs. 5-2-0 to 2-8-0 for Cholan and Rs. 5-2-0 to 2-1-0 for other dry grains. (f) A deduction of 25% was made on account of vicissitudes of season and the inclusion of unprofitable areas in the holdings of ryots in the case of both wet and dry lands. (g) The rate of assessment ranged from Re. 1 to Rs. 8-8-0 an acre for wet and annas 2 to Rs. 2 an acre for dry lands.

### Kadiri Taluk

This taluk was originally in Cuddapah district and was included in Anantapur district in 1910. The scheme for original settlement was sanctioned in G.O. Ms. No. 939, dated 9th August 1880 and the rates were introduced in Kadiri taluk in F. 1292. (1882). The highest and the lowest dry rates in that district were Rs. 3 and annas four respectively. The highest and the lowest wet rates were Rs. 9 and 2 respectively. The soils were classified under the two main classes of Regada or black and ferruginous or red. Wet lands were arranged in five groups with reference to the quality of sources from which it was irrigated.

### Rayadurg Taluk

This taluk was originally in Bellary district. It was transferred to Anantapur district on 1-10-1953 on the formation of Andhra State. Rayadurg taluk was included in the tract constituting Hospet, Hadagali, Harpanahalli, Kudligi and Rayadurg. The scheme for the settlement of above tract was sanctioned in G.O. No. 358, dated 1st May 1893. The rates were introduced in Rayadurg taluk in Fasli 1303 (1893). The soils of the district of Bellary was grouped under regar or black, ferruginous or red. For the purpose of fixing the money rates the standard crop on wet land was taken to be paddy and on dry land, Cholan. The dry rates ranged from two annas to Rs. 2-4-0 and wet rates from Re. 1 to Rs. 11.

12. *Resettlement.*—The resettlement in Anantapur district was done in four tracts. They were Black cotton soil taluks of Gooty and Tadpatri, (2) Red soil taluks of Anantapur (16 villages of Gooty transferred to Anantapur taluk, Kalyanadurg, Dharmavaram, Penukonda and Hindupur), (3) Kadiri taluk transferred from Cuddapah district, (4) Rayadurg taluk transferred from Bellary district.

In the first tract the scheme for the resettlement was sanctioned in G.O. No. 1332, Revenue, dated 21-7-1922 and the rates were introduced in F. 1333 (1923-24). In the second tract the scheme was sanctioned in G.O. No. 2070, Revenue, dated 3-12-1926 and the rates were introduced in Fasli 1336 (1926-27) in Kalyanadurg,



Penukonda, Dharmavaram and Anantapur and in Fasli 1337 (1927-28) in Hindupur and Madakasira taluks. In the third tract (Kadiri taluk) the scheme was sanctioned in G.O. No. 1968, Revenue, dated 28-11-1911 and the rates were introduced in Fasli 1323 (1913-14). In the fourth tract (Rayadurg taluk in Bellary district) the scheme was sanctioned in G.O. No. 1332, Revenue, dated 21-7-1922 and the rates were introduced in Fasli 1334 (1924-25).

### General Features of the Resettlement

The resettlement was based mainly on the rise in the prices of staple foodgrains since the last settlement.

### Soil Classification

There was no revision of general classification of the soils, except the usual changes that are effected in resettlements.

*Wet Lands.*—The classification of sources was introduced at the time of resettlement. A few tanks came into existence subsequent to the original settlement, viz., Ralla Anantapuram Manirevu and Pallur in Kalyandurg taluk and Padamati yaleru in Anantapur taluk. In Ramapuram and Karthanaparathi villages new tanks were constructed. The lands which in all ordinary seasons have an unfailing supply of water for two wet crops were registered as double crop at one and a half times the single crop wet assessment irrespective of the classification assigned to the irrigation source. As regards the voluntary composition of the second crop charge, the following rates were adopted.

Classification	Rates of composition adopted in the tract
2 .. ..	.. 1/3rd of the first crop charge.
3 .. ..	.. 1/3rd do
4 .. ..	.. 1/4th do
5 .. ..	.. 1/4th do

Where the supply was supplemented by wells these rates were reduced by one-half even in the case of lands under second class sources. The composition was at one-half of these rates if the supply is supplemented by wells only in the case of lands under third, fourth or fifth class sources.

### Standard Crop and Outturn

Paddy had been taken as standard crop on wet lands and yellow Cholan has been taken as standard crop on dry lands in

black cotton soil taluks ; Cholan and Horsegram and Ragi have been taken as standard crops in other taluks. The resettlement commutation rates were determined with reference to the average prices of the standard crops during the 20 non-famine years immediately preceding the commencement of resettlement operations. On the average of 20 non-famine years (1903-04 to 1922-23) the commutation price of cholam comes to Rs. 338 a garce and of horsegram Rs. 376. The commutation price of paddy comes to Rs. 276 against 138 at the last settlement. Deducting 15% on account of cartage and merchant profits the net commutation rates come to Rs. 235 a garce against Rs. 117 at the last settlement in the case of paddy, Rs. 287 against Rs. 129 in the case of Cholan and Rs. 320 against Rs. 135 in the case of horsegram. These rates represent an increase of 10 per cent in the case of paddy, 122 per cent in the case of Cholan and 137 per cent in the case of horsegram. In the taluks of Hindupur and Madakasira the commutation price of paddy works to Rs. 303 a garce and those of Ragi and Horsegram to Rs. 316 and Rs. 363 respectively. Deducting 15% on account of cartage and merchants' profits the net commutation rates are Rs. 258 for paddy, Rs. 269 for Ragi and Rs. 309 for horsegram which represent an increase over the commutation rates of 119 per cent, 169 per cent and 136 per cent respectively.

A comparative statement of the money rates as at the first and second resettlement is given below :—

GOOTY AND TADPATRI

WET						DRY					
First settlement			Second settlement			First settlement			Second settlement		
Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
11	0	0	10	2	0	2	8	0	2	13	0
10	0	0	9	0	0	2	0	0	2	4	0
9	0	0	7	14	0	1	8	0	1	11	0
8	0	0	6	12	0	1	0	0	1	2	0
7	0	0	5	10	0	0	12	0	0	14	0
6	0	0	4	8	0	0	8	0	0	9	0
5	0	0	3	6	0	0	6	0	0	6	0
4	0	0	2	13	0	0	4	0	0	4	0
3	0	0	2	4	0	0	2	0	0	2	0
2	8	0	1	11	0	..			..		
2	0	0	1	2	0	..			..		
1	8	0	..			..			..		
1	0	0	..			..			..		

KALYANDURG, DHARMAVARAM, ANANTAPUR, PENUKONDA,  
HINDUPUR AND MADAKASIRA

WET			DRY		
First settlement		Second settlement	First settlement		Second settlement
(1)	(2)	(3)	(4)		
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
	16 villages of Gooty transferred to Anantapur	Other taluks			
8 8 0	12 2 0	9 9 0	2 0 0	2 0 0	0 0 0
8 0 0	9 0 0	9 0 0	1 8 0	1 8 0	0 0 0
7 0 0	7 14 0	7 14 0	1 0 0	1 0 0	0 0 0
5 8 0	6 12 0	6 3 0	0 12 0	0 12 0	0 0 0
4 8 0	5 10 0	5 1 0	0 8 0	0 8 0	0 0 0
3 8 0	4 8 0	3 15 0	0 6 0	0 6 0	0 0 0
2 8 0	3 6 0	2 13 0	0 4 0	0 4 0	0 0 0
2 0 0	2 13 0	2 4 0	0 2 0	0 2 0	0 0 0
1 8 0	2 4 0	1 11 0	..	..	0 0 0
1 0 0	1 11 0	1 2 0	..	..	0 0 0
..	1 2 0	..	..	..	0 0 0

## KADIRI

WET		DRY	
First settlement	Second settlement	First settlement	Second settlement
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
9 0 0	9 0 0	3 0 0	2 0 0
8 0 0	8 0 0	2 0 0	1 8 0
7 0 0	7 0 0	1 8 0	1 4 0
6 0 0	6 0 0	1 4 0	1 0 0
5 0 0	5 0 0	1 0 0	0 12 0
4 0 0	4 0 0	0 12 0	0 8 0
3 8 0	3 8 0	0 8 0	0 6 0
3 0 0	2 8 0	0 6 0	0 4 0
2 8 0	2 0 0	0 4 0	..
2 0 0	..	..	..

## RAYADURG

(1)			(2)			(3)			(4)		
Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
11	0	0	13	0	0	2	4	0	2	8	0
10	0	0	11	4	0	1	12	0	2	0	0
9	0	0	10	10	0	1	0	0	1	2	0
8	0	0	10	2	0	0	12	0	0	14	0
7	0	0	9	8	0	0	8	0	0	9	0
6	0	0	9	0	0	0	6	0	0	6	0
5	0	0	8	4	0	0	4	0	0	4	0
4	0	0	7	14	0	0	2	0	0	2	0
3	0	0	7	2	0	..			..		
2	8	0	6	12	0	..			..		
2	0	0	5	15	0	..			..		
1	8	0	5	10	0	..			..		
1	0	0	4	12	0	..			..		
..			4	8	0	..			..		
..			3	6	0	..			..		
..			2	13	0	..			..		
..			2	4	0	..			..		
..			1	11	0	..			..		
..			1	2	0	..			..		

13. *Estate Abolition Act.*—The survey and settlement operations in the shortrium villages taken over by the Government under the Estates (Abolition) Act, 1948 are under progress. There were no estates to be taken over in this district.

## CHITTOOR DISTRICT

## Introductory

*General Features.*—Chittoor district was constituted out of the old North Arcot district on 1st April 1911. It comprises the taluqs of Chittoor, Palamaner and Chandragiri transferred from the old North Arcot district of Madras State and of Madanapalli and Vayalpad transferred from the old Cuddapah district as well as the *ex-zamindari*s of Punganur, Kalahasti, Puttur and Tiruttani (old Karvetinagar Estates) ; Kangundi (Kuppam) taluq of North Arcot district with the exception of 22 villages was transferred to the Chittoor district from 1st December, 1928 and added to the Palamaner taluq of Madanapalle Division. Further, eight villages

which were enclaves of Mysore State were transferred to the Palamaner taluq of this district with reference to the exchange of enclaves under the Provinces and States (Absorption of Enclaves) Order, 1950.

The district is situated between  $12^{\circ} 37'$  and  $14^{\circ} 0'$  of the northern latitude and  $78^{\circ} 3'$  and  $79^{\circ} 55'$  of the eastern longitude. It is bounded on the North by the Anantapur, Cuddapah and Nellore districts, on the east by Nellore district and Chingleput district of Madras State, on the South by the North Arcot district of Madras State and on the west by the Mysore State and Salem district of Madras State. The district covers an extent of 5,890 sq. miles. The abolition and taking over of the Zamindari areas by the Government under the Madras Estates (Abolition and Conversion into Ryotwari) Act, 1948 commenced in F. 1359 (1949-50). The 6 villages of Venkatagiri Estate lying in Kalahasti taluq were taken over on 7-9-1949. In the second batch, most of the remaining estates in the district (Zamin and under tenure) were taken over on 7-9-1950. They contain numerous small sources of irrigation. There are no big rivers in the western part of the district. The Papagni rises in the Mysore territory and runs through the Madanapalle taluq of this district, and the Kadiri taluq of Anantapur district having a considerable amount of wet cultivation on its banks, as there is usually some water in it all the year round. It forces its way through the Palakonda Range at Vemupalle and finally falls into the Pennar. In the area traversed by these rivers, there are numerous tanks which are fed by them. Many of the tanks are large and well built. There are only a few wells in this area. Owing to the innumerable hills, in the Eastern portion of the district, there are very many jungle streams. In the Chittoor taluq and parts of Chandragiri taluq, these streams drain into Poiney, a tributary of the Palar. The Poiney river rises in the Chittoor taluq and joins the Palar in Tiruvalam village in the North Arcot district. The Swarnamukhi river drains nearly the whole of the Chandragiri taluq and a portion of the Kalahasti Zamindari after flowing through a comparatively open portion of the Chandragiri division and passes into the Nellore district. This river in its lower course has generally some water in it all times of the year. The area drained by it has a rich soil and is favoured by numerous springs and a high level of sub-terranean water. Similar conditions prevail in the Karvetinagar Zamindari which is drained for the most part by the Kusathalis the Arni and Nandi rivers flowing eastwards into the Chingleput district of Madras State. The lands lying on the banks of these rivers are very fertile. A large part of the western portion of the division is covered with forests. These forests extend more or less continuously over the whole of the eastern part of the Vayalpad and northern part of the Chandragiri taluq. The forests are rich in secondary timber of which black wood, red sanders and Yepi

(hard wickia binata) are the most important. The Avulapalle forest in Punganur Zamindari is rich in bamboo growth.

There are numerous hillocks in the Plateau taluqs of Madanapalle, Palamaner, Punganur and Vayalpad and in the eastern taluqs of Kalahasti Puttur and Tiruttani. The most prominent of them are the Horesely Hill (4,100 ft.) in Madanapalle taluq and the Nagari Hills in Puttur taluq.

The important pilgrim towns in the district are Tirupati, Kalahasti and Tiruthani. Chandragiri is a historical place, Puttur and Narayanavanam are important weaving centres, Kuppam is important for its Sandalwood oil and quilt industries. Tirupati and Chittoor are the two Municipalities in the district.

The district is served by  $68\frac{1}{4}$  miles of broad-gauge and  $165\frac{1}{2}$  miles of metre-gauge railway. There are 1,766 miles of roads in the district consisting of 54 miles of National Highways, 121 miles of State Highways and 560 miles of Major district roads, 1,009 miles of District Board roads and 22 miles of Municipal roads.

The land utilization of the area in 1955-56 is as follows:—

			<i>Acres</i>
Total geographical areas	..	..	37,69,290
1. Area of forest	..	..	11,97,004
2. Barren and uncultivable land	..	..	4,18,018
3. Land put to non-agricultural use	..	..	1,49,997
4. Cultivable waste	..	..	3,64,438
5. Permanent pastures and other grazing lands	..	..	80,537
6. Trees, miscellaneous crops and groves	..	..	65,263
7. Current fallows	..	..	4,15,275
8. Other fallow lands	..	..	1,19,108
9. Total area sown	..	..	10,87,493
10. Area sown more than once	..	..	1,27,843
11. Net area sown	..	..	9,59,650

2. *Soil.*—There are three classes of soils, Regada (black) Lal (Red) and Mussab (Mixed). Black soil is again subdivided into clayey, loamy, and sandy, and red soil into loamy and sandy. The major part of the soil is of the red series. There is much fertile red loam in the Karvetinagar area. Punganur on the Mysore plateau offers the same characteristics as the adjoining ryotwari taluqs of Palamaner and Madanapalle. The soil of the Kalahasti estate situated in the district resembles that of the eastern portion of the Chandragiri taluq, though it is perhaps slightly inferior.

3. *Rainfall.*—Roughly speaking the South-West monsoon is more copious than the North-East on the plateau and in the central parts of the district, while North-East monsoon is more copious than the South-West in the Kalahasti and Karvetinagar Zamindaries *i.e.*, the eastern parts of the district which are nearer and more open to the Bay of Bengal. The average rainfall of the district taken as a whole based on the records of the past 80 years ending with 1949 is 33.81 inches. The district is served by both the North-East and South-West monsoons. The plateau taluks of Madanapalli, Vayalpad, Punganur and Palamaner get more rains during South-West Monsoon (June to September) than during the North-East Monsoon (October to December). The district being situated in the interior of the Peninsula the monsoon clouds get thin when they reach the district. The rainfall has never been less than 20 inches in the district since 1876, the year of the great famine, when it was only 13.09 inches. It was only in 1904 and in 1947, that the average rainfall of the district was 20.21 and 20.10 inches respectively. In only 7 years during the 74 years that elapsed since 1876, has the rainfall been less than 25 inches and only in thirteen other years was it 25 inches and above but below 30 inches.

4. *Irrigation.*—The following statement shows the irrigation sources and the area irrigated in the district:

Source		No.	Area irrigated Acres
1.	Government canals .. ..	574	8,319
2.	Private canals .. ..	16	151
3.	Tanks with an ayacut of Acres 100 and more .. ..	1,336	1,76,460
	Tanks with an ayacut of Acres 100 and less .. ..	5,290	
4.	Wells .. ..	6626	
	(a) Sole irrigation .. ..	19,449	1,00,608
	(b) Supplementing other source of irrigation. .. ..	49,180	18,585
5.	Other sources (spring channels, etc.) ..	466	31,662
6.	Total net area irrigated .. ..		3,17,200
7.	Percentage of net area irrigated to the net area sown. .. ..		39.5%
8.	Area irrigated more than once in the same year. .. ..		94,668

Source	No.	Area irrigated Acres
9. Total gross area of crops irrigated .. ..	.. ..	4,11,868
10. Percentage of the total gross irrigated .. .. area to the total area sown.	.. ..	37.8%
11. No. of wells having independent ayacuts .. ..	.. ..	25,981
12. No. of wells supplementing recognised . source of irrigation.	.. ..	43,746
13. Percentage of area irrigated by wells . having independent ayacuts to the total area irrigated.	.. ..	29.7%

Three out of the 17 medium projects in the Andhra area are in this district (1) Mallimadugu reservoir (2) Kalingi reservoir (3) Siddalagandi.

Channels taken from the rivers of the district, *viz.*, the Swarnamukhi, the Poiney, the Bahuda, the Papagni, the Pincha and their tributaries irrigate in normal rainfall season of a fairly large area and may be expected to protect the crop on a small portion of the ayacut in the adverse seasons. Irrigation by wells is largely developing and affords considerable protection.

### Dasabandam Tanks

A dasabandam inam is a grant of land or of Revenue as a compensation for the construction of a tank, well or channel. The grant generally, though not invariably, carries with it the condition of maintaining it. If the inam consists of land, it is called "Khandam Dasabandam". If it is an assignment of revenue, it is called "Shamilat dasabandam".

There are innumerable dasabandam tanks in this district under both the categories *viz.*, "Khandam and "Shamilat". The dasabandamdars who fail to carry out repairs when called upon by the Collector are deprived of the inam right by resumption. There are a few cases of dasabandam wells also. These wells are generally maintained by the dasabandamdars themselves. The dasabandamdars are entitled to  $\frac{1}{4}$  share in the Teerva Jasthi and Fasli Jasthi derived under the sources concerned (*vide* B.S.O. 56). All 'Khandam Dasabandam Inams' have to be resumed under the conversion of inams into ryotwari Act 1956. They have already been fully assessed under the Andhra Inams Abolition and Conversion to



Ryotwari Act. Only formal resumption under the conversion of inams into Ryotwari Act remains. A special staff has been appointed for this purpose.

The above Act does not apply to 'Shamilat Dasabandam' lands.

### Irrigation under Palar River Basin

The River Palar enters Chittoor district from the Mysore State and flowing through Kangundi *Ex-Zamin* Estate for a distance of about 20 miles passes out into the North Arcot district of the Madras State. Though the course of the river in the district is short, it has a fairly wide basin in the district covering vast portions in the taluks of Palamaner, Punganur, Madanapalle, Chittoor and Chandragiri.

On the ground that the Palar system is already burdened with the irrigation of an area beyond its capacity and that to allow further additions would aggravate difficulties of the situation, the Government of the composite Madras in G.O. No. 1617-I dated 19-6-1931, directed that

(i) No new irrigation works should be constructed in the Palar Basin;

(ii) No extension of the existing works should be undertaken with the object of increasing the amount of water impounded or drawn off by them.

(iii) No dry land in the Palar Basin should be transferred to and registered as wet;

(iv) No single crop wet land should be registered as double crop wet; and

(v) The charge for a second crop on any wet land should not be compounded.

There are also orders prohibiting the grant of permission for the construction of new wells in the Palar Basin area. This restriction was relaxed in G.O. Ms. No. 2549, Revenue, dated 30-9-1939 communicated with B.P. Ms. No. 2964, dated 17-10-1939 subject to the condition that the Public Works Department should be consulted before a loan is granted for the sinking of wells on private lands or before a well is sunk on land at the disposal of the Government. The Government also relaxed in G.O. No. 2240, Revenue, dated 11-12-1933, the ban against raising second crop on the existing single crop land and a third crop on the existing double crop lands. Again in the year 1946, the rules were further relaxed temporarily for a period of 5 years in G.O. 3985, P.W.D., dated 6-10-1948 and sinking of wells and tube wells to irrigate dry lands in the basin and the extension of irrigation of dry lands after

a favourable North-East Monsoon were allowed. This relaxation was extended till 5-10-1955, in G.O. Ms. No. 1597 P.W.D., dated 9-4-53. The question was further examined in the year 1956 and the Government, in G.O. Ms. No. 992, dated 9-4-1956, directed that the temporary relaxation of Palar Basin rules already in force should be continued for a further period of five years, *i.e.*, till 5-10-1960. The Government also directed that new works should not be constructed but where any tank or irrigation work is not in proper working order, it can be restored to its original condition.

5. *Cultivation.*—The best part of the year for agricultural operations in a normal year is July to October. Moderate rains in June and July are quite essential for ploughing up of wet and dry lands on a large scale. Heavy and excessive rains during August and September will help wet cultivation but affects dry crops sown during the months. Absence of rain between July and September greatly affects the plateau taluqs of Madanapalle and Vayalpad where their chief food crop, cumbu is likely to be a total loss. Moderate rainfall during October and November is beneficial to the standing crops. Dry crops are harvested during these months. Heavy rain during December affects sowing of paddy and spoils the harvests. But showers are necessary in December to January to refresh dry and wet crops standing on ground.

Under wells, particularly in Chandragiri division, paddy crop is raised in all the seasons. One may see the paddy crop in all the stages in different portions irrigated from a mota well worked by bullocks.

Generally no rotation of crops is being followed in this district. During a normal year when there is adequate supply in the irrigation sources, only paddy crop will be raised successively during both the seasons. In times of inadequate supply, paddy crop will be followed by Ragi or Jowar which require watering.

Of the total cultivable area of 18,89,819 acres, 8,76,798 acres or 46 per cent were cultivated in the normal year during the decennium ending 1950-51. There was drought for five years continuously in this decade. The area cultivated in a year on average in the last decennium was 8,12,122 acres. The area cultivated during the year 1955-56 (F. 1365) was 10,87,493 acres.

Cumbu is the chief food crop in Vayalpad and Madanapalle taluqs and paddy is the chief food crop in other parts of the district. Ragi is another important food-crop used throughout the district.

Among pulses, the area under Horsegram (3,31,517 acres) was nearly 3.8 times that of the others (Ac. 8,313). It was largely

grown in Chittoor, Palamner, Madanapalle and Vayalpad taluqs. Pulses are generally sown in dry lands in this district.

The area under fruits and vegetables is the largest in Chittoor taluq. The area under condiments and spices is the largest in Madanapalle taluq. Paddy, Ragi and Bajra (Sajja) produced in the district were barely sufficient for local requirements and rice was imported from outside.

The important commercial crops in this district are groundnut and sugarcane. The jaggery manufactured in Chittoor is said to be of good variety. Among the fruit bearing trees, mango and tamarind are worth mentioning. Groundnut, jaggery, mango and tamarind were exported on a large scale and they are really the money-producing crops. Cotton and tobacco are grown on a very small scale.

Among the oil seeds, castor was grown on a large scale in the plateau taluqs of Madanapalle and Vayalpad. In Chandragiri, Kalahasti and Puttur taluqs, the extent under gingelly is larger than in the other taluqs.

6. *Cost of cultivation.*—The particulars gathered are tabulated below:

Source & Year	Paddy	CHOLAM		SAJJA		
		Irrigated	Dry	Irrigated	Dry	
1	2	DRY GRAINS				6
	Rs.	3	4	5	Rs.	
		Rs.	Rs.	Rs.	Rs.	
1. Settlement scheme reports original resettlement 1881-1914	11 15 6 to 8 0 0	Dry grains 4 1 4 to 2 9 6				
2. Director of Agriculture						
By Motor	175.25					
By oil engine	.. 285.25					
3. Collector .. *	.. 442.50	194.60	63.25	149	50.25	

Source and year	RAGI		GROUNDNUT		Sugarcane
	Irrigated	Dry	Irrigated	Dr	
	(7)	(8)	(9)	(10)	(11)
1. Settlement scheme reports	Rs.	Rs.	Rs.	Rs.	Rs.
Original resettlement 1881-1914	Under dry grains	..	..	..	..
2. Director of Agriculture:					
By Motors			169.50	156.25	131.25
By oil engine.					
3. Collector	.. 206.50	61.25	185	77	635

7. *Prices.*—The average prices of few important crops at different periods have been as follows :—

PER GARCE OF 3200 M.Ms.

Products	Original settlement 1881-82	Resettlement 1911-1914	1945-46 previous 10 years' average	1956-57 10 years' average
	Rs.	Rs.	Rs.	Rs.
Paddy .. ..	168	184	334	1282
Sajja .. ..	205	215	..	1841
Ragi .. ..	..	197	..	1287

8. *Yields.*—The gross outturns of several crops gathered from important sources are :—

Source	Paddy	Cholam	Sajja	Ragi
1. Settlement reports .. ..	1200 to 400	..	300-80	360-120
2. Director of Agriculture .. ..	900	..	..	533
*3. Bureau of Economics & Statistics.	719	141	167	170
†4. Officials .. ..	1557	..	..	699
†5. Non-Officials .. ..	1289	778	293	531
6. Collector 1956-57 .. ..	1448	Irrigated 752 Dry 70	Irrigated 329 Dry 165	Irrigated 823 Dry 219

Sources:— †From the answers to the Questionnaire.

\*From Statistical Abstract for 1955-56 on the basis of Random sampling method.

Paddy straw yield 2500 lb. per acre	}	As estimated by the Director of Agriculture.
Ragi straw yield 2500 lb. per acre		

Paddy straw yield 2000 lb. per acre	}	As estimated by the Collector.
Ragi straw yield 1200 lb. per acre		
Sajja straw yield 1200 lb. per acre		
Jonna straw yield 1600 lb. per acre		

9. *Seasonal conditions.*—In the year 1807 the season was unfavourable. In 1820 severe storms in May were followed by the failure of rains. In 1823 there was prolonged distress and relief was given. The year 1832-33 was one of un-precedented scarcity. In 1860 there was a partial famine but great distress was averted by copious though late rains. The great famine of 1876-78 was severely felt in this district, particularly in Madanapalle and Vayalpad taluqs. In 1891-92 severe distress was felt in various parts of the district.

The district was in the grip of famine from F. 1339 onwards. The condition became worse year by year. The district has been continuously experiencing adverse seasonal conditions ever since 1947-48, *i.e.*, F. 1357.

Statement showing particulars of remissions granted in Chittoor District from F. 1362-1366.

	Rs.	a.	p.
Fasli 1362	..	5,04,144	12- 7
Fasli 1363	..	78,999	8- 3
Fasli 1364	..	61,592	0-10
Fasli 1365	..	1,24,218	9- 2
Fasli 1366	..	47,668	2- 1

10. *Holdings.*—This is a district of small holdings. On the whole there are 3,11,333 holdings covering an area of 10,61,177 acres. The average size of the holding is:

Acres 4.77 comprising of wet acre 1.00 and dry acres 3.77.

STATEMENT SHOWING THE NUMBER OF VARIOUS VALUES OF HOLDINGS  
IN CHITTOOR DISTRICT

The details regarding the sizes of holdings :—

	SINGLE HOLDINGS				
	No. of holdings	EXTENT		Assessment Rs.	
		Dry Acres	Wet Acres		
One rupee and less .. ..	7,061	46,957	8,338	57,306	
Rs. 10 and less but over Re. 1 ..	1,21,937	2,05,449	55,222	4,46,000	
Rs. 30 and less but over Rs. 10 ..	25,765	95,697	46,935	3,34,274	
Rs. 50 and less but over Rs. 30 ..	5,817	37,590	20,499	1,48,719	
Rs. 100 and less but over Rs. 50 ..	2,167	23,575	15,632	1,12,097	
Rs. 250 and less but over Rs. 100 ..	549	16,761	11,246	73,949	
Rs. 500 and less but over Rs. 250 ..	47	3,833	2,470	10,952	
Rs. 1,000 and less but over Rs. 500 ..	2	197	131	1,100	
Over Rs. 1,000 .. ..	..	..	..	..	
Total ..	1,63,345	4,30,059	1,60,473	11,84,237	

	JOINT HOLDINGS				
	No. of holdings	No. of share holders	EXTENT		Assessment Rs.
			Dry Acres	Wet Acres	
One rupee and less ..	45,475	1,44,214	27,719	7,191	38,062
Rs. 10 and less but over Re.1	80,878	2,23,854	2,18,731	29,867	3,16,193
Rs. 30 and less but over Rs.10	17,401	56,576	76,483	24,275	1,95,789
Rs. 50 and less but over Rs.30	2,919	8,998	28,717	8,861	68,596
Rs. 100 and less but over Rs.50	1,065	3,219	18,389	6,703	44,480
Rs. 250 and less but over Rs.100	216	941	10,920	4,497	27,160
Rs. 500 and less but over Rs.250	27	98	2,455	1,737	7,011
Rs. 1,000 and less but over Rs.500	7	26	2,603	497	3,587
Total ..	1,47,988	4,37,926	3,87,017	83,628	7,00,878

11. *Settlement.*—For the purpose of settlement and resettlement, this District was divided into two tracts. The first tract consists of Vayalpad and Madanapalli taluks and the second tract consists of Chandragiri, Chittoor and Palamaner taluqs. The settlement and resettlement of the first tract was done in 1882 and 1911 respectively and of the second tract, in 1881 and 1913. Some of the important features of the original and resettlement in the district are given below:

### Features of the Original Settlement

Both wet and dry lands, with the exception of small area as “permanently improved”, were classified under the two main series of regar and red ferruginous.

The villages were divided into dry groups with reference to their distance from markets, facilities of communication, rainfall and other facilities for dry cultivation. In case of wet lands, grouping of villages was done with reference to the general nature and quantum of water available for irrigation in each village. Cumbu, Ragi and Varagu were taken as standard crops for dry and paddy for wet lands.

The grain outturns per acre, determined, ranged from 400 to 1200 M.Ms. of paddy in wet lands and from 120 to 360 M.Ms. of ragi and 80 to 340 of cumbu in dry lands.

The cultivation expenses per acre ranged from Rs. 8 to 11-15-6 for wet crop and from Rs. 2-9-6 to 4-1-4 for dry crops.

A deduction of 20 to 25% of the yields was allowed for the vicissitudes of season and unprofitable areas. In the original settlement of Chandragiri, Chittoor and Palamanair taluks a deduction of 10% was made for merchants' profits.

A special rate of Rs. 1-8-0 was charged for lands made over to the ryots under ruined sources to be restored by private enterprise.

The money rates ranging from Rs. 1-8-0 to 18-2-0 for wet land and from annas 4 to Rs. 3-8-0 for dry lands were fixed.

12. *Features of Resettlement.*—No general reclassification of soils was undertaken, except those transferred from poramboke and unassessed to assessed since the last settlement.

The grouping of villages in respect of dry lands adopted at the original settlement remained unaltered.

At the original settlement the irrigation sources were not classified, but the villages were divided into groups according to the

general nature and capacity of the irrigation sources in each group of villages. As this system of grouping of irrigation sources was inelastic, all sources of irrigation were classified into four classes according to their condition and capacity. Thus the system of wet grouping of villages which was in force at the original settlement was abolished.

The allowance of 12% made for merchants' profit, at the original settlement, was increased to 15%.

At the resettlement of Vayalpad and Madanapalli taluks, the commutation rates for the staple food crops arrived at were the same as that arrived at in the original settlement. The allowances for cultivation expenses, for the vicissitudes of season and unprofitable areas remained unaltered. The outturns of the standard grains were also left unaltered. Therefore, there had been no change in the table of money rates for both wet and dry lands. In the resettlement of Chandragiri, Chittoor and Palamanair taluks, the commutation rates of standard grains arrived at were somewhat higher than those arrived at in the original settlement. Hence the money rates were recommended for enhancement by 25% for the wet lands on the three highest tarams and 12½% on all dry tarams. But the Government after taking into account the reclassification of the irrigation sources have considered that the enhancement of wet rates by only 12½% would be adequate.

**MONEY RATES—ALL TALUKS EXCEPT MADANAPALLI AND VAYALPAD.**

Taram	WET RATES		DRY RATES		Remarks
	Chittoor and Chandragiri	Palmanair	Chittoor and Chandragiri	Palmanair	
	Rs. a.	Rs. a.	Rs. a.	Rs. a.	
1.	10 0	8 6	2 8	2 4	Scheme sanctioned in G.O. No. 538 Rev., dated 18th Feb. 1914.
2.	9 6	7 12	2 0	1 12	
3.	8 12	7 2	1 8	1 6	
4.	8 2	6 8	1 0	1 0	
5.	7 8	6 0	0 12	0 12	
6.	6 14	5 6	0 8	0 8	
7.	6 9	5 0	0 6	0 6	
8.	6 4	4 12	..	..	
9.	5 15	4 8	..	..	
10.	5 10	4 2	..	..	
11.	5 5	3 14	..	..	



WET RATES			DRY RATES		Remarks
Taram	Chittoor and Chandragiri	Palmaner	Chittoor and Chandragiri	Palmaner	
	Rs. a.	Rs. a.			
12	5 0	3 8	..	..	Rates introduced in Chittoor and Chandragiri in fasli 1324(1914-15.)
13	4 11	3 0	..	..	
14	4 6	2 6	..	..	
15	4 1	..	..	..	
16	3 12	..	..	..	
17	3 2	..	..	..	
18	2 8	..	..	..	Rates introduced in Palmaner in fasli 1325 (1915-16.)

**MONEY RATES—MADANAPALLE AND VAYALPAD TALUKS**

Taram	Wet rates	Dry rates	Remarks
	Rs. a.	Rs. a.	
1	9 0	2 0	Scheme sanctioned in G.O. No.1968 Rev., Dated 28th June 1911.
2	8 0	1 8	
3	7 0	1 4	
4	6 0	1 0	
5	5 0	0 12	
6	4 0	0 8	Rates introduced in Vayalpad in fasli 1322 (1912-13)
7	3 8	0 6	
8	3 0	0 4	
9	2 8	..	Rates introduced in Madanapalle in fasli 1323 (1913-14)
10	2 0	..	

13. *Settlement of Estates taken over under Madras Estate Abolition Act, 1948.*

**Tiruttani taluk**

The entire taluk was an estate area, and comprised the following estates:

1. Tirupati-Tirumalai Devasthanam estate;
2. Chettinad estate;
3. Karvetinagar Trust estate;

4. Unregistered portion of Karvetinagar zamin estate;
5. Develampet estate;
6. Minor estates.

The total extent of the above estates situated in the taluk was 372-34 sq. miles in 315 villages. The area was taken over under the Madras Estates Abolition Act, 1948 and was administered by the Government under managerial establishment till 1-7-1957 on which date the settlement rates were introduced in this taluk. The 315 villages were surveyed and grouped into 128 villages for administrative convenience. This is the first taluk in which settlement was effected for the first time under Estates Abolition Act. The Scheme Report has been drafted by Sri B.C. Gangopadhyay, I.A.S. Nagari, Nandi and Kushasthala are the rivers or streams flowing across the taluk, which will be in good freshes only during the rainy seasons. They feed a number of tanks and serve as drainage courses. There are a good number of rain-fed and river-fed tanks besides spring ponds (Kasams) and river spring channels used for irrigation. It enjoys good rail and road communications. Chittoor and Chandragiri taluks are the adjoining ryotwari areas for this taluk, and their affinity to those two taluks is greater than that to Madanapalli and Vayalpad taluks which are also ryotwari areas in this district. For the purposes of settling this taluk, the resettlement notification applied to Chandragiri and Chittoor taluks was followed. The irrigation sources were classified into five classes. The first class being perennial sources, which afford a supply for irrigation throughout the year. Second class sources are those supplying for 8 months and more. Third class sources supply between 5 and 8 months while the fourth class sources supply water between 3 and 5 months. All other sources which supply for less than 3 months, are classified as fifth class sources.

The important provision made for the classification of lands is to recognise 'Manavari' or rainfed lands on which paddy could be grown. The money rates for 'Manavari lands' have been so fixed as the highest manavari rate is the same, as the lowest but one wet rate and the lowest manavari rate is the same as the lowest but one dry rate of resettlement rates of Chandragiri and Chittoor taluks. In contrast with the resettlement notification, referred to within, the lands in the water spread of the tanks held by pattas, have been ordinarily charged at the highest dry rate. The next important feature is about the treatment of the poramboke wells about which nothing was mentioned in the resettlement notification. The wells stand on poramboke amidst patta lands. The ryots contend that their fore-fathers constructed them. All these wells situated on porambokes amidst patta lands have been treated as private wells.

Tiruttani taluk has been placed in the first dry group as in the case of Chittoor and Chandragiri taluks. Garden lands, which were specially assessed during the estate regime, have been classified as dry lands under general principles. As there is no first class source in this area, no lands are registered as double crop lands. The average rainfall of the taluk before settlement has been worked out to be 33.78 inches. Paddy is the predominant wet crop. Turmeric and betelvines are raised on insignificant extents. The broadcast system as well as transplantation system, prevail for paddy. Among the dry crops, ragi and cumbu occupy the pride of position. Next comes cholam.

The financial results of the settlement are shown below :

	Total assessment.
1. Pre-rent reduction ..	Rs. 5,11,423-0-11
2. After rent reduction ..	Rs. 2,92,645-1-1
3. According to settlement	Rs. 3,18,435-1-0

The burden of the rates has been equitably distributed. The money rates have gone down to 25 from 271 of the rent-reduction period and 493 of the Estate regime, from which it may be seen that the settlement has resulted in a more equitable system with greater uniformity and equity.

### **Kuppam and Puttur Taluks**

The settlement rates under the Estates Abolition Act, 1948 were introduced in these taluks also with effect from 1-7-1958, on similar lines adopting the resettlement notification in force of the taluks of Chittoor and Chandragiri for Puttur taluk and that of Palmaner taluk for Kuppam taluk.

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## **CUDDAPAH DISTRICT**

### **Introduction**

Cuddapah District is situated between 13°.43' and 15°.14' of northern latitude and 77°.51' and 79°.29' of eastern longitude. Each of its sides is bordered by a single district, Kurnool on the north, Chittoor on the south, Nellore on the east and Anantapur on the west. The population of the district is 11,61,731 and the area of the district is 5,923 sq. miles. The density of population in the district is 196 per sq. mile. The district comprises the following taluks and revenue divisions.

Name of the division.	Name of the taluk.
1. Cuddapah ..	1. Cuddapah. 2. Rayachoti. 3. Kamalapuram.
2. Jammalamadugu ..	1. Jammalamadugu. 2. Proddatur. 3. Pulivendala.
3. Rajampet ..	1. Rajampet. 2. Sidhavattam. 3. Badvel.

The land utilisation of the area in Cuddapah in the year 1954-55 is as follows :

	<i>Acres.</i>
Total geographical area .. .. .	37,98,522
Area of Forests .. .. .	11,56,865
Barren and uncultivable land .. .. .	1,60,846
Land put to non-agricultural uses .. .. .	2,03,536
Cultivable waste .. .. .	6,59,771
Permanent, Pastures and other grazing lands .. .. .	1,42,384
Land under Miscellaneous trees, crops and groves not included in the net area sown .. .. .	20,881
Current fallows .. .. .	3,60,334
Other fallow lands .. .. .	28,505
Net area sown .. .. .	10,65,400
Area sown more than once .. .. .	1,03,377
Total cropped area .. .. .	11,68,777

Weaving is one of chief industries of the district. Fine handloom sarees are manufactured in Madhavaram, Moolapalle and Kuruguntapalle of Siddhout taluk, Pullampeta and Proddatur. The stone quarries are worked in dry season. The quarries in Nidujvvi in the Kamalapuram taluk are famous for fine Cuddapah slabs which are exported to all parts of the Madras State. In Jammalamadugu taluk there are also some quarries which yield good granite slabs.

2. *Soil.*—The soils in this district have been divided into two main classes 'black' or 'regar' and red. Each of these is again subdivided into 'Clay', 'Loam' and 'Sand'. There are thus six classes of soil spread over the district. Black clay is considered to be the best soil in this district. It occupies 23.7 per cent of the total classified area of the district. Red clay 1.3%, is found scattered in the Rajampet division and in Cuddapah and Proddatur

taluks. Black clay is found mainly in the taluks of Jammalamadugu, Pulivendla and Proddatur, red loam which is not so good, is met with in all the taluks of the district, but is exceptionally plentiful in Badvel, Cuddapah, Rajampet and Rayachoti taluqs. The worst soil is red sand which is met with mainly in Rayachoti taluk. The soils in Cuddapah, Proddatur, Jammalamadugu, and Pulivendla taluks are of moderate fertility. As regards Rajampet division, the lands situated near the Pennar and Sagileru basins are fertile on account of the alluvium deposited there. In Rajampet taluk, red loam of high agricultural value predominates. The sub-soil in B.C. lands of Jammalamadugu and Proddatur taluk consists of loose-rock, (*viz.*), slabs.

3. *Rainfall.*—For this purpose the year may be divided into the following seasons.

Season	Average rainfall (1954-55) inches	Average rainy days
N.W. Monsoon .. ..	14.0	16
N.E. Monsoon .. ..	14.0	14
Winter period .. ..	0.2	1
Hot weather period ..	6.0	9
	34.2	40

The normal rainfall of the district is 27.1"

#### AVERAGE ANNUAL RAINFALL OF THE DISTRICT

##### *Rainfall in inches*

1949-50	1950-51	1951-52	1952-53	1953-54	1954-55
28.10	19.70	21.00	20.00	29.80	35.20

and

1955-56. The average rainfall is 30.60.

The normal rainfall of the district is 27.1". The first four months of the year are practically rainless, but in May the advance showers of the south west monsoon begin to fall and after this

the falls become heavier, the wettest months being September and October. Heavy showers often occur in August and November but are uncertain than in September and October.

4. *Irrigation.*—The whole of the district is drained by the Pennar river and its tributaries. The river Pennar runs from west to east and enters in Nellore district through the gap in the Eastern ghats at Somasila. Its chief northern tributaries are the Kunderu and the Sagileru and the southern tributaries, the Chitravati, the Papagani and the Cheyyeru. These tributaries and the main river take their rise outside the district. The K-C canal is the principal irrigation source in the district. It takes off at Sunkesula from the Tungabhadra river in Kurnool district and is 190 miles and 14 chains long. It enters the Cuddapah district at Mile 136.7. The total area of irrigation under the K-C canal in Cuddapah district is 43,280 acres. The commandable ayacut as located in this district is 93,141 acres. An extent of acres 19,540 is irrigated under spring and river channels (in the district) for which the ryots contribute labour constantly for the removal of silt.

Particulars of the sources of water supply and the area irrigated there from in the district in 1954-55 are given below :

Sources of water supply	No.	Area irrigated Acres
1. Government canals .. ..	405	68,044
2. Private canals .. ..	6	920
3. Tanks (a) with ayacuts of 100 acres or more .. ..	155	62,377
(b) with ayacuts of less than 100 acres	1,029	
	1,184	
4. Wells .. ..	34,430	95,624
5. Other sources (Spring channels, etc.) ..		10,597

5. *Cultivation.*—73.7 percent of the area cultivated is devoted to food crops of which cereals occupy 63.1%. Paddy, Cholan, Cumbu and Ragi are the chief food crops raised in the district. The area under paddy is comparatively large in Rajampet and Rayachoti taluks on account of the large number of irrigation sources in these taluks. Cuddapah and Proddatur taluks also contribute a fairly large area on account of irrigation facilities under the

K-C. canal. Paddy is the staple food grain of the richer classes in the taluks of Rayachoti, Rajampet, Cuddapah, Proddatur and Badvel while cholam, cumbu and ragi are the chief food crops of the poorer classes in all the taluks. Cholam is extensively grown in the taluks of Jammalamadugu, Pulivendla, Cuddapah and Proddatur, Cumbu in the taluks of Rayachoti, Rajampet, Badvel and Sidhout and Ragi in the taluks of Rajampet, Cuddapah, Sidhout and Proddatur. Among the commercial crops the foremost is groundnut, the area sown being 18.4 per cent. Groundnut is extensively grown in the taluks of Rayachoti, Pulivendla, Jammalamadugu, Proddatur and Cuddapah. The extent under 'Orchard and garden produce' is the largest in Rajampet taluk where the soil is best suited to it. Mango gardens also exist here in large areas. Betel leaf gardens are extensive in Rajampet taluk and a portion of Cuddapah taluk. They are mostly grown under spring channels. The particulars of total area sown at different periods are as follows :—

	Original settlement 1870	Resettle- ment 1903	In 1956
Extent in acres	6,70,144	10,65,245	11,49,394
Area cropped more than once.	10	11	73,734
Net area sown	12	13	10,75,660

The crop calender showing the sowing, harvesting and peak marketing seasons of some of the important crops of the district is given below :—

Products	Sowing	Harvesting	Peak marketing
1. Paddy ..	August, October, January	Jan. February March, April	March, June. May, June.
2. Cholam .	August, September	December, January.	February, June.
3. Ragi ..	June August	October December	January, March.
4. Ground- nut.	August, Sept.	Nov. December	Jan. February.
5. Cotton	August-Sept.	February April	May.

6. *Cost of cultivation (per acre)*

The particulars gathered are tabulated here under.

		Paddy	Jonna	Korra	Ragi
		Rs.	Rs.	Rs.	Rs.
1. Settlement scheme reports	..				
(a) Original settlement	..19.00 to 5.13	} 6-2-9 to 1-14-3	} 6-2-9 to 1-14-3	} 6-2-9 to 1-14-3	} 6-2-9 1-14-3
(b) Resettlement	..18.00 to 12.00				
2. Director of Agriculture					
(a) N.E.S. Block Chennur, 1958	.. 225.00	65.86	..	215.09	
(b) Porumamilla Block 1958	.. 171.77	..	..	..	
(c) Jammala-madugu Block 1958	.. ..	49.20	..	..	
(d) Mydukur Block 1958	.. ..	21.62	25.40	..	
(e) Collector 1958	.. 185.00	85.00	44.00	98.00	

7. *Prices.*—The average prices of a few important crops at different periods are as follows :—

(per garce of 3,200 M.Ms.)

Products		Original settlement	Resettle-ment	1935-36 to 1945-46 average of 10 years	1946-47 to 1956-57 average of 10 years
		Rs.	Rs.	Rs.	Rs.
Paddy	..	140	162	359	1,090
Cholam	..	163	173	..	1,490
Ragi	..	..	..	..	..
Korra	..	114	..	..	..

8. *Yields.*—The gross outturns of several crops gathered from different sources are as follows :—



Source	Paddy	Cholam	PER ACRE IN M.Ms.	
			Sajja	Ragi
1. Settlement Reports:			Dry grains	
Original settlement	1,450 to 320	500-80	80-325	
Resettlement	1,100-400	400-80	80-260	
2. Director of Agriculture	885	198	272	
*3. Bureau of Statistics & Economics.	628	100	..	
**4. Officials	.. 776	337	..	424
**5. Non-officials	.. 874	453	..	624

### Sources

\*From the statistical abstract 1955-1956 on the basis of Random sampling method adopted.

\*\*From the answers to the questionnaire.

9. *Seasonal conditions.*—The greater part of the district lies within the famine zone of the state, the taluks which are not distinctly included in it being Sidhout and Rajampet. The following were the famine years.

1800-1802	
1823-1824	
1833-1834	Serious famine
1866-1867	Slight
1876-1878	Serious
1891-1892	Famine.
1896-1897	..
1899-1900	..
1901-1902	Distress.

A STATEMENT SHOWING THE PARTICULARS OF REMISSION GRANTED DURING THE PAST FIVE FASLIS IS GIVEN BELOW:

### DETAILS OF REMISSIONS GRANTED IN TERMS OF RS.

Fasli	Waste	Shavi	Tirva kammi	Fasli Kammi	Other remi- ssions	Special remi- ssions.	Total	Remarks
1362	42381	133055	36674	3136	3095	105023	323364	
1363	11994	1260	37928	130	6653	..	57965	
1364	13270	2105	23846	509	7284	..	47014	
1365	19931	2130	21181	253	6711	..	50206	
1366	8878	1115	10607	104	5661	..	26365	

10. *Holdings*.—The number of land holdings in the district is 3,03,136 and the area covered by them is 9,69,737 acres of which the wet ayacut consists of 85,994 acres. The average size of the holding in the district including both wet and dry lands is only 3.75 acres. It may be seen from this that almost all the ryots in the district have just small patches of lands with the exception of very few, if any, big land lords owning extensive holdings. A statement showing the details of pattas bearing different assessments is given below :

DETAILS OF PATTAS BEARING DIFFERENT IN CUDDAPAH DISTRICT.

Holdings assessed to	NUMBER			EXTENT	ASSESSMENT
	Single	Joint	Total	Acres	Rupees.
Re. 1 & less ..	47,986	54,662	1,02,648	1,29,741	88,719
Rs. 10 and less but over Re. 1	75,971	67,207	1,43,178	3,46,851	4,44,561
Rs. 30 ,, Rs. 10	17,445	21,395	38,840	2,60,824	3,94,096
Rs. 50 ,, Rs. 30 ..	5,192	4,744	9,936	1,12,499	2,15,518
Rs. 100 ,, Rs. 50 ..	1,573	6,387	7,960	79,295	1,33,935
Rs. 250 ,, Rs. 100 ..	302	207	509	31,661	52,846
Rs. 500 ,, Rs. 250 ..	33	31	64	8,775	17,475
Rs. 1000 " Rs. 500 ..	1,	..	1	111	610
Over Rs. 1000 ..	..	..	..	..	..
Total ..	1,48,503	1,54,633	3,03,136	9,69,737	13,47,760

**Features of Original Settlement**

The original settlements of the taluks of Cuddapah district were done at different periods from 1872 to 1882 as shown below.

<i>Year</i>	<i>Name of the taluk</i>
1872	Cuddapah, Jammalamadugu, Proddatur and Pulivendala.
1873	Badvel, Sidhavattam and Rajampet.
1882	Rayachoti.

In these settlements both wet and dry lands with the exception of small area classified as "permanently improved" were classified under the two main series of regar and red-ferruginous.

The villages were divided into groups not only for dry lands but also for wet lands. The principle adopted in grouping the villages in respect of dry lands is the relative fertility of the soil and in the case of wet lands the capacity of irrigation sources. By

adopting these principles the villages in different tracts of the district, were divided into groups as shown below :

	Cuddapah, Jammalama- dugu, Proddu- turu	Pulivendla	Badvel Sidhout Rajampet	Raya- choti
No. of dry groups ..	3	2	3	3
No. of wet groups ..	2	2	3	2

Cholam and Korra were taken as the staple food crops for dry lands. Paddy, as usual, was taken as the staple food crop for wet lands.

The grain outturns per acre, determined ranged from 320 to 1450 M.Ms. of paddy in wet lands, from 500 to 800 M.Ms. of cholam and from 80 to 325 M.Ms. of cumbu in dry lands. The cultivation expenses per acre ranged from Rs. 12 to 19 for wet crops and from Rs. 1-14-3 to 6-2-9 for dry crops.

A deduction of 20 to 25% of the yields was allowed for vicissitudes of seasons and unprofitable areas.

A further deduction of 15 per cent was allowed for cartage and merchants' profits.

The commutation rates determined on the basis of prices prevailing during the faslis from 1255 to 1274 for paddy, cholam and cumbu were Rs. 126 to 141, 147 to 151 and Rs. 130 per garce of 3200 M.Ms. respectively.

The money rates ranging from Rs. 2 to 10 for wet lands and from Rs. 0-4-0 to 4 for dry lands were fixed.

#### Features of Resettlement of Cuddapah district

The resettlement of the taluks of Cuddapah district was done at different periods from 1907 to 1912.

No general reclassification of soils was undertaken except those transferred from poramboke and unassessed to assessed since the last settlement.

The grouping of villages in respect of dry lands adopted at the original settlement remained unaltered.

Though the average price level of foodgrains showed small increase, no enhancement of the dry rates fixed at the last settlement was made.

At the original settlement, the irrigation sources were not classified, but the villages were divided into groups according to the general capacity of the irrigation under each source. As

this system of grouping of irrigation sources was inelastic all sources of irrigation were classified into five classes according to their condition and capacity. The wet grouping of villages was abolished.

The differential water-rate system is in force in this district.

The lands registered as wet without any source but which were situated in the water spread of tanks were transferred to 'dry' and assessed at special rates not exceeding the highest dry rate of the district.

Lands irrigated by baling from sources other than wells were allowed a remission of one rupee per acre.

#### Increment Remission

The increase in assessment of individual holding by 25% or more was spread over a series of years under the principles of increment remission. The money rates according to the latest resettlement in Cuddapah district are as follows per acre:

Taram	Wet rates	DRY RATES			Remarks
		Badvel Siddhout, and Rajam- pet.	Remaining taluks		
	Rs. a.	Rs. a.	Rs. a.		
1	10 0	4 0	4 0	Scheme sanctioned for	
2	9 0	3 0	3 0	Jammalamadugu, Cud-	
3	8 0	2 4	2 4	dapah and Proddatur	
4	7 0	2 0	2 0	in G. O. No. 2108, Rev.,	
5	6 0	1 12	1 12	Dated 21st August, 1907,	
6	4 8	1 8	1 8	for Pulivendla in G.O.	
7	3 8	1 4	1 4	No. 3227, Rev., dt. 25th	
8	3 0	1 0	1 0	November, 1909, Bad-	
9	2 8	0 12	0 12	vel, Siddhout and Rajam-	
10	2 0	0 10	0 8	pet in G. O. No. 2246,	
11	..	0 8	0 4	Rev., dated 6th July, 1910.	
12	..	0 4	..	Rates introduced in	
				Jammalamadugu and	
				Proddatur in F. 1317	
				(1907-08), Cuddapah in	
				F. 1318 (1908-09), Puli-	
				vendla in F. 1320 (1910-	
				11) and Badvel and	
				Siddhout in F. 1320	
				(1910-11) and Rajam-	
				pet in F. 1321 (1911-12)	

13. *Estates taken over.*—As regards the taken over estate villages in this district, survey and settlement operations are in progress.

## EAST GODAVARI

### Introductory

East Godavari district takes its name from the great river which forms its Western boundary and the delta of which it is the richest and most fertile portion. The adjoining western districts are West Godavari, Khammameth, Warangal and Karimnagar. On the north, the district touches the Madhya Pradesh and Orissa States and the Visakhapatnam district. The headquarters of the district is Kakinada. The district has an area of 5,768 square miles and a population of 2,414,808 (the density of population being 419 per sq. mile). It extends from 16° 19' to 18° 38' N. and from 80° 22' to 82° 36' E. The land utilisation of the area in 1955-56 is as follows :—

TOTAL GEOGRAPHICAL AREA	..	..	36,37,000
			<i>Acres</i>
1. Area of forests	..	..	13,93,083
2. Barren and uncultivable land	..	..	2,32,034
3. Land put to non-agricultural use	..	..	1,85,526
4. Cultivable waste	..	..	4,03,864
5. Permanent pastures	..	..	1,38,726
6. Trees, miscellaneous crops and groves	..	..	50,275
7. Current fallows	..	..	65,396
8. Other fallow lands	..	..	51,682
9. Total area sown	..	..	13,34,573
10. Area sown more than once	..	..	2,18,164
11. Net area sown	..	..	11,16,583

The district can be divided into three distinct zones *viz.*, delta, upland and agency. The deltaic portion consists of the taluks of Amalapuram, Kothapeta, Razole and Ramachandrapuram besides portions of Kakinada and Rajahmundry taluks. The upland portion comprises the taluks of Peddapuram, Pitapuram, Tuni and portions of Kakinada, Ramachandrapuram and Rajahmundry taluks. The agency portion comprises the Chodavaram, Yellavaram, Bhadrachalam and Nugur taluqs. The boundary line between the delta and upland areas was taken to be that of the Eluru, Samalkot canals.

There is great disparity in the security of water supply, the fertility of the soil and the facilities for marketing produce, and communications between the delta and the uplands. The contrast between the two areas is marked ; the delta ryot has few anxieties and is assured of a reasonably good crop except when there are extraordinary floods in the river, the upland ryot has to face the vicissitudes of season and to work far harder for an average return for less than that of the delta ryot. Speaking generally, the delta ryot is well off and the upland ryot is poor. A greater part of the agency is hilly, undulating and ill-suited for irrigation. Agriculture of the crudest form is the chief occupation of its inhabitants. Although there was sufficient area of fertile lands that could be brought under cultivation the majority of the agency men preferred to cut the jungle on hill sides and practised the peculiar system of hill side cultivation styled "podu, or shifting cultivation". This was due to want of capital to purchase the necessary cattle, implements and seeds and also to their innate laziness and disinclination to produce anything beyond what is required for satisfying their immediate wants. Hill Cholan was their staple food. Failure of seasonal rainfall makes their condition precarious. However, with the advance of time, their culture has also progressed appreciably to the present day. Yellavaram taluk and the southern portion of Chodavaram are more advanced in point of agricultural practices, health, sanitation and general level of culture owing to greater and more intimate contact with the plains on account of easier communications. There are 79½ miles of broadgauge railway and 1,863 miles of roads in the district.

### Soils

The deltaic character of the district accounts for the large extent of alluvial soil which is 52.7 per cent in this district. It is found in the deltaic regions and also in the Peddapuram taluq through which the Yeleru river flows. 32.00 per cent of the soil of the district is red ferruginous and occurs mostly in the uplands. Sand-stone predominates in the central portion and south-western border of the district, gneiss on the east of the inland border and alluvial elsewhere. The regar is 8.07 per cent and the arenaceous 6.07 per cent.

### Rain Fall

For this purpose, the year may be divided into the following four seasons :—

Season	Months	Average rainfall 1894-1923 (inches)	Average rainfall 1943-46 (inches)	Average rainfall 1955-56 (inches)
1. Winter period or dry weather	January— February	0.72	..	0.4
2. Hot weather period	.. March— May	3.73	..	6.1
3. South-West Monsoon	.. June— September	26.76	..	21.5
4. North-East monsoon	.. October— December	10.53	..	14.4
		41.74	41.76	42.4

		<i>Plains</i>	<i>Agency</i>
The average rainfall in 1957	..	.. 52.3"	53.8"
The average rainy days in 1957	..	.. 43	52
The normal rainfall is 41.8"			

The first four months of the year are practically rainless but in May, there is normally a fair fall. More than half the annual rainfall is brought by the south-west monsoon, most of the rest falling in October or November. The coast is affected by cyclones occasionally during October. Rain is required in May and June to plough dry lands and to raise seed beds in the delta area. In July and August it is required to enable the ryots to sow dry crops and to transplant paddy in the delta area. In September and October, it is needed for standing crops. Then in February and March occasional showers are required to help transplanting second crop paddy. The channels are opened in the last week of May or first week of June and there is rush for water for seed beds. The lands higher up require all the water and it is some time before those at the tail-end can be satisfied. So, unless there is sufficient rain in May and June, some difficulty is experienced. Second crop paddy is not usually raised till the end of January or the beginning of February as crops do not thrive in December and January.

### Irrigation

Prior to 1840 the Godavari district was frequently the scene of bad famines. In 1832 a terrible famine ravaged the district and the calamitous famine of 1840-41 followed after some more bad years.

The recurring famines, the decreasing population and the dwindling revenue spurred the Government into action and late Sir Arthur Cotton proposed the construction of an anicut across the Godavari at Dowlaiswaram with three canals one for each of the three deltas known as the Western, Central and Eastern deltas. The works were sanctioned almost immediately and carried out expeditiously under his guidance.

The Godavari anicut system irrigates Razole, Amalapuram, Ramachandrapuram and portions of Kakinada and Rajahmundry taluks, and it is a main source of irrigation. Prior to the construction of the anicut, there was comparatively little irrigation in Central and Eastern deltas. The extent irrigated was about acres 35,576 (17,855 under tanks and 17,721 under channels). The river Godavari rises in the Western Ghats within 50 miles of the Arabian sea and flows across the peninsula for 900 miles before it falls into the Bay of Bengal. The river drains about 1,15,000 square miles and carries as much as  $1\frac{1}{2}$  million cubic feet per second, in very high floods. The anicut is in four sections, linking the islands in the broad river, the Dowlaiswaram section 4,839 feet long, the Ralli section 2,859 feet long, the Maddur section 1,550 feet long and the Vijjeswaram section 2,601 feet long. Some time after the construction of the masonry dam it was found necessary to raise the anicut slightly and fit up falling shutters, 2 feet high on the crest. In 1935 the 2 feet shutters, were replaced by 3 feet shutters. The central delta, particularly the Nagaram island is the 'Garden of the Godavari district' and is noted for that Gannavaram aqueduct which was completed in about 8 months by Captain Orr in the fifties of the last century. The Polavaram aqueduct at Annampalli is a similar recent construction to irrigate Polavaram island. Razole taluq is also irrigated by the Peravaram pumping scheme. The Godavari is an unfailing source of water supply. The first crop in the delta has never failed for want of water in the canals. The river receives its freshes in June and in full flood during July and August. The canals are open for practically eleven months in the year and they are closed during May each year. Even though there is plentiful supply in the river for at least ten months in the year, there is scramble for water during the first crop season and the end of the second crop season. This is mainly due to the fact that the cultivation seasons cannot be adjusted to the periods when there is water in the river. In December and January the river has plentiful supply, but no wet paddy crop is on ground. Local rainfall is also necessary to raise a successful crop under the anicut. The low level lands suffer from submersion when there are heavy floods in the river.

There are some spring channels in the Rajahmundry taluk but most of the irrigation is by rainfed tanks. The spring channels in



Peddapuram taluk are used for irrigation. The wet lands in Peddapuram taluk are mostly irrigated by tanks and the river channels taking off from Yeleru river. This Yeleru river rising in Yellavaram agency of the district runs south through its fertile valley in Peddapuram taluk of the Samalkot canal and passes off into the erstwhile zamindari areas of Pitapuram and Tuni. Owing to the silt brought down the stream from the agency, the valley of the river is covered with an alluvial deposit and is noted for its sugarcane crop. The irrigation under the Yeleru is regulated by the turn systems prescribed in the diary of Kanchi Ramanna Pantulu. Wells are used to irrigate areca-nut gardens in Amalapuram and Razole taluks. There are about 1,106 irrigation pumps worked by oil engines (853) and electric power (253) in this district. The sources of water supply and the area irrigated therefrom in the district in 1955-56 are given below :

Sources of water supply	No.	Area irrigated Acs.
1. Government canals .. ..	11	4,74,102
2. Private canals .. ..	..	..
3. Tanks .. ..	1,196	1,33,594
(a) With ayacut of 100 acres or more	569	}
(b) With ayacut of less than 100 acres	627	
4. Wells (private, masonry) ..	366	301
5. Other sources (spring channels, etc.) ..		7,819
		<hr/>
		6,15,816
Area irrigated more than once (second crop) .. ..		94,267
Total area irrigated .. ..		7,10,083

### Cultivation

Food crops are raised in 83.8 per cent of the area cultivated. Paddy being the chief food crop, Ramachandrapuram, Amalapuram, Kakinada and Razole taluks have the largest extent of paddy cultivation. In the delta tracts water is allowed for second crop only by rotation. Under the localisation scheme water is allowed every year to lands placed in the permanent zone and once in every two or three years to the other lands according as they are classed in the biennial or triennial rotation zone. Amalapuram and Razole taluks comprise the biennial zone while Ramachandrapuram and Kakinada taluqs from the triennial zone. In the delta tracts where

second crop paddy is harvested, a catch crop like black-gram, horsegram, etc., is also raised with the aid of the moisture and the dew fall in the season. Cholan is cultivated extensively in Bhadrachalam and Nugur taluks and on limited extents in other parts. Maize, Cumbu, Ragi, Corra, Varugu and Samai are the other cereals raised in the district. Greengram, Redgram, Blackgram, Bengalgram and Horsegram are the pulses cultivated. Sugarcane, Gingelly, Cotton and Mangoes are the important commercial crops of the district. Tobacco is chiefly grown in Rajahmundry taluk. The area under coconuts is appreciable. Fruit cultivation is becoming popular. The particulars of the total area sown at different periods is as follows :

In or about 1860 (Original Settlement)	In or about 1899 (first settlement)	In or about 1923 (second settlement)	In 1956 Present time
2,60,105 ( <i>approximatety</i> )	5,64,087	6,83,821	13,34,573
Area cropped more than once		Net area sown	
1923	1956	1923	1956
1,60,670	2,18,164	5,23,151	11,16,583

The crop calender showing the sowing, harvesting and peak marketing seasons of some of the important crops of the district is given below :

Products	Sowing	Harvesting	Peak marketing
1. Paddy	.. June-Aug. Jan.- Feb.	Sept-Oct. April-May.	June-July.
2. Cholan	.. October	February	March-June
3. Sugarcane	.. February- March	January- March	April-June.
4. Tobacco	.. October	February	April-June
5. Gingelly	.. June-July	Sept.-Oct.	Nov.-Dec.
6. Chillies	.. September	March	April-June
7. Onions	.. July-Oct.- January.	Dec.-March- May.	Jan.-June.
8. Redgram	.. July-Aug.	Jan—Feb.	March-April.

## The Costs of Cultivation

The particulars gathered are tabulated hereunder :

Source & Year	White paddy	Black paddy	Cholam	Sajja	Ragi	Horse-gram	Tobba-cco	Sugar-cane	others
Settlement scheme reports of original and resettlements 1860-1931	3- 8-0 to 14- 0-0	2-12-0 to 4- 0-0	2- 0-0 to 4-12-0	2- 0-0 to 4- 0-0	2-12-0 to 4- 4-0	2- 4-0 to 2-12-0	35- 0-0 (1860)	95- 0-0 (1860)	
Director of Agriculture Rajupalyam Farm of Kirlampudi N.E.S. block (1958) 1st crop	193-0-0								
The Collector(1958)	175-0-0	50-0-0	45-0-0	..	..	..	475-0-0	1136-0-0	
							(Collector-1958)		
							Coconuts	Rs. 197	
							Plantains	„ 445	
							Groundnut	„ 75	
							Chillies	„ 194	
							Gingelly	„ 38	
							Cotton	„ 98	

## The prices

The average prices of important crops at different periods are as follows :—

Products	1860 original settlement	1899 First re-settlement	1931 Second re-settlement	1946-47 (10 years' average)	1956-57 (10 years' average)
	Rs.	Rs.	Rs.	Rs.	Rs.
Paddy	.. .. 88	.. .. 136	.. .. 293	.. .. 324	.. .. 894
Cholam	.. .. 101	.. .. 169	.. .. 345	.. ..	.. ..

### The yields

The average gross outturns of several crops gathered from important sources are :

Source	Paddy	Cholam	Sajja	Ragi.
1. Settlement reports	500 to 1150 M.Ms.	50 to 800 M.Ms.	66 to 666 M.Ms.	100 to 933 M.Ms.
2. Director of Agriculture : Rajupalem farm of Kirlam-pudi Block 1958	. 2000 M.Ms.			
3. Bureau of Statistics (1956)..	788 M.Ms	442 Lb.	541 Lb.	731 Lb.
4. Collector.				
1954-55	.. 812 M.Ms.	713 Lb.	..	..
1955-56	.. 630 M.Ms.	811 Lb.	673 Lb.	..
1956-57	.. 858 M.Ms.	508 Lb.	250 Lb.	328 Lb.
5. Non-Officials 1958	954 M.Ms.	251 M.Ms.	198 M.Ms.	..

In 1947 Sri N. Raghavendra Rao estimated the price of straw yielded from one acre at Rs. 40. In 1958 the State Marketing Officer furnishes Rs. 40 as the normal price of straw from one acre of paddy crop in the State.

### Seasonal Conditions

The years of seasonal calamities are the following :—

Floods	..	1614
Inundations by sea		1706
do.		1787
Famine	...	1791
Distress due to failure of monsoons	..	1835-38
The Guntur Famine	..	1832-33
Disastrous cyclone, inundation and famine		1839-41
Floods		1862, 1863, 1875, 1878, 1882 to 1884.
Great flood		1886
Floods		1887

Floods	..	..	..	1892
Floods	..	..	..	1895-96
Scarcity in agency due to failure of monsoon	..	..	..	1897
Floods	..	..	..	1900
Scarcity	..	..	..	1918-1921
Floods	..	..	..	1928
Storm	..	..	..	1937
Cyclone	..	..	..	1945
Cyclone	..	..	..	1949
Floods	..	..	..	1953

A statement showing the particulars of remissions granted during the past five faslis is given below :

Fasli				Rs.
1362	..	..	..	1,38,092
1363	..	..	..	2,55,794
1364	..	..	..	20,251
1365	..	..	..	14,259
1366	..	..	..	21,954

### Holdings

The number of land holdings in the district is 1,37,037 and the area owned by them is 5,11,268. acs. Thus it is evident that this is a district of small holdings. At the same time it is one of the few districts where we have an appreciable number of pattadars with large extents. The latest particulars are given below:

### DETAILS OF PATTAS BEARING DIFFERENT ASSESSMENTS

Classification of holdings	SINGLE PATTAS				
	Number of pattas	Extent of holdings		Assess - ment Rs.	
		Dry	Wet		
(1)	(2)	(3)	(4)	(5)	
Re. 1 and less	11,783	5,641	784	8,976	
Rs. 10 and less but over Re. 1	37,017	46,135	14,280	1,69,719	
Rs. 30 and less but over Rs. 10	19,748	39,103	30,705	3,14,292	
Rs. 50 and less but over Rs. 30	6,014	19,095	16,755	2,07,754	
Rs. 100 and less but over Rs. 50	3,838	22,006	19,298	2,39,638	
Rs. 250 and less but over Rs. 100	1,595	16,879	18,235	2,14,506	
Rs. 500 and less but over Rs. 250	281	6,272	6,719	88,397	
Rs. 1,000 and less but over Rs. 500	55	1,442	3,379	35,191	
Over Rs. 1,000	8	369	901	8,847	
Total	80,339	1,54,942	1,11,056	12,87,320	

**DETAILS OF PATTAS BEARING DIFFERENT ASSESSMENTS—(Contd.)**

JOINT PATTAS				
Number of Pattas	Number of Share holders	Extent of holdings		Assessment Rs.
		Dry	Wet	
(6)	(7)	(8)	(9)	(10)
5,461	9,470	2,174	255	4,919
24,380	49,425	37,938	9,837	1,27,678
16,011	39,594	37,364	23,175	2,73,300
5,423	13,949	21,151	15,912	1,53,423
3,416	9,794	17,523	18,449	2,16,362
1,551	5,354	15,691	18,717	2,06,862
326	1,252	6,519	8,587	1,07,007
69	369	4,292	4,963	44,462
11	102	1,658	1,065	15,347
56,698	1,29,309	1,44,310	1,00,970	11,49,360

NOTE : This does not include water rate, lease amounts, cesses and other miscellaneous revenue.

**Features of the Original Settlement, 1865**  
(BY MR. R. E. MASTER)

The district was divided into two portions, delta and upland, the former comprising the zone falling within the Godavari anicut system and the latter the remaining portions of the district. Separate rates of assessment were sanctioned for the delta and the uplands. (a) All the lands in the delta were classified as dry and uniform water rate was levied on those irrigated in addition to the land assessment. In the uplands consolidated wet rates were imposed on lands irrigated from Government sources. (b) The soils in the delta were divided into five classes—alluvial, exceptional or permanently improved, regar, red ferruginous and arenaceous, while those in the uplands were divided into four classes—alluvial, permanently improved, regar, and red ferruginous. The regar and the red ferruginous soils were sub-divided into clay, loam and sand and the arenaceous into loam, sand and heavy sand. Each of these subdivisions were further subdivided into a number of sorts,

generally three. Lands classed as alluvial or as permanently improved were also similarly divided into sorts. (c) For the purpose of dry assessment, the villages in the delta, as well as the upland, were divided into four groups. The grouping was based on the relative fertility of the soils in each village and not on consideration of proximity of markets or facilities of communications. (d) For the purpose of wet assessment the villages in the upland tract were divided into three classes. It is not however clear on what principles the classification was made but the relative fertility of the wet lands appears to have been the main factor that was taken into consideration. In most cases whole villages were placed in the same class and this class generally corresponds with the dry group. In some cases however different classes were assigned to the wet lands in the same village on a consideration of the supply in the irrigation sources. (e) Black paddy, cholam, cumbu and ragi were adopted as the standard crops for dry lands in the delta. In addition to those grains, horse-gram was taken as a standard in the uplands. The standard crop for wet lands in the uplands was white paddy. Sugarcane was also adopted as a standard for the exceptional lands under the Yeleru in the Peddapuram taluk. (f) For vicissitudes of season and unprofitable areas included in holdings a deduction of  $16\frac{2}{3}$  per cent was made from the gross produce in the case of the delta and a portion of Rajahmundry taluk. The deduction allowed for the rest of the upland was 25%. (g) The rates of assessment for ordinary wet lands in the uplands ranged from Rs. 1-4-0 to Rs. 7-0-0 per acre. Special rates of Rs. 6 and Rs. 10 per acre were fixed for the exceptional lands under the Yeleru. The rates for ordinary dry lands ranged from As. 4 to Rs. 5 per acre in the delta and from As. 4 to Rs. 4-8-0 per acre in the uplands. Special rates up to a maximum of Rs. 20 per acre were imposed on lanka lands.

### The Water Rate

Water rate for Godavari delta was fixed at Rs. 3 an acre in 1861. It was raised to Rs. 4 in 1865 in G.O. 1006, dated 12-5-1865. This was again raised to Rs. 5 per acre in G.O. No. 562, Revenue, dated 2-8-1894. Since 1931, with the resettlement the rate has been increased to Rs. 6-4-0 per acre.

#### (A) Features of the First Resettlement, 1899 (BY MR. G. P. CLERK)

The division of the district into the delta and the uplands was retained at the resettlement but the two portions were dealt with on different lines as indicated below :—

(a) *Delta*.—Consolidated wet rates were imposed on irrigated lands in the delta as it was considered that the levy of a

uniform water rate in addition to dry assessment pressed too heavily on the poorer soils while the richer soils escaped their fair share of taxation. Only lands which had been under wet cultivation for five consecutive years or from which Government water could not be excluded, were classified as wet. Other irrigable lands were retained as dry but it was decided that if they were cultivated with wet crops with the aid of irrigation from Government water, the water rate to be levied should be the difference between the appropriate wet and dry rates plus one rupee per acre in consideration of the option allowed of taking water or refusing water and of the administrative inconvenience caused thereby. In order to facilitate the introduction of this system the whole of the deltaic tract was reclassified.

(1) The soils were divided into three main series—alluvial, regar and arenaceous. The alluvial series was subdivided into clay and loam, the regar into clay, loam and sand and the arenaceous into loam, sand and heavy sand. Each class of the alluvial and the regar series was further subdivided into five sorts, while the classes of the arenaceous series were subdivided into three sorts each. Provision was made for an extra sort under alluvial clay and under alluvial loam, and the exceptionally fertile lands in the taluks of Amalapur, Ramachandrapur were classified under this sort.

(2) Irrigation sources were divided into four classes with reference to the conditions of irrigation and drainage.

(3) For the purpose of dry assessment the deltaic tract was divided into two groups.

(4) The standard grains adopted were white paddy for wet and black paddy for dry lands.

(5) After allowing a deduction of 15% on account of merchants' profits and charges of transport commutation rates of Rs. 118 and Rs. 96 per garce were adopted for white and black paddy respectively.

(6) An allowance of 10% for wet and 20% for dry lands was made on account of vicissitudes of season and unprofitable areas included in holdings.

(7) Cultivation expenses were fixed at Rs. 14 to Rs. 5 per acre for wet and Rs. 8 to Rs. 2-6-0 per acre for dry lands.

(8) Padugai and lanka lands held on patta were assessed one and two tarams higher than ordinary dry lands of the same class and sort.

(9) The rates of assessment per acre ranged from Rs. 2-8-0 to Rs. 12 for wet lands, from Rs. 4 to Rs. 7 per ordinary dry lands, from Rs. 2 to Rs. 9 for padugai lands and from Rs. 2-8-0 to Rs. 11 for lanka lands.



(b) *Uplands*.—There was no reclassification of soils or of irrigation sources in this tract. The old rates of assessment were enhanced by about 33-1/3 per cent. The revised rates ranged from As. 5 to Rs. 5-8-0 per acre for dry and from Rs. 1-10-0 to Rs. 9 per acre for ordinary wet lands. The special rates of Rs. 10 and Rs. 6 for dry lands under Yeleru were raised to Rs. 12 and Rs. 7-12-0 respectively per acre. Some rented villages in the tract which had been excluded from the original settlement were now classified and settled. The classification was made on a system of five sorts under each soil and the grouping of villages and the classification of irrigation sources were made with reference to the facilities of communications and irrigation respectively, but the scale of rates applied was the same as that sanctioned for the other upland villages.

(c) *Water Rate*.—This remained at Rs. 5 per acre.

### (B) Features of Second Resettlement, 1931

(BY MR. B. G. HOLDSWORTH, I.C.S.)

Now also the old division of the district into delta and upland remained generally unaltered. No general reclassification of soils was made and the system of classification of irrigation sources and the dry grouping prevalent in the delta and upland tracts during the first resettlement was retained. The arrangement by which soils of equal productive capacity were grouped in 'tarams' and the notation of the different soils was also retained. But the Special Settlement Officer was authorised to assign a fresh classification or to alter, where necessary, the then existing classification in the case of the following lands:—

(i) Lands transferred from dry to wet or vice versa, one irrigation source to another, poramboke and unassessed lands transferred to assessed waste or assigned on patta, and lands disafforested subsequent to the first resettlement.

(ii) Lands north of Ellore and Samalkot canals which though regularly irrigated from the delta classified as upland dry, were reclassified on the system adopted for similar soils in the delta.

(iii) Large blocks of cultivable waste lands in the uplands and in the tail-end villages of the delta tract which were not previously classified but were likely to be taken on patta.

(iv) Lands classified as permanently improved in the upland tract.

(v) Lands under irrigation sources recognised subsequent to the first resettlement or the classification of which was altered at the ensuing settlement. (b) The Settlement Officer was also authorised to revise and give appropriate classification to irrigation sources in cases the classification made at the first resettlement

was manifestly incorrect. (c) Wet ayacuts were revised as detailed below :—(i) The lands selected for inclusion in Godavari western delta where owners paid inclusion fees and corrected the level of lands, were transferred to wet. (ii) The dry lands which the Settlement Officer in consultation with the P.W.D. considered desirable, were transferred to wet. (iii) All Bapat-wet lands and irrigated dry lands cultivated with wet crops in each of the past five faslis and other lands which cannot be excluded from Government water were also transferred to wet in consultation with P.W.D. (iv) The dry lands which have been regularly under wet cultivation for 5 years were transferred to wet at the discretion of the Settlement Officer. (v) Transfers from wet to dry were also made in the deserving cases. (d) The inducement fee of one rupee per acre levied in addition to the appropriate wet assessment on irrigated dry lands was abolished as these lands were transferred to wet. (e) No wet lands except those assessed at 'Yeleru Special Rates' were registered as 'double crop' (f) Manavari classification was not recognised and the lands on which objectionable achukattu cultivation was carried on were made liable to pay enhanced assessment. (g) The following rules in regard to grant of baling remission were continued in respect of first crop. Registered wet lands—Delta and uplands—Re. 1 per acre.

Dry Inam and Zamindari lands in delta	.. $\frac{1}{4}$ the water rate Rs. 1-4-0 per acre.
Dry lands paying ordinary water rate	.. $\frac{1}{4}$ the water rate Re. 1-0-0. Re. 0-12-0 per acre.

But in respect of the second crop it was modified and fixed at  $\frac{1}{4}$  the second crop charge subject to a maximum of Re. 0-8-0 per acre. (h) The commutation rate of white paddy worked out to Rs. 258 a garce for delta tract and Rs. 252 for upland after making a deduction of 15% on account of cartage and merchants' profits. The percentage increase was 119% and 114% for delta and upland respectively. The delta and upland rates were enhanced by  $18\frac{3}{4}$ % with exception of the special rate of Rs. 12 for lands under Yeleru river in the uplands which was raised by  $12\frac{1}{2}$ % only.

A comparative table of money rates of the first and second resettlements is as follows :—



## UPLANDS

Wet lands		Dry lands	
First Resettle- ment	Second Re- settlement	First Re- settlement	Second Re- settlement
(1)	(2)	(3)	(4)
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
12 0 0	13 8 0	5 8 0	Reclassified
9 0 0	Reclassified	4 8 0	5 1 0
8 8 0	10 1 0	3 12 0	4 3 0
7 12 0	9 3 0	3 4 0	3 10 0
7 0 0	8 4 0	2 12 0	3 1 0
6 8 0	7 11 0	2 8 0	2 13 0
5 12 0	6 13 0	2 4 0	2 8 0
5 4 0	6 4 0	1 12 0	2 0 0
4 8 0	5 4 0	1 10 0	1 14 0
3 12 0	4 7 0	1 4 0	1 6 0
3 4 0	3 14 0	1 0 0	1 2 0
2 8 0	3 0 0	..	1 6 0
2 4 0	2 11 0	0 10 0	0 12 0
2 0 0	2 6 0	0 8 0	0 9 0
1 10 0	1 15 0	0 5 0	0 5 0

(i) Objectionable cases of cultivated lands in the water spread of irrigation source were ordered to be acquired and registered as poramboke in all possible cases. Pattas were issued for other cases of lands which were classed as dry and assessed at special rates. (j) The increase of assessment on an individual holding if increased by 25% or more due to resettlement was spread over a series of years and the increase effected gradually subject to certain conditions. (k) Water rates were revised and refixed as follows :

<i>Delta</i>	<i>Upland</i>
Rs.	Rs.
6-4-0	5-0-0
5-0-0	4-0-0
4-0-0	3-0-0

(2) In G.O. No. 1692, Revenue, dated 27-8-1934 the following rates of assessment were sanctioned for Nugur taluq in the agency:

Wet land (1)	Cholam Land (2)	Paddy land. (3)
Rs. a. p.	Rs. a. p.	Rs. a. p.
3 8 0	1 4 0	1 12 0
3 2 0	1 0 0	1 8 0
2 12 0	0 12 0	1 4 0
2 6 0	0 8 0	1 0 0
2 0 0	0 6 0	0 12 0
1 10 0	0 4 0	0 8 0

(3) For Yellavaram taluq of the agency, the rates shown below were sanctioned in G.O. No. 2545, Revenue, dated 8-12-1934.

Wet rates	Dry rates
Rs. a. p.	Rs. a. p.
8 4 0	2 13 0
7 11 0	2 8 0
6 13 0	2 0 0
6 4 0	1 14 0
5 4 0	1 6 0
4 7 0	1 2 0
3 14 0	0 12 0
3 0 0	0 9 0
2 11 0	0 5 0
2 6 0	..
1 15 0	..

(4) In Rampachodavaram and a portion of Yellavaram taluqs of the agency Muttadari system is in force. The Muttadar collects tax from the Mutta ryots on the basis of their dwelling houses, irrespective of the extents of land cultivated by them and pays the demand fixed to the Government. This is in the areas not surveyed and settled. (5) In Bhadrachalam, one of the agency taluqs, the rate of assessment was uniformly levied—the dry rate being Re. 0-5-0 per acre and wet rate being Re. 0-10-0 per acre. The lands involved have not been surveyed or settled.

#### The Estates Abolished.

The zamindari areas taken over by the Government are being surveyed, settled and converted into ryotwari on the same principles

enunciated in the latest resettlement notification in force. The settlement rates are due to be introduced on 1-7-1959 in all the areas of the district.

## GUNTUR DISTRICT

### Introductory

Guntur district lies between 15°-18' and 16°-50' of the northern latitude and 79°-10' and 80°-55' of the eastern longitude. The district was constituted on 1-10-1904 from the old Nellore and Krishna districts. It is bounded on the north by Nalgonda and Krishna districts, on the east by Krishna district and Bay of Bengal, on the south by Nellore district and on the west by Nellore, Kur-nool and Nalgonda districts. The shape of the district is roughly that of an umbrella spread out. The area of the district is 5,771 sq. miles consisting of 9 taluks and 927 inhabited villages and 25 towns. It has a population of 25.50 lakhs, out of which 20.48 lakhs is rural and 5.02 lakhs urban, the density of the population being 440 per sq. mile. There are 7 Municipalities, 51 class I and 888 class II Panchayats in the district. The headquarters of the district is the Guntur city (formerly known as Moortezanagar) with a population of 1,25,255. The land utilisation of the area in 1955-56 is as follows :—

	IN ACRES
Total Geographical area .. ..	36,93,743
1. Area of forests .. ..	4,68,862
2. Barren and uncultivable land .. ..	3,75,095
3. Land put to non-agricultural uses .. ..	43,020
4. Cultivable waste .. ..	1,10,029
5. Permanent pastures .. ..	94,737
6. Miscellaneous, trees, crops and groves .. ..	75,099
7. Current fallows .. ..	3,09,148
8. Other fallow lands .. ..	57,041
9. Net area sown .. ..	21,60,712
10. Area sown more than once .. ..	3,16,944

(2) The district may be divided into 2 regions *i.e.*, (i) The delta, (ii) the uplands. The taluks of Tenali, Repalle, a major portion of Bapatla taluk, a considerable area in Guntur taluk and a small portion of Ongole taluk form the deltaic portion of the district, while the taluks of Narsaraopet, Vinukonda, Palnad, Ongole, Sattenapalle and parts of Bapatla and Guntur are upland areas.

3. There are in the district 1,807 miles of roads consisting of 99 miles of National Highways, 108 miles of State Highways and 1,600 miles of District and Village roads. The recently completed

Regulator-cum-Bridge over the Krishna river is a landmark in the history of communications, connecting Guntur and Krishna districts on the Madras-Calcutta Trunk Road. There are 133 miles of broadgauge and 162 miles of metre-gauge of Southern Railway in the district. The Krishna, is the biggest river flowing on the border of the district and Gundlakamma, Naguleru, Chandravanka and Musi are the important minor rivers of the district. The climate is generally hot in summer, except in deltaic taluks. Rentachintala of Palnad taluk has the unenviable reputation of recording in summer the highest temperature in Andhra Pradesh. The world famous variety, of Ongole breed of bulls is from this district. Countries like Brazil and Canada purchase these bulls from the Ongole tract. The predominant occupation of the district is agriculture and about 69% of the population depend upon agriculture. Chirala is noted for its handloom cloth and Vetapalem for its export of cashewnut. Betel-vine is also grown in this district.

4. *Soils*.—Over 85% of the area of the district is fertile consisting mostly of black cotton soil. Red-ferruginous soils are found principally in the neighbourhood of Guntur-Guntakal Railway line and arenaceous or sandy soils near the Sea coast. A small extent along the banks of Krishna river is alluvial.

5. *Rainfall*.—For the purpose of rainfall the year may be divided into the following four seasons :

Season	Months	AVERAGE RAINFALL (IN INCHES)			
		1870- 1930	1931- 1949	Rainfall in	
				1950-55	1955-56
Winter period	.. Jan.-Feb.	0.61			0.1
Hot weather period	March- May	2.52			2.7
South-West monsoon	.. June-Spt.	17.89			16.9
North-East monsoon	.. Oct.-Dec.	9.63			14.0
		30.65	34.2	28.82	33.7

The normal rainfall of the district is 32.4 inches.

6. *Irrigation*.—The Krishna anicut system irrigates Tenali and Repalle taluks, major portions of Bapatla and Guntur taluks and one village of Ongole taluk. The canal taking off from the

Krishna anicut at Vijayawada (Sithanagaram) and its branches form the main source of irrigation for the delta areas. The irrigation is carried out by four large branches of the main canal from the river Krishna and those are (1) The Main canal, (2) The Commamur canal, (3) The Nizampatnam canal and (4) The Bank canal. There are five major drains in this district frequently causing loss to paddy crop when they overflow.

7. The area irrigated by the Government canals is 4,49,335 acres (1955-56). Irrigation in non-deltaic areas or upland taluks is under rainfed tanks and a few tanks fed by minor streams and rivers. Irrigation is also carried on solely by wells or wells supplementing the other irrigation sources. There are also 2,229 spring channels in Bapatla and Ongole taluks and excavated in the sand ridge which runs parallel to the coast. These springs are called "Sonalu" and the supply in these channels is generally copious. The sand ridge runs parallel to the sea, a few miles from it, from Bapatla to Chinaganjam. There is a valley through which Kunderu drain flows. The extent irrigated under tanks is 45,166 acres and under wells and springs is 10,600 acres (1956). The total net area irrigated both in deltaic and non-deltaic area is 5,13,955 acres (1955-56). The Prakasam barrage brings in an additional ayacut of 54,000 acres of Krishna delta under irrigation in Guntur district. The Nagarjunasagar Project will bring 32 lakhs of acres under irrigation, out of which a major portion lies in Guntur district.

8. The sources of water supply and the area irrigated therefrom in the district during 1955-56 are given below :—

Sources of water supply	Number	Area irrigated (acres)
(1)	(2)	(3)
1. Government canals .. ..	14	4,49,335
2. Tanks :		
(i) With ayacuts of 100 acres or more .. 106	}	45,166
(ii) With ayacuts of less than 100 acres 179		
3. Wells :		
(i) Masonary (Government) .. .. 59	}	10,600
(ii) Masonary (Private) .. .. 2,954		
4. Other sources :		
Spring channels, etc... ..		8,854
		5,13,955
Area irrigated more than once (second crop)		13,594
<i>Gross</i> total area irrigated .. ..		5,27,549



9. *Cultivation.*—Paddy is the chief crop. Cholan and Cumbu are extensively grown, while Ragi, Korra and Maize are grown on limited extents. Chillies, Groundnut and Tobacco are the chief commercial crops. Turmeric is a very important commercial crop in Tenali taluk. Casuarina plantations and Cashew-nut trees are extensively grown along the coast, in Ongole, Bapatla and Repalle taluks. Virginia Tobacco, Turmeric, Cashewnut and chillies of the district find markets in foreign countries like England, China, America and Russia.

10. The particulars of total area sown at different periods is as follows :—

	In or about 1874 Original settlement	In or about 1905 Resettle- ment (approximate).	In 1956
	Acres	Acres	Acres
Guntur portion ..	14,12,469	15,51,393	24,77,656
Ongole portion ..	1,82,487	2,02,658	
	15,94,956	17,54,051	
Area cropped more than once (1956)		..	3,16,944
Net area sown (1956)		..	21,60,712

11. The crop calendar showing the sowing, harvesting and peak marketing seasons of some of the important crops of the district is given below :—

Name of the crop	Sowing season	Harvesting season	Peak-marketing
Paddy	.. June-Sept. Jan.-February	Dec.-February April-May	March-June June
Jawar	.. July August	December January	February June
Maize	.. July August	Oct.-Nov. Jan.-March	January April-May
Korra	.. July-Sept.	Octo.-Dec.	January
Chillies	.. September	March	April-June
Groundnut	.. July-August	Oct.-Nov.	Dec.-January
Turmeric	.. June-July	Feb.-Nov.	April-June
Bajra	.. July-August	Oct.-Nov.	Jan.-March
Ragi	.. Sept.-Oct. December	January March-April	.. Feb.-March
Tobacco	.. October	February	April-June

12. *Cost of cultivation.*—The cultivation expenses allowed for important food crops at different periods is given below :

Source and year	White paddy		Black paddy		Cholam	Cumbu	Variga
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Original settlement 1873-74	11 15	2*	..	4 10	8**	..	..
Guntur portion	to	..	..	to	..	..	..
	12 10	0	..	5 8	8	..	..
Ongole ..	9 3	2	..	1 8	0	1 4	0 2 0 0
	to	..	..	to	..	to	to
	10 8	0	..	2 15	0	2 5	0 5 6 0
Resettlement papers (1905)							
Delta ..	5 0	0*	3 0	0 0**			
	to	..	to	..			
	14 0	0	8 8	0			
Uplands ..	11 15	1*	4 10	9**			
	to	..	to	..	..	..	..
	12 12	5	5 6	2			
Vinukonda ..	10 8	0	..	..	..	4 4	0 ..
	to	..	..	..	..	to	..
	20 0	0	..	..	..	7 0	0 ..
Ongole ..	9 3	2	..	1 7	11	1 3	8 2 4 11
	to	..	..	to	..	to	to
	10 8	3	..	2 14	7	2 4	10 9.10 3
Collector-1958							
Delta ..	150	..	..	..	..	..	..
Upland ..	100	..	..	65	65	..	..
Vinukonda ..	245	..	..	107	107	..	..

\*Wet grains.

\*\*Dry grains.

### Prices

The average prices of a few important crops at different periods are as follows:—

PER GARCE OF 3,200 M.Ms.				
	Original settlement 1873-74	Resettle- ment 1905	1947-48 10 years' average	1957-58 10 years' average
	Rs.	Rs.	Rs.	Rs.
<i>White paddy :</i>				
Delta	..	122	} 456	1,074
Upland	100	146		
Vinukonda	..	140		
Ongole	107	143		
<i>Cholam :</i>				
Delta	..	199	} 742	1,165
Upland	112	184		
Vinukonda	..	161		
Ongole	129	..		
<i>Cumbu :</i>				
Vinukonda	..	173	} 799	1,248
Ongole	107	167		
<i>Variga :</i>				
Ongole	..	107	..	..
Vinukonda	..	86	..	..

14. *Yields.*—The gross outturn of several crops is furnished below:

Source	White Paddy M.Ms.	Cholam M.Ms.	Cumbu M.Ms.	Variga M.Ms.	Black paddy M.Ms.
<i>Original settlement :</i>					
Krishna-Guntur portion	800-1200	240-560	..	..	
Ongole	..	70-380	60-375	100-575	
<i>Resettlement papers :</i>					
Delta ..	350-1150	90-450	..	..	100-500
Vinukonda	550-1100	..	120-300	..	..
Ongole ..	500-800	70-325	60-325	140-500	
Uplands ..	800-1200	220-560	..	220-560	
Bureau of Statistics (1956)	892	245	114	..	
Collector (1958)	1,024	320	192	..	
Officials ..	1,000	327	..	400	
Non-officials	1,094	237	..	359	

15. *Seasonal Conditions*.—Between November, 1790 and November 1792, there was a serious dearth of foodgrains in this district and numerous deaths occurred due to starvation. In the year 1823-24, the district again suffered severely and public employment was provided for the relief of the distressed. In 1832-34 the famine known as the "Guntur Famine" occurred. It lasted for 20 months and was extremely severe. This was due to insufficient rainfall during the south-west monsoon and almost a total failure of the north-east monsoon. Although the famine disappeared in 1834, its effect continued for some decades afterwards. Even though there was a considerable flow in the river Krishna all through the famine period, it could not be utilised as the present anicut was built only in 1855. Since the construction of the Krishna anicut, the district has been practically immune from famine. The famine of 1876-78 was not severe. The people suffered more from high prices than from actual scarcity. Some distress was felt in faslis 1301, 1307 and 1309. Fasli 1309 was a very bad year and the district especially the uplands, had a narrow escape from scarcity. The decade ending fasli 1340 recorded no actual famine, but in fasli 1336, distress was felt in a few villages of Ongole taluk. There were no famines during the decenniums ending faslis 1350 and 1360. Some distress was, however, felt during the faslis 1361 to 1366 in the upland taluks due to the failure of monsoon.

16. *Holdings*.—The number of land holdings in the district is 5,04,288 and the area owned is 23,78,036 acres. Details of holdings classified according to the assessment payable are given in the following statement.

Holdings assessed	Total
	Rs.
Re. 1 and less ..	63,080
Rs. 10 and less but over      Rs. 1	2,80,950
Rs. 30      "      "      " 10	1,13,135
Rs. 50      "      "      " 30	30,351
Rs. 100      "      "      " 50	13,162
Rs. 250      "      "      " 100	3,054
Rs. 500      "      "      " 250	392
Rs. 1,000      "      "      " 500	109
Over Rs. 1,000      ..	55
Grand total ..	5,04,288

17. *Features of original settlement.*—The original settlement of the Guntur or western portion of the Krishna district comprising the taluks of Tenali, Bapatla, Guntur, Narasaraopet, Vinukonda, Sattenapalli and Palnad was carried out in 1873-74 under the scheme drawn up by Mr. Wilson. Repalle taluk was then included in the Tenali taluk and the Tenali taluk was split up into two taluks, Tenali and Repalle on the 1st July 1910 under Sir W. Mayer's scheme. Ongole taluk was in the Nellore district and it was settled under the scheme drawn up by Mr. Rundall. From 1-10-1904, Ongole taluk was transferred to the Guntur district.

*Taluks other than Ongole.*—The Repalle and Bapatla taluks formed the deltaic area while the other taluks formed the non-deltaic tract. The lands irrigated from the Krishna western delta system in the two deltaic taluks were all registered as dry and water cess charged. Only the lands under the pre-anicut tanks and 'Sonas' *i.e.*, springs in the sand ridges were registered as wet. All lands under regular and continuous irrigation in the non-deltaic tract were also registered as wet. The soils in the tract were placed in the alluvial class. (1) Permanently improved (lands having such exceptional features as proximity to village-site, advantages of situation, etc., and the existence of a private well). (2) Regar (*iii*, *iv* and *v*) red ferruginous (*vi*, *vii* and *viii*) and arenaceous (*xii*, *xiii* and *xiv*) series. There were only two sorts under soils classified as permanently improved, red ferruginous and arenaceous and three sorts under the rest. A special extra sort was fixed under regar clay (*iii*) for the specially good soils in the II-group villages. Ninety per cent of the soils in the tract were placed in the regar series, 5% in the arenaceous, 2% in red, 2% in alluvial and 1% in the permanently improved series. The villages were grouped with reference to the fertility of the soils. The loamy tract in the delta, and the alluvial villages which were placed in the first group, the bulk of the villages forming the regar tract were placed in the second and the rest consisting of the sandy coastal villages as well as the poorest of the villages in the uplands were placed in the III group. The irrigation sources were not classified but the villages were assigned a wet group for purposes of the levy of wet assessment. White paddy was taken as the standard crop for wet lands, while for the dry lands cholam and variga, in equal proportions, were adopted as the standard crops. The commutation rates were fixed with reference to the prices, that prevailed during a period of 58 years prior to the Settlement. The rates thus fixed were Rs. 100 per garce for paddy and Rs. 99 for the dry grains. (Rs. 112 for cholam and Rs. 86 for variga). A deduction of 15% was allowed for cartage and merchants' profits. The allowance for vicissitudes of season and unprofitable areas, was 1/6th for the villages placed in the first group and 1/4th in the case of the villages placed in the second and third groups. For wet lands, the allowance

for vicissitudes of season was made as for the lands in the villages in the last two groups. Cultivation expenses ranging from Rs. 5-8-8 to Rs. 4-10-8, were allowed in the case of dry lands and from Rs. 12-10-0 to Rs. 11-15-2 in the case of wet lands. The resulting rates of assessment ranged from Rs. 7-8-0 to Rs. 1-12-0 in the case of wet and from Rs. 4-8-0 to annas 0-4-0 in the case of dry lands.

18. *Ongole Taluk*.—The soils were placed in the permanently improved, regar, red ferruginous and arenaceous series. Two sorts were alone recognised under the permanently improved and arenaceous series, while three sorts were recognised under this series and an extra sort 2-E was also fixed in order to assess adequately the lands which are decidedly superior to those under III-2 but not so good as to deserve III-1. The villages were divided into three groups for purposes of dry assessment with reference to the general level of fertility and the natural advantages enjoyed by them. The irrigation sources were graded according to their capacity and were placed in the II, III and IV classes. White paddy was taken as the standard crop for wet lands and early Cholan, Variga, Cumbu for dry lands. A deduction of 10% was made for merchants' profits, but none was allowed for cartage. For vicissitudes of season and unprofitable areas, a deduction of 1/6th was made in respect of dry lands. For wet lands deductions of 10, 13½ and 20 per cent were made for II, III and IV class sources respectively. The commutation rates were fixed with reference to the rates prevailing during the 20 years ending with fasli 1274 and worked out as shown below :—

	Price per garce.
Paddy ..	.. Rs. 107
Early Cholan ..	.. Rs. 129
Variga ..	.. Rs. 107
Cumbu ..	.. Rs. 107

19. The outturns of the different crops were very carefully fixed with reference to crop experiments conducted over a series of years. The cultivation expenses ranged from Rs. 10-8-0 to Rs. 9-3-2 for paddy, Rs. 5-4-0 to Rs. 2 for Variga, Rs. 2-15-0 to Rs. 1-8-0 for cholam and Rs. 2-5-0 to Rs. 1-4-0 for Cumbu. The rates of assessment ranged from Rs. 5 to annas 0-4-0 in respect of dry lands and Rs. 10 to 2-8-0 in respect of wet lands.

20. *Features of First Resettlement*.—The period of 30 years for which the original settlement was introduced in the Guntur portion of the Krishna district having expired in 1902-03, the resettlement was introduced from 1904-05. In carrying out the resettlement, it was found necessary to alter the existing frame-work of the settlement in the case of the deltaic tracts and the Vinukonda taluk, while in respect of the other upland taluks, the old frame-work was retained with, but slight adjustments.

21. *The Delta.*—It was decided to discontinue the practice of treating lands irrigated under the Krishna western delta system as dry and charging only water cess. As in the case of the Krishna district, all lands from which it was payable to exclude Government water and which had been under wet cultivation for five years previously, were ordered to be registered as wet and assessed at the appropriate wet rates.

22. The following further changes were introduced.

23. The lands were reclassified and placed in the alluvial, the regar and the arenaceous series. Five sorts were recognised except under the alluvial and the regar varieties. Under the former, a special sort I-A was also introduced for the very rich lands, while under arenaceous variety only three sorts were fixed. 53% of the soils fall under the alluvial, 22% under regar and 25% in the arenaceous series. Dry lands were placed in two groups, the lower groups comprising the villages on the sea-board not so favourably situated in respect of communications, etc., and those villages in which the dry lands had deteriorated from the saline efflorescence due to the surrounding irrigation. The irrigation sources were classified and placed in four classes to meet cases of defective drainage and deficient water supply. White paddy was taken as the standard crops for wet lands. For dry lands black paddy and cholam were taken in equal proportions as the standard crop instead of cholam and varaga adopted at the original settlement. In the case of white paddy, the average yield of the various soils was determined with reference to the average outturns adopted at the resettlement of Godavaris and Krishna districts while in the case of the dry grains the yield was deducted from the outturn adopted at the last settlement. A deduction of 10% in the case of wet, and 20% in the case of dry lands was made for vicissitudes of season and unprofitable areas. A further deduction of 15% was made for cartage and merchants' profits. Cultivation expenses were determined by numerous local enquiries. They ranged from Rs. 14 to Rs. 5 in the case of wet and Rs. 8-8-0 to Rs. 3 in the case of dry lands. The commutation rates were based upon the prices for 20 years ending with F. 1312. The price of black paddy which was not recorded was taken to be 19% less than that of white paddy. The commutation rate fixed was Rs. 122 for white paddy, Rs. 100 for black paddy, and Rs. 199 for cholam. The resulting rates of assessment ranged from Rs. 12-8-0 to Rs. 2 for wet and Rs. 6 to Re. 0-4-0 for dry lands.

24. *Vinukonda taluk.*—The soils which were reclassified were placed in the regar and red-ferruginous series, with five sorts under each. Dry lands were placed in two groups, the second group comprising those villages, less favourably situated in respect

of communications and markets. Irrigation sources were graded in four classes according to their capacity. White paddy was taken as the standard crop for wet lands and cumbu for dry. For the former, the outturns were based on those fixed at the old settlement and for the latter on the experiments made in the adjoining districts. Deductions of 15% for cartage and merchants' profits and of 25% for vicissitudes of season were allowed. Cultivation expenses varying from Rs. 20 to Rs. 10-8-0 for wet lands, and from Rs. 7 to Rs. 4-4-0 for dry lands were also deducted. The commutation rates worked out on the basis of prices for 20 years ending fasli 1312 was Rs. 140 for White paddy and Rs. 173 for cumbu. The rates of assessment ranged from Rs. 8 to Rs. 2 for wet lands and from Rs. 2-8-0 to Rs. 4 in the case of dry lands.

25. *Uplands (Except Ongole taluk).*—The existing frame work of the settlement was not interfered with and except for the reclassification of a few irrigation sources, the resettlement took the form of a percentage enhancement of the old rates. The prices of the standard grains had increased by 25% in the case of Narasaraopet, Guntur, Bapatla and Tenali taluks and by 20% in Palnad and Sattenapalli taluks. The resulting rates of assessment ranged from Rs. 9-6-0 to Rs. 2-4-0 for wet lands and Rs. 5-10-0 to Re. 0-5-0 for dry lands. The lands classed as 'permanently improved' at the old settlement were inspected and an approximate classification was assigned in each case. Lands which were treated as permanently improved, owing to such exceptional causes as proximity to village site, advantages of situation, etc., and not on account of the existence of a private well, were retained under the head permanently improved; while lands which were classed as permanently improved, owing to the existence of a private well, were transferred to the ordinary series.

26. *Ongole taluk.*—The resettlement did not effect any drastic change in the existing settlement except for increasing the allowance of 10% made at the original settlement for merchants' profits to 15% to include cost of cartage. Reclassification of irrigation sources was done to a certain extent. The prices of standard crops showed increases ranging from 25 to 56%. The rates were raised by 18-3/4% in respect of wet and dry lands except in the case of dry lands lying between the Buckingham canal and the sea, which were exempted from enhancement. The resulting rates of assessment ranged from Rs. 4-12-0 to Re. 0-4-0, in the case of dry lands and from Rs. 8-5-0 to Rs. 2-15-0 in the case of wet lands



27. A comparative table of the money rates of the Original and Resettlements is given below :—

## DELTA

Wet		Dry		Lankas and Padugais.	
Original Settlement	Resettle-ment	Original Settlement	Resettle-ment	Original Settlement	Resettle-ment.
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		Rs. a. p.
9 8 0	12 8 0	4 8 0	6 0 0	..	10 0 0
	10 8 0		4 8 0	..	8 0 0
to	9 0 0	to	3 8 0	..	6 0 0
	8 0 0		2 8 0	..	4 8 0
4 8 0	7 0 0	0 4 0	2 0 0	..	3 8 0
	6 0 0		1 8 0	..	2 8 0
	5 0 0		1 4 0	..	2 0 0
	4 0 0		1 0 0	..	1 8 0
	3 8 0		0 12 0	..	1 4 0
	3 0 0		0 8 0	..	..
	2 8 0		0 4 0	..	..
	2 0 0		..	..	..

## UPLAND

Palnad and Sattenapalli				Guntur, Narasraopet, Bapatla, Tenali.	
Wet		Dry		Wet	
Original Settlement	Resettle-ment	Original Settlement	Resettle-ment	Original Settlement	Resettle-ment
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
7 8 0	9 0 0	4 8 0	5 6 0	7 8 0	9 6 0
6 8 0	7 12 0	3 8 0	4 4 0	6 8 0	8 0 0
6 0 0	7 4 0	3 0 0	3 10 0	6 0 0	7 8 0
5 8 0	6 8 0	2 8 0	3 0 0	5 8 0	6 4 0
5 0 0	6 0 0	1 8 0	2 6 0	5 0 0	5 10 0
4 8 0	5 6 0	1 4 0	2 2 0	4 8 0	5 0 0
3 8 0	4 4 0	1 0 0	1 12 0	3 8 0	4 6 0
3 0 0	3 10 0	0 12 0	1 8 0	3 0 0	3 12 0
2 8 0	3 0 0	0 8 0	1 2 0	2 8 0	3 2 0
1 12 0	2 0 0	0 4 0	0 14 0	1 12 0	2 4 0
..	..	..	0 9 0	..	..
..	..	..	0 5 0	..	..

Guntur, Narasaraopet, Bapatla, Tenali Dry			Vinukonda Wet			Vinukonda Dry		
Original Settlement		Resettle- ment	Original Settlement		Resettle- ment	Original Settlement		Resettle- ment.
Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
4	8	0	5	10	0	8	0	0
3	8	0	4	6	0	7	0	0
3	0	0	3	12	0	6	0	0
2	8	0	3	2	0	5	8	0
2	0	0	2	8	0	5	0	0
1	12	0	2	4	0	4	0	0
1	8	0	1	14	0	3	8	0
1	4	0	1	10	0	3	0	0
1	0	0	1	4	0	2	8	0
0	12	0	1	0	0	2	0	0
0	8	0	0	10	0	..	..	..
0	4	0	0	5	0	..	..	..

28. *Features of II Resettlement.*—The Second Resettlement was undertaken in this district about the year 1935. The percentage enhancement of the rates of assessment proposed on a consideration of prices were not given effect to. Changes regarding reclassification of soils and irrigation sources in certain cases, transfer of lands from dry to wet, revision of grouping, etc., were given effect to. In classifying or reclassifying soils, the system of classification adopted at the last resettlement was followed with the modification, that in classifying permanently improved lands in the ordinary series, special sorts such as 3-1A, 4-1A as the case may be were introduced when it was found that the lands could not be adequately assessed with the ordinary soil classification and table of rates.

29. *The Estates Abolished.*—The addition of the Ongole taluk of the Nellore district to the Guntur district on 1-10-1904 has brought with it 58 villages of the Venkatagiri estate, which is the only Zamindari in the district. These estate villages have been taken over by the Government. They have been surveyed, settled and converted into ryotwari on the same principles enunciated in the latest resettlement notification in force. The settlement rates have been introduced in these villages of the district on 1-7-1958.

## KRISHNA DISTRICT

## Introductory

Krishna district takes its name from the great river Krishna, which forms its western and southern boundary. The district is bounded on the north by the Nalgonda, Khammam and West Godavari districts on the east by the Bay of Bengal and on the west, by the Krishna River. The old Krishna district was bifurcated into Krishna, and West Godavari districts in 1925. The present Krishna district consists of 10 taluks, viz., (1) Bandar, (2) Divi, (3) Gudivada, (4) Kaikalur, (5) Vijayawada, (6) Gannavaram, (7) Nandigama, (8) Tiruvur, (9) Nuzvid and (10) Jaggayyapet, with four revenue divisions of Vijayawada, Nuzvid, Gudivada and Bandar. The district is between  $15^{\circ} 43'$  and  $17^{\circ} 10'$  of the northern latitude and  $80^{\circ}$  and  $81^{\circ} 33'$  of the eastern longitude. It has an area of 3,496 sq. miles with a population of 17,79,484 (the density of population being 509 per sq. mile). The headquarters of the district is Chilakalapudi (Masulipatam). The details of the land utilisation in the district are as follows :--

	<i>Acres</i>
1. Geographical area (by village papers)	.. 22,36,805
2. Forests .. .. .	.. 2,24,576
3. Barren and uncultivable land .. .. .	.. 3,19,620
4. Land put to non-agricultural uses .. .. .	.. 87,272
5. Cultivable waste .. .. .	.. 63,755
6. Permanent pastures .. .. .	.. 47,355
7. Miscellaneous trees, crops and groves not included in net area sown .. .. .	.. 60,571
8. Current fallows .. .. .	.. 1,01,263
9. Fallow land other than current fallows .. .. .	.. 23,812
10. Net area sown .. .. .	.. 13,08,581
11. Area sown more than once .. .. .	.. 2,49,396

2. The district may be divided into two distinct zones viz., delta and upland. The dividing line runs from Vijayawada along the Eluru canal. The taluks of Bandar, Divi, Gudivada, Kaikalur, Gannavaram and a small portion of Vijayawada taluk form the delta area and the taluks of Nandigama, Jaggayyapeta, Tiruvur, Nuzvid and the rest of Vijayawada taluk form the upland area.

3. The Collair lake, is an extensive depression of about 150 sq. miles in extent, lying in the northern part of Kaikalur taluk and into it flows all the drainage of the surrounding country. From August to December, the water spread extends to about 250 sq. miles. The lake never dries up. In summer after the level goes down large tracts of area exposed are cultivated with paddy by pumping water from the drains.

4. In the delta area, the staple crop is white paddy. Sugar-cane is an important commercial crop grown on a considerable area in Gannavaram, Gudivada and Divi taluks.

5. In the upland area, paddy, groundnut, tobacco and chillies are the important crops. Paddy is raised mostly under tanks depending on the monsoon.

6. In the district there is about 55 miles of broad gauge and 77 miles of metre gauge railway. There are 1,650 miles of roads, comprising 94 miles of National Highways, 78 miles of State Highways, 314 miles of major district roads and 1,164 miles of district and village roads. The total mileage of navigable canals in the district is 369½ miles.

7. *Soils*.—The soils, in the delta, are classified into three series alluvial, black-regar, and arenaceous. A major portion of the delta is alluvial. In the uplands, the soils are classified as permanently improved (due to the proximity to the village site, advantages of situation, and the existence of a private well), regar and red ferruginous. The south-west portion of the Gudivada taluk, the deltaic portion of Vijayawada taluk and the portion of the Divi taluk adjoining the Krishna river have alluvial soils. The rest of the tract is arenaceous. In the uplands, regar is extensive in the non-deltaic portion of Vijayawada taluk and in the Nandigama and Jaggayyapet taluks. Red ferruginous and all the three soils exist largely, in the other upland taluks.

8. *Rainfall*.—For the purpose of rainfall, the year may be divided into the following four seasons. The average rainfall that occurred during the seasons, is shown against them.

Season	Months	Average rainfall ( <i>in inches</i> )		
		From 1894 to 1924	1955-56	1956-57
1. Winter period	January & February	0.67	..	..
2. Hot weather period	March to May	2.74	4.2	..
3. South-West Monsoon	June to September	25.38	25.9	..
4. North-East Monsoon	October to December	8.63	15.0	..
Total ..		37.42	45.1	53.79
Average rainy days ..		50		
The normal rainfall is ..		37.00 inches.		

9. *Irrigation*.—Prior to 1840, the Krishna district like the Godavari was frequently a victim of bad famines. In 1832-33 a terrible famine ravaged the district and the continuous famine of 1840-41 followed after some more bad years. The recurring famines, the decreasing population and the dwindling revenue spurred the Government to action and Sir Arthur Cotton who constructed the Godavari anicut constructed an anicut across the Krishna river in 1855 at Vijayawada, with two canals supplying the two sections of the delta, on either bank of the river. The river Krishna is the main source of irrigation in the district. It rises in the western ghats near Mahabaleswar in Bombay State and runs southwards. It traverses 475 miles before falling into the sea. At Vijayawada, 47 miles from the mouth of the river Krishna, the anicut was constructed across the river in a gorge of 1300 yards in width in a low range of gneissic hills and its waters are turned out into a net work of irrigation canals, which spread throughout the delta. The eastern delta has an area of about 1160 square miles and stretches as far north as Collair lake. The western delta is about 950 square miles and extends to the south as far as Peddaganjam in Guntur district. The Krishna-Eluru canal in the eastern delta connects the Godavari-Eluru canal in the north and the Commamur canal of the western delta joins the Buckingham canal in the south. The Divi island was irrigated with water pumped from the river by diesel engine driven pumps. Pumping from the river was the practice till 1935 when the "Campbell Aqueduct" was constructed at Puligedda to carry the Krishna East Bank canal across the river to Divi. The canal now irrigates by direct flow the entire ayacut in the Divi island. The "Campbell Aqueduct", at Puligedda, is the longest reinforced concrete bridge in India and carries a road way 16 feet wide and a foot path 4 feet wide.

10. The Muniyeru, a tributary of the Krishna above the Vijayawada anicut which passes through the Nandigama taluk from north to south as an anicut at Polampalli and irrigates large extents in Nandigama and Jaggayyapeta taluks. Budameru, Tammileru and Patamata Pumping Scheme are some other sources of irrigation. In the uplands, irrigation is carried out by tanks and wells. In the villages bordering the sea, water is stored in pits and used for irrigation. The Collair lake and its outlet the Upputeru, also serve as sources of irrigation. The irrigation potentialities of the district have increased with the completion of the Prakasam Barrage at Vijayawada. This barrage is chiefly intended to replace the existing anicut which suffered damage during the floods of 1952 and also to assure supply for irrigation. Incidentally, this will also help to bring in an additional ayacut of 4,600 acres in the delta area of the district. In this district the drainage facilities are not adequate. The rivulets Budameru, Tammileru, Ramileru and Gunderu, collect drainage and flow into Collair lake. The other

important drains are Yerrakalva, Ayanampudi drain, Sivaganga drain, Lazzabanda drain, Chandrayya and Kamoravolu drains. These drains need improvements and repairs. Large extents of fields are submerged every year for want of proper drainage facilities. The details of the extent of land damaged by inadequate drainage and the remission granted during the last 10 years in the district are furnished below :

Fasli	Extent in acres	Amount of remission in rupees
1356	4,985	29,737
1357	15,639	1,04,837
1358	2,535	9,708
1359	21,199	1,11,165
1360	Not available	
1361	7,048	30,798
1362	1,564	9,894
1363	632	3,623
1364	6,879	36,012
1365	12,117	69,117
1366	18,422	1,66,176

11. The details of the area irrigated in the district are as follows :—

Sources of water supply	Number of sources	Area irrigated during 1955-56
		<i>Acs.</i>
1. Government canals	11	6,38,991
2. Tanks ..	559	1,17,784
3. Wells ..	1,369	5,152
4. Other sources ..		4,940
5. Total net area irrigated		7,66,867
6. Area irrigated more than once in the same year.		68,299
7. Total gross area of crops irrigated		8,35,166

12. *Cultivation.*—(a) *Delta area.*—The local rainfall has less influence on the paddy harvests of the delta than the rains in the

catchment of the river Krishna. The Krishna freshes arrive as a rule in June before "Yeruvaka Pournami" and the river is in full floods during July and August. If the floods come in before 'Pournami', the prospects of paddy crop in the delta will be bright. Wet paddy is the staple food crop. Sugarcane is an important commercial crop grown in a considerable area around Vuyyur Sugar Factory. The fertile area in Vijayawada, Gannavaram and Divi taluks yield excellent crops of sugarcane.

(b) *Upland area*.—Paddy, Groundnut, Tobacco and Chillies are the staple crops. Paddy is raised mostly under tanks which depend on the monsoon. Irrigation is also done under wells.

13. The particulars of the total area sown both in delta and upland areas at different periods, are as follows :—

Year	Total area sown	Area cropped more than once	Net area sown
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
1912-13	21,33,281	2,92,816	18,40,465
1930-31	12,28,623	1,27,793	11,00,830
1954-55	15,72,284	2,53,336	13,18,948
1955-56	15,57,977	2,49,396	13,08,581

14. The crop calendar showing the sowing, harvesting and peak marketing seasons of some of the important crops of the district, is given below :—

Name of the crop	Sowing	Harvesting	Peak Marketing
1. Paddy	June-August	November-December.	January-June
2. Cholan	September-October	January-February.	March-June
3. Sajja	July	September-October	January-March.
4. Sugarcane	March-April	February-April.	April-June
5. Onions	July-October	December-March-May	January-June
6. Chillies	September	March	April-June
7. Tobacco	October	February	April-June
8. Redgram	July-August	January-February	March-April
9. Groundnut	July-August	October-November	December-1 January.

15. *Cost of Cultivation.*—The cost of cultivation worked out during the settlement and resettlement are as follows :

	<i>Cost of cultivation per acre for</i>			
	Wet crops		Dry crops	
	From	To	From	To
	Rs.	Rs.	Rs.	Rs.
Original Settlement	14 0 0	6 8 0	8 0 0	2 10 0
Resettlement :—				
I. Alluvial	13 0 0	8 0 0	7 8 0	4 14 0
II. Permanently improved	13 0 0	9 4 0	7 0 0	4 4 0
Black regar :—				
III. Clay	10 8 0	7 0 0	6 4 0	3 10 0
IV. Loam	12 0 0	7 8 0	5 8 0	3 4 0
V. Sand	9 4 0	6 8 0	4 4 0	2 10 0
Red :—				
VII. Loam	..	..	4 14 0	2 14 0
Arenaceous :—				
XII Loam	9 4 0	7 8 0	4 4 0	3 4 0
XIII Sand	8 0 0	7 0 0	3 10 0	2 14 0
XIV. Heavy sand	7 8 0	6 8 0	3 4 0	2 10 0
Second Resettlement	1927	Not considered.		

16. The Collector of Krishna district and the Director of Agriculture, have given the cost of cultivation as noted below :—

Name of the crop (1)	Cost of cultivation per acre of crop raised in	
	Delta area. (2)	Uplands (3)
	Rs.	Rs.
<i>Collector:</i>		
1. Paddy	120	105
2. Sugarcane	975	
3. Groundnut	115	90



(1)	(2)	(3)
	Rs.	Rs.
4. Tobacco (Virginia)		305
5. Cholam		135
6. Chillies		240
<i>N.E.S. Seed Farm, Tiruvur</i>		
Paddy	182.80	
Cholam	35.00	

17. *Prices.*—The average prices of the important crops at different periods are as follows :

Grains	<i>Price per garce of 3,200 Madras Measures.</i>				
	During the original settlement in 1864	During the I Resettle-ment in 1899	During the II Resettle-ment in 1931	During the de-cennium ending 1945-46	During the dece-nnium ending 1955-56
(1)	(2)	(3)	(4)	(5)	(6)
<i>Delta :</i>	Rs.	Rs.	Rs.	Rs.	Rs.
White Paddy	..	118	241	347	798
Black Paddy	..	96	192	..	..
Cholam ..	..	170	371	590	985
<i>Uplands :</i>					
White Paddy	90	145	235	372	870
Cholam ..	95	216	328	594	1,009
Cumbu ..	70	173	286	509	1,061
Ragi .. .	..	..	..	487	1,098

18. *The Yields.*—The gross outturn of several crops are as follows :—

	<i>Gross outturn per acre in Madras measures of</i>			
	Paddy	Cholam	Sajja	Ragi
Original; Settlement reports (1864) ..	1,150	520	280	..
	to	to	to	
	240	100	80	
Resettlement (N. A.)	..	..	..	..
Bureau of Statistics. 1955-56	700	91	154	231
Officials	1,003	251	..	..
Non-officials .. .. .	989	..	..	..

19. *Seasonal Conditions.*—The district suffered from famines during the periods of November 1790 to November 1792, 1823-24 and 1832 to 1834. The seasonal conditions were adverse during 1876 to 1878, 1891, 1897 and 1899. The upland taluks of the district again suffered from famine during 1918-19. The district as it is now constituted may be regarded as famine proof, although some distress may be caused in the upland portions by the failure of monsoons.

20. *Holdings.*—The number of land holdings in the district is 2,40,404 and the area covered by them is 11,51,813 acres. Details of holdings classified according to the assessment payable are furnished in the statement below :—

Holdings assessed to	NUMBER			Extent in acres	Assessment in rupees
	Single	Joint	Total		
(1)	(2)	(3)	(4)	(5)	(6)
Re. 1 and less ..	19,100	10,899	29,999	27,477	28,424
Rs. 10 and less but over Re. 1.	75,333	44,527	1,19,860	3,34,940	7,06,752
Rs. 30 and less but over Rs. 10.	32,041	26,344	58,385	2,98,434	9,92,853
Rs. 50 „ 30 ..	9,746	8,682	18,428	1,87,151	6,56,252
Rs. 100 „ 50 ..	5,529	4,992	10,521	1,45,006	6,50,277
Rs. 250 „ 100 ..	1,555	1,154	2,709	98,735	4,06,781
Rs. 500 „ 250 ..	232	173	405	38,679	1,41,522
Rs. 1,000 „ 500 ..	39	45	84	16,338	69,683
Over Rs. 1,000 ..	9	4	13	5,053	19,840
Total ..	1,43,584	96,820	2,40,404	11,51,813	36,70,384

## Features of the Original Settlement 1864

(MR. F. W. MORRIS)

21. The district was divided into two distinct zones of delta and upland. The taluks and villages covered by irrigation from the Krishna river is called "Delta" and the rest of the tract is called "Upland". In the upland taluks consolidated wet rates were imposed on lands irrigated by rainfed tanks and other sources but in the case of irrigated dry lands of the delta, the assessment, instead of being consolidated, was made up of a uniform water rate and a land assessment, the latter being calculated with reference to the outturns of dry grains and all the lands in the delta were classified as dry in the accounts. There were, however, two exceptions to the uniform water rate in respect of lands in the Divi island and those in the Collair lake. The soils were classified as noted below.

<i>Tract</i>	<i>Classification</i>
1. Delta ..	(1) Alluvial, (2) Permanently improved, (3) Regar and (4) Arenaceous.
2. Upland ..	(1) Alluvial, (2) Permanently improved, (3) Rega and (4) Ferruginous.

These classifications were further subdivided into sorts. Each class in the alluvial and regar series had three sorts and other soils including the permanently improved lands had only two sorts.

22. Dry grouping of villages was made entirely with reference to differences in the fertility of the soils and not with reference to proximity to markets and facilities of communication, etc. Three groups were adopted for delta and only one group was adopted for the upland. No gradations or groups were adopted under wet in delta. In the upland tract all irrigation sources were placed in the third class and no attempt was made to class each tank or other source separately.

23. Under dry, black paddy, cholam and cumbu were taken as the standard crops. For wet lands in the upland tract, white paddy was adopted as the standard crop. In arriving at the outturns, no distinction was made between delta and upland tracts.

24. An allowance of one-sixth or  $16\frac{2}{3}\%$  of the gross produce in the first and second group villages, was made for deductions for vicissitudes of season and unprofitable areas.

25. The dry rates for the villages of the first and second group villages were fixed at Rs. 3-8-0 to Re. 0-6-0 per acre and for the third group villages, they were fixed at Rs. 3-0-0 to Re. 0-4-0. The

consolidated wet rates for the upland tract, were fixed from Rs. 6-0-0 to 2-8-0.

26. In the delta, a uniform water rate of Rs. 3 was fixed. This was raised to Rs. 4 in 1865 and to Rs. 5 in 1895-96 pending the resettlement of the tract. In a few villages however, in consideration of the disadvantages arising from defective drainage, the rate was continued at Rs. 4.

### Features of the Resettlement

#### FIRST RESETTLEMENT OF 1899 (MR. M. ADINARAYANA AYYA)

27. The resettlement of the district followed the lines in the Godavari. The division of the district into upland and delta tracts was retained. The Divi island, however, was not included in the delta as there was then no scope of its being irrigated by canals from the Krishna anicut. The lands in the deltaic tract were classified under three main series, alluvial, regar and arenaceous, but a small extent in the Vijayawada taluk was placed in the red ferruginous series. Each class of the alluvial and the regar series was further subdivided into five sorts, while the classes of arenaceous series were subdivided into three sorts each. Irrigation sources were divided into four classes with reference to conditions of irrigation and drainage. For purposes of dry assessment, the delta tract was divided into three groups. Black paddy and cholam were adopted as standard crops for dry lands. After allowing a deduction of 15% on account of merchants' profits and charges of transport, commutation rates of Rs. 118 and Rs. 96 per garce for white and black paddy respectively and Rs. 170 per garce for cholam, were adopted. An allowance of 10% for wet and 20% for dry lands was made on account of the vicissitudes of season and unprofitable areas included in the holdings. Cultivation expenses were fixed at Rs. 13 to Rs. 5 per acre for wet and at Rs. 7-8-0 to Rs. 2-4-0 per acre for dry lands. The rates of assessment per acre in the delta ranged from Rs. 10-0-0 to Rs. 2-8-0 for wet lands, from Rs. 5-0-0 to Re. 0-4-0 for ordinary dry lands, from Rs. 7 to Rs. 2 for padugai lands and from Rs. 9 to Rs. 2-8-0 for lanka lands.

28. There was no reclassification of soils or of irrigation sources in the uplands. The old rates of assessments were enhanced by 33½%. The revised rates per acre in the uplands ranged from Rs. 7-8-0 to Rs. 2-8-0 for wet and from Rs. 3-12-0 to Rs. 0-5-0 for dry lands, while those in the Divi island ranged from Rs. 4-4-0 to Re. 0-4-0.

**Features of the Second Resettlement, 1931**

(MR. B. G. HOLDSWORTH)

29. During the second resettlement of the district, the classification of soils and irrigation sources made during the first resettlement were retained except in respect of (1) lands transferred from dry to wet and *vice versa*, (2) large waste blocks of unclassified lands in the tail-end villages and (3) the cultivable lands on the margins of Collair lake which had been occupied on sivaījama. One deviation was, however, made in the case of irrigation sources of Kaikalur taluk. The irrigation sources in the second or third class were placed in the third or fourth class on account of the drainage difficulties.

30. In the upland tract, lands under regular irrigation from the Muniveru project were registered as wet and assessed at wet rates applicable to lands under second class in the Krishna delta, while lands which were within the influence of the project but which had not yet been brought under irrigation were assigned a suitable dry classification in the scale sanctioned for the villages of the second group in the delta.

31. Subsequent to the first resettlement, a pumping station for supplying water for irrigation, was erected in the year 1908 at the north of Divi island. Unlike other systems of irrigation, this scheme was very costly, in that, the engines had to be frequently renewed and the working expenses were also great. Instead of treating the lands served by this system as wet as would have been done under any other system, the lands were classified as irrigated dry and a uniform water rate of Rs. 6 per acre was fixed. Since 1931 the rate has been increased to Rs. 6-4-0 per acre.

32. A comparative table of money rates of the original settlement, the first and second resettlements, is given below :

## DELTA

	Wet Lands						Dry Lands					
	Original Settlement		First Resettle-ment		Second Resettle-ment		Original Settlement		First Settlement		Second Settlement	
	1	2	3	4	5	6	7	8	9	10	11	12
No wet classification.	10	0 0	11 14	0	3 8	0	5 0	0	5 15	0		
	9	0 0	10 10	0	3 0	0	4 0	0	4 12	0		
	8	0 0	9 8	0	2 8	0	3 0	0	3 8	0		
	7	0 0	8 4	0	2 0	0	2 8	0	3 0	0		
	6	0 0	7 2	0	1 12	0	2 0	0	2 6	0		
	5	0 0	5 15	0	1 8	0	1 8	0	1 11	0		
	4	8 0	5 4	0	1 4	0	1 4	0	1 6	0		
	4	0 0	4 12	0	1 0	0	1 0	0	1 2	0		
	3	8 0	4 2	0	0 12	0	0 12	0	0 14	0		
	3	0 0	3 8	0	0 10	0	0 8	0	0 9	0		
	2	8 0	3 0	0	0 8	0	0 4	0	0 5	0		
					0 6	0						
	Lanka Lands						Padugai Lands					
	9	0 0	10 10	0	..	7 0	0	8 4	0			
	7	0 0	8 4	0	..	5 0	0	5 15	0			
	5	0 0	5 15	0	..	4 0	0	4 12	0			
	4	0 0	4 12	0	..	3 0	0	3 8	0			
	3	0 0	3 8	0	..	2 8	0	3 0	0			
	2	8 0	3 0	0	..	2 0	0	2 6	0			

## UPLANDS

Wet			Dry		
Original Settlement	First Resettle-ment	Second Resettle-ment	Original Settlement	First Resettle-ment	Second Resettle-ment
6 0 0	6 4 0	7 7 0	3 0 0	3 12 0	4 3 0
5 0 0	5 8 0	6 8 0	2 0 0	2 8 0	2 13 0
4 8 0	4 12 0	5 10 0	1 12 0	2 2 0	2 6 0
4 0 0	4 4 0	5 1 0	1 8 0	1 14 0	2 2 0
3 8 0	3 12 0	4 7 0	1 4 0	1 8 0	1 11 0
3 0 0	3 0 0	3 8 0	1 0 0	1 4 0	1 6 0
2 8 0	2 8 0	3 0 0	0 12 0	1 0 0	1 2 0
2 0 0	..	..	0 8 0	0 10 0	0 12 0
..	..	..	0 4 0	0 5 0	0 5 0

33. *Estates Abolished.*—All the estates in the district have been taken over by the Government. In the estate areas of Bandar, Divi, Gudivada, Kaikalur, Vijayawada, Nandigama and Jaggayyapet taluks, survey and settlement operations have been completed and settlement rates have also been introduced from 1-7-1958. In respect of the estate areas of Tiruvur, Nuzvid and Gannavaram taluks, the survey and settlement operations have not yet been finalised.

## KURNOOL DISTRICT

## Introductory

Kurnool is one of the districts of the Rayalaseema and is economically backward. It lies between 14° 55' and 16° 20' of the northern latitude and 77° 20' and 79° 35' of the eastern longitude. It is bounded by Mahaboobnagar district and Guntur district on the north, Guntur and Nellore districts on the east, Anantapur and Cuddapah districts on the south and

Bellary district of Mysore State on the west. The area of the district which is the biggest in Andhra Pradesh State is 9,215 sq. miles. The population is 16.19 lakhs and the density of the population is 174 per sq. mile. There are four Revenue Divisions in the district comprising 11 taluks and 2 sub-taluks.

<i>Division</i>	<i>Taluk and sub-taluks</i>
1. Kurnool	..1. Kurnool. 2. Nandikotkur. 3. Dhone.
2. Adoni	..1. Pattikonda. 2. Adoni. 3. Alur.
3. Nandyal	..1. Nandyal. 2. Koilkuntla. 3. Allagadda (Sirvel). 4. Banganapalli (sub-taluk).
4. Markapur.	..1. Markapur. 2. Giddalore (Cumbum). 3. Atamkur (sub-taluk).

The district can be divided geographically into three homogeneous tracts separated by two ranges of hills, *i.e.*, Nallamalais and Erramalais. The eastern tract comprises of the Markapur and Cumbum taluks. It gets the benefit of the North-East monsoon. Part of this tract suffers from feeble rainfall but in some places it is made good by numerous wells. The central tract lying between the two ranges of hills comprises of Koilkuntla, Sirvel, Nandyal and Nandikotkur taluks and Atmakur and Banganapalli sub-taluks. It is the fertile portion of the district and is served by the K-C Canal. The third tract is the western division, consisting of the taluks of Kurnool, Dhone, Pattikonda, Alur and Adoni. The taluks of Kurnool, Dhone and Pattikonda are studded with hillocks which are barren with sparse growth here and there. Srisailam temple on the banks of the River Krishna situated in the midst of Nallamalai hills is one of the important ancient temples in the country.

The chief cottage industry of the district is weaving of cotton carpets, cotton cloth and woollen cumbalies. In Yemmiganur, Kodumurand Gudur, a few varieties of silk fabrics are prepared. The manufacture of writing slates is an important cottage industry in Markapur.



The land utilisation of the area in Kurnool district for the year 1955-56 is as follows :—

	<i>Acs.</i>
Geographical area .. .. .	58,94,616
Area of forests .. .. .	16,94,477
Barren and uncultivable land .. .. .	2,96,269
Land put to non-agricultural uses .. .. .	1,34,042
Cultivable waste .. .. .	4,75,055
Permanent pastures .. .. .	25,425
Land under miscellaneous trees, crops, and groves not included in the net area sown .. .. .	10,076
Current fallows .. .. .	2,20,514
Other fallow lands .. .. .	1,12,977
Net area sown .. .. .	29,25,781
Area sown more than once .. .. .	1,40,101

2. *Soils.*—The varieties of soils met with in the district are clayey, loamy and sandy under regar and red types. In the eastern section the poor red soil predominates. The central section is rich in regar, Pattikonda and Dhone taluks of the western section have poor soil, while Kurnool taluk of western section and portions of Pattikonda taluk are rich in regar soil. The pure regar soil is very fertile and its capacity for moisture retention is great. The chief crops grown in regar soil are cholam, cotton, indigo, korra, bengal-gram and onions. In Adoni and Alur taluks fertile mixed soils (black-red) are found.

3. *Rainfall.*—Both the south-west and the north-east monsoons are active in this district and their distribution is as follows :—

<i>Season</i>	<i>Rainfall during</i> 1955-56
South-West Monsoon .. .. .	23.5"
North-East Monsoon .. .. .	5.2"
Winter period .. .. .	0.1"
Hot weather period .. .. .	2.8"
Total .. .. .	31.6"

The average rainfall figures of the district during the years from 1949-50 to 1955-56 are given below :—

1949-50	33.70 inches
1950-51	22.70 "
1951-52	31.60 "
52-53	14.70 "
53-54	20.70 "
54-55	25.20 "
55-56	31.60 "

The area west of Nallamalais gets more rain in the south-west monsoon and that to the east of Nallamalais gets more rain during the north-east monsoon. The south-west monsoon breaks out in June and lasts till September. It is thereafter followed by the north-east monsoon. Generally the south-west brings on more rain than the north-east. Normal rainfall of the district is 24.2".

4. *Irrigation.*—The chief rivers in the district are the Tungabhadra, the Krishna, the Hundri, the Kundu, the Gundlakamma and the Sagileru. The Tungabhadra river rises in the Western Ghats and enters the district at the north-western corner of Kurnool taluk and flows on the northern boundary of the district till it falls in the river Krishna which later flows along the northern boundary of the district. The Hundry river rises in the Pattikonda taluk and flows across Pattikonda and Kurnool taluks and falls in the Tungabhadra at Kurnool. The Kundu river rises on the western side of the Erramalais and flowing north-east across Nandyal taluk, turns south and flows across Nandyal and Koilkuntla taluks and the North-western corner of Allagadda taluk entering Cuddapah district eventually to join the Pennar. The Kurnool-Cuddapah canal and the Tungabhadra Project are the two major irrigation projects in this district. The K-C canal takes off from the Tungabhadra river at Sunkesula, 18 miles west of Kurnool and passes through the taluks of Kurnool, Nandikotkur, Nandyal, Allagadda and Koilkuntla before entering the Cuddapah district. The canal was designed to irrigate one lakh acres. It is expected that a total extent of 3 lakhs of acres will be commanded by the improvements to the K-C canal executed at a cost of Rs. 4 crores. The Cumbum tank in Cumbum taluk, Markapur tank and Siddapuram tank in Atmakur sub-taluk are the biggest tanks in the district. There are 638 minor irrigation sources in this district irrigating an area of 23,563 acres. The various types of irrigation sources and the area irrigated by them in the district for the year 1955-56 are given below :

<i>Sources of water supply.</i>		<i>Area irrigated</i>
		<i>Acres.</i>
1. Government canals	.. ..	53,664
2. Tanks	.. ..	59,956
3. Wells	.. ..	10,589
4. Other sources	.. ..	30,113
5. Total area irrigated	.. ..	1,54,322
Area irrigated more than once	.. ..	2,417
Gross area irrigated	.. ..	1,56,739

5. *Cultivation.*—Food crops are grown in 68.6 per cent of the total cultivated area. Paddy, Cholan and Korra are the chief cereals. Arika is also largely grown in Nandikotkur, Allagadda, Cumbum and Markapur taluks. Cumbu and Ragi are also largely grown in Cumbum and Markapur taluks with the aid of well irrigation. The bulk of the area under cereals is occupied by dry crops. In the taluks of Nandikotkur, Nandyal, Allagadda, Cumbum and Markapur the area of the paddy is larger than in other taluks. This is due to irrigation from the K-C. canal, in all the taluks except Cumbum which has the largest rain-fed tank in the district serving as many as 14 villages. Cumbu and Ragi are the chief food crops in Cumbum and Markapur taluks and Cholan in all other taluks. The area under Cholan is the largest in the taluk of Kurnool. Next in order comes the taluks of Koilkuntla, Nandikotkur, Nandyal, Pattikonda, Dhona and Sirvel. The chief commercial crops are cotton, groundnut, onions and chillies. Chillies are grown on a fairly large extent in Nandyal taluk. The largest cotton producing tracts are the Koilkuntla and Pattikonda taluks. Cotton is also grown in fairly large extents in Kurnool, Nandikotkur, Nandyal and Sirvel taluks. Groundnut is extensively grown in the taluks of Pattikonda, Kurnool, Dhona, Nandikotkur and Sirvel.

The particulars of total area sown at different periods are as follows :

	<i>Original Settlement Acs.</i>	<i>Resettlement Acs.</i>	<i>1956-57 Acs.</i>
Net area sown ..	11,66,409	20,00,362	29,25,781

The crop calendar showing the harvesting and peak marketing season of some important crops of the district is given below :

<i>Products</i>	<i>Sowing</i>	<i>Harvesting</i>	<i>Peak-marketing</i>
Paddy	.. July-August Jan.-February	Nov.-Jan. April-May	March-June June.
Cholan	.. Sept.-October	Jan.-Feb.	March.
Ragi	.. Nov.-January. June-July.	Jan.-April, October	May-June
Groundnut	. Sept.-Oct.	Dec.--Jan.	Feb.-March
Cotton	.. Sept.-Oct.	April-May	May

6. *Cost of Cultivation.*—The particulars gathered are tabulated hereunder:

	<i>Paddy</i> Rs.	<i>Korra</i> Rs.	<i>Jonna</i> Rs.
1. Settlement-scheme reports :			
(a) Original settlement ..	18 0 0	6 11 4	6 11 4
	to	to	to
	3 10 0	1 1 0	1 1 0
(b) Resettlement ..	18 0 0	4 2 0	4 9 10
	to	to	to
	12 4 0	0 12 0	1 1 0
2. Director of Agriculture :			
(a) T.B.P. area ..	230.36	63.44	..
(b) Seed Farm, Kurnool ..	250.00	65.00	52.00
3. Collector ..	260.00	56.50	46.00

7. *Prices.*—The average prices (per garce of 3200 m.m.) of few important crops at different periods are given below:

<i>Product</i>	<i>Original Settlement</i>	<i>Resettle-ment</i>	1943-46 10 years	1956-57 10 years.
	Rs.	Rs.	Rs.	Rs.
Paddy ..	142	156	350	1,082
Cholam ..	148	154	..	776
Arika ..	105	110	..	..

8. *Yields.*—Estimates of the gross outturn of several crops are given below:

<i>Sources</i>	<i>Paddy</i> <i>M. Ms.</i>	<i>Cholam</i>	<i>Arika</i>
1. Original settlement reports ..	1450-300	500 to 60	320-80
2. Resettlement reports ..	1100-550	360-60	..
3. Director of Agriculture— Seed Farm, Kurnool ..	1534	230	..
*4. Bureau of Statistics and Economics ..	673	138	
5. Collector ..	1280	192	
†6. Officials ..	1253	335	
†7. Non-Official ..	1178	315	

\* From statistical abstract 1955-56 on the basis of random sampling method adopted.

† From the answers to the questionnaire.

9. *Seasonal conditions.*—The district lies in the heart of the famine zone. All the taluks are liable to famine and the outturn of all but the irrigated crops on cultivated area depends on the vagaries of the monsoon. If the rainfall is fair and properly distributed there can be no doubt that the district can raise a supply of food crops ample for its own consumption and a large surplus for storage or export. However the rainfall is too frequently deficient and badly distributed.

The following are the famine years:

1833	..	.. Severe famine	.
1854	..	.. Famine to some extent	
1866	..	.. Famine	
1876-78	..	.. ”	
1891-92	..	.. ”	
1896-97	..	.. ”	
1900	..	.. ”	
1904—draught	..		
1921-22 distress	..	Remission of kist Rs. 1,32,214. Relief Rs. 59,846. Charity Rs. 3,996-8-0.	
1937-38	..	Famine	
1942-43	..	Famine.	

The particulars of remissions granted during the last five years are given below :

Name of the fasli		Remissions under B.S.O. 13	Spl. remission B.S.O. 14
Fasli	1362	.. 37,726 plus 42,206	79,932
..	1363	.. 10,198	
..	1364	.. 23,896	
..	1365	.. 15,202	
..	1366	.. 71,375	

10. *Holdings.*—The total number of holdings in this district is 3,02,750 and the extent covered by them is 23,62,440 acres. Out of a total number of 3,02,750, the number of holdings having an assessment of Rs. 10 and less is 2,32,350. It is, therefore, evident that this district has a large percentage of small holdings.

The details regarding holdings are given below.

Holding assessed to	Single Patta	Joint patta	Total	Extent in acs.	Assessment in Rs.
One Rupee & less ..	30,927	34,574	65,501	1,03,171	60,874
Rupees ten and less but over Re. 1.	79,148	87,701	1,66,849	8,79,097	7,57,222
Rupees thirty and less but over Rs. 10.	23,135	30,793	53,928	6,54,727	7,48,277
Rupees fifty and less but over Rs. 30.	5,648	5,422	11,070	2,49,768	3,44,267
Rupees hundred and less but over Rs. 50.	2,118	2,159	4,277	1,79,692	2,39,111
Rupees 250 and less but over Rs. 100.	488	397	885	82,009	1,26,459
Rupees 500 and less but over Rs. 250.	92	92	184	40,741	51,425
Rupees 1,000 and less but over Rs. 500.	41	12	53	18,487	30,628
Over Rs. 1,000 ..	3	..	3	2,945	4,177
			3,02,750	22,10,637	23,62,440

### Features of Original Settlement of Kurnool District

The original settlement of the taluks of Kurnool district was done at different periods from 1863 to 1905, as shown below:

<i>Year</i>	<i>Taluk</i>
1863 ..	.. Dhone Kurnool Nandikotkur Nandyal Sirvel and Koilkuntla
1868 ..	.. Cumbum and Markapur
1870 ..	.. Pattikonda.
1890 ..	.. Aluru Adoni
1905 ..	.. Banganapalli.

In these settlements, with the exception of a small area classified as permanently improved, the soils were all classified under the two main series of regar and red ferruginous.

The villages were grouped with reference to relative fertility of the soil.

Paddy was taken as the staple food crop for wet lands. Jonna for dry lands in regar soils and Arika and Korra in red soils were taken as the staple food crops.

The usual deduction of 25% was made for vicissitudes of seasons.

The cultivation expenses ranged from Rs. 18-0-0 to Rs. 3-10-0 in wet lands and from Rs. 6-11-4 to Rs. 1-1-0 in dry lands.

The grain outturns ranging from 300 to 1,450 M.Ms. of paddy in wet lands and from 60 to 500 M.Ms. of cholam and from 80 to 320 M.Ms. of korra in dry lands were assumed.

In Alur and Adoni taluks, irrigation sources were divided into five classes according to capacity of the source. In other taluks this was not done but the villages were formed into groups.

The money rates ranging from Rs. 2-8-0 to Rs. 10-0-0 for wet lands and from Re. 0-4-0 to Rs. 5-0-0 for dry lands were adopted.

For lands irrigated by baling a deduction of Re. 1 per acre for the first crop and annas eight for the second crop was allowed.

### Resettlement

All the taluks except Alur and Adoni were resettled during the years 1905 to 1909 and the Alur and Adoni taluks during 1920.

(a) *Dry lands*.—No change was made in the classification of soils or in the grouping of villages except in the following cases.

(i) Permanently improved lands:—Dry lands which were classified at the time of original settlement as 'permanently improved' were transferred to appropriate classes and sorts.

(ii) Lands left unclassified or registered as poramboke at the last settlement which were subsequently granted on patta and assessed by the Revenue Department were classified.

(iii) All waste lands wrongly registered as poramboke at the time of original settlement were also classified.

In carrying out the classification of the above lands, the principles in the original settlement were followed.

(b) No increase was made in dry rates in respect of Pattikonda, Koilkuntla, Markapur and Cumbum taluks, in consideration of the economic conditions prevailing in these taluks. But in the case of Dhone, Kurnool, Nandikotkur, Nandyal and Sirvel taluks, the average prices of standard grains, viz., cholam and arika during the last 20 non-famine years showed an increase of 59 and 87 per cent respectively. Hence dry rates were increased by 7.55 per cent.

In the resettlement the money rates ranged from Rs. 2 to Rs. 10 for wet and from Re. 0-4-0 to Rs. 4 for dry lands.

(a) As the system of grouping of irrigation sources at the original settlement was inelastic, they were classified into five classes according to their conditions and capacity.

(b) At the original settlement all wet lands in Dhone, Kurnool, Nandyal, Nandikotkur and Sirvel taluks were assessed as dry but at resettlement this system was abolished and a consolidated wet assessment was imposed on all wet lands.

(c) Under the K.-C. canal, lands which had been cultivated continuously for five years with wet crops or from which water could not be excluded, were registered as wet. Under other sources, all lands which in normal years receive water, and all lands registered as dry which were so situated in the midst of wet lands from which water could not be excluded, were registered as wet. To secure this, ayacuts were thoroughly revised.

(d) *Manavari lands*.—Lands with no recognised sources of irrigation but cultivated with wet crops depending entirely on rain were classed as dry and assessed one sort higher than ordinary 'dry lands' of similar soil.

### Water rate

(a) Differential water rate system is in force in this district.

(b) *Second crop charge on lands registered as wet*.—The charge for the second crop on lands registered as 'single crop' wet will be half the single crop wet assessment but the ryots holding lands under sources of the second, third, fourth and fifth classes were given option to compound the charge for the second crop.

For sugarcane, betel, plantains and other wet crops which ordinarily remain on the ground for more than six months, the charge to be levied will be one and half times the difference between the wet and dry rates plus half the dry assessment. The charge for irrigated dry crops which remain on the ground for more than six months will be half the difference between the wet and dry rates.



(c) *Water rate on lands not registered as wet.*—All owners of commanded lands not registered as wet, have to pay water-rate equal to the difference between the wet and the dry assessments when water is taken for wet crops and one-third of such difference when dry crops are irrigated.

(d) *Lands under doruvu wells.*—Wet and dry classification was assigned to all lands commanded by doruvu wells. They were registered as “irrigable dry” and assessed at the appropriate dry rate. When water is utilised, a water rate of half the difference between the wet and dry assessments with a baling remission of half the water rate is charged.

### Features of Second Resettlement of Kurnool District in 1935

(BY MR. STUART.)

(1) No general reclassification of soils was made except those transferred to assessed wastes since the last resettlement.

In reclassifying the above lands, the system of classification adopted at the last settlement was followed.

(2) *Classification of irrigation sources.*—There was no general reclassification of irrigation sources at the resettlement in respect of I and II class sources and the then existing classification was retained unaltered but all the third and fourth class sources in the district were reclassified according to their capacity. Sources recognised by the Revenue Department subsequent to the last resettlement was also classified according to their capacity.

(3) It was proposed to increase wet assessment by  $6\frac{1}{4}\%$  and dry assessment by  $12\frac{1}{2}\%$  per cent but they were not given effect to in view of the orders issued in G.O. Ms. No. 1067, Revenue, dated 12-5-1937.

(4) *Revision of ayacuts:*—(i) *Sources other than K-C canal.*

(a) *Transfer from dry to wet:*—There was no general revision of wet ayacuts but the existing ayacuts of Cumbum and Markapur tanks were refixed on the following principles. Lands registered as ‘dry’ which were regularly cultivated with wet crops for five years or from which water could not be excluded were transferred to wet.

(b) Land registered as wet which owing to their situation or for any other reason, were unfit for wet cultivation were transferred to dry. Wet lands deliberately rendered unfit for wet cultivation not because the supply of water was inadequate but because the growing of dry crop was more profitable were retained as wet. A note to this effect was made in the resettlement registers.

(ii) *K-C. canal.*—At the last resettlement, in order to encourage the irrigation of wet crops in the area commanded

by the K.-C. canal, the system of consolidated water-rate was introduced but it proved unsuccessful. Hence the ayacuts under K.-C. canal were revised on the following principles.

(a) Lands registered as wet but which had not been under continuous cultivation for five years ending with fasli 1345 were transferred to dry on the application of registered holders.

(b) All dry lands which had been regularly cultivated for five years ending with fasli 1345 with white paddy or wet or garden crops with the aid of water from the canal or its distributaries or tanks fed by the canal were registered as wet, in consultation with the P.W.D.

(c) Where portions of fields were eligible for transfer to wet or dry, the minimum limit for subdivision was fixed as 25 cents. In effecting the subdivision, the ryots were given the option of locating the portion which had to be subdivided.

(d) The following concessions were shown to such lands transferred to wet under K.-C. canal granted under the block rules.

(i) They were assessed at a rate fixed for the next lower sort than that assigned at the resettlement.

(ii) The additional dry assessment of Re. 1 per acre collected on the un-irrigated portions was abolished.

(5) The existing grouping of dry lands was retained, except in ten villages of Markapur taluk which were transferred from group II to group III.

(6) *Manavari lands*.—These lands were registered as dry and assessed at the dry rate appropriate to the soil classification already assigned at the last resettlement.

(7) *Lands within the water spread of irrigation sources*.—The lands were classified as dry and assessed at a special rate intermediate between the wet and dry rates.

### The Madras Estates Abolition Act, 1948

The survey and settlement operations in respect of the Inam Estates abolished and taken over under the provisions of the Act XXVI of 48 are in progress.

#### General

A major portion of the district is in the famine zone with a rainfall of less than 25" per year. As the soils are fertile, the northern portion of the district might become more prosperous after the ayacut is fully developed under the T.B. Project. The

area commanded by the K.-C. canal has a look of prosperity compared to the rest of the dry tracts.

### KURNOOL DISTRICT MONEY RATES

Taram	Wet rates	DRY RATES									
		Kurnool proper rates		Cumbum and Markapur rates		Pattikonda rates		Koilkuntla rates			
	Rs.	a.	Rs.	a.	Rs.	a.	Rs.	a.	Rs.	a.	
1	10	0	2	8	3	0	3	0	4	0	
2	9	0	2	0	2	4	2	8	3	0	
3	8	0	1	8	1	8	2	0	2	4	
4	7	0	1	4	1	4	1	12	2	0	
5	6	0	1	0	1	0	1	8	1	12	
6	4	8	0	12	0	12	1	4	1	8	
7	3	8	0	8	0	8	1	0	1	4	
8	3	0	0	4	0	6	0	12	1	0	
9	2	8	..		0	4	0	8	0	12	
10	2	0	..		..		0	4	0	8	
11	..		..		..		..		0	4	

Scheme sanctioned in G.O. No. 501, Rev., dated 2nd June 1905, for Kurnool proper.

do. G.O. No. 1034, Rev., dated 14th April 1909, for Cumbum and Markapur.

do. G.O. No. 710, Rev., dated 25th July 1906, for Pattikonda.

do. G.O. No. 882, Rev., dated 11th September 1906, for Koilkuntla.

Rates introduced in Kurnool proper in faslis 1315-16 (1905-06 and 1906-07)

do. Cumbum and Markapur in F. 1319 (1909-10)

do. Pattikonda in F. 1316 (1906-07).

do. Koilkuntla. do.

## KURNOOL DISTRICT MONEY RATES

## Alur and Adoni taluks

Taram	Wet rates	DRY RATES						Remarks
		Black soil taluks			Red soil taluks			
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
1	.. 13 0 0	2 13 0	2 8 0	Scheme sanctioned in G.O. Nos. 1332,				
2	.. 11 4 0	2 4 0	2 0 0	Rev., dated 21st July 1922 and in				
				373, Rev., dated 6th March 1925.				
3	.. 10 10 0	1 11 0	1 2 0	Rates introduced in black soil taluks				
4	.. 10 2 0	1 2 0	0 14 0	in F. 1333 (1923-24) and in red				
5	.. 9 8 0	0 14 0	0 9 0	soil taluks in F. 1334 (1924-25).				
6	.. 9 0 0	0 9 0	0 6 0					
7	.. 8 4 0	0 6 0	0 4 0					
8	.. 7 14 0	0 4 0	0 2 0					
9	.. 7 2 0							
10	.. 6 12 0							
11	.. 5 15 0							
12	.. 5 10 0							
13	.. 4 12 0							
14	.. 4 8 0							
15	.. 3 6 0							
16	.. 2 13 0							
17	.. 2 4 0							
18	.. 1 11 0							
19	.. 1 2 0							

## NELLORE DISTRICT

## Introductory

Nellore district derives its name, from the word 'Nell' which means paddy. It was also known in olden days as "Vikrama Simhapuri".

It lies between 13° 30' and 16° of the northern latitude and 79° 5' and 80° 15' of eastern longitude. It is bounded on the north by the Guntur and Kurnool districts ; on the east by the Bay of Bengal ; on the south by the Chittoor and Chingleput districts and on the west by Cuddapah and Kurnool districts.

River Pennar flows through the district from west to east entering the district at Somasila in Atmakur Taluk and falls into

Bay of Bengal at Vutukuru in Kovur taluk, 18 miles away from the Nellore town after flowing for a distance of 70 miles in the district.

There are two big reservoirs in this district, viz., Kanigiri reservoir in Kovur taluk and the Mopad reservoir in Kanigiri taluk besides the two big tanks of Nellore and Survepalli in Nellore taluk and numerous other P.W.D. and Minor Irrigation tanks to serve the needs of wet ayacut.

The headquarters of the district is Nellore. The district comprises 4 revenue divisions and thirteen taluks with a total population of 17,95,632 and an area of 7,960 sq. miles.

Name of the Revenue Division	<i>Taluks</i>
1. Nellore	Nellore, Atmakur, Rapur.
2. Gudur	Gudur, Sulurpet, Venkatagiri.
3. Kavali	Kavali, Udayagiri, Kovur.
4. Kanduku	Kandukur, Kanigiri, Podili, Darsi.

The district is noted for its mica mines. Gypsum is being extracted from Pulicat lake in Sulurpet taluk. China clay is obtained in Rapur and Atmakur taluks and there are ceramic factories at Gudur and Nellore. Salt is largely manufactured in the salt factories at Tada, Oolapalem and Krishnapatnam.

The land utilisation in this district as per the statistics published for the year 1955-56 is furnished below.—

	<i>Area in acres</i>
1. Total geographical area .. ..	50,94,198
2. Barren and uncultivable land .. ..	17,26,007
3. Land put to non-agricultural uses .. ..	3,46,367
4. Permanent pastures and other grazing lands .. ..	3,77,306
5. Cultivable waste .. ..	2,18,136
6. Trees, miscellaneous crops and groves .. ..	49,783
7. Current fallows .. ..	2,72,436
8. Other fallow lands .. ..	89,764
9. Net area sown .. ..	16,06,863
10. Area sown more than once .. ..	1,93,539

The district forms part of the plains of Carnatic and the terrain is undulating. The coastal taluks of Kandukur, Kavali, Kovur, Nellore, Gudur and Sulurpet lie from north to south along

the coast. The western taluks of Darsi, Podili, Kanigiri, Udayagiri, Atmakur, Rapur and Venkatagiri taluks lie adjacent to them. The coastal area is generally a sandy plain with large tracts of scrub jungle interspersed with palmyrahs and casurina plantations. On the south-east corner of the district, the island of Sriharikota with an area of about 210 sq. miles forms a low ridge of sand containing jungle growth and casurina plantations which supply fuel to Madras.

The eastern half of the district along the coast is fairly fertile with large cultivated areas and handsome topes; whereas the western half is a rather barren area with large tracts of low scrub jungle rocky hills and plains littered with stones. The Buckingham canal running along the coast is utilised for transporting considerable quantities of paddy and fuel from this district and from other northern districts to Madras.

The Veligonda hills form part of the western boundary with the highest peak of 3,000 ft. The Udayagiri hill which rises to a height of 3,079 feet, is reputed to contain rare and valuable medicinal herbs.

2. *Soils*.—The district can be divided into three parts, viz., (i) eastern portion (ii) western portion and (iii) coastal portion. The eastern portion is fairly *fertile and prosperous*. The western portion comprises wide stretches of *barren treeless country*. The coastal strip which is generally of 3 to 4 miles in width is *sandy*.

Inferior red loam covers most of the area in this district except the northern portion of Kandukur, Darsi and Podili taluks in which *black clay* is found. The distribution of soils is as follows:

<i>Soil</i>	<i>Percentage</i>
Black clay ..	.. 22.38%
Black & Red loams ..	.. 63.16%
Sandy ..	.. 13.27%

3. *Rainfall*.—The district lies in a zone of precarious rainfall. The year may be divided into four seasons and the rainfall statistics are given below :

Seasons	Months	Average from 1870-1939	Rainfall	
			1940-55	1955-56
South-West Monsoon	June-September	11.24	..	11.9
North-East	Oct.-December	22.33	32.27	4.6
Winter period	January-February	1.57	..	0.8
Hot weather period	March-May	..	..	4.3

The average rainfall in 1955	..	44.1 inches
The average rainy days in 1955	..	50 days
The normal rainfall	.. ..	35.5 inches.

The South-West monsoon gives less than a third of the total rainfall in a year whereas the N.E. monsoon which brings the bulk of the rainfall is beneficial to crops. The northern taluks of Kanigiri and Kandukur get the benefit of both the monsoons and in the southern taluks the north-east monsoon is of greater importance. The rainfall is the heaviest during the north-east monsoon. (October-December.)

4. *Irrigation.*—There are six rivers in the district. The Musi, the Paler and the Manner flowing through the northern part of the district, the Kandleru, Swarnamukhi and Kalangi in the south, besides the Pennar. Open channels from each feed tanks and serve as irrigation sources.

The largest tanks in the district are Machavaram and Ponnalur tanks in Kandukur taluk, Zutur in Kavali taluk, the Mopad reservoir and Hajipuram tank in Kanigiri taluk, the Kanigiri reservoir in Kovur taluk, the Survepalli, Nellore and Manubolu tanks in Nellore taluk; the Anantasagaram, the Kaluvoy and A.S. Beeraperu tanks in Atmakur taluk and the Kota Penaka, Gudur and Yerur tanks in Gudur taluk. Of these, the Kanigiri reservoir, Mopad reservoir, Survepalle and Nellore tanks, the Anantasagaram and Hajipuram tanks are the biggest and serve the needs of a major portion of wet ayacut in the district.

The sources of water supply and the area irrigated therefrom in the district are given below as per the statistics of 1955-56:

<i>Source of water supply</i>		<i>No.</i>	<i>Area irrigated in acres</i>
1. Government canals	.. ..	19	2,51,490
2. Canals	.. ..	..	779
3. Tanks	.. ..	522	3,09,034
4. Wells:	.. ..	..	..
Government	737	..	70,974
Private	5,744		
	4,055		
5. Other sources	.. ..	..	11,941
Total net area irrigated	.. ..	..	6,44,218
Area irrigated more than once	.. ..	..	1,93,539
Total gross area of crops irrigated	.. ..	..	8,37,757

Of the tanks, 284 have an ayacut of more than 100 acres each and the remaining 238 less than 100 acres.

5. *Cultivation*.—Paddy, Cholan, Cumbu, Ragi, Korra and Varagu are the chief food crops usually grown in the district. Samaia and Maize are grown in limited extents. Gingelly and Tobacco are also grown to some extent.

The total area covered by cultivation of food crops is 16,39,304 acres whereas under non-food crops it is 1,85,702 acres. Out of this extent of non-food crops, an extent of 41,480 acres was utilised for fodder crops. Chillies are grown extensively under wells in Sulurpet and Gudur taluks.

A statement showing the details of crops raised in the different seasons in a year is given below :

<i>Name of crop</i>	<i>Sowings</i>	<i>Harvesting</i>	<i>Peak Marketing</i>
Paddy	..Aug.-Jan.-Feb.	Jan.-February April-May.	March-June
Bazra (Cumbu)	..June-July	Sept.-October	Jan.-March
Jowar	..Nov.-December	March-April	May-June.
Ragi	..Dec.-January ..June-July	March-April October	May-June November.
Korra	..July-September	Oct.-Dec.	January.
Sugarcane	..May	April	May & June.
Chillies	..September	March	April-June.
Tobacco	..October	February	April-June.
Groundnut	..July-October	Oct.-January	Jan.-February.
Castor	..July-August	Jan.-March	April
Gingelly	..June-July	Sept.-October	Nov.-December

Particulars of area sown at different periods in Nellore district are furnished below :

At the time of original settlement (1905-1906)	At the time of Resettlement (1905-1906)	At present times (1956)
4,37,071 Acs.	8,98,370 Acs.	16,06,863 Acs.

Paddy is the chief food crop raised in the deltaic portion and parts of Atmakur, Kanigiri, Kavali and Gudur taluks. Next come Cholan, Cumbu and Ragi crops.



6. *The cost of cultivation.*—The costs of cultivation per acre are given hereunder from the particulars gathered.

Source & year	Paddy			Cholam			Sajja			Varagu			Ragi			
1. Original settlement (1874)	10	8	3	3	11	1	2	4	6	2	2	5	..	..	..	
		to			to			to			to					
	9	3	2	1	7	11	1	3	8	1	6	7	..	..	..	
2. Resettlement (1905-06)	..	10	8	3	2	14	1	2	4	6	5	3	2	..	..	..
		to				to			to			to				
	9	3	2	1	7	11	1	3	8	2	0	4				
3. Furnished by D.A.O., Nellore 1958	154	0	0	96	0	0	170	0	0	67	0	0	156	0	0	
4. Collector, Nellore 1956-57 Delta	..226	0	0	..	..	..	136	0	0	..	..	..	..	..	..	
5. Upland irrigated	..170	0	0	85	0	0	..	..	..	..	..	..	..	..	..	

7. *The prices.*—The average prices of a few important food grains at different periods have been as follows :

Products	Per garce								
	Original settlement			Resettle- ment 1905-06			Present times 1946-56		
	Rs.			Rs.			Rs.		
White Paddy ..	..	125	0 0	}	143	0 0	848	0 0	
Black Paddy ..	..	110	0 0		172 (late)	879	0 0		
Jonna ..	..	143	0 0	161 (early)	..	..			
Arika ..	..	78	0 0	95	0 0	782	0 0		
Variga ..	..	121	0 0	167	0 0	934	0 0		
Sajja ..	..	127	0 0	167	0 0	780	0 0		
Horsegram ..	..	130	0 0	..	..	942	0 0		

8. *Yields.*—The gross outturn of several important crops in the district is furnished below :—

Name of the crop	At the time of original settlement	At the time of Re-settlement	Present day (M.Ms. per acre)		
	M.Ms. *	M.Ms. *	Director of Bureau of Statistics †	Officials ‡	Non-Officials ‡
Paddy	500 to 1,000	500-800	882	1,076	928
Cholam	80 to 375	70-340	245	438	279
Ragi	..	..	193	546	693
Sajja	.. 60 to 325	60-325	295	453	553

## Sources :

\* Original and Resettlement Reports.

† From Statistical Abstract 1955-56 on the basis of random sampling method adopted.

‡ From the answers to the questionnaire.

9. *Seasonal Conditions*.:—The several years of seasonal calamities in the district are furnished below :—

Partial drought	..	1803
Famine	..	1806-1807
Damage to crops by rats and vermin	..	1808
Unfavourable year	.. ..	1812
Cyclone		1820, 1857, 1915, 1927 and 1933
Distress		1823-24
The Guntur famine		1832-34
Unfavourable season		1853-54
The great famine		1876-78
Famine		1891-92
Famine		1897-98
Control for food movement		1918
Scarcity	..	1926-27
Bad season in Gudur taluk	..	1934
Floods-Inundation of Pennar	..	1804
Floods	..	1852, 1874, 1882, 1902, 1903.
Floods	.	1946
Floods	.	1954
Floods	.	1957

It is seen from the above that the district has been subjected to various kinds of calamities causing great loss to ryot and Government. Government had to remit large amounts of land revenue due to famine besides granting other kinds of relief to the people. Floods in several rivers including the chief river Pennar and the frequent failure of the monsoons also are causes of distress.

A statement showing the particulars of remissions granted during the previous five years is appended.

10. *Holdings*.—The total number of holdings in the district is 3,65,117 out of which 1,90,691 are single and 1,74,426 are joint covered by an extent of 17,26,781 acres with an assessment of Rs. 31,29,709.

Of the above holdings a major number of holdings about 2/3 of the total number in the district *i.e.*, 2,25,243 pay less than Rs. 10 and the rest over Rs. 10.

A statement of holdings is appended.

### Features of the Original Settlement (1872-74)

(By Mr. RUNDALL)

11. The leading features of the original settlement are as follows.

(i) The soils were generally divided into three sorts except classes II, VI, XII, XIII and XIV to each of which only two sorts were assigned, while class III was distinguished by four sorts, with an extra sort for second group dry. (ii) The grouping was chiefly based on the fertility of the soil and not with reference to facilities of communications and proximity to markets and roads. No allowance was made for vicissitudes of season in the case of wet lands under first class irrigation sources, while in the case of dry lands a deduction of 1/6 was made instead of 1/4 as in the neighbouring districts. (iii) The scale of cultivation expenses for wet lands was not so liberal as in the adjoining districts and that for dry lands was moderate. (iv) A deduction of 10% was made from the average prices in the case of wet lands for cartage and merchants' profits instead of 15% as in recent settlements. (v) The average rates of assessment per acre for *dry* and *wet* lands are :

The district was divided into the 'Principal Division' and the 'Sub-division', the former comprising the taluks of Nellore, Gudur, Kavali, Udayagiri, Atmakur and Rapur; and the latter Kanigiri, Kandukur together with Ongole taluks subsequently transferred to Guntur district. The settlement scheme reports were finalised in 1874. The settlement was introduced in the principal division in 1873 and in the subdivision in 1874.

The term of thirty years expired in the Principal Division in 1902 and in the subdivision in 1903.

12. *Resettlement in 1905-06.*—Mr. Paddison, I.C.S., the then Settlement Officer took up the work in 1905 and submitted proposals to Government which were approved by the Government in 1906.

The following table shows the comparative figures of commutation prices of the standard crops adopted by the Settlement Officer. Fifteen per cent on the prices of twenty non-famine years ending with 1903-04 was deducted for cartage and merchants' profits.

Divisions	Standard grains	COMMUTATION PRICES		Difference	Percentage
		Original settlement	Resettlement		
<i>Dry</i>					
Principal Division	} Late Cholam	129	172	43	33
Southern part subdivision		} Arika	64	95	31
Southern part subdivision	.. Variga	107	167	60	56
	Cumbu	107	167	60	56
	Early Cholam	129	161	32	25
<i>Wet</i>					
Whole district	.. Paddy	107	143	36	34

No reclassification of the soil was considered necessary, except in the case of lands assessed by the Revenue Department during the currency of the previous settlement and lands assessed as 'permanently improved' at the old settlement. Four resumed inam villages (one in Gudur, two in Atmakur and one in Kandukur) and large areas of cultivated lands which were left unclassified at the original settlement were all classified for the first time. Cultivable lands which had been left unclassified and unassessed at the old settlement and had not been assigned, were now classified

and assessed. In regard to 3,227 acres which were registered as "baling" they were transferred to dry as there was no wet cultivation in those lands for five years. On 'baling wet lands' (of which there were 2,552 acres) a remission of one rupee per acre for the first crop and eight annas for the second was allowed. The Settlement Officer also recommended 15% enhancement for the greater portion of the district, the exceptions being the anicut villages which are supplied from storage reservoirs (25%), the rest of the anicut villages of Nellore and Gudur and the best villages in Kandukur (20%) and the worst parts of Kavali and Atmakur and the best part of Udayagiri (10%). No enhancement was recommended in Kanigiri and the greater portion of Udayagiri taluk. The changes were not many and were not due to any mistakes in the old settlement, but simply due to the fact that the villages recommended for special treatment had experienced harder times than the rest of the tract under notice, or on the other hand have been specially benefited by the new communications.

Twenty five rates for wet and 32 rates for dry were recommended. Government were in favour of a percentage enhancement but objected to the introduction of multiplicity of money rates with unnecessary five gradations. They preferred a general enhancement of 3 annas in the rupee or  $18\frac{3}{4}\%$  in view of the backwardness of the district in many respects and the uncertainty of the rainfall. They suggested a revision of the grouping of irrigation sources into five classes and of villages into five groups.

As regards dry lands there was no enhancement of assessment in the taluks of Kanigiri, Udayagiri, Rapur, Atmakur and in some coastal villages of Nellore, Gudur, Kavali and Kandukur. The more westerly portions of these taluks (Kandukur and Kavali) were exempted from increased taxation while in the other portions of these taluks the assessment was increased by  $12\frac{1}{2}\%$ .

As regards wet lands, though the price of paddy increased by 34% and the completion of the Sangam Project and other irrigation works had rendered wet cultivation more secure and there had been great improvement in the communications, Government fixed  $18\frac{3}{4}\%$  as the proper rate of enhancement for the whole district. The resettlement resulted in a total increase of 15% in the land revenue demand with 18% in case of wet lands and 9.5% in case of dry lands. The revised money rates were introduced in F. 1316 and were in force for

30 years (1906-1936). A comparative statement of money rates of original and resettlements is given below :—

## MONEY RATES

ORIGINAL SETTLEMENT			RESETTLEMENT		
Taram	Wet	Dry	Taram	Wet	Dry
	Rs. a.	Rs. a.		Rs. a.	Rs. a.
1	.. 10 8	5 0	1	.. 8 14	4 8
2	.. 10 0	4 8	2	.. 8 5	4 0
3	.. 9 0	4 0	3	.. 7 11	3 15
4	.. 8 0	3 8	4	.. 7 2	3 8
5	.. 7 8	3 0	5	.. 6 8	3 6
6	.. 7 0	2 8	6	.. 6 4	3 0
7	.. 6 8	2 4	7	.. 6 0	2 13
8	.. 6 0	2 0	8	.. 5 15	2 8
9	.. 5 8	1 12	9	.. 5 10	2 4
10	.. 5 4	1 8	10	.. 5 8	2 0
11	.. 5 0	1 4	11	.. 5 5	1 15
12	.. 4 12	1 0	12	.. 5 0	1 12
13	.. 4 8	0 14	13	.. 4 12	1 11
14	.. 4 0	0 12	14	.. 4 8	1 8
15	.. 3 8	0 10	15	.. 4 2	1 6
16	.. 3 0	0 8	16	.. 4 0	1 4
17	.. 2 8	0 6	17	.. 3 9	1 2
18	.. 2 0	0 4	18	.. 3 8	1 0
			19	.. 2 15	0 14
			20	.. 2 8	0 13
			21	.. 2 6	0 12
			22	.. 2 0	0 11
			23	.. ..	0 10
			24	.. ..	0 9
			25	.. ..	0 8
			26	.. ..	0 7
			27	.. ..	0 6
			28	.. ..	0 4

### Second Resettlement : Nellore District

The resettlement work was taken up in this district in 1934. But it was stopped in 1939 pending a final decision of the Government on their Land Revenue policy.

13. *Estates Abolition Act*.—One of the biggest Zamindaris in the State *viz.*, Venkatagiri zamindari is in this district in which nearly half the area is covered by estates.

The progress of survey and settlement operations in the estates of Venkatagiri, Chundi and in all other minor estates taken over under the provisions of the Zamindari Abolition Act, XXVI of 1948 is as follows :

Settlement rates have been introduced in the estates situated in Sulurpet taluk from 1-7-57 and in estates situated in Nellore, Kovur, Rapur, Atmakur, Gudur, Venkatagiri, Podili and Darsi taluks with effect from 1-7-58.

In respect of the remaining estates taken over in Nellore district, it is proposed to be introduced from 1-7-59.

Consequent on the integration of the Estate Offices with regular Revenue units, Rapur taluk is taken away from Gudur Division and added on to Nellore Division.

*General*.—The south-eastern half of the district, is well developed while the western taluks are still backward due to very inferior soils. One food crop is grown once in three years in Udayagiri on account of poor soils. A casual tourist passing through the district will gain an impression that except in Kovur and Nellore there are only pastures and scrub jungles. The Pennar delta area is really prosperous and on account of its proximity to Madras is comparatively more advanced. The mica mines and salt factories provide adequate work for the labourers in the south of the district.

*Statement showing the amounts of remission granted under different categories during fasli 1362 to 1366 in Nellore district.*

Fasli	1362			1363			1364			1365			1366		
	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
Shavi				37,160	15	3	20,954	4	3	1,76,564	8	3	23,933	4	2
Thirva Kammi				11,680	10	0	9,715	14	0	23,458	12	3	2,186	7	0
Waste				13,262	2	9	1,715	13	9	22,184	1	7	9,353	1	1
Mulam ryot				4,845	3	0	5,620	8	0	7,758	0	0	7,791	8	8
Submerged or Inundated				714	10	0	202	11	0	..			245	0	0
Fasli Kammi	..			153	5	0	102	6	0	78	11	0	0	6	0
Fixed Remission	..	..	..	794	11	8	794	11	8	602	6	0	1,198	6	0
Remission granted for lands taken-up for public purposes	..	..	..	38	11	0	38	11	0	38	11	0	38	11	0
Free hold	..	..	..	24	0	0	24	0	0	24	0	0	24	0	0



*Details of pattas bearing different Assessments in*

**Nellore district**

Holdings assessed to	NUMBER		Total	Extent Ac.	Assessment Rs.
	Single	Joint			
Re. 1 and less .. .. .	38,260	32,703	70,963	1,06,937	1,11,137
Rs. 10 and less but over Re. 1 .. .. .	80,280	74,000	1,54,280	5,54,538	6,61,593
Rs. 30 .. .. . Rs. 10 .. .. .	51,729	45,297	97,026	4,88,986	8,89,991
Rs. 50 .. .. . Rs. 30 .. .. .	10,903	15,095	25,998	2,22,427	5,35,673
Rs. 100 .. .. . Rs. 50 .. .. .	5,001	4,379	9,380	1,55,685	3,77,976
Rs. 250 .. .. . Rs. 100 .. .. .	4,080	2,574	6,654	1,28,618	2,96,619
Rs. 500 .. .. . Rs. 250 .. .. .	370	311	681	60,862	1,69,856
Rs. 1,000 .. .. . Rs. 500 .. .. .	64	64	128	26,825	77,504
Over Rs. 1,000 .. .. .	4	3	7	1,963	9,360
Total .. .. .	1,90,691	1,74,426	3,65,117	17,26,781	31,29,709

## SRIKAKULAM DISTRICT

*Introductory* :—Srikakulam is the northern-most district of the State of Andhra Pradesh. The district was reconstituted in 1950 having been carved out of the old Visakhapatnam district. While forming the Orissa State in 1936, six taluks of the Chicacole (Srikakulam) district had been separated from the Ganjam district and added to the Visakhapatnam district. The district lies between 18° 20' and 19° 10' of the northern latitude and 83° 25' and 84° 50' of the eastern longitude. It is bounded on the north and west by the State of Orissa, on the east by the Bay of Bengal and on the south by the Visakhapatnam district. This is a small district with an area of 3,899 square miles consisting of three revenue divisions with 11 taluks. It has a population of 2,123, 136. Considering its density of population viz., 544 per sq. mile it is a thickly populated district. The revenue divisions and the taluks under each are given below.

Name of the Revenue Division	Headquarters of the Revenue Division	Name of the taluk
Tekkali ..	.. Tekkali	.. Sompeta. Itchapuram. Tekkali Pathapatnam.
Srikakulam	.. Srikakulam	.. Narasannapeta Srikakulam Chipurupalli
Parvathipuram	.. Parvathipuram	Palakonda. Parvathipuram Bobbili Salur

Portions of Parvathipuram, Palakonda and Salur taluks consist of hilly areas known as agency tracts occupied mainly by hill tribes. The taluks of Itchapuram, Sompeta, Tekkali, Narasannapeta, Srikakulam and Cheepurupalli are on the coast. The district may be roughly divided into two natural divisions namely the agency and the plains. The parts of the agency area lie in portions of Palakonda, Parvathipuram and Salur taluks. The coastal taluks include extensive sandy tracts. The Eastern ghats run roughly parallel to the sea-coast from the north-east and the country drains from the ghats to the sea.

There are cashewnut factories and salt factories in Tekkali taluk and sugar factory in Bobbili taluk. There is also a vegetable oil factory at Sitanagaram in Bobbili taluk. There are manganese mines at Garbham, Garividi, Perepi and Sirvaram villages in Cheepurupalle taluk.

The land utilisation of the area in the district is as follows :

				Acres
<i>Total geographical area</i>	..	..	..	24,91,076
1. Area of forests	..	..	..	4,33,967
2. Barren and uncultivable land	..	..	..	4,52,892
3. Land put to non-agricultural uses	..	..	..	69,490
4. Cultivable waste	..	..	..	2,15,869
5. Permanent pastures	..	..	..	93,796
6. Miscellaneous, trees, crops and groves not included in net area sown.	..	..	..	23,516
7. Current fallows	..	..	..	1,74,521
8. Fallow land other than current fallows	..	..	..	1,02,161
9. Net area sown	..	..	..	9,24,864
10. Area sown more than once	..	..	..	2,86,064

2. *Soils*.—The prevailing rock of the district is a soft pinkish gneiss. Intrusive bosses of granite and diorite are abundant. The soils formed by the disintegration of these rocks are highly ferruginous and often sandy. The soils in the district belong chiefly to the regar or black cotton and red ferruginous series. Each type of soil gradually merges into another and so the classification is rather arbitrary. Near the hills the red varieties are predominant but towards the coast the soil becomes finer and in the richest valleys there is a fertile black clay with a tendency to crack on drying. The distribution of soils in the Government settled areas of the district is given below in thousands of acres.

Taluk	Regar clay	Regar loam	Regar sand	Red loam	Red sand
Palakonda	.. 12.5	16.5	1.8	28.2	12.2
Srikakulam and Narasannapeta	} 0.8	0.4	0.5	..	0.2
Itchapuram	.. 0.2	..	..	..	0.2

3. *Rainfall*.—The normal rainfall of the district is 42.7 inches. For this purpose the year may be divided into the following four seasons :—

	Average rainfall	Average rainy days
1. South-West Monsoon (June to Sept.)	34.0 inches	24
2. North-East Monsoon (Oct. to Dec.)	21.2 "	8
3. Winter period (January to February)	0.4 "	1
4. Hot weather period (March to May)	3.2 "	11
Total	58.8	44

The average rainfall of the district during the years from 1950-51 to 1955-56 is given below :

1950-1951	.. 38.70	Inches
1951-1952	.. 41.80	"
1952-1953	.. 39.20	"
1953-1954	.. 46.90	"
1954-1955	.. 46.30	"
1955-1956	.. 58.80	"

There are 964 miles of roads in the district.

Government roads	..	.. 523 miles.
District Board roads	..	.. 393 "

There are 147 miles of broad gauge and 21 miles narrow gauge of Eastern Railway in the district.

4. *Irrigation (Rivers)*—The chief rivers in the district are Nagavalli and Vamsadhara. The Vamsadhara rises in the eastern ghats in the Orissa State and enters the district in Pathapatnam taluk and flows between Narasannapeta and Srikakulam taluks. The Nagavalli also rises in the eastern ghats in the Orissa State, and enters the district in Parvathipuram taluk. After flowing across Palakonda taluk, the river forms the boundary between Srikakulam and Cheepurupalli taluks. In the lower reaches it is called Langulya. The Swarnamukhi river flowing from Bobbili taluk is a tributary of the Nagavalli. The other rivers in the district are Bahuda in Itchapuram taluk, the Mahendratana in Sompeta and Pathapatnam taluks and the Vegavathi in Salur taluk.

The Chief sources of irrigation in the district are the Nagavalli or the Langulya, Vamsadhara and Bahuda rivers. A regulator has been built across the Nagavalli at Thotapalli in Parvathipuram taluk from which irrigation channels take off. The Nagavalli with its tributary the Swarnamukhi irrigates large extents in Palakonda, Bobbili and Srikakulam taluks and some extent in Parvathipuram taluk. The Vamsadhara irrigates large extents in

Pathapatnam, Narasannapeta and Srikakulam taluks. The Bahuda irrigated considerable extents in Itchapuram taluk. The irrigation from most of these rivers is by open mouth channels into which waters is diverted by a temporary obstruction known as "Korombo" work which is raised and maintained by ryots under customary labour. Silt clearance in the channels is also attended to by the ryots. The minor irrigation tanks in all the taluks are generally in good repair except in the areas which formed part of zamindaries recently taken over by the Government. Chikati, Mandasa, Tarla, Patha Tekkali, Deyadi and Urlam and parts of Vizianagar and Parlakimidi are some of the important estates in this district which were abolished and taken over. Survey and settlement operations are still in progress in these estate areas.

The sources of water supply and the area irrigated there from in the district are given below :—

<i>Sources of water supply</i>	<i>No.</i>	<i>Area irrigated</i>
1. Government canals .. ..	79	100,560
2. Private canals .. ..	17	20,001
3. Tanks .. ..	9,316	250,450
4. With an ayacut of 100 acres or more ..	1,992	
5. With an ayacut of less than 100 acres ..	7,324	
6. Wells :		
Government (Masonry) .. ..		
Private .. ..	8,702	15,450
7. Other sources (Spring channels, etc.) ..	..	15,075
8. Area irrigated more than once ..		137,020
Total area irrigated ..		538,556

The number of tanks with an ayacut of 10,20,30 acres are shown below :—

<i>Name of the taluk</i>	<i>Tanks with an ayacut</i>		
	<i>Acres 10</i>	<i>Acres 20</i>	<i>Acres 30</i>
1. Itchapuram .. ..	122	42	20
2. Sompeta .. ..	182	81	49
3. Tekkali .. ..	250	210	134
4. Pathapatnam .. ..	400	117	60
5. Srikakulam .. ..	38	39	28
6. Narasannapeta .. ..	139	115	73
7. Cheepurupalli .. ..	1,050	890	1,250

8. Parvatipuram ..	..	430	220	94
9. Salur ..	..	348	169	86
10. Palakonda ..	..	115	80	47
11. Bobbili ..	..	732	387	233

This district has the largest number of tanks in the State.

5. *Cultivation.*—The agricultural year in the district can be divided into three seasons ; namely, 'punasa' the period of the south-west monsoon, when the staple dry grains are sown 'pedda panta', the regular wet crop season from July to December, and 'Payiru' the period from November to April when second dry crops are raised with the aid of north-east monsoon. Cultivation operations of some sort will be proceeding for ten months out of twelve. The 'punasa' crops are by far the most important as they comprise, cumbu and ragi, the staple food of the mass of the people and a failure of the south-west monsoon will be a serious calamity. In several details, the methods of cultivation in Srikakulam district differ from those in the South. Rice fields are often left unmanured for years together but the seedlings are given a good start by plentiful supplies of fertilizers to the seed beds. Along with manures, wild indigo and sunhemp plants are frequently ploughed in when green. Dry land on the other hand, which in the south is often neglected, is here usually plentifully manured, especially with tank silt, and ragi, cumbu and sometimes cholam instead of being sown are transplanted in dry fields from seed beds after rain, the seedlings being put out by hand in a furrow and their roots covered by ploughing another furrow. Paddy is the chief wet crop grown in the district. Dry crops such as ragi, cumbu, cholam, groundnut, jute, etc. are also raised in the district. The rotation of crops generally followed in the dry, irrigated dry and wet lands is indicated below :

<i>Dry lands</i>	<i>Irrigation dry lands</i>	<i>Wet lands</i>
1. Groundnut or jute. ragi or maize followed by horsegram.	Ragi followed by paddy greengram or gingelly.	Sathikam Ragi or paddy or korra or chama or vooda followed by paddy and greengram or gingelly.
2. Ragi or jute followed by horsegram.		

In the wet lands under the project areas of Palakonda, Parvathipuram, Srikakulam, Narasannapeta, etc., taluks and Uddanam

area in Ichapuram taluk, 'sathikam' or second paddy crop will be raised in wet lands.

The particulars of total area sown at different periods are as follows :

Original settlement 1889	Re-settlement 1919	1956 present times
1,08,664 Acres.	1,72,906 Acres.	*9,24,864 Acres.

\*Includes also the figures relating to estate areas taken over by the Government under the Estates Abolition Act, 1948. Original and Resettlement figures do not include the cultivation figures in estate areas.

The crop calendar showing the harvesting and peak marketing seasons of some of the important crops of the district is given below :

Products	Sowing	Harvesting	Peak marketing
Paddy	.. July-Aug. March-April	Nov-December June-July.	January-June August-Sept.
Ragi	.. June-July Jan.-February	Sept.-Oct. April-May.	Nov.-December June.
Cholam	.. Sept. October	February	March-June
Korra	.. June-July	Sept.-October	Dec.-January.

6. *The cost of cultivation.*—The particulars gathered are tabulated.

	Paddy		Ragi		Other dry grains		Ground- nut	
	Rs.	a. p.	Rs.	a. p.	Rs.	a. p.	Rs.	a. p.
1. <i>Settlement Reports.</i>								
(a) Original settle- ment, 1889.	9	10 8	4	15 6	4	15 6	..	
		to		to		to		
	6	7 0	2	14 2	2	14 2		

1	2	3	4	5	6
(b) Resettlement, 1911.	9 10 8 to 6 7 0	4 15 0 to 2 14 2	4 15 0 to 2 14 2	..	..
2. Director of Agriculture: Karu- kupet farm	..115 0 0	160 0 0	..	..	..
3. Collector's report (Tekkali Dvn.)	95 0 0	51 0 0	..	82 0 0	..
Narasannapet taluk	..170 0 0	140 0 0	..	115 0 0	..

7. *The Prices.*—The average prices of few important crops at different periods have been as follows:

Products	Original settlement 1889	Resettle- ment 1911	1946-47 10 years' average	1956-57 10 years' average
Paddy	..120 0 0	197 0 0	..	811 0 0
Ragi	..141 0 0	217 0 0	..	857 8 0

8. *Yields.*—The gross outturn of several crops gathered from important sources are given below :

Sources	Paddy	Ragi
1. Original settlement reports (1889).	400 to 900 M. Ms.	375 to 160 M. Ms.
2. Resettlement (1911) reports.	400 to 1,000 M. Ms.	375 to 160 M. Ms.
<i>Present Yields</i>		
3. Agricultural officer	.. 951 M. Ms.	328 M. Ms.
*4. Bureau of Economics and Statistics.	703 M. Ms.	240 M. Ms.



5. Revenue Officers	..	853 M. Ms.	394 M. Ms.
†6. Officials	..	921 M. Ms.	392 M. Ms.
†7. Non-officials	..	969 M. Ms.	394 M. Ms.

*Sources.*—\*From the Statistical abstract 1955-56 on the basis of random sampling method adopted.

†From the answers to the questionnaire.

9. *Seasonal conditions.*—The district frequently suffered from famines and scarcity. It experienced a serious dearth of food between November 1790 and 1792. In April 1791, 1200 persons were stated to have died of starvation near Srikakulam. The failure of the two monsoons in 1823 resulted in nearly half the wet land being left uncultivated and in the dry land crops suffered greatly, so that early in 1824 the price of grain was double the normal price. The effects of the Orissa famine in 1865-66 were some what felt in the district. The north-east monsoon failed in 1868 and some anxiety prevailed until the south-west rains of 1869 proved to be favourable. In 1871 again distress threatened the district. The great famine of 1876-78 which brought such terrible havoc in the south of the State was hardly felt in the district. The season of 1885-86 was especially unfavourable. Yet in 1889, the year of the Ganjam famine the district escaped entirely. In 1891-92 there was again considerable scarcity of food. In 1896-97 occurred, the last famine which the district has witnessed.

The district experienced more than its share of floods and storms on account of the long coast and the short courses of the several rivers which rise from the Eastern Ghats which are at a distance of 30 to 40 miles from the coast. The district has been frequently a victim to cyclones, floods and tidal waves.

Earthquakes have been reported in the district on 6th January 1827, 24th August 1859, 19th December 1870, and 31st December 1881, but none of them did any damage.

A statement showing the remissions granted during the last five years is appended below.

Statement showing the particulars of remissions granted during the past five years (fasli 1362-1366).

Fasli 1362	Fasli 1363	Fasli 1364	Fasli 1365	Fasli 1366
Rs. 10,661	Rs. 8,195	Rs. 14,538	Rs. 19,437	Rs. 43,044

10. *Holdings.*—The number of holdings in the district is 65,305 and the area covered by them is 2,21,042 acres. Out of the total number of holdings in the district the number of holdings having an assessment of Rs. 10 and below is 48,629. This is therefore a district of small holdings. The latest particulars are given below:

*Statement showing the number of holdings of various values in Srikakulam district.*

SINGLE HOLDINGS.					
	No. of holdings.	Extent.		Assessment.	
		Dry	Wet		
One Rupee and less .. ..	8,869	4,389	3,883	6,373	
Rs. 10 and less but over Re. 1 ..	17,004	20,102	13,563	69,548	
Rs. 30 and less but over Rs. 10 ..	1,797	9,766	3,438	31,152	
Rs. 50 and less but over Rs. 30 ..	2,704	4,383	5,982	52,775	
Rs. 100 and less but over Rs. 50 ..	1,188	3,573	5,696	62,428	
Rs. 250 and less but over Rs. 100 ..	103	692	1,909	14,264	
Rs. 500 and less but over Rs. 250 ..	18	1,585	3,571	5,290	
Rs. 1,000 and less but over Rs. 500 ..	2	48	234	1,544	
Over Rs. 1,000 .. ..	..	..	..	..	
Total ..	31,685	44,538	38,276	2,43,274	

JOINT HOLDINGS.						
	No. of holdings.	No. of share holders	Extent		Assessment	
			Dry	Wet		
			Acs.	Acs.		Rs.
One rupee and less ..	10,771	32,749	4,024	8,409	11,604	
Rs. 10 and less but over Rs. 1	11,985	16,001	23,350	3,105	42,633	
Rs. 30 and less but over Rs. 10	4,112	10,941	23,439	21,232	1,46,416	
Rs. 50 and less but over Rs. 30	4,879	23,157	10,589	13,311	83,457	
Rs. 100 and less but over Rs. 50	1,657	8,165	5,168	10,736	1,07,340	
Rs. 250 and less but over Rs.100	187	1,368	1,938	3,797	24,718	
Rs. 500 and less but over Rs. 250	27	167	836	7,996	7,833	
Rs. 1,000 and less but over Rs. 500	2	42	120	178	1,333	
Total ..	33,620	92,590	69,464	68,764	4,45,334	

### Features of Original and Resettlement.

#### *Original settlements.*

Taluk	Year
Srikakulam ..	1877
Narasannapeta	} 1889
Itchapuram,	
Palakonda (plain)	

#### *Resettlement.*

Chicacole (Srikakulam)	1909
Narasannapeta ..	1911
Itchapuram & Palakonda (plains)	1920-21

#### *Srikakulam taluk:— Original settlement.*

All the lands were classified under three main heads as Wet, Dry and Manavari. Wet lands were divided into four classes with special reference to their situation and the irrigational facilities enjoyed by them, while dry lands were actually placed in one group though two groups were sanctioned for them by the Government. The soils were divided into three sorts except in the case of regar clay for which four sorts were assigned and arenaceous heavy sand which had only two sorts. At the introduction of the settlement rates, a fourth sort was added to each series which had already three. The standard grains for wet and dry lands were second sort paddy and ragi respectively, the commutation rates adopted being Rs. 80 per garce for paddy and Rs. 105 per garce for ragi. The maximum and minimum rates of assessment were Rs. 5-8-0 and Re. 1-4-0 respectively per acre of wet land and Rs. 4 and annas 4 per acre of dry land. Manavari lands were assessed at one taram higher than similar dry lands of the village.

In resettlement, the same principles as in the original settlements were adopted. The wet rates have been enhanced by  $18\frac{3}{4}\%$  and dry rates by  $12\frac{1}{2}\%$  on the basis of the increase in the prices.

#### *Original and Resettlement:—Narasannapeta, Itchapuram and plain portion of Palakona (127 villages)*

Similar principles as in the original and resettlement of old Visakhapatam district (*viz.* for the Sarvasidhi and Golukonda taluk) were adopted with the following exceptions.

In the original settlement, the irrigation sources were divided into four classes, according to their supply capacity.

In the resettlement, there was no general reclassification of sources, except in the following areas : (i) The classification of the tanks in the village of Magguru in Palakonda taluk which do not receive any supply from Sekharapalli channel taking off from the Swarnamukhi river was reduced from the first to the third or fourth class (ii) In four other villages, Kottisa, Talagama Sirivam and Vangara in which the supply was defective the classification of the channel and of the tanks directly fed by it, was reduced from first to the second class.

In the original settlement the rates of assessment ranged from Rs. 2 to Rs. 9-8-0 in the case of wet lands and annas 10 to Rs. 3 in the case of dry lands. In the resettlement there was an enhancement in the assessment by  $18\frac{3}{4}\%$  over and above the original settlement rates.

Agency areas :—In agency villages the “Muttadari” system is still in vogue. 103 agency villages of Palakonda taluk were settled for the first time under G.O. No. 2726, Revenue, dated 9-11-1940.

12. *Estates Abolition.*—All the estates in the district have been taken over under the Estates (Abolition and Conversion into Ryotwari) Act, 1948. The survey and settlement operations are in progress.

General :—Even though the methods of cultivation are still primitive Nature is bountiful and yields generally good crops. The district, however, suffers from severe droughts once in five years. There are four salt factories in the district. Handloom weaving is an important industry in the district. The Uddanam area in Itchapuram and Sompeta is famous for coconut, jack and cashewnut gardens. In Sompeta and Baruva, coir-mats and ropes are manufactured. At Palasa, there are a number of cashewnut factories depending on the large extents of cashew topes on the sandy coast. These industries provide sufficient employment for labourers in this thickly populated district.

*Money rates—Srikakulam*

Tarams	Dry rates	Wet rates	Remarks
1	2.13	6 8	Scheme sanctioned in G. O. No. 2085, Revenue, dated 30th July, 1909. Rates introduced in fasli 1319 (1909-10) G.O. No. 2996, Revenue, dated 7th October, 1911.
2	2 4	5 5	
3	1 11	4 2	
4	1 6	2 15	
5	1 2	2 6	
6	0 13	1 12	
7	0 9	1 7	
8		1 4	

*Money rates—Narasannapeta—Itchapuram and plain portion of Palakonda taluks*

Taram	Wet rate	Dry rate	Remarks
1	9 8	3 9	Scheme sanctioned in G.O. No. 1602, Revenue, dated 8th July 1919 (B. P. No. 116, dated 10th July 1919). Rates introduced in fasli 1329 (1919-20).
2	8 5	3 0	
3	6 9	2 6	
4	5 6	1 13	
5	4 3	1 8	
6	3 0	1 3	
7	2 6	0 14	
8	2 0	0 10	
9	..	0 7	

### VISAKHAPATNAM DISTRICT

*Introductory* :—After the formation of the Orissa State in 1936, Visakhapatnam became very unwieldy with twenty taluqs and five revenue divisions. The northern half was therefore, constituted into a new district called Srikakulam in 1950. The new Visakhapatnam district is the southern half of the old Visakhapatnam district. It lies between 17° 10' and 18° 25' of the northern latitude and 81° 50' and 83° 55' of the eastern longitude. It is bounded on the north by the Orissa State and Srikakulam district, on the east by the Bay of Bengal and on the south by the East Godavari district and on the west by the Orissa State. The district consists of the following revenue divisions comprising the taluqs noted against them.

Name of the Revenue Division	Headquarters of the Revenue Division	Name of the taluq
Narsipatnam	.. Narsipatnam	.. Narsipatnam Yellamanchili Chintapalli
Visakhapatnam	.. Visakhapatnam	.. Anakapalli Visakhapatnam Bheemunipatnam
Vizianagaram	.. Vizianagaram	.. Vizianagaram Srungavarapukota Chodawaram.

The district consists of two natural divisions namely the agency areas and the plains. The agency tract consists of the hilly regions covered by the Eastern Ghats which run parallel to the coast from the north-east to the south-west. They comprise the taluqs of Chintapalli and parts of the taluqs of Narasipatnam. Srungavarapukota and Chodavaram, portions of Vizianagaram and Visakhapatnam taluqs and the northern portions of Yellamanchili taluq also contain hills. The hills of the Eastern Ghats are of an average height of 3,000 ft. with several peaks of 4,000 ft. The chief peaks are Sinkaram 5,300 ft. and Galikonda 5,300 ft. in Srungavarapukota taluq. Between these main hills and the low country intervene ranges of lower foot hills among which there are secluded valleys. Along the coast lie a series of back-waters of the sea and swamps from which salt of a superior variety is manufactured on a large scale.

The land utilisation of the area in the district is as follows in the year 1955-1956 :—

	<i>Acres</i>
Total geographical area .. .. .	33,14,434
Area of forests .. .. .	14,46,164
Barren and uncultivable land .. .. .	3,76,256
Land put to non-agricultural uses .. .. .	3,67,807
Cultivable waste .. .. .	73,787
Parmanent pastures .. .. .	35,017
Trees, miscellaneous crops and groves .. .. .	41,939
Current fallows .. .. .	1,45,494
Other fallow lands .. .. .	43,513
Total area sown .. .. .	7,84,457
Area sown more than once. .. .. .	1,98,421

The river Machkund rises in the Madugula hills in Gudem taluq and flows nearly north at first and then turns westwards into the Orissa State. There is a water fall in the river at Doduma where the Machkund Hydro-Electric Project which is a joint venture of the Orissa and Andhra States is functioning after the completion of the first stage. Three out of the six turbines have so far been installed. The rivers Champavathi and Gosthani rise in the Galikonda hills, flow through Srungavarapukota, Vizianagaram and Bheemunipatnam taluqs and fall into the sea at Konada and Bheemunipatnam. The river Sarada rises in Madugula hills flows through Chodavaram, Anakapalli and Yellamanchili taluqs and enters the sea at Vakada. The Varahanadi rises in the Golugonda hills, flows through Narasipatnam and Yellamanchili taluqs and enters the Bay of Bengal at Vakada. The other rivers flowing in this district are Meghadrigadda flowing in Visakhapatnam, Sam-

gudugadda and Tandava rivers flowing in Narasipatnam and Yellamanchili taluqs. The well known Aruku valley in this district is being developed as a summer resort. There are 1,105 miles of roads in the district consisting of 132 miles of national high ways, 403 miles of major district roads, 150 miles of other districts roads, 278 miles of village roads and 142 miles of municipal roads. There are jute mills at Narsipatnam and Chithivalsa. There are 58½ miles of broadgauge section of the Southern Railway and 69 miles of the South-Eastern Railway in the district. The Vizianagaram-Raipur line now connects Visakhapatnam with Bombay by a short straight cut. Visakhapatnam is a sea-port town and its importance is augmented by the installation of the Hindustan Ship Building Yard and oil refinery. Anakapalli is noted for its jaggery industry. Simhachalam about 8 miles from Visakhapatnam is a place of pilgrimage. The deity Narasimhaswamy is venerated by all.

2. *Soils.*—The coastal taluqs included extensive sandy tracts. The prevailing rock of the district is a soft pinkish red ferrous gneiss. Intrusive bosses of granite and diorite are abundant. The soils formed by the disintegration of these rocks are highly ferruginous and often sandy. The soils in the district belong chiefly to red ferruginous series, black soils are found in the basins of the rivers. Each kind of soil gradually shades into another and so the classification is only arbitrary. Near the hills red varieties are predominant but towards the coast the soil becomes finer and in the richest valleys there is a fertile black clay with a tendency to crack on drying.

3. *Rainfall.*—The average rainfall in the plains is 41 inches and in the agency which receives more of south-west monsoon is 57 inches. Monsoon-wise particulars are as follows:—

		Average rain- fall in inches.	Average rainy days
South-West Monsoon	.. ..	24.0	29
North-East Monsoon	.. ..	16.6	10
Winter period	.. ..	0.5	1
Hot weather period	.. ..	17.3	12
	Total ..	<u>58.4</u>	<u>52</u>

The average rainfall of the district during the years 1949-50 to 1955-56 is given below :

1949-50	..	48.50 inches
1950-51	..	35.10 inches
1951-52	..	41.50 inches

1952-53	..	38.10 inches
1953-54	..	37.10 inches
1954-55	..	59.00 inches
1955-56	..	48.70 inches.

The normal rainfall of the district is 39 inches.

4. *Irrigation.*—*Chintapalli taluq.*—The region is hilly and as far as possible beds of streams are bunded up and paddy is grown. There are 81 minor irrigation sources with an ayacut of 1,554.39 acres.

*Srungavarapukota taluq.*—Irrigation is carried on by Gosthani river, channels and rainfed tanks. There are 1754 minor irrigation sources in the taluq with an ayacut of 55,326 acres and 54 major irrigation sources with an ayacut of 35,663.53 acres.

*Chodavaram taluq.*—Irrigation is by open mouth channels from the Sarada river and rainfed tanks. There are 837 minor irrigation works with an ayacut of 32,418.08 acres and 34 major irrigation sources with an ayacut of 23,865.82 acres.

*Narasipatnam taluq.*—The chief irrigation sources are tanks. There are 528 Minor Irrigation works with an ayacut of 15,643.18 acres and 29 major irrigation sources with an ayacut of 4,602.69 acres.

*Vizianagaram taluq.*—The river Champavathi has two anicuts from which about 10,000 acres are irrigated. The rest of the irrigation sources consist of rainfed tanks. There are 809 minor irrigation sources serving an area of 23,264.80 acres and 28 major irrigation sources with an ayacut of 17,185.09 acres.

*Bheemunipatnam taluq.*—Irrigation in the taluq is carried on by open head channels from one anicut on the river Gosthani and from open mouth channels of the Champavathi. The 63 minor irrigation rainfed sources in the taluq command an ayacut of 17,132.78 acres and 26 major irrigation sources with an ayacut of 25,405.72 acres.

*Visakhapatnam taluq.*—There are 173 minor irrigation works with an ayacut of 5,492.80 acres and 6 major irrigation sources with an ayacut of 1,939.52 acres.

*Anakapalli taluq.*—River channels and tanks from the five anicuts on the river Sarada form the principal irrigation sources. There are 546 minor irrigation sources commanding an area of 20,075.69 irrigation works and 69 major irrigation sources with an ayacut of 15,272.45 acres.



*Yellamanchili taluq.*—The Varahanadi, Tandava and Sarada river channels form the more important irrigation sources. There are 137 minor irrigation sources with an ayacut of 18,723.90 acres.

The Gokivadagadda, a branch of the river Sarada was embanked on the right-side from Melupaka to Marrisipalem to protect the ayacut under several villages from submersion.

The sources of water supply and the area irrigated there from in the district during the year 1954-55 are given below.

Source of water supply	No.	Area irrigated (acres)
1. Government canals	92	78,408
2. Private canals ..	8	49,585
3. Tanks ..	2,698	1,30,856
(a) With an ayacut of 100 acres or more	226	
(b) With an ayacut of less than 100 acres	2472	
4. Wells:		
Government (Masonry)	849	41,641
Private .. .. .	15,203	
5. Other sources (Spring channels, etc.)		56,020
Area irrigated more than once		72,577
Total net irrigated ..		3,49,510
Total Gross area irrigated ..		4,22,087

5. *Cultivation.*—The agricultural year in the district can be divided into three seasons; namely '*Punasa*' the period of south-west monsoon, when the staple dry grains are sown; '*Peddapanta*' the regular wet crop season from August to December, and '*Pairu*' the period from November to April when the second dry crop is raised with the aid of North-East Monsoon. Cultivation operations of some sort or other are done for ten months out of the twelve. The '*Punasa*' crops are by far the most important as they comprise, cumbu and ragi, the staple food of the mass of the people, and a failure of the south-west monsoon is a serious calamity. In several directions methods of cultivation in Visakhapatam differ from those in the South. Rice fields are often left unmanured for years together but the seedlings are given a good start by plentiful supplies of fertilizers to the seed beds. Where manures are used, the wild indigo and sunhemp plants are frequently grown and ploughed in when they are green. Dry land on the other hand, which in

the South is often neglected, is here usually plentifully manured, especially with tank silt. Ragi and cumbu (and sometimes cholam) instead of being sown, are transplanted from seed beds after rain, the seedlings being put in by hand in furrows. Paddy is the wet crop grown in the district. Dry crops such as ragi, cumbu, cholam, Groundnut, etc., are also raised in the district. The particulars of total area sown at different periods are as follows:—

Original settlement 1889	Resettlement 1919	(Present times) 1956
Acres 1,08,664	Acres 1,72,906	Acres *7,84,457

\* includes also the figures relating to estate areas taken over by the Government under the Estates Abolition Act, 1948. Original and resettlement figures do not include the cultivation figures in estate areas.

The crop calendar showing the harvesting and peak marketing seasons of some of the important crops of the district is given below :—

Products	Sowing	Harvesting	Peak marketing
Paddy	.. July-August March-April	November-Dec. June-July	Jan-June. Aug.-September
Ragi	.. June-July Jan.-February	Sept.-October April-May	Nov.-December June.
Cholam	.. September- October.	February	March-June.
Korra	.. June-July	Sept.-October	December-Jan.

6. *Cost of cultivation.*—The particulars gathered are tabulated below :

	Paddy	Ragi	Other dry grains
1	2	3	4

#### 1. *Settlement reports.*

(a) Original settlement 9-10-8 to 8-3-0 4-15-0 to 3-7-5 4-15-6 to 3-7-5

1	2	3	4
(b) Resettle-9-10-8 to 7-1-0 ment.	4-15-0 to 3-7-5	4-9-9 to 3-7-1	
2. According to Agriculture officials- average.	134-1-5		
3. According to Non- officials-average 187-9-0			

7. *Prices.*—The average prices of a few important crops at different periods have been as follows :—

PER GARCE OF 3200 M.Ms.

Products	Original settlement Rs.	Resettle- ment Rs.	1945-46 (10 years' average)	1956-57 (10 years' average)
Paddy	.. 120	197	334	809
Ragi	.. 141	217	..	857-8-0

8. *Yields.*—The gross outturn of several crops gathered from important sources are given below in terms of Madras Measures.

Sources	Paddy (M.Ms.)	Ragi (M.Ms.)
<i>Settlement Reports.</i>		
1. Original settlement	.. 400 to 900	375 to 160
2. Resettlement	.. 400 to 1000	375 to 160
3. <i>Agriculture Department.</i>		
Sugar cane Research Station, Anakapalli	.. 918 M. Ms.	492 M. Ms.
*4. Bureau of Economics & Statistics	601 M.Ms.	269 M.Ms.
5. Officials	.. 864 M. Ms.	472 M. Ms.
†6. Non-officials	.. 921 M. Ms.	649 M. Ms.

Sources : † From answers to the questionnaire.

\*From statistical abstract 1955-56 on the basis of random sampling method adopted.

9. *Seasonal Conditions.*—The district has suffered but little from famines and scarcities. It experienced a serious dearth of food between November 1790 and November 1792. In April 1791, 1,200 persons were stated to have died of starvation in the neighbourhood of Vizagapatam. The failure of both the monsoons in 1823 resulted in nearly half the wet land being left uncultivated and in the dry land crops suffered greatly, so that early in 1824 the price of grain was double the normal. The effects of the Orissa famine in 1865-66 were felt somewhat in Vizagapatam. North-east monsoon of 1868 failed and some anxiety prevailed until the south-west rains of 1869 proved to be favourable. In 1871 distress threatened the district. The great famine of 1876-78 which wrought such terrible havoc in the south of the State was hardly felt in Visakhapatnam. The season of 1885-86 was especially unfavourable. Yet in 1889, the year of the Ganjam famine Visakhapatnam escaped entirely. In 1891-1892 there was again considerable scarcity of food. In 1896-1897 occurred the last famine which the district had witnessed until 1943 when famine conditions prevailed. The district has experienced more than its share of floods and storms on account of the long coast and due to the short courses of the several rivers which rise from the Eastern Ghats which are at a distance of 20 to 30 miles from the coast, the district is frequently a victim to cyclones, floods and tidal waves.

Earthquakes have been reported as having occurred in the district on the 6th January 1827, 24th August 1859, 19th December 1870, and 31st December 1881, but none of them did any damage.

The particulars of remissions granted during the past five years are as follows :—

*Statement showing the particulars of remissions granted during the past five years (1362-1366 F.)*

1362 F.	1363 F.	1364 F.	1365 F.	1366 F.
Rs.	Rs.	Rs.	Rs.	Rs.
66,880	19,230	43,746	19,981	12,431

10. *Holdings.*—The number of land holdings in the district is 29,835 and the area owned by them is 1,62,872 acres. Out of the total number of holdings 20,196 are holdings paying an assessment of Rs. 10 and less. Thus it is evident that this is a district of small holdings. The latest particulars are as follows :—

Classification of holdings	SINGLE PATTAS			
	No. of pattas.	Extent of holdings.		Assessment in Rs.
		Dry	Wet	
(1)	(2)	(3)	(4)	(5)
		Ac.	Ac.	
1. Rupee one & less .. ..	1,310	903	105	979
2. Rs. 10 & less but over Rs. 1 ..	5,592	18,120	2,258	19,553
3. Rs. 30 & less but over Rs. 10 ..	1,797	9,766	3,438	31,152
4. Rs. 50 & less but over Rs. 30 ..	556	3,820	1,945	12,105
5. Rs. 100 & less but over Rs. 50 ..	210	3,379	1,823	14,505
6. Rs. 250 & less but over Rs. 100 ..	69	3,112	1,591	10,601
7. Rs. 500 & less but over Rs. 250 ..	14	670	409	3,373
8. Rs. 1,000 & less but over Rs. 500 ..	2	240	271	1,015
9. Rupees over 1,000 .. ..	..	..	..	..
Total ..	9,550	39,810	11,840	93,283

## Continuation of the Statement above.

JOINT PATTAS				
No. of pattas	No. of share holders	Dry	Wet	Assessment in Rs.
(6)	(7)	(8)	(9)	(10)
1,309	2,000	1,183	173	1,802
11,985	16,001	23,350	3,105	42,633
4,112	10,941	26,959	7,538	68,929
1,496	4,516	12,305	5,549	60,009
1,017	3,533	9,159	8,056	50,041
336	1,336	4,895	5,865	41,568
29	233	1,827	1,085	8,881
1	26	29	144	523
..	..	..	..	..
20,285	38,586	79,707	31,515	2,74,386

11. *Features of Original Settlement* : (1889).—By Mr. C. J. Stuart & M.E. Rangachari. (The Government taluqs of Palakonda now in Srikakulam district (Sarvasidhi & Golugonda).

The original settlement was done in 1889.—(a) The soils were classified into two main series regar and red ferruginous. The red ferruginous series were subdivided into clayey and loamy. Each of these subdivisions was again subdivided into five sorts, best, good, ordinary, inferior and worst. (b) Irrigation sources were divided into four classes according to their supply. (c) For the purpose of dry assessment, villages were divided into two groups with reference to facilities of communications, accessibility to ports and markets, unhealthiness and exposure to the ravages of wild animals. (d) Paddy was adopted as the standard crop for wet lands in all the taluqs and cumbu and ragi in the proportion of 2 to 1 in the taluqs of Yellamanchili and Narasapatam. (e) Commutation rates were fixed after allowing a deduction of 15% on account of the difference between market prices and the ryots' selling prices. The rates thus adopted were Rs. 105 a garce of 3200 M. Ms. for paddy and Rs. 126 a garce for ragi and Rs. 114 a garce for cumbu. (f) The rates of assessment ranged from Rs. 6 to Rs. 8 in the case of wet lands. (g) A consolidated charge was imposed on all wet lands irrespective of the No. of crops grown on them, the addition made to the single crop assessment on this account being one-third, one-fourth, one-fifth, and one-sixth respectively under the first, second, third and fourth class sources.

12. *Features of Resettlement*. (1919-20).—(By Mr. J. T. Gwyn I.C.S.). The Government taluqs of Palakonda now in Srikakulam district, Sarvasidhi and Golugonda taluqs.

There was no general reclassification of soils except in respect of the lands commanded by the new Nagavali anicut. As regards the remaining area classification was altered in the case of the following lands :—

(1) Lands which were found to have been seriously over assessed at settlement, especially in the (Sarvasidhi) Elamanchili taluq.

(2) Lands which were unassessed at the original settlement but which were subsequently transferred to assessed waste or assigned on patta by the Revenue Department.

(3) Lands which had been transferred from dry to wet or vice versa or from one source of irrigation to another subsequent to the original settlement.

(4) Lands in the seven villages of Narasipatnam (Golugonda) taluq which were irrigated by the channels from the Komaravolu Ava and the small anicuts on the eastern branch of Varahanadi and the tanks directly supplied by them.

(5) At the original settlement the whole of Elamanchili (Sarvasidhi) taluq and 99 villages of Palakonda (now in Srikakulam district) were placed in the first group, the whole of Golugonda (Narasipatnam) and the remaining 28 villages in Palakonda being placed in the second group. No changes were effected in dry grouping at the time of resettlement.

(6) There was no general reclassification of irrigation sources except in the case of channels from the Komaravolu Ava and the small anicuts on the eastern branch of the Varahanadi and the tanks directly supplied by them was raised from the second to the first-class.

(7) Commutation rates : Paddy was adopted as the standard crop for wet lands at the original settlement. As regards dry lands, ragi was adopted as standard crop in Palakonda (now in Srikakulam district) while cumbu and ragi were adopted as the standard crops in the taluqs of Elamanchili (Sarvasidhi) and Narasipatnam (Golugonda). After deducting 15% on account of cartage and the merchants' profits, the commutation rates were fixed at Rs. 105 a garce for paddy, Rs. 126 a garce for ragi and Rs. 114 a garce for cumbu. The commutation prices of these three grains based on the average annual prices during the 20 non-famine years ending with 1916-17 amount to Rs. 220 a garce for paddy, Rs. 247 a garce for ragi and Rs. 226 a garce for cumbu. These prices were somewhat higher than those prevailing in the ryots' selling months during the same period which amount to Rs. 214 a garce for paddy, Rs. 238 a garce for ragi and Rs. 221 a garce for cumbu. After deducting 15% from the latter set of prices on account of cartage and merchants' profits, the net commutation rates amounted to Rs. 182 for paddy, Rs. 202 for ragi and Rs. 188 for cumbu which represent an increase of 73%, 60% and 65% respectively on the commutation rates adopted at the original settlement. If however, the year 1917-18 is taken as the terminal year of the twenty years' period the net commutation rates would come to Rs. 186 a garce for paddy, Rs. 206 a garce for ragi and Rs. 192 a garce for cumbu. An enhancement of the assessment by  $18\frac{3}{4}$  percent of the original settlement rates was therefore ordered.

(8) Charge for second crop : At the original settlement, the wet assessment in the three Government taluqs was a consolidated one irrespective of the number of crops grown. The addition made to single crop assessment on this account was one-third, one-

fourth, one-fifth and one-sixth respectively on lands under first, second, third and the fourth class sources. As these rates were less than normal rates namely half, one-third, one-fourth, and one-fifth, no remission was granted when a second crop was not grown. The Government discontinued the system of levying a consolidated assessment on wet lands. Lands which in all ordinary seasons had an unfailing supply of water were registered as double crop and such lands were eligible for remission of the difference between the double and single crop charges if the water supply was found insufficient for two crops in any year. A second crop when raised on land registered as single crop wet will be charged in accordance with paragraphs I (i) and 2 of B.S.O. 5. Lands on which two wet crops or one wet and one irrigated dry crop were grown were registered as compounded double crop lands at the following standard rates. Lands under second class source at 1 & 1/3 of the single crop charges. Lands under third class source at 1 & 1/4 of the single crop charges. Lands under fourth class source at 1 & 1/5 of the single crop charges. Lands under fifth class source at 1 & 1/6 of the single crop charges. The usual increment remission was given.

13. *Settlement of resumed muttas in Gudem taluq in 1936.* 76 villages of Koyyur, Antada, Mokaam and Chintampadu resumed muttas were settled as per G.O. 2051, dated 30-8-1935 and G.O. 1324, dated 19-6-1936. The rates sanctioned are as follows:-

*Money Rates—Visakhapatnam—Gudem (Resumed Muttas)*

Class and sort of soil					Wet rates		
III	IV	V	VII	VIII	III class	IV class	V class
					Rs.	Rs.	Rs.
..	1	..	..	..	8 5 0	6 9 0	5 6 0
1	2	..	1	..	6 9 0	5 6 0	4 3 0
2	3	1	2	1	5 6 0	4 3 0	3 0 0
3	4	2	3	2	4 3 0	3 0 0	2 6 0
4	5	3	4	3	3 0 0	2 6 0	2 0 0
5	..	4	5	4	2 6 0	2 0 0	2 0 0
..	..	5	..	5	2 0 0	2 0 0	2 0 0



Class & sort of soil					Dry rates.		
III	IV	V	VII	VIII	III class	IV class	V class
					Rs.	Rs.	Rs.
1	..	..	..	..	3 0 0	2 6 0	1 13 0
2	1	..	1	..	2 6 0	1 13 0	1 8 0
3	2	..	2	..	1 13 0	1 8 0	1 3 0
4	3	1	3	1	1 8 0	1 3 0	0 14 0
5	4	2	4	2	1 3 0	0 14 0	0 10 0
..	5	3	5	3	1 14 0	0 10 0	0 7 0
..	..	4	..	4	0 10 0	0 7 0	0 5 0
..	..	5	..	5	0 7 0	0 5 0	0 3 0

### Abstract

Tarm	Wet rates	Dry rates
	Rs.	Rs.
1	8 5 0	3 0 0
2	6 9 0	2 6 0
3	5 6 0	1 13 0
4	4 3 0	1 8 0
5	3 0 0	1 3 0
6	2 6 0	0 14 0
7	2 0 0	0 10 0
8	..	0 7 0
9	..	0 5 0
10	..	0 3 0

A comparative statement showing the money rates of the original and resettlements for the Government taluqs is given below:—

No. of tarams	WET		DRY	
	Original settlement 1889	Re-settle- ment 1919	Original settlement 1889	Resettle- ment 1949
1	8 0 0	9 8 0	3 0 0	3 9 0
2	7 0 0	8 5 0	2 8 0	3 0 0
3	5 8 0	6 9 0	2 0 0	2 6 0
4	4 8 0	5 6 0	1 8 0	1 13 0
5	3 8 0	4 3 0	1 4 0	1 8 0
6	2 8 0	3 0 0	1 0 0	1 3 0
7	2 0 0	2 6 0	0 12 0	0 14 0
8	..	2 0 0	0 8 0	0 10 0
9	..	..	0 6 0	0 7 0

14. *Estates Abolition.*—All the estates in the district have been taken over under the Madras Estates (Abolition and Conversion into Ryotwari) Act, 1948. Survey and settlement operations on the same lines of resettlement principles have been completed and settlement rates have been introduced on 1-7-58 in the taluks of Vizianagaram, Srungavarapukota and Bheemunipatnam. In respect of other areas they are in progress. Practically 3/4 of the district was covered by zamindaries out of which the notable are Vizianagaram, Madgole, Chemudu and Kasimkota. It may also be mentioned that the rents in Vizianagaram zamindari were quite moderate and the irrigation sources were maintained in a fairly satisfactory condition.

## WEST GODAVARI DISTRICT

### Introductory

In April 1925 the taluks forming the Godavari Western delta together with the adjacent uplands were separated from the old Krishna district and formed into the new district of West Godavari. The agency taluk of Polavaram was also transferred to this district from East Godavari in 1942. The western delta of the river Godavari lies in this district which has been appropriately named

“West Godavari”. The district consists of eight taluks in three revenue divisions as detailed below :—

<i>Name of the Revenue Division</i>	<i>Name of the Taluk</i>
Eluru ..	.. Eluru Chintalapudi
Kovvur ..	.. Tadepalligudem Kovvur Polavaram Tanuku
Narsapur ..	.. Narasapur Bhimavaram

The district lies between 16° 15' and 17° 30' of the northern latitude and 80° 50' and 81° 55' of the eastern longitude. The district is bounded by the Krishna district on the west and Khammammet district on the north; East Godavari on the east and Bay of Bengal on the south. It is a small district in the State with an area of 2,988 sq. miles and a population of 1,697,727. The density of population is 568 per sq. mile. The land utilisation of the area is as follows :—

	Acs.
Total Geographical area .. ..	19,31,830
Forests .. ..	1,81,471
Barren and uncultivable land .. ..	2,19,915
Land put to non-agricultural use .. ..	1,63,881
Cultivable waste .. ..	2,28,834
Permanent pastures .. ..	67,906
Miscellaneous trees, crops, etc., not included in net area sown. \ .. ..	7,586
Current fallows .. ..	1,03,111
Fallow land other than current fallows .. ..	65,486
Net area sown .. ..	9,56,640
Area sown more than once .. ..	2,08,226

The most striking physical features of the district from the point of view of Revenue settlement is that half of it is delta and the remaining half is upland and agency. The agency taluk Polavaram is hilly and inhabited mostly by Adi-vasis. The upland area consists of the Chintalapudi taluk, the northern portion of Eluru,

Tadepalligudem and Kovuru taluks. The delta area is irrigated by the Godavari river channels and Krishna channels. The river Godavari flows along the entire eastern boundary of the district. The Tammileru river flows along the western boundary of Eluru and Chintalapudi taluk. Lake Collair is an extensive shallow depression which receives a large volume of drainage from the Godavari and Krishna canal systems and has an outlet to the sea through Upputeru river. The lands on the margin of the lake suffer immersion as the entire inflow cannot be adequately drained away into the sea by Upputeru. The upland and the delta however show a striking contrast. The dividing line runs from Bezwada along the Eluru Canal to the Godavari anicut. South of this lies the delta, with alluvial soil and under wet cultivation, presenting a vast expanse of paddy fields. North of Bezwada-Samalkot line lies the upland of the district. There are 1,172 miles of road and 108 miles of broad gauge and 14 miles of metre gauge railway in this district. The laying of Nidadavoulu-Narasapur broad gauge line and the Gudivada-Bhimavaram metre gauge line has improved communications and opened up the delta for trade in other states. Besides these railways the net work of Godavari canals afford cheap transport facilities for agricultural produce and passengers.

2. *Soils*.—There are three classes of soils in the district viz., alluvial, black clay and red ferruginous. There is also a small belt of arenaceous soil on the sea coast.

The district is a very fertile one and alluvial soil occurs extensively in all the taluks except Chintalapudi and Polavaram.

3. *Rainfall*.—For this purpose the year may be divided into the following 4 seasons and the seasonwise rainfall for 1955-56 is furnished.

South-West Monsoon	North-East Monsoon	Winter period	Hot weather	Total rainfall
June to September 1955	October to December 1955	January to February 1956	March to May 1956	June to May 1956
27.2 inches	14.1 inch.	0.1 inch.	5.1 inch	46.5 inch

Normal Rainfall, 40.7".

Most of the rainfall is received during the South-West Monsoon from June to September and a little rainfall during the North-East

Monsoon in October and November. The climate is generally healthy throughout the district. The hilly areas of Polavaram taluk are slightly cooler than the plains in the months of December and January.

The effect of local rain depends more on its distribution than its total quantity and a year of heavy downpour may be as disastrous as one of comparative drought. As far as the delta is concerned local rains are of secondary importance to the supply in the river. It is, however, in the uplands that the effects of insufficient rains are most keenly felt. This district rarely experienced famine or scarcity conditions after the advent of the Godavari anicut system.

4. *Irrigation.*—Irrigation is carried on mainly from the canals of the Godavari and Krishna deltas. This district usually suffers from inadequate drainage and submersion. In the uplands the irrigation sources consist mostly of rainfed tanks and a few tanks fed by natural streams. Sometimes direct irrigation by baling from the streams is also resorted to by the ryots. There are private wells in the uplands for irrigating garden crops. Temporary doruvu wells irrigate dry crops in the coastal villages. There are about 1,295 irrigation pumps out of which 1,079 are worked by Oil Engines and 216 with Electric power in the district. The sources of water supply and the area irrigated therefrom in the district in 1955-56 are given below:—

Sources of supply	No.	Area irrigated in Acs.
Government Canals .. ..	169	6,18,459
Tanks .. ..	445	1,13,966
Wells .. ..	1,401	10,251
Other sources .. ..		14,147
		7,56,823
Area irrigated more than once .. ..		57,911
		8,14,734

5. *Cultivation.*—Out of 8,14,734 acres of the total irrigated arae, an extent of Ac. 7,61,394 is utilised for cultivation of food

crops. Paddy is grown in an extent of Ac. 7,27,375. The particulars of total area cultivated at different periods are shown below :—

First Resettlement (Approximate)	During 1919-23 Second Resettlement	During 1955-56 (Present times)
4,60,605	6,41,590	8,14,734

The crop calendar showing the sowing, harvesting and peak marketing seasons of some of the important crops of the district is given below :

Products	Sowing	Harvesting	Peak marketing
Paddy	.. June-August Jan.-February	Sept.-October April-May	June-July
Jowar	.. Sept.-October	January	March-June
Sugarcane	.. March-April	Feb.-April	April-June
Onions	.. July-October	Dec.-March	January-June
Tobacco	.. October	February	April-June
Gingelly	.. June-July	Sept.-October	Nov.-December
Chillies	.. September	March	April-June
Red-gram	.. July-August	Jan.-February	March-April

6. Costs of cultivation— The particulars gathered are tabulated below :—

Source and Year	White paddy	Black paddy	Cholam	Sajja	Ragi
1. Settlement scheme reports of original and resettlements (1860-1930)	.. 3 8 0 to 14 0 0	2 12 0 to 4 0 0	2 0 0 to 4 12 0	2 0 0 to 4 0 0	2 12 0 to 4 4 0
2. Collector (1958)	.. 100 0 0	40 0 0	40 0 0	..	..
3. Agricultural Officers gathered from questionnaires.	151 0 0	..	111 0 0	..	..
4. Director of Agriculture for seed farms.	204 0 0	..	81 0 0	..	149 0 0

Source and Year	Horse-gram	Tobacco	Sugar-cane	Others
1. Settlement Scheme reports of original and resettlements (1860-1930)	2 12 0 to 4 4 0	35 0 0 (1860)	95 0 0 (1860)	For Alluvial soils Rs. 8 to Rs. 14 from the first resettlements.
2. Collector (1958)	.. ..	..	600 0 0	
3. Agricultural Officers gathered from questionnaires.	35 0 0	480 0 0	846 0 0	
4. Director of Agriculture for seed farms	..	..		..

7. The average prices of a few important crops, at different periods are furnished below:—

PER GARCE OF 3200 MADRAS MEASURES

Products	1860 Original Settlement	1899 First Resettlement	1931 Second Resettlement	1945-46 (10 years' average)	1956-57 (10 years' average)
Paddy ..	88	136	293	331	894
Cholam ..	101	169	345	..	..

8. *The yields.*—The gross outturns of several crops gathered from important sources are :—

Source	Paddy	Cholam	Sajja	Ragi
Settlement	.. 500 to 1,150 M.Ms.	50 to 800 M.Ms.	66 to 666 M.Ms.	100 to 933 M.Ms.

*Present Day :*

Bureau of Economics      713 M.Ms. 120 M.Ms. 171 M.Ms. 240 M.Ms.

based on random  
sampling method

Agricultural Officers 984 M.Ms. 303 M.Ms.

Officials 939 M.Ms. 305 M.Ms.

Non-Officials 972 M.Ms. 458 M.Ms.

9. *Seasonal conditions.*—The years of seasonal calamities are the following :—

Floods : 1614

Famine : 1791

Guntur Famine : 1832-33

Distress due to failure of monsoon : 1835-38

Disastrous cyclone, inundation and famine : 1839-41

Floods : 1862, 1863, 1875, 1878, 1882 to 1884

Severe floods : 1886, 1900 and 1953

Floods : 1928

Storm : 1937

Cyclone : 1945, 1949

A statement showing the particulars of remissions granted during the past five faslis is given below :—

	Rs.
Fasli 1362	1,62,540
Fasli 1363	56,888
Fasli 1364	83,601
Fasli 1365	2,92,579
Fasli 1366	1,82,415

10. *Holdings.*—The number of land holdings in the district is 1,66 630 and the area covered by them is 7,65,813 acres. The number of pattadars assessed over Rs. 1,000 are seventeen, with an extent of acres 10,216 bearing an assessment of Rs. 49,131. The total assessment covered by the holdings is Rs. 28,32,638. A statement showing the details of holdings is appended below. The district is evidently a district of small holdings.



Holdings assessed to	NUMBER			Extent Acres	Assessment Rs.
	Single	Joint	Total		
Re. 1 and less ..	15,819	10,292	26,111	24,962	20,380
Rs. 10 and less but over Re.1	45,657	32,271	77,928	2,15,151	5,31,228
Rs. 30 ,, Rs. 10	19,315	20,969	40,284	2,11,625	7,95,876
Rs. 50 ,, Rs. 30	5,760	6,102	11,862	1,16,491	4,55,268
Rs. 100 ,, Rs. 50	3,780	3,417	7,197	90,653	4,23,798
Rs. 250 ,, Rs. 100	1,504	1,149	2,653	62,843	3,27,308
Rs. 500 ,, Rs. 250	203	277	480	23,566	1,61,297
Rs. 1,000 ,, Rs. 500	49	49	98	10,306	68,252
Over Rs. 1,000 ..	6	11	17	10,216	49,131
Total ..	92,093	74,537	1,66,630	7,65,813	28,32,638

### Features of the Original Settlement about 1860

(BY R.E. MASTER)

11. (a) Settlement operations were taken up about 1860. The present West Godavari then formed part of the Godavari district which was divided into delta and uplands. Delta portion was again divided into Western, Central and Eastern delta. The western delta corresponds to the present delta portion of the West Godavari. Separate rates of assessment were sanctioned to the delta and uplands. All the lands in the delta were classified as dry and a uniform water rate was levied on the irrigated lands in addition to the land assessment. However the lands irrigated in upland from a Government source of irrigation were classified as consolidated wet lands and separate wet rates were charged. (b) The soils in the delta were divided into five classes—alluvial, exceptional or permanently improved, regar, red ferruginous and arenaceous, while those in the uplands were divided into four classes—alluvial, permanently improved, regar and red ferruginous. The regar and the red-ferruginous series were subdivided into clay, loam and sand, and the arenaceous into loam, sand, and heavy sand. Each of these subdivisions was further subdivided into sorts—generally three. Lands classified as alluvial or as permanently improved were also similarly subdivided into sorts. (c) The villages were divided into four

dry groups based on the relative fertility of the soils in each village and not in consideration of its proximity for markets and facilities of markets and for each group a separate set of dry rates was framed.

2. The water rate for Godavari delta was fixed at Rs. 3 an acre in 1861. It was raised to Rs. 4 in 1865 in G.O. 1006, dated 12-5-1865. This was again raised to Rs. 5 per acre in G.O. No. 562, Revenue, dated 2-8-1894. Since 1931, the rate has been increased to Rs. 6-4-0 per acre. The standard grains adopted were white paddy for wet and cholam, cumbu, ragi, blackpaddy and horsegram for dry. The rates were calculated from the commuted value of the standard outturns less 25 per cent for vicissitudes of seasons and the estimated cultivation expenses.

## 12. (a) Features of First Resettlement

(BY MR. G. P. CLERK)

The original settlement in the western delta expired by 1892-93 and in the rest of the tract by 1896-97. The delta portion was reclassified substituting consolidated wet assessments for the existing separate charges of land assessment and water rate.

Delta soils were reclassified on a more elastic table providing five sorts for each class except arenaceous series. A special sort I, 1-A was adopted in the delta to provide for the exceptionally fertile alluvial clay found both in dry and wet areas near the Godavari river. Lankas and Padugais were also classified on their merits and rates one and two tarams higher than the rates on ordinary lands of the same classification were charged on padugais and lankas respectively. Two dry groupings were adopted.

### Classification of sources.—

Four classes for irrigation sources were adopted. To allow for irrigational defects of particular blocks, the channel in the same village can be, the first, second and third class for the different portions of the ayacut.

The standard grains adopted were, white paddy for wet and black paddy for dry land.

Upland soils were not reclassified. The old rates of assessments were enhanced by  $33\frac{1}{3}$  per cent.

### Water Rate :

This remained at Rs. 5 per acre till 1931 when it was raised to Rs. 6-4-0 per acre.

**(b) Features of Second Resettlement, 1931****(BY B.G. HOLDSWORTH)**

No general reclassification of soils was made. The system of soil classification prevalent in the delta and upland tracts was retained. There was no general reclassification of irrigation sources and the existing classification in vogue in the first resettlement was retained unaltered both in delta and upland tracts. White paddy was taken as the standard wet crop and as in the first resettlement a deduction of 15 per cent on account of cartage and merchants' profits was allowed and commutation rates of Rs. 258 for delta tract and Rs. 252 for upland tract were arrived. The existing rates in delta and upland tracts were enhanced by  $18\frac{3}{4}$  per cent.

In G.O. press No. 2874, Revenue, dated 8-12-1928 Government decided that 42 villages of Polavaram taluk, East Godavari district which were experimentally settled, should be settled on ryotwari principles. A revision of the conditions of experimental settlement was made in F. 1341. The Polavaram taluk was transferred to West Godavari district in the year 1942.

13. *Estates Abolished.*—The zamindari areas taken over by the Government are being settled and converted into ryotwari on the same principles enunciated in the latest resettlement notification in force. The settlement rates are due to be introduced on 1-7-1959 in all the areas of the district.

**General :—**

West Godavari is a prosperous district on account of fertile soils and unfailing supply from the Godavari but is liable to submersion during floods and heavy rains on account of inadequate drainage facilities. The woollen carpets of Eluru are famous. Palakol is a citrus growing area.

**REPORT**  
**OF THE**  
**LAND REVENUE REFORMS COMMITTEE**  
**PART I—Volume (ii)**

## CHAPTER IV

### Principles and methods of Settlement in the Telangana region

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After the assumption to the office of Prime Minister by Sir Salar Jung, the State undertook to deal directly with the cultivators, discontinuing the practice of assessing villages in the gross, and a method of assessing the land held by each individual cultivator was introduced as the ryotwari system of periodical settlement was considered as the best. Bombay and Madras States have also followed the same system. These beneficent reforms led to a security of tenure of the cultivator and the area under occupation steadily increased. But there were still certain drawbacks. The fields had not been accurately measured ; the soils had not been classed according to their relative values and, as a natural consequence, it followed that the assessments were very unequally distributed on the different holdings.

In order to set right these drawbacks several revenue officers urged upon the Government, the need for fixing proper assessment on land. The Government tried the experiment of having some areas surveyed by patwaries. This experiment made matters worse. Government, therefore, decided to introduce a regular survey and settlement in the State in 1875. These survey operations, on a small scale, were commenced in Paithan taluka of Aurangabad district. The results were encouraging and Government extended survey operations to other places. The definition and demarcation of fields, the settlement of boundary disputes, classification of soil, the interior regulation of survey and the administration of the settlement were regulated by the main principles, laid down by Messrs. Gold-smid and Wingate in their joint report. In this system a field is the unit of survey, as the success of settlement under the ryotwari system, depends entirely on the correct measurement of fields and on the facilities afforded for identifying them.

The survey number is subdivided into Pot-numbers or sub-divisions, if it consists of holdings belonging to different persons. According to the rules, sub-divisions of less than 8 acres in the case of dry land and of less than 1 acre in the case of wet lands are not recognised for purposes of survey.

For purposes of settlement, the taluk is considered a convenient unit. When a taluk is taken up for settlement, the fields of all the villages of the taluk are cadastrally surveyed and their relative

values (*i.e.*, the classification of soils, the command of water for irrigation, or other extrinsic circumstances) are determined. The method of soil classification is generally the same as that followed in Bombay with slight modification to suit local conditions.

There are three important factors in regard to the soil classification. They are the *colour*, *depth* and *texture* of soils. In regard to the question of depth, the factor determining the fertility of a particular soil is dependent on the usual depth to which roots of plants reach in a cultivation season and also the depth up to which the retention of moisture due to rains or watering will facilitate growth of particular crops.

In the case of regar or black soils, the relative value is determined according to their depths and in the case of chalka soil and wet, garden lands according to the relative proportions of clay and sand in them. In the case of wet and garden lands in addition to the soil value of the land, the classification of the source of irrigation is an important factor governing the determination of the assessment. There is an annawari table according to which the water class of source of irrigation is fixed and it is taken into account in fixing the assessment of wet lands. Other factors also such as distance from the village site or from the source of particular irrigation are taken into account in determining the valuation.

There are 7 classes in the soil classification in Telangana as against 9 found in Bombay and Mysore which follow the description and distinction given by the authors of the joint report.

In regard to wet and Bhagat lands the first class lands have only 4 classes, *viz.*, 1, 2, 3 and 4 ranging from 16 annas to 11 annas, 16 annas for the first class, 15 for the second class, 14 for the third class and 11 for the fourth class. The second class soils in respect of wet and garden lands have only 4 classes of lands under them *viz.*, from 2, 3, 4 and 5 with the soil value ranging downwards from 15 to 8 annas, 15 annas, 14 annas, 11 annas, and 8 annas, respectively.

In respect of dry chalka soils, the classification of dry lands is as noted below :

In the first class, the classes range from 3 to 7 *viz.*, 14 annas, 11 annas, 8 annas, 5 annas, and 3 annas, respectively, and in regard to the 2nd class of lands, the ranging is from classes 4 to 7 *viz.*, 11 annas, 8 annas, 5 annas and 3 annas. The 3rd class of land in dry chalka soils has only one classification *viz.*, the 7th or last with the soil value of 3 annas.

In Black Cotton soils, the classification is based on the depth of the soil which determines its fertility. In these lands the 1st group consists of different classes which range from 1 to 7, with values from 16 annas down to 3 annas, respectively and in the 2nd class of land, the soil classes range from the 2nd to the 7th with values of soils of 15 annas, 14 annas, 11 annas, 8 annas, 5 annas and 3 annas respectively. The table shows the various classes of soils, the depths and the soil values of various classes of lands :

Soil class	In Black Cotton soils according to depth of soils in cubits.		In Eastern Districts with reference to proportion of clay to sand.				Comparative soil value assigned in annas.
	Black soils	Red soils	Dry lands proportions of clay		Wet lands proportions of clay		
			Black soils	Red soils	Black soils	Red soils	
1.	1 $\frac{3}{4}$ cubits or more	..	..	..	$\frac{3}{4}$ or more	..	16
2.	1 $\frac{1}{2}$ cubits or more	1 $\frac{3}{4}$ cubits & more	..	..	$\frac{1}{2}$ or more	$\frac{3}{4}$ or more	15
3.	1 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "	$\frac{3}{4}$ or more	..	$\frac{1}{4}$ "	$\frac{1}{2}$ "	14
4.	1 "	1 $\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ or more.	Less than $\frac{1}{4}$	$\frac{1}{4}$ "	11
5.	$\frac{3}{4}$ "	1 "	$\frac{1}{4}$ "	$\frac{1}{2}$ "	..	Less than $\frac{1}{4}$	8
6.	$\frac{1}{2}$ "	$\frac{3}{4}$ "	Less than $\frac{1}{4}$	$\frac{1}{4}$ "	..	..	5
7.	$\frac{1}{4}$ "	$\frac{1}{2}$ "	..	Less than $\frac{1}{4}$	..	..	3

The lands up to 8 annas value are considered as superior and the rest as inferior. The value is determined on the basis of depth or proportion of clay and sand. It is reduced if some defects injurious to crop are found in the soil. These defects or 'Dosh' as they are called are 8 in number. They are shown with their conventional marks below :

1. Chunkhad ∴ Denotes a mixture of minute fragments or nodules of limestone.
2. Walsar .. √ ∴ a mixture of sand.

3. Utarvat .. / Denotes a sloping surface.
4. Reswath .. × „ want of cohesion amongst the constituent particles of the soil.
5. Karal .. ^ „ a peculiar mixture, more or less impervious to water.
6. Dhopan .. ‡ „ liability to be swept over by running water.
7. Upalwat .. □ „ liability to an excess of moisture from surface springs.
8. Gochu .. L „ a mixture of large fragments or nodules of limestone.

It is presumed that these defects have a deteriorating influence on crop. Therefore, for each defect found in the soil one annawari class is reduced and the value determined. Out of these defects, some are not considered injurious to wet and garden crops ; therefore they are not taken into account. Similarly “Reswath” and “Walsar” (small and big particles of sand) are not considered harmful to crops grown in chalka soil. The classification of chalka, therefore, is fixed two grades lower than wet land taken into account the existance of these two defects as natural in that soil. The following defects are to be neglected in respect of the following kinds of land :

1. For Chalka soils:—Walsar and Reswath;
2. Wet lands:—Reswath, Upalwat and Dhopan;
3. For garden lands:—Reswath, Walsar and Karal (Saline or Alkaline).

One field may not be of the same type throughout. Therefore, for classification purposes, it is divided into several compartments (Khastas), on the basis of the area according to the following scale:-

				No. of Khastas or Compartment- ments.
Up to one acre	..	..	..	2
From 1 to 3 acres	..	..	..	3
„ 3 to 5 acres	..	..	..	4
„ 5 to 10 acres	..	..	..	6
„ 10 to 20 acres	..	..	..	8
„ 20 to 30 acres	..	..	..	10
For every 3 acres above 30 acres				1 more Khasta.



This system of having Khastas or compartments is intended to ascertain from the representative blocks, where the soil is tested, to fix a correct annawari value for the whole survey number. In choosing a place where the texture and depths are to be examined by excavation or boring a hole, care should be taken to see that they are not on the edge of a field but are in the middle of each compartment or some such representative place in a compartment. Examining a place which is well manured or in a soft place, though the conditions in the other parts in that compartment are different, will give results which will be unfair to the holder of the lands. Similarly, selecting a patently arid or stony high level spot for examination, overlooking the fact that the major portion of such a field is of a superior kind, would be unfair to the Government.

Each compartment is classified separately and average annawari worked out by dividing the sum-total of the annas, by the number of compartments. This is taken as the classification of the survey numbers in terms of annas.

An allowance in annawari called, 'mile-war' is also made for all classes of lands for distance from the village-site. For every half-mile distance beyond the first 1/8 mile from the village, half anna value of the field is reduced up to a maximum of four annas.

For dry lands, fertility of soil is an important factor, in determining the yield. Consequently, in fixing the assessment of dry fields, soil classification is the most important factor. The nature of soil, whether it is of black-cotton type or red-chalka type, and in the former case, the depth of morum layer from the surface, and in the latter case the proportion of sand to clay, are first ascertained and noted as different classes in term of annas in a rupee, and later the acknowledged defects (*e.g.*, the presence of lime particles, etc.) which reduce the yield, are taken into account.

In the case of wet or irrigated lands, water is also an equally important factor. Therefore, in addition to the classification of soil, taking into account the nature of water supply, the water available for irrigation is also classified, which is called 'Pani' or water classification.

Water classification in the erstwhile Hyderabad State was based on the nature of the source of irrigation with reference to the quantity of regular water supply available for irrigation. There are two broad divisions of sources.

1. 'Patasthal' sources or sources which can supply water by natural gravitational flow.

2. 'Motasthal' sources where only lift irrigation is possible.

Sources under the first category where the ayacut or the extent of lands irrigated (tank or other sources of irrigation) is 30 acres or more than 30 acres, and which supply water for Tabi crop, are considered the best and, therefore, the water classification under such sources would be first class (1 anna). Where the ayacut is less than 30 acres, land under such sources are classified as falling under the second class with the water class fixed at 2 annas.

Irrigation by means of spring is also given the first class water class 1 anna, while if it is under a 'Jharra' which is not of the same capacity, as a spring, it is given the second class—2 annas.

If irrigation is by means of a river, the water classification would be 1 anna (first class) while if it is from a nala it would be 2 annas (second class).

If the water is saltish and hence less useful, the water classification is reduced by one anna. If the water passes over saline soil, or karal land or land mixed with limestone particles, the water classification be further reduced by half anna. A table showing the variation in assessment for different soils under different water classes is given in Appendix. V.

The water classification for Baghats or Garden is determined by the period for which the water is utilized by flow and not by lift. If the flow is available for a period of 8 months, the water classification is one anna and for every month for which the flow is less, the water classification will be reduced at the rate of 6 pies for every month which is less. Thus if the flow is only for 4 months instead of 8, the water classification will be 3 annas. If the water is available only for one month, the water classification is put at 5 annas, because the use of water for one month will not confer much advantage for cultivation and as such the reduction is more. In respect of wells sunk in the bed of tanks from which the water is used during times of scarcity, such water is regarded as a flow irrigation.

In cases where, ordinarily, the source is a small one, if 2 crops are raised, the water classification will be regarded as 2 annas for the Abi crop and one anna for the Tabi crop. Where water is used for Tabi, whatever the size of the source, the source is regarded as a tank and not as a kunta.

In the case of lift-irrigation, water classification depends upon the height to which water is to be lifted for irrigating the land. If water is to be lifted to only a small height by manual labour water classification will be of  $2\frac{1}{2}$  annas class. Where water is to be lifted

by mhots or otherwise, to a greater height the water classification will be as given below :—

Height to which water is to be lifted	Pani or water class of the source
1 to 6 yards	3 annas.
6 to 8 „	3½ „
8 to 10 „	4 „
10 to 12 „	4½ „
More than 12 yards	5 „

Further if water from the wells is to flow for a longer distance than 10 chains water classification is further reduced at the rate of half anna per 20 chains.

As per the subsequent Government orders all lands under lift irrigation are to be assessed at the dry rates, therefore the question of water classification for lands under lift irrigation does not arise now.

It may be noted that in no case can the water classification be reduced to more than 5 annas.

In Telangana, wet cultivation is compulsory under any source specified by the Settlement Department and a consolidated wet assessment is charged. Although, wet cultivation is compulsory, and liable to be charged a consolidated wet rate, suspensions and remissions in land revenue are also allowed in case of failure of crops.

If two crops are grown in a wet land, annually, the first crop is called “Abi” for which full assessment is charged and the second crop is called “Tabi” for which only half of the wet assessment is levied. The rain-fed lands known as “Asmani Tari” (or Manavari) lands though classified as wet are only charged dry assessments.

The classification details are entered in a separate register called “Parthi Book”. If any portion of a survey field is found to be uncultivable, it is not classified and no assessment is levied on this area. It is treated as “Pot-Kharab”. The Pot-Kharab includes all topo-details, viz., paths, the land with toddy and Gul-moha trees, field channels, nalas and other uncultivable portions which are net surveyed separately during survey process. In all wet lands, in addition to this, two guntas (or 5 cents) per acre are allowed as Pot-Kharab for ridges. The rate of assessment is worked out by taking into consideration, the physical and economic

features of the tract. The process of determining the assessment included the following important operations:—

- (i) The division of the villages of the taluk into groups.
- (ii) The determination of the aggregate for the area under settlement by an examination of the revenue history and economic condition of the tract.
- (iii) The distribution of the aggregate for the whole area over the groups by means of maximum rates for the various classes of lands.

For the purpose of dividing the tracts into several groups, the divergent conditions prevailing in the various portions of the taluk, are taken into consideration. For the fixation of maximum rates, the physical features and general, social, economic and agricultural conditions, prices of agricultural commodities and developmental activities and other public amenities are taken into account. The rate of revenue is worked out by taking into consideration the average yield of the principal crops, the prices of agricultural produce and the ordinary expenses of cultivation. The physical considerations like climatic conditions, rainfall, proximity to markets, means of communications and standard of husbandry also are taken into account while determining the assessment at the time of settlement, and the net profit derived therefrom are all fully considered and then a certain portion of the net income is determined as the Government's share, under the head land revenue. The actual income realised by the landholders is also taken into consideration for fixing the assessment after making certain deductions. The crop experiments are carried out in different types of soil and the outturns per acre are determined and valued. The cost of cultivation is worked out after allowing certain percentages for the vicissitudes of seasons etc., and then the net income is arrived at. At the time of the initial settlement when the prices of the commodities were very low nearly half of the net income was stamped as the assessment due to Government under land revenue. The basis for proposing maximum rates had been as follows :—

	Average yield per acre	Money value of the yield- paddy at 18 seers, Jowar at 13 seers per rupee.	20% deduction towards vicis- situdes of season etc.	Remaining	Cost of cul- tivation per acre viz. plou- ghing, manure, seed, weeding, harvesting etc.	Net income per acre.	Half of net income.	Proposed maximum rate per acre.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Wet	.. 1,130 seers paddy.	62 12 5	12 8 10	50 3 7	13 2 8	37 0 11	18 8 6	18 0 0	
Dry	.. 242 seers Jowar.	.. 18 9 10	3 11 7	14 14 3	8 15 4	5 14 1	2 15 6	2 12 0	

The rates thus worked out are sanctioned by Government and taking into consideration, the classified value assigned to each field, its assessment is worked out on the basis of the sanctioned rates. After the settlement rates are announced, the cultivators are allowed to prefer objection petitions regarding survey and settlement of their lands in case they are dissatisfied in any respect. The assessment so fixed is for a period varying from 15 to 30 years. This is called "empirical" method of assessment, because, the assessment is based on the impressions and observations of the settlement officers.

After the expiry of the original settlement, a revision settlement is made, preceded by an inspection of lands and recording all changes and mutations affecting classifications. As a rule, resurvey is not carried out, unless there is any defect in the original survey records. Reclassification is carried out only if it is found necessary to do so. If any Pot-Kharab area has been brought under cultivation, it is assessed. No increase in the assessment can be made at any revision settlement on account of any improvement effected by the ryot in his land during the term of settlement. The ryot is entitled to the full benefit of such improvements. Increase in assessment is made only when there is a general rise in the value of land due to a rise in prices or any improvement carried out at Government expense *e.g.*, construction of new irrigation sources or new means of communications. The enhancement at the time of revision is limited to an extent of  $33\frac{1}{3}\%$  in the case of a taluk,  $66\frac{2}{3}\%$  for the village and 100% per khata or entire holding. The enhanced revenue is realised by a process of incremental remission *i.e.*, if the increase made in the assessment during the revision settlement exceeds 20% of the pre-revision settlement rate, in first year 20% of the increase is levied and thereafter an additional increase of 10% every year, so that the full increase is recovered in the 9th year.

**Para 2.—Brief Summary of the reports on settlement and resettlements made in each district together with the special conditions obtaining in it.**

Different tracts in each district were settled and resettled in different years, though the principles adopted in the settlements and the resettlements of the Telangana region are the same. The rainfall, soil fertility, agricultural practices, yields of crops along with the prices of staple food crops at each settlement and resettlement, the facilities of irrigation available and the maximum rates of assessment are described separately for each district in the following pages of this chapter.

## ADILABAD DISTRICT

*Introductory.*—Adilabad was only a sub-district and was known as Sirpur-Tandur-Amaldari, from 1297 F. to 1313 F. It was given the status of a district in 1314 F. with 8 taluks. Later Utnoor and Boath taluks were constituted in 1322 F. and Khanapur taluk (Mahal) after abolition of Jagirs. But during the reorganisation of States, Kinwat and Rajura were transferred to the Bombay State while the 3 circles of Mudhole taluk in Nanded district (now in the Bombay State) were transferred to Adilabad district constituting into one taluk. At present the district comprises 10 taluks consisting of 1,715 villages including 184 deserted ones. The total area of the district is 6,242 sq. miles with a population of 8,31,600.

The district is situated between 19° and 19° 56' north latitude and 77° 53' and 80° 0' east longitude. It is bounded on the north and west and east by Bombay State and on the south by Nizamabad and Karimnagar districts.

The 'Sahyadriparwat' of the Satpura range of hills traverses the district from the north-west to the south-east for about 175 miles and is mostly covered with thick forest and abounds in valuable timber of all types and teems with wild life. About a third of the district is covered by rich forests.

The most important river which drains the southern region is the river Godavari, which flows on the southern border. The river Kadam is one of its tributaries. It rises in the Sahyadriparwat in Boath taluk. Next in importance is the river Pranhita which flows on the eastern border and falls into the Godavari at Chinnoor.

There are two railway lines of the Central Railway (Broad & Metre gauge sections) one Kazipet-Balharsha line and the other Hudkhed-Adilabad, lines covering a total length of 100 miles. There are 317 miles of roads connecting important centres of the taluks. The national highway No. 7 from Hyderabad to Nagpur runs through this district touching Nirmal and Adilabad towns. Drinking water facilities are not adequate in villages (on the hilly tracts) of the taluks of Boath, Sirpur, Nirmal and Utnoor. Agricultural labour is available in almost all taluks. In interior villages, cultivators help their neighbours in agricultural operations. The wages are, however, very low in the district. The prices of agricultural lands during the period 1947 to 1954 are worked out as below :

	<i>Maximum</i>	<i>Minimum</i>	<i>Average</i>
Dry	Rs. 209-4-7 per acre (250 times the land revenue)	Rs. 50 per acre (57 times the land revenue)	Rs. 127-4-0 per acre (123 times the land revenue)

Wet	.. Rs. 969-8-8 per acre (127 times the land revenue)	Rs. 48-10-2 per acre (48 times the land revenue)	Rs. 363-4-0 per acre (42 times the land revenue)
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The value of the dry land per acre in general is very high when compared with that prevailing in the adjoining district of Nizamabad, as the black cotton soils yield better crops without much manuring.

2. *Soil.*—The soils in Adilabad district are classified broadly into the 'Regad' or Black Cotton soil and Chalka lands (both red & black). In between these two belts, there is a large area of what is locally called 'Milva' type of soil. It is brownish in colour and is actually a mixture of both B.C. and the Chalka varieties. The northern portion of the district consists of B.C. soil and the southern and south-eastern half consists of chalka soil except for a narrow strip of land all along the Godavari and the Penganga rivers.

The eastern portion of Asifabad, western portion of Utnoor consist of B.C. soil while the northern half portion of Adilabad, Boath and Madhole taluks have rich B.C. soils. Nirmal and Sirpur taluks contain both B.C. and chalka varieties but the chalka soil in Nirmal taluk is of superior quality. Khanapur, Laxettipet and Chinnur taluks have chalka type of soils.

The alluvial soil on the banks of the rivers and along streams is the most fertile in Adilabad, Nirmal, Khanapur & Luxettipet taluks. The soil of the villages situated in the valleys along the Satpura range in Utnoor and Boath taluks is also quite fertile. The soil on the slopes of hills in the villages situated in Utnoor, south-east Boath, Asifabad, Adilabad and Luxettipet taluks is very shallow and poor. There are many virgin soils which have been brought under cultivation recently in Utnoor & Asifabad taluks.

3. *Climate.*—The district is comparatively unhealthy in Telangana, owing to the large area of forest. The hilly and forest areas are malarial. The villages situated in the plains are healthier. Asifabad, Sirpur and Utnoor are the malarial taluks.

The annual rainfall of the district is the highest in the Telangana with an average of about 41.07 inches for the last 35 years and 39.54" for the last decade. Average yearly rainfall for the last 10 years is as follows :

1947-48	.. 39.88 inches	1949-50	.. 53.45 inches
1948-49	.. 38.01 ,,	1950-51	.. 26.54 ,,



1951-52 .. 33.52 inches	1956-57 .. 50.42 inches
1952-53 .. 28.64 „	1954-55 .. 39.81 „
1953-54 .. 53.83 „	1955-56 .. 31.30 „

More than 80% of the total rainfall is received generally during June to September from the south-west monsoons.

4. *Irrigation.*—The Godavari north canal project is the only major irrigation scheme in the district. The Kadam reservoir which has been constructed by putting up a dam across the Kadam river near Peddur village, Khanapur taluk—forms a part of this project. The main canal under this project is 47 miles long and is designed to irrigate 65,000 acres in the Abi and 2,000 acres in the Tabi seasons. The water from the project was first let out in 1955 after its completion. In 1958-59 an extent of 8,524.38 acres was irrigated in Abi as against 2,414.0 acres in 1956-57. But the dam breached on 31-8-1958 due to unprecedented floods. In order to save the standing crops supply of water has been arranged by diverting natural streams and nalas into the main canal by installing pumps wherever possible. Besides, there are 5 other projects in the district. They are :

1. Laxman Chanda project in Nirmal taluk.
2. Jewili Nala project in Nirmal taluk.
3. Gangaram project in Chinnur taluk.
4. Sirala project in Mudhole taluk.
5. Old Godavari canal in Khanapur taluk.

The first 4 projects irrigate about 500 acres each. Almost all of them are in a dilapidated condition due to which the actual ayacut is not being irrigated for many years. The old Godavari canal from Khanapur anicut 25 miles long irrigates over 7,000 acres.

The number of sources irrigating 10 to 30 acres of ayacut, is 416 out of which 14 are in breached condition. Under these sources the area irrigated (in the district) is 6,348.24 acres (excluding the area in Luxettipet taluk) with a total revenue of Rs. 60,772-57 nP.

Apart from these, nalas and wells are also used for irrigation. However, the largest number of irrigation sources are situated in Nirmal, Luxettipet, Sirpur and Khanapur taluks in the area below the ghats. The area irrigated under various sources of irrigation in 1955-56 is as follows :—

	Area in acres
Government Canals .	7,791
Private canals .	..

	Area in acres
Tanks	44,382
Tube wells	..
Other wells	1,379
Other sources	1,744
Total irrigated area ..	55,296
Area irrigated more than once	15,491
Gross area irrigated . .	70,787

5. *Cultivation*—The outmoded wooden plough is still being used throughout the district and the methods of agriculture are very backward in the district. In the Black Cotton soil area 2 to 3 pairs of bulls are required for one plough while harrowing is done with 2 bulls. The broadcast method of paddy cultivation is mostly in vogue. Transplantation is practised only in some villages of Nirmal, Chinnoor, and Luxettipet taluqs. The land is generally ploughed for the Kharif crops in 'Arudra' or 'Punarvasu', Karties. It is ploughed once and then harrowing is done generally twice but the backward tribes, the Gonds and others, generally do the harrowing only once. The lands are not usually manured. The B.C. soil areas are very fertile and do not require any manure while the chalka or other less fertile lands are manured in alternate years or seasons (or by crop rotation). Generally farm yard manure is applied to the fields. Jowar and maize crops, generally, are not manured. Farm yard manure is applied only to the lands growing chillies, gram, wheat and paddy crop. Green leaves are also used as manure for paddy crops in some of the villages of Nirmal, Luxettipet and Chinnoor taluks, advantage being taken of proximity of large forest areas. In the interior villages of Utnoor and Asifabad taluks, no manuring is done by the 'Gonds'. Improved varieties of seeds are nowhere in use except in the villages of Nirmal and Luxettipet taluks which are more developed.

Since the introduction of developmental schemes under the first Five-Year Plan, the agricultural economy of the district has been improving and people are adopting modern methods of cultivation. With rising prices and increasing profits in agricultural commodities, the cultivators are paying more attention to agriculture and the improvement of lands. Even lands on the slopes of hills have been levelled up into plots, with bunds for wet cultivation, wherever possible. In the district bunding on a large scale, however, is not in vogue, because of the low pressure of population on the land compared with the other developed districts. Tractor-ploughing and levelling of lands have been done with the help of Agricultural Department in the commandable area of the Kadam project.

In 1956, there were 369 iron ploughs and 224 tractors in use in the district. The rotation of crops followed in this district is:—

1. Kharif paddy (rainfed), Rabi gram—Kharif jowar mixed with Red gram, Rabi fallow.
2. Kharif maize—Rabi fallow—Kharif maize.
3. Kharif cotton or sesamum, Rabi jowar—Kharif paddy and Rabi wheat and gram.

In Adilabad taluk the Kharif and Rabi areas are almost equal. Kharif crops are grown in Sirpur, Chinnur and Luxettipet taluks. In B.C. soils, the extent of Rabi and Kharif crops depend on the distribution of rainfall. The percentage of area under seasonal crops of Kharif, Rabi, Abi and Tabi in 1955-56 was respectively 56%, 35.8%, 6.9% and 1.3%. The particulars of land utilisation under various heads in the district are shown below :—

	<i>Area in acres</i>
Total Geographical area	35,80,086
Forest	10,38,957
Barren and uncultivable land	4,70,697
Land put to non-agricultural uses	1,41,908
Cultivable waste	1,88,494
Permanent pastures	1,47,091
Land under miscellaneous trees, etc.	12,757
Current fallows	2,33,206
Other fallows	86,261
Net area sown	12,60,715
Area sown more than once	15,492

The total cropped area in the district is 12,76,207 acres out of which the area under food and non-food crops is respectively 71.8% and 28.2%. The percentage of area under principal crops in the district are as follows :—

Jowar	38.6%	Cotton	15.9%
Pulses	17.8%	Gingelly	6.0%
Paddy	8.2%	Groundnut	1.4%

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6. *Cost of Cultivation.*—The particulars of costs of cultivation of paddy and jowar per acre in various settlements are shown below :

	<i>Paddy</i> in I.G. Rs.			<i>Jowar</i> in I.G. Rs.		
At initial settlement	21	5	5	7	8	9
At revision settlement	..			..		
<i>At present day.</i>						
(a) Collector	137	8	0	103	0	0
(b) Officials who have answered the questionnaire. .. ..	143	0	0	86	8	3
(c) Non-officials .. ..	266	10	8	106	0	0

7. *Prices.*—The prices of paddy and jowar in different periods of settlement are given below :—

	<i>Paddy</i> Seers per I.G. Re. 1		<i>Jowar</i> Seers per I.G. Re. 1	
At initial settlement	23		24½	
At revision settlement .. ..	..		..	
At present from Statistical Abstract 1956-57	4½		3¾	

8. *Yields.*—The yields of paddy and jowar per acre of main food crops are shown below in seers :—

Name of the crop	At the time of initial settlement (Seers per acre).*	At the time of revision settlement (Seers per acre)*	PRESENT DAY (Seers per acre)		
			Director of Bureau of Statistics †	Official ††	Non-official ††
(1)	(2)	(3)	(4)	(5)	(6)
Paddy ..	740	..	470	1,800	1,400
Jowar ..	257	..	159½	195	547

SOURCES :—

\* Initial and revision settlement reports of Adilabad taluk.

† From Statistical Abstract 1955-56 on the basis of random sampling method adopted.

†† From the answers to the questionnaires.

9. *Seasonal Conditions.*—There was no famine or scarcity conditions at any time in this district. On account of large forest areas in the district and the rich soil, fodder is also available in every village without difficulty. The amounts of remissions sanctioned during last 5 years are as under:—

<i>Fasli year</i>	<i>Amount in Rs.</i>
1362	1,81,738
1363	1,80,839
1364	52,538
1365	62,994
1366	46,224

10. *Holdings.*—The total No. of holdings in the district is 1,64,243 with an extent of 16,35,083 acres.

11. *Features of Settlement and Resettlement.*—Due to the existence of large forest areas, Adilabad district was not developed earlier and therefore, it was initially settled as late as 1346 F, when the original settlement rates in the other Telangana districts, were revised. The first revision settlement was undertaken only in Nirmal and Boath taluks, while Mudhole taluk which was transferred from Nanded district had undergone a 2nd revision.

The existing maximum rates of the district vary from Rs. 0.85 to 2.57 for dry, Rs. 6.85 to 13.71 for wet and Rs. 6.85 to 12.85 for garden (flow). The taluk-wise groups and rates of assessment are shown in the statement appended. The period of settlement for all the taluks except Boath has expired. The revision settlement of Boath taluk will expire in 1369 F. The taluks which are due for revision are subject to the levy of Special Assessment and hence due to standardisation, in all the taluks except Boath, Mudhole and Khanapur an additional assessment at Re. 0-1-0 for wet per rupee and Re. 0-2-0 per rupee for dry is being levied.

12. *Abolition of Estates.*—In the villages of 'Jagirs', Sarfekhas' and 'Paighas' taken over by the Government, the high rates of assessment if any prevailing are being reduced and brought down to the level of the rates obtaining in the adjoining diwani (ryot-wari) villages.

[Statement.]

Statement showing the maximum rates of assessment in Adilabad district

Name of the taluq	DRY		WET		GARDEN (FLOW)	
	Group	Max.	Group	Max.	Group	Max. rate
		Rs. np.		Rs. np.		Rs. np.
1. Adilabad	.. I	1.06	I	10.28	I	8.57
	.. II	0.85	II	8.57		
2. Utnoor	.. I	0.85	I	6.85	I	6.85
	.. II	0.85				
3. Boath	.. I	1.16	I	6.85	I	6.85
	.. II	0.85				
4. Nirmal	.. I	1.71	I	13.71	I	10.28
	.. II	1.38	II	12.85	II	8.57
	.. III	0.95				
	.. IV	0.64				
5. Mudhole	.. I	2.57	I	12.85	I	12.85
6. Luxettipet	.. I	1.71	I	8.57	I	6.85
	.. II	1.28	II	6.85		
	.. III	0.85				
7. Khanapur	.. I	1.71	I	8.57	I	6.85
	.. II	1.28	II	6.85		
8. Asifabad	.. I	1.06	I	6.85	I	6.85
	.. II	0.85				
9. Sirpur	.. I	1.06	I	6.85	I	6.85
	.. II	0.85				
10. Chinnur	.. I	1.71	I	10.28	I	7.71
	.. II	1.28	II	7.71		
	.. III	1.06				

## HYDERABAD DISTRICT

## Introductory

Hyderabad district is the smallest in the State and includes the twin cities of Hyderabad and Secunderabad. Before 1956, it was comprised of 2 divisions with 5 taluks but during the reorganisation of States, three taluks, *i.e.* Pargi, Vikarabad and Tandur respectively from Mahaboobnagar, Medak and Gulberga (now in Mysore State) districts were transferred to Hyderabad district, forming into a separate division. At present the district is comprised

of three divisions with 8 taluks consisting in all 1,114 villages. The total area of the district is 2,904 sq. miles with a population of 18,18,034.

It is bounded on the north by Medak, on the south by Mahaboobnagar on the east by Nalgonda and on the west by Gulberga (of Mysore State) district.

The district is mostly hilly and sparsely wooded. The city is surrounded by small hillocks ranging from 200 to 300 feet in height. The general slope of the land is from west to east and south-east.

The Rajkonda hill range runs in a south-eastern direction from Pipalpad in the then Ambarpet taluq to Deverkonda taluk in the Nalgonda district. The Anantagiri range traverses the district from the south in Mahaboobnagar district to the north up to Dharur of this district. A large portion of the range is composed of high grade laterite. Isolated granite hills are also found here and there. The centre of the district contains small hillocks of which Maula Ali, the Golconda hill and the black rock at Tirmulgiri are well known.

The most important river is the Musi. It rises in the Anantagiri hills near Sivareddipet and flows almost to the east, passing through the city of Hyderabad. This river and its major tributary have been intercepted by masonry dams to form the two artificial lakes of Osmansagar and Himayatsagar situated at a distance of about 12 miles from the city. The river Manjira, passes through two villages of the West Hyderabad taluk, on the north-west of the district. The other streams are the Sakalvani tributary of the Musi, the Haldi and Deo tributaries of Manjira. The ridge between the Godavari and the Krishna basin runs through this district. There are patches of forest areas in the southern and south-eastern parts of the district.

From Hyderabad two metre gauge lines run, one to Manmad and the other to Dronachalam. The Wadi-Kazipet broad gauge railway line runs through the district from west to east. The P.W.D. roads cover a mileage of 373 miles in the district. Among these, Shamshabad-Mahaboobnagar, Hyderabad-Suryapet and Hyderabad-Patancheru roads being portions of the 3 trunk roads lead to Raichur, Masulipatam and Bombay respectively. There are 3 regulated markets in the district. There is no scarcity of drinking water in the district. There is no difficulty in the availability of labour in the district though the agricultural labour families which were engaged, have taken to non-agricultural work like labour on roads, irrigation work or employed as workmen in big industrial concerns.

2. *Soils.*—Soils in Hyderabad district comprise mostly of sand and sandy-loams. They are generally called Chalka, or 'Dubba' soils. Sandy soils by nature are well drained and can easily be worked though they are of poor fertility. Due to the sloping nature of land and the porous nature of soils, soil erosion and washing out of plant-food is a constant process which impoverishes the soil. Due to poor moisture retentive nature of the soils, crops can be raised successfully during rainy season and with the abundance of irrigation facilities in other seasons. Clay-loams and black-cotton soils are also found in patches in Shabad and Medchal taluks. These soils are by nature more productive, due to their moisture retentive nature, and crops can be raised successfully during Rabi season also. In Pattur and Jukal regions, regar soils predominate. The soil in the river valleys and at the foot of the hills are particularly fertile.

3. *Climate.*—The climate of the district is warm and dry. Numerous big and small tanks make the climate slightly humid. From October to March the district is generally very healthy. The maximum temperature in the hottest months is 103° F. and that of coldest months is 55° F.

The annual rainfall of the district averages to 30.4" for the last 35 years and 30.97" for the last decade. The particulars of the average rainfall during last 10 years is given below :—

1947-48	32.17 inches.
1948-49	31.88 "
1949-50	24.86 "
1950-51	33.88 "
1951-52	26.95 "
1952-53	16.77 "
1953-54	31.46 "
1954-55	27.23 "
1955-56	43.70 "
1956-57	40.83 "

More than 3/4th of the annual rainfall is received generally during June to September from the south-west monsoons.

4. *Irrigation.*—There are no projects in this district. There are only tanks, kuntas and other minor irrigation sources. The 4 major tanks, *i.e.*, the Osmansagar, the Himayatsagar, the Hussainsagar and the Mir Alam tank situated in and around the city, supply only drinking water to the twin-cities of Hyderabad. The minor tanks having an ayacut of 10, 20 and 30 acres in the district are respectively 672, 293 and 171 in number. These sources irrigate an area of 29,441.15 acres fetching a total revenue of about



Rs. 4.121 lakhs. There is one peculiar source in the district, *i.e.*, irrigation under drainage (out-fall of city). Owing to special manurial value of this water, a special rate of I.G. Rs. 16-4-6 per acre is charged. As per the Agre-Economic Survey undertaken in 1954, the number of irrigation sources including wells in disrepair are 1,075. The Irrigation Department has restored 158 tanks in the last 5 years while 200 wells have been repaired and renovated due to the efforts of the ryots in the N.E.S. blocks.

The number of tanks with an ayacut of 100 acres and above is 159 while the tanks irrigating less than 100 acres are 2,015. The irrigated area of the district in 1955-1956 under various sources of irrigation is given below :

<i>Sources</i>	<i>Area in acres.</i>
Government canals	9,090
Private canals	740
Tanks ..	47,384
Tube-wells ..	1,004
Other wells ..	44,326
Other sources ..	5,630
Net area irrigated ..	1,08,174
Area irrigated more than once	13,560
Gross area irrigated ..	1,21,734

5. *Cultivation.*—As the sources of irrigation in the district have not been fully developed so far, cultivation mainly depends on rains. The methods of cultivation in the district are still the same as those in the past. Agriculture is still in the undeveloped and non-mechanised stage. The means of transport in majority of cases are the same. However, since 1950 the agriculturists are making use of improved seeds, green manures, fertilizers and other artificial manures. Agriculturists with adequate resources are using pumps, tractors, improved seeds. Agriculture Department is doing extension work in the taluqs and villages. Kharif and Rabi crops are grown in June and from the middle of September respectively. In wet lands Abi and Tabi crops are grown. Tabi crop is raised when there is assured supply of water under tanks and wells. Some times a third crop is also grown during summer 'summer crop' season called 'Zayad Fasal'. A Research Agricultural Farm is established at Rajendranagar to produce improved strains of paddy and other crops.

Normally no rotation is followed in the wet lands with good irrigation. A few cultivators, however, grow a green manure crop of Sunhemp and rotate it with paddy but only on small areas. In Kharif season, the usual rotations are Jowar and maize followed

by castor or groundnut. In Rabi, the rotation is Jowar, pulses, Safflower and Linseed normally. However, most of the cultivators resort to mixed cropping and grow usually the different crops in the same season together. One of these crops forms a major crop and the other one is grown in a few lines all around and in between the major crop. Jowar is the chief food crop of the district and the other principal crops are rice, bajra, ragi, maize, linseed, and cotton. Groundnut is not grown extensively in this district.

The particulars of land utilisation in the district in 1955-56 are as under :—

	<i>Area in acres</i>
Total geographical area	18,67,129
Forest ..	1,69,419
Barren and uncultivable land	1,79,138
Land put to non-agricultural use	1,25,274
Cultivable waste ..	58,679
Permanent pastures .. ..	1,91,608
Land under miscellaneous trees, etc.	23,207
Current fallows	2,05,372
Other fallow lands	56,299
Net area sown	8,58,133
Area sown more than once ..	19,459

Total cropped area of the district is 8,77,592 acres out of which the area under food and non-food crops is respectively 77.5% and 22.5%. On seasonal basis the area sown under Kharif, Rabi, Abi and Tabi is respectively 53.6%, 33.5%, 7.6% and 5.3%.

The extent of important food and non-food crops grown in the district are shown in the table below :—

1. Jowar	26.1%
2. Paddy	15.2%
3. Pulses	14.2%
4. Millets	6.8%
5. Bajra	2.7%
6. Ragi	2.5%
7. Castor	9.9%
8. Gingelly	2.4%
9. Groundnut	2.2%
10. Cotton	0.9%

6. *Cost of Cultivation.*—The average cost of cultivation per acre of principal food crops *i.e.*, paddy and jowar calculated in various

settlements are shown below :—

	<i>Paddy</i>	<i>Jowar</i>
At the time of initial settlement	.. Not avail- able	Not avail- able
At the time of revision settlement	.. do	do
During Agro-Economic Survey in 1954	..Rs. 255	Rs. 45
<i>At present day:</i>		
Officials who have answered questionnaire	.. Rs. 306 0 0	Rs. 62 12 0
Non-officials	.. Rs. 251 0 5	Rs. 120 14 7

7. *Prices.*—The prices of paddy and jowar in various periods are shown in the table below :—

	<i>Paddy</i>	<i>Jowar</i>
	Seers per I.G. Re. 1	Seers per I.G. Re. 1
At the time of initial settlement (1301 fasli)	31½ seers	28 seers
At the time of revision settlement (1323 fasli)	14 „	13 „
At the time of Agro-Economic survey in 1954	5 „	4½ „
At present day: As per Statistical Abstract 1955-56	5¼ „	4½ „

8. *Yields.*—The yield of paddy and jowar per acre are shown below :—

Name of the crop	At the time of initial settlement (seers per acre)	At the time of revision settlement (seers per acre)	Present day (seers per acre)		
			Director of Bureau of Statistics*	Officials †	Non- officials †
Paddy	.. Not available	Not available	510	1,230	1,246
Jowar	.. do	do	67½	280	403

SOURCES :—

\* From Statistical Abstract 1955-56 on the basis of random sampling method adopted.

† From the answers to the questionnaire.

9. *Seasonal Conditions.*—The district generally escapes famine and scarcity conditions, but it suffered severely from drought owing to scanty and unseasonable rains in 1896, 1897, 1899, 1901

and 1902. In the first 2 years no fodder was obtainable and large numbers of cattle died. But after the formation of this district in 1949, no famine conditions have been reported and as the rainfall is generally fair, the district can be said to be almost free from famine. Fodder crops and green grass are also grown in the district. Wherever fodder crops are not available straw of paddy, maize and jowar are utilised for fodder purposes and, pasture lands wherever available are fully utilised. Beyond 5 to 10 miles of city of Hyderabad, there is forest area and grass lands.

Remissions and suspensions in land revenue are being sanctioned whenever there is failure of crops by pests, crop diseases or failure of water supply. The amounts of remissions sanctioned during last 4 years are shown below :—

<i>Fasli year</i>	<i>Amount</i>
1365	Rs. 3,34,485- 0-2
1366	Rs. 3,80,229-13-0
1367	Rs. 3,18,289- 8-8
1368	Rs. 4,16,641- 2-3

10. *Holdings*.—Total number of holdings in the district are 1,12,478 with an extent of 14,01,757 acres.

11. *Features of settlements and resettlements*.—All the taluks of Hyderabad district were initially settled from 1305 fasli to 1332 fasli, except Tandur and Vikarabad taluks which were newly formed taking a number of villages from adjoining taluks. During settlement, the taluks were divided into a large number of groups and for each group different rate of assessment was sanctioned varying from I.G. Rs. 3.42 to 0.85 per acre for dry and I.G. Rs. 24.00 to 8.57 per acre for wet. But at the time of revision settlement these rates and groups were reduced to a considerable extent to avoid confusion. The revised rates of assessment in the district vary from I.G. Rs. 2.78 to Rs. 0.85 per acre for dry, Rs. 17.57 to Rs. 10.28 for wet and Rs. 20.57 to Rs. 10.28 for garden (flow).

No particular year can be fixed for the expiry of revision as in each taluk, the revision settlement for *ex-Jagir* and *ex-Sarf-e-Khas* and diwani villages was conducted in different years by different agencies. However, a major portion of each taluk is not ripe for 2nd revision except Pargi taluk where an additional assessment at Re. 0-1-0 per rupee for wet and Re. 0-2-0 per rupee for dry is being levied under the Special Assessment Act. The existing high rates of assessment in non-diwani villages is mainly due to enhancement of classification grades during revision settlement.

The existing rates and group of diwani villages talukwise are shown below :

Sl. No.	Taluk	DRY		WET		GARDEN (FLOW)					
		Group	Maximum rate	Group	Maximum rate	Group	Maximum rate				
1.	Hyderabad East	I	2.78	I	14.57	I	14.57				
		II	2.14								
2.	Hyderabad West	I	2.78	I	14.57	I	14.57				
		II	2.14								
3.	Shabad ..	I	2.57	I	20.57	I	20.57				
		II	1.92								
		III	1.50					II	17.14	II	17.14
		IV	1.28					III	13.71	III	13.71
		V	0.85								
4.	Medchal ..	I	2.35	I	17.14	I	17.14				
		II	1.92					II	13.71		
5.	Ibrahimpatam	I	2.78	I	14.57	I	14.57				
		II	2.14								
6.	Pargi ..	I	1.60	I	15.43	I	10.28				
		II	1.28					II	12.85	I	8.57
		III	1.06					III	10.28	Combined	10.28
7.	Tandur ..	I	2.14	I	12.85	I	12.85				
		II	1.92					II	10.28		
8.	Vikarabad ..	I	2.62	I	16.28	I	16.28				

12. *Abolition of Estates.*—About 80% of the total number of villages of Hyderabad district are non-Diwani, formerly belonging to Sarf-e-Khas, Paigah, exempted and non-exempted jagirs. These non-Diwani areas were charged higher rates of assessments than was the case in Diwani areas. These villages with the exception of some villages which belonged to small jagirdars, the rest were surveyed by the respective jagir agencies.

The villages of *ex-Sarf-e-Khas*, *ex-Jagir* and *Paigah* which were taken over by the Government are 833 in the district. The high assessment rates if any prevailing are being reduced and brought down to the level of the rates obtaining in the adjoining diwani (ryotwari) villages.

13. *General.*—On account of the proximity of the villages to the city of Hyderabad, the rates of dry assessment are comparatively high even in diwani villages. The settlement officers took the proximity of the city as an advantage when fixing the assessment, but due to the development of industries, and the migration of labourers for work in those concerns, it is now a disadvantage. The sites in and around Hyderabad used for non-agricultural purposes are charged at O.S. Rs. 15 per acre. Barring the city and its suburbs, the district is a poor one and the cultivators still follow the old fashioned methods of agriculture.

## KARIMNAGAR DISTRICT

1. *Introductory.*—Karimnagar was formerly known as Elgandal. In 1905, the Parkal taluk was added to the district from Warangal while Chinnur and Lakshettipet were transferred to Adilabad and Siddipet to Medak district. During the reorganisation in 1953 Parkal taluk was again transferred to Warangal district. The district at present consists of six taluks with 1097 villages in all. It is a small compact district with an area of 4,504 sq. miles. The Godavari river skirts the north-eastern boundary of this district for about 76 miles separating it from Adilabad district in the north and the Bastar State of Madhya Pradesh on the east. The district of Warangal lies to its south, while Medak and Nizamabad districts are on the west. The population of the district is 14,28,168 and the density of population 317 per sq. mile.

A range of hills extends in the north-east between Gorrappalli and Jagtial and terminates at Venulkorthi near Godavari. A second range stretches from Shanigaram to Malangur. A third range starts in the south-western corner of the district, from the valley of Manair river, and runs to the north-east intersecting the Gunigram range, and passes beyond Ramgir and terminates near Godavari.

Godavari is the main river while its tributary Manair flows from the west towards the east as far as Karlagenta and thence flows to the north till it falls into the Godavari. The Peddavagu and the Chellavagu also constitute the minor tributaries of the Godavari. At Kaleswar on the north-eastern corner of the district the tributaries Pranhita and Manair join the Godavari. This place of confluence of the three rivers is locally called "South Kasi". This place is opposite to Sirivancha which was transferred to Madhya Pradesh from East Godavari district. The eastern portion of the district is composed of Gondwana formation consisting of thick beds of sand, stones and thin clay beds.

The district has forest with a good growth of timber in an area of 101.53 square miles on the right bank of the Godavari. In Jagtial and Manthani taluks where wild game and timber of different varieties such as Teak, Nallamaddi, Sheesham, Beejasal, Andook and Loban etc., are found. After local needs are met, a large quantity of timber is floated down to Rajahmundry on the Godavari river.

All the (8) P.W.D. roads covering a mileage of 350 miles emanate from Karimnagar proper and one road connects the highway between Hyderabad and Chanda. The broad gauge line from Kazipet to Balharsha runs through the district. Out of the six stations in that stretch only Peddapalli of Sultanabad taluk is of some importance. There are in all 5 regulated markets in the district one in Sultanabad, two in Karimnagar and two in Metpalli taluks.

2. *Soils.*—The soils consist of Chalka, Masab and Regay. The Regad is utilised for 'Rabi' crops, the 'Masab' partly for garden crops and partly for 'Rabi' while Kharif crops are raised on Chalka lands. The soils of Godavari plains are of black-cotton variety but the major portion of the district is of red sandy soil which is more suited for wet cultivation than dry. In the eastern-portion of the district the soil is sandy but in the valleys, loamy soils are common. The western portion is composed of pink and grey granites traversed by numerous dolerite dykes which give rise to grey, sandy reddish, brown, and black-soils.

3. *Climate and rainfall.*—The eastern portion of the district which comprises Manthani taluk, is generally considered malarial due to the existence of thick forests. The rest of the district has, however, a healthy climate. The summer is excessively hot and the temperature rises up to 105° F. during May. The average rainfall of the district in 1955-56 is 40.90". Generally, more than 2/3 of annual rainfall, is from the south-west monsoon from June to September.

4. *Irrigation.*—The irrigation sources in the district consist of tanks, minor projects, kuntas, nalas and spring channels under flow irrigation while the wells and Bhurkies with pumping sets, mota, koul, yatam, and guda come under lift. The principal irrigation sources of the district are the tanks and kuntas. The number of tanks with different extents of ayacut and their condition is given below :

Category of source	Condition of source		Total	Total revenue derived.
(1)	(2)	(3)	(4)	
	<i>Good</i>	<i>Disrepair</i>		
1. Tanks with an ayacut of 10 acres and less ..	1,633	164	1,797	} 3,01,745-12
2. Tanks with an ayacut of 20 acres and less ..	697	96	793	
3. Tanks with an ayacut of 30 acres and less ..	319	51	370	
Total ..	2,649	311	2,960	

The total extent of irrigation under 'Parrekalva' in the district is 302 acres. There are five projects in the district. The extent of area irrigated and left unirrigated till 1958 in the commandable ayacut is given below :

S.No.	Name of the project	Fixed ayacut	Ayacut brought under cultivation.	Extent left unirrigated in the commandable area.
		Ac. g.	Ac. g.	Ac. g.
1.	Manair project (Sircilla taluq) ..	14,013-27	10,451-00	3,562-27
2.	Shanigaram Project. (Karimnagar taluq) ..	4,856-08	3,799-26	1,056-22
3.	Chegaon project (Sultanabad taluq) ..	800-00	650-00	150-00
4.	Bandlavagu project. (Sultanabad taluq) ..	634-00	384-00	250-00
5.	Yakinpur project (Metpalli taluq) ..	1,474-02	1,033-15	440-27
	Total ..	21,777-37	16,318-01	5,459-36

Source: Collector's report.

The sources of water supply and the total area irrigated therefrom in the district are given below :

<i>Source</i>	<i>Area irrigated Acres</i>
1. Government canals	. 30,568
2. Private canals	. 1,932
3. Tanks	. 1,92,245



4. Tube wells	583
5. Other wells	36,901
6. Other sources .. ..	19,806
7. Total net area irrigated ..	2,82,035
8. Area irrigated more than once	44,762
9. Gross area irrigated ..	3,26,797

5. *Cultivation.*—The old traditional methods of cultivation are followed. Crop rotation is practised on black-cotton soil by alternating Kharif jowar with oil-seeds. The chalka lands are usually kept fallow for one year after growing two crops in succession. Paddy crop is grown either under broadcast system or by transplantation. The latter method is gradually gaining popularity since the crop grown under this method is less susceptible to failure and generally yields more. Ploughing is generally done with bullocks and wooden-ploughs. Since 1950, appreciable improvement is made in the agricultural economy of the district, due to the developmental activities sponsored under the First Five-Year Plan. Under various agricultural schemes introduced in the district, the agriculturists are becoming conversant with modern methods of cultivation. The modern and improved types of agricultural implements and fertilisers are being supplied either on cash or 'taccavi' basis. Demonstration farms have been established and crop competitions are organised to induce the cultivators to improve the farm yield. The table below shows the land utilisation in the district in 1955-56 :

<i>Particulars</i>	<i>Area in Acres</i>
1. Total geographical area	29,28,371
2. Area of forest ..	6,44,263
3. Barren and uncultivable area	2,05,663
4. Land put to non-agricultural use	1,79,711
5. Cultivable waste	84,680
6. Permanent pastures ..	1,60,784
7. Land under miscellaneous trees, etc	20,332
8. Current fallows	2,88,026
9. Other fallow lands	57,041
10. Net area sown ..	12,87,871
11. Area sown more than once	44,762
12. Total cropped area	13,32,633

Out of the total cropped area the percentage of area under food crops and non-food crops is 75.4 and 24.6 respectively. The

distribution of area under seasonal crops of Kharif, Rabi, Abi and Tabi is respectively 63.3%, 15.3%, 14.0% and 7.4%. The area under principal food crops of jowar and paddy is 23.1% and 21.2% while oil seeds *i.e.*, gingelly, groundnut and castor are respectively sown on 12.3% and 9.4% and 1.6% of the area. Cotton and tobacco are grown on 0.9% and 0.2% of the total area. There is considerable surplus of labour population.

The number of ploughs and plough-cattle respectively are 122 and 250 per 1,000 acres of cropped area. The average maximum and minimum prices of lands worked out from sale-deeds are of the following order :—

	<i>Maximum</i>	<i>Minimum</i>
	Rs.	Rs.
Dry	663-6-0 per acre	72-12-0 per acre
Wet	1,135-5-0 per acre	249-8-0 per acre

6. *Cost of Cultivation.*—Jowar and Paddy, being the major food crops grown extensively on large extents, were considered as representative crops for dry and irrigated lands and the cost of cultivation per acre of these crops worked out in various settlements are given below with comparison of the present day costs:—

#### COST OF CULTIVATION PER ACRE

	At the time of initial settle- ment (1313 F.)*	At the time of revision settlement (1335 F.)*	Present day †
	I.G. Rs.	I.G. Rs.	I.G. Rs.
Paddy	.. 11-56	.22-13	216-75
Jowar	.. 2-56	12-35	68-75

SOURCE.-- \*Initial and Revision Settlement reports of Karimnagar taluq.

† Average of Non-officials who have answered the questionnaire.

7. *Prices.*—The prices of jowar and paddy in the settlements together with the present day figures are shown below :—

Prices in initial settlement (in 1313 F.)*	Prices in revision settlement (in 1335 F.)*	Present Day†
Seers per I.G. Re. 1	Seers per I.G. Re. 1	Seers. per I.G. Re. 1.
Paddy .. 40 $\frac{3}{4}$ seers	12 $\frac{3}{4}$ seers	3 $\frac{3}{4}$ seers
Jowar .. 23 $\frac{1}{3}$ do	11 $\frac{2}{3}$ do	3 $\frac{1}{4}$ do

*Source :* \*Initial and Revision settlement reports of Karimnagar taluq.

†Statistical Abstract 1955-56.

8. *Yields.*—The yields of jowar and paddy per acre worked out in the initial and revision settlement period along with the present day figures are given below :—

Name of the Crop	At the time of initial settlement (seers per acre.) *	At the time of revision settlement (seers per acre)*	PRESENT DAY		
			Director of Bureau of Statistics. †	Officials ††	Non-officials. ††
Paddy ..	2,160	1,000	399	..	905
Jowar ..	360	300	135 $\frac{1}{2}$	..	314

*Sources :*

\*Initial and revision settlement reports of Karimnagar taluq.

† From Statistical Abstract 1955-56 on the basis of random sampling method adopted.

††From the answers to the questionnaire.

9. *Seasonal conditions.*—During the past ten years there was no famine in any taluk nor even scarcity conditions. On account of excessive rains or pests and diseases, the crops have, no doubt, failed in some areas during some years but that did not lead to any famine or scarcity conditions. Remissions or suspensions were,

however, granted for failure of crops to the ryots. Likewise, fodder scarcity was also never experienced in any place during the last decade. The particulars of remissions sanctioned during last 5 years are given below :—

<i>Fasli</i>	<i>Amount</i>
	<i>Rs.</i>
1362 ..	15,10,250
1363 ..	5,53,391
1364 ..	6,07,359
1365 ..	5,96,218
1366 ..	3,56,437

10. *Holdings*.—The total number of holdings in the district are 3,02,593 with an extent of 17,73,659 acres.

11. *Features of original settlement*.—The original settlement of this district was complete during 1315 fasli to 1319 fasli. The taluk-wise particulars of settlement are given below :—

(a) KARIMNAGAR TALUK.

The initial settlement of this taluk was done in 1315 fasli. The taluk then had 3 groups in dry assessment and two groups in wet assessment. The following maximum rates were sanctioned :—

	O.S. Rs.
Dry I group	3 0 0
II „	2 8 0
III „	2 0 0
Wet I group ..	15 0 0
II „ ..	12 0 0

(b) JAGTIAL TALUK.

The initial settlement of this taluk was done in 1315 fasli. There were three dry groups and one special group, 3 groups in wet assessment, one group for garden (flow) and 2 groups for garden (lift). The following maximum rates were sanctioned :—

	O.S. Rs.
Dry Special group	3 0 0
I	2 8 0
II	2 4 0
III	2 0 0
Wet I	15 0 0
II	12 0 0
III	10 0 0

	O.S. Rs.
Garden (flow) Group	12 0 0
„ (lift) I	7 0 0
II „	6 0 0

## (c) SIRSILLA TALUK :

This taluk was initially settled in 1315 F. The groups and maximum rates then sanctioned are shown below :

	O.S. Rs.
Dry I Group	3 0 0
II	2 8 0
Wet I	20 0 0
II „	17 0 0

## (d) HUZURABAD TALUK :

The taluk was initially settled in 1316 F. The taluk then had 3 groups for dry assessment and two groups for wet assessment. The following maximum rates were sanctioned :—

	O.S. Rs.
Dry I Group	2 12 0
II	2 4 0
III	1 10 0
Wet I	14 0 0
II „	12 0 0

## (e) MANTHANI TALUK :

The initial settlement of the taluk was done in 1318 F. for a term of 15 years. The sanctioned maximum rates of this taluk were :

	O.S. Rs.
Dry I Group	1 10 0
II	1 2 0
Wet I	12 0 0
II	10 0 0

## (f) SULTANABAD TALUK :

The initial settlement of the taluk was done in 1316 fasli. The taluk then had three groups for dry and two groups for wet assessment. The maximum rates sanctioned at that time were :—

	O.S. Rs.
Dry I Group	2 4 0
II	1 12 0
III	1 4 0
Wet I	12 0 0
II	10 0 0

12. *Features of resettlement.*—The particulars of the 1st revision settlement of each taluk are given below :—

(a) KARIMNAGAR TALUK :

The revision settlement of the taluk was done in 1340 F. As per the revised set up, the taluk consists of 179 villages in all.

The taluk had two groups in dry and wet assessment and one group in garden (lift) and (flow) and one group for combined sources. The following maximum rates were announced :—

	O.S. Rs.	I.G. Rs.
Dry I Group	3 0 0	2 9 1
II „	2 8 0	2 2 3
Wet I „	17 0 0	14 9 1
II „	15 0 0	12 13 8
Garden (lift)	7 8 0	6 6 10
„ (flow)	15 0 0	12 13 8
Combined source	15 0 0	12 13 8

This taluk will be due for second revision in 1369. (1960 A.D.)

(b) JAGTIAL TALUK :

The taluk was revised in 1355 F. It consists of 155 villages including one deserted one. The taluk had 2 groups each for dry, wet and garden assessments and 1 group for combined sources. The following maximum rates were announced :—

	I.G. Rs.
Dry I Group	2 9 1
II „	2 2 3
Wet I „	13 11 5
II „	12 0 0
Garden (lift)	6 0 0
„ (flow)	10 4 6
Combined sources	10 4 6

The taluk will be due for second revision in 1374 (1965 A.D.)

(c) SIRSILLA TALUK :

The revision of this taluk was done in 1359 fasli. As per the revised set up, this taluk consists of 173 villages including five deserted ones. The taluk had two groups each for dry and wet

assessments, two groups for garden (lift) and two for garden (flow). The following maximum rates were announced :—

		I. G. Rs.
Dry	I Group	2 15 11
	II "	2 5 8
Wet	I "	15 6 10
	II "	13 11 5
Garden (lift)	I "	7 11 5
"	" II "	6 13 8
"	(flow) I "	15 6 10
"	" II "	13 11 5

The taluk will be due for second revision in 1378 F. (1969 A.D.)

(d) HUZURABAD TALUK :

The first revision settlement of this taluk was done in 1354 F. It consists of 132 villages in all. The taluk had one group each for dry, wet, garden (lift) and (flow) assessments. The following maximum rates were sanctioned :—

	I. G. Rs.
Dry Group ..	2 9 1
Wet ..	12 13 8
Garden (lift) group	6 6 10
" (flow) "	12 13 8

The period of revision will expire in F. 1373 (1970 A.D.).

(e) MANTHANI TALUK :

The taluk consists of 170 villages including 29 deserted ones. The settlement period of this taluk had expired in 1338 F. (1929 A.D.). The field operations of revision work were completed only by 1955. The results of the revision have not been so far announced. The existing maximum rates with groups are given below :—

	I. G. Rs.
Dry I Group	1 6 2
II "	0 15 4
Wet I "	10 4 6
II "	8 9 1
Garden (lift) "	4 4 6
" (flow) "	1 8 9

## (f) SULTANABAD TALUK :

The rates of taluk were revised in 1955 A.D. The taluk consists of 188 villages which includes one deserted village. The taluk had two groups each in dry and wet assessment and one group each for garden (lift) and (flow). The following maximum rates were sanctioned :—

			I. G. Rs.
Dry	I	Group	2 9 1
	II	„	2 2 3
Wet	I	„	13 11 5
	II	„	12 0 0
Garden (lift)		„	6 0 0
„ (flow)		„	10 4 6

The period of revision will expire in 1970 A.D.

## (g) METPALLI TALUK :

The taluk had been formed taking over 86 villages from Jagtial, 14 villages from Armoor of Nizamabad district. As per the revised set up, this taluk consists of 100 villages including 2 deserted villages. The existing groups and maximum rates of this taluk are given below :—

			No. of villages	I. G. Rs.
Dry	I	Group	15	2 9 1
			17	2 5 8
	II	„	28	2 2 3
Wet	I	„	2	17 2 3
			10	14 9 1
			65	13 11 5
	II	„	1	12 13 8
			18	12 0 0

No particular year can be assigned for its revision. However, the taluk will be due for revision partly in 1375 F. and partly in 1362 F. as per the years prescribed for Jagtial and Armoor taluks.

13. *Estates Abolition.*—There are 139 ex-Jagir villages and 23 Sarf-e-Khas villages in the district. In all these villages survey-settlement has been completed and the rates of assessment prevailing in the adjoining diwani villages are being applied.



## KHAMMAM DISTRICT

1. *Introductory*.—The area forming Khammam district was previously a part of Warangal district. As a result of amalgamation of *ex-jaghir* villages and reorganisation of taluks of erstwhile Hyderabad State in 1950, the Warangal district was bifurcated and the new district (Khammam) came into existence on 1-10-1953 with an area of 3,982.45 sq. miles. It consists of two divisions Khammam and Kothagudem. In Khammam division there are two taluks—Khammam and Madhira. In Kothagudem division there are three taluks—Yellandu, Palwancha and Burgampahad. The district is bounded by Mulug, Pakhal taluks of Warangal district on the north, Mahbubabad taluk of Warangal district and Suryapet and Huzurnagar taluks of Nalgonda district on the west, Krishna and Godavari districts on the south and east. River Godavari forms the eastern boundary of the district. The average height of the tract is 600 feet above the sea-level. The eastern part of the district is covered with thick forests. There are a few minor isolated ranges of hills. The important inland rivers are the Kinnarsani, a tributary of the Godavary which drains the north-eastern part of the district and the Muneru a tributary of the Krishna river. There are 473 inhabited villages and 8 towns. The population of the district is 7,00,006. There are roads covering a mileage of 241 miles in this district. The Khazipet to Bezwada route of the Central Railway runs through the district from north to south. There are two branch lines one from Dornakal to Yellandu (17 miles) and the other from Dornakal to Bhadrachalam (34 miles).

2. *Soil*.—The soil is mostly sandy. But there is a considerable area of Black Chalka soil in Madhira taluk and all along the Godavari river on the western side of the district which is very fertile. In dry crops the yields are very high. The remaining portions of the district consist of Red-chalka soil and *black-chalka-soil*. In Khammam taluk the level on the whole is uneven, but the area adjoining Madhira contains black-chalka soil which is superior to the soils found in the rest of the taluk. The central and eastern portions of the district *i.e.*, greater portion of Yellandu, Palvancha and Burgampahad taluks where there are thick forests, the soil is of poor chalka type, the proportion of the sand to clay in this area being high. The soils under wet cultivation in the district include sand, sand-loams, clay-loams and heavy clays. The percentage of different soils in several taluks is as follows :—

<i>Taluk</i>	<i>Regar</i>	<i>Chalka</i>
Khammam	11.22%	88.78%
Madhira	46.01%	53.99%
Yellandu	4.73%	95.27%
Palvancha and Burgampahad	..	100.00%

3. *Climate and Rainfall.*—The areas on the right bank of Godavari in Burgampahad, Yellandu and Palvancha taluks are still malarial. It is generally hot and slightly humid. There are extremes of climate in this district, Khammam being the hottest taluk. The particulars of the average rainfall and the average number of rainy days are given below :—

*Rainfall and rainy days*

	Average rainfall	Number of average rainy days
South-west monsoon	32.56	43
North-eastern monsoon	5.07	8
Winter period ..	0.21	..
Hot weather period ..	3.17	5
Total ..	41.01	56

4. *Land Utilization.*—The table below shows the land utilization in the district.

Particulars	Area in acres	Percentage of total area
1. Total geographical area ..	2,778,961	100.00
2. Area of forests .. ..	1,128,683	42.77
3. Barren and uncultivable land	184,729	6.66
4. Land put to non-agricultural use	124,792	4.49
5. Cultivable waste .. ..	101,372	3.65
6. Permanent pastures and other grazing lands	172,684	6.22
7. Land under miscellaneous trees, etc.	8,328	0.29
8. Current fallows ..	83,852	3.82
9. Other fallow lands ..	50,455	1.82
10. Net area sown .. ..	864,066	31.09
11. Area sown more than once	3,987	0.15
12. Total cropped area ..	868,053	31.24

Large areas which are cultivable but left fallow in the past in the three taluks of Yellandu, Burgampahad and Palvancha have now been developed and brought under cultivation. More and more manure is also being used. The high prices and scarcity of foodgrains were the two main features which induced the cultivators to bring under cultivation every available piece of land which was hitherto left fallow. Lands which were left uncared for due to uneconomic yields are now found quite economic and they are improved and brought under the plough. The prices of land increased and so did the investments on land.

The wet lands in Khammam district command the highest rate ranging from Rs. 500 to Rs. 2,500 per acre depending upon their productivity, location and the quality of the soil. The lowest price is recorded in Palwancha, Burgampahad and Yellandu taluks ranging from Rs. 100 to Rs. 500 per acre. Dry lands in Madira taluk command prices from Rs. 500 to 1,500 per acre. The superior soils of Madhira taluk in Yerupalam, Madhira and Ravinutala Revenue circles command the highest prices ranging from Rs. 300 to 1,500 per acre. Next to them are the dry lands of Khammam and Madhira which command from Rs. 100 to Rs. 1,000 and the last category of the lands are those which are in the taluks of Palvancha, Burgampahad and Yellandu which fetch from Rs. 20 to Rs. 200 per acre. Of late, the fertility of the soil on the banks of Godavari river has increased due to the recent Godavari floods. The lands inundated during floods are regarded to be the richest commanding prices from Rs. 1,000 to 2,000 per acre. However, these lands are not offered for sale, even for the prices quoted above, but they are leased out annually on rents ranging from Rs. 100 to Rs. 200 per acre.

5. *Irrigation.*—In Khammam district irrigation is carried on by means of tanks and wells. Advantage had been taken in the past of the undulating character of the terrain for constructing large tanks and kuntas in every village.

Wyra project is situated in this district and has been undertaken to harness the river Wyra. The area drained by this river is 152 sq. miles. This is mainly an irrigation scheme which will irrigate about 16,000 acres of land. The other major projects are the Palair project, the Bethapalli-Gangaram project, and the Singabhupalem project. A part of Khammam and Madhira taluks will also be benefited by the Nagarjunasagar after its completion. The irrigation facilities in Khammam and Madhira are better than in other taluks of the district. The irrigation sources existing in the *ex-jagir* villages have been mostly in a state of disrepair with the result that there is very little area under cultivation in the Tabi season.

The ayacuts and the acreage left un-irrigated under different projects are as follows :—

	<i>Ayacut</i>	<i>Area left un-irrigated</i>
	Acres	Acres Gs.
Palair project	16,084	1,887-30
Wyra project	14,557	1,213-07
Baithapally project .. .. .	4,800	2,054-14
Singabhoopalem project .. .. .	1,800	..

The reasons for leaving them unirrigated are : (1) non-excavation and maintenance of feeder channels, (2) non-excavation of main channels at the tail-end, (3) inadequate outlets and sluices at suitable places and (4) uneven nature of the land. The extent under minor irrigation sources in the district with an ayacut of 30 acres and less is 10,135.28 acres. The revenue derived therefrom is Rs. 85,208.27 nP. The number of tanks with different category of ayacut and their condition is given below :—

Category of source	No. of sources	<i>Condition of source</i>	
		Good	Disrepair
Tanks with an ayacut of Acres 10	666	567	99
do . . . . . 20	370	352	18
do . . . . . 30	171	164	7

The sources of water supply and area irrigated therefrom in the district are given below :

	Acres
1. Government canals	28,135
2. Tanks .. .. .	90,222
3. Wells .. .. .	9,776
4. Other sources (spring channels, etc.) ..	1,409
5. Total net area irrigated .. .. .	1,29,542
6. Percentage of net area irrigated to the net area sown .. .. .	(14.99)
7. Total gross area of crop irrigated .. .. .	1,29,542
8. Percentage of total gross irrigated area to the total area sown .. .. .	(14.92)
9. Percentage of area irrigated by wells having independent ayacuts to the total area irrigated. ..	(7.55)

The practice of charging water rate separately is not in vogue in the erstwhile Hyderabad State. For the wet lands the settlement department fixed the wet assessment which comprises both the water charge and dry rate. As such the water-rate can be derived by deducting the appropriate dry rate from the wet assessment.

6. *Principal crops and yields.*—The chief agricultural products are paddy, jowar, maize and pulses. A statement showing the yields of the crops at various times and (another statement showing) the cost of cultivation and prices for the said crops are appended. The yield of different crops was being estimated according to different methods at different times. The Revenue authorities were conducting crop-experiments on the selected fields which represented the average type of the field in the taluk. Later the method of random sampling has been introduced. The average yield in the recent past of each crop has shown a substantial increase. The increase in the average yield of paddy is attributed to the following reasons :—

1. Replacement in Abi of low yielding—Do Fasla variety by high yielding of Ek Fasla variety.
2. Widespread practice of transplantation in abi instead of broadcasting.
3. The use of fertilisers.
4. Increased area under improved strains.
5. Plant protection method adoption.
6. Introduction of Japanese method.

7. *The economic conditions of ryots.*—The economic condition of the ryots in the project area should normally be better than those of the up-lands owing to their facilities of assured water supply and easy irrigation. But their condition in this district on the whole has still to be improved. The lands under the projects are generally poor. Owing to the presence of saline deposits and the marshy nature of the soil, particularly in the project lands of Wyra and Singabhupalem (in Madhira and Yellandu taluks respectively). The ryots doing wet cultivation thereunder are not therefore in a position to get sufficient yield or produce commensurate with the amount of labour and capital invested by them. The average yield per acre in these lands ranges from 4 to 10 bags, whereas the cost of cultivation exceeds 50% of the gross produce. The ryots in this area do not have large dry extents to raise cash or commercial crops to meet their necessities of life. So, they have to depend entirely on wet cultivation and the limited produce obtained therefrom. When compared to the prices prevailing in the pre-war days, the prices of food crops or food stuffs have increased by four times whereas the prices of other commodities necessary for life

have risen by six times. Thus the per-capita income of the ryots in the above projects is lower than that of ryots in upland areas who could grow commercial crops. The condition of ryots under the other two projects of Palair and Baithapally are no doubt slightly better as the soils are also better. The yields range from 6 to 16 bags per acre. The Land Commission had fixed the cost of agricultural expenses as 50% of the gross produce derived. Rotation of crops is not followed in the wet and irrigated dry lands in this district. Rotation system is observed only in respect of groundnut, red-gram and jowar crops.

8. *Holdings*.—The total number of holdings in the district is 1,15,294 with an extent of 12,05,150 acres.

9. *The initial settlement and revision settlement*.—The initial settlement and revision settlement of Khammam district were undertaken for each taluk after conducting field to field survey and classification of soil. The settlement particulars of each taluq are given below :—

(a) KHAMMAM TALUK :

The initial settlement was conducted in 1307 fasli (1898 A.D.). At that time this taluq consisted of 188 diwani villages and 23 jagir villages. The settlement was announced only for 188 diwani villages. These villages were divided into two groups for dry and wet assessments, and the following maximum rates were announced.

			I. G. Rs.
Dry	I Group	140 villages	2.14
	II	48 "	1.60
Wet	I	107 "	13.71
	II	81 "	12.00

On the expiry of the period of initial settlement in 1323 fasli the revision settlement work was taken up and completed in the year 1328 fasli. The revised rates were announced in the year 1329 fasli for 30 years. At the time of the revision-settlement the taluk consisted of 154 diwani and 18 Jagir villages. This was due to the changes effected at the time of Zilabandi in 1314 fasli. The taluk then had 2 groups for dry and wet assessments.

			I. G. Rs.
Dry	I Group	117 villages	2.46
	II	37 "	1.92
Wet	I	108 "	15.43
	II	46 "	13.71

The above rates apply to the villages of the Khammam taluk as it was at the time of the revision. The villages from other taluks added to the new Khammam taluk will continue to bear the rates of the respective taluks in which they were situated at the time of the revision settlement. The term of the revision settlement of the Khammam taluk expired in 1359 F. and it is over due for a fresh revision settlement.

(b) MADHIRA TALUK :

The initial settlement of this taluk was conducted in the year 1310 fasli (1900 A.D.). The taluk then consisted of 139 diwani villages and 51 jagir villages. As far as diwani villages are concerned the taluk had three groups for dry assessment and two groups for wet assessment. The following maximum rates were announced :

			I.G. Rs.
Dry	I Group	38 villages	1.92
	II "	61 "	1.60
	III "	35 "	1.17
Wet	I "	28 "	12.00
	II "	11½ "	10.28

The term of settlement was for 15 years which expired in the year 1324 fasli. The revision settlement was conducted in the year 1328 Fasli and completed in 1334 Fasli. The taluk at that time consisted of 144 diwani villages and 58 jagir villages. The taluk had three groups in dry assessment and two groups in wet assessment. The following were the maximum rates announced :

			I.G. Rs.
Dry	I Group	47 villages	2.46
	II "	64 "	1.92
	III "	33 "	1.39
Wet	I "	27 "	13.71
	II "	117 "	12.00

As stated in respect of Khammam taluk the above rates apply to the villages that comprised the former Madhira taluk. The villages that have been transferred from other taluks to the new Madhira taluk will continue to bear the rates of assessment of the respective taluk in which they were situated at the time of revision settlements. The term of revision settlement for this taluk was for 30 years and expired in 1365 Fasli. This taluk also is over due for fresh revision settlement.

## (c) YELLANDU TALUK :

The initial settlement of this taluk was announced in the year 1309 fasli. The taluk then consisted of only 38 diwani villages. The taluk had 2 groups for dry lands and 2 groups for wet lands. The following were the maximum rates announced :

			I.G. Rs.
Dry	I Group	20 villages	1.49
	II "	18 "	1.06
Wet	I "	5 "	10.28
	II "	33 "	8.56

On the expiry of the period of the initial settlement in the year 1323 fasli, the revision settlement work was taken up and the following were the maximum rates for the two groups given in this taluk for dry and wet assessments :

			Rs.
Dry	I Group	30 villages	1.72
	II "	16 "	1.27
Wet	I "	12 "	12.00
	II "	34 "	10.28

The period of revision settlement was for 30 years which has expired in the year 1365 fasli. Thus this taluk is due for revision. In the case of this taluk also the above rates apply only to the villages that were comprised of the old Yellandu taluk. The villages transferred from other taluks to this taluk will continue to bear the assessment rates of the respective taluk from which they were transferred.

## (d) BURGAMPAHAD TALUK (PALWANCHA KHALSA) :

The initial settlement of Palwancha Khalsa taluk was commenced in 1307 fasli, and it was announced in 1313 fasli for a period of 15 years. At that time the taluk consisted of 50 diwani villages under only one group for dry and wet assessments, with maximum rates of Rs. 1-8-0 and Rs. 10 respectively throughout the taluk. The period of initial settlement expired in 1327 fasli but however, it was extended up to 1352 fasli. Even to this day no revision settlement was effected and the same old rates are being levied. Out of the diwani villages initially surveyed they are only 27 villages in this taluk at present and the rest have been added to the newly created taluk of Palwancha. The remaining villages have been added to this taluk from Palwancha Samasthan.

## (e) PALWANCHA TALUK :

This taluk has been newly formed in the year 1950 after the amalgamation of ex-jagir villages mainly with the inclusion of



Samasthan Palwancha. This taluk consists of 23 villages of the former Palwancha Khalsa taluk which was surveyed and settled as detailed above under Burgampahad taluk and the villages of Samasthan Palwancha added to this taluk together with those villages which were transferred from Madhira and Yellandu taluqs.

10. *Settlement of Jagirs.*—The jagirs and agraharam villages taken over by the Government have been surveyed and settled by the Settlement Department and the rates of the adjoining diwani villages are being adopted.

11. *Water charges.*—As already stated earlier the practice of charging water rate separately is not in vogue in the erstwhile Hyderabad State. For all irrigated crops under the sources in wet lands the fixed assessment of the source is charged. For second crop raised in the wet lands and irrigated under the source, half the wet assessment fixed under the source is charged. In the case of private wells only fixed dry assessment is collected. In the case of Government tanks, channels and streams etc., minimum 'Parakam' rate (wet assessment for flow) of the village is charged.

*Remissions.*—The particulars of remissions granted during the past 5 years are given below :—

<i>Fasli</i>	<i>Amount.</i>
1362	5,66,692
1363	1,91,596
1364	1,31,324
1365	1,37,278
1366	1,53,126

#### YIELDS

Name of the crop	At the time of initial settlement (seers per acre). *	At the time of revision settlement (seers per acre). *	PRESENT DAY (Seers per acre)		
			Director of Bureau of Statistics†	Officials. ††	Non-officials. ††
(1)	(2)	(3)	(4)	(5)	(6)
Paddy	1,250	1,280	498	927	765
Jowar	372	300	260	380	248

SOURCES: \* Initial settlement report of Madhira taluk and revision settlement report of Khammam taluk.

† From Statistical Abstract 1955-56 on the basis of random sampling method adopted.

†† From the answers to the questionnaire.

## Prices

Name of crop	At the time of initial settlement (seers per I.G. rupee) *	At the time of revision settlement. (seers per I.G. rupee) †	Present day (seers per I.G. rupee) ††
Paddy	.. 22½	22 1/6	5
Jowar	.. 22 1/6	14	4½

Source : \* Initial settlement of Madhira taluk.  
 † Revision settlement of Khammam taluk.  
 †† Statistical abstract of 1955-56.

## Cultivation expenses

Name of crop	At the time of initial settlement I.G. rupees. *	At the time of revision settlement I.G. rupees †	Present day I.G. rupees. ††
Paddy	.. 10.81	14.11	Rs. 242, 159, 158-8-0, 174, 176-8-0
Jowar	.. 5.34	9.59	123, 68-1-0, 67-9-0, 96, 91-8-0

Source : \* Initial settlement of Madhira taluk.  
 † Revision settlement of Khammam taluk.  
 †† Answers from the questionnaires.

## Particulars given below:

		Rs.		
For	Paddy	.. 242	}	Shri Ghulam Ahmed, Dt. Agrl. Officer, Khammam.
	Jowar	.. 123		
	Paddy	.. 159	}	The Agricultural Assistant, Burgumpadu.
	Jowar	.. 68-1-0		
	Paddy	.. 158-8-0	}	do
	Jowar	.. 67-9-0		
	Paddy	.. 174	}	do
	Jowar	.. 96		
	Paddy	.. 176-8-0	}	The Tahsildar,
	Jowar	.. 91-8-0		
				Yellandu.

## MAHABOONNAGAR DISTRICT

*Introductory.*—Mahaboobnagar was formerly known as Palamore. It consisted of 10 taluks. After the States reorganisation, Pargi taluk has been excluded and attached to Hyderabad district, and the taluks of Alampur and Gadwal of former Raichur district and Kodangal taluk of Gulbarga district have been included in this district increasing the number of taluks to 12. There are four revenue divisions. The present set-up of the district is as follows :

	No. of villages
I. Mahaboobnagar division :	
1. Mahaboobnagar	136
2. Kalvakurti ..	149
3. Shadnagar ...	140
II. Narayanpet division :	
1. Makthal ..	130
2. Atmakoor ..	122
3. Kodangal ..	155
III. Nagarkurnool division :	
1. Nagarkurnool .	136
2. Achampet ..	49
3. Kokkapur ..	118
IV. Gadwal division :	
1. Gadwal ..	192
2. Wanparthi ..	146
3. Alampur ..	100
Total .. ..	1,528

This district with an area of 6,981 sq. miles lies between 15°-2' and 17°-14' of the northern latitude and 77°-10' of the eastern longitude. The river Krishna and Tungabhadra form its boundary on the south separating it from Kurnool and Guntur districts. Hyderabad district lies on its north, Nalgonda on the east and Raichur and Gulbarga on the west. In the south-east corner a range of flat topped hills extend from the north to the south of the Amrabad taluk. The principal river is Krishna. Its tributaries, Tungabhadra, Dindi and Peddavagu, drain the district. This district contains large tracts of forests which cover 17.2% of the total geographical areas. The taluk of Amrabad, and Kollapur are mostly covered with forests. The total length of roads in the district is 654 miles. The Secunderabad-Dronachalam metre gauge line of the Central Railway runs across the district. There are 1,510 villages and 18 towns in this district. The total population as per 1951 census is 14.38 lakhs.

2. *Soil.*—The soils of the district may be divided into three zones. The belt along the rivers Krishna and Tungabhadra is of rich deep black soil. The western portion has sandy loam and the eastern portion contains medium black soil or Halki (light) Regad. As far as the silt and clay mixture of the soil is concerned, it is classified as sandy-loam and is lighter in its texture.

3. *Climate and Rainfall.*—The temperature and humidity vary in different parts of the district. The taluks of Nagarkurnool and Amrabad are damp, while the taluks of Makthal and Mahboobnagar are hot and dry. The average monthly temperature of the hottest month is 91° F (32.8° C) while in January it comes down to 74° F (23.3° C). The western portion of the district receives less than 25 inches of rainfall. The particulars of average rainfall and average number of rainy days are given below :—

1955-56	Average rainfall	Average rainy days
South-West monsoon	33.30	50
North-East monsoon	3.48	6
Winter period	0.01	..
Hot weather period	2.63	3
Total	39.42	59

4. *Irrigation.*—Tanks and wells are the main sources of irrigation. Irrigation under river canals is confined to Mahaboobnagar, Shadnagar, Makthal and Atmakoor taluks. Irrigation by "Parrekalva" (spring channels) is also in vogue in a few taluks. The area irrigated by different sources is given below :—

Source	Area irrigated (in acres).
1. Government canals	14,819
2. Tanks ..	1,66,966
3. Wells ..	41,494
4. Other sources (spring channels, etc.) ..	7,493
5. Total net area irrigated ..	2,30,672
6. Percentage of net area irrigated to the area sown ..	(9.51)
7. Area irrigated more than once in the same year ..	23,449
8. Total gross area of crops irrigated ..	2,54,121
9. Percentage of the total gross irrigated area to the total area sown ..	(10.37)
10. Percentage of area irrigated by wells having independent ayacuts to the total area irrigated ..	(17.99)

The following are the three medium size projects in this district :

	Commandable area	Area irrigated	Area left fallow
1. Sarlasagar ..	4,800-00	..	4,800-00
2. Koilsagar..	14,468-17	7,635-28	6,832-29
3. Chandrasagar ..	3,600-00	1,200-00	2,400-00

The reasons for leaving some areas under each of them fallow are mentioned below. In the case of Koilsagar, channels to the tailend villages have not yet been excavated. Further the ryots are not raising paddy crops on the black-cotton soil on the ground that hard black soil is unsuitable for wet cultivation, as salts are coming up after irrigation. The hoofs of the cattle get damaged during puddling and transplantation is difficult due to the hardness of the soil.

In the case of Chandrasagar, the Executive Engineer is taking steps to make water available for the remaining ayacut also. The Sarlasagar project commenced by the Raja of Wanaparathi before the abolition of the Samasthan has not yet been completed by the Government.

5. *Cultivation.*—The table below shows the land utilization in the district.

Particulars	Area in acres	Percentage of total area
Total geographical area .. ..	45,60,069	..
Area of forests .. ..	7,85,929	17.2
Barren and uncultivable land .. ..	2,81,598	6.2
Land put to non-agricultural uses .. ..	1,64,465	3.6
Cultivable waste .. ..	84,792	1.9
Permanent pastures and other grazing lands	1,97,989	4.3
Land under miscellaneous trees, etc. .. ..	27,890	0.6
Current fallows .. ..	4,61,392	10.1
Other fallow lands .. ..	1,30,048	2.9
Net area sown .. ..	24,25,961	53.2
Area sown more than once .. ..	25,465	0.6
<b>Gross total cropped area .. ..</b>	<b>24,51,426</b>	<b>53.6</b>

The usual system of rotation of crops is followed in this district. The main factors that influence rotation of crops are soil, climate and irrigation facilities. In this district there is a practice to grow oil seeds and castor extensively alternately with jowar. The

cultivator gets by mixed cropping a good crop of jowar and a substantial income from the cash crop. Mixed crops are common in the rabi area. Cotton and chillies are grown in Gadwal and Alampur taluks.

6. *Cost of Cultivation*.—The cost of cultivation of dry and wet lands is given below :—

Particulars	At the time of initial settlement (per acre)		At the time of revision settlement (per acre)	Present day (per acre)
			*	‡
				Rs.
Paddy .. ..	Not available	O.S. 13-2-8	287-8-10 (officials) 285-5-0 (non-officials)	
Jowar .. ..	do	Not available	82-7-1 (officials) 98-12-0 (non-officials)	

#### 7. Prices

	At the time of initial settlement (per Re. in seers.)		At the time of revision settlement (per Re. in seers.)	Present day (per Re. in seers)
			*	
Paddy .. ..	26	10	3½	
Jowar .. ..	20	6	5½	

#### 8. Yields.

Name of the crop	At the time of initial settlement (Seers per acre). *	At the time of initial settlement (Seers per acre). *	PRESENT DAY (Seers per acre).		
			Director of Bureau of Statistics †	Officials ‡	Non-officials ‡
1	2	3	4	5	6
Paddy .. ..	Not available	994	390	1,360	1,175
Jowar .. ..	do	Not available	167	284	290

SOURCES : \*Initial and Revision settlement reports of Mahaboobnagar taluk.

† From Statistical Abstract 1955-56 on the basis of random sampling method adopted.

‡ From the answers to the questionnaire.

9. *Seasonal conditions.*—The common pests that attack the crops in this area are 'Tella Tegulu', Leaf Shedding, Usa Tirugulta, 'Bonta purugu', 'Nella purugu', 'Nusi purugu', Paddy Hispa and Stem-borer. Preventive steps are taken by the Agricultural Department at the request of the ryots and at their cost.

10. *Holdings.*—The total number of holdings in the district is 2,26,320 with an extent of 32,07,559 acres.

11. *Features of settlement.*—The table below shows the years of initial settlement and revision settlement in each taluk of the district.

Name of the taluk	Year of initial settlement	Year of revision settlement
	Fasli	Fasli
1. Mahaboobnagar	1308	1332
2. Kalvakurti..	1309	1332
3. Nagarkurnool	1311	1332
4. Makthal ..	1303	1330
5. Atmakur ..	..	.. Ex-Samasthan.
6. Achampet ..	1312	1354
7. Kondangal	1303	1325
8. Kollapur ..	..	..
9. Shadnagar	..	..
10. Gadwal ..	..	..
11. Wanpartii ..	..	..
12. Alampur ..	1300	1320

The maximum dry rates range from Rs. 2.56 to Rs. 0.85 I.G., and maximum wet rate from Rs. 17.14 to Rs. 8.65 I.G., and maximum garden rates from Rs. 12 to Rs. 5.14 I.G., according to the grouping.

Taluks of Shadnagar, Kollapur, Atmakoor, Gadwal and Wanaparti are *ex-Jagir* taluks and newly created due to the abolition of jagirs in erstwhile Hyderabad State. Hence the particulars of past settlement are not available. The existing rates in the said taluks are as follows :—

	Dry		Garden (flow)		Wet	
	I.G.	Rs.	I.G.	Rs.	I.G.	Rs.
Shadnagar .. .. .	1.60		15.43		15.43	
	1.28		12.85		12.85	
	1.05		10.28		10.28	

	Dry I.G. Rs.	Garden (flow) I.G. Rs.	Wet I.G. Rs.
Kollapur	2.14	17.14	17.14
	1.60	12.85	12.85
	1.38	10.28	10.28
Atmakur	1.81	17.14	17.14
	1.49	12.85	12.85
	1.17	10.28	..
Gadwal	1.71	..	..
	1.28	8.57	8.57
Wanaparti	1.92	..	12.85
	1.49	10.28	12.00
	1.28	..	..

12. *The Estates Abolition.*—In the villages of *ex-Jagirs*, *ex-Sarf-e-khas*, *ex-Samasthan* and *ex-Paighas* taken over by the erstwhile Hyderabad Government, the high rates of assessment if any prevailing, are being reduced and brought down to the level of rates obtaining in the adjoining diwani (ryotwari) villages.

13. *General.*—Except Gadwal and Alampur taluks which were transferred from Raichur district, the district is generally a poor one in the Telangana region on account of the inferior soils and inadequate rainfall. The cultivators are hard working and cultivate considerable areas under wells. This district supplies a large number of efficient unskilled labourers for project works. The labourers are called Palmore Labourers. The wages and the rates of pay for farm servants are cheaper in this district than those prevailing in other neighbouring districts.

## MEDAK DISTRICT

*Introductory:*—Originally Medak district was comprised of 7 taluks with 1154 villages. Due to the reorganisation of the erstwhile Hyderabad State, Vikarabad taluk having 192 villages was transferred to Hyderabad district and in return 2 taluks of district of Bidar viz., Zaheerabad and Narayankhed, having 172 and 137 villages respectively were included in this district making a total of 8 taluks for the district. The present set up of the district consists of 3 revenue divisions and 8 taluks as given below :

Division : <i>Sangareddy</i>	Division : <i>Medak</i>	Division : <i>Siddipet</i>
Sangareddy taluk.	Medak taluk.	Siddipet taluk.
Narayankhed taluk.	Narsapur taluk.	Gajwel taluk.
Zaheerabad taluk.	Andole taluk.	..



This district is bounded by Nizamabad district on the north, Karimnagar district on the north-east, Nalgonda district on the East and Hyderabad and Bidar districts on the south and west respectively. This district lies between 17° 25' and 18° 19' northern latitude and 77°48' and 78°31' eastern longitude. The major portions of forests are found in Narsapur and Medak taluks. The most important river in this district is 'Manjira', a tributary of Godavari which enters Medak from Bidar district and passes through the western and north-western portions of the district. The 'Pasperu', a tributary of the Manjira, enters the district from the north and flows by the side of Medak town. There are 347 miles of roads in the district. The broad gauge route enters the district from the west and the meter gauge route from Hyderabad to Manmad also passes through the district in the east. This district is a small one with an area of 3,799.67 sq. miles and a population of 11.24 lakhs.

2. *Soils*.—Chalka or Sandy loam is the predominant soil in the district. Black regad soils and red laterite soils also exist. Red laterite soil is found in Zaheerabad taluk and black soils are found in Sangareddy, Andole, Narayankhed taluks and a part of Narsapur taluk. The rest of the area of the district is all of chalka soil interspersed with small patches of black loam. The chalka soils are coarse, porous and drain off very well. They are generally poor in nitrogen, organic matter and phosphates. The clay contains kaolin and has a low moisture retentive capacity. On the whole they are reckoned to be less fertile than clay soils. Chalka soils are quite suitable for wet cultivation. The laterite soils of Zaheerabad taluk are in general richer than the chalka in other parts. They are excellently suited for orchards and garden crops.

3. *Climate and Rainfall*.—The climate is dry and pleasant from September to June. But during the rainy season the area becomes malarial. The minimum temperature drops to 45 (7.2°C) and maximum temperature rises to 100 F. (37.8°C). The particulars of rainfall are given below :

Rainfall and Rainy days :

	Average Rainfall	Average Rainy days
South-West Monsoon ..	47.34 inches	57
North-East Monsoon ..	2.94 „	4
Winter period ..	..	..
Hot-weather period ..	3.25 „	4
Total ..	<u>53.53</u>	<u>65</u>

4. *Irrigation.*—Tank irrigation is the main stay of the district and the whole district is full of tanks. The canals from the river Manjira and the Nizamsagar serve a portion of the district.

The important source of irrigation in Sangareddy taluk is 'Gangakalwa' project which was completed in 1323 F. The project feeds about eighteen tanks and kuntas distributed in five villages. At present there is paddy cultivation in about 615 acres during the Abi season under this source.

There are more than 1,000 tanks in the Medak taluk and two important projects, Mahboobnagar project and Rayanapalli project. Mahboobnagar project was constructed across the river Manjira near Ghanpur village about 8 miles south-west of Medak. This irrigates an extent of about 6,000 acres lying in 18 villages. Rayanapalli project is constructed across the Pushpal stream tributary of the Manjira river. It is 7 miles from Medak town. It will irrigate 1,250 acres if the entire ayacut is developed. At present it irrigates 656 acres 24 guntas.

The other important project is the Fatahnagar in the Andole taluk, which irrigates 11 villages in Andole taluk and is designed to irrigate an area of 5,400 acres.

Under the Second Five-year Plan three minor irrigation projects, namely, Haldiwagu, Nakkawagu and Kotapalli project will be taken up.

The sources of water supply and the area irrigated therefrom in the district are given below :

<i>Particulars</i>	<i>Area irrigated in acres</i>
1. Government canals	12,648
2. Tanks ..	1,46,297
3. Wells ..	38,339
4. Other sources (Spring channels, etc.)	3,498
5. Total net area irrigated ..	2,00,782
6. Percentage of net area irrigated to the net area sown .. .. .	(18.23)
7. Area irrigated more than once in the same year .	40,566
8. Total gross area of crops irrigated .. ..	2,41,348
9. Percentage of the total gross irrigation area to the total area sown .. .. .	(20.56)
10. Percentage of area irrigated by wells having independent ayacuts to the total area irrigated .	(15.89)

5. *Cultivation.*—The table below shows the land utilization in the district :

Particulars	Area in acres	Percentage to total
1. Total geographical area ..	24,35,275	100.00
2. Area of forests .. ..	2,26,087	9.28
3. Barren and uncultivable land ..	2,14,207	8.80
4. Land put to non-agricultural uses..	1,32,808	5.45
5. Cultivable waste .. ..	1,00,325	4.12
6. Permanent pasture and other grazing lands .. ..	2,22,787	9.15
7. Land under miscellaneous trees, etc. .. ..	41,990	1.72
8. Current fallows .. ..	2,47,324	10.16
9. Other fallow lands .. ..	1,48,261	6.09
10. Net area sown .. ..	11,01,486	45.23
11. Area sown more than once ..	72,326	..
Total cropped area ..	11,73,812	

Normally no crop rotation is adopted in wet lands with good facilities of irrigation. A few cultivators however, grow green manure crop or sun hemp by rotation with paddy but only on small extents. This practice of growing green manure exists in few taluks. In kharif season, the usual rotations are jowar and maize followed by castor or groundnut. In rabi, normally the rotation is jowar, pulses and safflower and linseed. However, most of the cultivators resort to mixed cropping and grow usually two different crops of the same season together. One of these crops forms a major crop and the other one is grown in a few lines all round and in between the major crop. For example, jowar is one of the main crop and it is mixed, with minor crops such as, jute and Pulses.

6. *Cost of Cultivation.*—The cost of cultivation of dry and wet lands at various periods is given below :—

Particulars	At the time of initial settlement (I.G. Rs. per acre).		At the time of revision settlement (I.G. Rs. per acre).		Present day †
	(1)	(2)	(3)	(4)	
Jowar .. ..	..	..	I.G.Rs. 12.86	I.G.Rs. 100	
Paddy .. ..	..	..	.. 19.27	.. 200	

SOURCE:— † Director of Agriculture  
(Nandikandi Seed-Farm).

### 7. Prices

Particulars	At the time of initial settlement (seers per Re. 1 I.G.)		At the time of revision settlement (seers per Re. 1 I.G.)		Present day †
	(1)	(2)	(3)	(4)	
Paddy .. ..	..	23 1/3	21	5	
Jowar .. ..	..	18 2/3	14	4½	

SOURCE :—† Statistical abstract of 1955-56.

### 8. Yields

Name of the crop	At the time of initial settlement (Seers per acre). *	At the time of revision settlement (Seers per acre). *	PRESENT DAY (Seers per acre)		
			Director, Bureau of Statistics †	Officials	Non-officials
				‡	‡
(1)	(2)	(3)	(4)	(5)	(6)
Paddy .. ..	1,500	1,280	502½	1,360	1,336
Jowar .. ..	347	260	102½	480	369

SOURCES : \* Revision settlement reports of Andole taluk.

† From Statistical Abstract 1955-56 on the basis of random sampling method adopted.

‡ From the answers to the questionnaire.

9. *Seasonal Conditions*.—No famine conditions have been reported in the Medak district, in the last 10 years. As there are a large number of tanks and wells—and as the rainfall is generally fair—the district can be said to be almost free from famine. In 1328 F. some scarcity was felt in Siddipet taluq but Government took adequate and timely measures. The particulars of remissions granted during the past 4 years are as follows :—

Fasli year	Amount Rs.
1363	6,94,533
1364	7,46,221
1365	6,99,003
1366	5,31,081

10. *Holdings*.—The total number of holdings in the district are 2,36,527, with an extent of 17,25,505 acres.

11. *Settlement*.—Talukwise features of initial settlement and revision settlement of the district are given below :

*Sangareddy taluk*.—(Kalabgur taluk) Sangareddy taluk was initially settled in 1300 F., and the period of settlement was fixed as 15 years. Revision settlement was announced in 1332 F., and the period fixed was 30 years which expired in 1362 F.

(a) *Dry lands* :—At the time of revision settlement 7 dry groups were existing with settlement rates ranging from O.S. Re. 1 to Rs. 4. Taking into consideration the facilities of transport and communication three groups were formed with the following maximum rates :

Groups	Maximum rates I.G. Rs.
Dry .. I Group ..	2.56
II Group ..	1.92
III Group ..	1.49

Proximity to Hyderabad city, facilities of transport and communications, increase in the value of the lands and agricultural commodities, construction of new sources of irrigation, were some of the factors taken into consideration for increasing the dry rates. The total dry assessment was increased by 31.31%.

(b) Wet lands :—At the time of initial settlement the following wet rates were introduced :

Crop	Group-I	Group-II
	I.G. Rs.	I.G. Rs.
Abi	15.42	13.72
Tabi	21.42	19.72
Do-fasla	31.72	28.81

At the time of revision settlement only one wet group was formed with a maximum rate of Rs. 19 for single crop and Rs. 28 for double crop.  $1\frac{1}{2}$  Abi assessment was levied for dofasal lands. There was an increase of 3.13% on wet assessment. On the whole the increase in assessment for dry, Baghat and wet lands was 16.45%. Incremental remission was also introduced at the time of revision settlement.

*Andole taluk.*—The initial survey of taluk was taken up in 1298 Fasli and completed in 1299 Fasli. Classification work was started in 1299 F. and completed in 1300 F. 73 diwani villages were included in the jamabandi report and announced in 1308 F. Due to reorganisation of districts in 1314 F., villages from Tekmall, Yellareddy and Medak taluks were transferred to Andole taluk and at the time of revision settlement Andole taluk comprised of 176 villages. Revision settlement was announced in 1332 F., for a period of 30 years. The period has expired.

(a) Dry lands.—At the time of revision settlement the following dry groups were existing :—

Groups	Villages	Rates	
		I. G. Rs.	
Special Group	8	2.56	Andole
First Group	5	2.56	Medak
do	35	2.14	Andole
Second Group	41	1.72	„
Third Group	87	1.27	„

During the revision settlement only 3 groups were retained with the following maximum rates. I.G. Rs. 2.46, Rs. 1.92, Rs. 1.38.

(b) Wet lands.—At the time of initial settlement rates charged for Abi and Tabi were different and Tabi rates were higher

than Abi. The following table gives the rates which were introduced at the time of initial settlement:

Crop	Group-I	Group-II	Group-III
	O.S. Rs.	O.S. Rs.	O.S. Rs.
Abi	21, 24, 17	17, 21	13, 18
	18	15	12
	16	13	10
Tabi	30, 48, 24	42	18, 36
	26	21	16
	24	18	14
Dofasla	44, 60, 35	38, 52, 36	27, 45
	38	31	24
	34	27	21

During this revision only two wet groups were retained with the maximum rates of I.G. Rs. 18.85 and I.G. Rs. 15.43. Sub-grouping was abolished.

N.B.—The above rates will not apply to the villages of sarf-e-khas and jagirs which have been included after abolition of jagirs. They have separate rates.

*Siddipet taluk.*—The initial settlement of this taluk was announced in 1319 F., and the period of settlement was 15 years. Revision settlement was announced in 1337 F., for a period of 30 years. In the beginning this taluk was in Karimnagar district and later transferred to the Medak district at the time of Zilabandi.

(a) Dry lands.—Due to the inclusion of taluks Ramayanpet and Chiryal nearly 7 dry groups were existing at the time of revision settlement with maximum rates ranging from O.S. Rs. 1-4-0 to Rs. 3-4-0. These seven groups were abolished and at the time of revision only 2 groups have been formed for the whole taluk..

		Maximum rates I.G. Rs.
Group I	.. 119 villages	2.78
Group II	.. 33 „	1.92

(b) Wet lands.—The following wet grouping and rates were existing at the time of revision settlement:

Group	No. of villages		Maximum rates
			O.S. Rs.
I.	51	Single crop Abi ..	18
		do Tabi ..	24
		do Dofasla ..	36
II.	84	Single crop Abi ..	15
		do Tabi ..	20
		do Dofasla ..	30
III.	17	Single crop Abi ..	12
		do Tabi ..	12
		do Dofasla ..	24

During the revision settlement, 2 wet groups were formed with the following maximum rates.—

Group I	..	.. 137 villages	I.G. Rs. 17.14
Group II	..	.. 17 „	„ 13.71

*Medak taluk.*—Medak taluk was initially settled in 1308 F., for a period of 15 years. Revision settlement was introduced in 1339 F., for a period of 30 years.

(a) Dry lands.—At the time of initial settlement 4 dry groups with the maximum rates ranging from O.S. Rs. 3-4-0 to 2 were fixed. But at the time of revision, taking into consideration the facilities of communication and transport and, prices of commodities, only one group was introduced for the whole taluk with a maximum rate of I.G., Rs. 2.78.

(b) Wet lands.—The following chart will indicate the wet groups existing in the initial settlement.

	Group I	Group II
	O.S. Rs.	O.S. Rs.
Abi	.. 24	18
	21	15
	22	19
Tabi	.. 48	36
	42	30
	32	28
		24
Double crop	.. 60	45
	52 8 0	37 8 0
	46 0 0	14 0 0



At the time of revision only two groups were formed with the maximum rates of I.G. Rs. 17.14 and I.G. Rs. 14.57. It may be observed that the practice of levying high rates in Tabi, compared to Abi was discontinued at the time of revision. The villages under Mahboobnahr project were included in the 1st group.

N.B.—The above rates will not apply to the villages of sarf-e-khas and jagirs which have since been included with diwani after abolition of jagirs. They have separate rates.

*Narsapur taluk.*—This taluk was newly constituted consequent on the abolition of jagirs. It consists of the following 159 villages:—

Taluks			
(1) Narsapur (Paigah) ..	..	31	villages
(2) Hatnoora ..	..	26	”
(3) Medchal (Sarf-e-khas)	..	43	”
(4) Medak (Kalsa) ..	..	18	”
(5) Kalabgur ..	..	27	”
(6) Andole ..	..	14	”
Total ..		159	”

The villages of Narsapur, Hatnoor (Paigah), Kalabgur, Andole are due for revision. The period of revision will expire in 1368 F., for the villages which were included from Medak taluk. Sarf-e-khas of former Medchal taluk (north taluk) are not due for revision at present. The maximum rates and groupings vary according to the former taluks in which the villages were situated. They are as follows :—

		No. of groups	Maximum rates		Circle
			O.S. Rs.	O.S. Rs.	
Dry	..	6	3 4 0 to	1 8 0	Kowdipalli.
”	..	8	3 4 0 to	1 4 0	Hatnoora.
”	..	8	3 8 0 to	1 8 0	Turkhal Khanapur.
”	..	6	3 4 0 to	1 12 0	Gumaddalla.
”	..	5	3 4 0 to	1 8 0	Sivampet.
”	..	7	3 4 0 to	1 8 0	Narsapur.
Wet	..	11	27 0 0 to	14 0 0	Kowdipalli.
”	..	7	27 0 0 to	14 0 0	Hatnoora.
”	..	6	23 0 0 to	14 0 0	Turkhal Khanapur.
”	..	4	21 0 0 to	17 0 0	Gumaddalla.
”	..	5	23 0 0 to	16 0 0	Sivampet.
”	..	9	25 0 0 to	14 0 0	Narsapur.

The rates which were announced during the initial settlement of Narsapur taluk in 1330 F., still hold good so far as dry and Abi lands are concerned. Due to complaints of high rates of assessment in the paigah villages, in the year 1951, Government accorded a suspension of 3 annas per rupee in the single and double crop tabi assessments, because the do-fasla and tabi rates in the Narsapur taluk were higher than the adjoining diwani-rates.

*Gajwel taluk.*—This taluk is also newly constituted and comprises 169 villages. These villages are taken from the following taluks :—

Name of the taluk	No. of village	Year of settlement	Maximum rate (Dry)
			O.S.Rs.
Siddipet ..	123	1338 F.	3 4 0 to 2 4 0
Medchal ..	28	1353 F.	2 12 0 to 2 4 0
Medak ..	7	1339 F.	3 4 0
Bhongir ..	7	1339 F.	3 2 0 to 2 8 0
Jangaon ..	2	1336 F.	2 12 0 to 2 8 0 & 2 0 0
Sirsilla ..	2	1339 F.	3 4 0 to 2 12 0

Wet rates vary from O.S. Rs. 24 to O.S. Rs. 16 in the six circles. Except for the 2 villages of Sirsilla taluk and the villages of sarf-e-khas of Medak taluk, a majority of the villages are due for revision.

*Narayankhed Taluk.*—The initial settlement of this taluk was conducted in the year 1301 F., and the period of settlement was fixed for 15 years.

(a) Dry lands :—The following maximum rates were announced for dry lands:—

Group	No. of villages	Maximum rates
		O.S. Rs.
Dry .. .. Spl. Group	8	3 8 0
” .. .. 1st ”	18	3 0 0
” .. .. 2nd ”	26	2 4 0
” .. .. 3rd ”	27	1 8 0

On the expiry of the period of initial settlement in 1317 F., the revision settlement was undertaken in the year 1319 F., and the

period of settlement was fixed for 15 years. The following groups and maximum rates were announced :

			O.S. Rs.
Dry	..	.. Spl. Group	4 8 0
"	..	.. 1st "	3 12 0
"	..	.. 2nd "	2 12 0
"	..	.. 3rd "	1 12 0

As a result of revised rates in the revision there was an increase of 24.48% in the land revenue.

On the expiry of 1st Revision, the 2nd Revision was conducted in the year 1336 F. Taking into consideration the communication and transport facilities, prices of commodities and cultivation expenses, etc., the following maximum rates were announced :

			Maximum rates O.S. Rs.
Dry	..	.. Spl. Group	4 8 0
"	..	.. 1st "	3 12 0
"	..	.. 2nd "	3 4 0
"	..	.. 3rd "	2 0 0

(b) Wet lands :—With regard to Wet and Baghat lands, the maximum rates which were announced at the time of initial settlement were continued in the 1st revision and 2nd revision also. They are as follows :—

			O.S. Rs.
	Wet	..	16 0 0
	Baghat	..	10 0 0

*Zaheerabad taluk.*—This taluk was newly constituted consequent on abolition of jagirs. It consists of 155 villages as detailed below :—

Khalsa	..	..	40 Villages
Sarf-e-khas	..	..	3 "
Asman Jahi (Paigah)	..	..	40 "
Khurshid Jahi	..	..	17 "
Ex-Jagir	..	..	55 "
			<hr/>
	Total	..	155 "
			<hr/>

The following dry and wet maximum rates are existing in the taluk:

Dry I.G. Rs.	Wet	Garden
3 13 8	13 11 6	12 13 9
3 8 7	12 13 9	10 4 7
3 6 10	10 4 7	8 9 2
3 0 0	5 6 7	
2 15 2		
2 10 5		
2 9 2		
2 5 8		

12. *The Estates Abolition.*—There were a number of *ex-Jagir*, *ex-Paigah*, *ex-Sarf-e-khas* villages scattered all over the district. After abolition of jagirs and sarf-e-khas, these villages were merged with the adjoining taluks, and the rates of assessment were revised as explained in para 11. The following statement indicates the number of villages which have been amalgamated with these taluks:

<i>No. of taluks</i>	<i>Sarf-e-khas</i>	<i>Paigah</i>	<i>Ex-Jagir</i>
Sangareddy	34	..	43
Siddipet	1	..	56
Gajwel	22	..	78
Medak	9	..	38
Andole	18	..	24
Narsapur ..	16	57	62
Narayan khed ..	20	81	18
Zaheerabad ..	3	57	55
Total ..	123	195	374

## NALGONDA DISTRICT

### Introductory.

Nalgonda district lies between 16° 20' and 17° 47' northern latitude and 78° 45' and 79° 55' eastern longitude. It is bounded on the east by Khammam and Krishna districts, on the north by Warangal and Medak districts, on the west by Hyderabad and Mahaboobnagar districts and on the south by Guntur district. There are a series of hills and hillocks in the district running from

north to south and south-east to north-west. Besides the forests in Nalgonda, Devarkonda and Orlakonda there is a fort constructed on a hill 2,000 feet high at Bhongir in the 16th Century. There is a famous temple of Sri Narasimhaswami on Yadgir gutta which is 7 miles from Bhongir. There is a famous Jain temple at Kulpak in Bhongir taluk. The district is very poor in forest wealth and small patches of jungle cover an area of 2,36,116 acres. River Krishna runs along the southern boundary for a length of 53 miles. The river Musi has a length of 40 miles in the district, and falls into the Krishna river at Wazirabad. The other rivers are the Hallia, the Peddavagu and the Dindi. The area of the district is 5,385 sq. miles with a population of 12,52,810. The total road mileage is 528 miles, 314 being metalled and 214 being murrum. The broad gauge railway line from Secunderabad to Khazipet runs through the northern portion of the district. Nalgonda, Miryalguda, Devarakonda, Ramannapet, Bhongir, Suryapet and Huzurnagar are the seven taluks of the district. The following are particulars of land utilization in the district in 1955-56.

	Acres
1. Total geographical area	34,21,222
2. Forests .. .. .	2,36,116
3. Barren and uncultivable land	2,56,942
4. Land put to non-agricultural use	1,45,501
5. Cultivable waste ...	84,101
6. Permanent pastures ..	3,01,490
7. Miscellaneous crops, trees, groves, etc. ...	12,091
8. Current fallows	4,25,159
9. Other fallows	12,585
10. Net area sown	18,33,237

There are 1,061 inhabited villages and 12 towns. 70.3% of the population depend on agriculture.

2. *Soils*.—The Chalka and Masab soils that cover large parts of the district have originated from the decomposed granite and hence are generally sandy and poor. In the Miryalguda and Huzurnagar taluks the soil on the banks of the Krishna river is alluvial and consists to a large extent of Black Cotton soil. In Suryapet taluk there are Black Cotton soils with admixture of sand. The soil, in general, is poor. There are several dry and arid pockets.

3. *Rainfall.*—The normal rainfall for the district is 26.8". The particulars of average rainfall and the average number of rainy days for 1955-56 are as follows :—

	Average rainfall	Average rainy days
South-west monsoon	23.49	36
North-east monsoon	6.75	9
Winter period ..	0.19	1
Hot weather period	2.69	6
	<hr/> 33.12	<hr/> 52

During April and May the temperature is high and sometimes goes up to 107°. The winter is usually mild and the minimum temperature does not fall below 50° F. In August and September the moist heat is oppressive. The rainfall in the past few years has been low and unevenly distributed.

4. *Irrigation.*—The particulars of the area irrigated during 1955-56 are as follows :—

<i>Source</i>	<i>Area irrigated Acres</i>
1. Government canals	32,127
2. Private canals	1,130
3. Tanks :	
(i) With ayacut of 100 acres or more 329	} 1,10,441
(ii) With ayacut of less than 100 acres 3,625	
4. Wells : (a) Tube wells Ac. 1,142	} 56,607
(b) other wells Ac. 55,465	
5. Other sources (spring channels, etc.)	3,628
Total net area irrigated .. ..	<hr/> 2,03,933
(a) Area irrigated more than once ..	8,897
(b) Total gross area of crops irrigated ..	2,93,830
(c) Percentage of wet area irrigated to the net area sown .. ..	(11.12)
(d) Percentage of gross area irrigated to the total area sown .. ..	(15.11)
(e) Percentage of area irrigated by wells having independent ayacuts to the total area irrigated	(19.27)

1,314 oil engines and 56 electric pumps are being operated for the purpose of irrigation in the district.

There is canal irrigation under the projects of Dindi, Pendlipakala, Bheemanapalli, Asafnaher, Utkoor, Marapalli and Shaligowraram projects. The fixed ayacut of Dindi is 12,000 acres and it has been fully developed. The ayacut under Pendlipakala project which is mainly intended for light irrigation is 4,893 acres but so far 3,630 acres only have been developed. The remaining ayacut could not be developed due to insufficient water. The ayacut fixed under Bheemanapalli project on Musi is 1,860 acres. But 1,023 acres only was developed and the remaining held up due to insufficiency of water in the project. The Asifnaher project is irrigating an ayacut of 5,537 acres as against the registered ayacut of 4,539 acres. The entire extent of Ac. 850 under Utkoor-Marepalli project has been developed. Shaligowraram project is irrigating 1,973 acres as against 1,622 acres of registered ayacut. The extent of irrigation under parrekal was is Ac. 17,076. When Nagarjunasagar project is completed portions of Miryalguda, Suryapet and Huzurnagar taluks will be brought under irrigation in this district. The irrigation is mostly from wells and tanks. The extent of irrigation under minor irrigation sources with an ayacut of 30 acres and less is 30,280 acres. The revenue derived therefrom is Rs. 3,20,027. The condition of tanks with ayacuts of 10, 20 and 30 acres is as follows :—

	No. of Sources in good condi- tion	No. of sources in breached condition	Total
1. No. of tanks with an ayacut of 10 acres .. ..	2,169	298	2,467
2. No. of tanks with an ayacut of 20 acres .. ..	648	113	761
3. No. of tanks with an ayacut of 30 acres .. ..	542	164	661

The Government have encouraged the ryots to take up restoration of breached tanks by granting concessions through G.O. No. 24, Revenue, dated 22-10-1952 which says "In order to speed up the restoration of minor irrigation sources with an ayacut of 10 acres and less the restoration of tanks with an ayacut of 10 acres having been taken up by the P.W.D. under the 5-year plan,

Government have decided to authorise the Collectors to grant permission to the cultivators to restore such tanks at their own cost and to recompense them by remitting in the event of restoration of tanks the land revenue for a period of two years from the date of restoration."

5. *Cultivation*.—The crops that are grown in the district are cholam, sajja, paddy and oil seeds. The particulars of cultivation during 1955-56 are as follows :

				<i>Area in acres</i>
1.	Total area under food crops	..	..	14,28,543
2.	Total area under non-food crops	..	..	5,15,805
Total gross cropped area				19,44,348
Area cropped more than once				1,11,111
		Ac.		
Area under	paddy	..	..	2,85,044
				14.66%
				of the total cropped area.
„	„ cholam	..	..	5,29,706
				27.24%
				„
„	„ cumbu	..	..	3,14,795
				16.19%
				„
„	Other cereals	..	..	58,814
				3.04%
				„
„	Pulses	..	..	2,10,588
				10.83%
				„
„	Condiments or spices	..	..	25,353
				1.30%
				„
„	Fruits and vegetables	..	..	4,241
				0.22%
				„
„	Sugarcane	..	..	2
				..
				..
„	Fibres	..	..	16,039
				0.82%
				„
„	Oil seeds	..	..	4,91,435
				25.28%
				„
„	Drugs and narcotics	..	..	5,525
				0.34%
				„
„	Fodder crops	..	..	1,796
				0.09%
				„
„	Miscellaneous	..	..	10
				..

The sowing, harvesting and peak marketing seasons of the principal crops are given below :—

[Statement



	<i>Paddy</i>	<i>Cholam</i>	<i>Sajja</i>
Sowing ..	.. June-July November- January.	June-July. October.	June-July.
Harvesting ..	.. November- April.	November- December. March-April.	October.
Peak marketing ..	.. January- June.	February- March. May-June.	December- March.

The Collector reports that the estimated extent of crop damaged by pests and crop diseases is 20 to 30 per cent of the cultivated area.

6. *Cost of cultivation.*—The following statement shows the costs of cultivation of the chief crops at various times.

	<i>Paddy</i> I.G. Rs.	<i>Cholam</i> I.G. Rs.
1. At the initial settlement, 1902 ..	12.86	2.47
2. At the resettlement, 1925 ..	22.47	14.14
3. At the present time :		
(a) According to the District Agricultural Officer ..	335 7 0	66 13 0
(b) Collector ..	148 0 0	28 0 0
(c) Ryots who have answered the questionnaire ..	310 10 3	62 9 11

7. *Prices.*—The prices of the chief products at various times are shown below :

	<i>Paddy</i> Lbs. per rupee	<i>Cholam</i> Lbs. per rupee
1. At the time of settlement, 1902-03 .	53	46
2. At the revision settlement, 1925 ..	32	18
1929 ..	26	16
1944 ..	38	26
3. At the present time (1956-57) according to Bureau of Statistics. .	8.7	7

8. *Yields.*—The yields of the chief crop per acre at different periods have been given below :—

Name of the crop	At the time of initial settlement (Seers per acre.)*	At the time of revision settlement (Seers per acre.)*	PRESENT DAY (Seers per acre)		
			Director, of Bureau of Statistics.†	Offi- cials.††	Non- Officials.††
1	2	3	4	5	6
Paddy .. ..	1,673	1,250	436	1,280	884
Jowar .. ..	203	245	152	240	194

*Sources :* \* Initial and revision settlement reports of Nalgonda taluk.

† From Statistical Abstract 1955-56 on the basis of random sampling method adopted.

†† From the answers to the questionnaire.

9. *Seasonal conditions.*—There have been no cases of recent famines but scarcity conditions often prevail in the district due to the vagaries of the monsoon. The particulars of remissions granted during the last 5 years are as follows :—

Fasli	Rs.
1362 .. ..	14,60,418
1363 .. ..	6,57,272
1364 .. ..	7,33,781
1365 .. ..	6,58,331
1366 .. ..	5,31,806

10. *Holdings.*—The total number of cultivation holdings in the district is 2,34,369 with an extent of 27,08,316 acres.

11. *Features of the settlements.*—The table below shows the years of initial settlement, resettlement and the year when the tract is due for a 2nd revision settlement.

Name of the taluk	Year of initial settlement	Year of re- vision settlement	Year in which 2nd revision is due
1. Bhongir .. ..	1905	1929	1958
2. Ramannapet .. ..	1905	1929	1958
3. Devarakonda .. ..	1910	..	..
4. Huzurnagar .. ..	..	1944	1963
5. Miryalguda .. ..	1903	1944	1963
6. Suryapet .. ..	1903	1944	1963
7. Nalgonda .. ..	1902	1926	1945

The rates fixed at initial and revision settlement are shown below :—

(i) *Bhongir taluk* :

				<i>Initial settlement rates I.G. Rs.</i>	<i>Revision settlement rates I.G. Rs.</i>
Dry	I Group	..	..	2.36	2.67
	II "	..	..	1.72	2.35
	III "	..	..	1.27	..
Wet	I "	..	..	12.86	15.43
	II "	..	..	11.14	
	III "	..	..	9.42	

(ii) *Ramannapet*.—This taluk was part and parcel of Bhongir taluk. The rates applicable to Bhongir are prevailing in this taluk.

(iii) *Devarkonda taluk*.—The initial settlement rates announced in 1910 are as follows :—

				I.G. Rs.	
Dry	I Group	..	..	1.49	101 Villages
	II "	..	..	1.27	65 "
Wet	I "	..	..	12.86	53 "
	II "	..	..	10.28	58 "
	III "	..	..	8.57	55 "

The term of the initial settlement was fixed as 15 years. But in the year 1925 it was extended up to 1942. Even afterwards the revision settlement was not taken up. As this is a taluk overdue for settlement the special assessment of Re. 0-1-0 and Re. 0-2-0 per rupee of wet and dry rates respectively is being levied at present from the year 1952.

(iv) *Huzurnagar taluk*.—This taluk was formed at the time of realignment of districts in 1904, from out of Khammam, Suryapet and Miryalguda taluks. The rates fixed for the initial settlement of these taluks continued in the villages of the taluk till a revision was announced in the year 1944 for 20 years.

				<i>Initial settlement rates I.G. Rs.</i>	<i>Revision settlement rates I.G. Rs.</i>
Dry	I Group	..	..	2.36	2.36
	II "	..	..	1.92	1.92
	III "	..	..	1.76	
	IV "	..	..	1.72	
	V "	..	..	1.60	
				1.49	

		<i>Initial settlement rates</i>	<i>Revision settlement rates</i>
		I.G. Rs.	I.G. Rs.
Wet	I Group	13.71	13.71
	II "	12.85	11.14
	III "	12.00	..
	IV "	11.14	
		9.42	

(v) *Miryalguda taluk :*

Dry	I Group	1.92	1.81
	II "	1.72	1.49
	III "	1.49	
	IV "	1.27	
	V "	1.06	
Wet	I "	15.43	11.14
	II "	12.85	
	III "	12.00	
	IV "	11.14	

(vi) *Suryapet taluk :*

Dry	I "	1.81	1.81
	II "	1.49	
	III "	1.17	
Wet	I "	12.00	11.14
	II "	9.42	

(vii) *Nalgonda taluk :*

Dry	I "	.. 89	villages	2.36	2.89	80	villages
	II "	.. 27	"	1.92	2.36	21	"
	III "	.. 76	"	1.49	1.81	69	"
Wet	I "	.. 51	"	15.43	18.00	54	"
	II "	.. 90	"	12.85	14.57	69	"
	III "	.. 51	"	10.28	6.85	13	"

12. *Abolition of Jagirs, Sarf-e-Khas and Paigahs.*—The Jagirs, Sarf-e-Khas and Paigahs have been merged with diwani. The high rates of assessment if any prevailing in these areas are being brought down to the level of the rates prevailing in the adjoining diwani (ryotwari) villages. This district is considered to be the poorest in Telangana.

## NIZAMABAD DISTRICT

*Introductory.*—Nizamabad was formerly known as Indore district. Its set up was modified twice. In 1905, the Nirmal and Narsapur taluks were transferred to the new district of Adilabad, and Mudhol and part of Banswada to Nanded district. The rest of Banswada was further divided between Bodhan and Yellareddy while Bimgal (a sub-taluk) was merged in Armoor. Again in '1933 the Banswada taluk was formed taking over villages from Bodhan and Yellareddy taluks. On the eve of the reorganization of States also some villages of Deglur taluk (Nanded district) have been included in Banswada. At present, the district comprises six taluks consisting of 922 villages in all. The area of the district is 3,203 sq. miles with a population of 8,33,611. The district fetches the largest revenue in Telangana on account of the Nizamsagar project.

Nizamabad lies between 18°5' and 19°30' north latitude, 77°40' and 79° east longitude. The district is bounded on the north by Adilabad district, on the east by Karimnagar district, on the south by Medak and on the west by Bombay State.

There are a few minor ranges of hills in the south-west and in the centre of the district. The Godavari is the largest river which flows along the northern boundary of the district for about 70 miles separating it from Nanded and Adilabad districts, while its main tributary, Manjira flows along the western border between Nanded and Nizamabad and falls in the Godavari near Kundakurthi after running for 62 miles in Bodhan taluk. Besides, there are a few smaller streams. The main perennial ones are the Phulang, traversing the Nizamabad and Armoor taluks and the Yeddul Kattavagu flowing in Kamareddy taluk.

All the taluks, except Bodhan are overgrown with forests with an abundance of wild big and small game. The most important trees in these forests are Teak, Ebony, Nallamaddi and Beejasal.

The Hyderabad-Manmad main railway line of the Central Railways passes through the district for about 80 miles and a branch line between Bodhan-Jankampet runs for about 11 miles in Bodhan taluk. All the P.W.D. roads on which the R.T.D. bus service or other services operate, cover 443 miles. One national highway No. 7 in the district connects the Hyderabad-Nagpur trunk road for about 71 miles. There are 2 regulated markets in the district. One in Nizamabad town, and the other at Kamareddy. The existing number of ploughs and plough cattle in 1955 in the district are worked out at 156 and 242 per 1,000 acres of total cropped area.

The average prices of dry and wet lands per acre during the ten years ending 1954 mentioned in the Agro-Economic Survey Report are given below talukwise.

	Dry land per acre			Wet land per acre		
	Rs.			Rs.		
(1) Nizamabad taluk .. ..	233	7	0	326	3	0
(2) Armoor taluk .. ..	210	0	0	283	0	0
(3) Kamareddy taluk .. ..	103	0	0	545	8	0
(4) Banswada taluk .. ..	134	9	0	331	8	0
(5) Yellareddy taluk .. ..	60	0	0	344	0	0
(6) Bodhan taluk .. ..	185	15	0	328	1	0

According to the last census of 1951, the agricultural labour forms 13.8% of the total population of the district. In the area commanded by the Nizamsagar project, there is scarcity of labour and much difficulty is felt in getting them in the right time and at reasonable wages. The wages rise up to Rs. 1-8-0 per day for even woman labour. However, this situation is met to a certain extent by seasonal migration of the agricultural labour from the adjoining district of Nanded. In other areas where there is not much wet cultivation, the supply of agricultural labour is quite abundant and there is no difficulty, whatsoever.

2. *Soil*.—Nizamabad district presents a mixture of the physical features and geological aspects of Telangana and Marathwada regions. A large area of black-cotton soil is spread over all along the Manjira and Godavari rivers in the north and western portions of the district which comprises Armoor, Nizamabad, Bodhan, Banswada and the western portion of Kamareddy taluks. The soil is very fertile and the yield of dry crops in this area is very high. The remaining portion of the district consists of red chalka soil. In between these two belts there is a small belt of black chalka soil which is locally called 'Mailwa'. In the central and southern

portion of Nizamabad, the eastern portion of Banswada taluks where there are thick forests, the soil is of poor chalka type, in which the proportion of sand-to-clay is high.

The soils under wet cultivation in the district include sandy, sandy-loam, clay-loam and heavy-clay. The clay-loam soils are the predominant types and they record the highest yields. Sandy loams are present in Banswada taluk and in the non-perennial zones of Nizamsagar. Heavy clays are found in Banswada taluk and some villages of Bodhan taluks. Small patches of alkaline soils and low lying ill drained patches are found scattered in all the taluks of this district particularly in Kamareddy.

3. *Rainfall.*—The climate of the district is healthy from February to the end of May, but it is damp and malarious during rains and the cold season, giving rise to fever and ague. A major portion of the district in the west and north is rather humid due to net work of irrigation canals running through the area. The temperature goes up to 110° in May.

The annual average rainfall is about 39.17" for the last 34 years and 43.45" for the last decade.

Average yearly rainfall for the last 10 years is as follows :—

1948-49	..	..	41-83 inches
1949-40	..	..	45-04 "
1950-51	..	..	31.22 "
1951-52	..	..	40-14 "
1952-53	..	..	24-44 "
1953-54	..	..	54.91 "
1954-55	..	..	43.51 "
1955-56	..	..	53.00 "
1956-57	..	..	61.15 "
1957-58	..	..	39.29 "

More than  $\frac{3}{4}$ th of the total rainfall is generally received between June and September, from the south-west monsoon and the remaining between October and November from the north-east monsoon.

4. *Irrigation.*—The Nizamsagar with its net work of canals and distributaries, is the main source of irrigation in the district. In the commandable area of the project, there are 321 villages situated in Banswada, Bodhan, Nizamabad and Armoor taluks. The cultivated area covering these villages under the project is 1,39,732 acres. The main cultivation under the project is paddy and

sugarcane and to some extent turmeric. An area of 94,771 acres of dry land has been converted into wet. The area estimated to be commandable under Nizamsagar project is 2.75 lakhs acres while the area irrigated in 1956 is 1.65 lakhs acres. The remaining area could not be irrigated as the capacity of the existing main canal requires improvement to increase the ayacut under the 1st crop. Next in importance is the Pocharam project situated at the southern boundaries of Yellareddy taluk. The forecast of wet area under this project is about 9,519.0 acres. Its main canal known as Mahbub canal is 16 miles long and irrigates 41 villages in Yellareddy taluk. Out of this 9,367.10 acres are irrigated in Abi and 5,891.18 acres in Tabi season.

In the non-perennial zone of Nizamsagar and in the villages above the canal, the sources of irrigation are the tanks, kuntas and wells. There are 625 tanks with ayacuts of 10 acres and below while 806 tanks with ayacuts ranging between 10 and 50 acres. Out of these tanks, 244 of the former and 346 of latter class are in disrepair. Besides these, nalas and wells also irrigate lands in each taluk.

In the perennial zone, the lands are constantly watered as long as the crops such as paddy, sugarcane and turmeric, remain on ground. Bhagayat or garden lands require only occasional wettings and such crops are generally grown under wells.

There are very good irrigational facilities in a major portion of the district which accounts for the prosperity of the district. But in the major portion of Yellareddy, Vellutla and Gandhari circles, the eastern portion of Banswada taluk, which is above the canal and the southern portion of Armoor taluk only small irrigation sources like kuntas exist with the result that there is very little area under cultivation in the tabi season.

The area under different sources of irrigation in 1955-56 is given below :—

<i>Source</i>				<i>Net area irrigated (in acres)</i>
Government canals	..	..	..	1,28,606
Private canals	..	..	..	741
Tanks	..	..	..	1,07,449
Tube-wells	..	..	..	470
Other wells	..	..	..	14,776
Other sources	..	..	..	2,340
Total area	..	..	..	2,54,382
Area irrigated more than once	..	..	..	47,677
Gross area irrigated	..	..	..	3,02,059



5. *Cultivation.*—The old customary methods of cultivation are still employed by cultivators in the district, but in general, the technique of agriculture has improved. This improvement is due to the influence of the ryots from the Krishna delta. The Agriculture Department has also played an important role in this development, during the war and postwar periods with the grow more food campaign. Large amounts of 'Taccavi' loans were distributed for the purchase of manure, tractors and oil engines. The big cultivators, particularly in Nizamabad and Bodhan taluks have replaced the wooden ploughs with tractors. Improved strains of paddy and Jowar were evolved in the Rudrur Agricultural Research Station. At present there are 75 tractors and 230 iron ploughs in the district. The Adsali or 18 months' sugarcane crop is grown only in this district in the Andhra Pradesh.

The use of chemical manure, oil cakes and green manures is now the order of the day in the canal area. In the non-perennial zone of the canal, and generally, in perennial zone, the lands are properly manured with farm yard manure and oil cakes. Throughout the district now at least in Abi, the transplantation method is being employed.

The black cotton soil was not considered suitable for wet cultivation, but now this view no longer obtains and a large area has already been brought under sugarcane cultivation and more and more area is being converted into wet. In the black cotton soil areas, where there are no irrigation facilities, only two crops are raised *i.e.*, Rabi and Kharif while in the remaining area there are 4 crops—Abi and Tabi for rice, and kharif and rabi for dry crops.

For wet cultivation under canal or large tanks, the preparation of lands begins even before the monsoons, as soon as the water is let out in the canal. In these lands the transplantation method is adopted and the yield is much more, and less labour is required for weeding. In the non-perennial zone of the canal *i.e.*, in Nizamabad and Armour taluks, in most of the villages where there is abundant supply of water and cheap labour, transplantation method is adopted on an extensive scale. It is not practised in Kamareddy. But where the water supply is limited, paddy locally known as "Vattivari" is grown under semi dry conditions—by the broadcast method. Such cultivation is in vogue in Kamareddy, part of Armour, Banswada, Nizamabad and Yellareddy taluks which are above not commandable by the Nizamsagar canal. The Japanese method of cultivation is also gaining ground in all the taluks except Kamareddy.

There are 127 different varieties of paddy seeds and 5 strains developed by Agriculture Department are grown in the district. Out of these, about 70% belong to the short duration variety. Only a dozen are common to all taluks.

In the perennial zone of the canal the long duration varieties of paddy seeds such as 'Akkullu', 'Kitchdi samba', 'Krishnakatukalu' etc., are grown. Still there are about 15% of the cultivators of low-income groups, who cultivate the short duration variety, particularly in Tabi season. The short duration varieties are mainly grown in non-perennial zones *i.e.*, in the taluks of Kamareddy, parts of Armoor, Banswada and Nizamabad.

Dry cultivation is not generally undertaken, in proper time, as the cultivators are busy with agricultural operations of the wet crops. The dry lands are not manured and if at all manured, it is with the farmyard manure which is left over after application to wet lands. There is generally no weeding, and if weeding is done it is done only once or twice. In the case of paddy or sugarcane crops weeding is done 3 to 4 times during the season.

Kharif crops of yellow jowar and Bajra and Abi rice ripen by about December and Rabi crops like white jowar, grams and Tabi rice ripen from April to May. Cotton is extensively grown in the black cotton soils. 'Lakshmi' variety of cotton is grown in preference to the short staple varieties.

All rice and sugarcane fields are manured. The sugarcane fields are heavily manured. Tabi is a better manured crop. Groundnut cake is used as manure for paddy crop under canal area and liberal quantities of ammonium sulphate and superphosphate are also applied. The practice of raising green manure crop such as sunhemp is also gaining ground.

In the areas adjacent to the forest, which are more backward due to paucity of communications, no other manure except farmyard manure and green leaves are used. Most of the cultivators of the Yellareddy taluk in south-west of Nizamabad taluk, northern portion of Kamareddy, eastern portion of Banswada, and southern portion of Armoor taluks use green leaves from the forest as manure.

The rotation of crops followed is given below :—

- Dry. (1) Jowar (Kharif).  
Gram (Rabi).  
Maize (Kharif).
- (2) Horsegram (Kharif).  
Jowar (Rabi).
- (3) Jowar (Rabi).  
Chillies or gram (Rabi).

In wet lands, at times sugarcane and betel vines are sown once in 2 or 3 years. Further rotations practised in the district are :

1. Abi rice—Tabi rice—Abi rice.
2. Abi rice—planted cane—ratoon cane Tabi fallow—  
Abi rice.
3. Abi rice—Tabi fallow—Abi rice.

The most common rotation in practice in all the taluks is the first mentioned above, but where there is scarcity of water the 3rd kind of rotation is followed. The second method is prevalent in Bodhan taluk due to the location of the biggest sugar factory in the State.

In general, agriculture has progressed on proper lines and the yields are also improving.

Out of total cropped area of the district, the area under food and non-food crops is respectively 89.4% and 10.6%. The main food crops being paddy, jowar and pulses, the area under these crops is respectively 34.8%, 19.5% and 15.4% while the non-food crops like groundnut, gingelly, turmeric and cotton cover respectively under 3.2%, 2.5% 0.4% and 1.3% of the cropped area. Sugarcane is grown on 5.9% of the total cropped area of the district which comes approximately to  $\frac{1}{4}$  of total cropped area in the State under sugarcane.

The percentage of area under Kharif, Rabi, Abi and Tabi crops is respectively, 37.2%, 28.4%, 25.2% and 9.2%. The particulars of land utilisation in 1955-56 are given below :—

	<i>Area in Acres</i>
1. Total geographical area .. .. .	19,07,884
2. Forest .. .. .	3,59,746
3. Barren and uncultivable land .. .. .	1,79,918
4. Land put to non-agricultural use .. .. .	1,46,815
5. Cultivable waste .. .. .	99,879
6. Permanent pasture .. .. .	1,41,262
7. Land under miscellaneous trees, etc. .. .. .	17,433
8. Current fallows .. .. .	1,93,686
9. Other fallows .. .. .	73,528
10. Net area sown .. .. .	6,95,617
11. Area sown more than once .. .. .	53,962

6. *Cost of Cultivation.*—The chief staple food crops that were considered during various settlements were jowar and paddy for all dry and wet crop cultivations. The cost of cultivation of paddy and jowar per acre is given below :—

		<i>Paddy in Rs.</i>	<i>Jowar in Rs.</i>
1. At the initial settlement	..	..	..
2. At the resettlement (1332 F.)	..	14.11	9.76
3. At the present times :—			
(a) Collector	..	203.75	90.00
(b) Ryots who have answered the questionnaire	..	210.76	54.00

7. *Prices.*—The prices of the chief produce per rupee at various times have been shown below :—

		<i>Paddy seers per I.G. Rs.</i>	<i>Jowar seers per I.G. Rs.</i>
1. At the initial settlements (1306 F.)	.	32 2/3	29 1/6
2. At the revision settlement (1337 F.)		23 1/3	11 2/3
3. At the present times 1955-56 (accord- ing to Bureau of Economics)	..	4 3/4	3 1/4

8. *Yields.*—The yield of chief crops per acre at different periods have been given below :—

Name of the Crop	At the time of initial settlement (seers per acre).*	At the time of revision settlement (Seers per acre)*	PRESENT DAY (SEERS PER ACRE)		
			Director, Bureau of Stati- stics. †	Officials. ‡	Non- officials. ‡
1	2	3	4	5	6
Paddy	.. 1,336	1,651	670	1,280	987
Jowar	.. ..	245	91	..	..

Sources: \* Initial and revision settlement reports of Nizamabad taluk.

† From Statistical Abstract 1955-56 on the basis of random sampling method adopted.

‡ From the answers to the questionnaire.

9. *Seasonal conditions.*—Owing to the very good irrigation facilities from the Nizamsagar and the Pocharam reservoirs numerous wells and tanks and the large forest area the district has been almost free from famines. There was no famine or scarcity condition in any part of the district during the 20th century. The only famine which occurred dates back to the 19th century. In 1819 while there was famine in Gulberga, Raichur, Bir and Parbhani districts of erstwhile Hyderabad State, only slight distress was experienced in Nizamabad. In the famine year of 1833 though the people were not affected much, large number of cattle died for want of fodder. The great famine of 1899-1900 which was most seriously felt in Aurangabad and Osmanabad, affected this district also in 1899. The rainfall was only 16 inches but as there was a bumper crop in 1898, the ryots did not suffer much. The fodder supply position is also quite satisfactory in the district. On account of development of communications and speedy transport facilities afforded in recent years, there is no likelihood of famines in the district.

The remission of land revenue, sanctioned during last 5 years is as follows :—

<i>Fasli year</i>	<i>Amount in rupees</i>
1362 ..	.. 9,15,094
1363 ..	.. 10,91,208
1364 ..	.. 3,90,102
1365 ..	.. 5,29,260
1366 ..	.. 5,12,439

10. *Holdings.*—The total number of holdings in the district is 1,89,281 with an extent of 9,38,853 acres.

11. *Features of settlements and resettlements.*—At the time of initial settlement, the possibility of irrigation under the Nizamsagar project, under execution, had been kept in mind. Therefore, short term settlement guarantee ranging from 7 to 15 years was fixed for the taluks, in the perennial zone of the canal *i.e.*, for Nizamabad, Bodhan and Banswada taluks so that at the end of this period the effect of the Nizamsagar project might be studied and land revenue rates might be revised as the increase in the land revenue was considered inevitable. The taluks however could not be resettled so far.

Sub-grouping was also in practice for dry lands and there were separate assessment rates for Abi, Tabi and Double crop wet lands. The Tabi wet crop was considered as the first crop as the yield had been comparatively more than the Abi crop, under similar circumstances and hence very high assessment rates were sanctioned. But

under the revision settlement, these disparities were removed and under certain principles all the lands were uniformly treated. The existing maximum wet rates range from I.G. Rs. 17.14 to I.G. Rs. 12.00, the maximum dry rates from I.G. Rs. 2.67 to I.G. Rs. 1.06, Garden from I.G. Rs. 17.14 to I.G. Rs. 12.00, according to the grouping done for wet and dry. The Adsali or 18 months crop of sugarcane is charged at  $3\frac{1}{2}$  times Abi rate or O.S. Rs. 70 per acre and the Eksal sugarcane at  $2\frac{1}{2}$  times Abi or O.S. Rs. 50 per acre.

The revision rates of *ex-jagir* villages of the taluk were announced in the years ranging from 1330 fasli to 1359 fasli. Turmeric, irrigated with water from a Government source, is charged  $1\frac{1}{2}$  times the Abi rate while for betel vines and bananas under a similar source the charge is two times the normal wet assessment. Chillies, Onions and Tabacco irrigated under Government source, are charged Baghat rates at  $\frac{2}{3}$  of the Abi rate assessment.

Since 1952 special extra assessment has been imposed in the taluks in which the period of guarantee had expired *i.e.*, in Nizamabad, Armoor, Kamareddy, Bodhan and Banswada taluks at 0-1-0 and 0-2-0 per rupee respectively on wet and dry assessment. Except Yellareddy, all taluks are now due for second revision.

The average rates for dry, wet and Baghat lands as worked out as per soil classification obtaining in 6 taluks of the district are as follows :—

Taluk	Dry I.G. Rs.	Wet I.G. Rs.	Baghat I.G. Rs.
1. Nizamabad .. ..	1.14	15.50	11.72
2. Armoor .. ..	0.75	16.40	9.33
3. Bodhan .. ..	1.14	15.56	11.72
4. Banswada .. ..	1.14	15.50	11.72
5. Kamareddy .. ..	1.08	15.50	9.56
6. Yellareddy .. ..	1.14	15.39	7.77

12. *Abolition of Jagirs.*—There are altogether 291 *ex-jagir* villages in this district which were abolished and taken over by the Government. High rates of assessment are existing in 5 villages of Armoor and 19 villages of Banswada taluk. Action is being taken to remove this disparity of assessment and to bring the rates to the level of adjoining diwani (ryotwari) villages.

## WARANGAL DISTRICT

1. *Introduction.*—Warangal district was known in the past as Khammam district. In course of time it assumed the historical name of Warangal which finds its mention in the ‘Deccan History’ as being the seat of the once flourishing ‘Telangana Kingdom’. Its set-up twice met with modifications, once in 1905 and the second in 1953. As a result of the latter change in its composition, five taluks thereof were separated to form into an independent district of Khammam while by adding two taluks of Parkal and Jangaon (from Karimnagar and Nalgonda districts respectively) to the residuary portion of the pre-1953 Warangal district, a compact district of Warangal comprising of six taluks was reconstituted consisting of 1098 villages in all. The district extends over a distance of 96 miles from north to south between latitude  $17^{\circ} 20'$  and  $18^{\circ} 37'$  and to a length of 120 miles from east to west between longitude  $78^{\circ} 50'$  and  $80^{\circ} 42'$ . It is bounded on the north by Karimnagar district, on the south by Nalgonda district, on the east by Khammam district and on the west by Medak district covering an area of 25,42,008 acres (5326 sq. miles) with a population of 13,25,984. The topographical features are the characteristics of a Telangana tract with vast stretches of green vegetation, dense-forests and an abundance of tanks. The district abounds in off-shoots of huge *granite rock* formation dotting the land-scape. Ten miles north-west of Warangal are the Chandragiri hills, and 14 miles west of it the well known iron-hills of Hasanparthi. The country around the town of Hanamkonda, is about 1700 feet above sea level, but the average elevation of the district is only 870 feet. Nearly  $\frac{1}{4}$  area of the district lying to the east of it (falling under Mulug, Narsampet and Mahaboobabad taluks) is over-grown with contiguous thick forests which are resplendent with Teak, Ebony and teems with wild life. It is studded with chains of hills here and there which have helped to form three natural bunds for the three famous lakes of Lakhnnavaram, Pakhal and Ghanpur. The Godavari river skirts the district on the north-east and then forms a natural border between Warangal and East Godavari districts. Besides, there are numerous small streams. The Lakhnnavaram rivulet is a tributary of the Godavari and the Pakhal stream later called Wyra river empties itself in the Krishna river after passing through Mahaboobabad and Khammam Taluks. Jangaon taluk has got two small streams whose waters are being utilised for irrigation purposes.

The Secunderabad-Bezwada section of the Central Railway runs through this district for a distance of about 96 miles. This line, branches off at Kazipet junction to connect the northern states right up to Delhi. There are in all 7 regulated markets in the district, 2 in Warangal, one in Mahaboobabad, 3 in Jangaon and one in Mulug taluk.

2. *Soil.*—The soil of the district is generally of an inferior quality known as Chalka in which only Karif crops can be grown with success. It forms about 58% of the entire cultivated area. In the low lands, where rich soil surface happens to be deposited, rice is grown. Chalka lands are more common in Warangal, Parkal and Jangaon (Cherial) taluks with a sprinkling of Regad. The 13 villages situated to the north-east of the district along-side the banks of Godavari, contain very fertile alluvial soil which is very suitable for growing Virginia Tobacco.

3. *Climate and Rainfall.*—The climate of the district is dry and generally healthy except during the rainy season. From February till the beginning of the rains, the climate is generally good. It is excessively hot in summer and the temperature rises to 112 degrees F. in the month of May. Some of the interior areas, which are over-grown with thick-forests, had been malarial in the past, but the Public Health Department has brought malaria under control by adopting anti-malarial measures. The annual rainfall of the district is 45.8 inches. In Parkal, Narsampet and Mulug taluks the rainfall is comparatively high as these taluks contain large areas of forests. The remaining taluks however, get comparatively less rain. Long breaks during monsoon, though rare, tend to affect the wet crops while (excessive rainfall) also proves injurious to the dry crops. More than half the annual rainfall is received generally from the south-west monsoon during the months of June to September which is common for the whole State.

4. *Cultivation.*—The table below shows the land utilization in the district :

<i>Particulars</i>	<i>Area in acres</i>
1. Total geographical area .. ..	25,42,008
2. Area of forests .. ..	3,25,387
3. Barren and uncultivable land .. ..	2,72,345
4. Land put to non-agricultural uses .. ..	1,53,362
5. Cultivable waste .. ..	81,401
6. Permanent pastures .. ..	2,20,823
7. Land under miscellaneous trees, etc. .. ..	26,302
8. Current fallows .. ..	2,60,869
9. Other fallow land .. ..	81,216
10. Net area sown .. ..	11,20,304
11. Area sown more than once .. ..	72,232
12. Total cropped area .. ..	11,92,536



At the time of initial settlement in most of the taluks cultivation of black soils was neglected, as most of the ryots preferred soils which required little labour and even when the pressure on land increased the ryots did not take to the cultivation of black soils with zest. The forests in this district have been reserved as game preserve. However, where more extension is required for tillage, the cultivator shirked from it as being unequal to it. Now in these black cotton soils, crop rotation is practised by alternating kharif jowar with the oil-seeds such as groundnut. The chalka lands are usually allowed to remain fallow for a season or two after two successive crops are grown thereon. Paddy is raised either by broadcasting or by transplantation. The latter method is gradually becoming popular since it gives a better yield without much risk of failure.

Generally the ploughing is done with bullocks and the wooden plough. The number of existing ploughs and plough-cattle work out to 151 and 248 respectively for 1,000 acres of cultivated area.

The total cropped area in 1955-56 was 11,92,536 acres out of which about 79.2% area was under food crops. Among principal food crops, jowar and paddy are important under which about 28.5% and 22.2% of the area was cultivated respectively, while the area under pulses was 14.9%. Among non-food crops, the principal oil seeds are groundnut, castor and gingelly under which 13.6%, 3.5% and 1.8% area was sown respectively. The areas under tobacco and cotton were 0.6% and 0.3% respectively. Agricultural labour is normally available throughout the district. The depressed classes supply most of the labour. The total cattle wealth of the district is 7,85,460 out of which 35% are used in agricultural work while 13.6% are milch animals. The average maximum and minimum prices of agricultural lands worked out from the sale-deed figures from 1947 to 1954 are shown below :

	<i>Maximum</i>	<i>Minimum</i>
Dry .. ..	384 13 0 per acre	34 10 0 per acre
Wet .. ..	1,317 2 0 ,,	117 0 0 ,, (1954)

5. *Irrigation.*—The sources of irrigation in the district are tanks, kuntas, projects, rivers, upalvat bonda, mote, yatam, Koles, Guda and Wells. The tanks and kuntas irrigate more than 50% of the total irrigated area.

There are 1,225, 725 and 360 tanks having an ayacut below 10, 20 and 30 acres respectively. Most of them are not in good

condition. An area of 30,693 acres is irrigated under these sources and the revenue derived is Rs. 2,88,822.78 nP. There are also spring channels *i.e.* 'Parre Kalvas' in Warangal and Jangaon taluks under rivers which irrigate 642 acres and 24 guntas. Besides, there are 7 projects in the district (two projects in Jangaon taluk had been restored in 1950) the details of which are given below:—

The Arjunapatla project which was estimated to irrigate 1313 acres and 30 guntas, has irrigated only 340 acres in Abi and 218 acres in Tabi in 1956-57. Besides, this area has not been transferred to wet by settlement department. Under Peddacheruvu, the ayacut is not settled. For the present, approximately 200 acres are irrigated. The Bheemganpur project of Parkal taluk is not settled and assessment is being collected at a flat rate of Rs. 6 per acre (under sivai jamabandi head). If the forest area is cleared and channels are repaired, there is a possibility of irrigating 2,000 acres. Under Pakhal project in Narasampet taluk, an area of 2600.32 acres remained uncultivated due to high level of the land, situated at tail-end of the ayacut, and consequent inadequate supply and want of interest on the part of the cultivators. In Mulug taluk there are 3 projects named Ramappa, Lakhnnavaram and Ghanpur. There is scope under Lakhnnavaram project, for bringing under cultivation an additional area of 2,000 acres of land belonging to Government. The sources of water supply and area irrigated therefrom in the district are given below :

<i>Source</i>	<i>Area irrigated in Acs.</i>
1. Government canals . .	14,393
2. Private canals	786
3. Tanks	1,99,786
4. Tube wells	769
5. Other wells	41,068
6. Other sources . . . . .	2,601
7. Total net area irrigated . .	2,59,403
8. Area irrigated more than once . .	44,434
9. Gross area irrigated . . . . .	3,03,837

6. *Cost of Cultivation.*—At the time of initial and revision settlements the principal food crops of paddy and jowar were generally considered as representative crops for all dry and irrigated wet lands for which average cost of cultivation per acre was

worked out. The cost of cultivation for paddy and jowar in various settlements and latest figures are as given below :—

*Cultivation expenses per acre*

Name of the crop	At the time of initial settlement*	At the time of revision settlement	Present day
(1)	(3)	(3)	(4)
Paddy	.. I.G. Rs. 10.81	I.G.Rs. 14.29	{ Rs. 266.68 by the Director of Agriculture. Rs. 209.51 by 6 officials. Rs. 130.49 by 7 non-officials.
Jowar	.. I.G. Rs. 5.34	I.G.Rs. 9.73	{ Rs. 95.18 by the Director of Agriculture. Rs. 68.00 by 4 officials. Rs. 146.83 by 2 non-officials.

SOURCE: \*Initial settlement report of Mahaboobabad taluk.

7. *Prices.*—The prices of principal food crops of jowar and paddy at the various settlements are given below with the present day rates for comparison.

PRICES

Name of crop	At the time of initial settlement (seers per I.G. rupee)*	At the time of revision settlement (seers per I.G. rupee)	Present day (seers per I.G. rupee)†
Paddy ..	34½	21	5
Jowar ..	35	15	5½

SOURCE :\* Initial settlement report of Warangal taluk.

† Statistical Abstract of 1955-56.

8. *Yield.*—The yield of jowar and paddy in different settlement periods with the present-day-yield figures are given below :

[Statement

## YIELDS

Name of the crop	At the time of initial settlement (Seers per acre).*	At the time of revision settlement (Seers per acre).*	PRESENT DAY (Seers per acre)		
			Director, Bureau of Statistics †	Officials ††	Non-officials ††
1	2	3	4	5	6
Paddy	1,120	1,103	380	1,076	1,025
Jowar	448	242	167	250	531

Sources: \*Initial and revision settlement reports of Warangal taluk.

† From Statistical Abstract 1955-56 on the basis of random sampling method adopted.

†† From the answers to the questionnaires.

9. *Seasonal conditions.*—During the past 10 years, there was no famine in any taluk nor even scarcity conditions. On account of excessive rains or plant-diseases, the crops failed occasionally but these did not lead to any famine or scarcity conditions. However, for all such crop-failures remissions or suspensions were invariably granted to the affected ryots. Likewise, fodder scarcity was also never experienced at any place during the last decade. The particulars of remissions granted during the last 4 years are given below :

<i>Fasli</i>	<i>Amount</i>
	Rs.
1363	4,30,510
1364	7,46,633
1365	6,25,363
1366	5,10,797

10. *Holdings.*—The total number of holdings of the district are 2,17,401 with an extent of 18,11,303 acres.

11. *Features of original settlement.*—Initial settlement of this district was done in the year 1888 but the announcement of the rates were made in different years from 1895 to 1904. In the past, the survey operations were confined only to the diwani villages. The settlement particulars of each taluk are given below :—

(a) *Warangal taluk.*—Initial settlement of this taluk was announced in the year of 1304 fasli (1895). The taluk had two

groups in dry assessment and 3 groups in wet assessment. The following were the maximum rates.

		O.S. Rs.	I.G. Rs.
Dry	I Group	.. 2 0 0	1.72 nP.
	II „	.. 1 0 0	0.86 „
Wet	I „	.. 16 0 0	13.72 „
	II „	.. 14 0 0	12.00 „
	III „	.. 12 0 0	10.28 „

(b) *Jangaon taluk*.—It was formerly known as Cherial. The initial settlement of this taluk was announced in the year 1306 fasli (1897). The taluk had two groups for dry and wet assessment, besides one group for garden (lift) and another for garden (flow).

		O.S. Rs.	I.G. Rs.
Dry	I Group	.. 2 8 0	2.14 nP.
	II „	.. 2 0 0	1.72 „
Wet	I „	.. 18 0 0	15.42 „
	II „	.. 16 0 0	13.72 „
Garden (lift)	„	.. 6 0 0	5.14 „
„ (flow)	„	.. 10 0 0	8.56 „

(c) *Parkal taluk*.—This taluk was formerly attached to Karimnagar district. The initial settlement of the taluk was conducted in the year 1307 Fasli (1898). The taluk then had three groups for dry assessment, 4 groups for wet assessments, one group for garden (lift) and another for garden (flow). The following maximum rates were announced :—

		O.S. Rs.	I.G. Rs.
Dry	I Group	.. 2 0 0	1.72 nP.
	II „	.. 1 8 0	1.28 „
	III „	.. 1 0 0	0.86 „
Wet	Spl.	.. 17 0 0	14.56 „
	I „	.. 15 0 0	12.86 „
	II „	.. 13 0 0	11.14 „
	III „	.. 10 0 0	8.56 „
Garden (lift)	„	.. 6 0 0	5.14 „
„ (flow)	„	.. 10 0 0	8.56 „

(d) *Mahboobabad taluk*.—It was formerly known as 'Manukota'. The initial settlement of this taluk was conducted in

1309 fasli (1900 A.D.) The taluk had 2 groups in dry and two for wet assessments. The following maximum rates were announced.

			O.S. Rs.	I.G. Rs.
Dry	I	Group	.. .. 2 0 0	1.72 nP
	II	"	.. .. 1 10 0	1.39 "
Wet	I	"	.. .. 15 0 0	12.86 "
	II	"	.. .. 12 0 0	10.28 "

(e) *Narsampet taluk*.—This taluk is commonly known as Pakhal. Its initial settlement was completed and announced in 1313 fasli (1904 A.D.) for a term of 15 years. The taluk had two groups for dry and 2 for wet assessment and one group for garden (lift) and another garden (flow). The following maximum rates were announced :—

			O.S. Rs.	I.G. Rs.
Dry	I	Group	.. .. 1 8 0	1.28 nP.
	II	"	.. .. 1 4 0	1.06 "
Wet	I	"	.. .. 12 0 0	10.28 "
	II	"	.. .. 10 0 0	8.56 "
Garden (lift)	"	"	.. .. 6 0 0	5.14 "
" (flow)	"	"	.. .. 10 0 0	8.56 "

(f) *Mulug taluk*.—Mulug is said to have been surveyed and settled in 1306 fasli (1897 A.D.) This taluk was formed in 1905 by taking over a number of villages from each of the taluks of Parkal and Narsampet. Hence, the year of announcement of the component villages will have to be deemed to correspond with that of the respective taluks to which they belonged previously. The taluk had 3 groups for dry assessment, 2 groups for wet assessment and one group for garden (lift). The maximum rates were as follows :—

			O.S. Rs.	I.G. Rs.
Dry	I	Group	.. .. 1 8 0	1.28 nP.
	II	"	.. .. 1 4 0	1.06 "
	III	"	.. .. 1 0 0	0.86 "
Wet	I	"	.. .. 12 0 0	10.28 "
	II	"	.. .. 10 0 0	8.56 "
Garden (lift)	"	"	.. .. 6 0 0	5.14 "

12. *Features of revision settlement*.—After the expiry of the initial settlement periods, the 1st revision settlement was completed in respect of each taluk as follows :—

(a) *Warangal taluk*.—The taluk consists of 213 villages including 3 villages transferred from Jangaon consequent upon

its revised set up. The 1st revision settlement of this taluk was completed in 1332 fasli (1923 A.D.). The taluk had 3 revision groups each under dry and wet, one group each for garden (lift), garden (flow) and for combined sources. The following maximum rates were announced :—

			O.S. Rs.	I.G. Rs.
Dry	I	Group	2 12 0	2.36
	II	„	2 6 0	2.03
	III	„	2 0 0	1.72
Wet	I	„	18 0 0	15.42
	II	„	16 0 0	13.72
	III	„	14 0 0	12.00
Garden (lift)		„	6 0 0	5.14
„ (flow)		„	10 0 0	8.56
Combined source		„ ..	.. 10 0 0	8.56

The term of revision too expired in 1361 fasli (1952).

(b) *Jangaon taluk*.—There are altogether 187 villages including 4 deserted villages in its present set up. During the process of its reconstitution, some of its villages were transferred to other taluks while a few villages pertaining to other taluks were added to it. The term of settlement was for 30 years which expired in the year in 1336 fasli (1927) and revision settlement came into force in the same year. In the resettlement, 3 groups for dry, 3 for wet assessment, one for garden (lift) and one for garden (flow) were fixed. The following revised maximum rates were announced :

			O.S. Rs.	I.G. Rs.
Dry	1st	Group ..	2 12 0	2.36
	2nd	„ ..	2 8 0	2.14
	3rd	„ ..	2 0 0	1.72
Wet.	1st	Group ..	20 0 0	17.14
	2nd	„ ..	18 0 0	15.42
	3rd	„ ..	16 0 0	13.72
Garden (lift)		„ ..	7 0 0	6.00
„ (flow)		„ ..	10 0 0	8.56

The revision period of this taluk also expired in 1365 F. (1956).

(c) *Parkal taluk*.—The taluk was revised in 1330 fasli (1921). In the revision set up of the taluk, 18 villages of Manthani and 4 villages of Narsampet have been transferred to this taluk. In all,

the taluk consists of 131 villages. The taluk has 3 groups each under dry and wet and one group for garden (lift) and another for garden (flow); the following were the rates announced:

	O.S. Rs.	I.G. Rs.
Dry 1st Group	2 12 0	2.36
2nd „	2 0 0	1.72
3rd „	1 6 0	1.17
Wet 1st „	16 0 0	13.72
2nd „	14 0 0	12.00
3rd „	12 0 0	10.28
Garden (lift) „	7 0 0	6.00
„ (flow) „	10 0 0	8.56

The term of revision was for 30 years which also expired in 1359 fasli (1950).

(d) *Mahboobabad taluk*.—50 villages of this taluk have been given over to Khammam and Yellandu taluks of Khammam districts, while two villages of Khammam were taken over to this taluk. Now there are 154 villages in the taluk out of which 6 are deserted ones. As per the revision settlement in 1331 fasli (1952) the taluk had 2 groups for dry assessment, and 3 groups for wet assessment, one group for garden (lift), garden (flow) and for combined sources. The following maximum rates were announced:—

	O.S. Rs.	I.G. Rs.
Dry. 1st Group	2 4 0	1.92
2nd „	1 14 0	1.61
Wet. 1st „	16 0 0	13.72
2nd „	14 0 0	12.00
3rd „	12 0 0	10.28
Garden (lift) „	6 0 0	5.14
„ (flow) „	10 0 0	8.56
Combined source „ „	10 0 0	8.56

The period of revision also expired in 1360 F. (1951).

(e) *Narsampet taluk*.—This taluk comprises of 195 villages. The revision was due in 1327 fasli (1918) but it was started rather late probably because of the unfavourable economic conditions obtaining in this taluk. It was, however, partially announced in the year 1349 falsi (1940) leaving the rest of the taluk unannounced



for reasons which could not be ascertained. Consequently enhanced rates are prevalent in a portion of the taluk, while in the rest of the taluk the same old assessment rates are operating. The latter type of villages are subject to the Special Assessment of annas 2 and anna one per rupee on the dry and the wet lands respectively.

(f) *Mulug taluk*.—The taluk is said to have been under the process of revision till 1955. As most of its area consists of forests, its theodalite survey work had to be completed before taking up its revision on hand. For various handicaps such as non-availability of hands etc., the revision had to be prolonged for quite a long period. At the revision set up, 23 villages of *ex-zamindari* of Palwancha taluk were transferred to this taluk. These villages comprised 6 khalsa and 17 *ex-jagir* villages which were, however, surveyed and settled by the Settlement Department itself. The announcement for these villages also was made in 1950 and the period of their settlement was to coincide with that of the taluk which, as a matter of fact, had already expired in 1943. The taluk now consists of 218 villages including 72 deserted ones.

On the whole the entire district of Warangal was ripe for 2nd revision due to the expiry of the settlement periods prescribed for each taluk. Recently, the revision survey operations have been finalized in respect of Mulug and Parkal taluks. Revision survey of Warangal taluk was also taken up in 1955 but was given up subsequently.

13. *Estates Abolition*.—After the abolition of jagirs, their settlement was taken up. But many *ex-jagir* villages were treated as independent units leaving the jagir assessments untouched, while in quite a number of cases such *ex-jagir* villages were subjected to the rates of the group in which they were locally situated. With the result different rates of assessment are in force in different villages of the taluks at present.

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## CHAPTER V

### Methods of Irrigation in Andhra Region

(1) Irrigation systems in India are probably as ancient as in Egypt. Large scale reservoirs and irrigation canals were constructed in India many years prior to the Christian era. By 300 B.C. India had developed irrigation to such an extent, that reports on the advantages of growing two crops on irrigated lands became a part of the recorded history.

(2) The rainfall over the greater part of South India is unevenly distributed often resulting in serious deficiency or total failure of supply of water for irrigation. In the Andhra region, as elsewhere in South India, agriculture is in most areas a gamble in the rain. Crop production cannot be assured without adequate artificial facilities to supplement the rain for irrigation, dependable water supply being one of the important factors that contributes to the efficiency of agriculture.

(3) India in general and Andhra in particular owes in a great measure to the former princes and rulers, for the inception of the present unrivalled system of Irrigation Works. In Andhra, wet cultivation is carried on, largely by means of artificial irrigation, the water for this purpose being obtained either through channels taking off from rivers or through tanks or reservoirs impounding the surface flow of rains. The works of this description have been in existence from very remote times, as the value of irrigation in increasing the yield from the soil, was recognised long ago. History has recorded, that during the III dynasty of Vizianagar Empire, the State had a clear-cut irrigation policy. The Emperors of Vizianagar took considerable interest in improving irrigation works.

4. Irrigation works in Andhra can be divided into two main classes—(1) those which are provided with artificial storage and (2) those which are dependant throughout the year on the natural supplies of the rivers. We find mostly non-storage systems in Andhra. The non-storage canals can be divided into perennial and inundation canals. Perennial canals obtain their supplies, irrespective of the level of water in the river, by means of some obstruction, placed in the bed of the river to raise the height of the water to the required level. The obstruction placed, usually, would be in the form of a weir or barrage fitted with shutters and sluices, to allow the excess water to escape down the river. The supplies to inundation canals, naturally, fluctuate with the water level in the river and irrigation under these canals is mainly dependant upon the seasonal conditions. The system of storing water in the monsoon for utilisation during the dry weather period has been in vogue since early times. Such storage works consist of an earthen embankment constructed across a valley through which a stream runs, carrying the rain water. The big tanks like Lingamparthi tank in East Godavari, Singanamala, Anantapur, Bukkapatnam, Gooty, Dharmavaram tanks in Anantapur district; Atmakur and Anantasagaram in Nellore and Rayalcheruvu in Chittoor district, were constructed by enclosing the valleys with earthen embankment and making use of the hills on either side as natural bunds.

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*N.B.*—‘Tirwajasti’, ‘Water Cess’ and ‘Water rate’ are used in this chapter to mean the charge for irrigating a crop other than dufasil, on dry lands.

5. Irrigation works are further divided into, Productive and Protective. Productive works are those which yield revenue, sufficient to cover working expenses and interest charges on the capital outlay. Protective works are those which do not get an adequate return but are constructed in order to protect precarious tracts from famines and the vagaries of the monsoon. The distinction between the Productive and Protective works has, however, largely disappeared now. The irrigation projects are now being taken up, more from the point of view of the welfare, the schemes help to create, than from the prospects of immediate cash returns to the Government. Irrigation projects are now generally classed as, major projects, medium projects and minor works.

6. *Important irrigation systems in Andhra.*—The most important irrigation systems in Andhra are the Godavari Delta System and the Krishna Delta System. The Godavari river drains about 1,15,000 sq. miles and carries as much as one and a half million cubic feet of water per second in high floods. The Godavari anicut system consists of an anicut and three main canals irrigating three deltas. The anicut is in four sections linking the islands in the broad river, the Dowleswaram section 4,839 feet long, the Ralli section 2,859 feet long, the Maddur section 1,550 feet long and the Vazeswaram section 2,601 feet long. The headworks of the canals consist of a head sluice and another sluice and a head-lock for each of the three deltas. The anicuts are monumental works which show the genius, keenness and intrepidity of Sir Arthur Cotton, the originator of the Godavari scheme. These monumental works secure copious supply of precious water to the ryots in Godavari delta. The ryots have erected statues at Dowleswaram, Bobbarlanka and Chettipeta to commemorate the memory of Sri Arthur Cotton.

7. The eastern delta is about 450 sq. miles, the central delta is about 500 sq. miles while the western delta is about 1,000 sq. miles, in extent, stretching down to the Collair lake. In the eastern and western deltas, the Samalkot and Eluru canals define the limits of irrigation to the areas enclosed between them and the Bay of Bengal. They also form the link between Kakinada port and Eluru town where the (Krishna) Eluru canal of the Krishna delta system joins the (Godavari) Eluru canal. The central delta particularly the "Nagaram" island is the "Garden of the Godavari District" and is noted for the Gannavaram aqueduct which was completed in about eight months in the fifties of the last century, a remarkable feat of Captain Orr. The Polavaram aqueduct at Annampalle is a similar recent construction to irrigate Polavaram island in the central delta. The system consists of a canal

of the Godavari central delta, about half a mile above Annampalle lock, which is taken across the Vriddha Gowtami, by a masonry aqueduct, and irrigates the Polavaram island. The river and its branches are banked, throughout, to protect the deltas from floods.\* Approximately one million acres are irrigated by the network of canals and channels which are thousands of miles long. Those who have local knowledge will certainly appreciate the benefits of irrigation derived on account of the construction of the Godavari anicut. By means of Godavari and Krishna canals and Buckingham canal, one can go, by boat, from Madras to Kakinada, a distance of 400 miles and from Rajahmundry one can continue the journey by boat beyond Bhadrachalam right up to Sirvoncha in the old Madhya Pradesh but now in the Bombay State, a further distance of 188 miles. The canals are therefore not only useful for irrigation but also for navigation, which provides a cheap means of transport for the crops produced. About 400 miles of canals are navigable and a major part of the exports and imports from and into the delta, is conveyed by boats. This network of navigable canals has helped a great deal to build up the prosperity of the Godavari and Krishna ryots. The network of canals are navigable throughout their length for 11 months in the year and carry annually cargo valued about Rs. 25 crores besides timber worth about Rs. 3 crores and over a million passengers a year. The capital outlay on the system is about Rs. 2.20 crores and the return is 18.22 per cent.

8. Next, we come to the Krishna delta. The river Krishna rises near Mahabaleswar in the Western Ghats, 4,000 feet above the sea level and runs southwards through the Bombay State for some distance, before it turns east into Hyderabad and receives the Bhima. Running through the Sholapur and Raichur 'Doabs', it passes Srisailam where it is known as "Pathala Ganga". The river Tungabhadra joins the Krishna at Sangameswar near Kurnool. From Srisailam, the river flows through the valley of the Nallamalai Hills passes by Nagarjunakonda and Elleswaram and Nandikonda village near the site of the Nagarjunasagar dam and running further east passes by Mukthyal, Dhanyakataka (now Amaravathi), the ancient Andhra capital, Vijayawada and after flowing another 40 miles east falls in the Bay of Bengal. The river, after flowing through a narrow gorge in the Nallamalais enters the plains of the Coramandal Coast, studded with hills. The last of these three hills is at Vijayawada where the river flows between two of them, hardly 6 furlongs apart. Stretching away on both sides of the river beyond Vijayawada lie the two sections of the delta, the eastern delta lying on the left side and the western delta lying on the right. For 40 miles below, the river runs in a single stream. It then throws out the Puligedda branch. Between this and the main river lies the Divi island. The main river then flows fifteen miles and splits into

three branches before it empties into the sea. The river drains 97,000 sq. miles and its flood discharge is about a million cubic feet per second. Sir Arthur Cotton who built the Godavari Anicut was again responsible for the construction of the Krishna anicut at Vijayawada in 1855 with its two canals supplying the two sections of the delta on either bank of the river. The eastern delta has an area of about 1,160 sq. miles and stretches as far north as the Collair. The western delta is about 950 sq. miles and extends to the south as far as Thimmasamudram in Guntur District. The Krishna-Eluru Canal in the eastern delta connects the Godavari river canal in the north and the Commamur canal of the western delta and joins the Buckingham canal in the south. These contour canals and the interior canals form a network of irrigation and navigation canals affording irrigation and transport for the two deltas. The Divi island was irrigated with water pumped from the river by diesel-engine-driven pumps. Pumping from the river was carried on till 1935 when the "Campbell aqueduct" was built at Puligedda to carry the Krishna east bank canal across the river to Divi. The canal now irrigates by direct flow, the entire ayacut in the Divi island. The "Campbell aqueduct" at Puligedda is the longest reinforced concrete aqueduct bridge in India and carries a roadway 16 feet wide and a footpath 4 feet wide. The river and its arms forming the Divi island are banked to protect the island from floods. The canals are navigable for about 10 months in the year and carry annually cargo valued about Rs. 17 crores, timber worth about Rs. 45 lakhs and over two lakhs of passengers. The system irrigates more than ten lakhs of acres. The value of the crops grown is about 12 crores. The capital expenditure is Rs. 2.28 crores and the return is 16.20 per cent. The Krishna anicut suffered serious damage during the floods of 1952. In order to replace the dilapidated anicut, the Prakasam Barrage on the Krishna river, at Vijayawada, was constructed, in 1958, as a spill over scheme of the First Five-Year Plan. The Prakasam barrage assures supply of water to the Krishna delta and will also incidentally help to bring in an additional ayacut of 54,000 acres in Guntur district and 4,600 acres in Krishna district.

9. The Godavari and Krishna projects are the most beneficial and most successful irrigation schemes in Andhra. These projects have improved the condition of the people beyond the expectations of the originator. These two projects are productive works, in the true sense of the term.

10. The other important irrigation systems are described below :—

In the extreme north of the State, we have the Bahuda river and Padmapuram gedda irrigating an extent of 6,000 acres. Next there is the Srikakulam minor rivers system comprising a

number of channels taking off from the rivers, the Vamsadhara and Garibulagedda, irrigating about 67,000 acres. By means of a regulator across the river Nagavali at Thotapalli, sufficient water is diverted to a main canal and its branch channel to irrigate roughly 28,000 acres. This project was completed in 1909 and it has conferred great benefit to the ryots. We have, in the southern portion of the Visakhapatnam district, a number of channels taking off from the Champavathi, Gosthani, Sarada, Varaha and Tandava rivers. These systems irrigate roughly about a lakh of acres.

11. Coming down to Nellore, we meet a dry and barren district, but advantage has been taken of such facilities as exist for extending irrigation. Excellent crops are grown near the sea coast where the rainfall is generally favourable and with the addition of some extra water supplied by means of irrigation from tanks and canals. In the Nellore district, the river Pennar has been harnessed for irrigation. Two anicuts have been constructed one at 'Sangham' and the other at Nellore to divert the water of Pennar river to the Kanigiri and Sarvepalle reservoirs and about 1,65,000 acres of paddy is cultivated under them annually. Further inland, the Mopad reservoir built in 1921 on Manneru river, as a famine protective work has largely fulfilled the purpose for which it was intended and irrigates about 7,000 acres.

12. We shall now divert our attention to the west and north-west to have a glimpse at Rayalaseema comprising Chittoor, Cuddapah, Kurnool and Anantapur districts. These are in the famine zone and are periodically liable to failure of rain and consequent drought. The normal rainfall varies from 20 to 30 inches.

13. The country is rocky and irrigation is very difficult. Irrigation schemes in Rayalaseema depending on local rains are of doubtful utility. The only hope of Rayalaseema is the river Tungabhadra and to develop irrigation in the Rayalaseema districts a project has been constructed at Mallapuram, near Hospet. About 2,50,000 acres is expected to be irrigated under this project. The spectre of famine in the Rayalaseema districts will vanish in spite of the general deficiency of rainfall. The main source of irrigation at present is the Kurnool-Cuddapah Canal taking off from the Thungabhadra near Sunkesula about 15 miles upstream of Kurnool. The canal which flows through a black cotton belt has not been as successful, as hoped for though in years of deficient rainfall, its water is eagerly sought by ryots, for occasional irrigation of their crops. The ryots have the option of taking or refusing water under this canal.

14. Some of the projects which have been recently completed and which are still in progress are described below:—

Gambhiramedda Reservoir in Visakhapatnam district is another important medium size project, the construction of which has just been completed. The anticipated ayacut is 1,509 acres, but water can be made available for 600 acres only, as it has also to supply drinking water to the Visakhapatnam Municipality.

Vegavathi anicut scheme, Seethanagaram anicut scheme and Narayanapuram anicut scheme are other important schemes in Srikakulam district. All these schemes are still under execution and they are likely to benefit an additional area of 13,020 acres besides stabilising the existing ayacut of acres 33,338. In West Godavari district, the scheme for remodelling the Bandakatta channel system under the existing anicut across Byneru river at mile 23/2 has been completed and the entire ayacut of 3,652 acres has been developed. Another important project in Guntur district is the Romperu project. This project is mainly intended to improve Romperu drain and allied drains viz., Perali and Kunderu with a view to ensure speedy discharge of floods and incidentally to release a long belt of  $4\frac{1}{2}$  furlongs width, for wet cultivation. The entire ayacut of 8,196 acres under the Romperu project has been developed. The total extent of the ayacut expected to be benefited by 1958-59 is 9,000 acres. The Rallapad project in Nellore district consists of a reservoir across Manneru in Veeraraghavuni Kota. It is still under execution. Ultimately 8,175 acres will be benefited. Nakkalagandi reservoir scheme, Paleru reservoir scheme and Upputeru lower anicut scheme are the other important schemes in Nellore district. All these works have been completed. The total area which will be benefited is about 4,320 acres under these schemes. Upper Pennar Project in Anantapur district was commenced in 1951 and the reservoir has been completed. The anticipated ayacut under this project is 9,781.70 acres. The work on Bhairavanithippa project is in progress. The anticipated ayacut is 9,700 acres. Though the project is expected to be completed by 1960, water will be let out for the second crop season from this year. Chennarayasa-wami Gudi tank and Vidyaranyaswami tank are some other irrigation schemes in Anantapur district. About 1,325 acres are expected to be benefited by these schemes. The lower Sagileru Project in Cuddapah district will benefit an additional area of 2,847 acres but this project has not yet come into commission. The total area to be benefited by the Pincha Reservoir Project in the same district is 3,880 acres. This project is still under construction. The Siddalagandi Project, Mallimadugu Reservoir and Kalangi Reservoir schemes in Chittoor district are other important schemes and they have been completed. In the case of most of these new projects the Government have fixed the water rate to be levied at Rs. 15 per acre.

15. *Productive irrigation works.*—The productive irrigation works in Andhra are (i) the Godavari delta system in East and West Godavari districts, (ii) the Cumbum tank system in Kurnool, (iii) Krishna delta system in West Godavari, Krishna and Guntur, (iv) the Divi-cum-Krishna east bank canal system in Krishna, (v) the Polavaram island system in East Godavari and (vi) the Ponnai anicut system in Chittoor district.

16. *Unproductive irrigation system.*—The Unproductive or the protective irrigation works in Andhra are (1) the K.C. Canal in Cuddapah and Kurnool districts, (2) the Srikakulam minor rivers system in Srikakulam and Visakhapatnam districts, (3) the Muniyeru system in Krishna district, (4) the Dondapadu tank in Guntur district, (5) the Yeruru tank in Nellore district, (6) the Sagileru system in Cuddapah district, (7) the Atmakur and Jangamaheswarapuram tanks in Guntur district, (8) the Anama-samudram-Beraperu tank, the Hajipuram tank and the Ponnaloor tank in Nellore district, (9) the Markapur tank, the Venkata-puram tank, the Siddapur tank, the Tippaipalem Project in Kurnool district, (10) the Nagavali river system in Srikakulam district, (11) the Bhavanasi tank in Guntur district, (12) the Yellanur tank in Anantapur district, (13) the Nagavaram anicut and supply channel in Cuddapah district, (14) the Mopad reservoir system in Nellore district, (15) the Pennar river canals, (16) the Chepad channel and (17) the Tungabhadra Project low level canal.

17. There are thousands of Minor Irrigation Works with ayacuts of 200 acres and less each in Andhra and they are pockets of insurance against famine. These minor works include tanks, private channels and other sources like spring channels, wells etc. The importance of minor works is not often recognised because they are small in size and scattered all over the country side, and are not spectacular like the huge reservoir or anicut systems. They are generally found in the dry upland districts where, but for them, the crops would be entirely dependent on the capricious rainfall. They irrigate annually an area very nearly equal to that irrigated by the major river systems. (*Vide* Appendix-16.)

18. Tank irrigation plays a very important part in the State. There is a wide diversity in the storage capacity of the tanks. There are tanks which are fed by river systems irrigating thousands of acres and small kuntas which irrigate only a few acres. The emperors of Vizianagaram encouraged the construction of tanks by making special grants. The tanks are the most important sources of irrigation under minor works. There are 25,547 tanks in Andhra. The largest number of tanks is found in Srikakulam and Chittoor districts. There are not many big rivers in these districts, and therefore all the rainfall has to be conserved and utilised through



tanks. Unlike in the larger systems of irrigation, the problem of Minor Irrigation Works is not primarily one of extension and development, but the very urgent one of conservation and maintenance, prevention of retrogression and the restoration of works to a certain minimum standard of efficiency ; for minor irrigation has both a productive as well as a protective value.

19. The protective aspect of minor irrigation was recognized as early as 1878 by the Famine Commission, who said that the true value of irrigation works is to be judged by the direct protection afforded by them in years of drought by the saving of human life, by the avoidance of the loss of revenue remitted and of outlay incurred in costly measures of relief.

20. Another important source of irrigation in Andhra are the wells. There are 2,23,957 wells in Andhra. A large number of wells in Andhra are sunk in hard ground with a foundation of rock or in rock itself. In the Deccan black-soil tracts, the water table is very deep and irrigation from wells hardly pays. Water supply at reasonable depth is to some extent available only in the south-east coastal areas. In Andhra, the climate is warm and the sun powerful throughout the year, and frequent waterings are necessary to the fields for the successful protection of summer crops. It does not therefore pay to irrigate from wells, unless a good yield is realised.

21. Lift irrigation and intensive cultivation are the rule, in the dry Rayalaseema districts. The development of well irrigation in Andhra is largely attributed to the liberal policy pursued by the Government, over a century in regard to the exemption of private improvement from additional taxation. Sir Thomas Munroe, first advocated the policy of not assessing to revenue, private wells, as they are treated as an improvement to land by the ryot's personal effort. The result was that orders were issued giving a definite assurance that the ryots would be allowed the full benefit of their own improvements, and that the lands improved would not be subject to any additional assessment so long as the general rates of the district remained unaltered. Another important factor is the availability of oil engines and cheaper hydro-electric power. These have enabled the ryots to deepen the wells to a depth where bullocks cannot ordinarily be used for lifting the water and thereby obtain larger supplies. There are 12,586 pump-sets in Andhra for pumping water for irrigation. There is considerable scope for the extension of well irrigation in Andhra.

22. Wells in the villages account largely for the success of agriculture and the Government have, from time to time, sanctioned subsidies to encourage the sinking of new wells, or the repair of old wells or for deepening them.

23. The development of irrigation in the State is watched by the Irrigation Development Board. All irrigation proposals and projects are examined and discussed by the Irrigation Development Board before they are submitted to the Government.

**Para (2) Brief summary of the rules and orders relating to levy of water charges in the districts of Andhra region.**

The rules for the levy of wet assessment have been dealt with in detail in Chapter III of this report. In this chapter, the rules for the levy of water cess are dealt with.

2. Water cess is charged, whenever water is taken from a Government source of irrigation, for irrigating dry lands, or for the irrigation of second crop on single crop wet lands. They are (a) thirvajasth, *i.e.*, water rate payable for irrigation of lands, classified as dry and (b) faslijasthi *i.e.*, water rate payable for irrigation of a second crop, on single crop wet lands.

3. Water rate is levied under the rules made under the Madras Irrigation Cess Act, 1865 whenever water is supplied or used for irrigation from any river or stream etc., belonging to, or constructed by, or on behalf of Government, in accordance with the rules prescribed under the Act. Any rule or notification prescribing water rates under the Act has to be published for eliciting public opinion, before it is finalised. The rules for the levy of water cess are contained in B.S.O. 4 to 7 and the appendices thereto.

4. The principles on which water rates are charged in Andhra are stated below :

(1) *Consolidated wet rate.*—In respect of older works like, Krishna and Godavari systems, the charge for water is consolidated with the land revenue proper and this wet assessment is calculated on the settlement principle of taking a share of the produce. The total receipts of this consolidated wet assessment are separated into shares due to land and water for purpose of accounts only.

(2) *Separate water rate.*—In all cases where water rate is not consolidated with land revenue as stated above, a separate charge for irrigation is made. Such charges for water fall under two heads—(i) Differential water rate and (ii) Fixed water rate.

(i) *Differential water rate.*—This proceeds on the principle that when a dry land is irrigated, the appropriate water-rate is the difference between the wet assessment and the corresponding dry assessment for the same class and sort of land.

(ii) *Fixed water rates.*—These rates fall under two heads (a) agreement rates under projects and (b) flat rates under old works.

(a) *Agreement rates.*—These are settled by contract express or implied. The special water rates prescribed under the various projects and the standard scale of water cess in force in Andhra come under this category.

(b) *Flat rates under old works and new projects.*—Flat rates are charged on all lands alike, varying only according to the nature and duration of crops and the classification of irrigation sources, but not depending on the nature of soil.

5. *Differential water rate system.*—This system is in force in the districts of Srikakulam (the tract covered by the Nagavali project), Kurnool, Cuddapah, Anantapur (Kadiri Taluk), Chittoor (Vayalpad and Madanapalli taluks) and Nellore, except in the tracts which are covered by the special rates in the projects. The rates of water cess chargeable for the different crops under the differential water rate system are as noted below :

- |   |  |
|---|--|
| (1) For a single wet crop   | .. The difference between wet and the dry rates at which the land is assessed. |
| (2) For a second or third wet crop.   | One half of the charge shown against item (1) plus half the dry assessments.   |
| (3) For a first, second or third dry crop.  | .. One-third of the charge shown against item (1).                             |
| (4) For sugarcane, betel, plantains and other wet crops which ordinarily remain on the ground for more than six months. | .. The sum of the charge specified against items (1) and (2).                  |
| (5) For dry crops which ordinarily remain on the ground for more than six months.                                       | One and a half times the charge shown against item (3).                        |

6. *Fixed water rate system.*—Under the fixed water rate system, water cess is levied at fixed rates on all lands alike, varying only according to the nature and duration of the crops and the classification of the irrigation sources, but not depending on the nature of the soil. The rates charged under the fixed water rate system fall under two categories viz., (1) the rates prescribed under the standard scale of water cess and (2) the special rates prescribed under

various projects. For the purpose of levy of water cess, the irrigation sources are divided into two classes. The irrigation sources placed in the 1st and 2nd class by the settlement department are treated as 1st class and those placed by the settlement department in groups lower than the 2nd, are treated as 2nd class. The rules for the levy of standard scale of water cess on dry lands are given in Appendix 6-A. The rates charged under special projects are furnished in Appendices, 6-B, C and D.

7. *Other rules.*—Where a wet crop is grown so close to a Government source as to raise a reasonable presumption that it obtains water by percolation, a charge under Madras Act VII of 1865 (Irrigation Cess Act) as amended by Act V of 1900 shall be made for such water, unless it is shown that the supply from the Government source has not been beneficial to or sufficient for the requirements of the crop. No water cess will be levied on dry crops, irrigated by percolation, unless owing to drought or other special circumstance, it is manifest that without such irrigation, the lands must have remained waste or the crop must have perished. In cases of doubt no charge should be made. In respect of crops which ordinarily remain on the ground for more than six months, the prescribed water-cess should be charged irrespective of the period for which water is actually taken, provided that water is available in the Government source concerned for a period longer than that required for raising an ordinary paddy crop. This rule will not however apply to casuarina, bamboo and other timber and fuel plantations, the irrigation of which should be charged as for single or dufasal crop according to the number of months during which water is actually taken. The levy of water cess for the irrigation of such plantations is regulated as below :—

(i) In tracts where there are different rates for occasional and systematic irrigation, the irrigation of these plantations should be charged as for occasional irrigation.

(ii) *Areas in which the standard scale of water rates is in force.*—The charge, appropriate for the irrigation of a first dry crop, should be levied, if water is taken for a period not exceeding six months. If water is taken for a longer period, one and a half times the above charge should be levied.

(iii) *Area in which differential water rate system is in force.*—The charges are the same as those prescribed for the irrigation of dry crops, with the modification, that the charge prescribed for the dry crops which ordinarily remain on the ground for more than six months or which ordinarily require water for more than six months, should be levied, only if water is actually taken for more than six months.

(iv) *Area for which special rates for water cess and special rules have been prescribed.*—These areas fall under two classes

(a) Where a separate charge has been prescribed for dry crops, and (b) where provision is made only for a charge on an irrigated crop without any distinction between wet and dry crops. In the areas in class (a) the charge for the irrigation of trees grown for fuel or timber should be the same charge as for a first irrigated dry crop, if water is taken for a period not exceeding six months, and one and a half times that rate if water is taken for a longer period. As regards areas in class (b) these plantations should be treated as single crop or double crop in accordance with the period for which they actually take water and charged at the rate for a first irrigated crop when water is taken for a period not exceeding six months and at one and a half times that rate when the period exceeds six months. Collectors, Divisional Officers, Tahsildars and Deputy Tahsildars may impose water cess in all cases. They may also sanction the prescribed abatement of charge, when water is raised by mechanical contrivances such as guda or picottas, which is generally one-fourth of the water cess. When portions of a field are irrigated, the charge will be calculated on the actual extent cultivated. However, where the extent is less than 10 cents, the officer charging water cess has the discretion to charge on the actual area or not to charge at all. Where a ryot grows two or more crops of different kinds, liable to different rates of water cess, the charge will be made according to the area under each crop. Unless it is a case of irregular irrigation, no charge will be made for the irrigation of seed-beds. A single crop, though twice cut, will be charged with only one rate of water cess. For instance, if a ryot raised an indigo crop with the aid of Government water and cuts it once in one year and another time in the following year he will be charged with water cess only in one year but not in both the years.

8. *Irregular irrigation.*—Use of water for irrigation is subject to the detailed rules issued in B.S.O. 4 and in the notifications issued in the case of the various projects. Permission to take water is necessary. The officer from whom the sanction is to be obtained will be defined, with reference to local conditions, by the Collector for sources in charge of the Revenue Department and by the Superintending Engineer for sources under the control of the Public Works Department. Irrigation is said to be 'irregular' when water from a Government source or work is taken or used in the following cases, namely:—

- (1) When the water is taken or used for any ryotwari or minor inam land registered as wet otherwise than in accordance with the conditions on which it is so registered or recognised; or
- (2) When the water is taken or used for any other land otherwise than under and in accordance with the terms of a general or special permit in force issued by a competent authority ; or

(3) When the water is taken or used for any land in a manner involving any unauthorised interference with an irrigation or drainage work, such as crossbunding a channel, making a cut or hole in the bund, opening or breaking a sluice, changing a pipe, or altering the position of a pipe; or

(4) When the water is taken or used for any land in breach of any rules or regulations directing from what source or on what conditions water may be taken to or used for such land.

9. *Irregular irrigation is liable to be penalised as noted below :—*

(a) In the areas commanded by the Godavari and Krishna irrigation systems:—

- |   |                                     |
|---|-------------------------------------|
| (1) On the first occasion                     | Three times the normal water cess   |
| (2) On the 2nd occasion                       | Six times the normal water cess.    |
| (3) On the 3rd occasion                       | Twelve times the normal water cess. |
| (4) On the fourth or any subsequent occasion. | Twenty times the normal water cess. |

(b) In all other areas :—

- |  |                                     |
|--|-------------------------------------|
| (1) On the 1st occasion:                   | Twice the normal water cess.        |
| (2) On the 2nd occasion :                  | Five times the normal water cess.   |
| (3) On the 3rd occasion :                  | Ten times the normal water cess.    |
| (4) On the 4th or any subsequent occasion. | Twenty times the normal water cess. |

10. *Wet Lands.*—For the irregular irrigation of any wet land, water cess will be levied at a rate exceeding the rate of water cess which would be levied on land, if the irrigation had not been irregular, by the amounts specified below :—

(a) In the areas commanded by the Godavari and Krishna irrigation systems :—

- |  |  |
|--|--|
| (1) On the 1st occasion                    | .. Twice the normal water cess.        |
| (2) On 2nd occasion                        | .. Five times the normal water cess.   |
| (3) On the 3rd occasion:                   | .. Eleven times the normal water cess. |
| (4) On the 4th or any subsequent occasion. | Nineteen times the normal water cess.  |

(b) In all other areas :—

- |  |                                       |
|--|---------------------------------------|
| (1) On the 1st occasion                                | .. The normal water cess.             |
| (2) On the 2nd occasion                                | .. Four times the normal water cess.  |
| (3) On the 3rd occasion:                               | .. Nine times the normal water cess.  |
| (4) On the 4th occasion<br>or any subsequent occasion. | Nineteen times the normal water-cess. |

11. On account of the general rise in prices, the maintenance cost of the various irrigation projects has greatly increased. The working expenses and the interest charges have risen considerably, but the gross revenue from irrigation has remained the same. In order to meet the increasing cost on the maintenance and repairs of irrigation sources, the Government of Andhra levied an additional assessment at the rate of  $18\frac{3}{4}\%$  of the amount of land revenue assessment payable on wet lands in the State of Andhra under the Andhra Land Revenue (Additional Wet Assessment) Act, 1956. This additional wet assessment has been increased to  $37\frac{1}{2}\%$  under the Andhra Land Revenue (Additional Wet Assessment) (Andhra Pradesh Amendment) Act, 1957. The additional wet assessment is intended to increase the water rate component of the wet assessment by 50%.

12. The Government have also passed orders in G.O. Ms.No. 982 Rev., dated 27-5-57 enhancing the water rates by 25% subject to the ceiling noted below; operative from 1-7-1956.

*For all crops other than duffassal crops :*

- (1) For the 1st irrigated crop: Rs. 10 per acre.
- (2) For the 2nd or 3rd irrigated crop: Rs. 5 per acre.

*For duffasal crops.—Rs. 15 per acre.*

The enhancement is not however applicable in cases of irrigation from wells, spring channels and tanks deriving supplies from a source other than a river. The Government have again enhanced the water rates to 50% in G.O.Ms. No. 1161 Rev., dated 23-6-1958 inclusive of the 25% already made, from 1-7-1957 subject however to the same ceilings fixed in the earlier G.O. The enhancement is not however applicable in cases of irrigation under wells and spring channels and lands served by rainfed tanks which ordinarily receive supply of water for a period of less than eight months a year.

## CHARTER VI

### Methods of irrigation in Telangana region

The importance of conservation, control and utilization of water flowing down the many rivers and streams for irrigation has been realised many a century back with the result that the whole of Telangana area is studded with thousands of small tanks impounding surface drainage and artificial lakes, constructed by the ancient rulers for growing paddy, which is the staple food crop of the people. There are no less than about 33,000 surface tanks, big and small, besides a few big artificial lakes notable among which are Pakhal, Ramappa, Laknavaram, Shanigaram and Ghanpur lakes said to have been constructed by the Kakatiya rulers in the 13th century A.D.

2. These surface tanks along with a few anicuts, wells etc., constructed by the ancient rulers, formed the back-bone of irrigation in the Telangana area. But as time passed on, due to various reasons, majority of these works fell into a state of disrepair. Thus, not only extensive repairs were required, but in some cases, actual restoration also became necessary requiring skilled supervision. For this purpose, the Irrigation Department was formed in 1896, in the erstwhile Hyderabad State, with its headquarters at Hyderabad, under a Chief Engineer. Since then this department has engaged itself in improving and increasing irrigation by:—

- (a) Repairing and restoring the old irrigation sources;
- (b) Constructing new reservoirs across streams and
- (c) Maintaining the old and newly constructed works.

3. The first step towards this end was to restore the ancient big lakes of Laknavaram, Pakhal, Ramappa etc., which were able to irrigate an area of 29,673 acres. Simultaneously, thousands of rainfed tanks were repaired and restored to requisite standards.

4. Of the 33,000 tanks, about 12,438 are having an ayacut of less than 10 acres each; 19,589 tanks between 10 and 200 acres each and the rest above 200 acres each. As a policy, the tanks having less than 10 acres under each are looked after by the cultivators themselves under the control of the Revenue Department. The Irrigation Department attends to repairs and restoration of all the tanks having ayacuts above 10 acres but regularly maintains only those tanks which have ayacuts of more than 50 acres. Breaches occur often in some of these tanks, as they are small and not strong enough to withstand the sudden and extraordinary floods during cyclones.



5. Apart from repairing and restoring the old irrigation sources, the Irrigation Department has been constructing new reservoirs across big streams. A number of such large and medium sized irrigation reservoirs were constructed: notable among which are Nizamsagar, Pocharam, Palair, Wyra, Pendlipakala, Chandersagar, Koilsagar, Dindee, Kaddam, Manair, Singabhupalayam and Baithapalli.

6. The soils, in Telangana, generally are suitable for irrigation and people are generally eager to utilise irrigation facilities, if made available. The undulating character of the country, lends itself more favourably to the irrigation of isolated patches from tanks, wells and smaller streams. The Telangana country is traversed by innumerable streamlets and nalas which have been used for storing rain water by putting earthen bunds across them. Further the soils in Telangana being sandy loam, it is necessary to store water; and for that purpose advantage has been taken in the past of the undulating character of the ground constructing large tanks and kuntas. Besides the tanks and kuntas or ponds, irrigation is also carried on from wells, generally and by means of canals and anicuts.

7. The irrigation in Telangana can be divided into two categories namely, 'Flow and Lift'.

(a) *Sources of flow irrigation.*—The various sources of flow irrigation, in the Telangana region are large reservoirs, projects, tanks, kuntas, kalvas (including Parrekalvas), nalas (open mouth channels) and Uppal-wat-Bondas. The important irrigation systems under flow irrigation are the reservoirs.

(1) *Nizamsagar project.*—This project was constructed 27 years ago and water was first let out in the year 1932. This was the first Major Detention Reservoir undertaken by the erstwhile Hyderabad State, by harnessing the waters of Manjira river, at a cost of Rs. 394.33 lakhs. Originally, the Irrigation Department estimated the area, to be irrigated under the project, at 2,75,000 acres, but subsequently it was found that the aggregate area that could be irrigated, would be in the neighbourhood of 1,70,000 acres. If in a year, the reservoir is full, by the end of October, it would be possible to give water for the total area of 1,03,920 acres in Abi and 62,000 acres in Tabi. According to the latest decision, the project is to irrigate 11,04,360 acres, in Abi and 62,000 acres in Tabi, besides the old area of 21,055 acres, under old tanks. The area cultivated in the year 1956-57 is as follows :—

(1) Abi .. .. .	93,023 acres.
(2) Tabi .. .. .	57,701 „

The above areas are exclusive of the old wet area of 21,055 acres. The areas shown under Abi and Tabi include also 22,164

acres, under sugarcane. Hence an area of 13,600 acres remaining to be developed, has not yet been located by the P.W.D. The P.W.D. is making necessary investigation to localise the said area. The Special Chief Engineer of Irrigation, is of opinion that as a period of over 20 years has lapsed since the previous survey and as the previous settlement was not based on the contour maps, he has proposed to localise the ayacut under the project, afresh, as it has more reached the saturation point of irrigation.

(2) *Kaddam project*.—This is constructed at Peddur village, in Adilabad district, by harnessing the waters of Kaddam river which rises in Boath taluq of the same district and falls in the Godavari after a course of about 48 miles. The main canal under this project is 47 miles long and is designed to irrigate 65,000 acres in Abi and 2,000 acres in Tabi. Six villages have been affected by the water spread of the reservoir either wholly or partially. Necessary arrangements for the rehabilitation of these displaced persons have been made by the Government. Construction of the project was completed in June, 1955 and water was let out for irrigation in the the same month. In spite of short notice the ryots could irrigate 827 acres in Abi 1955-56. The year 1956-57 was the second year of irrigation. The P.W.D. has drawn up a programme for supplying water to 10,000 acres. But due to some reason or other, the P.W.D. could not complete the distribution system for the above area and only an extent of 8,524-38 acres was irrigated in Abi 1958-59.

The dam breached on 31-8-1958 due to unprecedented floods. In order to save the standing crops supplies have been arranged by diverting natural streams and nalas into the main canals by installing pumps wherever possible.

(3) Besides the above projects, there are 29 projects, the details of which are appended.

The extent of irrigated crops in the Telangana region at the end of the first half of the present century was only at 13.7% of the total cultivated area. Obviously there is plenty of scope for improving the position.

An effective way of achieving this object is to harness the waters of the big rivers flowing through the State. Hitherto, the development of irrigation was confined only to the small streams and rivulets and the waters of the major rivers, the Godavari and Krishna were left untapped. It was proposed to construct a series of multipurpose projects on these rivers and their tributaries to utilise to the maximum extent, the waters of these rivers. The Nagarjunasagar project is under construction on the river Krishna.

Canals from rivers are of two kinds *viz.*, inundation canals which flow only during floods and perennial canals from reservoirs and 'pucca' anicuts. Inundation canals are scattered here and there in Telangana area. Perennial canals flow from the Nizamsagar project.

(4) *Parrekalva*.—It is a kind of channel dug in the bed of small streams for conveying sub-soil water for irrigating fields. A big depression is made in a stream or river and the water is carried to the fields by digging a channel for a distance of about a mile or two and then diverting it to the lands for irrigation. This kind of irrigation requires a great deal of manual labour, as the bed of the river is sandy and the silt has to be removed constantly from the temporary channel. All this labour is contributed by the ryots.

(5) *Uppalwatbonda*.—It is a kind of spring well from which water is available for irrigation by everflow as from patasthal source. It is, therefore, treated as a patasthal or a source of irrigation, by flow.

(b) *Sources of lift irrigation*.—Wells and Bhurkis with mhotas, yatam guda etc., are treated as lift irrigation sources or 'motasthal'.

(1) *Wells*.—The system of irrigation under wells is in vogue in all the districts of Telangana. The area irrigated under wells which are mostly private wells is 2,86,755 acres.

Irrigation under wells is purely optional. It is not compulsory, as it is under tanks and other sources. In the case of all patasthal wet lands, whether classed by settlement as single crop Abi or double crop, the Abi crop shall be deemed to be 1st crop, and Tabi the 2nd crop. Cultivation of all such lands in Abi is compulsory, if water is available in the source in 'Ashleshakarathi', cultivation in Tabi also is compulsory if water is available. About 75% of wells are used for protective or light irrigation. Dry crops like maize, jowar and wheat are grown and watered to two or three times to get surer and better yields. In very few cases, commercial crops like chillies, sugarcane, plantains or turmeric are grown and these too are restricted to small areas. Much capital has to be invested in sinking wells. Running costs of lifting the water are also heavy. Ordinary cultivators cannot afford to keep a 'Mhota' and incur heavy expenditure on the cultivation of commercial crops. Moreover, irrigation under wells is shifting from year to year. The area of two or three acres that could be irrigated is changed, usually, in alternative years. Wells are mostly owned jointly by many hissadars (shareholders) and water taken by turns. Many of them use their share of water occasionally. A few of them even sell their right, of using the water, for a season or two. For land revenue assessments, the existence of wells is

now altogether overlooked and no charge is levied for irrigation under wells, in tank ayacuts. The idea is to encourage the sinking of new wells, in patta lands, for which subsidy is being given by the Government.

(2) *Yatam or Guda*.—If water from the main source does not suffice as under small kuntas, the cultivator has to save his crop by lift irrigation by a yatam or guda. In such cases the water class is lowered.

(3) *Bhurkis*.—Bhurkis may be briefly defined as “wells” sunk on the banks of rivers, vagus and nalas for irrigating lands. They are similar to the “doruvu” wells of the Madras presidency and the “Dhekudies” of the Bombay presidency. Bhurkis are of two kinds, ‘Pucca’ and ‘Kacha’. According to the standing orders of Government, dry lands under Bhurkis constructed on the banks of natural rivers and nalas shall be charged 1 & 1/8 the maximum dry rate of the village, in the case of pucca Bhurkis and 1 & 1/4 the maximum dry rate in the case of kacha Bhurkis, until the next revision settlement.

8. *‘Asmani Tari’ and ‘Kariveda’*.—No additional assessment will be charged, if a second crop is raised or Asmani Tari (raising paddy crop with rain water) is cultivated on dry lands, but if paddy crop (Kariveda) is raised in the bed of a source of irrigation or with water which flows into such a source, the lowest wet rate of assessment fixed for the village will be charged. In many parts of Adilabad, Karimnagar and Warangal districts Kariveda (Paddy) crop is grown. In spite of all these schemes, there are, still many more possibilities of harnessing the waters of rivers and streams flowing across the Telangana region, and there is ample scope for further expansion of irrigation by means of major, medium and minor irrigation projects.

**Para 2. Brief summary of the rules and orders relating to levy of wet rates and water charges in the districts of Telangana region.**

Wet rates in Telangana are levied under sections 53 and 82 of the Land Revenue Act, and the Hyderabad Land Revenue Rules of 1951. The rates are consolidated with land revenue. Water rate, as such, is not levied or collected separately. Sources of irrigation are classified according to the commandable area and period for which water can be supplied.

2. Consolidated irrigation rates are fixed as maximum wet rates for a group of villages having identical conditions. They

are separately fixed for irrigation under flow and irrigation under lift. The range of maximum wet rates in the Telangana is :—

- (a) For irrigation under flow: I.G. Rs. 6.85 to 18.85 per acre.
- (b) For irrigation under lift: I.G. Rs. 4.28 to 10.28 per acre.

3. In cases of new irrigation works a concession of irrigation rates is given as an inducement to the cultivators for reclaiming the land and for bringing it under irrigation. At present the concession consists in granting complete exemption from payment of water rate in the 1st year, and in charging 1/4, 1/2, 3/4 and full revenue, respectively, in the 2nd, 3rd, 4th and 5th years. In light irrigation zones, where supply of water is not guaranteed, and where it depends upon the vicissitudes of the season, no irrigation rates are fixed. It is levied at a moderate flat rate (Rs. 4-2-0 per acre under Nizamsagar) in the years, when water is available and for lands which are actually irrigated.

4. Irrigation of lands in the commandable area is compulsory and wet assessment is charged on all lands localised as wet in this area, whether the land is cultivated or not, with wet crops. The methods of irrigation obtaining in Telangana have been described in detail in the foregoing paragraphs.

5. Under the present rules, any tank which irrigates more than 30 acres is classed as a 1st class source, while other sources which irrigate less than 30 acres, are placed in second class (water class—2 annas).

6. In the case of major irrigation projects, an average rate is shown in the forecast which is expected to yield a definite return on the capital outlay and then the settlement officers are asked to survey each field included in the ayacut and work out the maxima and minima rates for soils and crops of the same nature. These rates are usually higher than those levied under ordinary tanks where irrigation is not assured and the maintenance also is not done regularly and up to the standard. Under major irrigation sources, a carry-over policy is adopted in order to supply water at the proper time for Abi, if the monsoon, does not set in at the normal time. A statement of rates of assessment charged under different irrigation projects is given in Appendix 7.

7. The assessment levied on sugar-cane and betel-vines, differs from that on other garden and wet crops. The rates of assessment are higher and the rates vary, for the same crop, from district to district according to local conditions. This is based on the ground

that more water has to be supplied for a much longer period than one season.

8. The irrigation sources and their water class is given below:

(a) *Yatam or Guda*.—If water from the main source, does not suffice as under small kuntas and the cultivator has to save his crop by means of 'Yatam' or 'Guda' lifts, the water class is lowered for this manual labour and fixed as—

Yatam	..	2½ annas
Guda (Pikota)	..	2 annas.

If water is taken from a patasthal (flow) source by means of Yatham or Guda to irrigate lands situated on a higher level flow wet rate is charged after reducing the water class to 2½ to 2 annas, respectively, to allow for the labour involved in lifting water.

(b) *Uppal-wat-bonda*.—These are treated as patasthal sources and water class is fixed as one anna, and if the source is from *Jhara* which is not of the same capacity as a spring and is for a short period, at 2 annas.

(c) If irrigation is from a sluice at a lower level the classification is one anna, but if the sluice is at a higher level, the classification is fixed as two annas.

(d) Where the water is saltish and hence less useful for the growth of crops, the water class is reduced by one anna. When the water flows over karal (saline) land and brings in water mixed with limestone particles, the water value to be assigned to such land is reduced by another half anna.

9. Under the above principles, the following rates are charged for different categories of irrigation sources :

- |  |    |  |
|--|----|--|
| (i) For 2nd crop paddy   | .. | Half of the wet assessment for the 1st crop. |
| (ii) For single crop paddy grown in dofasal lands in Tabi.                         | .. | Full wet assessment as for the 1st crop.     |
| (iii) For perennial like sugarcane, pan-malla etc. (12) months crop.               | .. | 2½ times the single wet crop.                |
| (iv) For sugarcane (Adsali) 18 months crop.  | .. | 3½ Abi.                                      |
| (v) For Do-fasal crop of 8 months duration not falling under items (iii) and (iv). | .. | 1½ time the Abi rate.                        |
| (vi) For light irrigation crop   | .. | Rs. 4 to 6.                                  |

- (vii) If due to non-availability of water in a source the wet cultivation is done—
- |   |                                  |
|---|----------------------------------|
| (a) By well constructed by ryots                              | Ordinary dry rate.               |
| (b) By Government well situated in the ayacut.                | Highest dry rate of the village. |
| (c) By Government well situated in gairan or poramboke lands. | Half of the patasthal rate.      |
- (viii) All lands under wells situated outside the ayacut are assessed dry rates.
- (ix) Manawari lands situated outside the ayacut of the patasthal source are assessed at dry rates and inside the ayacut at wet assessment.
- (x) When water is lifted from the channels of patasthal sources by means of mechanical pumps with the permission of the Collector  $\frac{1}{4}$ th of the wet assessment will be remitted as per rule 62 of the Land Revenue Rules of 1951.
- (xi) As per rule 68 of the Land Revenue Rules, when water is taken from Government source to irrigate the dry lands the wet assessment after deducting the dry assessment will be levied. In case, by giving water like this, the fixed ayacut is affected the dry rate will not be deducted.
- (xii) When a land is irrigated by percolation from a Government source, wet rate will be levied treating that the irrigation was done by the Government source.
- (xiii) Under rule 73 of the Hyderabad Land Revenue Rules, 1951 lands irrigated under 'parrekālwa' will be charged dry assessment plus  $\frac{1}{3}$ rd of the difference between the maximum wet and dry rate of assessment of the village subject to maximum of Rs. 5 per acre.
- (xiv) In case of single crop wet land cultivated in both the seasons, an additional charge equal to half of the Abi assessment will be charged as per rule 43.
- (xv) If a third paddy crop known as Edigar paddy is raised in a Do-fasal patasthal wet land no additional assessment will be levied.
- (xvi) Lands irrigated from jungle streams which receive a casual supply may be utilised without charge provided it does not affect any Government source (Revenue Department Circular No. 16 of 1325 fasli).
- (xvii) In case a dry crop is raised on wet land with the aid of Government water double dry assessment will be levied (Rule 60 of Land Revenue Rules).

- (xviii) Wet lands situated under tanks receiving no water for continuously 4 years will be classified as dry land.
- (xix) In case of Tabi cultivation, Tahbandi has to be done fixing every year the irrigable area under each source.
- (xx) If a cultivator exploits the sub-soil water or the water flowing to waste, for irrigation purposes at his own cost and with the permission of the Revenue Officers, only the ordinary dry rate is levied.
- (xxi) *Green manure crops.*
- (1) If water for green manure crops and Abi is taken for not more than six months, which is the longest duration of Abi, from the date of opening of the canals, no extra assessment should be levied.
  - (2) Similarly, if water is taken for green manure crops and Tabi for not more than four months from the date of letting out water, no extra assessment should be charged, and
  - (3) If water is taken for any extra period over and above the periods mentioned above, extra assessment equal to half of the Abi rate or half of the Tabi rate as the case may be should be levied.

10. The calculation of wet assessment is made as per the "Sharenavisi" showing the area under irrigation.

11. Allowance is made for any manual labour or other labour needed for lifting water. This water class (value assigned to each irrigation work) is consolidated with the soil value for the fixation of a consolidated assessment. Generally speaking, the consolidated irrigation rate is more than the actual charge for water supply, as it also contains an element of additional levy on the increased yield from the land because of irrigation. Remissions are granted under the Land Revenue Rules, for wet lands not irrigated, owing to reasonable grounds, or for lands where crops are destroyed on account of scarcity of water, or for other reasons, beyond the control of the cultivators.



Sl. No.	Name of the project	District in which it is situated	Cost of the project in Lakhs.	Ayacut envisaged (in acres)	AYACUT DEVELOPMENT		Total area irrigated in 1956-57 (in acres)
					Abi (in acres)	Tabi	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Rs.			
1.	Nizamsagar project	.. Nizamabad	394.33	1,70,000	95,023	57,701	1,52,724
2.	Pocharam	.. do	..	13,069	14,718	..	14,718
3.	Kaddam	.. Adilabad	..	67,000	2,414	..	2,414
4.	Arjunpatla	.. Warangal	6.31	1,227	260	152	412
5.	Pakhal	.. do	4.50	10,500	5,925	5,110	11,035
6.	Ramappa	.. do	2.93	5,197	4,459	1,052	5,511
7.	Lakhnawaram	.. do	3.06	3,716	2,937	1,017	3,954
8.	Gagilapur	.. do	7.21	680	214	105	319
9.	Bheemghanpur	.. do	0.50	1,783	1,065	718	1,783
10.	Ghanpur	.. do	..	2,955	1,532	1,644	3,176
11.	Palair	.. Khammam	2.45	16,084	14,286	..	14,286
12.	Singabhupalam	.. do	2.97	1,800	1,753	..	1,753
13.	Wyra	.. do	35.09	14,557	11,626	..	11,626
14.	Baithapalli	.. do	2.27	4,800	2,500	..	2,500
15.	Koilsagar	.. Mahabubnagar	..	Abi 12,000 Tabi 2,500	7,154	..	7,154
16.	Chandrasagar	.. do	..	Abi 2,700 Tabi 300	1,213	..	1,213
17.	Manair	.. Karimnagar	..	14,000	10,401	..	10,401
18.	Yakinpur	.. do	..	1,474	876	..	876
19.	Chegaon	.. do	..	1,102	658	..	658

STATEMENT.--(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
20.	Bandalvagu Project	. Karimnagar	..	1,040	234	..	234
21.	Shanigaram ,,	. do	(450 seers of Gold)	4,856	1,942	2,770	4,712
22.	Dindi ,,	. Nalgonda		15,000	17,049		17,049
23.	Pendilipakala ,,	. do		5,000	4,388		4,388
24.	Bheemanpalli ,,	. do		1,860	1,214		1,214
25.	Asifnahr ,,	. do		4,539	5,547		5,547
26.	Ootukurmarpalli	. do		850	850		850
27.	Shaligowaram.	. do		1,622	1,973		1,973
28.	Fateh Nahar ,,	. Medak		4,377	5,478	..	5,478
29.	Mahboobnahr,,	. do		6,345	4,988	21	7,665
					2,656	double crop.	
30.	Rayanpalli ,,	. do		800	168	526	694
						double crop	
31.	Old Godavari canal	.. Adilabad	..	..	..	..	7,000

## CHAPTER VII

Taxes now levied on land and agricultural produce in addition to the rates fixed in settlement and resettlement including land cess and other cesses levied under :

- (i) The Madras District Boards Act, 1920.
- (ii) The Madras Elementary Education Act, 1920.
- (iii) The Madras Village Panchayats Act, 1950.
- (iv) The Madras District Municipalities Act, 1928.
- (v) The Andhra Pradesh Commercial Crops (Assessment) Act, 1957.
- (vi) The Andhra Pradesh Land Revenue (Surcharge) Act, 1957.
- (vii) The Andhra Land Revenue (Additional wet Assessment) (Andhra Pradesh Amendment) Act, 1957 and
- (viii) The Andhra Land Revenue Assessment (Standardisation) Act, 1956; and other acts now in force in Andhra Pradesh.

### 1. Land Cess.

(The Madras District Boards Act, 1920)

The importance of Local Self Government has been recognised even from the time of British Rule and the British have embarked on the introduction of Local Self Governing institutions in the country, like the District Boards, the Municipal Corporations, the Municipalities and the Village Panchayats. These institutions have gradually developed and they have now become an integral part of the National Administrative Machinery, playing the same vital role that is assigned to similar institutions in other democratic countries. The importance of these institutions is increasing day by day and they are eventually to take charge of the social services of the State.

2. The local bodies have restricted powers of taxation, though these powers are comprehensive as they cover persons, property and business. One of the most important source of revenue is the land cess. The income from land cess in Andhra is over 60% of the aggregate revenue derived by the Local Boards. Land Cess, however important a source of revenue it may be, has proved to be an inelastic source of income for local boards as it is based on land revenue which itself usually remains static during a period of 30, 20 or 15 years for which the rates are unalterable. Under Section 78 of the Madras District Boards Act, 1920, land cess is levied at the rate of two annas in the rupee, on the land revenue payable by every landholder. Under section 135 of the Hyderabad District Boards Act, 1956 local cess is leviable at the rate of

two annas on every rupee of land revenue payable to the Government. Thus every landholder in a ryotwari area is liable to pay land cess on the land revenue payable by him and also on the water cess and miscellaneous revenue payable by him. In zamindari areas, the cess is based on the rents payable to the zamindars but, however, in view of the abolition of the zamindaris, the cess is now collected on the reduced rents and on the settlement rates if introduced as in the case of the ryotwari areas. In the case of inam lands, land cess is not levied on the quit-rent or jodi but only on the equivalent ryotwari assessment of that land. The charging of ryotwari assessment on inam land has not therefore resulted in any increase in the cess payable in respect of these lands. Enhancement of the ryotwari assessment or water-rate will alone bring about an increase in land cess to the local bodies. In Andhra region land cess is usually collected by the State Government along with the land revenue and credited to the local bodies. In Telangana, the collection charges are, however deducted before making over receipts to the local boards.

## 2. Education Cess.

(The Madras Elementary Education Act, 1920)

3. Education cess is another important source of revenue to the local bodies. This also, like land cess, is in the nature of a surcharge on land revenue and is collected by the State Government along with the land revenue and credited to the local boards. Under Section 35 of the Madras Elementary Education Act every landholder is liable to pay education cess on the land revenue payable by him. The cess is levied on the land revenue assessment, and on the water-cess and miscellaneous revenue payable by the landholders in ryotwari areas. In zamindari areas, the cess is based on the rents payable by the zamindars but however in view of the abolition of zamindaris, the cess is now collected on the reduced rents or on the settlement rates if introduced as in the case of ryotwari areas. The rate of education cess in various districts of the Andhra region is at three annas in a rupee of land revenue paid. In Telangana, there is no education cess as in the case of Andhra region.

## 3. Tax on Agricultural Land.

[(i) The Madras Village Panchayats Act, 1950.

(ii) The Madras District Municipalities Act, 1928.]

4. Among other taxes, the Village Panchayats and the Municipalities can also levy the following taxes:—

(a) *By Village Panchayats.*—Under Section 63 (3) (b) of the Madras Village Panchayats Act, 1959, a village panchayat

may levy in the village, a tax on agricultural land for a specific purpose, subject to such rules as may be prescribed and with the sanction of the Inspector-General of Local Administration and also subject to such restrictions and conditions imposed by him. A statement showing the names of the Panchayats for which sanction was accorded by the Inspector-General of Local Administration to levy agricultural tax is appended below :

### NAMES OF PANCHAYATS FOR WHICH SANCTION WAS ACCORDED FOR LEVY OF AGRICULTURAL TAX.

#### 1. East Godavari.

Atreyapuram Panchayat, Kothapeta Taluk at the rate of Rs. 3-2-0 per acre per half-year; with effect from 1-4-1958 for two half-years.

#### 2. West Godavari.

1. Vandram Panchayat; Bhimavaram taluk at the rate of Rs. 8 per acre per one half-year for a period of one half-year or Rs. 4 per acre per half-year for a period of one year (L.Dis. No. 61691/57, dated 17-10-57).

2. Kalavapudi Panchayat, Bhimavaram taluk, rate at Rs. 10 per acre per half-year, for a period of six months. (L.Dis. No. 83906/58, dated 5-10-1958).

3. Siddapuram Panchayat, Bhimavaram taluk, at the rate of Rs. 5 per acre per half-year for a period of one year. (L.Dis. No. 18061/58, dated 10-6-58).

4. Velagapalli Panchayat, Tadepalligudem taluq, at the rate of Rs. 5 per acre per half-year for a period of two years. (L.Dis. No. 40997/58, dated 29-5-1958).

#### 3. Krishna District.

Motur Panchayat, at Rs. 5 per acre per half-year for two half-years of 1958-59 (L.Dis. No. 56766/57, dated 6-11-1958).

#### 4. Guntur District.

1. Tadikonda Panchayat, Guntur taluq, at the rate of Rs. 2-8-0 per acre per half-year for a period of two years. (L.Dis. No. 7054/57, dated 2-5-1958).

2. Chiluvur Panchayat, Tenali taluq at the rate of Rs. 2-8-0 per acre per half-year for a period of one year (L. Dis. No. 14423/54, dated 7-9-1954).

3. Chinalingayapalem Panchayat, Bapatla taluq, at the rate of Rs. 5 per acre per half-year for a period of two years. (D. Dis. No. 82726/58, dated 28-10-1958).

4. Narsaraopet Taluq, Pasumarru, Anantavaram, Enamadala, Eddanapudi, Gannavaram and Punoor Panchayats.

Rate:—

1. Pasumarru .. Naya-paise eighty seven only per acre per half-year for a period of six half-years.
2. Anantavaram Rs. 3 per acre per half-year for a period of six half-years.
3. Enamadala .. Rs. 3 per acre per half-year for a period of six half-years.
4. Eddanapudi . Rs. 3 per acre per half-year for a period of six half-years.
5. Gannavaram Rs. 3 per acre per half-year for a period of six half-years.
6. Punoor .. Rs. 3 per acre per half-year for a period of six half-years.

(D. Dis. No. 56232/58, dated 25-9-58).

(b) *By Municipalities.*—Under Section 81 (4) (a) of the Madras District Municipalities Act, 1928, a municipal council may in the case of lands used exclusively for agricultural purposes levy property tax (which includes a tax for general purpose, a water and drainage tax, a lighting tax, a scavenging tax, a railway tax) at such proportions, as it may fix, on the annual value of such lands, as calculated in accordance with the provisions of Section 79 of the Madras District Boards Act, 1920. If such lands be occupied by tenants, the Municipal Council shall levy the taxes in equal shares, from the landholder and tenant respectively.

#### 4. Special charge on commercial crops.—

[The Andhra Pradesh Commercial Crops (Assessment) Act, 1957].

(5) In the general scheme of land revenue settlement, the crops taken into account in fixing the assessment are the staple food crops (*i.e.*) paddy in wet area and cholam, ragi, cumbu and korra in dry areas. No notice was taken of commercial crops or other cash yielding crops grown on lands at the time of settlement or resettlement. It is generally more profitable to cultivate commercial crops, than to cultivate food crops. There was therefore a need to impose tax on commercial crops, in order to collect a larger contribution from the better placed agriculturist. With this object in view special assessment on the commercial crops as noted below

has been levied from F. 1367 under the Andhra Pradesh Commercial Crops (Assessment) Act 1957.

	Per acre Rs.
1. Casuarina	1 0 0
2. Cotton ..	1 0 0
3. Coconut ..	2 0 0
4. Tobacco :	
(a) Virginia	3 0 0
(b) Other varieties	1 0 0
5. Turmeric	5 0 0
6. Sugarcane	5 0 0
7. Plantains	5 0 0
8. Chillies ..	2 0 0
9. Citrus fruit	2 0 0
10. Groundnut	1 0 0
11. Betel Vine	5 0 0
12. Onions ..	5 0 0

6. The collection of special assessments on groundnut and turmeric has been suspended, at present, due to the sudden fall in the price of turmeric and due to a heavy incidence of pests and inadequate and untimely rainfall for groundnut. The income under this head in F. 1367 is estimated at Rs. 58 lakhs.

### 5. Surcharge on Land Revenue.

The Andhra Pradesh Land Revenue (Surcharge) Act, 1957.

7. The system of assessment on land lacks an element of progression in that a person who owns a large extent of land and enjoys a considerable net surplus from the produce pays assessment only at the same rate as another who has only a small holding which leaves no or only a small surplus to him. It has, therefore, become necessary to consider the question of levying a tax on agricultural income in order to introduce an element of progression in the system of land revenue assessment. One proposal is to levy agricultural income tax and the other is to levy surcharge on the larger holdings. The employment of some additional staff is necessary for the administration of Agricultural Income-Tax Act. In this connection the following observation of the Land Revenue Reforms Committee, Madras is relevant. "When the tax is being levied primarily with a view to secure an element of progression, the actual yield itself is not particularly relevant, provided that the expenses of collection do not absorb the bulk of the yield from the tax, for whatever net

income is derived by the tax would be in addition to the assessment levied on land as such". As the expenditure on the employment of additional staff could not be estimated accurately and as the alternate proposal of levying surcharge is much more beneficial than levying agricultural income-tax in that it can be collected with the available staff, the Government have decided to levy surcharge on the larger holdings. As a result, the Andhra Pradesh Land Revenue (Surcharge) Act, 1957 has been enacted. The surcharge is levied on the land revenue assessment and is based on slab system at the following rates :—

Amount of Land Revenue	Rate of Surcharge per Rupee
Rs. 10 per less .. .. .	nil
Exceeding Rs. 10 but not exceeding Rs. 100 ..	13 nP.
Exceeding Rs. 100 but not exceeding Rs. 500 ..	25 „
Exceeding Rs. 500 .. .. .	50 „

8. The revenue demand under this head for the Fasli year 1366 (1956-1957) is Rs. 61,57,179 and the revenue expected in Fasli year 1367 (1957-1958) is Rs. 50,33,667.

#### 6. Additional Wet Assessment on Wet Lands.—

The Andhra Land Revenue (Additional Wet Assessment) Act, 1956.

The Andhra Land Revenue (Additional Wet Assessment) (Andhra Pradesh Amendment) Act, 1957.]

9. Different districts and tracts were settled and resettled at different times. Broadly speaking, the continuous rise in prices during the periods of resettlement resulted in higher commutation rates being adopted in the case of the districts resettled at a later date than in the case of those which were resettled earlier. As a result, there is wide variation in the pitch of assessment in the different districts. Further, on account of the abandonment of the resettlement operations, the assessments in the several districts have remained unchanged, since the time of the last resettlement. There is therefore variation from district to district, in the incidence of assessment, in respect of lands, which have been estimated to yield an identical grain outturn.

10. In the case of dry land, the assessment represents the land revenue payable thereon and in the case of wet land the assessment includes a charge for water besides land revenue proper. The proportion of assessment due to water is estimated on the average, at 70% of the consolidated wet assessment and the balance of 30% represents on the average the land revenue element thereof.



If a resettlement of all the districts were to be undertaken at the present date, the assessment in all the districts is liable to be enhanced, since the present commutation rates based on the average of the prices of the last 20 years are much higher than the commutation rates at the last resettlements in the various districts. On account of the heavy rise that has taken place in the prices of materials and in wages and salaries, the cost of construction of new irrigation works and maintenance of old and new works has increased considerably. The accumulation of interest charges, the large scale extension and renovation of small schemes to increase food production have further contributed to an increase in the expenditure on irrigation. The significance of irrigation as an item of revenue has therefore dwindled relatively to the growth of other resources. Considerable scope for revision of rates has been provided by the improvement in the prices of agricultural produce during the war and in the postwar years. The incidence of water rates which were fixed during the latter period has thus gone down considerably in recent years emphasising the need for a revision of rates. Though the revision of rates itself would not enable the Government to reduce their current costs on irrigation works, it can safely be said that the increase in rates would certainly go a long way to cover the increased working expenses on projects.

11. The scope and justification for the inclusion of a tax on profit element in the water rate arises in areas (1) where the alternative cost of supply is higher than the rate fixed by Government or (2) where the area covered by the project is fairly developed and the irrigation facilities add further to this development. Moreover, where because of the low cost of construction and maintenance of old irrigation works, water rates are much lower than in other areas and advantage from these low rates is derived by individual cultivators, the State Government would be justified in increasing the water rates by adding an element of tax with a view to appropriate to the general revenues of the Government, some part of these large benefits that have accrued. As a result of it, the Government have enacted the Andhra Land Revenue (Additional Wet Assessment) Act 1956. Under section 3 of this Act, an additional assessment at the rate of  $18\frac{3}{4}\%$  of land revenue assessment payable for the year has been imposed from 1-7-56 in respect of all wet lands in the state served by any Government source of irrigation, the exceptions being wells, spring channels and tanks deriving supply from a source other than a river. This Act has been amended by another act called the Andhra Land Revenue (Additional Wet Assessment) (Andhra Pradesh Amendment) Act, 1957. Under section 3 of this Act, the additional wet assessment of  $18\frac{3}{4}\%$  on wet lands has been raised to  $37\frac{1}{2}\%$  with effect from 1-7-57 the exceptions being wells, spring channels and rainfed tanks which derive supply of water for a period of less than 8 months in a year.

12. The collection of additional wet assessment is however subject to the conditions, that the additional assessment together with the land revenue assessment payable in respect of the land shall not exceed rupees thirteen and naye paise fifty *per acre* in the case of *single crop* wet land and rupees twenty and naye paise twenty five *per acre* in the case of *double crop* wet land and that if the land revenue assessment payable in respect of any land is higher than the maximum specified above, such land revenue assessment alone shall be collected.

### 7. Land Revenue—Standardisation of Assessment.—

The Andhra Land Revenue Assessment (Standardisation) Act, 1957.

13. The land revenue settlements introduced by the British and as developed in a ryotwari state like Andhra is one of the achievements of the British rule. But this system has been on trial ever since the depression in the thirties. The pattern of the country's agricultural economy has considerably changed from the time of the initial settlement owing to the violent fluctuations in the prices of agricultural produce. Thus the place of land revenue has also changed with the changing character of the economy. Progressive monetisation, the development of internal transport, the growing commercialisation of agriculture and the general evolution of an all India market with the steady support provided to local prices have served to lighten the burden of land revenue. Since the beginning of the 20th century, the monetisation of economy has been carried farther by the process of commercialisation of agriculture. There has been considerable increase in the area under commercial crops, oil seeds, sugarcane, cotton, etc. Though the total area under the commercial crops appear to be relatively small, when compared to the area under food crops, the commercial crops are of great significance as they have been leading to the monetisation of the rural economy to a much greater extent than the food crops. These changes in the pattern of agriculture have led to the rise in prices. Consequently there has been steady increase in the prices of foodgrains. Foodgrains prices in 1891 have risen about a third higher than in 1872, and in 1912 the prices have risen again a third higher than in 1891. The first world war has again led to a sharp rise in prices and the level of foodgrains prices has almost doubled. In 1929 however foodgrains prices have started to decline as a result of the depression. But the second world war has caused an increase in foodgrains prices to more than 4 times, the pre-war level. Those whose lands had been settled or resettled in one of the earlier periods have to bear a lighter burden of assessment than those whose lands have been settled or re-settled later. Disparities of this type have occurred due to

the postponement of resettlements as a result of the depression and the war. They can only be minimised by a readjustment of assessments in relation to the dates of resettlement or more accurately to the period taken into account at resettlement for fixing the price levels, on which among other things the revision is based. The movements in prices have been such that a certain degree of readjustment of this kind has become necessary on grounds of equity. In order to correct the existing disparities of assessment within the said limit and to the extent practicable, the rates of assessments have been standardised with the enactment of the Andhra Land Revenue Assessment (Standardisation) Act, 1956.

14. According to this Act the standard rates of assessment are fixed as follows : (a) in respect of (1) the Kadiri taluq of Anantapur district, (2) the Madanapalli and Voyalpad taluqs of Chittoor district (3) the Cuddapah district (4) the Guntur district (5) the Kurnool district excluding the Adoni and Aloor taluqs (6) the Nellore district and (7) the Srikakulam district excluding the Bobbili, Cheepurupalli, Palakonda, Parvatipuram, Pathapatnam and Salur taluqs, the current rates of assessment together with an addition of two annas in the rupee of such assessment in the case of dry lands and half anna in the rupee of such assessment in the case of wet lands.

(b) In respect of (1) the Chittoor district excluding the Madanapalli and Voyalpad taluqs (2) the Bobbili, Cheepurupalli, Palakonda, Parvatipuram, Pathapatnam and Salur taluqs of Srikakulam district and (3) the Visakhapatnam district, the current rates of assessment together with an addition of one anna in the rupee of such assessment in the case of dry lands and three pies in the rupee of such assessment in the case of wet lands and

(c) In respect of (1) the Anantapur district excluding the Kadiri taluq, (2) the East Godavari district, (3) the Krishna district (4) the Adoni and Aloor taluqs of Kurnool district and (5) the West Godavari district, the current rates of assessment without any addition.

15. The standardisation effected in the Andhra region was based on the recommendations of the Taxation Enquiry Commission, 1954.

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## CHAPTER VIII

### *Para 1.—Market Values of different types of agricultural lands*

1. The land value depends on the demand, which varies from district to district and on the conditions of the money market. The

value of the land also depends on the following factors :

(a) the existence of wells, water courses, facilities for storage or distribution of water for irrigation,

(b) the existence of works for the drainage of the land or for protection of land from floods or from erosion or other damage by water, and

(c) any reclamation work, levelling or bunding required.

2. The population has increased faster, than the expansion of cultivation. The increasing pressure of population on land, necessarily increases the competition for lands available for sale, with the result that prices shoot up.

3. Lands having special facilities for irrigation for first and second crops naturally fetch special prices. Many ryots do not possess plots, suitable for raising early seed-beds. Such lands should have special facilities for getting water in summer, either from a well, a tank or a spring. It very often happens, that lands adjoining a ryot's holding become available for sale. There are numerous cases where the purchase of such bits of land would enable the ryot to make a compact block of his field. In districts, where fragmentation of holding is so general, the ryots are naturally anxious to purchase such lands belonging to other ryots, as would enable them to save cultivation expenses and to consolidate their holdings. The sale might include land which contains a house or a cattle-shed or a well or fruit trees.

In such cases, naturally, the values are higher than other lands, on which, the ryot has not spent much for rendering it more fertile or for improving irrigational facilities. In many cases, very good lands are often sold either by small ryots, who are heavily involved in debts, or by those who wish to migrate from the village to some new area.

4. In the beginning of the last century, land values were low and the ryots wanted special privileges of relinquishing lands. Now, land values have increased appreciably and there are practically no cases of relinquishments of lands by the ryots, as the cultivation is generally remunerative. However, we do not have reliable and adequate data for arriving at the current market rates. A close examination reveals that the values of the lands, noted in the sale deeds, at the time of registration, are also not reliable and that there are many factors which induce a ryot to under-value the lands noted in the sale deeds, produced for registration. The Committee elicited information on the market values of lands in all the places visited.

5. The Committee is able to gather through their questionnaire, information about the market value of the lands of all varieties now prevailing in the several villages, of both the Andhra and the Telangana regions. The Special Collector for Nagarjunasagar Project has also furnished the Committee, the particulars of prices of lands in both the Telangana and the Andhra regions at which the land is acquired for project purposes.

6. One of the chief reasons for the increase in the land values is, no doubt, the rising prices, in the recent years, besides, the increased population and the increased cultivation, in these areas. The past history of the prices and the consequent trend of increased land values support the aforesaid view. Three long price cycles have occurred during the last 160 years, each covering about 50 years. Each can be divided into two parts : first, a period of rising prices, culminating in a peak during a war, and second, a period of decline following the peak.

7. Beginning in 1933 we apparently began a fourth cycle with prices rising to a peak after World War I.

The approximate durations of the periods are :—

(a) Rising prices	1790 to 1816.
(b) Falling prices,	1816 to about 1845.
(c) Rising prices	1845 to 1864.
(d) Falling prices	1864 to 1896.
(e) Rising prices	1896 to 1920.
(f) Falling prices	1920 to 1932.
(g) Rising prices	1932 onwards.

8. In each of the four periods of rising prices, the price of land tended to rise and debts were easier to pay either out of income or by sale of the property. Conversely, in periods of price-declines, farm-incomes and land values fell and debts, were more difficult to pay.

9. The details of land values in different districts as gathered from answers to questionnaire are enumerated below in a tabular form :

[ Statement.

Name of the district	Classification of land	Official or non-official	Range of market value per acre
(1)	(2)	(3)	(4)
			Rs.
1. Anantapur ..	.. Wet land	Officials	7 1,000 to 3,000 2 2,000 to 5,000 4 500 to 1,000
		Non-officials	11 500 to 2,000 1 3,000 1 4,000
	Dry land ..	Officials	10 50 to 500 3 501 to 1,500
		Non-officials	4 20 to 100 12 101 to 1,000
	Garden land	Officials	2 500 to 1,000 2 1,500 to 3,000
2. Chittoor	.. Wet land	.. Officials	1 500 to 1,000 14 1,000 to 3,000 1 4,500 to 7,000
		Non-officials	36 500 to 3,000 6 2,000 to 4,000 1 3,500 to 6,000 4 200 to 1,000
	Dry land ..	Officials	11 100 to 500 6 500 to 1,500
		Non-officials	28 100 to 500 7 500 to 1,500 1 1,500 to 2,000 2 50 to 500
	Garden land ..	Officials	4 100 to 1,000 1 1,000 to 3,000
		Non-officials	1 750
3. Cuddapah	.. Wet land	.. Officials	12 1,000 to 3,000 1 6,000 to 8,000 (in a few villages)
		Non-officials	8 400 to 1,000 16 1,000 to 3,000
	Dry land	Officials	6 100 to 500 3 500 to 1,500
		Non-officials	12 25 to 500 4 500 to 1,000

Name of the district	Classification of land	Official or non-official	Range of market value per acre
(1)	(2)	(3)	(4)
			Rs.
	Garden land ..	Officials	1 600 to 1,000 1 1,000 to 2,000 1 1,500 to 5,000
		Non-officials	3 500 to 600 1 1,000 to 2,000 1 6,000 Betel vines. 1 50 to 100 1 800 to 1,600
4. East Godavari	.. Wet land	.. Officials	4 1,500 to 3,000 3 500 to 1,000 9 3,000 to 5,000
		Non-officials	16 2,500 to 3,000 3 100 to 1,000 5 3,000 to 4,500
	Dry land	.. Officials	4 150 to 500 2 500 to 800 1 800 to 1,500 1 2,500
		Non-officials	5 50 to 500 3 500 to 1,000 3 1,000 to 2,000
	Garden land	Non-officials	1 1,250 to 2,500 1 500 (Plantain) 1,500 (Coconut)
5. Guntur	.. Wet land	.. Officials	5 1,500 to 3,500 4 3,000 to 4,000 2 4,000 to 5,000 1 7,000
		Non-officials	17 1,000 to 2,500 15 3,000 to 5,000 7 200 to 1,000
	Dry land	.. Officials	1 100 to 500 4 500 to 1,500 2 2,500 to 5,000 (Black cotton soil) 1 1,500 to 2,000
		Non-officials	13 500 to 2,000 6 2,000 to 4,000 6 100 to 500 2 50 to 200

Name of the district	Classification of land.	Official or non-official	Range of market value per acre
(1)	(2)	(3)	(4)
			Rs.
	Garden land	Officials-	1 5,000 to 6,000
		Non-officials	1 100 to 500
			2 800 to 1,200
			4 3,000 to 5,000
6. Krishna	.. Wet land	.. Officials	8 2,000 to 3,000
			4 1,000 to 1,500
			4 2,000 to 5,000
		Non-officials	6 1,200 to 2,500
			2 3,000 to 4,000
			3 4,000 to 5,000
	Dry land	.. Officials	4 500 to 1,500
			2 2,000 to 3,000
			2 300 to 1,000
			1 1,500 to 4,000
		Non-officials	3 500 to 1,000
			1 100 to 600
	Garden land	Officials	1 4,000 to 7,000
			2 3,000 to 6,000
7. Kurnool	.. Wet land	.. Officials	2 500 to 1,000
			9 1,000 to 3,000
			5 3,000 to 5,000
			1 3,000 to 6,000
		Non-officials	5 300 to 1,000
			3 500 to 1,500
			1 2,000
	Dry land	Officials	5 500 to 1,000
			10 100 to 500
			1 200 to 800
			4 150 to 1,500
		Non-officials	12 50 to 1,000
	Garden land	Officials	3 1,000 to 2,000
8. Nellore	.. Wet land	.. Officials	2 300 to 1,500
			3 500 to 3,000
			1 1,000 to 4,500
			9 2,000 to 3,500
			1 3,000 to 4,000



Name of the district	Classification of land	Official or non-official	Range of market value per acre
(1)	(2)	(3)	(4)
			Rs.
		Non-officials	14 1,000 to 2,500
			2 300 to 1,500
			10 3,000 to 5,000
			2 2,000 to 4,000
	Dry land	.. Officials	12 50 to 500
			1 3,000 to 4,000
		Non-officials	17 50 to 500
			2 500 to 1,000
			2 20 to 25
	Garden land	.. Officials	5 250 to 1,000
			1 3,000 to 4,000
			4 1,500 to 3,000
		Non-officials	4 500 to 1,000
			1 200 to 500
			3 1,500 to 2,000
9. Srikakulam ..	.. Wet land	.. Officials	12 1,000 to 2,000
			2 500 to 1,000
			4 2,000 to 3,000
			1 5,000
			1 500 to 3,000
		Non-officials	8 500 to 1,000
			16 1,000 to 2,000
			4 1,500 to 3,000
			1 200 to 500
	Dry land	Officials	14 500 to 1,500
			5 200 to 500
		Non-officials	13 500 to 1,000
			11 100 to 500
	Garden land	Officials	3 1,000 to 2,000
			4 2,500 to 5,000
		Non-officials	1 1,000
10. Visakhapatnam	.. Wet land	.. Officials	2 3,000 to 4,000
			3 1,000 to 2,000
			2 500 to 1,000
		Non-officials	8 500 to 2,000
			4 2,000 to 4,000
	Dry land	.. Officials	5 500 to 1,000
			2 100 to 500
			1 1,000 to 1,500

Name of the district	Classification of land	Official or non-official	Range of market value per acre
(1)	(2)	(3)	(4)
			Rs.
		Non-officials	10 100 to 1,000
			1 800 to 1,600
			1 300 to 1,500
	Garden land	Officials	1 1,500 to 2,000
		Non-officials	1 200
11. West Godavari	.. Wet land	.. Officials	2 1,500 to 2,000
			2 2,000 to 4,000
			1 1,000 to 3,000
		Non-officials	1 400 to 1,000
			1 1,000 to 1,500
			7 1,500 to 3,000
			1 1,000 to 4,000
			5 2,000 to 4,000
			1 5,000
			1 3,000 to 6,000
	Dry land	.. Officials	2 150 to 300
			1 800
			1 2,000
		Non-officials	4 50 to 500
			3 500 to 1,500
	Garden land	.. Officials	1 4,000 to 6,000
		Non-officials	1 500 to 1,000
12. Adilabad	.. Wet land	.. Officials	6 200 to 1,000
		Non-officials	11 300 to 1,000
			1 100 to 300
	Dry land	.. Officials	6 50 to 300
		Non-officials	8 125 to 300
			2 50 to 100
			1 1,000
			(Black cotton soil)
	Garden land	.. Officials	1 500 to 1,500
		Non-officials	1 500
13. Hyderabad	.. Wet land	.. Officials	2 300 to 500
	(single crop)		2 100 to 300
			1 500 to 1,000
	(double crop)	..	2 1,000
			3 300 to 500
			1 1,000 to 2,000

Name of the district	Classification of land	Official or non-official	Range of market value per acre
(1)	(2)	(3)	(4)
			Rs.
	(Single crop)	Non-officials	8 200 to 500
			3 500 to 1,000
			1 200 to 800
			1 2,000
	(Double crop)	Non-Officials	2 1,500 to 2,500
	Dry land	.. Officials	3 100 to 500
			3 50 to 100
		Non-officials	8 50 to 300
			3 30 to 60
			1 200 to 600
	Garden land	Officials	2 200 to 300
			2 300 to 400
14. Karimnagar ..	.. Wet land	.. Officials	2 400 to 1,000
	(Single crop)	Non-officials	11 200 to 1,000
			2 1,000 to 3,000
			2 500 to 2,000
	(Double crop)	Non-officials	3 2,000 to 3,000
	Dry land	.. Officials	2 50 to 100
		Non-officials	13 50 to 300
			3 300 to 500
			1 100 to 800
	Garden land	Non-officials	10 500 to 2,000
			1 1,000 to 3,000
15. Khammam ..	.. Wet land	.. Officials	2 300 to 1,500
			2 1,000 to 3,000
			1 800 to 2,000
			2 300 to 500
		Non-officials	7 500 to 1,500
			1 300 to 500
			1 1,000 to 2,000
	Dry land	.. Officials	3 300 to 800
			4 100 to 300
		Non-officials	10 50 to 500
	Garden land	.. Officials	1 600 to 700
16. Medak ..	.. Wet land	.. Officials	3 500 to 1,000
			2 300
		Non-officials	10 200 to 1,000
			1 300 to 1,200

Name of the district	Classification of land	Official or non-official	Range of market value per acre.
(1)	(2)	(3)	(4)
			Rs.
	Dry land	.. Officials 5	50 to 200
		Non-officials 15	50 to 500
	Garden land	Non-officials 4	100 to 300
17. Nalgonda ..	.. Wet land	.. Officials 3	300 to 500
		3	800 to 2,000
		1	3,000
		Non-officials 11	200 to 600
		4	500 to 1,500
		1	1,000 to 3,000
	Dry land	.. Officials 2	50 to 200
		3	150 to 800
		1	50 to 1,200
		Non-officials 11	100 to 500
		4	50 to 150
		1	30 to 60
	Garden land	Officials 4	300 to 700
		Non-officials 5	200 to 500
18. Nizamabad ..	.. Wet land	.. Officials 5	1,000 to 2,000
		1	400
		Non-officials 9	300 to 1,000
		6	1,000 to 1,500
		1	500 to 2,000
	Dry land	.. Officials 1	60
		1	100 to 500
		1	50 to 200
		Non-officials 8	100 to 500
		1	300 to 600
		1	50 to 100
	Garden land	Non-officials 1	300 to 500
19. Warangal ..	.. Wet land	.. Officials 4	300 to 1,000
		2	500 to 1,500
		1	2,000 to 2,500
		Non-officials 3	500 to 1,000
		4	1,000 to 1,500
	Dry land	.. Officials 1	1,500 (Alluvial)
			400 (B.C. Soil)
			100 (Chalka)
		4	50 to 300
		1	30 to 60
		1	1,000 (B.C. Soil)

Name of the district	Classification of land	Official or non-official	Range of market value per acre.
(1)	(2)	(3)	(4)
		Non-officials	6 100 to 500
	Garden land	Officials	1 150 to 300
			1 1,500
			1 200 to 500
		Non-officials	2 500 to 1,500
20. Mahboobnagar	.. Wet land	.. Officials	8 300 to 500
			1 150 to 200
		Non-officials	7 200 to 500
			2 500 to 800
			1 150 to 200
	Dry land	.. Officials	7 50 to 100
			1 30 to 50
		Non-officials	6 30 to 100
			3 100 to 300
	Garden land	Officials	1 150 to 200

10. Considerable importance will have to be attached to prices. A fall in prices of land is generally an indication that returns from agriculture are diminishing and vice versa. Though, we get now  $5\frac{1}{4}\%$  P.A. interest on Government securities ryots prefer to invest money on lands. This is partly due to the social prestige and satisfaction that a person derives by owning land even though there are many problems facing the land owner.

11. It may, however, be assumed, that generally investors will not go in for land, unless they get about 5% net return on the capital invested.

## Para 2.—Details of crops.

1. Details of single crops, dofassal crops, irrigated dry crops, garden crops, catch crops and green manure crops that are generally grown in Andhra Pradesh.

Crops may be analysed into :

1. Wet crops : (Heavily irrigated)

(i) Single crops.

(ii) Dofassal crops.

- (iii) Adsali sugarcane crop which stands on ground for 18 months.
2. Light irrigated crops.
  3. Dry crops :
    - (i) Kharif, Punasa or Mungari crops.
    - (ii) Rabi, Paira or Hingari crop.
  4. Garden crops.
  5. Catch crops.
  6. Green Manure crops.

There are some dry crops, which come under light irrigated crops also. The details are given below :

*Wet (or heavily irrigated) crops :*

- (i) Single crop—Paddy.
- (ii) Dofassal crop—Sugarcane, Betel-vines, plantains, turmeric and Elephantlyam.
- (iii) Adsali crop—Sugarcane.

*Light irrigated crops.*—Jowar, Maize, Ragi, Tobacco, Wheat, Barley, Groundnut, Onions, Chillies, Garlic, Potatoes, Sweet potatoes and all vegetables.

*Dry crops (Kharif crops).*—Jowar, Bajra, Ragi, Maize, Red-gram, Green-gram, Horse-gram, Black-gram, Groundnut, Sesamum, Korra, Varagu, Samai, Cotton, Chillies, Ginger, Deccan-Hemp, Coriander and Ajwan.

*Rabi crops.*—Jowar, Wheat, Barley, Bengal-gram, Castor, Linseed, Safflower, Mustard, Ramtil and Tobacco.

*Garden crops.*—Coconuts, Mangoes, Citrus fruits, Oranges, Mosambi, Lemon, Grapes, Pomegranates, Apples, Pears, Guava and Pappaya.

*Catch crops.*—Sunhemp, green-gram, Black-gram, and Pillipesara.

*Green Manure crops.*—Pillipesara, Sesbania, Daincha, Indigo and Sunhemp.

### Para 3—Rotation of crops.

The principle of dividing up the land and growing various crops, according to man's natural requirements, is so obvious that it has been adopted by cultivators all over the world.

It is, however, difficult to follow this procedure in the case of subsistence—farming, as in South India or where cultivators grow only a few crops and repeating the same from season to season. Good cultivators, as far as possible, avoid growing the same crop, on the same piece of land, for two years, in succession.

2. One advantage of the rotation of crops is, that it reduces damage by pests. If the same crop is grown every year on the same piece of land pests multiply, whereas they die out, if a different crop which is not susceptible to it is grown alternatively.

3. Different crops require different mineral salts though, in minute quantities. By growing the same crop, year after year, in the same land, the soil will become exhausted. Such exhaustion of soil is avoided by suitable rotation.

4. Nutrients from different strata are taken up by different crops. Crops like barley, exhaust the topsoil, while others such as cotton or maize, draw up food from the deeper layers of the soil.

5. Some ryots grow catch-crops, between two main crops, if the season is favourable. Some of the common catch-crops, are black-gram, green-gram and bengal-gram, buck-wheat, cow-pea and green manure.

6. *Black soils*.—Light textured and shallow black soils and all black-loam called 'Masab' and red loam called 'Chalka' lands are exclusively used for growing the Kharif, punasa or early crops, as these soils cannot support any crop growth in the dry winter season. Kharif crop is therefore, predominant in Telangana districts in which there are large extents of light or shallow soils. Bajra is sown in very light or shallow soils and yellow jowar, in medium soils. Heavy textured and deepblack soils can conserve enough moisture, and support the growth of Rabi crops even if there are no rains in this period. Rabi white jowar, wheat and Bengal-gram are almost a monopoly of deep-black soils. Cotton is a kharif crop and thrives well on medium soils. Groundnut is suitable in all soils and climates. Light black or sandy chalka soils are, perhaps, more suitable to it. Nalgonda and parts of Mahaboobnagar are similarly well known for castor.

7. In spite of these peculiarities of soils or climatic conditions, which are specially suitable to certain crops, these cannot be grown, year after year, on the same land, as the soils will get exhausted. Deep-rooted and shallow rooted leguminous and cereal crops are often grown alternate years or seasons on the same piece of land.

By growing deep-rooted crops, the plant nutrients from the deeper layers of the soil are taken by the crops, whereas the nutrients in the surface layers of the soil are left intact and by the time the shallow-rooted succeeding crops are sown in the next season, the natural recuperation of the surface layers of the soil will have been completed for supporting the shallow-rooted crops. Similar will be the case, with deep rooted crops which succeed the shallow-rooted ones.

8. Rotation patterns became more important in our enquiries because of wide difference between prices of commercial and food crops. Cultivation of commercial crops, like tobacco, cotton, castor, groundnut or sugarcane is today much more profitable to the cultivator than the cultivation of food crops such as wheat, jowar, cumbu or paddy.

(a) *Telangana.*

9. There are two main seasons for dry crop cultivation, kharif starting from June and Rabi starting from September. For wet lands also, there are two main seasons, Abi (Rainy season) and Tabi (Summer season). The latter crop is taken, when there is assured water supply in the tanks.

10. *Wet lands.*—Normally, no rotation of crops is adopted in the case of wet lands with good facilities for irrigation. A few cultivators, however, grow a green manure crop of sunhemp and rotate it with paddy but only on small areas. In kharif season, the usual rotation is jowar and maize followed by castor or groundnut. In Rabi the rotation normally is jowar, pulses and safflower and linseed. However, most of the cultivators resort to mixed cropping and grow usually two different crops of the same season together. One of these crops forms a major crop and the other one is grown in a few lines in between the major crop. For example where jowar is the major crop, it is always mixed with a minor crop, like ambhada, bullar and lobia.

11. In some of the districts of Telangana, rotation of crops is not followed in respect of wet cultivation. In Nizamabad, the rotation of crops followed in wet lands is jowar, gram and maize. Paddy is the only main wet crop whereas, the cash crops such as cotton, groundnuts, sugarcane, oil seeds and tobacco are also grown to some extent in the Hyderabad district.

12. *Black cotton soils.*—In the district of Warangal, the rotation of crops is done on black-cotton soil by alternating kharif-jowar with oil-yielding crops. In the district of Adilabad, this type of soil is used for Rabi crop.

13. *Red chalka.*—Chalka or loamy soils are well suited for orchards and garden crops. All irrigated crops like paddy and



sugarcane could also be successfully grown in chalkas. In the district of Warangal, the chalka lands are usually allowed to remain fallow for sometime after two successive crops are raised thereon. The paddy is grown either by broadcasting the seed or by transplanting the seedlings. The latter method is gradually becoming popular, since the crop grown by transplantation is less susceptible to failure and the yield is more than in the other case. The soil in the district of Warangal is generally of inferior chalka, in which only kharif crops can be grown, with success. It forms about 58% of the entire cultivated area. In the low lands, which receive deposits of silt washed down from higher regions by rain water, paddy is grown.

14. *Alluvial soils*.—The fertile alluvial soil on the bank of Godavari is really suitable, for the cultivation of virginia tobacco crop.

15. *Dry lands*.—In Hyderabad dry crops like jowar, groundnut, and castor are grown by rotation. If jowar is sown in the first year, groundnut or pulses, castor or ragi will be sown in the second year. The rotation of crops depends on the type of soil and the seasonal conditions.

(b) **The rotation for Perennial irrigation zones.**—

16. Paddy and sugarcane crops of the varieties noted below against each can be grown in rotation. The other alternative is to grow annually two crops of paddy year after year, one of long duration and the other of short duration, for the main and summer seasons respectively. The third alternative is to grow a green manure crop followed by samba paddy.

Serial number for the rotation of crops	Crop	Planting seasons	Harvesting	Remarks
(1)	(2)	(3)	(4)	(5)
I	(a) Paddy.	June-July.	December-January.	1st year.
	(b) Sugarcane.	February-March.	January-February.	2nd year.
	(c) Green manure.	April-May.	June-July.	} 3rd year.
	Paddy.	June-July.	December-January.	

(1)	(2)	(3)	(4)	(5)
II	.. Main season Paddy. Green manure. Summer season paddy.	June-July. November-December. February.	November-December. January-February. May.	} 1st year and repeated in second year.
III	.. Green manure. Main season paddy.	March. June-July.	June. December-January.	} 1st year and repeated in 2nd year.

17. *Wet zone.*—Early transplantation requires water for seed-beds from June onwards unlike late transplantation from September. Only paddy crop, year after year, can be grown, with the strains noted below, for the early and late seasons :—

Crop	Planting season	Harvesting	Remarks
(a) Green manure crop .. early or main season- paddy.	June July-August.	July. December- January.	} To be ploughed in after 7 weeks.
(b) Green manure .. Late season paddy, early type varieties.	June-July. September- October.	August-September January- February.	.. ..
Late varieties ..	September- October.	February- March.	..

18. *Dry irrigated zone.*—It receives water from June and up to the following February, and only one dry irrigated crop can be raised during the period. It is possible to raise bengalgram as a dry rainfed rabi crop by sowing in November, in the same land soon after the harvest of Mungari Jonna which should be sown early in June and harvested in October-November. In place of pulse crop, the cultivator can grow a fodder crop if he chooses. The rotation of crops suggested under the Tungabhadra Project is as indicated below :—

Crops	Sowing	Harvesting	Remarks	
(a) Groundnut, red-gram, mixture.	June-July. June-July.	October-November. January-February.	} 1st year, 3 year course rotation for deep soils.	
Mungari Jonna	.. June-July.	November-December		2nd year.
Green manure Combodia cotton	.. June. .. Middle of August.	July. March-April.		} 3rd year.
(b) Groundnut, red-gram mixture.	June-July. June-July.	October-November. January-February.	} 1st year course 3 year rotation for shallow soils.	
Green manure	.. June.	July.		} 2nd year.
Combodia cotton.	Middle of August.	March-April.		
Korra ..	.. June-July.	October-November.	3rd year.	
(c) Green manure Glumed wheat	.. June-July. .. October-November.	August-September. February-March.	} 4 year course rotation for deep and shallow soils 1st year.	
Groundnut	.. June-July.	October-November.		} 2nd year.
Red-gram manure	.. June-July.	January-February.		
Jonna ..	.. June-July.	October-November.	3rd year.	
Green manure	.. June	July.	..	
Combodia cotton	.. Middle of August.	March-April.	} 4th year.	

### (c) Circars

19. These districts receive rainfall both from the south-west and the north-east monsoons besides having assured supplies from major rivers like Godavari and Krishna.

20. The rotation of crops followed in Circars is given below :—

21. The main wet crop is, of course, paddy and the prevailing practice in both deltas is to grow a long period variety known as the "Sarva" crop between July and December. Transplantation of seedlings is almost the universal method and the system of single

seedling transplantation is common. These seedlings are raised in plots under wells or adjoining the channels and transplantation is started soon after the permitted date July 15th, after the lands are puddled.

22. In the Godavari western delta a field is, as a rule, permitted to take water for a second wet crop once in three years ; in the central and eastern deltas in alternate years, though channels under which there is a substantial area of sugarcane are kept open every year. The second crop grown is, usually a 75 days paddy and is known as the "Dalva" crop. Although the first crop is harvested early in December, yet the second crop is raised in February, if it is planted earlier, it invariably suffers from pests. This crop which matures late in April requires water up to the middle of April when supplies are apt to be low.

23. Both in the deltas and uplands, there are three seasons for dry cultivation, the "punasa", the "pedda" and the "pairu". The punasa extends roughly from June to September during the south-west monsoon, the pedda which extends from September to January benefits by both, while the pairu depends only on the north-east monsoon. Typical crops of each season for these areas are :—

Punasa .. ..	.. ..	..Gingelly. Rained paddy cumbu.
Pedda .. ..	.. ..	..Cholam, cotton.
Pairu .. ..	.. ..	..the grams.

24. The list is not exhaustive and some of the crops may be grown in any of the three seasons.

25. The seasons on the lankas are similar, save that there is no cultivation before the pairu season as those lie submerged during the floods.

26. In the wet lands in Godavari and Krishna deltas the first crop wet paddy is followed by either pulses like green-gram, black-gram or fodder crops like pillipesara and sun-hemp as second crop. In some cases vegetables like brinjals are also raised. In the sugarcane growing areas, of these deltas a three year rotation is followed with wet paddy and sugarcane crops. In place of sugarcane, turmeric is raised. The rotation may be in such cases sugarcane, turmeric and cholam in alternate years.

27. The dry lands of black-cotton soils follow a two year crop rotation of tobacco and chillies or cholam and groundnut

according to the fertility. The red soils, generally carry a two crop rotation with groundnut and cholam.

28. It may be observed that the crop pattern in recent years has altered from different types of food crops on dry lands to rotation with commercial or cash crops.

**Para 4—Items entering into cost of cultivation.—**

The actual cost of cultivation is not the same for all crops and for all classes and sorts of soil. It differs from place to place, from crop to crop under irrigated or dry cultivation.

(2) The items of expenditure usually included in the cost of cultivation are :

- (i) Cost of ploughing cattle.
- (ii) Cost of agricultural implements.
- (iii) Seed.
- (iv) Manure.
- (v) Wages for labour required for sowing, transplanting in wet, reaping and threshing.

This is arrived at by first ascertaining the extent of wet land or dry land that could be cultivated with one plough and one pair of bullocks under the ordinary conditions of the district.

(3) The several items entering into the cost of cultivation are mentioned below :—

**(a) Pay of farm servants employed on annual basis.—**

Usually arjot having 5 acres and more engages a farm servant, on an annual basis, to assist him in all activities connected with the cultivation. The salary is a legitimate item in the cost of cultivation.

An analysis of the answers to the questionnaire shows that the farm servants are paid annually either in kind, or in cash, or in both. Generally, the salary payable per annum ranges from Rs. 150 to 300 in addition to food. In cases where there is no provision for food, the pay of a farm servant varies from Rs. 300 to Rs. 400 per annum.

Besides the payment of annual wages either with or without food, it is obligatory in a majority of cases that farm servant is granted interest free loans and customary annual supply of a pair of clothes, a pair of chappals and tobacco, etc.

**(b) Piece-work rates in agriculture.—**

The rate of piece-work labour varies with the nature of work and the capacity of the piece-work labourer. The working capacity of a male, female or a boy labourer

is different and the wages payable to them also are in proportion to their working capacity. Different rates of wages are paid for different kinds of piece work. The different stages of agricultural operations in which wages on piece-work basis are paid, are mentioned below :

*Ploughing.*—Only the services of a male labourer are required and he is paid a daily wage ranging from Rs. 1-8-0 to Rs. 3 per diem. In almost all the cases whenever a wage of about Rs. 1-8-0 or Rs. 1-4-0 is paid, it is in addition to a meal given for the day employed.

*Transplanting.*—According to the answers received to the questionnaire, female labour is extensively employed and their wages range between Re. 0-12-0 to Re. 1 per woman per diem. Occasionally, males are also employed and their wages range from Rs. 1-8-0 to Rs. 2 per day.

*Weeding.*—This item of work is usually attended to only by females and cases of employment of men are rare. The rate of wage per male is Re. 1 to Rs. 1-12-0 per day and that of a female is Re. 0-12-0 to Re. 1-0-0.

*Harvesting.*—Both men and women are employed for this item of work and their wages range between Rs. 1-8-0 to Rs. 1-12-0 per man and Re. 1-0-0 to Rs. 1-4-0 per woman respectively per day.

*Threshing.*—Both male and female labourers are employed and they are paid wages ranging from Rs. 1-4-0 to Rs. 2-0-0 per man and Re. 1-0-0 to Rs. 1-8-0 per woman respectively per day.

*Earthing sugarcane.*—This item is attended to on a contract basis at Rs. 20 to Rs. 25 per acre.

*Stacking of straw and hay.*—Men are mostly employed for this item of work and they are paid Rs. 1-8-0 to Rs. 2-0-0 per day.

**(c) Cost of work-animals, their maintenance and depreciation.—**

As analysed from the answers to the questionnaire, the cost of a pair of bullocks of small size ranges from Rs. 200 to Rs. 1,000, of medium size from Rs. 300 to Rs. 1,500 and large size from Rs. 500 to Rs. 3,000. The annual maintenance cost ranges from Rs. 400 to Rs. 800 and the period of effective service ranges from 10 to 15 years. These statistics are taken into account, to include under the cost of cultivation, the depreciation of work-animals.

**(d) Agricultural implements needed for cultivation, their cost and rate of depreciation.—**

The following are the implements needed for cultivation. Their cost and period of duration is noted below. Their cost is also

taken into consideration, in arriving at the cost of depreciation of these implements, and including them in the cost of production of crops. Generally the cost of the implements and the period of wear and tear, vary from place to place. The wide range both in cost and the period of wear and tear is due to the variety of models and the material—wood or iron—they are made of.

Name of the implement	Cost in rupees	Normal life in years
(1)	(2)	(3)
Plough	7 to 50	1 to 8
Gorru	6 to 20	5 to 6
Guntaka	8 to 25	5
Danthi	10	5
Spade	2	2 to 4
Crowbar	4 to 8	5 to 12
Sickle	2	2 to 3
Seed drill	30	5
Iron plough	45	20
Cart	200 to 500	5 to 12
Paddy weeder	25	10
Levelling Board	10	2
Yoke	3	5 or 6
Axe	6	5 or 6
Palla Gorru	6	5 or 6
Jaddigam	3	5 or 6

(e) **Agricultural machinery, tractors, pumpsets, electric motors, oil-engines, their cost, maintenance, efficiency and depreciation.**

The following is a statement showing the Agricultural Machinery and Implements in use in Andhra Pradesh in 1956:—

(I) Pumps for Irrigation purposes:—

(a) Worked by oil engines	16,771
(b) Worked by electric power	3,220

**(II) Tractors:**

(a) Government	.. 549
(b) Private	..1,077
	1,626

The average cost of an oil-engine is estimated at Rs. 3,000 and the working charges at Rs. 10 per day, if it pumps out water sufficient to irrigate 20 acres. The expenditure incurred for irrigating one acre works out to Re. 0-8-0 whereas the manual labour required to lift the same quantity of water will be about Rs. 6 per day.

The cost of a tractor is about Rs. 20,000 and the working expenses amount to Rs. 50 per day. It ploughs an extent of about 50 acres a day. The manual labour to plough the same extent of 50 acres per day would cost Rs. 100. An ordinary ryot having a holding less than 100 acres cannot afford to maintain a tractor and derive any benefit out of it.

**(f) Other items such as interest on the capital value of the land.—**

This was not taken into account at any settlement or resettlements to work out the net-income from the land as the principles governing levy of income tax were not applied to agricultural incomes.

**(g) Management or supervision charges and contribution of labour by the farmer and his family.—**

In para 6 of his report Sri N. Raghavendra Rao observed as follows: "In this province the labour of the pattadar and his family is also included in calculating the cost of cultivation. It is however very difficult to determine it accurately but only a careful estimate is aimed at after local enquiry."

**(h) Cost of seed and Manure.—**

Manure again is largely gathered from cattle of the farm, or picked up by the children or women in the waste lands or is cut, as green manure, from the jungle. The cost of seed varies considerably from place to place. In some places where there is an early supply of canal water or there are seed bed tanks, the cost of raising seedlings per acre is considerably lower than in less favourably situated areas where the ryots are obliged to grow seedlings in other places by renting seed beds or to wait until canal water comes. Thus the cost of seedlings required per acre would be comparatively higher. There are occasions on which ryots have no other choice but to purchase seedlings from some of the neighbours or from distant places.



Most of the ryots do keep a portion of their previous years yield for seed purposes. But if such seed gets damaged or if a ryot changes his mind as to the type of paddy he should grow, he has to incur additional expenditure upon seed-beds. The cost of seed and manure is being deducted from the gross value of the produce to arrive at the net produce as it forms part of cultivation expenses.

(4) The cultivation expenses were calculated for each sort of land under each group of dry lands and each classification of source for wet lands. The maximum and minimum of the cultivation expenses allowed in the settlements are detailed below :—

	<i>Wet.</i>
Maximum	Rs. 20-0-0
Minimum	Rs. 3-4-0
	<i>Dry</i>
Maximum	Rs. 8-8-0
Minimum	Rs. 0-12-0

(5) The cultivation expenses as reported by the gentlemen who answered the questionnaire were discussed in para 5.

**5. Analysis of the figures of the cost of Production in dry and wet lands, from the answers received to the questionnaires and official reports.**

The statements are prepared from the figures of the costs of cultivation and gross incomes given in the answers to the questionnaire, received from the officials and non-officials. In spite of the fact that the different items which go into the cost of cultivation were mentioned in the questionnaire, it cannot be said that every one who has answered the questions, has adopted the same standards in computing the cost of cultivation. The Committee also did not have the scope for verifying the correctness of the figures given in the answers.

Statement showing cost of cultivation of one acre.

PADDY

District	OFFICIALS				NON-OFFICIALS			
	No.	Gross income	Cost of Cultivation	Net income	No.	Gross income	Cost of Cultivation	Net income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
1. Anantapur	10	517 0 0	266 14 5	247 1 7	12	461 6 9	418 8 0	42 14 9
2. Chittoor	12	541 8 8	317 4 4	224 4 4	31	496 2 1	309 11 4	186 6 9
3. Cuddapah	7	502 11 5	227 10 10	275 0 7	15	408 13 10	200 6 11	208 6 11
4. East Godavari	13	319 11 10	133 12 7	185 15 3	21	299 13 4	162 13 7	136 15 9
5. Guntur	8	381 8 0	157 13 10	223 10 2	26	352 9 8	153 15 10	198 9 10
6. Krishna	10	363 6 10	163 10 10	199 12 0	10	389 9 7	152 1 0	237 7 11
7. Kurnool	21	440 13 8	248 4 3	192 9 5	13	397 15 6	264 4 10	133 10 8
8. Nellore	16	357 9 0	168 14 0	188 11 0	26	305 5 9	174 13 2	130 8 7
9. Srikakulam	8	317 8 0	133 10 10	183 13 2	28	277 3 5	123 9 3	153 10 2
10. Visakhapatnar	5	337 3 2	134 1 3	203 1 11	10	327 4 9	187 8 11	139 11 10

11. West Godavari	12	332	4	0	150	14	6	131	5	6	16	302	3	7	163	10	11	138	8	8
12. Adilabad	2	382	8	0	143	0	0	239	8	0	3	405	0	0	266	10	8	138	5	4
13. Hyderabad	5	431	9	7	306	0	5	125	9	2	17	359	7	2	248	3	3	111	3	11
14. Karimnagar	..	..			..			..			17	282	12	6	205	14	0	76	14	6
15. Khammam	4	446	4	0	167	0	0	279	4	0	4	211	4	0	152	12	0	58	8	0
16. Mahbubnagar	4	387	6	4	287	8	9	99	13	7	8	344	15	4	289	5	3	55	10	1
17. Medak	5	314	0	0	231	8	9	82	7	3	12	361	3	4	221	4	2	139	15	2
18. Nalgonda	4	429	0	0	371	8	0	51	8	0	10	383	7	2	279	15	7	103	7	7
19. Nizamabad	..	..			..			..			17	278	0	0	202	1	3	75	14	9
20. Warangal	6	316	9	2	209	8	3	107	0	11	7	337	0	0	206	8	3	130	7	9

#### CHOLAM (JOWAR)

1. Anantapur	3	100	0	0	45	10	8	54	5	4	3	160	10	8	110	2	8	50	8	0
2. Chittoor	..	..			..			..			2	202	8	0	89	1	0	113	7	0
3. Cuddapah	4	151	12	0	62	2	3	89	9	9	6	93	10	8	69	13	3	23	13	5
4. East Godavari	4	117	10	8	66	7	1	51	3	7	3	116	10	8	66	4	0	50	6	5
5. Guntur	3	163	2	5	80	8	6	82	9	11	12	153	6	0	103	11	9	49	10	3
6. Krishna	1	126	0	0	112	1	0	13	15	0	..	..			..			..		
7. Kurnool	19	161	12	1	86	14	6	74	13	7	7	115	11	5	90	3	3	25	8	2

Statement showing cost of Cultivation of one Acre.—(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CHOLAM (JOWAR)—Contd.								
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
8. Nellore	3	248 10 8	116 10 8	132 0 0	7	172 2 3	107 7 1	64 11 2
9. Srikakulam	..	..	..	..	4	153 12 0	91 13 6	61 14 6
10. Visakhapatnam	..	..	..	..	..	..	..	..
11. West Godavari	1	210 0 0	111 8 0	98 8 0	1	200 0 0	158 8 0	41 8 0
12. Adilabad	2	110 0 0	86 8 3	23 7 9	3	153 5 4	110 10 8	42 10 8
13. Hyderabad	4	132 8 0	65 4 0	67 4 0	10	156 3 2	118 12 7	37 6 7
14. Karimnagar	..	..	..	..	11	98 2 10	67 14 5	30 4 5
15. Khammam	4	218 8 0	80 12 6	137 11 6	7	130 12 11	108 7 3	22 5 8
16. Mahbubnagar	3	147 3 11	82 7 1	64 12 10	6	106 1 4	75 5 4	30 12 0
17. Medak	1	161 0 0	88 0 0	73 0 0	9	135 4 5	97 4 7	37 15 10
18. Nalgonda	2	83 0 0	66 11 0	16 5 0	5	90 4 9	66 9 1	23 11 5
19. Nizamabad	..	..	..	..	1	70 0 0	54 0 0	16 0 0
20. Warangal	4	77 4 0	68 0 0	9 4 0	2	177 13 4	146 13 4	31 0 0
CUMBU (SAJJA)								
1. Chittoor	..	..	..	..	5	152 12 9	96 4 9	56 8 0

2.	Cuddapah	1	130	0	0	94	0	0	36	0	0	2	163	0	0	99	0	0	64	0	0
49	3.	East Godavari	..	..	..	..	..	..	1	138	0	0	69	0	0	69	0	0	69	0	0
4.	Guntur	..	..	..	..	..	..	..	1	39	8	0	10	12	0	28	12	0	28	12	0
5.	Kurnool	..	..	..	..	..	..	..	1	335	0	0	140	0	0	195	0	0	195	0	0
6.	Nellore	2	262	8	0	155	8	0	107	0	0	1	270	0	0	196	0	0	74	0	0
7.	Visakhapatnam	..	..	..	..	..	..	..	1	160	0	0	100	0	0	60	0	0	60	0	0

#### MAIZE.

1.	Adilabad	..	..	..	..	..	..	..	1	300	0	0	130	4	0	169	12	0	169	12	0
2.	Hyderabad	..	..	..	..	..	..	..	2	185	0	0	94	4	0	90	12	0	90	12	0
3.	Karimnagar	..	..	..	..	..	..	..	6	326	13	4	223	4	0	103	9	4	103	9	4
4.	Medak	2	130	0	0	108	12	0	21	4	0	1	60	0	0	40	8	0	19	8	0
5.	Nizamabad	..	..	..	..	..	..	..	2	190	0	0	135	8	0	54	8	0	54	8	0
6.	Warangal	..	..	..	..	..	..	..	2	423	0	0	271	8	0	151	8	0	151	8	0

#### RAGI

1.	Anantapur	3	281	10	8	216	12	0	64	14	8	5	296	12	9	198	0	0	98	12	9
2.	Chittoor	10	258	4	10	150	2	10	108	2	0	20	250	10	5	163	8	2	87	2	3
3.	Cuddapah	2	275	8	0	194	14	0	80	10	0	6	357	13	4	248	10	8	109	2	8
4.	East Godavari	1	120	0	0	47	0	0	73	0	0	..	..	..	..	..	..	..	..	..	..

Statement showing cost of cultivation of one acre—Contd.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>RAGI—Contd.</b>								
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
5. Guntur	..	..	..	..	1	208 0 0	130 4 0	77 12 0
6. Kurnool	1	245 0 0	215 0 0	30 0 0	..	..	..	..
7. Nellore	4	274 12 0	189 3 3	85 8 9	2	257 8 0	229 4 0	28 4 0
8. Srikakulam	5	135 0 0	90 4 0	44 12 0	1	1,200 0 0	841 8 0	358 8 0
9. Visakhapatnam	..	..	..	..	1	205 0 0	124 0 0	81 0 0
10. Hyderabad	1	215 0 0	137 0 0	78 0 0	1	130 0 0	34 12 0	95 4 0
11. Mahabubnagar	1	26 10 8	13 3 9	13 6 11	3	146 10 8	107 10 3	30 0 5
<b>VARIGA</b>								
1. Guntur	1	170 0 0	118 8 0	51 8 0	2	143 10 6	140 6 0	3 4 6
2. Nellore	1	152 0 0	113 0 0	39 0 0	1	48 0 0	46 0 0	2 0 0
<b>KORRA</b>								
1. Anantapur	2	130 8 0	88 6 0	42 2 0	1	105 0 0	77 0 0	28 0 0
2. Cuddapah	..	..	..	..	1	220 0 0	144 0 0	76 0 0
3. Kurnool	5	125 9 7	69 10 5	55 15 2	1	135 0 0	94 8 0	40 8 0

CHODI

1. Srikakulam									11	118	5	9	72	1	7	46	4	2
2. Visakhapatnam									2	281	0	0	194	0	0	87	0	0

DRY MIXED CROP

1. Anantapur	5	200	6	5	78	8	0	121	14	5	1	96	8	0	83	0	0	13	8	0
2. Cuddapah	1	230	0	0	89	0	0	141	0	0	5	189	0	0	128	6	2	60	9	10
3. East Godavari	1	80	0	0	46	9	9	33	6	3	..	..	..	..	..	..	..	..	..	..
4. Krishna	2	247	8	0	100	4	0	147	0	0	1	200	0	0	147	8	0	52	8	0
5. Kurnool	3	120	5	4	60	8	0	59	13	4	4	151	4	0	120	15	0	30	5	0
6. Nellore	2	400	0	0	111	12	0	288	4	0	1	80	0	0	59	0	0	21	0	0
7. Visakhapatnam											2	282	8	0	179	0	0	103	8	0
8. Adilabad											1	79	6	4	71	10	6	7	11	10
9. Karimnagar											1	192	0	0	98	0	0	94	0	0
10. Nalgonda	..	..	..	..	..	..	..	..	..	..	1	152	8	0	147	0	0	5	8	0

BENGAL GRAM

1. Karimnagar											1	80	0	0	43	8	0	36	8	0
2. Medak											1	200	0	0	109	6	0	90	10	0

*Statement showing cost of cultivation of one acre—Contd.*

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>GREEN GRAM</b>								
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
1. Hyderabad	1	120 0 0	71 2 0	48 14 0	..	..	..	..
<b>RED GRAM</b>								
1. Guntur	..	..	..	..	3	275 0 0	168 8 0	106 8 0
<b>BLACK GRAM</b>								
1. Guntur	1	90 0 0	42 0 0	48 0 0	..	..	..	..
2. East Godavari	..	..	..	..	3	113 8 0	42 5 4	71 2 8
3. Krishna	1	60 0 0	30 8 0	29 8 0	1	50 0 0	30 0 0	20 0 0
<b>HORSE GRAM</b>								
1. East Godavari	..	..	..	..	1	44 0 0	32 0 0	12 0 0
2. West Godavari	2	63 12 0	36 12 0	27 0 0	..	..	..	..
3. Hyderabad	1	70 0 0	53 0 0	17 0 0	..	..	..	..
<b>PULSES</b>								
1. East Godavari					3	71 5 4	16 2 0	55 3 4
2. Krishna					1	60 0 0	40 0 0	20 0 0
3. Nellore					1	42 0 0	39 0 0	3 0 0



4. Srikakulam	..	..	..	..	3	247	5	4	56	0	0	191	5	4
---------------	----	----	----	----	---	-----	---	---	----	---	---	-----	---	---

**CHILLIES**

1. Anantapur	..	..	..	..	1	450	0	0	294	0	0	156	0	0
--------------	----	----	----	----	---	-----	---	---	-----	---	---	-----	---	---

2. Chittoor	..	..	..	..	1	450	0	0	110	0	0	340	0	0
-------------	----	----	----	----	---	-----	---	---	-----	---	---	-----	---	---

3. East Godavari	2	366	9	7	167	8	0	199	1	7	1	500	0	0	382	0	0	117	8	0
------------------	---	-----	---	---	-----	---	---	-----	---	---	---	-----	---	---	-----	---	---	-----	---	---

4. Guntur	2	363	10	7	225	9	5	138	1	2	6	383	5	4	252	8	6	130	12	10
-----------	---	-----	----	---	-----	---	---	-----	---	---	---	-----	---	---	-----	---	---	-----	----	----

5. Krishna	1	420	0	0	301	0	0	119	0	0	..	..	..	..	..	..	..	..	..	..
------------	---	-----	---	---	-----	---	---	-----	---	---	----	----	----	----	----	----	----	----	----	----

6. Kurnool	..	..	..	..	3	261	10	8	234	3	4	27	7	4
------------	----	----	----	----	---	-----	----	---	-----	---	---	----	---	---

7. Nellore	3	1077	13	4	487	3	0	590	10	0	2	900	0	0	803	0	0	97	0	0
------------	---	------	----	---	-----	---	---	-----	----	---	---	-----	---	---	-----	---	---	----	---	---

8. Srikakulam	..	..	..	..	1	600	0	0	432	0	0	168	0	0
---------------	----	----	----	----	---	-----	---	---	-----	---	---	-----	---	---

9. West Godavari	5	533	0	0	237	9	9	295	6	3	1	600	0	0	390	0	0	210	0	0
------------------	---	-----	---	---	-----	---	---	-----	---	---	---	-----	---	---	-----	---	---	-----	---	---

10. Karimnagar	..	..	..	..	5	486	0	0	426	0	0	60	0	0
----------------	----	----	----	----	---	-----	---	---	-----	---	---	----	---	---

11. Mahabubnagar	1	75	0	0	27	0	0	48	0	0	..	..	..	..
------------------	---	----	---	---	----	---	---	----	---	---	----	----	----	----

12. Medak	1	800	0	0	706	0	0	94	0	0	1	400	0	0	335	0	0	65	0	0
-----------	---	-----	---	---	-----	---	---	----	---	---	---	-----	---	---	-----	---	---	----	---	---

13. Nizamabad	..	..	..	..	1	720	0	0	315	0	0	405	0	0
---------------	----	----	----	----	---	-----	---	---	-----	---	---	-----	---	---

14. Warangal	1	450	0	0	403	4	0	46	12	0	4	450	0	0	233	8	0	216	8	0
--------------	---	-----	---	---	-----	---	---	----	----	---	---	-----	---	---	-----	---	---	-----	---	---

**TURMERIC**

1. Cuddapah	..	..	..	..	4	1,016	4	0	792	0	0	224	4	0
-------------	----	----	----	----	---	-------	---	---	-----	---	---	-----	---	---

2. East Godavari	2	245	0	0	102	11	0	142	5	0	..	..	..	..
------------------	---	-----	---	---	-----	----	---	-----	---	---	----	----	----	----

Statement showing cost of cultivation of one acre—Contd.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>TURMERIC—Contd.</b>								
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
3. Guntur	..	..	..	..	1	900 0 0	660 0 0	240 0 0
4. Krishna	1	800 0 0	523 0 0	277 0 0	..	..	..	..
5. Hyderabad	1	750 0 0	425 0 0	325 0 0	1	420 0 0	400 0 0	20 0 0
<b>SUGARCANE</b>								
1. Anantapur	3	906 10 8	678 8 0	228 2 8	1	1,500 0 0	1,017 8 0	482 8 0
2. Chittoor	3	1,223 5 4	690 0 0	533 5 4	9	1,010 8 10	800 13 6	209 11 4
3. East Godavari	1	1,020 0 0	213 0 0	807 0 0	6	1,151 10 8	793 0 2	358 10 6
4. Krishna	2	1,400 0 0	856 2 0	543 14 0	..	..	..	..
5. Kurnool	1	800 0 0	784 0 0	96 0 0	..	..	..	..
6. Srikakulam	2	1,104 1 0	563 14 0	540 3 0	2	775 0 0	487 0 0	288 0 0
7. Visakhapatnam	2	1,500 0 0	901 11 5	598 4 7	6	1,160 2 8	875 6 8	284 12 0
8. West Godavari	3	1,466 10 8	846 3 4	620 7 4	1	1,200 0 0	735 0 0	465 0 0
9. Hyderabad	1	1,000 0 0	773 0 0	227 0 0	1	900 0 0	753 0 0	147 0 0
10. Medak					3	986 10 8	775 1 2	211 9 6
11. Nizamabad					5	1,521 11 2	991 8 0	530 3 2

ONIONS

1. Cuddapah	1	1,200	0 0	581	0 0	619	0 0
2. Medak	1	800	0 0	696	0 0	104	0 0

PLANTAINS

1. Nellore	..	..	..	..	1	1,500	0 0	1,214	0 0	286	0 0
2. Srikakulam	1	1,260	0 0	584	0 0	676	0 0	..	..	..	..
3. Visakhapatnam	..	..	..	..	2	846	8 0	619	0 0	227	8 0
4. West Godavari	2	1,001	4 0	465	8 0	535	12 0	..	..	..	..

GINGELLY

1. East Godavari	1	117	0 0	91	0 0	26	0 0	2	100	0 0	64	6 0	35	10 0
2. Srikakulam	..	..	..	..	..	2	82	8 0	58	8 0	24	0 0	..	..
3. Visakhapatnam	1	240	0 0	57	8 0	182	8 0	1	100	0 0	40	0 0	60	0 0
4. West Godavari	..	..	..	..	..	2	160	0 0	62	8 0	97	8 0	..	..
5. Adilabad	1	60	0 0	58	0 0	2	0 0	..	..	..	..	..	..	..
6. Karimnagar	..	..	..	..	..	3	66	10 8	63	15 6	22	11 2	..	..
7. Nizamabad	..	..	..	..	..	1	80	0 0	47	0 0	33	0 0	..	..

GROUNDNUT

1. Anantapur	8	226	4 0	116	6 0	109	14 0	5	166	0 0	119	0 0	47	0 0
2. Chittoor	10	224	12 9	106	6 5	118	6 4	21	204	1 10	116	7 5	87	10 5

Statement showing cost of cultivation of one acre—Contd.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GROUND NUT.—(Contd.)								
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
3. Cuddapah	4	194 4 0	104 5 0	89 15 0	10	195 7 2	128 10 4	66 12 10
4. Guntur	4	221 13 0	123 12 8	98 0 4	4	160 0 0	122 8 0	37 8 0
5. Krishna	3	305 0 0	183 10 8	121 5 4	..	..	..	..
6. Kurnool	18	206 11 1	113 9 1	93 2 0	4	211 4 0	122 0 6	89 3 6
7. Nellore	2	245 0 0	153 0 0	92 0 0	..	..	..	..
8. Srikakulam	1	250 0 0	160 0 0	90 0 0	3	308 5 4	101 2 8	207 2 8
9. Visakhapatnam	1	202 0 0	100 8 0	101 8 0	1	105 0 0	40 0 0	65 0 0
10. West Godavari	3	250 13 4	170 5 4	80 8 0	1	300 0 0	161 0 0	139 0 0
11. Hyderabad	4	148 12 0	70 9 6	78 2 6	..	..	..	..
12. Karimnagar	..	..	..	..	2	141 0 0	88 4 0	52 12 0
13. Khammam	..	..	..	..	1	150 0 0	79 0 0	71 0 0
14. Mahabubnagar	1	430 0 0	132 8 0	297 8 0	3	159 12 8	114 2 8	45 10 0
15. Nalgonda	2	150 0 0	107 8 0	42 8 0	2	144 8 0	95 12 0	48 12 0
16. Warangal	..	..	..	..	2	187 8 0	151 8 0	36 0 0

CASTOR																						
50	1. Hyderabad	..	..	..	..	..	2	77	4	0	41	8	0	35	12	0						
	2. Mahabubnagar	..	..	1	130	0 0 0	86	0	0	44	0	0	1	90	0	0	71	0	0	19	0	0
	3. Nalgonda	..	..	1	24	0 0 0	19	12	6	4	3	6	2	55	0	0	35	0	0	20	0	0
COTTON																						
	1. Anantapur	..	..	1	100	0 0 0	33	0	0	67	0	0	1	97	8	0	78	0	0	19	8	0
	2. Cuddapah	..	..	2	300	0 0 0	150	0	0	150	0	0	2	137	0	0	87	11	5	49	4	7
	3. East Godavari	..	..	1	106	10 8	61	1	3	45	9	5	..	..	..	..	..	..	..	..	..	..
	4. Guntur	..	..	..	..	..	..	..	..	..	..	..	1	30	0	0	21	0	0	9	0	0
	5. Kurnool	..	..	11	158	6 6	77	0	0	81	6	6	3	108	5	4	84	5	0	23	13	4
	6. Adilabad	..	..	1	180	0 0 0	103	0	0	77	0	0	1	173	0	0	126	8	0	46	8	0
FIBRE CROP																						
	1. Krishna	..	..	..	..	..	..	..	..	..	..	..	1	124	0	0	45	0	0	79	0	0
	2. Srikakulam	..	..	2	220	0 0 0	172	0	0	48	0	0	2	200	0	0	92	0	0	108	0	0
	3. Visakhapatnam	..	..	1	180	0 0 0	134	8	0	45	8	0	1	100	0	0	60	0	0	40	0	0
	4. West Godavari	..	..	1	36	0 0 0	22	8	0	13	8	0										
	5. Hyderabad	..	..	1	60	0 0 0	40	13	10	19	2	2										
	6. Medak	..	..	1	130	0 0 0	73	8	0	56	8	0										

Statement showing cost of cultivation of one acre.—Contd.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GANTI								
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
1. Visakhapatnam	2	166 0 0	84 0 0	82 0 0	4	310 0 0	230 4 0	79 12 0
TOBACCO								
1. Anantapur	..	..	..	..	1	385 0 0	260 0 0	125 0 0
2. East Godavari	3	666 10 8	354 0 0	312 10 8	..	..	..	..
3. Guntur	2	379 10 11	325 13 6	53 13 5	10	519 6 4	263 2 0	256 4 4
4. Krishna	4	1,001 4 0	576 10 0	424 10 0	..	..	..	..
5. Nellore	..	..	..	..	1	375 0 0	224 0 0	151 0 0
6. West Godavari	6	773 8 0	479 11 4	293 12 8	4	881 8 0	716 1 0	165 7 0
7. Khammam	1	350 0 0	210 0 0	140 0 0	1	625 0 0	591 0 0	34 0 0
8. Nalgonda	..	..	..	..	1	220 0 0	170 0 0	50 0 0
COCONUT								
1. East Godavari	2	312 8 0	185 12 0	126 12 0	2	447 8 0	214 8 0	233 0 0
2. Srikakulam	1	500 0 0	350 0 0	130 0 0	1	350 0 0	180 0 0	170 0 0

GREEN MANURE

1. Anantapur	..	..	1	192 0 0	136 0 0	56 0 0	..	..	..	..
2. Chittoor	..	..	..	..	..	..	1	120 0 0	33 0 0	87 0 0
3. Krishna	..	..	1	30 0 0	14 0 0	16 0 0	..	..	..	..

FODDER CROP

1. Guntur	..	..	1	137 12 10	88 13 2	48 15 8	1	96 0 0	18 0 0	78 0 0
2. Krishna	..	..	..	..	..	..	2	40 0 0	20 8 0	19 8 0
3. Nellore	..	..	..	..	..	..	1	16 0 0	11 0 0	5 0 0
4. Hyderabad	..	..	1	150 0 0	114 6 0	35 10 0	..	..	..	..



**REPORT**  
OF THE  
**LAND REVENUE REFORMS COMMITTEE**  
1958-1959

**PART II— Volumes (iii), (iv) & (v)**

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**K. N. ANANTA RAMAN, I.C.S.**  
*Chairman.*

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**K. N. ANANTA RAMAN, I. C. S.**  
*Chairman.*

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**REPORT**  
**OF THE**  
**LAND REVENUE REFORMS COMMITTEE**  
**PART II—Volume (iii)**



## PART II.

### INTRODUCTION.

Even after the integration of the Telangana region of the erstwhile Hyderabad State with the former Andhra State, effected on the 1st November 1956, Andhra Pradesh continues to have two different land revenue systems. Disparities in the pitch of land revenue assessment are believed to exist between the two regions of the State as also between the different tracts settled at different periods. It has been mentioned in chapter I of this report that the Government have appointed this Committee to examine the existing systems, rates of land revenue assessment and irrigation charges obtaining in the various regions of the State and to make suitable recommendations for their rationalization. In chapter II a picture of the resources of the Andhra Pradesh has been given with the historical background of the land revenue systems. The principles and methods followed during the previous settlements and resettlements in Andhra and Telangana regions have been explained in chapters III and IV respectively and the differences between the two systems have been mentioned. Even though the basic principles are similar in both the systems, yet there is some difference in their application. Both in Andhra and Telangana, settlements have been carried out taking many factors into consideration. In Andhra, soils have been analysed into classes and sorts and the rates of assessment, called 'tarams' have been fixed on the basis of yields. Villages have been divided into groups with reference to the transport facilities and the situation of the markets. In Telangana, besides the composition, the texture and the depth of the soils, the distance of the fields from the village have also been taken into consideration in fixing the assessment. The yield from the lands, the cost of cultivation and the net income from the lands have been calculated in both the cases. While in Andhra, the assessment has a direct bearing on the net yields thus arrived at, in Telangana they are taken only for purposes of comparison in fixing the assessments which never exceeded half of the net income to the ryot. It is necessary to rationalize the two systems following the principles of uniformity, equity and simplicity. Similarly in chapters V and VI the methods of irrigation followed in both the regions and a brief summary of rules and orders relating to the levy of consolidated wet assessments and water-rates in all the districts have been

given. In chapter VII an attempt has also been made to assess the incidence of taxes other than land assessment on the farmer. The cost of cultivation and economics of farming are dealt with in chapter VIII.

Part II of our report contains our recommendations and suggestions for rationalizing the levy of assessments and water charges and other allied matters.

## CHAPTER IX.

### *Role of Developmental Activities.*

During our tours in the State for studying the problems connected with land assessment, irrigation and agriculture, several representations were received from the agriculturists about deterioration in cattle wealth, difficulties in obtaining green manure, lack of adequate credit facilities, supply of good seeds, non-availability in adequate quantities of fertilizers, pesticides, iron, fuel, agricultural implements, pumping sets and accessories to oil engines used for pumping water, etc. The farmers also represented that even when some of these materials had been supplied, the supply was often not in time and that consequently the benefit derived was little. Everywhere the agriculturists linked up all these matters with land revenue and water rates, and urged that the inadequacy of these facilities has resulted in low returns from the agricultural lands. These factors, they represented, have a direct bearing on the costs of cultivation, the yields and the income to the ryot, which in their turn influence the pitch of assessments on land and also the irrigation charges. We agreed with them and considered it necessary to ascertain the views of the public in general on these matters and included questions relevant to the developmental activities in parts V and VI of the questionnaire issued by us. In this chapter we have dealt with the role of developmental activities and given our suggestions to promote the welfare and the prosperity of the ryots after analysing the answers received.

*Paragraph 1.—Existing difficulties in obtaining green leaf manure in adequate quantities from forests.*

The Chief Conservator of Forests is of opinion that all species in a forest cannot be used as green manure with equal advantage, that only leaves of some species may be more useful and that it is not desirable to allow the ryots to pick, and choose the leaves as there is a likelihood of indiscriminate

defoliation on the whole. He is not in favour of removing green leaf from the forests for use as green manure on the ground that—

(1) leaves of species usually found in the forests are not very useful as green manure;

(2) that the forests will be denuded and

(3) the soil in the forests will get gradually impoverished—as the dry and decaying leaves which contribute to the humus will diminish largely in quantity if leaves are removed, and taken away even when they are green.

The ryots of Chittoor district, however, were quite emphatic in this matter and said that they have been using every kind of leaf from the forest and that it gave them good results. Shri M. S. Sivaraman, I.C.S., when he was Director of Agriculture, Madras, initiated an intensive propaganda that green leaves of *Sesbania* and *Glyricidia* are very useful as green manure.

2. We feel that the opinion of the Chief Conservator of Forests about the value of green leaf as manure cannot be accepted *in toto*—though his arguments against large scale removal of green foliage from forests has to be given due weight.

3. A summary of the answers received by the officials and non-officials is given below:—

Twelve officials and nine non-officials have stated that no difficulty is experienced in obtaining the permits from the Forests Officers to get the green leaves from the forests while 9 officials and 29 non-officials stated that there are difficulties in obtaining permits from the Forests Officers. One official said that in order to get the permit, it will take at least six months. Three other officials stated that they must go to the taluk headquarters to get the permits thereby incurring heavy transport charges. Another non-official stated that he was finding it difficult to get the permits because the authority of granting them is not working under the Tahsildar. One official has suggested that the power to grant permits, must be in the hands of Revenue Department. One non-official said that the permission should be given at a short interval and local peo-

ple may be entrusted on commission basis as was done previously. Two officials and three non-officials in Guntur district have stated that there are no forests and even if there are, they are not big ones. In Cuddapah there is no demand for green manure leaves. Two officials and four non-officials of East Godavari district stated that generally permits are not sought for. Some of the officials and non-officials suggested that green manure leaves should be brought from forests and sold to the ryots at their fields at subsidized rates during the season and that water facilities should be created for growing green manure crop in the fields, which are at the tail end of the source. All the officials and non-officials stated that the common green manure crops cultivated are Indigo, Sunhemp, Pillipesara and Daincha. Steps may be taken to popularize the practice of green manuring wherever feasible. Seeds of green manure crop should be supplied free.

4. The Committee considers that the demand for green leaf from the forests is mostly a local problem. The ryots may be allowed to gather green leaves from the coupes which are proposed to be auctioned in the next year so that the defoliation might not affect the growth. If the Forest Department apprehend defoliation and damage, we would recommend that green leaf manure may be gathered by the Department and sold to villagers at a reasonable price. The Chief Conservator of Forests it may be remembered, had his own doubts about the value of green manure. His views on the question of defoliation and the consequent deleterious effect on the forests have to be given due weight. The only question is whether we cannot strike a balance between the needs of the ryot on one hand, and that of the forest itself on the other and whether a certain amount of defoliation cannot be permitted. Conditions vary from district to district and from forest to forest. Just as a little donation of one's blood is not harmful, trimming of the hedges and pruning of shrubs is not only not harmful, but actually beneficial, some areas in forest could also stand a little defoliation. The Chief Conservator of Forests should certainly be allowed to say the last word about the closing of any particular area for the supply of green leave for manure, but exceptions could be made.

5. The Committee is unanimously of opinion that the ultimate solution should be to grow one's own green manure and to utilize the available green leaf to the maximum extent. The

Forest Department should be liberal in granting permits by issuing them in lump sum to Panchayats for distribution among the needy. The removals, however, should be under the strict supervision of the Officers of the Forest Department.

*Paragraph 2.—Promoting agricultural prosperity and its effect on the taxable capacity of the ryot.*

*Improved seeds.*—Improved seeds are multiplied and distributed through departmental depots at subsidized rates. Several strains suitable for different tracts are evolved in the research stations and they are released for extensive use after establishing their superiority over the local seed. These seeds generally give 10 to 15 per cent increased yields over the locals. Seeds are also carried to the interior villages through departmental lorries and distributed to the cultivators without any extra charge. To cope with the increased demand for improved seeds, seed farms and seed stores are being organized one in each Development Block to meet the requirements of Block-villages. The use of good seed is very important and with each variety should be distributed pamphlets containing detailed instructions for its proper use. Each variety has its own requirements of water and fertilizer. Time of planting, spacing and, therefore, seed rate would be different for each strain. All these details must be worked out for each improved strain for each area, before seeking to distribute the same. Quality of the seed is very important and should not be sacrificed for quantity. A good seed naturally spreads and hence small quantities of genuinely good seed distributed among a large number of progressive and enterprising farmers each year will feed the rest of the community.

*Fertilizers.*—Fertilizers are being distributed through the co-operative depots and from departmental godowns located at various centres, so as to be within easy reach of cultivators. There are altogether 248 godowns functioning in Telangana where fertilizers are stocked and distributed to cultivators by the department. In the Andhra area, the distribution of ammonium sulphate is made through Co-operative Societies and 334 depots have been opened by them so far. Fertilizers are distributed to cultivators both on cash as well as on credit. Taccavi loans for the purchase of chemical fertilizers are sanctioned under a special scheme called 'Intensive Manuring Scheme', in the Andhra area. In this scheme, loans are granted to cultivators up to a maximum of Rs. 500 per individual. In

the Telangana area, Taccavi loans are sanctioned for the purchase of fertilizers by the Revenue Department, on the recommendations of the officers of the Agricultural Department. In order to enable the cultivators to make proper use of fertilizers, a pamphlet has been prepared on the dosage, time and method of application of various fertilizers that are used in the State. It is proposed to print this pamphlet for distribution on a large scale to the cultivators as well as to Village Level Workers and Extension Officers in Agriculture, etc. The quantity of fertilizers supplied should be on the basis of the extent of land that a particular ryot owns. Cow-dung and rice-husk are being used as fuel in some of the villages as they are cheap and economical. Cow-dung and compost manure have much more and probably lasting fertilizing value than many artificial fertilizers. In our villages it is the general practice for cultivators to use fertilizers only for the main crop.

Newer fertilizers are being put in the market but their effect on all the crops of the State have not been worked out. It is a serious matter that the fertilizer bag does not carry with it any detailed instructions as to its use. Expansion of irrigation is making heavy demands on our fertilizer resources and shortage in supply is holding back progress. More production can only be built on the basis of larger supplies of plant nutrients and chemical fertilizers are the main source. However important green manuring and conservation of yard manure may be, it is impossible for us to obtain all our requirements of plant nutrients from these sources. We cannot over-emphasize the need to augment supplies of chemical manures.

With regard to rules governing the supply of these on credit, there is an urgent need to revise them and make them applicable to the whole State.

*Cement.*—The State Government allots a specific quota for agricultural purposes and permits are issued by the Director of Controlled Commodities on the recommendation of the Officers of the Agricultural Department. Cement is available in liberal quantities and cultivators are not experiencing any difficulty in obtaining their requirements at present, but when there is scarcity, the supplies have been extremely inadequate to the cultivators.

*Pesticides.*—Basic stocks of pesticides of approved specifications and quality required for the area are stocked in the

departmental depots. The pesticides are at present obtained through the Central Stores Purchase Department. The annual consumption of pesticides is approximately Rs. 4 lakhs. In Andhra area pesticides are not sold at 50 per cent concessional rates while in Telangana pesticides continue to be sold at 50 per cent concessional rates. Proposals are under consideration to revive the concessional sale of pesticides in Andhra region also. There is no scarcity of pesticides and we were told that if used they give sure relief in the case of several pests. We are, however, not able to reconcile this with the statement of ryots even in Guntur that pest on groundnut is causing havoc. Obviously much remains to be done by the scientists or else a ryot in Guntur would not fail to use a readily available pesticide if he could positively check the pest on his all important groundnut crop.

Similar was the statement of a ryot and a legislator in Kurnool district who offered to pay the salary of a District Agricultural Officer, plus all costs if only he can stay and control pests and diseases on his chillies.

We, therefore, suggest that more scientific talent must be concentrated on this problem and more applied research carried out to precisely determine the dosages and time of application, etc. No effort should be spared to make plant protection methods a success.

*Fuel.*—Coal is required by the tobacco growers for curing their tobacco leaf in barns. Supplies are obtained from the Director of Controlled Commodities on the recommendations of the Central Excise Officials.

*Fuel oils.*—The agriculturists obtain their requirements from the dealers in the local market without difficulty as there are several agencies supplying these oils. We learn there was an attempt on the part of farmers to get their requirements exempted from excise duties and sales taxes but they have not borne fruit.

*Iron.*—Specific quota is allotted by the Director of Controlled Commodities for agricultural purposes and permits are issued by him to individual applicants on the recommendations of the Officers of the Agricultural Department. To make implements readily available to cultivators, the department has encouraged local fabricators to undertake the fabrication and

supply of indigenous implements to suit the requirements of the local cultivators. Regular quotas of iron are arranged to these fabricators for manufacturing implements. There are at present 169 fabricators, 75 in Andhra and 94 in Telangana regions.

Improved implements are also supplied to the agriculturists under hire-purchase system repayable in easy annual instalments. However, such implements are very uncommon in the villages eventhough the supply is adequate with reference to the present demand; but Agricultural Extension Services must create further demands. Moreover efficiency of tools is a sure indication of the progress of the people and measured from this angle we are still primitive.

We consider the wooden country plough and the country bullock cart, without either a machined axle or even a ring oil bearing or a grease cup, as symbols of the backwardness of our agriculture and as long as this continues, so long will production and productivity and, therefore, the taxable capacity remain to the lowest ebb.

*Tractors and pumpsets.*—Despite the fact that large number of ryots are either not in need of tractors or can afford to buy them yet the demand far exceeds the supply. Tractors are not being imported but there are operations like reclamation, ploughing, grading, levelling, etc., which can be done well and more economically by tractors alone with appropriate attachments.

Regarding pumpsets the same condition prevails and indigenous manufacture is not keeping pace with demand and is not even able to maintain quality. We believe it is a wrong policy to allow quality to deteriorate and make farmers suffer. It may be better to subsidize the natural industry and enable them to compete with imported material in quality and workmanship. We are interested that the Indian farmer technically backward—as he is—should not be further burdened with less efficient equipment.

Loans are granted by Government, to encourage intending cultivators to purchase the machinery of their choice from local firms.



2. A summary of replies given by officials and non-officials in regard to the agricultural supplies is as follows:—

Six officials stated that the agricultural supplies are not available, whereas four officials and four non-officials have stated that they are not available in time and at reasonable prices with some exceptions. One non-official stated that only fertilizers and manures are available in time, but not iron, cement and pumpsets. One official said that the fuel oils are only available in big taluk headquarters towns. One non-official stated that the rates of pumpsets are not reasonable and that the number of sets made available is not adequate. Three officials and 13 non-officials have stated that there is much black-marketing in these commodities and they have stated that the supply of these commodities should be increased. Seven officials and four non-officials, stated that cement and iron are not available, and if they are available they are available only to the influential ryots, but not to all. One non-official stated that the agricultural supplies are available only to the rich people and only to 1 per cent of the poor.

3. The impression which the Committee has gained during its tours is that the ryot is not able to secure the chemical fertilizers he needs in proper time and in adequate quantities. As a consequence he has to make at least a dozen trips to the taluk headquarters for getting supplies of (1) fertilizers, (2) iron, and (3) permits for green leaf. If the cost of these trips is added to the cost of production, the net income of the ryot is materially affected.

4. In olden days, the ryots had no need to go to any taluk headquarters except for jamabandi, and even then only when they had petitions to present. But now a ryot has to depend on the taluk headquarters for carrying on the day to day operations of agriculture. The system of issuing permits has almost upset the economy of the ryot. It has no doubt the advantage of even distribution and preventing accumulation. But in actual working, complaints are still being heard about the difficulty in obtaining the permit and the non-availability of stocks even though a permit is given. The system of issuing permits has led to the monopoly in the supply of articles essential to agriculture. These articles should be allotted village-wise on the basis of the area of wet land and should remain without sale for at least 6 months if there is no

demand. This method can be adopted in the case of iron at present. In the case of fertilizers, the supplies should be kept at firka levels at least two months in advance of the date of need and the necessity for redistribution should be examined only 15 days after such date. There will be need for fertilizers for persons who sow seed late and also those who transplant late. Decentralization of power, quick movement of stocks to local depots and avoiding delay, in fixing prices might improve the situation. The supply position, so far as the ryot is concerned, in regard to fertilizers, and iron is not so rosy as the Director of Agriculture or the Registrar of Co-operative Societies have represented to the Committee.

5. Cattle manure which in addition to humus and major plant nutrients also contains small quantities of micro-nutrients like molybdenum, boron, etc., which play a very essential part in controlling the growth and yield of plants, has to be carefully preserved and utilized. The value of cattle manure as a fertiliser cannot be over-estimated. The full manurial value of cattle dung is not utilized as it is not stored properly and allowed to mature in the proper manner. In India there is a strong prejudice against the use of human excreta though it is not to be found in the Asian countries like China and Japan. Composting of town rubbish with excreta has been more or less perfected during recent years.

6. The next question relates to the problem of supplies of essential goods to the cultivators. A distinction must clearly be made between the requirements of peasant as a producer of farm commodities and as a normal consumer. His requirements vary from area to area and will continue to multiply both in quantity and variety as our production plans go into operation. The essential articles for production are: (1) fertilizers, (2) pesticides, (3) iron for carts and agricultural implements and for cattle sheds, etc., (4) indigenous implements, (5) improved equipment including sprayers and dusters, (6) electric motors, diesel pumpsets and accessories and spares, (7) cement for construction of wells, channels, cattle sheds, etc., (8) fuel and lubricating oils, (9) tractors, and (10) green leaf for manure. In advanced countries the supplies are normally made by trade. However, in our country supply is so small and the expected demand, so unsteady that trade cannot be entrusted with the work of distribution equitably. Therefore—

- (1) the State should provide the supplies until trade is able to take over the functions;
- (2) the quality should be of prescribed standard;
- (3) the price should be fair to the cultivator; and
- (4) the supply should be timely and adequate.

Farmers cannot be expected to check up these points by themselves and Agricultural Department will have to undertake this job. The supply agency, therefore, has to be separate from the technical staff. A suitable agency needs to be devised. We are of the opinion that the taxable capacity of the ryot would be affected, if the requirements of the ryot are not met in good time and in required quantities, of acceptable quality and at a reasonable price. We, therefore, recommend that the Government may ease the supply position on the lines indicated above.

*Paragraph 3.—Adequacy of staff, equipment and pesticides available to control pests and plant diseases.*

*Control measures taken by the Agricultural Department.—*The plant protection wing of the Agricultural Department is intended to undertake control and remedial measures whenever any outbreak of pests and diseases on crops are reported. Plant protection equipment like power sprayers, dusters and other hand-operated implements are stocked in the depots for demonstration and for use in case of emergencies. The equipment is also hired out to cultivators at nominal rates in Andhra districts. The following equipment is available with the department at present.

		<i>Andhra</i>	<i>Telangana</i>	<i>Total</i>
Power sprayers	...	53	9	62
Power dusters	...	4	3	7
Hand-operated sprayers	...	1,141	221	1,362
Hand-operated dusters	...	1,160	2,147	3,307
Seed mixtures	...	—	11	11
Petromax lights (Efar)	...	—	138	138

The Agricultural Department proposes to further strengthen the equipment in the State during the Second Five-Year Plan period as follows:—

Power sprayers	...	330	10	340
Hand sprayers	...	2,000	60	2,060
Hand dusters	...	2,000	60	2,060

The Department has also purchased 4 mobile vans to carry important pesticides to villages and make them available at the doors of cultivators. These vans are also fitted with all kinds of equipment for use in emergencies. Ever since the plant protection scheme came into operation, valuable work is being done in the State. Paddy, the major food crop in the State is subjected to more than a dozen insect pests and diseases and unless all these are controlled in time, when the pest or disease is most vulnerable, heavy losses are inevitable. Extensive use of pesticides at the right time may effectively control them. If the insect is tackled at the larval stage, it can be controlled easily. As an instance it was brought to our notice in Nellore district where due to prompt action the attack of the paddy earheadbug was controlled effectively, within a week in an area of nearly 20,000 acres by using 250 tons of pesticides. Mixing of sulphur with the seed for the control of grain-smut on jonna and the gammexene dust against grass hoppers, earheadbug, etc., have been well established as popular remedies. Among fruits, mango is important in this State. Poor yields are a normal feature due to the incidence of a sucking insect called 'Mango Hopper'. Similar steps could be taken for controlling the pests and diseases of citrus and other fruit trees. Vegetables particularly exotic varieties could not be grown successfully in several districts due to heavy incidence of pests and diseases. Now large areas are grown as effective control measures are undertaken by the growers. Similar attention has been paid by the plant protection staff for the protection of commercial crops. Chillies in Guntur, Krishna, West Godavari, East Godavari districts faced extinction due to the heavy incidence of the pest called thrips; ryots grew despondent and doubted whether it would be possible ever to grow chillies successfully. It was demonstrated that thrips could be easily controlled by the application of chemical pesticides. At present this pest has ceased to be a serious problem. Tobacco nursery growing was a very speculative enterprise previously because a serious disease called 'Damping off' and a cut worm called 'Prodenia' completely destroyed the nurseries. Tobacco is an important cash crop for the Circar ryot, besides being a valuable earner of foreign exchange. By intensive propaganda and demonstrations, the control over the pests and diseases of tobacco nurseries has reached the door of every tobacco grower. It may be mentioned here that during 1955, a phenomenal attack of plant lice on tobacco occurred in Guntur, Krishna, West Godavari

and East Godavari districts. The attack was unprecedented and the entire resources and ingenuity of the plant protection organization were pooled to combat this pest and nearly 40,000 acres were treated against this pest. Useful work has also been done in Telangana to control paddy pest called hispa on a large scale.

2. A summary of replies received from officials and non-officials which gives a different picture is detailed below:—

Nineteen officials and thirty-seven non-officials have stated that they are getting the advice from the departments regarding the pests and diseases while 4 officials and 11 non-officials, have stated that they are not getting any advice from the departments. Seven officials and twelve non-officials have stated that the advice sought from the departments is beneficial and they have also stated that they were able to get rid of the pests when they were attacking chillies and paddy. Two non-officials have stated that their advice is not practicable. One non-official has stated that the advice has been sought but due to the inefficiency of the staff, there was loss of crop. Another non-official has stated that the Agricultural Assistant rarely visits the villages and he is not known to the cultivators of the village.

3. From the replies to the questionnaire received from non-officials and replies given by officials we find that:—

(1) In a large number of cases while the department said that effective control is possible, the ryots feel that the department have done nothing to combat the pests.

(2) Enormous loss by insect pests and diseases, in the case of almost every crop notably groundnut, castor and chillies has been reported from most of the districts.

(3) In large number of cases department is content in making only the recommendations and while welcoming Government of India's recent decision to subsidize all pesticides, we make the following suggestions:—

(a) A similar subsidy in equipment and liberal import of power-sprayers and dusters is necessary.

(b) Free demonstrations of the use of pesticides, is necessary all over the country.

(c) Farmers should be trained on a large scale in plant protection methods at Government expenses.

(d) Organization of pest-warning service is essential.

(e) Complete plant protection at the cost of the State in 2 per cent of the villages to study the economics and organization problems and to provide training for plant protection personnel should be undertaken.

(f) The research should continue into the technical and agro-economic problems relating to plant protection. We are of opinion that free pesticide demonstration should be done in one plot in each village so that ryots in the village could actually see the benefits for themselves and adopt them. We feel that at no time would Government agency be able to do all the plant protection that is needed. It is, therefore, necessary that cultivators must be told that plant protection equipment is as much a 'must' on their farm as a plough or a 'gorru' or a 'guntaka' and plant protection is as much their responsibility as any other operation on the farm. There is no escape from this reality. State does come in for providing advice and facilities and may come in also with their equipment in grave emergencies, when trouble flares up in an epidemic form.

*Paragraph 4.—Recommendations to step up technical assistance to the ryots from Agriculture Department.*

Assistance rendered to the ryots by the Agricultural Department is described below as could be ascertained from the answers to the questionnaire and the evidence of official and non-official witnesses recorded.

(1) Propaganda staff is appointed in the districts for carrying the results of research undertaken by the department to the doors of cultivators. There is an Agricultural Demonstrator or Agricultural Assistant for each taluk assisted by a number of field-men or kamgars. The jurisdiction of a kamgar or a fieldman is roughly 10 to 20 villages. This staff tours extensively in the villages and conducts demonstrations and tenders technical advice about improved agricultural practices to the cultivators. Superior strains of seeds are introduced and demonstration plots are organized on ryots' holdings. Additional Agricultural Demonstrators are also appointed in certain taluks of the State where the work is heavy for one demonstrator to manage.

(2) There is a dépôt or a godown in charge of each demonstrator where improved seeds, manures, pesticides, implements and other agricultural requirements are stocked for sale and demonstrations to ryots. Additional depots are also arranged in certain taluks at important centres.

(3) The department maintains a fleet of tractors and bulldozers which are available for hire to the cultivators to assist the ryots in the reclamation of their lands through mechanical means. There are at present 151 tractors and bulldozers in Andhra and 32 in Telangana.

(4) The department also maintains oil-engines and electric motors which are given to the cultivators on hire for lift-irrigation. In Telangana, boring sets are also maintained by the department, to deepen the wells for augmenting water supply.

(5) There are two Plant-protection Assistants in each district to attend to pest-control work. To disseminate information there are two publicity vans equipped with electric-generators and cine-projectors to carry on propaganda through Audio-Visual aids. Exhibitions are conducted by the department at all important occasions and ceremonies to educate the ryots on the activities of the department. Bulletins and leaflets are also published and distributed for the information of the public. The department also publishes a monthly Telugu journal called *Padi Pantalu* with a circulation of over 40,000 copies a month. The department also publishes every year a villager's guide and a calendar in which important agricultural topics are discussed and suggestions offered.

(6) For the speedy development of ayacuts under irrigation projects, where the ryots are not familiar with irrigated farming, the department is taking special steps by appointing special propaganda staff.

(7) Demonstration-cum-Research farms and agricultural research stations are maintained in representative tracts of the State to educate the cultivators and extend first-hand knowledge of practical agricultural improvements. Refresher courses for young farmers are also organized for short periods to impart practical training at some important stations.

2. We consider that the activities of the technical department depend upon the availability of trained personnel, apparatus and equipment. The department has been in existence for a long time and it may not be possible for the

Committee to make many recommendations on the technical side. But we consider that effective steps should be taken to correlate research, administrative and extension methods as has been emphasised by Shri A. P. Jain, the Union Minister for Food. The acid test of the efficiency of the extension machinery is to take ryots at random in villages and find out whether essential knowledge with regard to agricultural technique, use of improved seeds, plant diseases has reached them. There may be a few very intelligent ryots who make a special effort to acquire specialised knowledge. But we shall like every average farmer to know the principal activities of the Agricultural Department. The idea to arrange for tours of farmers throughout the State to visit not only agricultural research stations and well organised farms but also selected areas in the State where cultivation is done in a very efficient manner, is worth a good trial. The journal *Padi Pantalu* has not been issued for the last so many months. There seems to be another agricultural journal named *Kisan* which has been regularly issued and which contains valuable information. The Village Level Workers should take greater interest in agricultural activities. They should not stop by merely achieving the easy targets prescribed for them but should take keen interest in developing modern methods of agriculture by a vigorous campaign in the villages. The Committee feels that it is not possible for agricultural department by itself to extend all the technical knowledge that is needed to all the agriculture population. In addition to Agricultural Department, the village level workers, revenue officials, village officers and some others may transmit this to the villagers. To this end we suggest that agricultural education may be expanded and the trainees may be given preference in recruitment to Revenue and other allied departments. Short courses may be run for the village school teacher and the village officer. The ideal to be aimed at is that every employee of the Government, coming in touch with the villagers should have a fair knowledge about science and practice of agriculture. Progressive farming is necessary and the farmers should be educated. The only effective method is by practical demonstration as there are enough number of fine farmers to grasp the advice. A technical man should be asked to teach and train a good farmer of a village and others would naturally copy the performance of the trained farmer. There will be many fine points that are adopted by some farmers and many of them are not properly publicised for the benefit of other farmers. Techniques are adopted by good farmers without



knowing the why of it. Men of science are needed to understand and extend these techniques. The quickest way to upgrade farming is to make every bad farmer copy a good neighbour. Every attempt must be made to enlist the voluntary services of good farmers in this task of agricultural extension. Only the visitor who observes closely could understand and find the scientific principle behind the same.

3. A note submitted in 1942 on "Registered farmers' Association" and "Agricultural Propaganda" by Shri J. Raghotham Reddy, a member of this Committee is appended. (*Vide* appendices).

4. The several suggestions made in the notes are recommended for consideration by the Government.

*Paragraph 5.—Steps necessary to improve the indigenous breed of cattle for draught and milk purposes.*

The Director of Animal Husbandry and Fisheries gave a note regarding the indigenous breed of cattle both for draught and milk purposes.

2. The All-India key village scheme envisages progressive improvement in the milk production and working efficiency of our cattle. This scheme has been formulated by the Indian Council of Agricultural Research, New Delhi after considerable thought. The term 'Key-Village' indicates that it holds the key to the success of cattle improvement. It is expected to be worked in villages under the ryots' own conditions, to convince them of the advantages of the methods and measures advocated. This scheme can be considered as the most important one evolved for cattle development in the Five-Year Plan. A key-village has been described as an intensive cattle improvement unit worked in a compact area of one village or a group of contiguous villages containing a total population of about 500 cows or she-buffaloes over three years of age fit for breeding. A selected number of breeding bulls are concentrated in the area for either natural services or artificial insemination. All the scrub bulls and the unapproved bulls are either castrated or removed from the areas in order to prevent any kind of indiscriminate breeding. Usually these breeding bulls stationed in the key-villages are replaced by a fresh stock of bulls of the same breed every four years so that within four or five generations, the entire stock in the key-village area turns out to be of superior quality of cattle. All

aspects of cattle improvement namely breeding, feeding, disease control, management and marketing will be attended to on scientific and approved lines so that the villages can eventually develop into co-operative cattle breeding farms.

*Basis for selection of area for the key-village.*

- (1) The cattle population should be stationary.
- (2) People of the area should be interested in cattle breeding and not merely in milk production.
- (3) Areas which have facilities for cultivation of cattle feeds and fodder have to be preferred.
- (4) Selected key-villages must be connected by good roads as far as possible.
- (5) Preference has to be given to areas where people are educated and progressive and where cattle improvement schemes have been in operation for some time past.
- (6) Location of key-village centres in areas containing definite breeds.
- (7) A compact area with 500 cows or bullocks may be chosen for the key village. This has been modified in the Second Five-Year Plan to cover a cow population of 800 so that a larger area gets the benefit.

3. Though the key-village scheme cannot be improved upon, the fact remains that the scheme serves only a very small number of villages. The total number of villages in Andhra Pradesh is 26,450, the total number of cattle is 2,95,13,119 and the number of villages covered by key scheme is 13. There are about 500 cattle in each of the areas covered by key scheme. The total cattle population coming under this scheme is only 6,500. The quality of cattle has been deteriorating very fast with the result that the price of cattle fulfilling certain recognised standards have gone up enormously. We consider that this problem should be tackled very quickly and on a very extensive scale, otherwise this deterioration of cattle will go on with disastrous results. It is a well known fact that even a small pair of bullocks will need three-fourth of the feed of a bigger pair, while giving only one-third of the latter's outturn of work. Besides, certain agricultural operations cannot be performed by inferior cattle. The only answer to this question is the castration of all scrub stock as pointed out in the previous paragraph. In order to keep the best out of available stock in the

village for service till replaced by better animals, a rapid survey of all the villages, and if that is not possible, rapid collection of information with the help of village officers about fairly good animals sufficient to serve should be taken up as the first step and some kind of subsidy should be given as in the case of extension centres. The number of animals actually required for a population of 500 may not be more than 7 or 8, whereas actually the male animals are almost equal in number to the females. Even with regard to the Brahmini bulls, legislation can be introduced prescribing certain standard. When social customs like marriages are coming under legislative measures, it should not be difficult to bring in this also under legislation. As a matter of fact, the legislation will be in accordance with the ancient Hindu scriptures which lay down that only bulls satisfying certain standards could be dedicated. We are of the opinion that though these steps involve considerable effort and though they might not bring in perfect results, yet there will be some improvement in the quality of cattle and in any case, the deterioration will be arrested.

#### 4. *Technical Programme:*

(1) Preliminary house-to-house survey of the area by the staff to collect information regarding the cattle census, availability of feed and fodder, average holding of the ryots, cattle diseases prevalent, marketing facilities for livestock products, etc., is carried out.

(2) The breeding bulls that are to be stationed in the key-village centres should be from the livestock farms.

(3) The breeding policy to be adopted in that area has to be laid down at the beginning and followed up from generation to generation.

(4) Livestock Improvement Act has to be introduced in the area in order to facilitate complete breeding control being enforced.

(5) Cattle Disease Act has to be enforced to facilitate the protection of all the cattle and buffaloes in the area against specific diseases breaking out in that area.

(6) Each key-village centre consists of one artificial insemination centre at the headquarters and six key-villages acting as sub-centres. Artificial insemination is conducted at the main centre to these cows and buffaloes that are brought to the headquarters.

(7) Each key-village centre is under the management of one Veterinary Assistant Surgeon who is assisted by two veterinary and livestock inspectors at the main centre and six veterinary and livestock inspectors at the six sub-centres. There are two attendants at the headquarters appointed to look after the four breeding bulls maintained for artificial insemination work. At each sub-centre two breeding bulls are expected to be maintained by selected custodians who will be paid a subsidy of Rs. 30 per mensem per bull towards maintenance charges.

(8) *Feeding.*—Steps to conserve excess green fodder as silage or hay have to be taken. Proper attention for adopting improved methods of feeding is necessary since immediate improvement in the condition of the animals can be witnessed through balanced feeding.

(9) Treatment of ailing cases, in each key-village is carried out either by the Veterinary Assistant Surgeon or Veterinary and Livestock Inspector. Periodically all cattle are protected against contagious diseases prevalent in the area.

(10) In order to create an incentive among the ryots towards better system of cattle management, it is necessary to provide proper marketing facilities for the livestock products so that the ryots will stand benefited monetarily through the sale of those products. In a nutshell the key village centre can be considered where bulls that are produced in the livestock farms and multiplied in key-villages so that they could later be distributed in other well defined areas. During 1958-59 sanction has been accorded for the implementation of key-village scheme at a total cost of Rs. 7.927 lakhs in Andhra Pradesh for the establishment of the following schemes.

*Andhra Region.*

(1) Four key-village centres with six key-village unit each.

- (2) Calf subsidy schemes for 200 calves.
- (3) One urban artificial insemination centre.
- (4) One milk marketing centre.
- (5) One extension centre.

*Telangana Region.*

- (1) Establishment of three new key-village centres.
- (2) Calf subsidy scheme for 100 calves.

(3) One urban Artificial Insemination centre.

(4) Development of feed and fodder resources.

5. *Urban Artificial Insemination centre.*—This will be opened in the urban area where there is already a veterinary hospital or dispensary with the provision of a Veterinary Assistant Surgeon. The aim is to increase the milk yield by upgrading the local milch stock and to meet the ever increasing milk demand from the public of the urban area.

6. *Calf subsidy scheme.*—In this scheme calves of known breed both heifers and male calves are subsidised at Rs. 10 per mensem from six months age for a period of two years to create an incentive, amongst the ryots to pay proper attention to the calves.

7. *Milk Marketing Centre.*—This scheme envisages the provision of good marketing facilities for livestock and livestock products so that the ryots are benefited monetarily. This scheme envisages the provision of a common platform for milking, pooling of milk from surrounding villages and arranging for marketing of milk and cattle.

8. *Extension Centre.*—The scheme envisages the stationing of 24 breeding bulls both Ongoles and Murrah to cover 5,000 cows and buffaloes within a radius of 5 to 6 miles. These bulls will be distributed at 50 per cent of the cost and an annual premium of Rs. 220 will be paid to the custodiar. The extension centre is intended to up-grade the under-developed areas where the local cattle are non-descript and without any known breed of bulls.

9. *Feed and Fodder Development Scheme.*—As cattle get upgraded, fodder supply will have to improve. Sri S. Y. Krishnaswami in his book, "Rural Problems in Madras—Monograph" dealt with this problem. Extracts of paragraph 265-267 are given below.—

"The most important reason for the deterioration in the quality of cattle is inadequate nutrition. There are too many cattle in the country and the fodder produced is inadequate for their proper feeding. The Royal Commission on Agriculture stated that 'no substantial improvement in the way of breeding is possible until the cattle can be better fed'

Although there is large extent of uncultivated land in the State, there is very little grazing available. Indeed in many parts of the country, the weeds growing on cultivated land, the grasses on field borders and along water channels, the cultivated plant which springs up from seeds falling before harvest and the stubble of crops, furnish the main grazing available for cattle. Further there is an abundance of grass only in certain brief periods of the year and except on the common grazing land near the villages where the early grass is devoured by starving animals, the latter growth never gets a chance to develop into pasture. Moreover the growth of grasses is extremely rapid and they quickly become unpalatable to the cattle. If these grasses are cut and stored at the proper stage as hay or ensilage, they will provide large quantities of cattle feed.

The conversion of some of the best grazing lands for cultivation to meet the needs of a growing population has also contributed to a shortage in fodder supplies. In certain cattle feeding areas, the introduction of money crops has resulted in a reduction of area under fodder crops. Mr. Littlewood, a former Deputy Director of Livestock in Madras, has explained how this process is going on in the Ongole-breeding tract. He says 'to give some idea of the methods of farming in this tract in former days and the present, I have taken a holding of 50 acres. In former years the cropping was 12 acres fodder cholam mixed with gram, 5 acres korra, sajja, followed by horsegram, 15 acres varagu and pyrujonna, 5 acres pyrujonna, 2 acres maize and 4 acres pasture, the cattle maintained on a holding of this size roughly as follows:—

two pairs work cattle;  
two or three cows;  
two or three buffaloes; and  
three calves.

All the fodder would be utilised by the ryot in feeding this stock. At the present time, if we take a holding of this size we find it cropped in this way:

Six acres jonna, 4 acres korra and sajja, 2 acres pillipesara, 15 acres varagu and pyrujonna, 5 acres pyrujonna, 2 acres maize, 10 acres chillies, coriander, tobacco, groundnut and 6 acres pasture. Of these practically the whole produce of 10 acres is sold away and the ryot is short of 5 acres of grazing

land and 6 acres of fodder crops; this is roughly 50 per cent of of his grazing land and 15 per cent of fodder growing land. The ryot does not purchase any fodder to make good the deficiency and hence the quality of the present day stock is not so good as formerly.'

A considerable portion of the area which is called as forest is open to grazing either throughout the year or during parts of the year, especially in summer when grazing is required. Grazing in the reserve forest areas has been going on for many years under permits issued by the Forest Department. Several measures were taken to fix the areas and to limit the number of cattle to be admitted for grazing within the reserve forest. In 1895, reserve forests were divided into grazing blocks which in turn were divided into compartments so that some portions might be closed to grazing for a period. A Forest Committee was appointed in 1912 to examine the question of grazing in reserve forests. The Committee recommended a scheme of classification of forests. It also recommended that grazing fees should not be abolished and that goats should be strictly excluded from all reserved forests. It added that blocks intended for the grazing of local or migratory cattle should be carefully fixed with due regard to area and water supply. As a result of the Committee's recommendations, certain forest areas were separated and for such areas, forest panchayats were established. In 1920, there were 336 panchayats. In 1922, these Panchayats were transferred to the control of the Revenue Department. The transfer of about 3,000 sq. miles of forests to panchayats did not, however, materially help to improve the position. The block system of grazing was abolished and grazing was allowed over the entire range. Regulated grazing was thus neglected. The Royal Commission on Agriculture which examined the question recommended that the intensity of grazing should be determined consistent with the proper development of the forests and the preservation of desirable grasses. It was not, however, given effect to. Thus the sound policy of controlled grazing laid down nearly 50 years ago has been relaxed in several ways resulting in a more prodigal utilization of grazing grounds".

In Andhra region, except in some parts of Nellore district grazing is permitted under 'Permit System'. In the remaining parts of Nellore district 'Kancha System' is favoured though not without some opposition from some sections of

public. To meet their wishes, it had to be replaced now and then with 'Permit System'.

Section 25 of the Land Revenue Code of Hyderabad for Fasli 1317 (Act VIII of Falsi 1317) lays down that when a village is under settlement, the Commissioner of Survey Settlement or the Commissioner of Land Records in that village and in other cases, with the sanction of the Board of Revenue, the Taluqdar may subject to the orders of the Government set apart any Khalsa Land not in the lawful occupation of any person or class for pasturage of cattle or for grass reserves or for other Government purposes of public benefit, provided that it does not interfere with any right of any person or class. The land so set apart shall not be otherwise appropriated without the orders of the Board of Revenue. Subsequently the Government in their order Ms. No. 1406, Revenue, dated 25th July 1958, prohibited the assignment of any lands set apart for pasturage for cattle, Gairon, Bancharai and Kancha. They also laid down that an extent equal to at least 10 per cent of the total cultivable area in a village shall be set apart as grazing lands for cattle. These orders apply only to Telangana region. The Government laid down their assignment policy and issued instructions applicable to Andhra area in their order Ms. No. 1407, Revenue dated 25th July 1958. This order does not contain the rules relating to grazing grounds as in the Telangana region issued in their order Ms. No. 1406, Revenue, dated 25th July 1958. We consider that it is desirable that rules similar to those in Telangana should also be made for Andhra region.

There was a 'Standing Fodder and Grazing Committee' in Andhra State constituted as per G.O. Ms. No. 123, Industries, Co-operation and Labour, dated 12th January 1956. This committee observed that about 92 per cent of the cattle depend upon grazing outside reserved forest. We understand that a similar committee is being constituted for the State of Andhra Pradesh. We request that the new Committee be constituted at an early date so as to enable it to advise the Government on problems relating to fodder.

10. *Artificial Insemination Centres.*—Artificial insemination has gained popularity, of and the advantages are as follows.—

(1) Since there is a terrible shortage of breeding bulls, as against the huge number of cow population, this method is



of particular significance. Among the available breeding bulls only a few may have outstanding qualities. In these circumstances, it is of great advantage to station good and selected breeding bulls at centre, so that a large number of cows can have the benefit of being inseminated from the semen collected from a good bull so that good calves may be expected. Difficulties due to difference of size can be got over, since the semen sample from a big bull can be inseminated into a small cow, whereas it is not a possibility for the bull to cover a small cow or young cows.

(2) This technique enables the examination of the semen quality of this bull and at the same time to examine the genitalia of cow before insemination is done, so that it ensures good results as far as possible, and prevents the spread of diseases. It gives a clue to the cause of sterility in cows.

(3) Results due to artificial insemination have amply proved that fertility percentage due to this technique has been made as good as natural service.

(4) In thickly populated areas, the artificial insemination technique can be considered as a boon where 10 bulls are required for 1,000 cows, the purpose can be usefully served with 2 good bulls for artificial insemination work to be conducted.

11. The main disadvantage is that it is highly technical and unless all necessary precautions during collection, evaluation, dilution, insemination and sterilization of the instruments after insemination are taken, it may have bad repercussions.

12. A summary of the replies received from officials and non-officials is given below.—

13. Reasons for the low yield of milk as stated by nine officials and 14 non-officials are lack of roughage, lack of concentrates, defective breed and bad maintenance. Ten officials and 14 non-officials stated that veterinary assistance is not timely and not available in time adequately. Two officials and 23 non-officials stated that veterinary assistance is available, seven officials and seven non-officials said that the special breed brought from outside, yields more than the local one and their offsprings also yield more. Two officials and six non-officials

said that the better yield is due to the better maintenance and inherent qualities.

14. From the account given by the Director of Animal Husbandry we feel that the department is doing its best to improve the breed of cattle. The Forest department may undertake silage of grass wherever it is plenty in the forests and make it available to the scarcity areas. The method for up-grading cattle is perhaps well-known. Up-grading of cattle is the quickest way to improve the economic condition of the people in villages. As cattle get up-graded, fodder supply will have to improve. We feel that the deterioration in cattle due to natural causes is far faster than the progress in the reverse direction achieved by all the Governmental and private efforts put together. As time goes on there will only be deterioration. We cannot lay too much emphasis on a plan calculated to stop the rot and make positive gain. To this end the following suggestions are made for consideration of the Government.—

(1) To consider problems of land with reference to their effect on cattle wealth.

(2) To intensify research in breeding and management problems of cattle.

(3) To use private breeders as spearheads of progress.

(4) To extend concessions where green fodder is grown for cattle.

(5) To educate people on the economics of having good cattle and looking after them well, and

(6) To emphasise milk production and improve marketing facilities for milk.

15. The whole problem needs a very careful study. Our holdings have also been too small for machines but are now getting to small for even cattle power. Poverty has eaten so much into our vitals that human labour has become cheaper than animal power. We content ourselves with drawing attention to the alarming state of affairs in the country side. Cow is no longer worshipped in practice, but is reared and worked under appalling conditions. The whole economy is in a vicious circle. Standard of living is roughly proportionate to the power each individual handles. We have no machines and not even good cattle to give relief from human drudgery.

While it is not possible to suggest anything better than the key scheme (for permanently up-grading cattle) which has been evolved after a thorough consideration of all the facts, we feel that some immediate steps are necessary to arrest the deterioration in the quality of the cattle. We think that if the best bull now available in each locality is selected even though it may not come up fully to the required standards, adequate subsidy given to the owners and the other bulls castrated, at least the rate of deterioration will go down. While considering the problem, we have also to visualise the magnitude of the problem. There are crores of cattle of very poor standard, deteriorating in quality at a fast rate. There are few bulls that come up to the standards. There are also difficulties standing in the way of artificial insemination. Considering all these we think that our suggestion may be examined from the technical and administrative point of view.

16. We also recommend to the Government for making special provision in the matter of foreign exchange for acquiring suitable equipment for artificial insemination in an adequate measure.

*Paragraph 6.—Adequacy of facilities for the marketing of agricultural produce to enable the ryots to secure fair prices.*

The Royal Commission appointed in 1926 on Agriculture to enquire and investigate into the evils and defects in the economic system prevailing in rural areas revealed that due to lack of marketing facilities the producer obtained only 6 to 10 annas in a rupee paid by the consumer. The Commission made several recommendations in its report, the important of them being.—

(1) Regulation of Agricultural Markets by suitable legislation, and

(2) Study and enforcement of measures connected with the improvement in the marketing methods of agricultural produce.

2. On the basis of the first recommendation, the Hyderabad Markets Act of 1930 and the Madras Commercial Crops Markets Act of 1933 came into being in the Telangana and Andhra regions respectively. In 1935, the Government of India constituted the Directorate of Marketing and Inspection for conducting Marketing Survey of agricultural produce and livestock products in pursuance of the second recommendation of the Royal Commission and asked the State Governments to consti-

tute Marketing organisations in their respective States in co-operation with the Government of India to undertake the survey. In Hyderabad State, the Chief Marketing Officer, who had already been appointed to enforce the Act in different trade centres and administer the markets regulated under the Act was made the Head of an Independent Marketing Department. In Madras the marketing organization was made a part of the Department of Agriculture. The Acts provide for the formation of the Market Committees to run the administration of the local markets, empower Government to make rules for proper management and regulation of such markets and confers on market committees the powers to frame its bye-laws subject to the provisions of the Acts.

3. There are 40 regulated markets in Telangana region. These markets work under the regulation of the Hyderabad Agricultural Markets Act, 1930 which applies to the purchases and sales of 54 agricultural commodities and livestock. In Andhra, regulated markets are established under the Madras Commercial Crops Market Act, 1933. In this region the Market Committees are constituted with jurisdiction over an entire district. The Act is in force in all districts except in Nellore and applies only to a few selected commercial crops which are significantly grown in the respective districts. The District Committees administer the transactions in the market yards distributed all over their respective districts.

4. The advantages derived from the regulation of the market are so obvious that it is not necessary to enumerate them here.

5. In accordance with the recommendations of the Agricultural Prices Enquiry Committee an integrated scheme for the improvement of market intelligence jointly financed by the State and Central Governments was sanctioned by the Government of Andhra Pradesh. Under this scheme it is proposed to effect improvement in the existing market news service so as to help the producer-cum-sellers in marketing their produce. To achieve this the Government of Andhra Pradesh selected 35 representative markets in Andhra region and 10 in Telangana region for the purpose of gathering and reporting daily price quotation and set up a field office at Vijayavada in 1957-58 and another at Hyderabad in 1958-59. The marketing assistants in charge of the field offices collect data regarding prices, arrivals, and despatches of stocks from the different market centres selected in respect of rice, pulses, fruits, groundnut,

tobacco, chillies, cotton, ghee, poultry, eggs, etc., and arrange for their dissemination through the AIR, Vijayawada, and Hyderabad daily at 6-55 p.m. for the benefit of the cultivators and traders. Besides these daily broadcasts, daily news bulletins and weekly reviews are also issued in English and Telugu.

6. A summary of replies received from officials and non-officials is given below.—

*Channels of marketing*—The common channels of marketing shown by both officials and non-officials are markets, weekly-shandies, both retail and wholesale merchants, commission agents and private traders.

*Disposal of the Produce*—11 officials and 39 non-officials have stated that they sell their produce to the village trader, while three officials stated that the ryots dispose of it by selling it at the regulated markets. Another batch of three non-officials said that the ryots dispose of the produce through the merchants, middle men and through brokers. One official stated that the ryots get the full value of his produce by selling it to the village trader, while another non-official stated that he is not receiving full value for his produce. Particulars of deduction as stated by one non-official are 4 annas commission for 100 seers, Rs. 5 per cart, Rs. 5 for measuring, Rs. 2 for water; another non-official said sales tax, purchase tax and transport charges are the deductions made. Another non-official stated that commission and transport charges are deducted from the price paid to the growers. 12 non-officials and one official stated that the distance of the regulated markets ranges from 10 to 80 miles.

*Co-operative Marketing Societies*—11 Officials and 17 non-officials have stated that there are Co-operative Marketing Societies in their taluks, while eight officials and 25 non-officials have stated there are no Co-operative Societies in their area. Three non-officials have stated that these Co-operative Societies are not working properly and that their existence is of no use in their area. One official stated that the Co-operative Credit Society is beneficial, for it will supply manure and iron goods. One non-official stated that he is getting loans at low rate of interest and loans are being collected soon after the harvest. Three non-officials said that it is not beneficial because it is supplying loans only to a few influential ryots, but not to all.

7. We feel that the broker or the buyer in the regulated market does not pay for the sweeping, the market fee and the hammalies. We consider that the expenditure on the above items should be shifted to the purchaser and not to the producer. We are of opinion that there is need for having regulated markets in larger numbers all over the State and that they should not be confined only to commercial crops but extended to the sale of all agricultural commodities including perishables like vegetables, fruits, milk and eggs, etc.

8. Rice is the biggest crop in Andhra area and its exemption from the operation of market laws is wrong. We urge that this be set right and all agricultural commodities brought to market, must be brought under marketing regulation.

9. Co-operative marketing is a fine tool if well wielded in the hands of a disciplined and conscientious group of growers. It will be effective against traders if they desire more profit than what their legitimate due is. All help and encouragement should be extended by the State to Co-operative marketing.

10. A normal grower stands to gain by competition between the purchasers and the benefit is highest when competition is perfect. We suggest that private trade must be encouraged to compete amongst themselves and as against the growers Co-operative. The traders will thrive if only their profits plus overheads are less than overheads alone of the Co-operative Marketing Societies. Monopoly in trade, whatever may be the agency, will work against the interest of the producer. We also suggest a speedy integration of the marketing regulations in the State.

*Paragraph 7.—Rural Housing of Agriculturists.*

Good housing conditions are necessary for increased efficiency. This is as true of farmers as of any body else. In addition to his own house, the farmer has to find a roof for his cattle, his implements and his produce. If a family has full employment in agriculture along with a pair of bulls, a couple of milch animals and three or four calves, it will own either 20 acres of dry land or four acres of wet. The implements would consist of two ploughs, a harrow, a drill and a few inter-cultivating devices. The family's produce would be about 80 bags of grain requiring 400 c.ft. of storage space. The roof area required at the rate of 100 sq. ft. per member of the family would be 500 sq. ft. and for six cattle at the rate of 50 sq. ft. will be 300 sq. ft. The total area that is needed to be under roof

even if grain is stored in another place and implements are kept along with the cattle, would be not less than 800 sq. ft. Thus the maximum space required if farmers are to exist as 'Homo Sapians' is about 800 sq. ft. Village sites have become congested and the space required by a farmer in the site is considerably great.

2. As ideal solution for our farmers would be to follow the practice of the other countries as well as Malabar and South Kanara and begin living on their farms. This kind of living will also encourage small agriculturists taking to profitable occupations like kitchen gardening, dairying and poultry so that they may pay adequate attention to the garden crop and watch them especially when they are ripe. If on the other hand they have to raise vegetables far away from their residence, it will not be possible for them to watch the fields constantly. They will also be able to utilize the manure better and can avoid the trouble of carting it.

Much is said of insanitation that would result in keeping animals at home. In some areas the practice is to have a cattle shed near the irrigation well and for the men folk to keep guard of the farm house by turns while women and children sleep in the village. In areas where this is not possible the cattle shed can be kept absolutely sanitary. In districts like East Godavari where wet land is very costly, it may not be possible to live in the midst of the fields, but the village site may be expanded and adequate space may be allowed for each family by providing sub-village sites.

3. We, therefore, recommend that the Government may encourage construction of farm houses and to expand the village sites generally.

*Paragraph 8.—Adequacy of existing sources of credit available to the ryots and recommendations to improve them.*

The subject of Rural Credit and Indebtedness of Agriculturists is a subject of vital importance affecting the economy of the rural population. From time to time, estimates have been made of the total indebtedness of the people of the States. The Deputy Director, Bureau of Economics and Statistics states that the estimated rural indebtedness of Andhra Pradesh may be taken as Rs. 228 crores on the basis of the Rural Credit Survey conducted by the Reserve Bank of India (1951-52). The causes of rural indebtedness have been mentioned practically by all Committees. Too much emphasis

is often laid on social obligations like marriages as one of the causes for indebtedness. A little expenditure on social functions cannot be eliminated or considered to be extravagant. Some of the money, however, is spent on unproductive objects which are not connected with the improvement of the cultivator's land. Agriculture, as it is carried on to-day, requires only a minimum working capital. Nevertheless, the agriculturist is forced to borrow at very high rates of interest. Evidence is forthcoming that many of the agriculturists are borrowing money at exorbitant rates of interest. The methods of financing adopted by the money-lenders are such that once a person gets into debt, it is extremely difficult for him to get out of it. The chief causes of rural indebtedness include, among others, (i) poverty, (ii) ignorance, (iii) extravagance, (iv) ancestral debt, (v) increase of population without corresponding increase of the means of subsistence, and (vi) more than anything else the uneconomic income from the existing system of farming. The chief purposes for which the money is spent by the agriculturists are: (a) the purchase of production requirements, seed, cattle, etc., and payment of wages, (b) the purchase of articles of food, clothing and other domestic necessities and (c) the financing of social or religious functions. The unproductive debt of the country has increased considerably since the latter half of the last century and the World Wars accentuated the evil. Though there is rise in the prices of various agricultural commodities since 1942, the balance is not completely turned in favour of the agriculturists. More than half of the total indebtedness is only due to poverty as Indian agriculture is often a gamble in the monsoon and the Indian monsoon has all the proverbial caprice of the eastern potentate. On the whole, it can be said that the ryot is not getting even 8 annas worth for his produce for which the consumer pays Re. 1. The middlemen walk off with large profits. Indebtedness compels a cultivator to sell his produce to his creditor at very unfavourable rates. The money-lender's grip over the cultivator results, not to mention the latter's economic servitude, in the reduction of the income of the agricultural debtor on the one hand and a rise in his expense on the other. Another consequence is that the agricultural indebtedness results in the transfer of land from the agriculturist to the non-agricultural money-lender, thus making the peasant proprietors a landless proletariat with greatly reduced agricultural efficiency, and lowering the standards of farming. Inherited debt is another contributing



cause. Innumerable people are born in debt, live in debt and die in debt from generation to generation. The cultivator pays high rates of interest because he incurs vast sums on unproductive debts. The Government and the Co-operative Societies are the chief sources of credit besides indigenous sowkars. The Government and the Co-operatives have not been able to touch even a fringe of the problem. The sowkar gives loans promptly without much enquiry as he is conversant with the situations of the borrower, whereas the Government would conduct detailed enquiries in each case through the Village Officers and other channels about the valuation of the land, its owner, etc. We have ascertained through our questionnaire the present problem relating to the credit. Ryots have represented to the Committee during their tours and interviews, the plight of the producer who is at the mercy of his nearest middle man and the money-lender. Relatives, friends and substantial farmers also render some assistance to poor ryots but this is not very appreciable as ascertained through the questionnaire. An analysis of answers received to the questionnaire shows that the ryots are not having adequate facilities for obtaining Government and Co-operative loans in right time and there is undue delay in disbursements. Another complaint is that co-operative societies are acting in a partisan spirit and lending money only to members of the parties of the ruling officials of the societies. The rules relating to the grant of loans are very elaborate and it is really difficult for joint pattadars to secure loans. In spite of denial by officials there is a lot of delay in the grant of loans by the Revenue Department. Though enquiries are necessary, they should be made with speed and on essential points. The Committee has also interviewed the Deputy Registrar of Co-operative Societies regarding the loans given by that department. He explained that loans are given either on personal security or on the mortgage of properties. With reference to the value of property mortgaged for loans a member would be given a loan, not exceeding 50 per cent of the value of property mortgaged. In the Telangana area, loans are advanced only on the mortgage of lands and there is no provision for the issue of loans on the strength of sureties. Further the basis of the individual credit limit in Telangana is the revenue assessment. It was previously five times for wet, ten times for garden and 12 times for dry lands. These credit limits have been doubled recently to 10, 20 and 24 times respectively. Manures are not given in the shape of loans by the Co-operative Department. For raising long term loans the

Land Mortgage Banks require production of title deeds and encumbrance certificate for 24 years prior to the date of application. The difficulties in the matter of early disbursement of loans put forward by the Departments are:—

- (1) Delay in producing title deeds by the agriculturist,
- (2) Want of consent statement of joint pattadars,
- (3) Unsurveyed tracts and consequent difficulty in identifying the lands,
- (4) Delay in producing encumbrance certificate issued by Registration Department,
- (5) Want of adequate resources,
- (6) Inability of poorer sections to secure sureties and
- (7) Rules of Telangana requiring ownership of land as a condition for membership in a Co-operative Society.

2. At present there are three agencies for sanctioning loans to agriculturists. These are the Revenue Department, the Agricultural Department and the Co-operative Societies. Yet, only 5 per cent of the demand could be met. In the Second Five-Year Plan provision has been made to increase the credit facilities from 5 per cent to 40 per cent. After taking into account the full particulars of loans advanced during the past five years by all these agencies for various purposes, we consider that the existing credit facilities are absolutely inadequate and that they require to be stepped up and the delay in the grant of loans should be minimized.

3. The Registrar of Co-operative Societies has reported that the number of agriculturists benefited by the Co-operative Societies, Land Mortgage Banks, etc., during the past five years (in the Andhra Region) is as follows:—

Year							<i>Agriculturists benefited. lakhs.</i>
1953-54	...	...	...	...	...	...	1.95
1954-55	...	...	...	...	...	...	2.00
1955-56	...	...	...	...	...	...	2.45
1956-57	...	...	...	...	...	...	3.15

and that in the erstwhile Hyderabad State the figures were not complied.

4. An analysis of the answers to the questionnaire in the matter is as follows:—

One hundred officials and one hundred forty-four non-officials of Andhra region, and 22 officials and 69 non-officials of Telangana region have stated that Co-operative Societies are working satisfactorily. Sixty-six officials and 129 non-officials of Andhra region, 40 officials and 37 non-officials of Telangana region have stated that Co-operative Societies are not working satisfactorily.

Three officials and three non-officials of Andhra region, six officials and four non-officials of Telangana region have stated that non-collection of loan instalments militated against the success of Co-operative Societies.

Twenty-six officials and 41 non-officials of Andhra region, eight officials and 11 non-officials of Telangana region have stated that due to delay in granting loans, lack of enthusiasm, and illiteracy among members, the societies are not working successfully.

Two non-officials of Andhra region, two officials and two non-officials of Telangana region have stated that the societies are not working satisfactorily due to the non-availability of long-term loans. Four non-officials of the Andhra region have stated that five Co-operative Societies could not secure a large number of members due to the insistence of collection of membership fee at Rs. 10 per head.

Fourteen officials and 23 non-officials of Andhra region, one official and one non-official of Telangana region have stated that the societies are not working satisfactorily due to factions and misunderstandings prevailing among Members and Directors. Seven officials and five non-officials of Andhra region and three officials and two non-officials of Telangana region have stated that due to inefficient control the societies are not working well. Five officials and five non-officials of Andhra region and two officials and one non-official of Telangana region have stated that due to misappropriation of funds by the office-bearers, the societies are not functioning well.

Three officials and two non-officials of Andhra region and four officials and one non-official of Telangana region have stated that due to inadequate staff, the societies are not working well.

One official of Telangana has stated that the societies are not functioning well as the ryots did not understand the principles of co-operation.

5. Denmark has solved many problems of co-operation. Whatever else may be doubtful or open to argument in connection with the Danish agriculture, one thing remains clear, namely, that it owes the greatest part of its prosperity to the working of the Co-operative Movement. No doubt the people of Denmark are well educated and belong to a homogenous group, but even in India co-operation can succeed if conditions are carefully studied and Co-operative Societies are evolved for certain specific purposes. For example at present there are no Co-operative Societies intended for the agriculturists residing in villages around cities and towns to grow vegetables or for the supply of milk or eggs for which there is great demand. The real cause is lack of proper organization. To give a few instances, the ryot who produces beans in a village near Hyderabad sells them at 42 seers a rupee to the middleman often without even weighing, whereas the consumer gets only three seers per rupee. Milk is collected by middlemen from villages at the rate of three seers per rupee and sold to city dwellers or hotels at 1½ seers per rupee. We recommend that rules for the Co-operative Societies have to be framed in such a way that local needs of the people are served. Rules must be suited to the society and not *vice versa*—and the activities of the societies should be correlated to the needs of the members.

6. This is well recognized by the Government as is evidenced by the Government of India accepting the recommendations of the Rural Credit Survey Committee. There is consistent attempt to enlarge the scope of the co-operative operations. Since the private credit cannot be replaced completely in the foreseeable future, it is worthwhile regulating private lending and allowing it to compete with co-operative and Governmental credit to the advantage of the borrower.

7. We would, therefore, recommend that:—

(1) joint pattas may be allowed to be turned into individual pattas and sub-division of land may be made promptly.

(2) the pass book recommended by the Village Officers' Enquiry Committee to be given to the ryots may be given very early,

(3) law governing state and co-operative credit may be integrated early and

(4) private money-lending may be regulated and encouraged to compete with other forms of State sponsored credit.

## CHAPTER IX

### *Paragraph 9.—Cottage Industries.*

Cottage industries have always played a significant role in Indian Economy and in fact the decay of cottage industries marked the beginning and it is in the fitness of things that successive Five-Year Plans should emphasize their importance.

2. Khadi and hand-loom are our premier village industries and so also blacksmithy and carpentry. Considerable attention and money is being devoted to their encouragement. We think that Government are already alive to their importance and will certainly do all in their power to foster them.

3. Apart from this what we suggest is that occupations ancillary to crop production may be treated as Cottage Industries and given due State patronage. The problem of low income in the villages is bound up with lack of full employment and adequate capital. In Andhra Pradesh nearly 25 per cent of the area is already under irrigation and the potential is very much greater. Once the water is available the employment in agriculture increases and is spread out over a larger period. Apart from expansion of flow irrigation well sinking is possible on a massive scale and can be economically done. Even where flow irrigation is available only during monsoon, wells can be sunk in the ayacut to give water for second and third crops.

4. In European and North American countries there is no farm employment in winter for crop production. Animal Husbandry comes to their rescue and gives them both employment and income. What is winter to them is summer to us

and if we can encourage mixed farming and add livestock to each farm then summer will no longer be a lean season. Milk production, poultry, rearing of calves both for work and milk can be a very interesting and lucrative occupation.

5. To the casual labour engaged in operations like planting, weeding, harvesting and thrashing during the crop season one can find ample employment in sinking and repairing of wells and other land improvement jobs.

6. With the growth of irrigation the undulating land requires either to be terraced for rice cultivation or to be graded to uniform slope for light irrigation. These jobs are capable of being done by machines but with present wages are done more cheaply by human labour. This also applies to contour bunding in areas where irrigation is scarce and which are largely dependent on monsoon. Every soil conservation measure would require some type of permanent or semi-permanent work on land during the off season. With rise in National incomes, the demand for fruit is bound to rise and almost all fruits are borne on perennial trees and, therefore, fruit production gives a year-round employment—more during summer than in other seasons. Larger production of fruit opens up yet another cottage industry, i.e., fruit preservation. Small village-based industry can very profitably be built up.

7. Village communications are proverbially bad and agriculture cannot improve unless the requirements of the farm like seed, fertilizers, pesticides and fuel oils, etc., can move in and agricultural commodities move out with ease and at less cost. The Government have to align the net work of village roads, acquire land and make roads. This process in the beginning and repairs every year will need plenty of unskilled labour in the off season.

8. We have already referred to rural housing as a cottage industry with almost unlimited potential for employment. This together with the other items, we have mentioned above, are enough for a long time to come to absorb all the manual labour our villages can make available. While we do not minimize the importance of encouraging the production of consumer goods on the cottage industry scale, we would draw a distinction between these and the ones we have catalogued. Even as in the case of producing consumer-goods items like animal husbandry, dairying, and poultry on the one hand and well-sinking, terracing, village road improvement and mainte-

nance, construction of rural houses on the other will all give employment during lean season, but in addition will create lasting capital in the village and will increase farm production and thus generate higher incomes. We would, therefore, urge that in any scheme of things under which State aid is made available, these must receive a higher priority than the production of consumer goods.

*Paragraph 10.—The factors affecting the prompt repayment of loans by agriculturists.*

Arrears of Land Improvement Loans and Agriculturists' Loans have accumulated practically in every district. The figures of demand, collection and balance of loans sanctioned to the ryots for various purposes reveal that there has not been prompt repayment of loans. We have examined both the officials and non-officials and elicited answers to the questionnaire on this matter. Many ryots who obtained loans from the Government do not consider it necessary to clear off the debts during the favourable seasons. Some ryots who are really affected by unfavourable seasonal conditions in a few villages approach the Government and obtain comprehensive orders for postponement and every one deserving and undeserving enjoy this benefit. The postponement of collections of loans has become almost a regular feature during recent years. Postponing the collection of loans and the grant of fresh loans when there are already arrears tend to piling up the burden on the ryot in the case of loans granted by Co-operative Societies. The agriculturist however, repays, the loans to the money-lenders as he is afraid of the methods, legal or otherwise adopted by him and a fear of the failure of a source of credit for the future. Another feature of Government loans is the improper distribution and non-issue of demands by the collecting agencies in time. While there are many agencies sanctioning the loans the collecting agency is only one. The collecting agency is the Revenue Department, whether it is the Revenue Department or Agricultural Department that grants the loans. Seventy-three officials and 50 non-officials of the Andhra region, 16 officials and 28 non-officials of the Telangana region have stated that it is only on account of indifference that cultivators are not repaying loans taken from Government regularly. One hundred and sixteen officials and 140 non-officials of Andhra region and 36 officials and 69 non-officials of Telangana region have stated that the cultivators are

not prompt in repaying loans to the different agencies due to unprofitable farming. Seven officials and four non-officials of Andhra region and one official of Telangana region have suggested that the situation would improve by resorting to Co-operative Farming. Thirty-three officials and 62 non-officials of Andhra region and 6 officials and 14 non-officials of Telangana region have suggested that the situation would improve by granting long-term Taccavi and Agricultural loans to ryots at low rate of interest for purchasing agricultural implements, seeds and manures. Two non-officials of Andhra region, one official and one non-official of Telangana region have suggested that grant of improved seeds and manures beside appointing adequate plant protection staff would improve the situation. Eleven officials and three non-officials of Andhra region, four officials and two non-officials of Telangana region have suggested that by providing better irrigation facilities, the situation would improve. Seventeen officials and 13 non-officials of Andhra region and four officials and two non-officials of Telangana region have suggested that by timely collection of loan instalments even by applying coercive processes would improve the situation. Seven officials and ten non-officials of Andhra region and five officials and five non-officials of Telangana region have suggested that the situation would improve by establishing Co-operative Marketing societies. One non-official of Telangana region has suggested grant of subsidies to all ryots that possess less than 10 acres of land. Two non-officials of Telangana region have suggested that it is necessary to take measures for maintaining the price levels of foodgrains. There is also laxity on the part of the officers in applying the provisions of the Revenue, Recovery Act.

2. The principle governing any productive debt is that the money borrowed and invested must lead to a rise in income, sufficient to repay the loan while the improvement lasts and add somewhat to the real income of the borrower. Repaying capacity is intimately connected with the profitability of agriculture. Another factor that tends to swell indebtedness is the lending by agencies which have nothing to do with collections. Even in lending we have targets to be fulfilled which leads to indiscriminate lending. Village Officers if paid a collecting fee may add to efficiency of collections. Lending by Government out of a revolving fund which is reimbursed by collections would pin point attention on failure to recover the moneys. In Telangana the Village Officers must be made



to maintain loan registers and such outstandings may be entered in pass books, the maintenance of which we are proposing elsewhere.

3. We consider that rigorous steps should be taken to collect the arrears when seasonal conditions are fair and ensure that credit is made available for the people who really need them. The amount allotted by the Government, should roll and serve the needs of many and not get locked up as at present. Only constant demand by the concerned officials at the appropriate time after the harvest will yield good results. Any undue leniency in this matter is certainly not a favour to the ryot. We, therefore, recommend that—

(1) all Government credit to land owners must be channelled through the same agency.

(2) instalments must be fixed keeping in view the benefits likely to accrue to the borrower; and

(3) collecting staff must bear a relation to volume of lending.

*Paragraph 11.—Training necessary to Village Officers and to publish a monthly Revenue Journal.*

There can be no efficient land revenue system without a good karnam at the village level and there can be no good karnam without adequate pay and training. The question of pay has been gone into by the Village Officers' Enquiry Committee, 1958 in the Andhra Region. The same question about Telangana Region is engaging the attention of the Government. In view of the rapidly increasing volume and variety of work to village officers with the increasing tempo of planning and developmental activities, it is quite necessary that there should be a suitably trained body of village officers who will be able to respond more efficiently to the needs of a Welfare State. Mere passing of some tests cannot give them all the equipment necessary to play their role effectively. We consider that special training is necessary to the karnams and patwaris and that such training should be at the cost of the Government. The period of training need not exceed two months at a time but it should include the training in survey, the knowledge of revenue and other rules, the methods of collecting statistics, estimation of crop yields, an elementary course of veterinary science and practical training in an agricultural farm. We also consider it necessary that the Board

of Revenue must issue a monthly journal of suitable size containing the latest orders and supply it to all Village Officers and Revenue Inspectors direct by post. They should not be distributed through the taluk offices under any circumstances as the bundles are likely to get locked up in Taluk Offices if sent through them. We feel that it would be most helpful to the Village Officers as there would be an opportunity for them to study the latest orders every month. Regarding the expenditure involved, the Committee submits that a journal of 24 pages would cost only 25 n.p. In 12 issues it would be Rs. 3 per annum. The total cost would be Rs. 81,000 if supply is made to 27,000 villages. Even if the expenditure goes up to one lakh, we feel, that it is worth incurring.

*Paragraph 12.—Work load on the revenue establishment.*

Incidentally, we have examined whether the existing administrative staff is adequate for revenue work and whether the jurisdiction of the Tahsildars and Revenue Inspectors is manageable.

2. The work load on village officials and revenue officers, from Revenue Inspectors to Collectors, has increased, by leaps and bounds, in recent years. In Nellore district, one officer informed the Committee that the co-operation of Village Officers was wanting in the collection of taxes on commercial crops and also in the collection of loans due to the Government as they had been overworked owing to various categories of taxes being introduced from time to time. The work of village officials is likely to increase further when recommendations of this Committee are given effect to. Firkas are usually too big for Revenue Inspectors to manage. In practice the revenue work is being relegated to a secondary place by officers who all along were doing revenue work. Work of subdivision consequent on sale, partition or change of status, i.e., from dry to wet and *vice versa* and keeping of revenue registry up-to-date is being badly neglected. The ryots are not able to secure loans—Land Improvement or Agricultural—as the registry is out of date. Encroachment, azmoish and remission work are not receiving adequate attention due to increasing extra work. Land reforms require an accurate record of the actual cultivator, his status, etc. Lack of efficient revenue administration will impede general development in the village and will quite often lead to village feuds.

3. The variety and range of Revenue Officers' work to-day is one that the original framers of the set-up could not have visualised. Tahsildars have now to spend considerable time with prominent members of the public and officials. They do not have sufficient time for their outdoor and indoor revenue work. In our enquiry at Hyderabad one officer has informed the Committee that Tahsildar is able to spend only one-fourth of his time to revenue work and only 10 per cent of the expected work is being turned out by him. Revenue Divisional Officers have also to contact the ryots in large numbers and it has been brought to our notice at Hyderabad that only 50 per cent of the Revenue Divisional Officer's time is spent on revenue work. Collectors are overburdened with work and do not have adequate time to contact the public.

4. We are of the view that there should be adequate number of Revenue Officers to attend to the revenue work. Otherwise there would be loss to the exchequer. We consider that it is imperative that the whole set-up, should be reorganised to meet the demands of the present concept of the administrative machinery of the Revenue Department and that it should be possible to do so without increasing the cost to the exchequer of the State if different agencies now working at village, block, taluk and district levels are integrated by suitably distributing the load of work and responsibility.

5. We are of the view that the Collector should continue to be the Chief Civil Administrator of the district and to achieve this end, he should be given an assistant who should be an officer in the run for a Collector's place and who might dispose of most of the administrative and statutory items of revenue work. This Officer may be called Joint Collector and should be subordinate to the Collector. We further feel that the designation of the Collector of the district might be changed as Civil Administrator.

6. The designation 'Civil Administrator' is much more appropriate than "Collector" to an Officer who is the head of the district and guides all the other officers of different departments in the district.

7. We recommend that the methods of work in the set-up should be examined, in detail, by a special committee. The time is now very opportune as revenue laws in both the regions of the State are being integrated. Along with integra-

tion, the frame work should be modified to suit present day conditions. We also recommend that the jurisdiction of the Revenue Inspector, Tahsildar and Deputy Collector might be reduced and he should be made responsible for the discharge of the various items of revenue work instead of appointing special officers. Normally a district should comprise 4,000 sq. miles and those which are bigger should be bifurcated. We are of the opinion that supply of small machines like 'Addressograph', numbering machines, 'Addition and multiplication instruments', etc., will be very beneficial to the various offices in the State and that these will eliminate the enormous expenditure spent on the establishment for routine work.

8. These measures are recommended to ensure efficiency and close contact with the people who can look to one officer for redress instead of being tossed from pillar to post and post to pillar.

#### *Paragraph 13.—Village Communications.*

For economic development, good roads are absolutely essential. This is universally accepted; and if good roads connecting all villages have not yet been laid, it is primarily because of want of resources. Laying of a road consists of aligning it, acquiring the land which very often belongs to private landholders, and finally laying of the road itself. The cheapest of these is the alignment; and next, in the order of cost is the acquisition of the land. Normally, the price of the land is rising and, therefore, to the extent to which we delay the acquisition of land for this purpose, to that extent the cost will go up. What is just now needed is not a pucca road for motor vehicles to ply comfortably but a village road which would allow a bullock cart to pass with reasonable ease during all seasons of the year. Cart-tracks that connect the villages now have not been aligned by any qualified person or persons and, therefore, very often they become impassable during monsoons. Subsequent to the formation of these cart-tracks, land on either side of it has sometimes been brought under irrigation, with the result that the track itself is slushy, sometimes knee-deep, making movement of even a bullock cart impassable. There is no doubt plans are being made for connecting each village to the nearest road by at least a semi-pucca cart-track during the Third Five-Year Plan. But looking at the enormity of the problem, one begins to doubt whether our resources would be enough for the achievement of

such an ambitious programme. What we would suggest is that the roads connecting each village to the nearest Public Works Department road may be aligned according to correct Highway principles and the land may be acquired.

2. The next job would be to construct culverts and road dams of a very rudimentary type across water-courses and wet lands. Where there is black cotton soil, rubble stone soling may be given. If this much is done by the Government, the work of maintaining the rest of it in a reasonably good condition may be left to the initiative of the local people. Indeed, if private lorries were allowed to ply on these village roads, they may in their own interest maintain them in good order. There are funds available under local development works and under Community Project and National Extension Service which can be diverted to improve and maintain village communications. All these are possible only if the roads are correctly aligned, because alignment itself improves a road from 30 to 50 per cent; and any further investment on this aligned road would reduce the ultimate expenditure to convert it into a pucca road-way. The alignment may not cost more than Rs. 100 a mile and acquisition of land would cost as much as the value of about 8 to 12 acres of land in that vicinity. It is very necessary that efforts in the next few years should be concentrated on this particular item, so that we may at least have in the next few years a net-work of village roads, over which at least bullock carts could travel with reasonable ease.

#### CHAPTER IX.

##### *Paragraph 14.—Suggestions to accelerate development of Irrigation, under projects and drainage works.*

Sri J. Ragotham Reddi, a member of our committee has submitted a note for the consideration of the committee and it is incorporated in Appendix 11. After a thorough discussion, we are in general agreement with the valuable suggestions made in the note. We feel that it is necessary that estimates for developmental activities also should be got prepared along with the main estimate for the project, so that the development of the ayacut might commence and proceed simultaneously, with the work relating to the construction of the project works, dam, head-works and canals. Then only, it would be possible to utilise the benefits of the project from the first year in which water is let out for irrigation. We strongly recommend to the Government to accept Sri J. Ragotham Reddi's suggestions, in his note and issue suitable instructions to the Chief Engineers and the Administrators, in charge of the execution of the projects.

2. Sri J. Raghatham Reddy has submitted another note which is included in Appendix 12. In this he deals with priorities to be given to the construction of irrigation improvement and drainage works. We have considered them and are in general agreement with the views expressed by him. We recommend that the Government may give preference and undertake the construction of drainage and improvement works, the cost of which is proposed to be contributed by the public either in full or in a large portion of it, provided that three-fourth of the persons who hold not less than two-third of the area to be benefited, agree voluntarily to pay the contribution. In such cases, the Government should waive the collection of betterment contribution.

#### CHAPTER X.

##### *Paragraph 1.—Existing standardized dry assessments to continue.*

The fertility of the soil and the quantum and distribution of rainfall are important factors in determining the yield from dry lands. In the case of wet lands, besides these two factors, the assured water supply confers additional benefits on yields and incomes. For wet lands, water is drawn from a reservoir or tank and applied to the land, whenever it is needed and in adequate quantities, but dry lands have to depend solely upon the precipitation from clouds. Rains may not always occur in proper time or in adequate measure. Thus the total quantum of rain and its distribution should both be taken into consideration, in fixing the dry assessment. A rainfall of about 35 inches, may be generally quite adequate for dry crops, but the rainfall is practically useless, nay injurious if it is concentrated within a fortnight or a month. In Vikarabad taluk, for instance, though the total annual rainfall is about 35 inches it is all precipitated in the south-west monsoon and often affects adversely the dry crops. The total absence of rain at a later stage also affects agricultural production seriously. Even a smaller quantity of rain, if properly distributed will result in beneficial effects. There are areas which do not receive either adequate rainfall or enjoy the advantage of proper distribution. These lands suffer most. There is no doubt, the human factor, which has also to be taken into account. Some farmers, in particular areas, have learnt better methods of cultivation and are able to produce much more than people in other regions. Since there has been an increase of irrigation in these days, all manurial resources have been diverted away from dry lands to irrigated lands. The available waste lands have all been assigned and the forests have

been partly denuded. The dry land-owner is compelled to keep a part of his holding fallow for the needs of his cattle which in earlier periods were met by the Government waste lands and forests. Though it cannot be said that all the dry lands, all over the State, have progressively deteriorated in quality due to continuous soil-erosion and cropping, yet a considerable portion has been so affected. It is also not easy to control the pests and diseases on vast extents of dry crops. Groundnut, castor and cottonseed-cake which are the products of dry lands generally go to fertilize irrigated lands. Thus while large quantities of plant nutrients are taken out of the soil little is returned to it. Dry farming is said to yield only a net income of not more than 20 per cent of the total yield, when ryots grow ordinary dry crops, and only a little more could be saved, by raising commercial crops. Even then, they have to pay extra multiple taxes. On the whole, it should be admitted that the incomes of the dry land cultivators are uncertain. The Government, in memorandum No. 22594/G-58-2, Revenue, dated 28th February 1958 have forwarded the suggestions made by Sri N. C. Rami Reddy, member of State Planning Advisory Committee, for our consideration. His suggestion is that in famine areas like Vayalpad taluk no upward revision should be made in the land assessments. We have visited the districts of Nellore, Chittoor and Kurnool where rainfall is precarious or scanty. These areas are subject to famines or frequent scarcity conditions. We found that even in regions of fairly low rainfall as in Palnad and Ongole of Guntur district or Atmakur of Kurnool district, for example, there are very fertile dry lands which yield good crops. Soils have been classified during settlements into alluvial, black, red and sandy soils with care. In addition to this, their yields have also been ascertained during the previous settlements and it is only upon these data, that the rates have been fixed. It would, therefore, work a hardship to the ryots in other regions of the State, if we base our recommendations on the present level of assessments in districts like Guntur and extend the same to similar soils in the entire State. On the other hand, it will not be proper to reduce the rates in Guntur district, so as to bring them down to the level of rates prevailing in less favourably situated districts, as the yields are high enough to bear the assessment. The soils, in some of the taluks of Guntur, are on the whole very fertile and the yield is often three or four times that of dry lands in other districts. Some taluks in Rayalaseema and in Telangana, receive neither adequate rainfall nor in proper time. Lands in Rayalaseema and in districts

like Mahaboobnagar cannot be compared with those in Guntur or the Deltas and assessed at the same level. There is a very wide range in the productivity of dry lands. Failure of crops, once in three years, appear to be a normal feature in Rayalaseema and Telangana. A statement showing the average rainfall for the Andhra Pradesh from 1915 to 1957 with the normal rainfall is given in Appendix (13).

2. The factors of soil fertility and rainfall were fully considered in determining the assessment on dry lands, in the earlier settlements, in both the regions. During revision or resettlement operations, only percentage enhancements were made and therefore the dry assessment continued to be levied on the basis of the fertility of the soil and the distribution of rainfall. The soil classification of both the Andhra and Telangana districts was made systematically, scientifically and with meticulous care. It is therefore not necessary to change the classification of soils, as it was only based on sound and uniform principles. We have also considered the feasibility of reducing the multiplicity of rates for dry areas by classifying the soils into four grades—as we have done later while recommending the table for water rates—and applying the quantum and distribution of rainfall in various regions, with a view to simplifying the classification. We found that if such a simplified system is adopted some of the areas which are well known for their fertility had to be placed on the same level with those that are generally known to be only of moderate fertility. Obviously, the factor of inherent fertility of soil which had been estimated with great care in previous settlements cannot be disregarded. While human effort, good cultivation and proper manuring can certainly go a long way in improving the yield, the initial advantage of an inherent fertility of the soil still plays a very important part. We, however, found that there is not much variation in the incidence of the dry rates between the Andhra and the Telangana regions. In this connection, we have also examined whether there are any conflicting principles, in the method of calculation of dry assessments, which could be eliminated and found none except that in Telangana region, an allowance in annawari called 'Milewar' is made for all classes of lands situated at a distance from village site. For every distance of half a mile beyond the first furlong from the village, a half anna value of the field is reduced upto a maximum of four annas. In the Andhra region, there is no such schedule of deduction, although the distance from the village-site is one of the factors, taken into account, for reducing the sort suitably at the time of the classification of soils.



3. The following table shows the existing range of dry assessment in the various tracts of the State.

ANDHRA REGION.

Name of the district or tract.	Range of assessment.	
	From	To.
	Rs. np.	Rs. np.
1. Srikakulam	0.44	3.58
2. Visakhapatnam plains	0.19	2.37
Palakonda agency	0.19	3.00
Gudem agency	0.31	0.75
Polavaram agency	0.31	2.81
3. East Godavari	0.31	3.50
4. West Godavari	0.31	5.06
5. Krishna	0.31	2.37
East Godavari	0.25	2.50
West Godavari	0.31	3.75
Krishna	0.25	2.50
6. Guntur ...	0.31	4.75
do ...	0.25	4.50
Vinukonda taluk.	0.25	4.00
Ongole taluk.	0.25	2.81
7. Nellore ...	0.25	4.00
8. Kurnool ...	0.12	2.81
Alur, Adoni taluks	0.25	2.00
9. Cuddapah ...	0.25	4.00
10. Chittoor ...	0.25	3.37
11. Anantapur ...	0.12	2.81
Kadiri taluk	0.25	2.00

## TELANGANA REGION.

Name of the district or tract.	Range of assessment.	
	From	To.
	Rs. nP.	Rs. nP.
1. Adilabad.	... 0·16	2·24
2. Hyderabad.	... 0·17	2·47
3. Karimnagar.	... 0·17	2·47
4. Khammam.	... 0·17	2·14
5. Mahbubnagar.	... 0·17	2·24
6. Medak.	... 0·27	2·47
7. Nalgonda.	... 0·22	2·52
8. Nizamabad.	... 0·17	2·35
9. Warangal.	... 0·16	2·03

4. The average dry assessment for Andhra region works out to Rs. 1-2-0 per acre whereas it is Rs. 1-1-0 in the case of Telangana region after eliminating the allowance under milewar hitherto given. There is justification for the higher average of one anna in the case of Andhra region, in view of the superior type of soils in the deltas. Apparently, there is no real disparity in the incidence of dry assessments in the Andhra and the Telangana regions. The rates are uniform subject to the potentialities like the fertility of the soil and the quantum and distribution of rainfall. We have compared the dry assessment on the charka lands of Telangana which are similar to the assessment on red ferruginous lands of Andhra region situated in places having similar advantages. We have also compared the 'regad' soils which are known as black-cotton soils in both Andhra and Telangana regions. We found practically no difference in the pitch or incidence of dry assessments between the two regions. The differences due to the settlement and resettlement having taken place at different times with different ranges in the price level, have already been removed in Andhra region by the Andhra Land Revenue Assessment (Standardisation) Act, 1956 and by the Hyderabad Land (Special assessment) Act, 1952 in the Telangana region. At this stage, to go into the question of revision of dry assessment by soil reclassification, in any one of the regions or both the regions would mean wasteful labour and expenditure with

no corresponding advantage. We agree to leave the dry rates, as standardised recently, with the only modification of the abolition of "mile-war deductions" in Telangana and recommend that it would be enough if they are reviewed once in five years on the basis of price fluctuations and other agro-economic factors.

5. We are recommending in a later chapter that, in future, no land should be registered as wet and that all the lands now classified in the revenue accounts as 'wet' need only be registered as dry classifying them into four kinds of dry lands.

'A' Class dry lands will be those which now stand registered in the revenue accounts as compounded double crop wet land or double crop wet land and for which there is an assurance of water supply for raising two heavily irrigated wet crops or a dofasal crop.

'B' Class dry lands will be those which now stand registered in the revenue accounts as single crop wet lands and for which there is an assurance of water supply for raising a single heavily irrigated crop of not more than six months duration.

'C' Class dry lands will be those which are now included in the dry irrigated zones of projects and for which there is an assurance of water supply for raising one dry crop with light irrigation.

'D' Class dry lands will be those which are not entitled to any supply of water but include manavari, asmanitari and Kariveda lands.

The irrigation of A, B & C class dry lands is compulsory and not optional.

6. In the case of all lands in the Andhra region, the class and sort of soil is available for each field and applying the dry group of the village, the corresponding dry assessment of the land could be worked out. The dry assessment of all the fields now registered as wet can be fixed by the revenue officers without any elaborate working. In the Telangana region, the soil classification and milewar deductions, are not available in the Sethwar or village settlement register, but they are available in the district offices. As the 16 annas rates for dry and wet are available, the corresponding dry assessment for irrigated lands could be worked out on the basis of wet bhaganna value already fixed, but excluding the milewar

deduction. There is also need to eliminate the milewar allowance given to all the lands because we feel that if the milewar concessions, as it exists in Telangana, is allowed to continue, without a corresponding provision for Andhra region, it only results in continuing the disparity in the incidence of the land revenue assessment. The Director of Settlements and his Deputy who were examined by us stated that the dry assessment of all the lands in the Telangana region can be refixed on the principles recommended by us with the help of records available in the district offices without going to the field and that this work might engage the entire settlement staff for four months. We therefore think that the calculations to arrive at the dry component of the wet assessment on the wet lands in both the regions would not involve undue expenditure or labour.

7. We also consider that it is necessary to get the settlement registers of Andhra region known as diglotts and the sethwars of Telangana region re-written in a common form, with reference to our recommendations, through the agency of the Revenue and Settlement departments, printed and supplied to the village officers. We find that the diglott register of the Andhra area is more comprehensive and appropriate than the sethwar register of Telangana. We therefore recommend the adoption of the former for the whole State with the additions. Additional columns are necessary to show the new soil grade, class of source and the corresponding water charge besides the corresponding dry assessment. Copies may also be made available for sale to the ryots.

*Paragraph 2.—Proposals for the revision of assessments levied under.*

(1) The Andhra Land Revenue Assessment (Standardization) Act, 1956;

(2) The Andhra Land Revenue (Additional Wet Assessment) (Andhra Predsh Amendment) Act, 1957.

(3) The Andhra Pradesh Land Revenue (Surcharge) Act, 1957;

(4) The Andhra Pradesh Commercial Crops (Assessment) Act, 1957;

(5) The Madras District Boards Act, 1920 and

(6) The Madras Elementary Education Act, 1920.

In Chapter XIII of our report, we have recommended that the existing system of levying consolidated wet assessment, in which the water charge is granted in the land revenue assessment, fixed on the basis of yields should be abolished and that dry assessment and water charge should be charged separately for irrigated lands in future. According to the Andhra Land Revenue Assessment (Standardization) Act, 1956, standard rate of assessment is levied in Andhra region as follows:—

(a) In respect of (1) the Kadiri taluk of Anantapur district, (2) the Madanapalle and Vayalpad taluks of Chittoor district, (3) the Cuddapah district, (4) the Guntur district, (5) the Kurnool district excluding the Adoni and Alur taluks, (6) the Nellore district and (7) the Srikakulam district excluding the Bobbili, Cheepurupalle, Palakonda, Parvatipuram, Patapatnam and Salur taluks—the current rate of assessment together with an addition of Re. 0-0-6 in the rupee of such assessment, in the case of wet lands and Re. 0-2-0 in the rupee in the case of dry lands.

(b) In respect of (1) the Chittoor district excluding the Madanapalle and Vayalpad taluks, (2) the Bobbili, Cheepurupalle, Palakonda, Parvatipuram, Patapatnam and Salur taluks of Srikakulam district and (3) the Visakhapatnam districts—the current rate of assessment together with an addition of 3 pies in the rupee of such assessment in the case of wet lands and Re. 0-1-0 in the rupee in the case of dry lands.

(c) In respect of the Anantapur district excluding the Kadiri taluk, (2) the East Godavari district, (3) the Krishna district, (4) the Adoni and Alur taluks of Kurnool district and (5) the West Godavari district—no additional assessment has been levied.

2. Under the Hyderabad Land (Special Assessment) Act, 1952, Re. 0-1-0 per rupee in the case of wet lands and Re. 0-2-0 per rupee in the case of dry lands are levied in addition to the existing assessments in Telangana region, in districts which are due for a revision of settlement.

3. In view of our recommendation, for abolishing the consolidated wet assessment, we recommend that the standardized assessment levied on wet lands in the Andhra region and the Special Assessment levied on wet lands in the Telangana region may be abolished and that the two acts may be repealed to that extent.

4. Further, according to the Andhra Land Revenue (Additional Wet Assessment) Act, 1956 as amended by the Andhra Land Revenue (Additional Wet Assessment) (Andhra Pradesh Amendment) Act, 1957, an additional wet assessment at the rate of thirty-seven and a half of land revenue has been imposed in respect of all wet lands in Andhra region served by any Government source of irrigation, with the exception of lands irrigated under wells, spring channels and rainfed tanks, which derive supply of water from a source other than a river and which ordinarily receive supply of water for a period of less than eight months in a year. The levy of additional wet assessment is, however, subject to certain conditions viz., that the land revenue assessment payable in respect of the land shall not exceed Rs. 13.50 nP., in case of single crop wet lands and Rs. 20.25 nP., in case of double crop wet lands and also subject to the condition that if the land revenue assessment payable in respect of any land is higher than the maximum specified above, only maximum specified shall be collected. We recommend that this Act may also be repealed, as according to our recommendation there will not be any lands classified as wet, in future.

5. Under the Andhra Pradesh Land Revenue (Surcharge) Act, 1957, surcharge is levied on the land revenue at the following rates.—

<i>Amount of land revenue.</i>	<i>Rate of surcharge per rupee.</i>
Rs. 10 or less	Nil.
Exceeding Rs. 10 but not exceeding Rs. 100	0-13 nP.
Exceeding Rs. 100 but not exceeding Rs. 500	0-25 nP.
Exceeding Rs. 500	0-50 nP.

6. Though the surcharge is levied as an element of progression in the system of land revenue assessment, it is hitting even the poor ryots having uneconomic holdings. The real object of this tax should be to obtain larger contribution from the persons getting higher incomes from land and to that extent the burden of land taxation should be rendered more equitable than at present.

At present, landholders getting higher incomes for agriculture are not contributing to the exchequer their proper

share. If the taxable slab were to commence from Rs. 10 persons who own even one acre of irrigated land will have to pay surcharge. So we consider that surcharge should be levied only on taxable incomes and thereby reduce the disparity in the burden of tax on agricultural incomes to the minimum possible. We may also state here that under the Indian Income Tax Act, the exemption limit is Rs. 3,6000 and it is, therefore, equitable that there should be a similar comparable exemption in the case of incomes on land. Andhra Pradesh being a State of small holdings, we consider that ryots paying a land revenue of Rs. 50 and less including water charges but excluding land cess and education cess should be exempted from paying any surcharge.

7. As we have recommended elsewhere the abolition of the classification of lands as wet, there will be no wet lands in future. There will be only dry assessment and water charge, when the lands are irrigated. As all the existing wet lands in future will be classified as only dry, and they bear only the dry assessment, we consider that the surcharge to be levied should be on the total of water charge and dry assessment. We, therefore, recommend that in the definitions under the Act, 'Land Revenue' may be made to mean, and include water charge also but not land cess. We recommend that surcharge may be levied on the land revenue assessment at the following rates:—

<i>Amount of land revenue.</i>	<i>Rate of surcharge per rupee.</i>
Rs. 50 or less	Nil.
Exceeding Rs. 50 but not exceeding Rs. 100	0-13 nP.
Exceeding Rs. 100 but not exceeding Rs. 250	0-25 nP.
Exceeding Rs. 250	0-50 nP.

No cesses should be levied on the surcharge imposed.

8. The Andhra Pradesh Land Revenue (Surcharge) Act, 1957 may be amended accordingly.

9. Under the Andhra Pradesh (Commercial) Crops Assessment Act, 1957, special assessment is levied on commercial crops as follows:—

						<i>per acre.</i>
						Rs.
(1) Casurina	...	...	...	...	...	1
(2) Cotton	...	...	...	...	...	1
(3) Coconut	...	...	...	...	...	2
(4) Tobacco:						
(a) Virginia	...	...	...	...	...	3
(b) Other varieties	...	...	...	...	...	1
(5) Turmeric	...	...	...	...	...	5
(6) Sugarcane	...	...	...	...	...	5
(7) Plantains	...	...	...	...	...	5
(8) Chillies	...	...	...	...	...	2
(9) Citrus fruit	...	...	...	...	...	2
(10) Groundnut	...	...	...	...	...	1
(11) Betelvines	...	...	...	...	...	5
(12) Onions	...	...	...	...	...	5

10. Due to the sudden fall in the prices of turmeric and due to a heavy incidence of pests and untimely and inadequate rainfall for groundnut, the collection of special assessment on these two commodities has been temporarily suspended by the Government.

11. The special assessment on the above commercial crops is levied with a view to reduce the disparity in the incomes of the ryots who grow food crops and those who grow commercial crops or other valuable crops. But there is always an uncertainty in the price of commercial crops during the various seasons of the year and the ryots grow these crops only when they anticipate profits. Otherwise, they change over to food crops. Commercial crops are then grown only in normal rotation. There are several difficulties in the working of this Act. At present, the special assessment on commercial crops is levied on the basis of acreage. The Act does not take into consideration the difference in yield per acre, not only from region to region in the State, but also from field to field, and irrigated to unirrigated. Further there is considerable difficulty in estimating the area grown under the different com-



mercial crops correctly, the natural tendency being to minimize the areas under the crops. A tax like this generally leads to manipulation of figures, resulting in unreliable statistics. We, therefore, recommend that the special assessment on commercial crops now levied may be abolished and that the rate of purchase tax levied on these commodities might be suitably increased.

12. Under section 78 of the Madras District Boards Act, 1920, land cess at the rate of two annas on a rupee is levied on the land revenue payable by the landholders to the Government in the Andhra region. Similarly under section 135 of the Hyderabad District Boards Act, 1956, local cess is levied at the rate of two annas on every rupee of land revenue payable to the Government in the Telangana region. As these cesses are the main sources of income to the local bodies in both the regions, we recommend their continuance.

13. Under section 35 of the Madras Elementary Education Act, education cess at the rate of Re. 0-3-0 is levied on every rupee of land revenue payable by the land owners to the Government in the Andhra region. This amount is collected by the Revenue Department and transferred to the District Board which maintains and runs the Elementary and High Schools. A similar cess is not levied in the Telangana region. With a view to have uniformity in both the regions, we recommend that education cess may be levied in the Telangana region also at the rate of Rs. 0-3-0 on every rupee of the land revenue payable to the Government and that necessary legislation may be undertaken by the Government to that effect.

14. Though the education cess is collected from the agriculturists only, the benefits go to the entire population including non-agriculturists. We consider that other sections of the community should also be taxed in an appropriate manner so that the burden might be borne by all the sections of the population evenly. To this end, we recommend that either a new tax should be levied on the non-agricultural population or the education cess that is now recommended for imposition in Telangana should be abolished in the Andhra region also and every one, including land owners, taxed on a new and uniform basis and the revenue thus derived utilized for education.

*Paragraph 3.—Advantages and disadvantages of multiple taxes.*

The different taxes now levied on land and agricultural produce in Andhra Pradesh are—

- (1) Land revenue on wet, garden and dry lands,
- (2) Land cess,
- (3) Education cess,
- (4) Sales tax or purchase tax on agricultural produce,
- (5) Assessment under the Andhra Land Revenue Assessments (Standardization) Act, 1956,
- (6) Additional assessment on wet lands,
- (7) Surcharge on land revenue,
- (8) Special assessment on commercial crops and
- (9) Special assessment on land in Telangana.

2. Besides these, there is Central Sales Tax on cotton, jute and oil seeds and Central Excise duty on tobacco and sugar. Out of the above taxes, the following are exclusively, in vogue, in the Andhra region:—

(1) Additional assessment on land revenue levied under the Andhra Land Revenue Assessment (Standardization) Act, 1956;

(2) Additional assessment levied on wet lands under the Andhra Land Revenue (Additional Wet Assessment) Act, 1956, as amended by the Andhra Land Revenue (Additional Wet Assessment) (Andhra Pradesh Amendment) Act, 1957; and

(3) Education cess levied under the Madras Elementary Education Act, 1920. Special assessment on land is exclusively, in vogue, in the Telangana region. It is levied under the Hyderabad Land (Special Assessment) Act, 1952.

3. The following taxes are common to both Telangana and Andhra regions:—

- (1) Land revenue on wet, garden and dry lands.
- (2) Special assessment on commercial crops levied under the Andhra Pradesh Commercial Crops Assessment Act, 1957.

(3) Surcharge on land revenue levied under the Andhra Pradesh Land Revenue (Surcharge) Act, 1957.

(4) Land cess levied under the Madras District Boards Act, 1920 and the Hyderabad District Boards Act.

(5) Sales tax or purchase tax on agricultural commodities.

4. At present we have as many as nine different taxes on land and agricultural produce. Out of these 9 kinds of taxes, land revenue, land cess and education cess are the oldest, while purchase tax has been in vogue since 1956 and they have come to stay. The taxes which have been levied recently are standardized assessment on land revenue, additional wet assessment, special assessment on commercial crops and surcharge on land revenue. Out of these 9 kinds of taxes, land revenue on wet, garden and dry lands is the primary tax levied on lands. Land cess and education cess are levied on the basis of land revenue and the income is ear-marked for specific purposes. Standardized assessment, additional assessment on wet lands and special assessment on lands are new additions to the land revenue proper. The special assessment on lands levied in Telangana at a rate of one anna per rupee in the case of wet lands and two annas per rupee in the case of dry lands is similar to the standardized assessment levied in the Andhra region. This is levied in areas which are due for a revision settlement in order to equalize the incidence of land revenue on all the ryots. The ryots do not grudge paying land revenue but they are not able to understand the calculations in the case of these several additions to the land revenue proper. It is no doubt true that land cess and education cess have been in existence for a long time, although the rate has been increased in recent years. They have to be retained separately even in future. There is no reason to continue separately the levy of standardized assessment and additional assessment on wet lands. The circumstances that necessitated the levy of the standardized assessment and additional assessment on wet lands are detailed below.

5. The pattern of the country's agricultural economy has considerably changed from the time of the initial and resettlements owing to the violent fluctuations in the prices of agricultural produce. The place of land revenue has also changed with the changing character of the economy; progressive

monetization, the development of internal transport, the growing commercialization of agriculture and the general evolution of an All-India Market. The steady rise in local prices, has served to lighten the burden of land revenue. These changes in the pattern of agriculture have resulted in a steady increase in the prices of foodgrains. Thanks to the Second World War, the prices have risen to nearly 4 to 5 times the pre-war level. Those, whose lands had been settled or resettled in one of the earlier periods, are bearing only a lighter burden of assessment than their counterparts whose lands have been settled or resettled later. Disparities of this type have come into existence, due to the abandonment of resettlements. On grounds of equity these disparities have to be minimized by a re-adjustment of assessment. The assessments have, therefore, been standardized to achieve this aim. It is equally patent that on account of heavy rise in the prices of the materials and in wages and salaries, the cost of construction of new irrigation works and the maintenance of old and new irrigation works has increased considerably. Further other small irrigation schemes such as renovation of tanks taken up by the Government has also contributed to an increase in the expenditure on irrigation. While the rise in the prices of agricultural commodities during and since the War has resulted in rise of cash income to the ryots, the water rates have continued to remain at the same low levels. Thus the revision of water rates has become necessary. It has, therefore, become necessary to raise water rates to an appropriate level. Since assessment on wet land comprises of dry assessment and water rate, the Government have levied additional assessment on wet lands, thus increasing the water rate component of the assessment on wet lands. This is in accordance with the Andhra Land Revenue (Additional Wet Assessment) Act, 1956 as amended by the Andhra Land Revenue (Additional Wet Assessment) (Andhra Pradesh Amendment) Act 1957. Whatever may be the justification for the levy of these assessments, there is absolutely no reason why they should be shown separately.

6. The question for consideration is how far the Government are justified in levying the other taxes and what are the advantages and disadvantages in their levy from the points of view of the cultivator and the Government. Like other States in India, Andhra Pradesh is also engaged in Nation Building activities. In a welfare State, it is the primary duty of the

Government to look after the comforts of the people and raise their standard of living. For this, money is needed and the Government will have to get it by increased taxation; after proper investigation of the taxable surplus. The burden of taxation which a cultivator has to bear should be in accordance with his ability; it should be elastic so as to vary with the climatic and other conditions of the region and the changes in price levels. The main criteria of a sound system of taxation, the ability of the tax-payer, economy in collection, elasticity in procedure, as well as equity in incidence are applicable to incomes from land as well as to all incomes.

7. The surcharge on land revenue is intended to introduce an element of progression in the land revenue payable by owners of agricultural land. An ideal thing would have been to follow the recommendations of the Taxation Enquiry Commission, 1953-54, but the practical difficulties inherent in assessing accurately, the agricultural incomes and the dwindling number of land holders earning incomes taxable under the Income Tax Act compelled the Government to choose the surcharge instead. Indeed the agricultural income tax was in vogue in Telangana but low collections and the high proportion of it, needed towards the administrative cost, were powerful factors in influencing the decision of the Government of Andhra Pradesh to opt for surcharge on land revenue. Another feeling grew with the Government. It was that producers of commercial crops were making large profits. Since the cost of only foodgrains entered into the commutation prices, it was felt that it would not be inequitable to levy an additional tax on areas grown with commercial crops.

8. The levy of each of these new taxes may have an independent justification, but cumulatively they have led to a confusing state of affairs at the local level, where the revenue is actually paid and collected.

9. We have everywhere been told by the ryots, the Village Officers and the Government servants (Officers), with equal emphasis, that this multiplicity of taxes must go. There were complaints everywhere that taxes have gone up steeply but more than the quantum, it was the manner of computing the demand that was most seriously objected to. We do feel that as long as the same ryot pays to the same Government for almost the same purpose, it would be convenient and administratively less costly to have one tax instead of many, if it could possibly be helped.

## CHAPTER XI.

*Consideration of alternatives to the existing system of Land Revenue.*

This Chapter deals with the question of replacing the land revenue system by sales tax on the sale of agricultural produce, or by a tax on the capital or rental value of land, or by an agricultural income tax or by a sliding scale of land revenue.

*Sales Tax in complete replacement of the Land Revenue System.*

2. The Land Revenue Reforms Committee, Madras, after detailed examination considered that the proposal to replace the land revenue assessment by a sales tax on the first sale of agricultural produce, cannot be accepted.

3. The Taxation Enquiry Commission 1953-54 in paragraph 56 of Chapter IV of its report, had stated that the replacement of the land revenue system by sales tax was not feasible on financial and administrative grounds. We agree and we are therefore of the view that the sales tax cannot serve as an alternative to the existing system of land revenue.

*Tax on capital or rental value of the land.*

4. The Indian Taxation Enquiry Committee considered that this tax may be based on—

(a) the capital value, which is usually determined periodically with reference to the sale value of lands;

(b) the unimproved or public value, i.e., such part of the capital value as is not due to the efforts or investment of the owners or occupiers;

(c) the net produce, i.e., the gross produce less the cost of production;

(d) the annual value, i.e., the gross produce less the cost of production and earnings of management; and

(e) the net income of the farmers, i.e., the earnings of management plus the value of the labour of the farmer and his family.

5. The Land Revenue Reforms Committee, Madras, in paragraph 31 of its report observed, "The majority of opinions expressed in the memoranda received by us are definitely against the adoption of these alternatives. The land revenue system in this State has been evolved over a series of years, and before the system is scrapped and replaced by some other system, it would be necessary for us to examine closely the implications of the alternatives proposed. Both the systems of levy, as a percentage of the capital value or the rental value, involve the difficulty of laborious initial valuation and also the serious disadvantage of the re-assessments necessary, periodically. If the re-assessments are to be done annually, that will be extremely burdensome and expensive; if they are to be done quinquennially, that will not be elastic enough, and in any case, the fact that re-assessment is necessary and likely, would bring in an element of uncertainty as compared with the existing system. The assessing agencies themselves may not have uniform standards and this may lead to inequity of levy as between various areas in this State. These methods will not allow of progression and so will, in that respect, be open to the same criticism as the present system. In any case these schemes will have to rest largely on the existing system of survey and land registers, and so there may not be any saving in cost, but on the other hand the staff for initial assessment and for re-assessment will really have to be extra and will entail additional cost."

6. We also consider that the existing system of land revenue cannot profitably be replaced by the levy of a tax either as a percentage of rental value or as a percentage of capital value of the land.

#### *Agricultural Income Tax.*

7. The existing system of assessment on land, lacks an element of progression in that a person who owns a large extent of land and enjoys a considerable net surplus from the produce pays assessment only at the same rate as another who has only a small holding which leaves only a small surplus to him. With a view to introducing a measure of progression into the system of land revenue assessment, the proposals for the levy of agricultural income tax is examined in the following paragraphs:—

(i) The Indian Taxation Enquiry Committee observed in 1925 as follows: "There is no historical or theoretical esti-

fication for the continued exemption from the income tax of incomes derived from agriculture. There are, however, administrative and political objections to the removal of the exemption at the present time. There is ample justification for the proposal that incomes from agriculture should be taken into account for the purpose of determining the rate at which the tax on the other incomes of the same person should be assessed, if it should prove administratively feasible and practically worth while". The position remained unchanged until the passing of the Government of India Act, 1935 and the actual development which then took place, was that a separate provincial levy on agricultural incomes became for the first time possible.

(ii) In 1937, the Marjori Banks' Committee considered the income tax idea to be not practical politics on the ground "that the great number of small holdings and the small amount of the assessment paid by each shows few ryots would be liable to pay anything at all on the basis of income tax, and the amount of worry and annoyance the investigation of the departmental staff would cause may be better imagined than described" but it is not clear whether they were thinking of an agricultural income tax in complete replacement of the land revenue, or of an agricultural income tax over and above the assessment on land.

(iii) With the advent of the first Congress Ministry in July 1937, the proposal was actively re-examined and it was finally considered to be inadvisable to proceed with the proposal before settling the land revenue policy. The Advocate-General whose opinion was then obtained on the question of legality of the levy of agricultural income tax on incomes accruing from permanently settled estates had opined that such a levy cannot be said to alter the character of the permanent settlements. However in view of the abolition of the Zamindaries this particular aspect of the matter does not now need any examination.

(iv) In 1943, when the Government of India suggested a levy, or enhancement of the rates of agricultural income tax as one of the measures to check inflation, even those who were prepared to support measure on grounds of principles, objected to the enactment at that particular time on the plea that such a measure should be sponsored by a popular Government and



not by the Advisers' Government. Another objection raised was that the finances of the Government were then satisfactory and so there was no justification for the levy of additional taxation. Yet another objection and possibly the most important one was that an essential pre-requisite to the imposition of an agricultural income tax was that the inequities and inequalities in the present system of assessment should be reduced to a minimum. Once again further consideration of the bill was dropped.

(v) In 1945, Sri Govindan Nair, an Officer of the Income Tax Department of the Central Government who was asked to investigate into the question of agricultural income tax and the likely yield, estimated a demand of 141 lakhs of rupees on the basis of rates and exemptions indicated in the Agricultural Income Tax Bill of 1947, of the Madras Government. The demand appears to be too high, particularly considering the fact that the exemption limit was then fixed at Rs. 5,000. Then the Zamindari Abolition had not come into effect. In 1946, on the advent of the Second Congress Ministry, this question was again reopened and after taking into account the criticisms, on the bill published in 1945, a fresh bill was published in the Gazette on 2nd January 1947. After some discussion, the papers were referred to Sri N. Raghavendra Rao. He observed that the important factor is that the agricultural income is not always steady but fluctuating from year to year, that the yield in this province is not generally good, that it does not compare favourably with the yield in other countries, that improved methods of cultivation have not yet been adopted on a large scale, that with most of the ryots the cultivation is only of a casual nature, that cultivation is not carried on as a business or on commercial scale, that failure of crops is not infrequent, and that a small portion of the cultivated land is protected by irrigation. The rest depends on rainfall which proves to be scanty and undependable and that pests also contribute to the poor yield, and that the value of the yield is to be determined by the price of the raw produce.

8. The Special Officer, Sri N. Raghavendra Rao estimated on the basis of net income from the land being four times the land revenue assessment, that the net assessable income would be about two crores of rupees on the assumption that only food crops are grown, and if commercial crops were grown, the net income would be much higher. His estimate was based presumably on Sri K. Govindan Nair's estimate. The considera-

tion of Sri Raghavendra Rao's report itself had been deferred pending the report of the Madras Land Revenue Reforms Committee, 1951. The Committee did not recommend the levy of agricultural income tax in any of the following ways in complete replacement of the existing system of land revenue.

(a) An agricultural income tax with a lower exemption limit but no other charge of any kind whether it be assessment or water rate on the land, or

(b) as in (a) above, but without exemption limit whatever, or

(c) an agricultural income tax with a lower exemption limit, no assessment being levied on land, but water rates being collected for water taken from a Government irrigation source,

(d) the levy of an agricultural income tax over and above a 'flat rate of land tax' plus water rate.

9. The Madras Land Revenue Reforms Committee was however, of the opinion that an agricultural income tax can properly be conceived only to be super-imposed as a factor of progression, in the scheme of suitable assessments on the land. They also observed, "that progression is necessary and justifiable cannot reasonably be denied, and we consider that, in principle, the levy of an agricultural income tax would be a proper way of securing a measure of progression in the scheme of land revenue assessment". In paragraph 121 of the report of the Madras Land Revenue Reforms Committee stated that the immediate implementation of the above principle throughout the agricultural sector, plantation areas excepted, would give rise to a degree of hardship among the agriculturists which, in its view, it was essential to avoid at that juncture. It further stated in the same paragraph as follows:—

"There is a fundamental difference in the maintenance of accounts, in the running of a business and in the running of a farm. In business, accounts have necessarily to be maintained, more or less systematically, to record each transaction as and when it takes place, but in agriculture it would not be essential except for purposes of the income tax. In the case of farmers, the overwhelming majority of whom, including large farmers, are illiterate, maintenance of

accounts in a form which would satisfy the officers of the Income Tax Department would give rise to insuperable difficulties. The effect would be to force them to employ an accountant. That would constitute a serious additional burden to agriculturists if we consider the wages or salary to be paid all through the year to a competent and reliable accountant. They cannot leave matters entirely in the hands of the accountants they employ either, and they will have necessarily to exercise a close supervision over the accountant's work. All this would distract the farmer's attention thus affecting the return he gets from the land which are developments to be avoided at the present juncture when it is imperative to focus the farmer's undivided interests on food production. On all these considerations, we are of the view that there should be no immediate levy of an agricultural income tax in the agricultural sector (except in plantation areas, which we deal with below)".

10. It can, therefore, be stated that the recommendations of the Land Revenue Reforms Committee, Madras, that agricultural income tax can be levied over and above the land revenue assessment is not applicable to Andhra Pradesh as there are no plantations. Further, the difficulties explained by them in introducing the system in the agricultural sector other than plantations exist even in Andhra Pradesh.

11. The Agricultural Income Tax was being levied in the Telangana area under the Hyderabad Agricultural Income Tax Act, 1950. (Act XIII of 1950) at the following rates.—

	<i>pies in the rupee.</i>
(1) On the first Rs. 2,000 of total income.	Nil
(2) On the next Rs. 3,500 of total income	... 9
(3) On the next Rs. 5,000 of total income	... 18
(4) On the next Rs. 5,000 of total income	... 36
(5) On the balance of the total income	... 48

PARTICULARS OF REVENUE AND THE COST OF COLLECTION UNDER  
HYDERABAD AGRICULTURAL INCOME TAX ACT, 1950.

Year.	Tax levied.	Tax collected	Cost of
			collection.
	Rs.	Rs.	Rs.
1950-51	... 1,07,614	18,964	Nil.
1951-52	... 17,70,195	12,02,050	Nil.
1952-53	... 4,52,347	2,04,550	22,161
1953-54	... 5,83,131	2,26,466	55,304
1954-55	... 8,17,784	2,37,289	51,595
1955-56	... 6,81,771	80,654	51,124
1956-57	... 12,17,534	80,132	Nil.

12. Consequent on the abolition of Jagirs the size of the larger holding dwindled and the revenue under the act diminished. In view of the above consideration and in order to have uniform taxation both in Andhra and Telangana the Government have enacted the Andhra Pradesh Land Revenue Surcharge Act, 1957 repealing the Hyderabad Agricultural Income Tax Act, 1950.

13. The estimated yield on account of agricultural income tax is about rupees six lakhs in Andhra area. The size of holdings is bound to go down with the impending Land Reforms and the fixation of ceilings on agricultural incomes. The levy of agricultural income tax, therefore, will not bring in any sizable revenue. On the other hand, there will be many administrative difficulties and also some harassment. Besides, there would be difficulty in ascertaining the correct incomes in the absence of proper accounts from the ryots. The Subramanyam Committee did not consider it worthwhile to levy agricultural income tax in complete replacement of the existing system of land revenue. For all these considerations, we consider that it is neither feasible nor practicable to levy agricultural income tax either as an alternative to the existing system of land revenue or in addition to it.

*Sliding Scales of Assessment.*

14. This system was prevalent only in two districts in the Punjab. Its object was to enable the Government to alter its demand with the rise or fall of prices and to adjust this demand at each harvest to current prices. Following are the

chief features of the system as stated by the Punjab Land Revenue Committee (1938) in Chapter 52 of its report.

(i) "The land revenue rates for each assessment circle based on commutation prices are the maximum rates payable during the term of settlement but the demand at each harvest due under these rates is not collected in full unless the general price level of the chief staple products of the district during the marketing season of the two preceding harvests is at least as high as the commutation price level.

(ii) if it is lower, revenue payers are entitled to a proportionate remission, however much lower it may be.

(iii) As stated above the remission to be allowed is based on the prices current during the marketing season of the two preceding harvests. It is not based on the prices of the actual harvest, because the land revenue is payable before the marketing of the crop is complete and the season's prices are fully available.

(iv) Remissions are granted in terms of half-anna per rupee of land revenue. In other words, they will be in units of three and one-eighth per cent of the full demand *e.g.*, three and one-eighth per cent, six and one-fourth per cent and 12 and half per cent and so on according to prices. This makes it easy for revenue payers to check the amount demanded from them.

(v) The demand on each holding is first calculated at full rates and the remission allowed is then deducted from it. The balance is the net amount due. In paragraph 106 of its report, the Committee came to the conclusion, that it would be unwise to extend the sliding scale system to the remaining districts in the State for the following among other reasons:

(1) The system is very costly.

(2) It would give no more relief to the small holder than to the large.

(3) It could only be done on the basis of the Commutation prices in each district, and this involves considering only one of the many factors that enter into a settlement. To consider the other factors at the same time would virtually mean a resettlement and if this were done in the office it would be open to the gravest objection. On the other hand,

if the other factors were not considered it is bound to lead to inequality and injustice not merely between district and district but also between village and village”.

15. We are in complete agreement with the observations made by the Punjab Committee, after gaining actual experience of the working of the system, and, therefore, do not recommend the introduction of the sliding scale system.

## CHAPTER XII.

*Paragraph 1.—Fixing land revenue assessment on the basis of gross produce or net produce and comparative study of the problems in other Indian States.*

In India, the State's claim to a share of the produce from the land has been recognised from the earliest times. The present land revenue systems in India, are a direct heritage from former Governments. The modifications under the British Government have been few but important, the tendency has been to recognise the local customs prevailing at the time of the codification of any law regarding land. The earliest inhabitants of India, known to anthropologists as Kolarians, recognised patriarchal or family system. The proprietary rights in the land vested in the family or tribal organization by whose labours, the land had been cleared or reclaimed from the jungle. Their institutions were democratic. The chiefs, though they held larger and more fertile holdings claimed no tribute or revenue as a matter of right and only accepted gifts. This democratic instinct is still ingrained among Kols and Sonthals who cultivate jungle land without anybody's permission. The Dravidians, who followed the Kolarians, extended the system of their predecessors. They permitted the proprietary rights in the land to vest in the actual cultivator. The king, however, collected a certain share of the produce from all holdings except those held by priests, military officers and others rendering service. The Aryans who followed the Dravidians continued the land system of their predecessors and recognized the reclamer of land from jungle as the true proprietor and all land holders, except priests, Kotwals and others who rendered service, paid a portion of the produce of the land to the king. The Hindu system never recognised the king as the proprietor of cultivated land but only as a protector and overlord. The Mohammeden conquerers adopted generally the system of their predecessors. The first important change was made by Akbar, who substituted cash payment for payment in kind.

It was during the decadence of the Moghal Empire, that petty chiefs, Rajas and Jagirdars rose into power. It became necessary for the British Government, to recognize these magnates and accept annual tributes from them. Another class of people who rose into power are those, to whom the Moslem Governments farmed out the right to collect revenue. They retained a certain share of it for the work involved, which was afterwards known as 'Malikana'. This is origin of the class of zamindars. The Permanent Settlement fixed, permanently the maximum revenue that the British Government could collect from the zamindars.

2. The basis adopted by different States in calculating Land Revenue are as follows.—

- (1) Net assets or economic rents.
- (2) Net produce or annual value.
- (3) Empirical.
- (4) Rental value.
- (5) Capital value and
- (6) Gross produce.

(1) *Net assets or economic rents.*

3. This method of assessment is in force in the Punjab, Uttar Pradesh, Madhya Pradesh, Pepsu, Himachal Pradesh, Ajmer and Delhi. This method was also followed in the temporarily settled areas of Bihar, Orissa and West Bengal. By net assets or economic rents, is meant, "the estimated average annual surplus of an estate or group of estates remaining after deducting the ordinary expenses of cultivation as ascertained or estimated".

(2) *Net produce or annual value.*

4. Madras and Andhra are the only States in which this method is in vogue. The average outturn per acre of the staple food crops for different kinds of soil is first determined, on the basis of crop experiments and elaborate enquiries in the fields. The gross value is then worked out on the basis of commutation rates, i.e., the average price of the preceding 20 non-famine years. The net produce or annual value is then derived by deducting from gross value the cultivation

expenses and also making certain allowance for seasonal conditions. The cultivation expenses include expenses on ploughing cattle, agricultural implements, seeds, manure, wages of labour required for ploughing, transplanting, weeding, harvesting and thrashing.

(3) *Empirical Method.*

5. Under this method, the aggregate amount of assessment is first fixed for a tract and then distributed over the villages and the individual survey numbers by means of maximum rates for the various classes of lands. Several factors are taken into consideration by the Settlement Officer at the time of settlement or revision and the assessment is ultimately based on the subjective impressions of the Settlement Officer. He will then examine the economic background of the tract and find out whether the area under cultivation and occupation has increased or decreased and whether the material condition of the people has improved or deteriorated. He will also take into consideration the proximity of the markets, the facilities of communication, the fluctuations in the prices of the main staple food crops and the land values of the tracts under settlement. This method of assessment is, in vogue, in Bombay, Telangana of erstwhile Hyderabad, Mysore, Bhopal, Manipur and Tripura States.

(4) *Rental Value.*

6. Except in Madras and Andhra, the main emphasis in many other states, is on rental value. Though the basis of assessment is net assets or is empirical, the general method adopted is to ascertain the actual rents received by the land holders and then to fix the assessments, after allowing certain deductions.

(5) *Capital Value.*

7. Though this basis has not been adopted for assessment in any state of this country, yet in practically all the States, the sale and mortgage values of the land formed one of the factors taken into consideration, at the time of settlements or resettlements.

(6) *Gross produce.*

8. This method formed the basis of assessment, in almost all States in India before the more scientific methods were evolved. This method is still in vogue in Assam and the



maximum limit of assessment, for any tract has been fixed at 10 per cent of the value of the gross produce of that tract.

9. Many of the complexities of the land revenue systems in India can be traced to the fact that the Indian systems are the result of a gradual process of evolution from indigenous practices and that they have been moulded into their present shape by British Officers, quite independently of one another, to suit local circumstances in different States.

10. The ryotwari system was, in a state of flux, till 1885, when the inequalities and weight of the assessment and the incessant but unsystematic reductions, compelled the then Madras Government, of which the present Andhra region was a part, to introduce a new survey and revise the assessment, chiefly with a view to give adequate relief to the ryots. Till the middle of the 19th century, the assessment was based on the gross produce of the land. Later on with the introduction of settlements, the assessment was based on the net produce of the land. The subject, whether the fixing of land revenue should be on the basis of gross or net produce received the attention of the Government of India in the year 1902 on a complaint made by R. C. Dutt and some others. The Government of India obtained detailed reports from the State Governments and passed a resolution in regard to the policy to be adopted by them. The Madras Government while submitting its report considered that the principle of taking the Government's share of the net produce, i.e., half of the net produce was practicable and more favourable to the ryots than taking a share of the gross produce. The Board of Revenue, Madras in its resolution No. 542, dated 6th December 1900 reported as follows.—

“It will further be clear that since the settlement allowance for cultivation expenses and the consequent calculation of the “net produce” are not “ruinous to the cultivation of the poorer class of lands”, no sufficient ground has been made out by Mr. Dutt for his suggestion (paragraph 13) that in future revisions “one-fifth of the gross produce and not half of the net produce be accepted as the maximum of rent” or rather “assessment”. For 36 years, without interruption, the ‘half-net’ principle, based upon years of discussion and ordered both by the Court of Directors and by successive Secretaries of State, as being more fair to the poorer lands, has been adopted and the settlement of every district is now based upon it; to go back to the method of taking share of the

gross would be, exactly, to reintroduce uncertainty. In 1856, the Court of Directors declined to accept the Madras Government's proposal, to take 30 per cent of the gross produce as basis of the maximum demand, observing that, "in lands of high degree of fertility, possessing every means of communication and in the neighbourhood of good markets, 30 per cent of the gross produce may fall considerably within the limits of the rent or net produce; in lands less fertile and less favourably situated, a much smaller share of the gross produce might considerably exceed it. The natural and inevitable consequence, as it appears to us, of apportioning the assessment to the gross produce, is to favour the most fertile lands, and to press, with increasing severity, on the poorer land, in an inverse ratio to their fertility". They consequently ordered that the assessment should be based not upon the share of the gross but upon a share of the net produce. In confirmation of the Court's observations.....that on the half-net system, the poorer lands are more favourably treated than the superior lands, i.e., that the cultivation expenses are more liberal in proportion to the produce; also that the assessments based on half the net produce are in almost all cases below, in many cases far below, one-fifth of the (nominal) gross produce even at commutation rates.....It is thus clear not only that the ryot is assessed much below 20 per cent of the gross produce on by far the greater bulk of the dry soils, for the highest class of soils are not very extensive but also that the lowest class of soils enjoy progressively lighter rates of assessments under the half-net system. In other words, the cultivation expenses on dry soils and, consequently, the net produce system are more favourable to the poorer than to the richer lands and Mr. Dutt's reason for altering the method of settlement is, therefore, unnecessary and even inadvisable".

11. The Government of India considered the reports from the several State Governments and held that the suggestion that land revenue should be fixed as a share of the gross produce was impracticable.

12. Even in the middle of the Nineteenth century, the Government of India decided that land revenue should be levied only as a share of the net produce. We are in full agreement with this view. Even in Telangana, the erstwhile Hyderabad Government had this concept in view, in fixing the assessment, although they did not strictly follow the Madras system of calculation of the net produce.

*Paragraph 2.—The items that should be deducted from the gross yield to arrive at the net income and the percentage of the net income that may form the proper share of Government, towards land revenue.*

Having decided that land revenue assessment should be fixed as a part of the net produce, our reply to the question, whether land revenue should be fixed as a percentage of the net produce, is in the affirmative.

2. The points for consideration are: What are the items that should be deducted from the gross yield to arrive at the net yield and (ii) what percentage of the net income should be fixed as the proper share of the Government, towards land revenue.

3. Before dealing with the question, at what percentage of the net income the proper share of the Government towards land revenue should be fixed, we examine first, the items that should be deducted from the gross yield, to arrive at the net yield.

4. While considering their land revenue policy during the year 1902, the Government of India also dealt with the cultivation expenses and what 'net produce' should consist of. The cost of cultivation is not proportional to the produce from any unit area. It must be perfectly obvious that the cultivation expenses vary, not merely from soil to soil, but from man to man, from crop to crop, and from year to year; in one field a man will spend Rs. 10, Rs. 20 or more on manure—according to crop, etc.—while his neighbour may spend little or nothing; one man cultivates his land contributing his own labour, drives a plough cut from his own field, with a team, he had bred on the land, and weeds and harvests with the labour of his own family, while his neighbour, perhaps a Brahmin, a merchant, or other non-cultivator, hires labour and buys material, at every step. But, since it is necessary to allow for the cost of raising a crop, the Settlement Officer prepared tables, based upon many years of enquiry and experience and applied them to the soils, in rough proportion to their productiveness, knowing fully well that the less productive lands do, as a matter of fact, generally get far less spent upon them than the more productive lands. It is not that expenses on poorer lands would not be as great or greater, if they were intensively cultivated, or that they would not cost more than

good lands, if they had to be raised to a given productiveness, or to yield a given produce, but, in fact, they are *not* so well cultivated, as they are not productive. The best lands get the maximum attention, the heaviest manuring, and labour. The ryot prefers to spend less upon the less productive and more precarious lands. Consequently, the gradation, though only a generalised approximation, has a real foundation.

(5) That the poorer soils are comparatively neglected, is a matter of the most common knowledge and experience, and is recorded in many settlement reports, the District Manuals and the reports of the agricultural experts. Wet lands, when assessed at low rates, are usually at the tail end of the irrigated area, or are on a high level, or are of poor soil; these lands are usually tilled last and get such labour, manure and water, as are left and available. In the case of dry lands, it is notorious that immense areas of poor lands get no manure, but are fallowed every third year or oftener, and that the manure available is reserved for the better soils and especially for the 'gardens' (dry land, watered by wells). So also, it is the better lands, the black-cotton soils, the red-loams and so forth, which get the thorough weeding necessary for good outturns, while on millions of acres of dry soils, assessed from two annas to eight annas, in districts of scanty rainfall, with a rocky or unwholesome sub-soil and only a few inches of stony surface soil, the land is barely scratched and sown with castor, groundnut horsegram, or millet; in most of such cases Rs. 1 to Rs. 2 per acre would be an outside figure of net income.

6. In this connection, it will be interesting to read paragraphs 38, 39, 40 and 42 of the resolution of the Board of Revenue, Madras, No. 542, dated 6th December 1900 which are extracted below.—

"38. In considering the relation of the estimate of expenses to the outturn and to the consequent position of the cultivator, it must be remembered that these scales are maxima; not that they are not often exceeded whether according to the year, the crop, or the ryot, but that they are all calculated as though paid for in money, as though labour, cattle, manure, etc., were all purchased, a hypothesis wholly different from fact but differing wholly to the benefit of the ryot. The cost of bullocks is calculated at a certain rate as though they were always bought, whereas in very many instances they are bred by the ryot and brought up wholly on the straw of the farm crops or on wild pasture: moreover. the cal-

cultivation usually allows for a minimum of acreage tilled and of duration of the cattle, whereas on dry land, a pair will ordinarily last five years and more and till 14 acres or more per annum, besides doing other work and yielding manure: hence the average rate of cost given in the tables is a maximum. So also, in probably nine-tenths of the area, at least of dry lands, the labour expended is only that of the owner and his family, for the farms are of very small size; it is not mainly paid labour, though often mutually borrowed as when men plough, harvest, etc., in their neighbours' fields in return for similar assistance in their own. Manure again is largely the produce of the cattle of the farm, or picked up by the children or women in the waste lands, or is cut, as green manure, from the jungle. The feeding and housing of the bullocks which Mr. Dutt observes has not been allowed for, are omitted because straw does not enter into settlement calculations, though of great feeding or selling value; in the old reports, early in the century, it was often set against the whole cultivation expenses, and in the present day sub-tenants are willing to cultivate good lands on receipt of one quarter of the gross out-turn of grain if they are allowed the whole of the straw also.

A vernacular proverb is to the effect that, if the cost of cultivation be counted up in money, not even the value of the goad will remain. whereas, in fact, not only does the ryot live, but most of his land has a good sale value; remembrance of this proverb would save many a fallacy.

39. It must also be remembered that the rates thus formed are checked by the existing rates, and that, should they prove excessive, they are reduced, so that the ryot "may run no risk"; there is visible in Madras, says Baden-Powell (Land Systems of British India, Volume I, page 298), a distinct tendency in revision settlements not to alter rates, found to work well.

40. The Board must also point out that, if the actual cultivation expenses are really larger than are allowed for by the Settlement Department, the gross produce must, for many districts, be more valuable than is calculated by that department. For since most lands, both wet and dry, will always be leased at least on the half-share system, and in the case of wet lands, often on a much higher landlord's share, it follows that, at most, half, and on the better lands two-fifths or one-third or even one quarter, of the gross

value must pay both the cost of cultivation and the livelihood and the profits of the actual cultivator. Now, as regards wet lands, calculation will show that in some districts, as in the lower class soils of Bellary, Anantapur, in all but the highest classes of Trichinopoly (settlement just expired), etc., the cultivation expenses allowed are more than or nearly equal to half the gross produce at commutation rates: in most, if not in all the districts the amount left to the cultivator of the lower grade soils on the half-share or in the better lands on the one-third share, after paying the theoretical cultivation expenses, is so small that no cultivator would take up the lands on those conditions. Taking Salem as an example, since it is a well-known ryotwari district of which the initial (new) settlement is still current. . . for all wet lands. . . the commutation rate was 32 Madras measures—48 imperial seers per rupee. Land, both dry and wet, is habitually leased on the share principle; the share is here taken as one-half, but the cultivator frequently gets less, especially on the high class river-channel lands. For dry soils, cumbu in the northern portion of the same district may be taken; the commutation rate was 32 Madras measures or 48 seers per rupee.

41. . . . .

42. It is clear. . . that either—

(1) the commutation rate is, at all events at present prices, too low, or

(2) that the grain outturn is estimated too low, or

(3) that the cultivation expenses are estimated too high, or

(4) that the straw is of such value as to make up for the loss or small profit in grain, or

(5) that the cultivation expenses are really not money expenses at all in most items, but only labour which is supplied by the cultivator, or

(6) that the actual cultivator is ground down to the barest subsistence by the ryot land-owner. Everyone of the first five hypothesis is in favour of the ryot and against the Government; the sixth is a well-known characteristic of peasant landlords. For the Presidency in general, however, it is clear that cultivation expenses in general are sufficiently well

allowed for by the Settlement Department, and that it is precisely "on the poorer class of lands" that the cultivation expenses are most liberal and not most 'ruinous'".

7. The actual cost of cultivation is a matter very difficult to determine and is one of the most conjectural of the various steps, connected with a settlement. The composition of soils afforded a tolerable clue as to the expenses of cultivation, the clayey soils being more difficult to work than the sandy soils and, therefore, requiring more costly cattle, while on the other hand, the sandy soils require more frequent manuring. The items usually included in the estimate of the cost of cultivation are:—

- (i) ploughing cattle;
- (ii) agricultural implements;
- (iii) seed;
- (iv) manure;
- (v) labour required for ploughing, sowing, weeding, reaping, threshing, etc.

8. The wages of labour, wherever paid in grain, are converted into money at the commutation prices adopted. The cost of bullocks and implements of husbandry is distributed over the number of years, for which they are expected to be serviceable and the other items are calculated for each year. The unit is taken as one plough and one pair of cattle for the area and then reduced to the terms of one acre. The straw is usually taken as a set off against the item 'feed of bullocks' and no separate provision is, therefore, made for it, nor does it find place in the assets of the ryots.

9. In Telangana, no attempt was made to fix the assessment, as a definite fraction of the net produce, after determining the money value of the produce of a field. The system prevailing in Telangana is 'empirical'. Although, the word 'empirical' suggests that the system is based on certain assumptions, it has to be pointed out that there is a systematic examination of the economic background of the tract, material condition of the people and other facilities enjoyed by the ryots. In doing so, the Settlement Officer investigates the gross yields on different types of lands, the cost of cultivation and make deductions for vicissitudes of season and other allowances paid to the village artisans. He

then calculates the net profits left to the ryots. He also takes into consideration the assessment that is already being paid in the area and in the surrounding tracts and then comes to a conclusion about the reasonable maximum assessment that may be fixed with reference to the capacity of an average ryot. The assessment never exceeded one half of the net income from the land. The method followed in Telangana also falls under the net produce theory. The following items of cultivation expenses are taken into account by the Settlement Officer in fixing the assessment:—

- (1) Manure,
- (2) Seeds,
- (3) Weeding,
- (4) Harvesting,
- (5) Balutedars, i.e., remuneration to village craft-man's services,
- (6) Maintenance of bullocks,
- (7) Depreciation charges of bullocks, and
- (8) Pay of farm servants.

10. The present position is that interest on capital outlay (value of land), however, is not deducted from the gross produce when arriving at the net yield. The purchaser of the land would have taken into consideration the current assessment so fixed.

11. As regards the point whether any deduction should be made from the gross produce to arrive at the net produce in respect of cost of agricultural implements, cost of cattle and the maintenance of cattle, we consider that depreciation of cattle and agricultural implements and the cost of maintenance of the cattle should be taken into account and should be deducted from the gross yield to arrive at the net yield.

12. The next point for consideration is as to what percentage of net produce should be fixed as land revenue. The half-net principle has been in vogue from many years and has been considered as 'more fair' to the holders of the poorer lands and it has been adopted in every district of the Andhra.



In the half-net system, the cultivation expenses are more liberal, in proportion to the produce, to the poorer lands than to the richer lands and the assessments based on half the net produce never reached the limit of 50 per cent of the net yield in actual practice, even in the past. The lowest class of soils enjoy progressively lighter and lighter rates of assessment under the half-net system. In other words, cultivation expenses are more favourable to the poorer than to the richer lands under the half-net system.

13. In practice, half the net produce has never been collected as assessment. With the rise in prices of foodgrains, the incidence of assessment has gone down. As we are not recommending settlements or resettlements and so, in future, revisions will be based on prices and other relevant factors, we consider that it is not necessary to give an opinion as to what percentage of net produce the share of the Government should be.

*Paragraph 3.—Whether there need be any difference in the percentage of the net income in fixing the Government's share from the wet and dry lands.*

The early ryotwari settlements, introduced by the British, had many defects. The survey and settlements were conducted rapidly and there were many inequalities. The assessments were very high and even not based generally on the estimates of the produce. The incidence of assessment was everywhere unequal, while a succession of years of low prices had the practical effect of raising the rates of assessment which were already admittedly too high. The Government took at that time, towards its share, i.e., land revenue, 50 per cent of the gross produce of irrigated land and 35 per cent of that of unirrigated lands. This was the position in 1855, i.e., a quarter century after the final adoption of ryotwari settlement as the standard revenue system of Madras of which the Andhra region was a part. In 1855, the Government determined to carry out the general revision of the assessment upon what seemed to be the only correct basis of a land revenue settlement, namely an accurate survey and a more or less exact classification of soil. But the actual settlement work was not taken up until the year 1864 when the Government's share was fixed as one-half of the net produce without making any distinction between irrigated and unirri-

gated lands. The actual rates of assessments thus fixed are in no case higher, nor are they equal to, or in excess of, half the net produce. In fact, the assessment never reached the upper limit of 50 per cent either at the original settlement or at the resettlements. The half-net system has thus been, in vogue, for the past about 94 years in Andhra. This is not a new idea to Telangana region as at the time of initial settlement, when the prices of commodities were very low, nearly half of the net income was declared as the assessment due to Government as land revenue. This maximum of half the net produce generally remained as an outer limit.

2. The point for consideration is whether different percentages should be fixed now for wet and dry lands as the proper share of Government towards land revenue.

3. We are recommending later, levy of water charge in addition to assessment on dry lands for irrigated lands and the removal of the category of 'consolidated wet'. The dry component or dry assessment corresponding to consolidated wet rates will be arrived at for each survey field and an appropriate water rate depending on the soil and nature of supply of source will also be levied. The water rate will have some relation to the quantum of service rendered.

4. Under these circumstances, we consider that it is not necessary to fix different percentages for dry and wet lands. Besides, we are not recommending resettlements. Hereafter, revision of assessments will be on the basis of prices, if any. Therefore, we consider that, it is not necessary to give our views on this issue.

*Paragraph 4.—The need for modifying the existing procedure of basing the commutation rates on the prices in the previous 20 non-famine years and the desirability or otherwise of linking up, the land revenue assessment with prices level.*

1. The commutation of Government's share of the produce from land into money with reference to the prices prevailing 'in the previous' 19 years was introduced, for the first time, during the reign of Akbar. The idea perhaps attracted the attention of the British Government only in 1865. In all the earlier settlements, the average of the prices in 20 years, from 1845 to 1864 was adopted. But since 1865, the abnormal prices prevailing in the years of famine or distress were

excluded, and the average calculated with reference to the recorded prices of twenty non-famine years (or such number of years as the Government may from time to time determine) immediately preceding the commencement of settlement operations in any district or tract.

2. The grounds urged for fixing the commutation rates on the basis of prices in 20 non-famine years have become out-of-date and the force of their application has also diminished with the rapid changes in the recent years. The settlements were made for a period of 30 years on the basis of the average of prices prevailing in the previous 20 non-famine years. It was, of course, considered sufficient, if the demand of the Government was readjusted once in the lifetime of each generation, as prices of the agricultural produce were not liable to violent changes. The conditions now prevailing are quite different from those existing during resettlements. There is rapid rise in prices due to the Five-Year Plans, due to the construction of roads, railways and projects and also the after effects of a World War. The prices, which increased, remained more or less steady, in the last decade. The postponement of the revision of the Government demand from lands is unfair both to the general tax payer, who has to bear the strain of additional taxation measures necessitated on account of the rise in prices, and to the Government who are deprived of the additional revenue to which they have a legitimate claim.

3. In theory, the Government revenue represents the sum that may fairly be demanded in an average of seasons and it was assessed in the belief that cultivators would save, to meet the deficit in bad years. The rates of assessment are fixed on the consideration of the yields of land in good, bad and indifferent years. The average ryot is not generally profited by the wholesome principle of fixation of assessment for a long period, in as much as he does not lay by a portion of his surplus in good years, to meet his requirements in bad or indifferent years. The demands of land revenue remained almost the same and the suspensions and remissions granted did not give adequate relief.

4. The popular Government which came into office in 1937 abolished resettlements as a State Policy. That the revenue assessments were heavy, was of course the direct consequence of long-term settlement. It furnished an argument to shorten

the period during which the rates of assessment fixed should be in force without a revision. This period may be reduced from thirty years to ten or five years. The incidence of land assessment has, however, decreased greatly owing to rising prices of agricultural commodities in recent years. As the prices have risen abruptly and remained steady, the value of the lands has also correspondingly increased in recent years. This may be taken as one of the tests for levying enhanced assessment. On account of the rise in the value of the produce and the realization of better yields, with the use of improved seeds and fertilizers, there is an increase in the standard of living of the cultivator. As a result of the expenditure incurred by the State, on irrigation and developmental activities, the strain on the resources of the Government is also heavy.

5. Consequent on the abandonment of resettlements, there is need for the Government to review the assessments on the basis of the variations in prices and other relevant factors at short intervals of five years.

6. With the rise in prices, the production requirements of agriculture have also increased in number and value. Even the cash income of the ryot has not risen in proportion to the rise in prices and the rise in real incomes has been slower still. These are a few of the many relevant factors which we suggest should be taken note of at each quinquennial review.

7. We also emphatically urge that cost of production studies must be organized by the State in typical areas, for representative soil and climatic tracts. This data alone will give a clear indication of the trends of incomes, in farming, which alone can sustain all taxes on land.

8. No one can forecast now, how the trend of prices and profits would be during the next 20 or 30 years. Unforeseen factors may cause them to rise still higher or fall steeper. However, during the long span of 20 years or so, there may be cycles of very high prices and of very low prices. It would certainly be very unsafe, in future, to base assessment on commutation rates worked out on the average prices of 20 years. It would be unfair to the tax payer, if prices fall below the revised rates and would similarly result in a loss of revenue to the Government, if prices rise. The probability of wide fluctuations in prices is a factor which Government must

take into consideration and which is quite apparent in the difference in prices of staple crops in the pre-war and post-war years. Therefore, we are of opinion that refixation or revision of commutation rates is essential for the purpose of revising the assessments periodically and that the old theory of fixing assessments for 20 non-famine years is now out-of-date and should be modified.

9. In order to arrive at the commutation rate, hitherto, a deduction of 15 per cent was made from the average of the prices, to cover cartage and merchants' profits, as the prices taken into consideration were generally those prevailing at the taluk headquarters and not those at the farm site. Even though the farmer is now more market-minded and the communications have improved, yet on an overall consideration, we feel that the deduction of 15 per cent from the average of prices over the period of revision is necessary while working out the commutation rates, even in future.

10. At the original settlements, a deduction ranging from 6 to 25 per cent was made from the average of yields per acre to allow for the vicissitudes of season and for unprofitable areas in the holdings. The settlement rates were fixed applying the commutation rate to the yield, so reduced. The settlement rates, so fixed, were revised during resettlements on the basis of change in the level of average of prices over 20 non-famine years. This resettlement rate was later standardized on the basis of price levels under the Andhra Pradesh Standardization Act, 1956 and the Hyderabad Special Assessments Act, 1952. As the allowance for vicissitudes of season has already been deducted while calculating the original assessments and the subsequent revisions are based on the original assessments, the question of making allowance for vicissitudes of season and for unprofitable areas will not arise in future reviews or revisions.

11. The place of land revenue in the economy of the ryot, has changed now, on account of its changing character in recent years. Progressive monetization, the rapid development of internal transport, the increasing commercialization of agriculture and the general change in the All-India Market, served to lighten the burden of land revenue. There is also decline in the importance of land revenue in relation to the total tax revenues of State Governments, due to the growth and increased importance of new forms of taxations, as shown below:—

*Share of land revenue in total tax revenue of Part 'A' States*

Year ending March	Total tax revenue excluding shared taxes (Rs. lakhs)	Land Revenue (Rs. lakhs)	Column 3 as per- centage of Column 2
(1)	(2)	(3)	(4)
1922 ..	6280	3439	54.8
1927 ..	6855	3444	50.2
1932 ..	6031	3261	54.1
1937 ..	5985	3167	52.9
1942 ..	6099	2770	45.4
1947 ..	13328	3096	23.2
1952 ..	16265	3305	20.3
1954 ..	18659	4964	26.6

Notes:—(1) The figures up to 1937 include Burma.

(2) The figures from 1948 relate to Part A States in the Indian Union.

12. In the absence of violent downward or upward movement of prices, the existing levels of assessments could, in broad terms, be said to operate in a manner not unfair to the cultivator. Many of the difficulties which have arisen and much of the inelasticity of land revenue receipts may be traced to a period of guarantee, which in the context of changed price conditions, has proved to be unduly long. Nor, for equally obvious reasons, can the period be too short. If the assessment is to be revised annually or biennially, much hardship and great uncertainty will replace the relative fixity and stability, which now characterize the land revenue system. The cost and labour involved, will not be commensurate with the results.

13. As the standardized assessment is based on certain commutation rates, fixed on the level of prices for the food-grains, it is proper that it should be liable to revision on the basis of the level of prices over a moderate period of five years, which will be neither too short nor too long. In 1951, when the Madras Land Revenue Reforms Committee recommended the sliding scale of assessment, the developments under the First Five-Year Plan were not envisaged. In 1954 when the Taxation Enquiry Commission examined the question, the

First Five-Year Plan was under implementation. The Commission, therefore, suggested a standardization of assessments and their revision, once in ten years. After taking into account the rapid developments that have taken place and the trend in prices in the fifties, we are of the view that the standardized assessments should be reviewed and if need be, revised once in five years. This period may coincide with the periods of the future Five-Year Plans.

*Paragraph 5.—Should prices of commercial crops be taken into consideration in fixing land revenue assessment?*

1. The land revenue assessment is based on the commutation rates of the staple foodgrains of the tract. Paddy has been the standard foodgrain grown in wet lands and cholam, cumbu, korra and ragi have been the main standard grains, in dry lands, both in Andhra and Telangana regions. The main basis for the selection of the grain is that it should be the most extensively grown and locally consumed food crop. The reason underlying this basis is that food products are the ultimate standards of value and that it is not also easy to ascertain and check the out-turn of some of the non-food crops, without relying on the estimates of the growers. The question, that attracted the attention of the Committee in this connection, is whether the prices of commercial crops should be taken into consideration, in arriving at the commutation rate, based on the average of prices in a period of years.

2. In the settlements and resettlements no notice was taken of commercial or other valuable crops grown on the lands, on the principle that the assessment was on the land and not on the basis of the crops actually raised. The peasant from time immemorial has been growing food crops for his own needs. Attractive prices and good demand have acted as inducement to the ryot, for growing commercial crops. A large area of the land on which some of the commercial crops are grown is assessed at a very low rate, especially in the case of dry lands. Castor in Telangana is grown on land which is unfit for any other crop. Groundnut is also grown on land assessed very low, at annas 2 to annas 5. Owing to the development of international trade, the commercial crops have acquired a definite place in agriculture, from the economic point of view and there has been also a considerable increase in the acreage under commercial crops. This is also due to the growing commercialization of agriculture and the general evolution of an All-India Market with the steady support pro-

vided to local prices. The prices of commercial crops fluctuate, violently. The ryots grow these crops only if they anticipate good profits. The commercial crops are normally cultivated in rotation with ordinary food crops. No land is utilized regularly for growing these crops. Lands have also to be left fallow some times for recouping the fertility by nitrogen absorption. We, therefore, consider that it is not feasible to take the prices of these crops into account, for fixing the commutation rate for the revision of assessment. Besides, the real importance of the commutation rate will arise only if there are original settlements and to some extent in resettlements and not when there is revision on the basis of prices and other allied considerations.

*Paragraph 6.—The effects of levy of purchase tax and sales tax on agricultural commodities on the ryots.*

Under the provisions of the Andhra Pradesh General Sales Tax Act, 1957 and schedules thereunder, Sales Tax or purchase tax is levied on agricultural commodities as follows:—

Name of the commodity	Point of levy	Rate of tax per rupee.
1. Paddy	.. At the point of 1st purchase in the State	.. 3 np.
2. Rice	.. do ..	.. 3 np.
3. Millets	.. do ..	.. 2 np.
4. Turmeric	.. do ..	.. 6 np.
5. Copra	.. do ..	.. 3 np.
6. Groundnut	.. do ..	.. 2 np.
7. Groundnut oil	.. At the point of 1st sale in the State	.. 2 np.
8. Chillies	.. At each stage of sale in the State ..	.. 2 np.
9. Jaggery	.. At the point of 1st sale in the State	.. 3 np.
10. Jute	.. At the point of 1st purchase in the State	.. 2 np.
11. Cotton seeds	.. At the point of 1st sale in the State	.. 2 np.
12. Cotton	.. When purchased by a Spinning Mill, at the point of purchase by the Spinning Mill and in all other cases at the point of purchase by the last dealer who buys it in the State ..	.. 2 np.
13. Oilseeds including groundnut, gingelly etc.	At the point of 1st purchase in the State	... 2 np.
14. Coconuts	.. At the point of 1st purchase in the State	.. 3 np.



3. The particulars of the revenue realised for 1957-58 on some of the commodities are furnished hereunder;

1. Paddy or Rice	..	Rs. 150.00 lakhs (Estimated)
2. Oilseeds	..	Rs. 17.00 lakhs (Approximate)
3. Chillies	..	Rs. 2.25       "       "
4. Cotton	..	Rs. 4.25       "       "

(Furnished by the Board of Revenue, Commercial Taxes).

2. According to the letter and spirit of the Act, the dealer is liable to pay the Purchase Tax to the Government. But a good number of answers received by the Committee from the public, to the questionnaire issued by it, reveal that the purchase tax is not actually paid by the dealer, but is passed on to the ryots. The dealer who ought to pay the tax is collecting it from the ryot by deducting the tax amount while paying to the ryot the price for the produce, purchased by him. Similarly, on the other articles and commodities sold to the public, the dealer has to pay the sales tax to the Government on his total turnover. But, in practice, the dealers add sales tax and issue receipts to the purchasers, collecting it from the purchasers.

3. The Committee feels the payment of sales and purchase taxes on foodgrains is nearer to the producer than a tax like Octroi which is nearer to the consumer. We consider that the levy of sales tax or purchase tax affects the ryots, though indirectly, and reduces to that extent, the value of the produce sold by him.

*Paragraph 7.—Assessment on non-agricultural lands.*

The levy of assessment on lands, put to non-agricultural use in Telangana, is regulated by rule 71 of the Hyderabad Land Revenue Rules. In the Andhra area, no special assessment is levied on lands, put to non-agricultural use. Ordinary ryotwari assessment is collected and it is subject to revision, during the resettlement of the tract.

2. In Andhra, when vacant lands at the disposal of Government in towns are assigned to private persons, the assignments are made subject to the condition, that the grantees should pay ground rent to the Government. Prior to 1927, this ground-rent was fixed on the basis of the full letting value of the land. Rules for the levy of ground-rent, in mufassal towns were laid down in Board's Standing Orders 21-12 (1920 edition). But subsequently, it was held that the levy of ground-rent on the rental value was not justifiable and it was converted into agricultural assessment,

i.e., the assessment which should have been charged, had the land continued to be agricultural land. The Government have also recognized the principle that municipalities should get a large share of the increment in land values, which is due to the development of urban life in the towns and that the Government should collect only the assumed agricultural assessment on the land. Accordingly in 1927, an assumed agricultural assessment of Rs. 6-4-0 per acre was fixed as ground-rent on town-sites. After 1927, there remained two sets of ground-rents—(1) levied on the basis of full competitive rent under the rules in force prior to 1927, and (2) ground-rents equal to the assumed agricultural assessment, i.e., Rs. 6-4-0 levied after 1927. After 1927, the ground-rent levied which is equal to assumed agricultural assessment was credited to the Government, while out of the amount levied prior to 1927, the amount in excess of the assumed agricultural assessment is being transferred to the Municipalities. The ground-rent levied after 1927 is also liable to revision during settlements as in the case of assessments levied on ryotwari lands. During the resettlements of East Godavari, West Godavari, Krishna and Guntur districts, the rate of ground-rent was increased to Rs. 12-8-0 per acre. The rates of ground-rent prevailing in each district are given below:—

<i>Name of the district</i>	<i>Rates per acre in force</i>					
	Rs.	A.	P.	Rs.	A.	P.
1. East Godavari ..	12	8	0			
2. West Godavari ..	12	8	0			
3. Krishna .. ..	6	4	0	12	8	0
	18	12	0	25	0	0
	43	12	0	50	0	0
	87	8	0	93	12	0
	131	4	0	850	0	0
	14	8	0	62	8	0
	14	0	0	5	0	0
	68	12	0	37	8	0
	15	0	0	16	4	0

<i>Name of the district</i>	<i>Rates per acre in force</i>					
	Rs.	A.	P.	Rs.	A.	P.
	15	0	0	19	0	0
	18	0	0	30	0	0
	21	14	0	33	5	4
	22	8	0	13	8	0
	11	0	0	10	8	0
	212	8	0	196	14	0
	362	8	0	125	0	0
	175	0	0	46	4	0
	69	0	0	151	4	0
	112	8	0	475	0	0
	150	0	0	250	0	0
	381	4	0	143	12	0
	600	0	0	3,537	8	0
	383	5	0	372	14	0
	56	4	0	42	11	4
4. Guntur ..	6	4	0	12	8	0
	37	8	0	75	0	0
	275	0	0	287	8	0
	775	0	0	400	0	0
	1,500	0	0	230	0	0
	375	0	0	325	0	0
	128	0	0	575	0	0
	837	11	0	50	0	0
	29	0	0	23	0	0
	350	0	0	373	9	0
5. Nellore .. ..	6	4	0			
6. Anantapur .. ..	6	4	0	12	8	0
7. Cuddapah .. ..	6	4	0			
8. Kurnool .. ..	6	4	0			
9. Chittoor .. ..	6	4	0			
10. Visakhapatnam .. ..	6	4	0			
11. Srikakulam .. ..	6	4	0			

3. The increase ordered, in resettlement, in Guntur district was kept in abeyance. In some towns, in Anantapur district, the existing rates of ground-rent is Rs. 12-8-0 whereas, in other towns it is only Rs. 6-4-0. Thus there are two rates in force, *i.e.*, Rs. 6-4-0 in some cases and Rs. 12-8-0 in other cases. The high rates of ground-rent prevailing in Krishna and Guntur districts were fixed under the rules in force prior to 1927. There is a rate of Rs. 3,537-8-0 per acre, in force, in Krishna district.

4. Ground-rent is not charged on house-sites in the village sites of villages and on the sites on which houses are situated in the old town.

5. In Telangana, in the event of diversion of dry agricultural lands to non-agricultural purposes the following special assessments are levied:—

(1) Rs. 5 per acre in the case of lands situated in the villages other than Tahsil or district headquarters,

(2) Rs. 8 per acre in the case of lands situated in the tahsil headquarters, and

(3) Rs. 12 per acre in the case of lands situated in the district headquarter. Provided where such land is situated within the municipal limits of a village having a population of 15,000 or more, the Collector may levy an assessment of Rs. 15 per acre. In the event of wet land being diverted to non-agricultural purposes, the rate of special assessment shall be one and one-fourth times the wet assessment, if the land is situated in a village other than the tahsil or district headquarters and one and half times, if the land is situated in the tahsil or district headquarters.

6. The municipality levies property tax based on the rental value per annum. Taxes are also separately levied by the municipality for water supply, scavenging and other amenities provided by it. All these taxes are collected by the municipality while the ground-rent or assessment is collected by the Revenue Department. Thus there are two collecting agencies, one the Revenue Department collecting ground-rent or special assessment and the other the municipality collecting the municipal taxes. We consider that there should be only one collecting agency to collect the assessment on land from the owner along with the municipal taxes, and that, the municipality should be the single collecting agency.

7. We understand that correspondence is going on between the Government and the Board of Revenue to revise or rationalize the existing rates of ground-rent in Andhra region or the special assessment levied on agricultural lands put to non-agricultural use, in Telangana. We, therefore, refrain from making any recommendation except that we feel that for good farming, it would be necessary that the farmer should have his house in the land itself—the advantages being better supervision and higher production and that in such cases special assessment should not be levied.

*Paragraph 8.—The necessity of continuing or altering the land revenue settlements in Agency areas.*

There are backward areas in Andhra Pradesh known as the agency as distinguished from the other areas known as plains, mainly inhabited by the Adivasis (Tribals). They are being given special treatment by the application of different laws from those in plains, in the matter of Land Revenue Administration and the Administration of Justice. These agencies are administered by the Collectors as agents to the Government under a separate enactment, viz., the Madras Act XXIV (the Ganjam and Visakhapatnam Act), 1839. The particulars of the Agency areas in Andhra region are given below:—

District	Taluk	Total number of villages	Area in sq. miles	Population
Srikakulam	.. Parvathipuram	.. 249	294	32,071
	Palakonda	.. 108	146	17,714
	Salur ..	.. 107	69	4,349
Visakhapatnam	.. Srungavarapu Kota	.. 679	282	38,649
	Golugonda	.. 27	188	24,595
	Veeravalli ..	.. 6	361	7,340
	Gudem ..	.. 1,828	1,869	1,09,521
East Godavari	.. Nugur ..	.. 146	593	35,366
	Bhadrachalam	.. 327	911	77,620
	Rampachodavaram	.. 232	289	40,272
	Yellavaram	.. 323	850	54,525
West Godavari	.. Polavaram..	.. 103	133	46,340

2. Bhadrachalam taluk originally formed part of the Palwancha Estate in Nizam's territory, granted as a military jaghir in 1824 A.D. by the Emperor of Delhi. This taluk was ceded by the Nizam to the British in 1860 and was included in the Central Provinces. In 1874, this taluk was transferred to the composite Madras State. The Nugur taluk which was in Sironcha Tahsil of Chanda district in the Central Provinces, was transferred to the Madras Presidency in the year 1909. This taluk contains 61 Government villages, 89 Malguzari villages, 39 patch villages and 11 forest villages. The tenures of lands in the Malguzari villages of this taluk are reported to be similar to those in the Bhadrachalam taluk. According to the orders issued in G.O. Ms. No. 1692, dated 27th August 1934 of the Madras Government, the assessment on the lands is based on their classification as 'Cholam land', 'Paddy land' and 'Wet land', in the Godavari Agency. In respect of Visakhapatnam Agency, the assessment on the lands is based on the number of ploughs used by each person. Each plough is supposed to enable a family to cultivate from 10 to 15 acres of dry land or about five acres of wet land. Settlement, on ryotwari principles, was undertaken in portions of Government Agency areas, where there was settled cultivation. The particulars of agency areas where the ryotwari system has been introduced are given below:—

*West Godavari District :*

Polavaram Taluk .. .. 20 villages were settled as per G.O. No. 1486 (21-s) Revenue, dated 11-7-1931 and 42 villages were settled as per G.O. No. 2121, dated 8-10-1931.

*East Godavari District :*

Ellavaram taluk .. .. 113 rented villages were settled as per G.O. No. 2545 Revenue, dated 8-12-1934.

Nugur taluk .. .. 71 villages were surveyed and settled in a simple manner in G.O. No. 1692, Revenue, dated 27-8-1934.

*Visakhapatnam District :*

Gudem taluk .. .. 76 villages of Koyyur, Antada, Makaram and Chittapadu resumed Muttas were settled as per G.O. 2051 Revenue, dated 30-8-1935 and G.O. No. 1324, dated 19-6-1936.

*Srikakulam District :*

Palakonda taluk .. .. 103 Agency villages were settled as per G.O. No. 2726 Revenue, dated 9-11-1940,

3. From the above, it may be seen that only small portions of Government agencies have been settled on ryotwari principles, on the ground that only such of the villages which have reached the stage of settled cultivation could be surveyed and settled on ryotwari principles. These villages are generally in the areas adjoining the plains and are easily accessible by roads to marketing centres. In the remaining agency areas, the Muttadari system according to which the area is subdivided into several 'Muttas', each under a 'Muttadar', as its chief, is still continued. The Muttadar is responsible for the collection and payment of land revenue due to the Government after deducting a portion of it for the service of collection. The reasons for putting off survey and settlement in a major portion of the Agency, are mainly the following:—

(a) the absolute lack of communications in most of the tracts;

(b) the very difficult nature of the country;

(c) the notoriously unhealthy conditions prevalent in the areas, which are in an underdeveloped and backward state, rendering the work relating to the survey and settlement, extremely difficult; and

(d) the enormous cost and time involved for completing the survey and settlement operations, owing to the difficulties described above, with very little corresponding advantage.

4. All these difficulties still exist in the way of taking up the entire Agency areas, in the Government and the abolished estates, for survey and settlement.

5. In some of the Agency estate villages, another system known as 'Musthajari' is in vogue. The main differences between Muttadari and Musthajari systems are given below:—

(1) While the Muttadar is the farmer of rent for the several villages included in his Mutta, the Musthajar has only one village under him and he is responsible for the collections in this one village only.

(2) While the Muttadar continues to be the head of the Mutta till he is removed and is responsible for revenue collections and the maintenance of law and order, during the period of his office, the Musthajar is only an annual farmer of rent

and can be replaced by another after the expiry of the year for which cowles and kadapas are executed by him.

6. In all other respects the conditions in the Musthajari and Muttadari systems are almost similar. In the Government Agency areas, there are, therefore, settled as well as unsettled tracts, side by side. The actual extent brought under ryotwari system is quite insignificant. Settlement in unsettled areas can only be taken up under ryotwari system when cultivation becomes settled and pronounced and when these areas are linked up, with good communications, to the markets.

*Telangana region.*

7. Analogous to the Agency administration, prevailing in Andhra, there is Tribal area administration, in Telangana region. This administration is carried out under the Tribal Areas Regulation, 1359 Fasli. This regulation prescribes the administration of civil and criminal justice, land revenue and other important administrative matters in tribal areas through the Agents and Assistant Agents. For this purpose, special rules have been framed by the Government. The particulars of the tribal areas notified in Telangana region are given below:—

Name of the District	Name of the taluk	No. of villages
1. Adilabad ..	... 1. Adilabad ..	72
	2. Boath ..	46
	3. Utnur ..	166
	4. Asifabad ..	86
	5. Lakshettipet ..	18
	6. Sirpur ..	24
2. Warangal ..	... 1. Mulug ..	84
	2. Narasampet ..	72
	3. Yellandu ..	99
3. Khammam ..	... Paloncha ..	151
4. Mahbubnagar ..	.. Achampet ..	67



8. The total areas inhabited by the tribesmen is 4,839 sq. miles, which has been settled, and their population is 2,61,330. The Hill Tribes generally live on agriculture. The traditional form of cultivation is 'Podu' or 'shifting' cultivation. But some Hill-Tribes like Ghonds cultivate with ploughs on land reclaimed. The Hill-Tribes are receiving now from the Government a more favourable and lenient treatment than their brethren, in the plains, and are administered by a different set of rules. They are assigned pattas under the 'Lavnikhas' (assignment) rules. Agricultural implements, seeds and bullocks are supplied to them by the Tribal Welfare Department, free of cost. They are also granted loans, both for improving agriculture and land.

9. The point for consideration is whether the existing land revenue assessments, obtaining in the agency areas should be continued or need any alterations. We refrain from recommending any changes in the existing system in the agency areas, which had not yet been settled, till the Hill-Tribes reach a stage when they could compete, successfully, with the plains-folk. We, therefore, recommend '*status quo*' to continue, in the unsettled area in the agency. The Committee recommends that any survey or other steps necessary for soil conservation, and allied purposes of the area relating to big projects like Machkund may, however, be taken.

*Paragraph 9.—Crop Insurance and Remissions.*

During the tour of the Committee in Kurnool district and elsewhere, one of the representations made to the Committee was about the pressing need for crop insurance. The Congress Agrarian Reforms Committee, in paragraph 109 of its report, dealt with the matter and recommended that the scheme of crop insurance should be undertaken experimentally by the State. We understand that the Chief Minister of Andhra Pradesh, has recently requested Dr. B. Natarajan and Sri P. S. Lokanathan, two leading Economists to work out a scheme for crop and cattle insurance. There cannot be any room for difference of opinion about the need for such insurance. Security, which is so sorely needed by the agriculturists, is assured only when there is crop insurance. This kind of insurance was never actually introduced in India, apparently on account of its inherent complications and the difficulties in its working. The first handicap for working out a crop insurance scheme is the fact that practically none of the agriculturists maintain any reliable data for a correct appre-

ciation of the position. One has to depend mostly on the oral data given by the agriculturists as regards cultivation expenses and profits from the crop. The second handicap is the vastness of the agricultural operations, their diversity, size and several other dissimilarities, requiring constant individual attention, which is rather difficult, as the maturity of the claim in respect of crop insurance occurs in several seasons and on several kinds of crops. The history of crop insurance as set out in *Encyclopedia Britannica* (pages 374 to 376, Volume I) reveals that even in countries like United States of America and Russia, it could not be successfully implemented even in initial stages, in many cases, because premiums adequate to cover the indemnities paid could not be collected. The Congress Agrarian Reforms Committee stated that crop insurance in some shape or form has been taken up in many foreign countries and that in every case, the Government have subsidized heavily such schemes of crop insurance. At the instance of the Food and Agriculture Organization, Dr. P. K. Ray submitted a scheme of crop insurance for Ceylon. A summary of this report on crop (paddy) insurance was published in the Reserve Bank of India Bulletin (March 1958 issue). Dr. Ray has said that the stage to introduce crop insurance has not yet come. The Co-operative Planning Committee of India observed that crop insurance in India in the present circumstances appears, in their opinion, beyond the scope of private agencies or co-operative organizations, firstly due to the lack of reliable statistical data and secondly due to the inability of the peasantry to bear the incidence of its cost. At the same time, they were of opinion that some scheme would have to be devised, in course of time, to protect agricultural classes. It is difficult to find any Insurance Company coming forward to undertake such insurance. The Government alone have to take up the question. In view of the difficulties expressed by several authorities, pending examination of the question by the Economists and what it costs to ryots, we are unable to make any recommendation in this behalf.

2. As crop insurance is not likely to materialize in the immediate future, the grant of remissions has to be continued till such time as the Government are ready to introduce a comprehensive scheme for crop insurance. In Telangana, the rules issued for the grant of remissions are statutory while in Andhra they are based on executive instructions. However, the compiling of a Revenue Code for the entire State is engaging the attention of the Government separately.

3. The points for consideration are whether the present rules of remission provide for adequate relief and whether the procedure adopted in granting the remissions now is suitable to ensure effective relief to the ryots.

4. After a careful examination of the rules of remissions contained in the Board's Standing Orders 13 and 14, in force, in the Andhra region and Part II of the Hyderabad Land Revenue Rules, 1951, in force, in the Telangana region, we make the following recommendations regarding the granting of remissions:—

(1) Every ryot who wishes to claim remission must apply on unstamped paper to the Deputy Tahsildar or the Tahsildar who has jurisdiction, in time to allow for the inspection of the crop. These applications must be presented before a specified date to be notified by the District Collector appropriate to the local agricultural practices and seasonal conditions in respect of each crop—(kharif and first irrigated crops and rabi, and second or third irrigated crops). The District Collector should also fix a date by which the officers should complete their inspections. As soon as an application is received, the Deputy Tahsildar or the Tahsildar should arrange for an inspection of the crop and the date fixed for such inspection should be intimated to the persons concerned. The ryot should keep the crop without harvesting till the last date fixed for completing the inspections. The inspection of the crop should be made after the setting of the grain and before the shedding of the grain, which will be different for different crops, in different areas. If the inspection is not made before the last date fixed for inspection, the ryot should be free to cut the crop and the presumption will be that the officers have accepted that the crop has been totally lost or lost to the extent, represented by him in his application.

(2) In respect of lands which are classified as A, B and C class irrigable dry lands, by this Committee, remission should be of both the dry assessment and water rate.

(3) Outturns should be recorded in terms of imperial maunds or other local weights.

(4) The present system of conducting crop cutting experiments after the constitution of panchs, to estimate the yields for granting remissions, now in vogue, in Telangana, should be abolished, as this procedure is cumbersome. The

order regarding the grant or rejection of remissions should be passed, only after personal inspection, either by the Tahsildar, or the Deputy Tahsildar, and not on the basis of the Revenue Inspector's remarks.

(5) The reasons for the low yields should be recorded by the Inspecting Officers.

(6) For the purpose of granting remissions, one acre or a full survey number or subdivision whichever is less should be taken as a unit.

(7) Remission should also be granted in the case of damage to wet crops due to insect pests and plant diseases.

(8) In the case of paddy crop, the ryot not only puts in much labour but also invests considerable amounts on seeds, manure and other items. Even if there be some slight yield it would not be sufficient to meet even those items of expenditure. We, therefore, recommend that if the yield of paddy on irrigated land is below three bags or 6 imperial maunds per acre, it should be treated as a case of total loss of crop.

(9) If the yield is five bags of paddy or less but not less than 3 bags per acre, half remission should be granted. If, however, the remaining half of the assessment and water rate is less than Rs. 8 per acre the amount remitted should be only the assessment which is in excess of Rs. 8 per acre.

(10) In the case of other irrigated crops, the cost of cultivation is higher than that incurred for dry crops. There is enormous difference in the yields between these two classes of crops. Remission for irrigated dry crops should therefore be granted considering the yield of each crop. We fix the following yields for purposes of granting remission for these crops:—

- |                     |        |                                       |
|---------------------|--------|---------------------------------------|
| (i) Cholam or jowar | ...    | 2 bags or 4 imperial maunds per acre. |
| (ii) Cotton         | ... .. | 250 lbs. per acre.                    |
| (iii) Groundnut     | ... .. | 3 bags or 3 imperial maunds per acre. |

In the case of other irrigated crops for which we have not fixed any yield but are entitled for the grant of remission we recommend that an outturn of one fourth of the normal yield and below per acre should be taken as a case of total loss of crop and remission granted,

(11) In the case of light irrigated crops, the same broad principles suggested for other irrigated crops in item 10 above, should be followed.

(12) Class VI sources as per the table recommended by this Committee should be treated as precarious sources. Under precarious irrigation sources, only the extent cultivated should be charged for water. The distinction made in Board's Standing Order No. 13 (12) in allowing this facility, only to the precarious sources in certain districts should be removed and it should be made to apply to such sources in all other districts also.

(13) In the case of unirrigated dry crops, when the area affected by bad seasonal conditions, such as drought, heavy rains, floods, etc. is a contiguous tract of not less than 50 sq. miles, the Collector of the district may order inspection of fields to estimate outturn and if the yield is one-fourth the normal yield or less, he will grant full remission or half the remission if the yield is half or less of the normal yield. This concession should also be extended to cases of loss of crop due to insect pests and plant diseases.

(14) In the case of unirrigated dry crops affected by hail-storm, the damage caused need not be over an area of not less than 50 sq. miles. Remission should be granted for such damage even in smaller areas, down to individual survey fields, in the manner prescribed in item (13) above.

(15) In respect of coconut gardens ravaged by cyclones, remissions should be granted for a period of three years so as to enable the trees to recoup, adequately, to yield normal crops. The limit of 50 sq. miles need not be insisted upon in the case of coconut gardens where the damage is caused by cyclone, floods, etc. In such cases remission should be granted even for smaller areas, even down to individual survey fields.

(16) We are of the view that the instructions in Board's Standing Orders Nos. 13 and 14 should be followed in the entire State as they are exhaustive, subject to the above modifications.

*Paragraph 10.—Time and method of collection of  
Land Revenue.*

Everyholder in the State should pay the revenue due on his land on or before the day on which it falls due, according to the 'Kistbandi' or other engagement and where no

particular day is fixed, at any time before the day on which the payment actually falls due, according to local usage. The 'Kistbandi' for the State is as follows:—

## KISTBANDI OF RYOTWARI LAND

District	PROPORTION OF ANNUAL TAX PAYABLE EACH MONTH							
	De- cember	Ja- nuary	Fe- bruary	Mar- ch.	Ap- ril.	May.	Ju- ne.	To- tal.
	A.P.	A.P.	A.P.	A.P.	A.P.	A.P.	A.P.	A.P.
<i>Srikakulam:</i>								
1. Burza, Palakonda, Nagaram & Viraghattam firkas in the Palakonda taluq.	..	8 0	4 0	4 0	..	..	..	16-0
2. Other portions of the district ..	.. 4 0	4 0	4 0	4 ..	..	..	..	16-0
<i>Visakhapatnam:</i>								
1. Yellamanchili taluk .. ..	..	4 0	8 0	4 0	..	..	..	16-0
2. All other taluk ..	.. 4 0	4 0	4 0	4 0	..	..	..	16-0
<i>East Godavari:</i>								
1. All taluks except Yellavaram, Chodavaram, Bhadrachalam and Nugur.								
(a) Dry and Wet lands .. ..	..	4 0	4 0	8 0	..	..	..	16-0
(b) Lanka lands, Padugai lands except those of Razole taluk .. ..	..	..	8 0	8 0	..	..	..	16-0
(c) Padugai lands of Razole taluk .. ..	..	5 4	5 4	5 4	..	..	..	16-0
2. Nugur Taluk								
(a) Holdings in regularly surveyed, and settled villages. .. ..	..	..	8 0	..	..	..	8 0	16-0
(b) Lankas (Salable) .. ..	..	8 0	8 0	..	..	..	..	16-0
(c) Patch cultivation .. ..	..	..	..	..	..	..	16-0	16-0
3. Bhadrachalam taluk .. ..	..	8 0	8 0	..	..	..	..	16-0
4. Yellavaram taluk .. ..	..	5 4	5 4	5 4	..	..	..	16-0

## KISTBANDI OF RYOTWARI LAND—Cont.

District	PROPORTION OF ANNUAL TAX PAYABLE EACH MONTH							
	De- cember	Ja- nuary	Fe- bruary	Mar. ch.	Ap- ril.	May	Ju- ne.	To- tal.
	A.P.	A.P.	A.P.	A.P.	A.P.	A.P.	A.P.	A.P.
5. Chodavaram taluk ..								
(a) Dry lands ..	4 0	4 0	4 0	4 0	..	..	..	16-0
(b) Wet lands ..	..	5 4	5 4	5 4	..	..	..	16-0
<i>West Godavari :</i>								
(a) Dry & Wet lands ..	..	4 0	4 0	8 0	..	..	..	16-0
(b) Lanka and Padugai lands ..	..	..	8 0	8 0	..	..	..	16-0
<i>Krishna:</i>								
(a) Dry and Wet lands ..	..	4 0	4 0	8 0	..	..	..	16-0
(b) Lanka and Padugai lands ..	..	..	..	8 0	8 0	..	..	16-0
(c) Lanka rentals on lease lanka lands ..	..	5 4	5 4	5 4	..	..	..	16-0
<i>Guntur:</i>								
(a) Ongole taluk ..	..	4 0	4 0	4 0	4 0	..	..	16-0
(b) Other taluk ..	..	4 0	6 0	6 0	..	..	..	16-0
<i>Nellore:</i>								
(a) Kanigiri taluk ..	..	4 0	4 0	4 0	4 0	..	..	16-0
(b) Kavali taluk ..	..	..	..	6 0	6 0	4 0	..	16-0
(c) Other taluk ..	..	..	4 0	4 0	4 0	4 0	..	16-0
<i>Cuddapah</i> ..	..	4 0	8 0	4 0	..	..	..	16-0
<i>Anantapur</i> ..	..	..	4 0	8 0	4 0	..	..	16-0
<i>Kurnool:</i>								
(a) All the villages in Gid- dalur and Markapur taluks and the red soil and black soil villages of Nandyal, Nandi- kotkur, Kurnool, Dho- ne & Allagadda tq. ..	..	4 0	8 0	4 0	..	..	..	16-0

## KISTBANDI OF RYOTWARI LAND—Cont.

District	PROPORTION OF ANNUAL TAX PAYABLE EACH MONTH							
	De- cember.	Ja- nuary	Fe- bruary	Mar. ch	Ap- ril.	May.	Ju- ne.	To- tal.
	A.P.	A.P.	A.P.	A.P.	A.P.	A.P.	A.P.	A.P.
(b) Alur and Adoni tq. ..	..	..	4 0	8 0	4 0	..	..	16-0
(c) Red soil villages of Pattikonda taluk ..	..	..	4 0	8 0	4 0	..	..	16-0
(d) Black soil villages noted below of Patti- konda taluk.								
1. Narakoduddi ..	..							
2. Devanabanda.								
3. Chinna Hulthi ..	..							
4. Peda Hulthi ..	..							
5. Pattikonda ..	..							
6. Hosur ..	..							
7. Puchakayalamanda ..	..							
8. Buruzala ..	..							
9. Maddikera (N) ..	..							
10. Maddikera ..	..							
11. Maddikera Agraharam								
12. Maddikera East ..	..	..	4 0	8 0	4 0	..	..	16-0
(e) Remaining black soil villages of Pattikonda Taluk ..	..	..	4 0	8 0	4 0	..	..	16-0
(f) Koilkuntla taluk ..	..	..	4 0	8 0	4 0	..	..	16-0
Chittoor ..	..	..	4 0	4 0	4 0	4 0	..	16-0

## TELANGANA REGION.

- (a) Kharif & Abi Crops .. 1st January to 21st January.
- (b) Rabi .. .. 1st April to 21st April.
- (c) Tabi .. .. 16th June to 30th June.



(2) The land revenue is payable in the months of December to June in the Andhra area and on three occasions in Telangana area. Any sum remaining unpaid after the 10th of the month specified in the kistbandi is treated as an arrear in the Andhra area. Coercive steps prescribed in the Madras Revenue Recovery Act, 1864 as amended, are resorted to for the recovery of the arrears of land revenue.

(3) For the land revenue collected, a receipt is issued in form No. 18 to the person paying, by the village headman or the Munsif and the Karnam in token of acknowledgment of the amount paid.

(4) In Telangana, land revenue receipts were given separately for every payment but each land owner was required to maintain a 'Pouthi Book' in which the demand and amount collected on different dates are entered and entries are duly attested and signed by the Patwari. The Board of Revenue has since issued instructions for the maintenance of Kirdi-cum-Receipt Register and there will be no need to maintain *Pouthi books*, hereafter. The *Kirdi-cum-Receipt Register* will serve the twin purpose of Kirdi (Cash Book) and receipt as the duplicate copy of the receipt forms the Cash Book.

(5) The Village Officers' Enquiry Committee has discussed this topic, in great detail, and suggested the issue of a pass book to a ryot which would enable him to know the amounts outstanding. He could also use it for obtaining loans from the Government Banks, Co-operative Societies or Agricultural Department and these institutions will note the grant of loans and hypothecations in it, to prevent the same land being hypothecated for more than one loan. The pass book could also be used for entering loans dues paid by the ryot. We recommend that the suggestion of the Village Officers' Enquiry Committee should be implemented.

(6) We recommend that an amount of Re. 1 per patta may be collected from each land holder for payment to the Karnam, to make the entries in the pass book.

(7) The mode of collection of land revenue in force in the Andhra and Telangana regions is more or less the same. The provisions in the Madras Revenue Recovery Act, 1864 as amended and in the Hyderabad Land Revenue Act, 1317 Fasli have been integrated and the Madras Act has been extended to Telangana.

(8) For fixing the time of collection of land revenue the crops grown in the State are divided broadly into two categories.—

- (1) Kharif, Mungari, Punasa, and Abi paddy, and
- (2) Rabi, Hingari, Pairu, and Tabi paddy.

(9) The kist months have been fixed with reference to the harvest of these crops.

(10) In our tours, representations have been made that there should be a change in the dates of payment of land revenue. In the questionnaire issued by us, we called for the views of the public in regard to the present system of payment of land revenue. In their replies, many of the non-officials have stated that the time of collection of land revenue should be so fixed as to enable the ryots to sell their produce at a reasonable price and in proper time.

(11) The Kharif or early dry food crops harvested in October and November are usually retained for the consumption of the producer's family and his cattle. Paddy which is harvested in the last week of November and in December, after drying, is sold in the market in January. The prices of irrigated crops like paddy are usually settled after Pongal festival. At present, the first kist falls due on 1st December. The ryot will have to pay the first kist by under-selling the grain, or borrowing locally from money lenders. We consider that the ryot should have the facility to sell his grain, without undue haste, after watching the market conditions, before he is called upon to pay his land revenue. We, therefore, recommend that the collection of land revenue should commence after Pongal (Sankranthi) festival as prices of grains will be settled then. We, therefore, recommend that the Kist months should be, altered and collections made in the months of February and March, in equal proportions for the demand accruing on Kharif and first irrigated crops and in the month of June for the demand accruing on Rabi, second and third irrigated crops including the miscellaneous items of revenue, settled during the Jamabandi.

### CHAPTER XIII.

*Splitting up consolidated wet rates into dry assessment and water charge.*

The methods involved in fixing charges for irrigation vary from State to State. They can be classified as,

- (a) Charge on classified wet lands.
- (b) Water charge under special projects and
- (c) Water rate on dry lands which are irrigated from Government sources of irrigation.

More than 70 per cent of the irrigated lands are classified as wet in the revenue accounts. For that category water charge is not levied separately. A consolidated rate of assessment is fixed. The basis for such a charge, is the Government's share in the net produce as in the case of dry lands. For purposes of calculation, paddy is taken as the standard wet crop raised. Such a procedure of levying a consolidated charge is found to prevail only in a few districts of Bombay, Burma, Madras and Andhra Pradesh. For theoretical and account purposes, however, the charge for water is apportioned from the consolidated assessment and is shown in irrigation accounts to be credited to Revenue from irrigation. The consolidated charge is considered to be simple as there is the advantage of elasticity, and as by its application, levy of multiple taxes can be avoided. In fixing the consolidated rate, all the circumstances of each survey field, the productiveness of the soil and its proximity to the market are taken into account. In Telangana, while fixing the consolidated wet rate, consideration was given to the soil-value and irrigation-value, depending on the character and nature of irrigation, made available to each unit of land.

2. In all States excepting those mentioned above, water charge is fixed and collected separately from the land assessment. The area irrigated and the kind of crop grown are the factors taken into account while arriving at the fixed water charges. No extra charge is made for additional waterings but deductions are made from it for lift irrigation. When failures of crops occur, remissions of irrigation-dues are granted according to the degree of damage.

3. Various opinions have been expressed on the question of levy of wet assessment in terms of consolidated wet assessment. The Taxation Enquiry Committee, 1924-25 observed that the consolidation of the charge for water with the land revenue was no longer appropriate and recommended that this system of levying the water charge should be abandoned. Sri N. Raghavendra Rao, Special Officer for Land Reforms in Madras in 1947 examined the question of splitting up of the element of water charge from the consolidated wet rate and

considered that it was not practicable to change it at least in the case of the lands already registered as wet. The Land Revenue Reforms Committee, Madras, recommended in 1951, that consolidated wet assessment should not be disturbed, that in respect of old projects, dry assessment and water rate should not be separated and that in respect of new projects the lands should be retained as dry and a separate water rate for irrigation should be levied. The Taxation Enquiry Commission, 1953-54 observed "excepting that the value of water is in some measure influenced by the nature of soil in the area under irrigation, there is no other reason for lumping land revenue and water charges together. This practice has, however, been discarded on all new works....."

4. The system of consolidated charge was not given up for the following grounds—that splitting up of the two components (dry assessment and water charge) would be complicated and laborious process; that there is really no satisfactory alternative to the consolidated wet assessment under the old projects; that the system is simple and capable of being applied with less cost without involving much field inspection, without the need to write up a number of accounts and without giving scope for frequent complaints from the ryots that water from the Government sources was not used.

5. In order to justify the expenditure of money borrowed for the construction of irrigation works, a policy that the increased return from the works should yield an income, at least equal to the interest on the capital outlay on the works, was ordered to be adopted. It was also ordered in 1868, by the Secretary of State for India, "that a clear account of the returns directly due to irrigation should be maintained. It was found that the two elements of income—the one from the irrigation and the other from the land revenue—could be arrived at only in an arbitrary and imperfect manner." After further detailed examination of the question, in 1876, a method of allocating the shares due to land and irrigation for each individual field was devised, though however the then Board of Revenue did not agree. "While the matter was thus dragging on, in May 1878, the Secretary of State criticized the Madras Government's budget for having budgeted for a very small figure under irrigation revenue and emphasized the need for the separation of the two elements....." Though accuracy could not be achieved, a method was evolved in 1880 by calculating the dry rate applicable to the class and sort of each wet field and determining the difference between the wet assessment and dry rate

and taking that the difference would represent the charge for water. By tabulating the results for several years, it was found that these two elements showed a fairly constant ratio. On this basis certain percentage was fixed in 1917 to represent the water-charge-element on the actuals of the previous ten years. This percentage underwent a change in 1930. This difficulty will not exist, if the classification of lands as consolidated wet is abolished and elastic water charges are separately levied. When the principle of basing water charges with reference to the expenditure on the new works is recognised, as recommended by several Committees, there can be no valid objection to the splitting up of the two elements on wet lands, even under the old projects if a simple method is suggested. When the first process of splitting up is completed, it will be very easy to levy water charges, afterwards. The system of levy of the fixed water rate does not take into account the relative soil values of the lands when irrigated. Soils which are good for dry crops may not be equally suitable for wet crops and *vice versa*. If the charge for water is the same for all kinds of soils, it would bear heavily on the poor dry lands. This difficulty was recognised in the Cuddapah and Kurnool districts where a double classification was assigned to each dry survey field *viz.*, the classification as dry and the would-be classification as wet. This was however found to be complicated and was later given up. The best course will, therefore, be to abolish the classification of wet and to fix lower rates of water charge for the inferior classes of dry lands. The levy of fixed water rates will be in strict accordance with the provisions of the Madras Irrigation Cess Act, 1865 as it empowers the Government to levy water cess at such rates as will secure a reasonable return in all cases. The Board of Revenue, Andhra Pradesh, Hyderabad, has, in its proceedings Mis. No. 630/57, dated 1st December 1957 recommended the retention of the consolidated wet assessment in respect of old projects but did not recommend the conversion of dry lands under the new and old projects and irrigation works to wet in future.

6. We consider that a beginning has to be made to split up the two elements of assessment and water rate so that accurate accounts of capital outlay can be maintained, especially, when crores of rupees are being spent on projects. In so maintaining, the accounts showing a comprehensive position of all projects—old and new—will always be available for guidance for future development. The objections raised by some of the earlier Committees that the work of inspection of lands and the

labour involved in writing up of accounts would be enormous, if consolidated wet is abolished and the lands are registered as dry, has been met in our recommendation in paragraph 2 of this chapter. After a careful examination, we recommend that in future, the land assessment should be fixed on the basis of its dry land potential and that the charge for irrigation should be on the basis of a charge for service by the Government. The details of procedure to be followed for the application of this principle without undertaking a resettlement but only on the basis of available information in the Revenue Accounts in this State has been indicated in paragraph 1 of Chapter X.

*Paragraph 2.—Revision of the rates of charge for irrigation by a grouping of soils and a reclassification of irrigation sources.*

1. "India owes in a great measure to the former rulers, for the first inception of her present unrivalled system of State Irrigation works." There are great possibilities for development of river projects in the Andhra Pradesh and large amounts are necessary to achieve this end and also to maintain the projects after their execution. The ryots have therefore to pay adequately to the Government, for the service rendered, by providing irrigational facilities, to enable the government to meet the working expenses and interest charges on the capital outlay. It is of vital importance to consider the principles of levying charges for irrigation—whether the appropriate basis should be the initial cost of project and its maintenance or whether there should be a uniform rate for all sources, which give the same quantum of supply regardless of the cost incurred by the Government in the construction.

2. There is an increase in the yield of crops to the ryot on account of irrigation. The Government have to secure a share of this increased yield which the ryots derive from their lands, due to irrigation, irrespective of the cost incurred by the Government for the supply of water. The charge for water represents this additional share. In some places the charge for water is regarded as a charge for services rendered based on the initial outlay in constructing the project and in maintaining it. It is also supplied on commercial basis. In some other places the charge is based on the increased income derived on account of irrigation and the crops raised. The direct financial return on the capital outlay of the works has been considered to be of secondary importance. The primary considerations while sanctioning works are invariably (a) the increase in the general prosperity of the community due to the increased

produce on account of irrigation, (b) the prevention or mitigation of the horrors of famine, (c) the increase in the humidity and the rise in the level of underground water supply and (d) flood control. In places where the rainfall and natural configuration of the country aids irrigation, the existing rainfall acts as a supplement to the irrigation and it will be therefore equitable that areas commanded by old irrigation projects and situated advantageously should pay at a higher rate. Some of the new projects are not advantageously situated but have been executed at a greater cost and their ayacuts require a good deal of reclamation and development. The areas under such new projects have been subjected to higher rates resulting in hardship to such areas. Thus the determination of water charge has to be considered as an integrated problem for the whole State. Increase in water cess in prosperous areas is essential not only to meet the maintenance charges but also to provide funds for the execution of projects in under-developed areas.

3. From the financial point of view, the irrigation works are classified as productive, protective and minor works. Productive works yield a profitable return on the amount spent in constructing them. In tracts of scanty rainfall, which are often subject to famine, the provision of protective irrigation works is essential so as to avoid or reduce the expenditure on relief works when there is actual famine. In such cases, the principles of adequate return cannot be rigidly applied and a relaxation of the principles is necessary. Expenditure on such works is quite appropriate inspite of low returns on the outlay of these works. All other sources fall under "minor works" which the Government had to take over with responsibility and incur certain expenditure for their improvement and maintenance in the course of normal administration. It is difficult to determine very accurately the increase of revenue expected with reference to the expenditure incurred in respect of these works. Besides these factors, crops and their prices provide basis for the determination of the rate for water. After a careful consideration of all these aspects, we hold that the productivity of the soils, the capacity of the source i.e., the duration of the supply and the ability of the ryots to bear the charge are the chief factors which should weigh in determining the water rates. The detailed basis for the rates recommended by us are discussed in the succeeding paragraphs.

4. In the Andhra region, water rate is charged whenever water is taken from a government source of irrigation for the

irrigation of lands classed as dry for the irrigation of a second crop or a Dofasl crop on lands classified as single crop wet. In the case of single crop wet lands no separate water rate is chargeable for the irrigation of first crop, since the wet assessment payable thereon includes charge for water in addition to assessment on land. The water-rate levied for raising a second wet crop on single crop wet lands is called fasli-jasti. Water-rate is levied in the Andhra region under the Madras Irrigation Cess Act, 1865, which states that whenever water is supplied or used for purposes of irrigation from any reservoir, tank, river, stream, etc., belonging to or constructed by or on behalf of the Government, it shall be lawful for the Government to levy a separate fee for such water in accordance with the rules prescribed under the Act. In appendices to B.S.O. 4, the rates of water cess prescribed for the several types of sources in the several districts or tracts and for the several crops grown are mentioned. From these appendices, which are about a dozen in number, it would be found that there is neither simplicity nor uniformity nor equity in the matter of levying water charge, with the result the ryots do not have a clear idea about the exact rate at which they have to pay water rate for the crops grown by them.

5. Generally speaking, there are two systems of levy of water rate on dry lands irrigated from government sources of irrigation. (1) fixed or special water rate system and (2) differential water rate system. In the fixed water rate system a flat rate of Rs. 6-4-0 per acre in the case of irrigation of a single wet crop under a I class source in Godavari and Krishna deltas and at Rs. 5 per acre for similar irrigation under a II class source are charged. Under the Tungabhadra project and under the several medium-size projects recently sanctioned, a flat rate of Rs. 15 per acre is being levied without any reference to the type of soil which is irrigated although it has a definite bearing on yield of crops. The Government appear to have fixed this flat rate after obtaining the consent of the people benefitted by these projects and worked out the financial forecasts. The flat rates levied may be considered to be 'owners rates or agreement rates.'

6. Under the differential water rate system, dry lands are charged water rate at rates equal to the difference between wet assessment and corresponding dry assessment on the land. This system is now in force in the districts of Srikakulam (Nagavalli project area), Kurnool, Cuddapah, Kadiri taluk of



Anantapur district, Vayalpad and Madanapalli taluks of Chittoor district and Nellore. The merit claimed for the differential water rate system is that it ensures that the charge for water is commensurate with the yielding capacity of the land irrigated, while the fixed water rate system, has the advantage of simplicity. The relative merits of the two systems were examined several times in the past but the government have been allowing both the systems to prevail in the different areas as they did not like to interfere with the settlement rates fixed. A statement showing the standard scale of water-cess and the special project rates in force in Andhra region is appended. (Appendix No. 6). An extract from the note of Dr. B. Gopala Reddy, ex-Finance Minister of the Andhra State, submitted to Legislature in 1955 for revising water rates is extracted below.—

“The rates under the standard scale of water cess were fixed as far back as 1873, i.e., 82 years ago, and have remained unchanged since the beginning of this century.

“The special project rates were fixed at different times, according to the completion of the project concerned. The more important factors taken into consideration in the fixation of the special project rates were.—

- (a) the nature of the project, whether productive or protective;
- (b) the cost of the project; and
- (c) the ability and willingness of the ryots affected to bear the charge.

In the case of ‘productive’ works, the principle adopted was to fix the water-rates at a level which would bring in an adequate return on the capital invested, while in the case of ‘protective’ works the main consideration was ‘what the land will bear’.

“The distinction between productive and protective works has however, largely disappeared in recent years, as irrigation projects have, as observed by the Taxation Enquiry Commission, come to be considered “more from the point of view of the totality of welfare the schemes help to create, than from that of the prospect of immediate cash returns.” Formerly very few irrigation works were undertaken unless they were considered financially sound. In recent years, however, the

financial tests have been relaxed to a great extent and many irrigation projects have been undertaken as protective works although they have not satisfied the test of being financially remunerative. It may be seen that even out of the works classified as productive, only Godavari and Krishna systems have been remunerative.

“Owing to the general rise in prices, the maintenance costs of the various irrigation projects have greatly increased. A statement indicating the expenditure incurred on the irrigation projects for which Capital and Revenue accounts are maintained and the revenue derived therefrom during the last few years is shown below:—

*statement indicating the gross revenue, working expenses etc., in respect of irrigation projects for which capital and revenue accounts are maintained.*  
(Andhra area)

*(Figures in lakhs of rupees)*

Year	Gross revenue	Working expenses	Net revenue	Capital expenditure	Interest on capital
1946-47 ..	137.23	47.01	90.22	881.53	38.00
1947-48 ..	136.40	57.35	79.05	1,022.91	42.10
1948-49 ..	139.55	60.31	79.24	1,304.22	52.08
1949-50 ..	121.13	71.48	49.65	1,581.46	61.96
1950-51 ..	126.58	79.24	47.34	1,842.23	73.10
1951-52 ..	127.74	78.01	49.73	2,223.89	87.66
1952-53 ..	132.67	126.33	6.34	2,699.08	109.58
1953-54 (2nd six months account).	134.44	28.69	105.75	..	65.15
1954-55 (Revised estimates).	119.18	89.28	29.89	..	139.98
1955-56 (Budget estimates).	120.06	82.29	37.77	..	142.77

It will be seen therefrom that, while the working expenses and the interest charge rose from Rs. 47.01 and Rs. 38.00 lakhs respectively in 1946-47, to Rs. 126.33 and Rs. 109.58 lakhs respectively in 1952-53 and to Rs. 82.29 and Rs. 142.77 lakhs respectively in 1955-56, the gross revenue fell from

Rs. 137.23 lakhs in 1946-47 to Rs. 132.67 lakhs in 1952-53. According to the budget estimates for the current year, the total revenue from irrigation works for which Capital and Revenue accounts are maintained is Rs. 120.06 lakhs. As against this, the working expenses and interest charges on those projects come to Rs. 82.29 and Rs. 142.77 lakhs respectively totalling to Rs. 225.06 lakhs. The deficit in the revenue on account of irrigation is thus of the order of Rs. 105 lakhs. If this deficit is to be made good entirely by an increase in the water rates, they would have to be enhanced by 87.5 per cent. The only other source besides the increase in water rates from which an additional revenue on account of irrigation could be derived, is the levy of betterment contribution on lands benefited as a result of the irrigation works. To the extent however that the additional revenue derived from increased water-rates and levy of betterment contributions will not suffice to make good the deficit in the revenue from irrigation, our irrigation projects will perforce have to remain subsidised from the general revenues. It would also follow that to the extent that the irrigation projects constitute a burden on the general revenues, the scope for undertaking new irrigation projects will become restricted. It is imperative, therefore to raise additional irrigation revenue by an increase of water-rate and levy of betterment contributions in order to be able to meet the maintenance charges and the interest charges, and repay the loans from which the irrigation projects are being financed, and thus relieve to an extent the general revenues of the encumbrance which the irrigation projects at present constitute. It may be stated, in this connection, that the income from levy of betterment contribution will not be very appreciable and it follows that the deficit in the irrigation revenue will have to be met largely by increase of water-rate. There is thus an incontestable case for considerable enhancement of water rates. The Government have proposed that they may be raised by 25 per cent only, excepting where, as in the case of some of the more recent projects the water-rates fixed or proposed are sufficiently high.

“As has been explained earlier, at the present level of water-rates, the existing irrigation projects are unremunerative, the only exceptions being the Godavari and Krishna delta systems. In almost all the new projects which are now being undertaken provision is made for levy of water-cess at rates substantially higher than the rates applicable to the old works. Due to the levy of water-cess at enhanced rate in the

case of the new projects, they will prove less burdensome to the general revenues than if water-cess should be levied at the rates applicable to the older irrigation projects. An incongruous result would, however, follow, especially in the case of the tracts served by both the old and new irrigation projects, since widely varying rates of water cess would be levied according as the irrigation source is old or new although the benefit derived by irrigation would be identical in both the cases. A review of the rates under the older projects would therefore, both be necessary and justifiable.

“It may be stated, in this connection, that several State Governments have, as pointed out by the Taxation Enquiry Commission already increased water-rates; for example the Uttar Pradesh Government imposed in 1948 a surcharge of approximately 50 per cent in the irrigation rates, and later enhanced in 1953, the water-rates including surcharge by about 50 per cent. These increases were calculated to enable the Uttar Pradesh Government ‘not only to meet the working expenses but to provide resources for undertaking new irrigation works or extending existing ones’. It is understood that the Uttar Pradesh Government have since allowed a rebate of 50 per cent of the increases made in the water-rates since 1953.

“As a principle of rationalisation of water-cess, the Taxation Enquiry Commission has recommended as follows.—

“Ordinarily, water-rates must cover the maintenance charges, i.e., the policy must be no profit but also no loss. But to this, there would be several exceptions. A policy of no profit and some loss would in our opinion be justified in the case of an irrigation work for a scarcity area which is being economically developed. On the other hand, a policy of some profit and no loss would, we believe, be justified where an irrigation project has been provided for a fairly well-off area or where an old work existed from which benefit had already been derived and continues to be derived by cultivators in the region.” They have also observed that where because of the low cost of construction and maintenance of old irrigation works, water rates are much lower than in other areas and undue advantage from these low rates is derived by individual cultivators, the State Governments would be justified in increasing the water rates by adding an element of tax with a view to appropriate to the general revenues some part of these large benefits that have accrued,

On the basis of this note, Government of Andhra passed the 'Andhra Additional Wet Assessment Act, 1955', which was further revised by the Government of Andhra Pradesh in the 'Andhra Pradesh Additional Wet Assessment (Amendment) Act of 1957'."

7. It may be observed from the developments narrated above that the Acts and the Wet Assessments now in force are so complex that several representations have been received by us to evolve some system by which the levy of assessments and water-rates could be simplified and collected in one lumpsum instead of leaving the ryots to depend upon the karnams and revenue officials who in view of the enormous increase in their work have neither patience nor the time to explain the details to the pattadars. We have also discussed at length the question whether the rates fixed uniformly for all lands irrigated by new projects should be retained in view of the fact, that the return was already reported in the financial forecasts of the projects concerned.

8. With reference to the orders on which these projects rates are based, we are constrained to observe that a uniform levy of the rate would cause undue hardship to the owners of lands with inferior soils while it may leave the owners of lands with fertile and superior soils with a lighter levy. Though the benefits of irrigation are considerable and though it can be assumed that the income from wet lands is about five to six times that of dry land, there is considerable variation in the quantum of benefit derived by irrigation of dry lands depending upon the type, nature and texture of the soils. The principles that weighed with the Committee are uniformity, simplicity and equity in the matter of levy of water rates and assessments. While it may not be possible to go into the minute details regarding the class and sort of the soils followed in the settlement systems of Andhra or consider the advantages of proximity to the village, defects in the soil, etc., which have been adopted in Telangana, it is necessary to have clear divisions which are called Grades of dry soils on the one hand and classification of irrigation sources depending on their capacity and the assurance of supply on the other. These divisions and classifications have to be simple enough to be understood by the ryots while at the same time cover the variations in the yields of crops on which the incomes depend. The ex-Finance Minister Dr. B. Gopala Reddy, in his note stated that on the basis of water-rates now levied

the Government have been paying from the general revenues a sum of Rs. 105 lakhs to meet the increasing charges on account of working expenses and interest charges on the old and new projects. There is no justification for making the general tax-payer pay this amount which should legitimately be borne by the beneficiaries. We are in entire agreement with the valuable suggestions made by Dr. B. Gopala Reddy, in his note, in favour of increasing the rates of water-cess in the old Godavari and Krishna projects under which the ryots are not paying an adequate share of the net profit derived by them to the Government like the ryots in the other recently developed project areas.

9. We have also mentioned the procedure followed in Telangana for classifying sources and the soils. What has been stated on the procedure, in Andhra, applies equally to Telangana where the system is also too complicated to be readily appreciated by ryots.

10. The comparison of the rates of wet assessments in the Andhra and Telangana areas reveals that the rates of assessments in Telangana are somewhat higher, even though the yields are lower. Several representations have been made to us during our enquiry that in Telangana, a tank having an ayacut of more than 30 acres has been assigned the same class as that of a major project like the Nizamsagar or the medium size project like Paler, Wyra and Manair. The maximum water-rate component of wet assessment in the Telangana is definitely more than Rs. 15 per acre which is the water-rate charged for a single wet crop on the projects sanctioned in the Andhra area within the last two decades. There need be no disparities in the pitch of water charges in the two regions of the State. The irrigation under the Godavari and Krishna which bring down a lot of valuable silt and also soluble plant nutrients confers definite benefits to the crop in that it does not need heavy manuring as in the case of other wet lands. There is every jurisdiction for the Government to take a reasonable share in the advantages derived by such irrigation from big rivers and also from the better yields of crops realised in the deltas, without causing any inequity by such increase in the water-rates.

11. The Taxation Enquiry Commission has vehemently condemned the differential water-rate system "as unsound in theory and extremely clumsy in practice". Except in the composite Madras, Bombay and Burma, the differential water-rate

system is not in vogue in other states of India. After a thorough discussion we have come to the conclusion that in future the assessment on irrigated land should consist of dry assessment depending on the quality of soil and the charge for irrigation based on the quantum of service rendered by the Government. Eventhough the income from wet land is several times that of dry land, still for the service done, we are not suggesting the levy of a uniform rate but graduated rates related to the soil value of the lands on which the yields would depend.

12. After deep consideration and careful examination, we recommend the following table which should form the basis for the levy of water-rates on different grades of soils from different classes of irrigation sources. In our view this table embodies the principles of equity, uniformity and simplicity.

Lands in the Andhra region are now divided according to the settlement principles into five series. They are further divided into classes and sorts. The recognized table of soils is given below.—

Series .	Class	Description	Sorts
Alluvial and exceptional.	I ..	Clayey (upwards of two-third clay) ..	1 Best. 2 Good. 3 Ordinary. 4 Inferior. 5 Worst.
	II ..	Loam (containing from one-third to two-thirds clay) permanently improved, <i>i.e.</i> lands in the beds of ruined tanks and sites in ruined villages	1 to 5
Regar	.. III ..	Clay regar, containing upwards of two-thirds clay .. ..	1 to 5
	IV ..	Mixed or loamy regar, containing from one-third to two-thirds clay ..	1 to 5
	V ..	Sandy regar, containing not more than one-third clay .. ..	1 to 5
Red ferruginous	VI ..	Clay containing up-wards of two-thirds clay.	1 Best. 2 Good. 3 Ordinary. 4 Inferior. 5 Worst.

Series	Class	Description	Sorts
	VII	.. Mixed or loamy containing not more than one-third clay .. ..	1 to 5.
	VIII	.. Sandy or gravelly containing from one-third to two thirds clay ..	do
White and grey calcareous.	IX	.. Clay containing upwards of two-thirds clay .. ..	do
	X	.. Mixed or loamy containing from one-third to two-thirds clay ..	do
	XI	.. Sandy or gravelly under one-third clay	do
Arenaceous	.. XII	.. Loamy or mixed one-third to two-thirds clay .. ..	do
	XIII	.. Sandy containing from one-third to one-tenth clay .. ..	do
	XIV	.. Sand under one-tenth clay ..	do

This classification is found to be rather elaborate to evolve a new table for levy of water rates. The new divisions have to be simple enough to be understood by the ryots while providing for variation in their yields. It is, therefore, proposed to divide the existing soils into four grades.

*Grade I.—Superior Alluvial soils.*

In Andhra, Class I alluvial clay soils with sorts I-A, 1 and 2, Class II alluvial loam with sorts I-A, 1 and 2. (There are no such soils in Telangana).

*Grade II.—Good soils.*

In Andhra, class I alluvial clay soil with sort 3, class II alluvial loamy soils with sort 3, class III regar or black cotton clay soils with sorts 1 and 2, Class IV regar or black loamy soils with sort 1, class VI red clay soils with sorts 1 and 2 and class VII red loamy soils with sort 1 and lands of Telangana with wet Bagannas above As. 14.

*Grade III.—Medium soils.*

In Andhra, class 1 alluvial clay with sort 4, class II alluvial loamy soils with sort 4, class II black cotton clay soils



with sort 3, class IV black loamy soils with sorts 2 and 3, class VI red clay soils with sort 3, class VII red loamy soils with sorts 2 and 3, class XII arenaceous loamy soils with sorts 1 and 2, Class XIII arenaceous (fine sand) soils with sort I and lands of Bhaganna of As. 11 and above but up to and including Bhaganna As. 14 of Telangana.

*Grade IV.—Inferior soils.*

All the classes of soils and sorts which are not mentioned in the above three grades and lands bearing Bhagannas below Re. 0-11-0 in Telangana.

13. Lands of Grade I soils are found mostly in the deltaic tracts of Krishna and Godavari. They are the best lands in Andhra Pradesh giving rich yields and can afford to bear a water rate higher than what the lands under Tungabhadra are now charged. These lands do not require much manuring due to the fertility of the silt and the plant nutrients carried by the flood waters.

14. In Telangana there are no lands which fail under the proposed grade I soil. Soils in Telangana are classified in terms of wet "Bhagannas" and for every defect a deduction of a class is made. Under Grade II, lands bearing a classification of more than As. 14 wet Bhagannas without deducting the milewar allowance will be included. In Grade III, soils classified with wet Bhagannas As. 14 and below upto and including wet Bhagannas As. 11 will be included. In Grade IV lands with classifications of wet Bhagannas below As. 11 will be included. These classifications of Bhagannas, are for wet lands. In arriving at the dry component of the assessment on these irrigated lands the milewar which is now allowed as a defect for lands situated at a distance of more than 2 furlongs from the village will be omitted and the corresponding dry assessment worked out on the basis of wet Bhagannas. There will be no difficulty as the maximum dry assessments fixed for each group are the 16 Bhagannas rate. After a careful examination, we consider that the distribution of classes and sorts into Grades in Andhra would very nearly correspond to the analysis of the wet Bhagannas in Telangana into the four grades.

15. In future, no land should be registered as wet but dry lands should be classified as A, B, C and D on the following basis to enable the ryots to know the type of irrigation he is entitled to, for growing suitable crops.

'A' Class dry lands will be those which now stand registered in the revenue accounts as compounded double crop wet lands or double crop wet lands or for which there is an assurance of water supply for raising two heavily irrigated wet crops or a dofasal crop.

'B' Class dry lands will be those which now stand registered in the revenue accounts as single crop wet lands or for which there is an assurance of water supply for raising a single heavily irrigated crop of not more than six months duration.

'C' Class dry lands will be those which are now included in the dry-irrigated zones of projects and for which there is an assurance of water supply for raising one dry crop with light irrigation.

'D' Class dry lands will be those which are not entitled to any supply of water but include manavari, Asmanitari and Kariveda lands.

Irrigation of lands falling under Classes A, B and C is compulsory and not optional. As the total of dry assessment and water rate due will be noted in the new village Settlement Registers to be prepared in the place of the present Diglott or Sethwar registers, there will be no need to prepare water rate accounts.

16. Irrigation sources are now classified in the Andhra region with reference to their capacity for the storage and supply of water. By 'capacity' is meant the period for which the water stored could be supplied from the source to its ayacut, with such repeated fillings as the source, usually receives from the monsoons, from supply channels taking off from rivers or streams or from surplussings from the sources higher up, etc. In Andhra, five classes of irrigation sources have been recognized for settlement purposes:

*First class.*

Exceptionally good sources based on anicuts or reservoirs across perennial rivers like the Godavari and Krishna rivers. The anicuts across these rivers, supply water unfailingly to extensive canal systems dependent on them, for practically the whole year.

*Second class.*

Irrigation sources affording a supply for eight months and more. Examples are the Cumbum tank, Kodakarla Ava, Singanamala tank, Bukkapatnam tank, etc.

*Third class.*

Irrigation sources affording a supply for five months and above, but less than eight months.

*Fourth class.*

Irrigation sources affording a supply for three months and above, but less than five months.

*Fifth class.*

All minor sources affording supply for less than three months.

In the Telangana, the classification of irrigation sources is made on the basis of "PANI" class according to which a tank with more than 30 acres of irrigable area is classified as first class along with Nizamsagar, Paler and Wyra projects. This is obviously inequitable.

17. After a careful consideration, we have come to the conclusion, that there should be a change in the principles of classification of the sources in both the regions. The levy of water rate, in Andhra is not equitable as the same rate is levied for supply of water under sources I and II is the same, though the period of supply is different. Similarly the rate of water charge now levied for supply of water from the remaining class of sources is the same, though the periods of supply vary considerably. On principles of equity we consider, that the rate to be levied should be proportionate to the period for which an assured supply is made. As we propose to levy different rates for different grades of soils, it is essential that sources also should be classified in a more rational manner to secure equitable rates on a uniform basis to the ryots. It is, therefore, proposed to classify the sources as follows.—

*Class-I.*

Major projects and tanks in the ayacut of big projects fed by channels from the projects which supply water throughout the year except during closure for repairs.

*Class-II.*

Medium-size projects and tanks in the ayacut of medium-size projects fed by canals from the projects which usually supply water for the first and second crops.

*Class-III.*

River channels and tanks which not only regularly irrigate more than 200 acres but also support a Tabi crop of at least 20 per cent of the irrigable area and which supply water for more than 8 months.

*Class-IV.*

Sona, Bila, Kasam or Uppalvatbonda, spring channels and tanks with an irrigable area of 200 acres and more which usually supply water for more than six months but less than 8 months.

*Class-V.*

Tanks with an irrigable area of 30 acres and above but below 200 acres which usually supply water for more than 3 months but less than 6 months.

*Class-VI.*

Tanks with an irrigable extent of less than 30 acres and which are precarious and supply water usually for less than three months. Only sources of this class will be declared as precarious sources.

18. At present water rate levy is the same on alluvial lands, regar lands and lands of inferior soils. The charges levied should, in the opinion of this Committee, have a relation to the yield which the ryot receives from his land by use of the water. With a view to alter the present rates to be in conformity with this principle, we have come to the conclusion that soils of superior fertility should be charged more than inferior lands.

At present lands under different new projects, like Tungabhadra, Byravanitippa are being charged at Rs. 15 per single wet crop. It is only fair that alluvial lands which are far superior in fertility, should be charged more. Lands which are inferior to regar-loam and red-clay should be charged less.

Taking into consideration all these factors, we recommend the following table for the levy of water rates for raising single wet crops of not more than six months duration.

The Committee has considered the question of levy of water rate for the irrigated lands on which sugarcane crop is raised. At present in the Andhra region, for the irrigation of lands on which sugarcane is grown  $1\frac{1}{2}$  times the water rate is charged if the land is dry and an additional half wet assessment if the land is registered as single crop wet land. In the Telangana region there is a variety of sugarcane called ADSALI which stands on the ground for 18 months. Now three and half times the Abi wet rate is being levied for such sugarcane cultivation and two and a half times Abi wet rate is being charged for EKSAL sugarcane of eleven months duration. We are of the view that for irrigation of sugarcane more water is required than for paddy. Sri D. V. Rao is of the view that paddy, Abi and Tabi crops, require 120 acre-inches of water at the Head sluice against 156 acre-inches for Eksal sugarcane and 200 inches for Adsali or 18 month sugarcane crop in addition to the normal rainfall in the area which is about 30 or 35 inches per annum. We entirely agree with his opinion. During summer much water will be required by the sugarcane crop. The loss by evaporation and transpiration is also very great. As the return to the ryot from such a crop is more than that from other crops we are of the view that three times the water-rate as fixed in the table recommended by us should be charged for Adsali sugarcane and two times the water rate for Eksal sugarcane. In respect of Eksali sugarcane twice the water rate will be charged only if water is supplied in summer. If, however, the sugarcane is sown with the aid of well-water, and government water is not taken during the months of April, May and June it should be charged one and half times single water rate.

19. Thus the rates now proposed by us are in complete replacement of the existing charges for water taken for a single crop in both Andhra and Telangana regions. There are other methods of irrigation by rotation, of systematically and occasionally irrigated dry and wet crops in the same fasli year and different rates are being levied for the irrigation of such crops under different sources. In Chapters V and VI of part I, the details of the existing charges have been given. A close examination of these rates revealed to the Committee that some definite proportion formed the basis for fixing these rates. As an example is quoted, the following standard scale of water-cess, levied on different types of crops and methods of irrigation.

First crop	Second crop	Total charge in the fasli
1. Wet crop (one rate)	.. Following wet crop ( $\frac{1}{2}$ rate)	.. $1\frac{1}{2}$ rate.
2. Wet crop (one rate)	.. Following dry crop systematically irrigated. ( $\frac{3}{8}$ th rate).	1 $\frac{3}{8}$ th rate
3. Wet crop (one rate)	.. Following dry crop occasionally irrigated. ( $\frac{1}{4}$ th. rate)	1 $\frac{1}{4}$ th rate.
4. Dry systematically irrigated ( $\frac{3}{4}$ th rate)	Following wet crop. ( $\frac{5}{8}$ th rate)	1 $\frac{3}{8}$ th rate.
5. do ( $\frac{3}{4}$ th rate)	.. Following dry crop systematically irrigated. ( $\frac{1}{2}$ rate)	1 $\frac{1}{4}$ th rate.
6. do ( $\frac{3}{4}$ th rate)	.. Following dry crop occasionally irrigated. ( $\frac{3}{8}$ th. rate)	1 $\frac{1}{8}$ th rate.
7. Dry occasionally irrigated ( $\frac{1}{2}$ rate).	Following wet crop. ( $\frac{3}{4}$ th rate)	.. $1\frac{1}{4}$ th rate.
8. do ( $\frac{1}{2}$ rate).	.. Following dry crop systematically irrigated. ( $\frac{5}{8}$ th rate).	1 $\frac{1}{8}$ th rate.
9. do ( $\frac{1}{2}$ rate).	.. Following dry crop occasionally irrigated. ( $\frac{1}{2}$ rate).	1 rate.

It has, therefore, become necessary for us to propose suitable proportions of water rates to be charged to cover all the items. We find the existing ratios of water charges applied to the irrigation by rotation of wet and dry (systematically and occasionally irrigated) crops in first and second crop seasons are moderate and reasonable and recommend that the same proportions be adopted in respect of the rates recommended by the Committee for a single crop.

20. As regards the third crop charge now being levied under some sources for which separate water rates are fixed by the Government, this Committee recommends that

(i) if the crop raised is green manure or fodder crop there should be no charge,

(ii) if irrigation is supplemented by wells there should be no charge, and

(iii) if a third crop—whether it is irrigated dry or pure wet crop— is exclusively irrigated from water of a government source, the charge should be one-fourth of the first crop charge.

21. As regards 'Mundlavari' crop, the irrigation of this crop is charged at half water-rate under Kurnool-Cuddapah canal and under some Government sources in Cuddapah, Chittoor and Nellore districts. This is an inferior variety of paddy, requiring less water, used for personal consumption by a poorer section of the public. We do not, therefore, recommend the levy of any charge for the irrigation of this crop.

22. The charge for the dofasal crops has been hitherto one and half rates on Government dry lands in the delta tract of East Godavari, West Godavari, Krishna and Guntur districts other than those irrigated from Kollair and Upputeru and at 2 rates on the Inam and Zamindari lands irrigated in the Krishna and Godavari deltas and lanka and padugai lands in the Krishna and Godavari rivers and dry lands in the upland villages of the above districts irrigated with water from the Godavari and Krishna rivers. If water is not available in the source for a period longer than that required for raising one ordinary paddy crop a single water rate is charged. The Committee recommends that betel, plantains, turmeric, elephant-yam, coconut and other crops requiring water for more than six months should be treated as dofasal crops and charged in the same proportion. The Committee has already indicated the charge to be levied for sugarcane; that in respect of crops like casuarina, bamboo and other timber and fuel plantations if watered for more than six months, the charge should continue to be three-fourth water rate. If they are watered for less than six months the charge should continue at half water rate.

23. As regards baling remissions, the Committee considers that there should be a distinction depending on the height of the lift and accordingly recommends that one-fourth remission should be granted for single lift of six feet and below and half remission for a lift of above six feet for both wet and dry cultivation without fixing any maximum limit per acre.

Incidentally the Committee recommends that there should be no further registry of lands under motasthal or baling ayacut and under Doruvu and Dasabandham wells.

24. The Committee finds that irrigation under drains in Krishna and Godavari deltas is being charged as for irrigation under the project canals except that there are special rates for Yanamaduru, Upputeru and Kollair drains. The Committee recommends the continuance of these rates, but however, feels that an investigation is necessary whether the water contains injurious salts detrimental to the growth of the crop in which case a substantial concession would be justified.

25. At present the irrigation under pumping installations has been classified on the basis of the source from which the water is pumped and special rates have been prescribed. We consider that the lands under pumping installations do not enjoy the same advantage and benefit as by direct flow from the source and recommend that they should be charged one third of the appropriate water rates recommended by us in the table.





(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.
<i>Grade II—Good soils :</i>						
In Andhra, Class-I Alluvial clay soil with sort 3, Class II alluvial loamy soils with sort, 3, Class III Regar or black cotton clay soils with sorts 1 and 2, Class IV Regar or black loamy soils with sort 1, Class VI red clay soils with sorts 1 and 2 and Class VII red loamy soils with sort 1, and lands of Telangana with wet Bhagannas above Re. 0-14-0 ..	15.00	14.00	10.00	7.50	5.00	4.00
<i>Grade III—Medium soils :</i>						
In Andhra, Class I Alluvial clay soil with sort 4, Class II alluvial loamy soils with sort 4, Class II Black-cotton clay soils with sort 3, Class IV black loamy soils with sorts 2 and 3, Class VI red clay soils with sort 3, Class VII red loamy soils with sorts 2 and 3, Class XII arenaceous loamy soils with sorts 1 and 2, Class XIII arenaceous fine sand soils with sort 1, and lands of Bhaganna of Re. 0-11-0 and above but upto and including Bhaganna Re. 0-14-0 of Telangana .. .. .	12.50	11.50	8.00	6.00	4.00	3.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.
<i>Grade IV—Inferior soils :</i>						
All the classes of soils and sorts which are not mentioned in the above three grades and lands bearing Bhagannas below Re. 0-11-0 in Telangana .. .. .	10.00	8.00	6.00	4.00	3.00	2.50

- (1) Open mouth river channels which involve some contribution by ryots by way of labour to divert water by forming Korambo bunds should be charged 1/2 of the water rates proposed under Class III of the sources, and
- (2) Parre kalvas or river spring channels which require constant labour to maintain regular flow should be charged 1/3rd the water rates proposed under Class III of the sources.

*Paragraph 3.—Desirability of levying Water Charge on Volumetric Basis.*

The idea of charging for water supplied for purposes of irrigation on a volumetric basis arose from the need to prevent wastage under flow irrigation. Though this has been engaging the attention of the irrigation authorities during the last 50 years, it was not found possible to put it into practice. In Bombay, Uttar Pradesh, Bihar and other States, this system has, however, been adopted in the case of lift irrigation. The principle underlying is similar to the supply of electricity.

As per the general practice which is mostly in vogue, the water tax is consolidated in the land revenue assessment, in respect of old irrigation whereas under the new projects, where dry lands are brought under irrigation, the water tax and land revenue are charged separately. Further the level of water tax bears a relation to the productivity of each individual field, its proximity to the market, village and roads, the duration of supply of water and its dependability, etc. Thus, for purposes of charging water charge, a number of factors have been taken into consideration. However, when the water is supplied for industrial purposes, it is charged on volumetric basis, under the provisions of Board's Standing Order 11 (A).

2. Two systems are mostly favoured for measuring the quantity of water supplied.

(a) By meter and

(b) By Module.

The chief features of these are.—

*Meter system.*—In this system, the quantity of water actually used is measured on a self-recording meter located at a distance not far removed from the field. Just as consumption of electrical energy is charged in terms of units, a unit of water (say an acre-foot or 43,560 cubic feet) actually used and recorded by the meter, is charged at higher rates compared to those obtaining under the second system described below.—

A reliable operator can control and regulate the distribution of a constant quantity. The cultivator can be charged for the supply, in terms of "charge per hour." This is best

suitable for measuring water supplied to lands which are in a compact area, situated close to the source of supply. A moderate sized tank and large diesel, steam or electric pumps erected on the banks of a river or other source of supply under which crops are in need of fitful supply of water are examples in point. In respect of other irrigation sources where already the lands require supply of water for large areas and varied holdings, this system is neither feasible nor appropriate.

*Module system*—A module is a type of a vent or outlet through which water is discharged and the cultivator pays for the volume of water allowed to pass through this outlet, at prescribed intervals and in sufficient quantities, to mature the crop. The discharge of water through the outlet bears a relation to the area to be irrigated and is independent of the level of water surface in the channel into which the supply of water is delivered. In this system, the main difficulty is that the cultivator of lands at a distance of 2 or 3 miles from the sluice, is at a disadvantage, compared to the one whose lands are situated in close proximity to the sluice, as in the former case the area irrigated is much smaller, for the same quantity of water, compared to the latter. It is, therefore, unfair to collect the same charge for the same quantity of water. In such cases, a sliding scale of charges varying inversely with the distance of the fields to be irrigated from the point at which the supply is measured, has to be devised. This presents practical difficulties, when the area to be irrigated is very large.

3. Under the meter system the cultivator pays in terms of units of water used. In a rainy season, the number of units of water utilized is comparatively less than in a dry season, although the value of the crop derived does not vary much. It is different under the module system. In a rainy season a cultivator who requires one watering for his field will have to pay the same charge, as he would in a dry season, when the crop usually requires many waterings. He has to pay a moderate and uniform rate per unit of water, placed at his disposal, through the outlet and not for the quantity of water actually used. This charge for the actual quantity of water used is secured under the meter system, though at a higher rate. The module system enables the ryot to have always an assurance of supply of water whether he can actually use it or not. He has to pay for having water at his disposal, though in a dry season, he may have to pay more than the value of the crop.

When water is regulated to be delivered along a water-course covering a distance of about a hundred miles, it is obvious that the quantity of water so placed at the disposal of landowners ought to be paid for, whether the owners of land along the water-course do actually take water or not, as their needs may vary. In such circumstances, the water once let out cannot be withdrawn or utilised elsewhere if the landowners decline to use it. For the above reason, the meter system is not suitable for large irrigation works and as described earlier, it is best suited to small irrigation sources, having compact blocks, as its ayacut, with less number of landowners. However much, the ryot may have to pay for the water, placed at his disposal, the module system with its lower unit rate of charge and the advantage of an assured supply, during a particular interval, in sufficient quantity to mature the crop, is certain to be more acceptable to the ryot than the meter system. In spite of this advantage, under a module, the consumer can reduce the discharge or close it altogether but he will not be entitled to a reduced charge, if he does not utilise the entire supply, for which it is set. In countries like Italy, Spain and America, the module system alone is adopted for irrigation of water, on volumetric basis. It was, however, tried in the Punjab with not much success or popularity. The unit for purposes of charges under the module system must always be the water-course and each water course must be provided with its own module. A village may have to be served by one or more water courses and under a water course, there may be one or more villages. While recovering the charges, these factors would bring in great difficulties both in distributing the charges and the supply of water, between consumers of different villages. There has been also the difficulty of arriving at a scale of rates of charge per unit, acceptable to the ryot and involving no loss to the Government revenue. The foregoing facts show, that for one reason or the other, no serious attempts were made for the supply of water for irrigation on volumetric basis.

4. The Indian cultivator has been well conversant with the payment of charges for water used in a given area. He is quite new to the method of determination of the volume of water used and the charge thereof. There is a possibility of tampering with the supplies made and the internal distribution of water to the consumer. The Indian Irrigation Commission 1901-03 examined this problem at length and considered that "distribution by module should come first. Then, after a long interval, assessment by module may follow". They have added that volumetric distribution of water is an ideal to be aimed

at and recommended "that strenuous and continuous efforts be made to perfect the system of distribution by modules and other means" to be introduced "gradually, as the people learn to appreciate its advantages". Ordinarily, no ryot will take more quantity of water than what is actually required for his crop, as over-irrigation and unnecessary flooding will spoil it. The present system of charging on area irrigated, cannot be changed to one of charge by volumetric distribution, merely on the assumption, that the ryot wastes water. As stated earlier, it has been found impossible exactly to measure the quantity of water flowing into each field or channel. This system is susceptible of malpractices, on the part of petty officials, connected with the distribution of water. Its working in the Punjab, where it was tried did not result in any economy of water—a principal advantage claimed in its favour. It, however, found easy application under lift-irrigation schemes and tube wells where the area irrigated was in compact blocks, in the ownership of a few cultivators, as it is easy to deal with such consumers. The area of irrigation under such source is not also considerable. The experience of the ryots is that even under these river systems, the supply is neither assured nor adequate, during the crucial months of May, June and December, for Abi crop and in March and April for the Tabi crop. Even though modules have not been fixed, yet the quantity of water let out from each sluice or pipe is measured in terms of cusecs and the area served by each sluice or pipe is also fixed under the projects. The scope to waste water is minimised by regulating the supply through the sluice. When introducing any change, we must be certain that it is beneficial to all concerned and that it is easy to work. Though, theoretically, it is advantageous to prevent wastage of water by charging cess on volume of water used, it is clear, as observed by Shri S. Y. Krishnaswami and the Taxation Enquiry Commission, that it will not be possible to measure the quantity utilised by each ryot. At best, we can regulate the quantity supplied to a village or a big block of cultivated area. The factor of distance is the most important one to be taken into account, in deciding against this system. The division of charges among the consuming ryots, as also between the villages, in certain cases, will be a source of friction among them, which is better avoided. We cannot charge the ryot extra, on the plea that more water than is necessary is delivered to him. Taking all these factors into consideration, we are not in favour of charging the ryot for water on the basis of the volume of water supplied, as it is not a practical proposition, in this State, at present. Even now, the Engineers,

when designing sluice, do consider the area it is to command and the crops that may be grown. This may, however, continue and improve as more knowledge is gained about water requirements of crops.

*Paragraph 4.—Importance of duration and adequacy of the supply of water and quality of the water.*

For irrigated farming, the duration of the supply of water and its nature are of the greatest importance besides other factors that contribute to realizing a good crop. These factors govern the yield of crops in varying degrees in different areas and under different sources of irrigation. Scientific farming of irrigated crops remains a hope. Ryots under the existing method of irrigation are often prone to resort to over-irrigation of wet crops under the erroneous notion that the more water they use the better value they get for the water rates they pay. They are often unaware of the ill-effects of over-irrigation. The normal rainfall in the tract has got to be supplemented by canal or well irrigation for the growth of the crops. Economy is necessary in utilizing water for irrigating crops during the dry season after the monsoons when the water level is low in the reservoirs and when it contains in solution, a high proportion of solids. Some examples of crops are quoted below in brief. For paddy crops, if the soil looks dry, especially when the plants are coming to ear, irrigation should be resorted to. Irrigation at this stage of growth results in heavy yield, unless seasonable showers make irrigation superfluous. It is enough if paddy plants have half an inch of water at the base for 72 days, i.e., if they have 36 inches of rainfall during the three months of vigorous growth from July to September. The maximum requirement of irrigation water for wheat is 750 tons of water or nearly 200,000 gallons. The variety of seed also is responsible for the increase or decrease in the yield and the quantum of irrigation required. One variety of seed may yield more, all other circumstances being the same. Correct directions to the ryots in rural areas dispelling these erroneous methods are being given under the developmental activities by the establishment of demonstration farms in National Extension Service Block Headquarters.

2. Experienced Engineers are of the view that supply of water should be assured during the full period of the crop and for the entire cultivated extent and that the extent should be confined to the available quantity of water in the source.



The existing distribution under the Krishna and Godavari deltas is considered to be adequate and equitable.

3. The classification adopted for irrigation sources in the Andhra region is based on the duration of supply. In Telangana the irrigation sources are classed with reference to the ayacut irrigated under each source and instead of reducing sorts for variation in the supply, the 'Pani-class' is being reduced. Not only the duration but the timeliness of the supply of water is important. Water is required in the last week of May or at least in the first week of June for raising seed-beds. In areas where it is not possible to obtain water in May seed-beds are raised with the aid of tanks which have supplies or wells in the ayacut. This difficulty of lack of supply of water for seed-beds at the appropriate time is felt even under major projects like Nizamsagar. In the case of precarious sources water received will be often inadequate even for one wetting of lands in the tail end of the ayacut at about the time of ripening of the crops. Irrigation works, especially tanks, constructed 3 or 4 centuries ago have now become very badly silted up and their storage capacity has been consequently reduced. There is much pressure on land on account of the increase in population and there is undue expansion of ayacuts especially under tanks without any reference to the capacity of the sources. In the case of many tanks in the erstwhile estate and jagir areas there are no details or hydraulic particulars. These standards will have to be fixed afresh with technical assistance. The sill-levels of sluices and the crest levels of surplus weirs of several sources require alterations or remodelling.

4. The duration of supply can be certainly increased if the ayacut is reduced to the proper extent and water is used economically and scientifically. In many cases while deciding about the adequacy of the period a good margin has to be allowed. For example if a crop takes six months to ripen we will have to allow a margin of at least two months more, because when tanks are fed by rain, however good the catchment may be, there is always some uncertainty about the actual time of filling up of the tank. The questions that arise out of the foregoing and requiring examination are, whether the loss of crops which a ryot sustains due to inadequate irrigation at the critical stage should be compensated by grant of remission, whether assessments on the lands of the ayacuts of such sources has to be reduced and whether a reduction in the registered ayacuts would afford adequate relief. We consider

that there is an urgent need to stop further indiscriminate expansion of ayacuts, specially under rainfed tanks, unless a detailed investigation of the hydraulic particulars justifies such an expansion or until special improvements to increase the capacity of the tanks are effected. At present extension of irrigation is going on without check. If penalty is not levied for five years in succession the ryot may acquire a right to irrigate the land. In future extensions of ayacut should be stopped and adequate penalties imposed if extension is objectionable. But if there is surplus water in any particular year temporary permission may be given. Such temporary permission should not confer any right of water in future years. The yield of most of the paddy lands depends upon the time of the year at which the cultivation is commenced. The ryots who are able to commence transplantation early enough usually get a much better yield than a ryot who transplants his land late because the crop transplanted early will be able to offer greater resistance to the pests, etc., and has also got a longer period for growth. Most of the crops are season-bound as the time of maturity is almost fixed. Therefore if a crop is planted late, the period of growth will be much less than that of a crop planted early. We are, therefore, of the unanimous opinion that greatest importance should be attached to the time of commencement of the supply of water for irrigation.

5. Quality of the water used for irrigation plays an important role in enabling a ryot to grow successful wet crops and secure good harvests. Studies in the analysis of water for irrigation show that "of all natural waters, rain water is the purest and also the safest for irrigation. Water of a river flowing through a granite country is also very pure containing only a small proportion of solids in solution while other rivers flowing through regions of soluble rocks contain a larger proportion. Spring or well water contains a still larger proportion of solids in solution and, therefore, is less helpful. Sea water contains the highest percentage of salts in solution and is thus definitely unfit for irrigation." Spring or well water or water from low and dirty pools which may look clearer than river water is injurious to plant growth as it contains a higher percentage of solids. Plants can derive nourishment from solids only in a very dilute solution and the best proportion for such nourishment is one part of solid food in 1,000 parts of water. Certain salts even though present in higher proportion do not harm the plants. Thus it can be gathered in general that salts in solution over a certain limit are injurious to crops. The nature of water varies to some extent with the

design of the source. Irrigation from storage tanks will result in accumulation of salts in higher proportion. Such sources must be made as deep as possible or evaporation prevented to avoid injury to crops on account of the presence of salts in solution in greater quantities.

6. Sri Nitya Gopal Mukerjee has observed "that nearly every soil contains all the essential constituents for the growth of vegetation and that the virgin richness of the soil has disappeared where the soil has been in cultivation for many years except where it is irrigated by canals". Canal water bring such rich deposits of silt to the soil and they serve the dual purpose of irrigation as well as fertilization. The manurial value of the silt itself is found to be between Rs. 4 and Rs. 5 per acre per annum under the Damodar Valley Project. The ryots find it profitable to take canal water in May and June when water is rich in silt and its component organic matter.

7. Sri L. Venkatakrishna Iyer, the Special Chief Engineer (Irrigation), Hyderabad, has observed that water is required as a vehicle to convey nutrients to the plant and that there is not much difference between river water and water from a reservoir. The opinion of Sri C. Seshavataram, retired Chief Engineer, is that though river silt confers considerable benefit to crops resulting in better yields classification for assessment on this basis will be cumbrous and highly technical. The proportion of dissolved salts in silt water and ordinary water and the relative effects on the yield of crops on different types of soil are varying and indefinite factors and not easily determinable. He is not in favour of such factors being considered in levying water rate or fixing wet assessment on land. According to Sri G. A. Narasimha Rao, the Chief Engineer, Public Works Department, Nagarjunasagar Canals "no relative importance need be given for various types of water occurring in nature".

8. In rivers during freshes, the water will be rich with silt and benefits the crop much while in second crop season the silt is decanted down and the water will be free from silt. When new dams or reservoirs are constructed some silt may be arrested by such dams depriving the lands under such dams of the silted waters. With the construction of a large number of reservoirs across big rivers the importance of silt as a factor will be minimized as the majority of the wet areas will come under the projects. The fields nearer the sluices will be bene-

fitted by water comparatively rich in silt while those at the tail-end will not have similar benefits. In Telangana the quality of water is taken into account while classifying the sources. Where the water is saline and hence less useful for irrigation the water class is reduced by one anna. Where the water flows on karal (saline or alkaline) land and brings in lime-stone particles the water value is further reduced by down-grading the class of source by another half anna. Some ryots under the Kurnool-Cuddapah Canal and Koilsagar represented about the bad effects of "white silt" under the former and "saline soil" of the bed of the latter. There cannot, however, be any doubt that good silt from the big rivers has beneficial effect upon the crops, though the yield depends upon a number of other factors like the soil, the quantity of water, the seed, the manure, the technique of cultivation, the weather and pests. Analysis of soils and water have not been taken up on any extensive scale. By experience ryots know that waters from certain sources laden with lime or salt are injurious to crops. Some sort of concession has been given in Telangana for this factor of quality of water by reducing the pani class. The exact quantum of the benefit derived cannot be estimated with any degree of accuracy. It is not, therefore, practicable to attach any special importance to water laden with silt. We consider, therefore, that it is not possible to make any distinction between the water received directly from the river or anicut and water from a reservoir as it will be difficult to assess the quantum and the quality of silt carried and the exact amount of benefit it confers on the crop.

*Paragraph 5.—Levy of different charges for the land situated near or farther away from the sluice.*

For a consideration of the question of making a distinction in the levy of water rate on lands situated near or farther away from the sluice, it is necessary to recapitulate the principles of fixing the classification of soils and sorts during settlement operations. In the early stages of settlement operations in the Andhra region, soils were classified according to their general characteristics and principal ingredients and divided into classes and sorts in order to remove inequities in the levy of assessment. Each class of soil has been divided into 'sorts', which are chiefly determined by the quantity of organic matter and nearness of the land to the village site and the sluices of the irrigation sources, the facility of manuring, irrigating and guarding the crop. To begin with there were

only two sorts, good and bad, in each class. But subsequently the number of sorts was raised to three and still later to five, i.e., best, good, ordinary, inferior and worst which are now in force. Thus the proximity of land to irrigation sources was one of the factors considered while fixing wet assessment in the Andhra region.

2. Separate water rates are charged on dry lands irrigated under projects newly constructed. Two kinds of water rates have been in force. They are (1) differential water rate system, (2) fixed water rate system. The principle in respect of the differential water rate system is that when a dry land is irrigated from a Government source, the charge corresponds to the difference between the wet rate and the dry rate of assessment of the corresponding land. This secures for the cultivator a charge commensurate with the yield from the land. It is in force in limited areas where proper soil classification has been made. The second method is that water rates have been fixed for sources which have been grouped according to the duration of their supply and capacity. It has been considered that the fixed water rates would press heavily on poorer lands and lands at the tail-end of irrigation sources especially in deltas. This is urged as an argument in favour of differential water rate system. The intrinsic disadvantage, if any, in the supply of water on account of the distance of the land from the sluice was considered at the time of the original settlement while assigning the sort. As we are not altering the sort, no interference is now called for to adjust the rates in the case of the two categories of lands. The defect in the case of lands farther away from the sluice would have been covered when the corresponding dry assessment of the wet land is determined. In Telangana there is no provision for reducing the rates of assessment or reducing the class of sources for lands situated at a distance.

3. A majority of Chief Engineers are of opinion that different rates need not be charged for lands near the sluice and those farther away from it. Suitable water regulation can always ensure good supply to the tail-end lands also. According to Engineers any large variation is undesirable as priority rights will be created by charging more for land near the sluice and if the owners of such land try to establish their rights for priority, it will be difficult to get rid of them at a later date.

4. A little inconvenience and necessary adjustments in the matter of equitable distribution of water are inevitable and it is not possible to give a separate independent source for each ryot even under ideal conditions. The water rate generally charged is only a fraction of what is charged in other places like Bombay and in view of such a good margin it will not be necessary to make minute distinction in fixing the rates.

5. We are, therefore, of opinion that proximity of the land to the source and sluice need not be taken into consideration in assessing water charge and that the same rates should be adopted for all lands.

*Paragraph 6.—Principles of levy of water charge on land newly brought under cultivation.*

The utilization of waste land "is a complex problem" and its optimum use for cultivation by irrigation depends on various conditions and factors, like water, drainage, soil-texture, alkalinity, location, etc. Several types of lands occur in the localized areas of irrigation projects. They fall mainly under the following categories:—

- (1) Barren soils.
- (2) Saline and water-logged lands.
- (3) Ill-drained lands.
- (4) Lands "under tanks which are restored".
- (5) Undulating lands.
- (6) Lands liable to submersion.
- (7) Tidal-affected areas.

Special steps have to be taken to bring these under wet cultivation and much labour and money will be required besides technical assistance. The average ryot will not have the wherewithal to spend for reclamation of such lands and get a fair return for the money invested. It will also take time for the people to appreciate the advantages of irrigation and learn the methods of reclamation and cultivation of land with irrigated crops. It is, therefore, considered that full water cess cannot be charged till the ryot derives a fair increase in the value of the crop, due to irrigation.

2. The period taken and the cost incurred for reclamation of the land are the main factors to be taken into account for determining as to when and how the full water cess on such lands can be charged. The Marjoribanks Committee recommended that the collection of water rates might be kept in abeyance for 5 years. Conditions vary a lot from tract to tract, village to village and even from field to field. Sri N. Raghavendra Rao, and the Land Revenue Reforms Committee, Madras, therefore, considered that a hard and fast rule for granting remission for a period of five years would not be suitable and discretion might be given to Collectors to waive the wet assessment according to the merits of each case. The Taxation Enquiry Commission recommended that concessional or incentive rates would be necessary in the initial stages of development and that concession should be given only in respect of water rate and not the dry assessment. It further suggested a periodical review of the reclamation activities as a result of the concessions granted and to levy the full rate as soon as benefits begin to accrue to the cultivators.

3. A sliding scale of concessional rates is sanctioned for cultivation of lands under the low level canal of the Tungabhadra Project.

First year, one-fifth of the rate.

Second year, two-fifths of the rate.

Third year, three-fifths of the rate.

Fourth year, four-fifths of the rate.

Fifth year, full rate.

In Telangana under the new irrigation works the procedure is—

No charge in the first year.

One-fourth charge in the second year.

Half charge in the third year.

Three-fourths charge in the fourth year.

Full charge in the fifth year.

4. The Chief Engineer (Special) Irrigation, Hyderabad has suggested that a graduated scale spread over a period not exceeding ten years might be adopted. The Chief Engineer, Public Works Department, Nagarjunasagar Canals, considered that a period of three years would be sufficient, while Sri C. Seshavaram, a retired Chief Engineer opined that each case had to be studied and judged separately. The periods of concessions suggested in answers to the questionnaire range

from 3 to 20 years. Persons with considerable experience in such matters have suggested that concessions may be given for a period of five years.

5. Special incentives should be given to those farmers who are prepared to reclaim new lands for cultivation. As stated earlier, conditions vary from field to field. The biggest item of expenditure in converting a land to wet is levelling. One field may be flat and need only a small sum for wet cultivation while another which yields excellent dry crops may be undulating or sloping and may require a heavy sum. Such extensive levelling exposes in many places, the sub-soil and it takes years before a state of equilibrium in soil conditions is established. In some places the soil is hard and full of pebbles. Again this also takes a number of years to consolidate to a suitable texture. In some fields small plots of 25 to 30 cents fit for cultivation can be formed only at a heavy cost. Ryots who derive good crops from their dry-rainfed lands are, therefore, averse to get their lands, commanded by the projects, under irrigation. By and large, we can assume that irrigated lands are more valuable than dry lands as the income from an irrigated land is several times that from a dry land. The only difficulty is the finance necessary to effect the conversion. Besides Land Improvement Loans, to meet the expenditure, it is necessary to give some inducement or incentive which quicken the pace of reclamation. Another important point is that the concession must be given from the year, the water reaches the field head. It is imperative that we make the ryot take water and not leave the option to him. Black soils give good yield when cultivated with dry crops and this is one of the reasons why the owners of black soils do not readily take to irrigation. Taking all the aspects into account, we recommend that water rates should be levied on the following scales on lands requiring extensive reclamation for raising irrigated crops:—

			<i>Red soils.</i>	<i>Black soils.</i>
First year	...	...	Nil	Nil
Second year	...	...	$\frac{1}{4}$ th	Nil
Third year	...	...	$\frac{1}{2}$	Nil
Fourth year	...	...	$\frac{3}{4}$	$\frac{1}{4}$
Fifth year	...	...	Full	$\frac{1}{2}$
Sixth year	...	...		Full



These concessions should take effect from the time when the water is made available to the ryot at his field and not from the year when the dam is completed and water is let into the main canals. With this modification we recommend the proposals submitted by the Board of Revenue to the Government for the integration of the Laws relating to the levy of compulsory water cess in force in the two regions of the State.

*Paragraph 7.—Drainage facilities.*

The "Cardinal principle of irrigation is to get water into the land and not on to the land" as observed by the Marquis of Tweeddale, when he was the Governor of Madras. Drainage and irrigation help the ryot in removing the excessive efflorescent salts from the soil. Lands containing sodium salts can be eliminated by drainage, thus making, barren lands fertile. Water-logging would prevent the roots of the plant from taking in air, and it is injurious at and immediately after the period of germination and also at the periods of flowering and ripening. Efficient drainage is a necessity for any large scale project works. Drainage and irrigation channels should be provided simultaneously wherever drainage problems can be foreseen. Proper drainage is as essential for a land irrigated as ventilation is for a house. It is necessary to take this fact into account when an irrigation work is designed than to think of it after it is completed. Water-logging is a very grave danger following irrigation, if suitable arrangements are not made for drainage even from the inception of a project. The intensity of the problem is felt only after some years following the completion of the project, since it takes time for the soils to get saturated with water. In fairness to engineers, it must be stated that it is not possible when projects are executed with speed, to take into account all the minute details and provide safeguards against all the bottle-necks including drainage. The problem will be very acute, as in the Punjab, if sub-soil water level is very high. If the problem of drainage is neglected its adverse effects will be cumulative and widespread resulting in a total failure of the crop besides creating public health problems.

2. In a country like India, there should be optimum irrigation and not over-irrigation. The problem of drainage is acute in portions of Godavari and Krishna deltas near the coast and to a certain extent in Nizamsagar area. The old drains which existed prior to the Godavari Anicut System continue to function without any improvement in their discharging capa-

city even though they have to carry four to five times the water which they were draining before the advent of the projects. These drains do not function properly as their courses are serpentine and narrow. The courses of such drains have to be straightened, widened or deepened, according to the needs. In Krishna and West Godavari districts, for example, a large area under Kollair lake, which is a natural depression receives all the rain water and drainage from fields and in some parts of the year covers a huge area submerging large extents of paddy fields surrounding it. The Upputeru is not adequate to drain off quickly all the accumulated water in the lake into the sea. There are a number of other drains like the Yerrakalva, Thammleru and Budameru. In all these ill-drained areas the out-turn of paddy is only half the normal. In delta tracts there is also the accumulation of water in the sub-soil. The capacity of the drains is limited by the narrowest portions in their course. Works taken up under Flood Control Measures will have a general beneficial effect on lands under the irrigation projects, since they would relieve the natural drainage of some portion of the burden. The chief remedy is to improve the drainage system though it may be expensive. The loss of crops brought about on account of this defect in a period of ten years will be much more than the cost of the drainage works.

3. A detailed note on the existing drainage difficulties and the remedial measures taken for improving them received from Sri L. Venkatakrisna Iyer, Special Chief Engineer, Hyderabad, is appended as it is exhaustive and informative. (*Vide* Appendix 4).

During settlements, lands affected by drains are assigned a classification of two sorts lower than lands which are not so affected. In cases of failure of crops on account of submer-sion, remissions are also given. But these do not afford adequate relief to the ryots or to such tract as a whole. The loss of crop has to be prevented. The ayacuts in the deltas of Godavari and Krishna have been extended very considerably but additional drainage facilities have not been provided. As can be seen from the note of Sri L. Venkatakrisna Iyer there are a number of works to be taken up costing a few crores. As observed earlier there is always diminution in yield in such areas but the degree by which the yield is affected varies from place to place and depends also upon the level of the sub-soil water. There are places where drainage problems have completely upset the agricultural economy. We feel that provision of adequate drainage facilities is just as important as the prob-

lem of providing irrigation and should be tackled by the Government with equal zeal. About two lakhs of acres in the Krishna and Godavari deltas suffer from submersion and inadequate drainage. Provision of adequate drainage facilities certainly improves the land, increases productivity and raises the value of the land. The ryot will have thus three-fold benefits, accruing to him. These works may be taken as Land Improvement Works and cost partly recovered from the beneficiaries. The Government need pay only a portion of the cost. There are always indirect revenues flowing from increased production and these would justify the State's contribution in part.

*Paragraph 8.—Irrigation from private tanks and petty sources.*

Tanks and petty sources provide a considerable degree of protection against famine. It will therefore be expedient to encourage the construction of tanks and kuntas by private enterprise. Collectors are competent to grant permission to construct small private tanks or kuntas, in consultation with the Public Works Department wherever necessary. The conditions for the grant of permission to construct private tanks and kuntas in Andhra region are laid down in the Board's Standing Orders No. 7 (2) (I to V). No water rate is levied for the collection, retention and use of surface water in a patta land provided such water does not flow in a defined channel, and does not interfere with similar rights of other ryots. When any individual wishes to draw water for irrigation from a Government source other than natural pools or minor streams by a new private work, a reduced rate of assessment or water cess may be levied under Board's Standing Order No. 7 (2) (IV) (b) with the concurrence of the Board of Revenue to encourage such private enterprise. The practice obtaining in this regard is different in Telangana. There were two systems governing the procedure of granting permission to construct private kuntas, namely Dastband and Mirasi. Both these systems ceased to be in operation for a long time. In 1950 "the construction of tanks and kuntas in patta lands rules" were framed authorizing Collectors to grant permission for the construction of kuntas in consultation with the Divisional Engineer in case the ayacut is ten acres and less and with the Superintending Engineer if the ayacut is over ten acres and less than 50 acres. Sources having an ayacut of 50 acres and more will be under the control of the Public Works Department. From the parties, maximum dry assess-

ment of the village will be collected for irrigation from such kuntas. Unauthorized private kuntas will be demolished.

2. We feel that liberalization of the procedure for obtaining permission for the construction of private kuntas will tend to increase food production. In Telangana there are a number of small bunds in patta lands intercepting merely the surface-flow for providing irrigation for dry or wet lands or supplementing the irrigation of such lands with the aid of wells. Such bunding will not only facilitate irrigation but also augment the supplies to the adjoining wells. Such bunds will not only prevent soil-erosion but also help soil conservation. We, accordingly recommend that construction of such kuntas be permitted subject to the following conditions:—

(a) Prior permission of the Collector is necessary for construction of a private tank.

(b) The water must be for the grantees' own use.

(c) Submerged area and ayacut must belong to the same person.

(d) The irrigated extent should not exceed 15 acres.

(e) Collectors should examine the question whether the interests of others are materially affected before granting permission.

(f) Bunds put up to intercept merely surface flow for providing irrigation for lands below should not be charged if the area irrigated is below three acres and no permission should be necessary for putting up a bund. The quantity of water that will be intercepted by such bunds will not be much and in all probability would be lost by evaporation and percolation, if it is not intercepted.

(g) Dry assessment should be levied for the area occupied by the bund and the submerged area.

(h) Only dry assessment should be charged on the area irrigated in each of the above cases.

These recommendations would not apply to the cases of permission already granted. But the concessions regarding assessment will apply unless payment of assessment is one of the conditions under which permission was granted.

*Paragraph 9.—Do lands irrigated under wells in the ayacut require any concession?*

Wells in non-perennial zones of irrigation projects and reservoirs are valuable assets both to the Government and to the ryots in times of drought as they help the raising of irrigated food crops on a large number of small holdings consisting of five acres and less. These wells not only help the raising of paddy nurseries earlier, but help the ryot to raise also green manure crops. Some of these wells are also in the ayacuts of Government sources. Large areas are irrigated under wells in the districts of Chittoor, Cuddapah and Nellore of Andhra region, the extents being respectively 1,00,608, 76,415 and 70,974 acres. In Telangana the area irrigated under wells is the largest in Nalgonda district being 56,607 acres.

2. In the Andhra region, the Board's Standing Order No. 6, paragraphs 1 to 7 provide for the construction of private wells and the collection of assessment on wet lands when irrigated from such private wells. They are in brief as follows:—

(a) Tax on land cultivated by wells constructed by ryots at their own cost will not be enhanced except on a general revision of the district rates and any modification in the assessment of land so improved will be effected irrespective of increased value conferred upon them by such wells.

(b) No notice need be given to the Collector about the sinking of wells and all that is necessary is that they should be sunk in land which belongs to the person sinking the well.

(c) No water rate is levied when dry lands are irrigated from private wells, situated on land which is the private property or constructed prior to 20th August, 1884 in Government lands whatever the distance of the wells might be from a public irrigation source.

(d) In cases where private wells exist in wet lands the ryots are allowed to pay compounded rates determined by the Collector for getting the wet lands registered as compounded double crop lands. If wet lands are irrigated from private wells the nature of assessment charged is noted below:—

	First Crop	Second Crop	Assessment payable
	1	2	3
Single crop land	Sufficient supply received	Sufficient supply not received	Single wet assessment
	Sufficient supply not received	Sufficient supply received	do
	do	Sufficient supply not received	Single dry rate
Ordinary double crop land	Sufficient supply not received	Sufficient supply not received	Single dry rate
	Sufficient supply received	do	Single crop wet assessment, if such is separately assessed, if not, two-thirds of the total double crop wet assessment.
	Sufficient supply not received	Sufficient supply received	
Compounded double crop land	Sufficient supply not received	Sufficient supply received	The full compounded rate
	Sufficient supply received	Sufficient supply not received	do
	Sufficient supply not received	do	Single dry rate

(e) In bad seasons, the remission of the difference between wet and dry assessments is granted on merits if the crop is raised mainly, if not, solely by watering from a private well. The guiding consideration for granting the remissions in such cases is that the water available in the Government source is wholly insufficient to bring the crop to maturity and the water is not taken, to the prejudice of crops on other wet lands which have not the advantage of protection of private wells.

3. In Telangana the construction of private wells and collection of assessment on lands are governed by rules 35, 37, 65 and 67 of the rules under the Hyderabad Land Revenue Act. They are given below:—

35. If a ryot sinks new wells in dry land in his occupancy situated outside the ayacut of Government patasthal sources, or repairs dilapidated or dried up wells with his own capital and does wet or baghat cultivation therefrom or plans, trees, etc., he shall be entitled to the full benefit of such improvements and no additional assessments except the dry assessment fixed during the settlement shall be levied on such land. If such land comes within the ayacut of a Government source, in future, due to the construction or extension of or repairs to a source of irrigation, the ryots of such land shall not be compelled to irrigate their land from such source. They shall be free to take water from such source or not. If Government water is taken, patasthal wet assessment shall be levied as before. It shall not be necessary to obtain any permission for sinking wells or repairing existing wells. The Village Officers shall maintain a record of all such wells giving details of land irrigated thereunder and send an annual statement to the Taluk Office where entries shall be made in the concerned Taluk Register.

37. (1) Ryots shall be free to sink wells in their lands situated within the ayacut of Government patasthal sources. If water from the Government patasthal source is not available and cultivation is done from such wells, only dry assessment shall be levied in the manner specified below:—

(a) In single crop patasthal wet land, if the first crop is cultivated with water taken from Government source and the second crop is cultivated with water taken from the well, only dry assessment shall be fixed for the second crop but the dry assessment so fixed shall be levied every year irrespective of whether the land is cultivated or not.

(b) If water is not available from Government source even for the first crop and such land is cultivated with water taken from the well dry assessment shall be levied for such crop also, but it shall not be compulsory to cultivate such crop under the well.

(c) In double crop patasthal wet land, if patasthal water is not available for a crop and cultivation is done with water taken from a well, no additional assessment except dry assessment shall be charged for such a crop.

2) If on account of repairs to or extension of a Government source, such land can be irrigated from such source

for both the crops, the ryot shall be bound to take Government water for both the crops.

(3) This rule shall apply also to Quali wells constructed by ryots in accordance with quals granted under Government Resolution No. 38 of 1303 Fasli.

65. Where owing to non-availability of water from the appropriate patasthal source, wet cultivation is done with the help of well whether new, old, auxiliary, quali or inami or whether situated within the ayacut or outside, dry assessment shall be levied and the remaining wet assessment shall be remitted under 'Kammi eksala':

Provided that if such a well is a Government well, having no separate land assigned thereto, half the patasthal assessment shall be levied and the remaining half shall be remitted under 'Kammi eksala':

Provided further that if such well is situated in the ayacut, the highest dry rate of the village shall be levied.

Proviso to rule 66 lays down that all lands under wells situated in the ayacut shall be treated as under patasthal source.

67. (1) In the event of partial failure of water from the patasthal source, no remission shall be granted if the source has irrigated a crop for not less than half the period before the source dried up and the crops are saved with the help of any auxiliary or quali or inami well. But half the assessment shall be remitted if the patasthal source has irrigated the crop for less than half the period.

(2) If a patasthal source is breached and the ryots save the crops with their labour and expense, remission up to half the assessment may be granted taking into consideration the expenditure incurred on such saving irrespective of whether or not the water from Government source was taken for more than half the period:

4. These provisions are in the main similar in both regions but they differ in details. The variations are examined below:—

Under Board's Standing Order No. 6 (5) provision has been made to charge single wet assessment for wet land if there is sufficient supply in the Government source for first



crop and sufficient supply is not received for second crop. According to our proposals there will be no consolidated wet land. In a case of this sort, dry assessment is charged in Telangana under rule 37 (1) (a) of the Hyderabad Land Revenue Rules. These provisions will be inapplicable in the new set-up envisaged by us. For these cases, dry assessment plus appropriate water rate should be charged.

Provision is made in the same Board's Standing Order No. 6 (5) for levy of water charges for ordinary double crop lands and compounded double crop lands when irrigated by private wells and under the corresponding Hyderabad Rules 37 (1) (b), 37 (1) (c) and 37 (2). In these cases also the appropriate dry rate plus water rate alone need be charged according to the table of water rates recommended by us. When there is no supply in the Government source and the land is irrigated by private well although, the dry assessment alone is collected. According to rule 65 of the Hyderabad Land Revenue Rules, if the well is situated in the ayacut of the patasthal source, the highest dry rate of the village is charged. We are of the view that no distinction need be made between the wells in the ayacut and those outside it. Such a distinction is not made in Andhra. It will be reasonable if the appropriate dry assessment alone and not water rate is collected for such irrigation. If the water used is from a Government well half the patasthal assessment is levied in Telangana. In Andhra region, water rate is charged for cultivation of land by a poramboke well after duly deducting baling remission at one-fourth water rate if the well has been constructed after 20th August 1884. The Government of Andhra in their Order Ms. No. 2720, dated 17th December 1955, have ordered that wells situated in estate areas taken over under the Abolition Act which are amidst patta lands but which are classified as poramboke wells be treated as private wells and that pattas be granted to the ryots concerned. Such wells constructed after 20th August 1884 also exist in porambokes in ryotwari villages and water rate is charged for irrigation from them. The cost of these wells cannot be ascertained now with any amount of accuracy and the extent irrigated also cannot be much. In several cases they are not regularly maintained at Government cost. Often the irrigation under such wells is supplemented from the main Government irrigation sources if they happen to be in the ayacuts of such Government irrigation sources. The concession of treating

such wells as private wells in erstwhile Zamindari villages will have to be extended to the wells in the ryotwari villages and any distinction made in their treatment will be unjust. We, therefore, considered that no separate class need be assigned to these wells in the table of water rates recommended by us. We accordingly recommend that no charge poramboke lands and constructed even after 20th August 1884. need be made for irrigation under these wells situated in

5. In Telangana according to rule 37 (1) (a) all lands under wells in the ayacut of a Government irrigation source are treated as under patasthal source and dry assessment is charged for the second crop whether it is cultivated or not. This, in our view, is not equitable and all such wells should be treated as private wells just as it is done in the case of wells outside the ayacut and all concessions applicable to the latter should be extended to these wells also. No dry assessment need be levied in such cases.

6. The guiding consideration for granting the remissions for wet lands irrigated by private wells in Andhra region is that the water available in the Government source is wholly insufficient to bring the crop to maturity and the water is not taken to the prejudice of crops on other wet lands which have not the advantage of protection of private wells. A parallel provision to this in Telangana is contained in Rules 67 (1 and 2) of the rules under the Hyderabad Land Revenue Act. The provision in the Board's Standing Order No. 6 for Andhra is rather vague and will be leaving the matter entirely to the discretion of the local officers. Rules 67 (1) and (2) of the Hyderabad Land Revenue Rules lay down that no remission shall be granted if the source has irrigated a crop for not less than half the period before the same dried out, and the crop is saved by the help of a well. But half the assessment shall be remitted if the patasthal source has irrigated the crop for less than half the period. Similarly if a patasthal source is breached and the ryots save the crop with their labour and expense, remission up to half the assessment may be granted taking into consideration the expenditure incurred on such saving irrespective of whether or not the water from the Government source was taken for more than half the period. These rules provide a definite method for determining the quantum of remission unlike in Andhra rules. We recommend that these provisions in the Telangana Rule 67 should be adopted in the entire State.

*Paragraph 10.—Lands irrigated directly by percolation and also from wells receiving supply by percolation.*

In the Andhra region according to Board's Standing Order 6 (3) the Government have abolished all restrictions on the sinking of wells in the proximity of Government irrigation works provided only that they are sunk in the land which belongs to the person sinking the well. According to Board's Standing Order 6 (4) no water cess will be charged on dry lands irrigated solely from private wells situated on land which is private property, or constructed prior to 20th August 1884, within whatever distance the wells may be from a public irrigation source.

2. Note 1 under Board's Standing Order 4 (2) reads as follows.—

“Where a wet crop is grown so close to a Government source as to raise a reasonable presumption that it obtains water by percolation, a charge under Act VII of 1865, as amended by Act V of 1900 shall be made for such water unless it is shown that the supply from the Government source has not been beneficial to or sufficient for the requirements of the crop”. Note 2 of Board's Standing Order 4 (2) reads as follows: “No water cess shall be leviable on crops classed as dry and irrigated by percolation unless owing to drought or other special circumstances, it is manifest that without such irrigation the land must have remained waste or the crop must have perished. In case of doubt whether the crop could have been successfully raised without such irrigation, no charge should be made.”

3. In the Telangana region, when a land is irrigated by percolation from a Government source, wet rate is levied treating that the irrigation was done by the Government irrigation source.

4. Sri C. Seshavatharam, Chief Engineer, Public Works Department (retired), Hyderabad opines that irrigation by percolation (and under wells) should not be permitted within a reasonable distance of canals and that water rate may be levied at half to three-fourth of the full rate if such irrigation exists or permitted. The idea is that extension of irrigation close to canals should be prevented in the interests of the registered ayacut under the canal.

Sri L. Venkatakrishna Iyer, Special Chief Engineer, (Irrigation) Hyderabad has observed that such irrigation should not be permitted as it is dangerous to the bund and that full water charge should be levied.

Sri A. R. Venkataraman, Chief Engineer (Irrigation) Hyderabad is definitely against permitting any such irrigation.

5. According to section I of the Madras Irrigation Cess Act, 1865, the Government can levy water-rate if the crop is benefited by percolation from a Government source of irrigation and a successful wet crop is raised. It is, therefore, necessary to retain the enabling provision in the Irrigation Cess Act to levy water charge for benefits due to percolation. Irrigation of dry crops by percolation need not be charged as it is difficult to estimate the benefits and effects of percolation.

6. We are of opinion that if a wet crop is raised successfully by percolation and without a well, there should be a charge for water as though the irrigation is from a regular source and that irrigation of dry crops by percolation should not be charged. If a dry land is irrigated by a well situated in private land which receives supply by percolation such irrigation should not be charged as it is very difficult to estimate the quantum of percolation from the canal or tank and from the natural springs. No well should be allowed to be excavated within the boundry of the canal or tank bund and where this is not demarcated within 25 feet of the outer toe of such bund.

*Paragraph 11.—How should lands irrigated from river channels, river (springs) channels and Kasams (spring-wells) be assessed?*

River and spring channels are water courses dug for conveying water from a stream for irrigating fields. A big depression is made in a stream or river bed and water is conveyed to the fields, by digging a channel for a distance of about a mile or two thus diverting it to lands for irrigation.

2. Kasams, Sonas and Bilas found mostly in Chittoor, Guntur and Srikakulam districts are subartesian springs from which water flows in the channel to irrigate the ayacut. These spring heads have no connection to a river but are usually at the foot of hillocks.

3. In rule 71 of the Hyderabad Land Revenue Rules, 1951 a 'Parre Kalva' is described as an artificial channel dug by the

ryots of the village by personal labour to carry sub-soil water from the beds of streams to irrigate their fields. The Government of Andhra Pradesh in their order No. 895, Revenue, dated 19th May 1958 modified the definition of "Parre Kalva" as follows.—

"Parre-kalva" is a kalva wherein ryots have to take out sand at their cost and labour to obtain water percolating from below the surface, of sand in quantity sufficient to flow and irrigate lands." This definition was further clarified by the Government in the same order as follows.—

"It is incumbent that water used for irrigation should be of percolation from below the surface of sand and private cost and labour should be applied to take out and clear the sand from the kalva. Therefore if any water flowing on the surface of the sand is utilised by the kalva for irrigation, such kalva should not be called Parre-kalva". In Andhra region the ryots by co-operating with each other voluntarily dig channels from the river beds for irrigating their fields. Every ryot offers free labour annually for the clearance of silt and berm-cutting. The silt is removed and deposited on the inner slopes. Owing to the heavy drift of sand, the banks of the channels go up higher and higher and the inner slopes become steeper so that the first shower of rain drives down the silt already removed, again into the channel. Side berms at a convenient height are indispensable to remedy the defect and this work was reckoned as one of the items to be done by Kudimaramat labour. Again during freshes the sandy portion of the channel dug in the river, will get obliterated and the entire excavation has to be redone by the ryots. The ryots have to contribute enormous manual labour constantly for the removal of silt and the maintenance of the channels in order to take water to the tail-end fields for successful irrigation. The Wet Rate Committee observed that for irrigation under Parrekalvas in Telangana tremendous labour on the part of ryots is necessary

4. Spring and river channels are found in almost all the districts in Andhra area. Their number is large in Anantapur, Kurnool, Chittoor and Cuddapah districts. A number of Parrekalvas exist in Warangal and Karimnagar districts. The extents irrigated also are large. In 1916 it was found that the ryots neglected Kudimaramat work in respect of the channels in Andhra. In many cases there was extreme and long continued neglect and by 1941 it became necessary to take up

the repair works at Government cost, to overcome the food shortage. G.O. No. 252, Revenue, dated 3rd February 1941 of the Composite Madras State provided for silt clearance and berm cutting at Government cost in spring, river and supply channels. Collectors were given discretion to waive contribution for Kudimaramat works in exceptional cases. The scheme is being extended year after year and several works were executed in Kurnool, Cuddapah, Chittoor and Anantapur districts under the provisions of the scheme.

5. The Committee received representations that even in case of these channels heavy water rates are levied inspite of the huge manual labour, involved in digging them from getting water to their fields. The cost of the manual labour contributed ranges from Rs. 50 to Rs. 100 per acre per annum. In Anantapur district there was keen agitation for exempting the cultivation under spring or river channels from the collection of wet assessment and water cess. The contention of the ayacutdars is that they have to work day and night to get the water. The Government granted concession in G.O. Ms. No. 1135, Revenue, dated 29th April 1949 in respect of irrigation under river and spring channels in Anantapur district. The rates charged under this Government Order are.—

*Wet lands.*

(a) First crop—one-fourth baling remission is allowed, i.e., three-fourth of the existing rate is charged.

(b) II and III crops—No charge.

*Dry lands.*

(a) I crop—A consolidated charge of Re. 1 per acre including water cess or the dry assessment whichever is more to be levied.

(b) II and III crops—No charge.

These rates are not subject to enhancements of 25 per cent, 37 and half per cent, or 50 per cent under the Andhra Land Revenue (Additional Wet Assessment) Act. The question of extending these concessions to channels in other districts also was examined by the Government in the year 1956. They considered that it was inopportune either to exempt such lands from the levy of water cess or to extend the concession to other districts. They have, however, decided to exempt irrigation under spring channels from the general enhancement

of water cess by 25 per cent which was proposed to be given effect to and directed that the existing rates of water cess under river and spring channels should only be continued. (Vide G.O. Ms. No. 22, Revenue, dated 19th January 1956). As regards the charges for irrigation under Parre-kalvas in Telangana dry assessment plus one third of the difference between maximum wet and dry rates of assessment of the village subject to a maximum of Rs. 5 is charged.

6. The concessions allowed to ryots under the River Spring channels in Anantapur district are mostly beneficial to the ryots who pay water rates on dry lands and not to the ryots owning wet lands as only one-fourth baling remission is allowed for the latter. It is a well known fact that ryots under river and spring channels, Kasams and Parre-kalvas have to put in enormous work to get supply of water to their fields. The cost of labour for maintaining the channel per acre of irrigated land may be at least 7 or 8 times the wet assessment they pay. The ryots who enjoy an assured water supply under a very big tank or an irrigation project spend practically nothing to get the water to their field. But the Government will have to make a gesture of sympathy in an adequate measure. During floods water can be taken by open mouth channels. A low water channel cannot be taken straightaway like an open mouth channel. In both the cases considerable manual work is necessary. Open mouth channel will also get silted up rapidly. The ryots' work consists of two parts, (a) Korambo works and (b) silt clearance works. With regard to other kind of channels under which the conventional Parre-kalva will be included Korombo work may not be necessary but extensive excavation in the bed of the stream is necessary.

7. We consider that *prima facie* there is a case for some concession. Whenever the entire burden of diverting the water into a channel and the periodical silt-clearance is thrown upon the ryot, substantial relief should be given. There is no material difference in the work involved between maintaining a channel from a river in which water is diverted with the aid of Korombo and an open mouth channel in the river. It will be appropriate in our view if river channels and Parre-kalvas or river spring channels are included under Class III of the table of water rates recommended by us and that Sonas, Bilas, Kasams, Uppalvat-bonda, spring channels which consist of sub-artesian spring ponds are included in Class-IV of the table. We consider further that open mouth river channels which in-

volve some contribution by ryots by way of labour to divert water by forming Korombo should be charged half of the water rates proposed under Class III of the sources and that Parre-kalvas or river spring channels which require constant labour to maintain regular flow should be charged one-third of the water rates proposed under the same class.

*Paragraph 12.—Revision of ayacuts under old tanks.*

Minor irrigation tanks play an important part in the irrigation of upland areas. These tanks are usually to be found in areas where other sources of water supply are rare. These are pockets of insurance against crop failures and deserve much more attention than is bestowed on them now. There has been an increasing gap between the registered ayacut of these sources and the area actually under wet cultivation. It is essential to repair the tanks so as to make them capable of irrigating the entire area for which they were originally designed. Though in the Andhra region, some tanks in the taken-over villages of estates after their abolition and also in ryotwari villages have been repaired under the Grow More Food Scheme and under the circle system, still there is need to pay greater attention to them. The extension of ayacuts under them is sanctioned only when there is successful irrigation for more than five consecutive years. The ayacuts in the Telangana area appear to be much more than what the tanks can command. The system of fixing ayacuts in Telangana area was found to be detrimental both to the ryots and to the Government as an average of 25 per cent to 30 per cent of the registered ayacut, remained uncultivated every year either for want of sufficient water or because big pattadars and well-to-do ryots have often kept such lands waste to avoid payment of both wet and dry assessment. In such cases, the Government had to grant remission of both wet and dry assessments. Under the above circumstances, the Hyderabad Government passed an order bearing No. 4, dated 11th October 1949 that the ayacuts of tanks should be limited to the extent actually irrigated, by eliminating from them the lands left waste for at least four years in the decade ending 1357 fasli, so that the Government could collect atleast the dry assessment from such lands. These orders have not been implemented upto now and the matter has been under correspondence all these years.

2. In some cases where the catchment of the tank is cultivated, the run off from the catchment does not reach the source. The ploughing up of the catchment area upto the



foreshore, has caused extensive silting up, as the loose soil gets washed down and gets deposited in the tank bed. The removal of the silt that has already accumulated in beds of tanks is an almost impossible task. At least further silting will have to be prevented.

3. One way of providing adequate supply to atleast a part of the ayacut is to limit it though it might lead to loss of revenue. There is case for such reduction of ayacuts of tanks under which there has been remission continuously for a number of years. We are also suggesting farther down the possibility of trying light irrigation. The alternative will be to repair the sources and bring them to their original standards by raising the surplus weir which is feasible only where the additional area which comes in the water spread of the tank belongs to Government or the owners are willing to relinquish their rights.

4. Some engineers opined that wet lands not irrigable by such tanks should be reclassified as dry. If the ryot does not voluntarily cultivate his land included in the ayacut for a period of five years, the Government may exclude it from the ayacut.

5. There are thousands of tanks especially in the erstwhile zamindari and jagir areas in a neglected state. The Committee has been told by many individuals that minor irrigation tanks are not receiving adequate attention. In addition to the deterioration in the condition of the tanks and the consequent diminution in the irrigable area, there is yet another hardship caused by the registration of excessive areas under tanks as wet. The water supply is inadequate for growing a good crop over the entire wet area and often there is total or partial failure. The remission of land revenue granted is negligible when compared to the money spent by the ryots. In such cases any statutory provision for exclusion of lands from the ayacuts will create legal complications though it may be in the interests of the ryots. The legal hurdles involved can only be got over by the consent of the ayacutdars.

6. We consider that it is worthwhile reiterating some of the remedies suggested by Sri S. Y. Krishnaswamy in his book "Monograph on Rural Problems."

"The remedies to be suggested for improving the condition of the tanks fall under two heads—first those that can be

carried out by local officers even by conforming to the existing rules and by the mere expenditure of a certain amount of extra zeal and diligence and second—those that call for legislative changes and important alterations of policy. The former are obviously within the realm of immediate practicability. But they only touch the fringe of the problem and it is by a bold policy of radical change with respect to fundamentals that any lasting benefit can be achieved.

The first remedy lies in the prevention of indiscriminate foreshore assignment. As has already been pointed out, a great deal of the original catchment area of tanks that used to be uncultivated jungle has now been brought under cultivation. In resettlement operations, there was a practice of not converting any foreshore land under the sources in question into assessed dry in the interests of the tank. These suggestions are made with reference to lands which are either now registered as poramboke or unassessed.

“The removal of the silt that has already accumulated in the beds of tanks is an impossible task. If further silting up is prevented, it will be a matter for satisfaction. Certain remedies followed with success are detailed below.—

(1) The rules for permission to quarry earth from tank beds should be interpreted in a very liberal way. At present such applications have to be scrutinized and orders passed and very often ryots are penalized for either (a) taking more than the quantity applied for (b) for non-domestic and non-agricultural purposes and (c) for taking it before the issue of orders. The earth in the tankbed is a definite hinderance to the irrigation, its existence there is useful to none and its removal is an unmixed blessing. In such circumstances the purpose of either insisting on applications or for making a distinction between agricultural and non-agricultural uses and domestic and non-domestic, in fact, between any one use and another, is not apparent. On the other hand the policy should be to encourage the ryots to remove earth from tankbeds. The general prohibition of not taking the earth from too near the bund alone need be insisted on. The rush of silt into the sluice could be prevented by a ‘silt trap’ with shutters—in two or three sections.

“There is water in many tanks without reaching the sluice ..... As has been noticed, very few tanks are able to command the original ayacut. It is within the experience of local officers, that a tank registered as class-II is in fact only

a class-III or IV source. The reducing of the ayacuts of such tanks is a wide problem involving loss of revenue; but a step should be made in this direction atleast in the case of tanks in respect of which there has been continuous remission over a series of years. The elimination of such lands from the ayacut involves no loss of revenue to Government but diminishes the correspondence and inspections involved in granting remissions and further helps to give a true account of the tank and its ayacut capacity..... In the second place the question of having a high-level and a low-level sluice may be considered with reference to the position of such sluices in relation to the possible extent that its height will enable to command on the one side, and on the other, the amount of remission saved by that extent of the ayacut at least being brought under cultivation. It is to be noted that this problem of two sluices arises mainly in the case of the large tanks. In the smaller tanks the sluice needs shifting only to a higher level. Where this is not possible silt shutters should anyhow be provided. There are various other points to consider such as the need for refusing all transfers of land from dry to wet and to encourage the applications for transfers from wet to dry. This process will be in the right direction. The mere fact that a person has been paying penal water rate for a number of years should not entitle him to a transfer of the concerned field to wet. Further in repairing bunds, the question of sluice leakage should always receive attention. With a leaking sluice, the best of bunds is useless. The sluice should always be so modelled as to admit of inspection without breaking open the bund. A telescopic system of sluice modelling has much in its favour."

7. We may state here that water, sufficient to irrigate a long term paddy crop in one acre of land, will be sufficient to irrigate dry crops, such as cholam, ragi, korra, cotton, groundnut, etc., on an area of 3 acres. The yield of an irrigated dry crop is three to five times that on an unirrigated land. When the irrigation source is not able to supply adequate quantity of water for the irrigation of the entire ayacut with wet crop, the ryots can very well be induced to grow irrigated dry crops in the tailend portions of the ayacut. Suppose a tank had an ayacut of 250 acres. On account of heavy silting of the bed its actual capacity now is only to supply water for the successful irrigation of long term paddy crop to an extent of 150 acres. Long term paddy crop may be raised in an extent of 100 acres, and in the remaining extent of 150 acres irrigated dry crops may be grown. The ryots will be benefitted

by having better yields while the Government will not lose revenue by the grant of remission for the lands left fallow. No land need be kept fallow as the entire area can be irrigated either with paddy or irrigated dry crops.

8. We recommend—

(a) that all minor irrigation tanks should be adequately repaired and restored,

(b) that further extension of ayacuts under irrigation sources should be stopped, unless the capacity of the tank is increased by special repairs or unless the existing capacity itself warrants such an extension,

(c) that instead of converting the lands, for which water cannot be supplied for raising paddy, into dry, the ayacut can be split up whenever possible into B class and C class dry lands after giving notice of the proposal to the owners and hearing their objections, and

(d) whenever ayacuts are fixed either after the construction of a new tank or execution of repairs to an old tank, the area should be localised, and properly demarcated so as to avoid haphazard development and future trouble.

*Paragraph 13.—Irrigation Panchayats.*

Minor Irrigation Works provide, to a considerable degree, protection against famine and scarcity in areas not served by perennial projects. They are in general looked after by the Public Works Department and Revenue Department. In recent times the question of transfer of control to local authorities such as Panchayats, etc., has assumed importance. Attempts to transfer the control and maintenance to Panchayats were made in some states. In Madhya Pradesh the Village Panchayats were entrusted with the maintenance of the Minor Irrigation Works. In the Composite Madras State, Government took some measures to make Village Panchayats and Informal Irrigation Panchayats responsible for the control and maintenance of Minor Irrigation Works. The details given below will be of interest.—

2. The question was dealt with by the Famine Commission constituted in 1878 by the Composite Madras Government, which recommended the transfer of control over the tanks irrigating less than 200 acres, to the villagers. This proposal

was considered by the Madras Government early in 1880. "After some unsuccessful and experimental attempts in the years 1883 to 1885 to transfer to the ryots jointly interested, all small tanks in Cuddapah and a few other selected districts, the matter was dropped pending the result of investigation then in progress in Madura district." In 1887, the Madras Government passed orders to hand over certain tanks in the Periakulam basin, in Madura district, to the ryots "on the understanding that they would be expected to maintain them under the supervision of the Collector in a state of repair upto the standard laid down in the descriptive review relating to the basin." The Collector was given a lump-sum-grant of four annas per acre on the ultimate area of cultivation, estimated by the Tank Survey party, from which he might pay the ryots such grant-in-aid as he might deem proper, and also meet the pay of the Tank-Inspector to be appointed to inspect and report on the condition of each tank and the value of the work done to it." The ryots of Periakulam basin declined to take over the tanks on the terms offered on grounds that there was no unity among themselves, that the proposed grant-in-aid was insufficient and that the Government declined to grant any remission. Hence the Madras Government dropped this proposal but they proposed that petty works irrigating less than 15 acres should be handed over to ryots, assessing the lands in their ayacuts at reduced rate to be fixed in each case but this proposal was never implemented. After some correspondence with the Government of India and the Board of Revenue in 1894, the Government issued orders to the effect that tanks irrigating 50 acres and less might be transferred to the ryots concerned, in cases in which the ayacut under them was held by a single ryot and in which the dry assessment on the water spread and on the ayacut would not involve loss of revenue. These orders did not take effect as no ryot came forward to undertake the cost of the upkeep of the tanks as no benefit of a reduction in his assessment was given.

3. In their order No. 2129, Revenue, of 14th December 1926, the Madras Government have prescribed a set of conditions governing the transfer of the control of irrigation works to panchayats constituted under the Madras Village Panchayat Act XV of 1920. It does not appear that any irrigation source had been transferred to the control of Panchayat Boards under these rules. Even under this provision much progress was not however made. The Madras Village Panchayat Act of 1920 was repealed by Madras Village Panchayat Act X of 1950. Provision was made in the Madras Village Panchayat Act X

of 1950 for transferring the control over small irrigation works to Village Panchayats. Rules were framed in G.O. No. 520, Local Administration, dated 24th March 1951 under section 59 (1) of the said Act relating to the transfer of control of irrigation sources to the Panchayats. Under these provisions, the control over two tanks in Muthukur village of Nellore district was transferred to the Panchayat Board. Only a beginning was made under these provisions.

4. In 1928, in their order 119 (1) dated 17th December 1928, the Government of Madras approved another set of conditions under which irrigation works might be transferred to the control of the Informal Irrigation Panchayats to be constituted with ayacutdars under the source as members. Under this scheme the Madras Government transferred control over 34 irrigation sources (as far as erstwhile Andhra State is concerned) to the informal Irrigation Panchayats upto the end of 1955-56. Out of these 34, 25 were reported to be working properly and 9 were dormant.

It can thus be seen that ryots have not taken advantage of the several provisions made from time to time in this regard. This question did not engage the attention of the Hyderabad Government for Telangana area until the Wet Rate Committee in paragraph 288 (29) of its report made the following recommendation on the maintenance of small Tanks and Kuntas.

“(29) The Committee feel that the Public Works Department with its increasing responsibilities towards large tanks and projects is unable to do any justice to the smaller sources and therefore they strongly recommend that the maintenance of small sources with an ayacut of 75 acres and less but more than 25 acres should be taken over by Taluqdars (Collectors). The Madras Rules relating to maintenance of minor irrigation works referred to in paragraph 262 should be adopted with necessary changes and appointment of establishment and allotment of budget provision for the execution of these works should be made, closely following the practice in that province. Under the 1939 Reforms Scheme the Panchayat Ain has been promulgated in the Dominions, and Panchayats have begun to work in many big villages. The Government now have the advantage of being able to use this new machinery also for this work under section 18 of the Panchayat Ain (Act). The Committee are of the opinion that sources with an ayacut of 25 acres and less should be handed over to ryots on the basis of one and half the maximum dry rate of the village, subject

to the condition that if any such source is situated in a series of tanks and is likely to affect other sources it should not be handed over to ryots but should be maintained by the Taluqdar. The ryots should be bound to maintain in good repair the sources thus handed over to them, and in case of default the Taluqdar should be empowered to recover full wet assessment on the occupied ayacut under the source irrespective of whether any number is cultivated or not. The assessment at the rate of one and half the maximum dry rate should be recovered permanently irrespective of cultivation or failure of crop. The Committee believe that the proposed arrangement would encourage wet cultivation under these sources and reduce jamabandi and land inspection work considerably. If the proposal is accepted the existing wet assessment on lands under these sources will have to be reduced to one and half maximum dry rate. But in fact the existing wet assessment is merely on paper as lands under most of these sources are not cultivated due to the sources lying in a state of disrepair, and the wet assessment is remitted in jamabandi almost every year. Under the proposed arrangement Government will realise one and half the maximum dry rate on all such lands permanently and the Committee are confident that the actual income from these lands will be certainly larger than what it is at present. Apart from this Government will be free from the responsibility of maintaining these sources."

No orders have been passed on this subject by the erstwhile Hyderabad Government.

5. Sri L. Venkatakrishna Iyer, Chief Engineer (Irrigation) and Sri C. Seshavatharam, a retired Chief Engineer are not in favour of transferring the control over irrigation sources to panchayats for the reasons that proper atmosphere is lacking for such a measure and that "the Panchayats with their slender resources will pass on the effects of adverse seasons to poor ryots."

But we feel that times have changed. The Community Development Projects have awakened the ryots to a large extent. The proper atmosphere referred to should be created by sustained effort, as it will not come of its own accord. It can be created only by making a beginning by transferring an appreciable number of tanks to panchayats and tackling the problems that arise out of such a transfer. It will be, therefore, expedient that tanks with an ayacut of 50 acres or below but not forming part of a chain of tanks might be transferred to

the control of irrigation Panchayats which should consist of the ayacutdars of the sources as its members subject to the payment of 75 per cent of the total of dry assessments and water rates on lands already included in the ayacut of the said source and subject to the following further conditions.

(i) that Public Works Department should bring up the tanks to the required standards before handing them over to the Panchayats.

(ii) that the capacity of the tank should not be increased (standards should not be interfered with).

(iii) that dry lands in the periphery of the ayacut of the tank could be irrigated with tank water only at the risk and hazard of the ayacutdars.

(iv) that dry assessment should continue to be paid on all dry lands irrigated with tank water, and

(v) that no remission would be granted for failure of crops for reasons which are not beyond the control of the ryots except in the case of widespread draught affecting the tract as a whole.

6. As regards repairs to small irrigation tanks, with an ayacut of 50 acres or less the present practice of maintaining them, is by entrusting the repairs either to the professional contractors or to the ayacutdars in rare and emergent cases like flood and scarcity times relaxing the usual procedure of calling for tenders under the departmental supervision. Generally the works are so petty and so scattered, that such repairs cannot be carried out properly by any Departmental agency and it is desirable to entrust the repairs of small irrigation sources not forming part of a chain of tanks of irrigation Panchayats of ayacutdars by diverting normal maintenance grant to them. Besides, much technical skill is not required in executing these normal repairs. In this connection the opinions of Sri L. Venkatakrishna Iyer, Chief Engineer (Irrigation) and Sri C. Seshavatharam, retired Chief Engineer are of importance. Both of them felt it desirable to entrust the work of normal repairs to petty irrigation works to Panchayats. It has been considered more feasible to make payments strictly on the work turned out instead of lumpsum payments which are likely to be diverted for other purposes, allowing the irrigation works to suffer.



7. The organisation of the Community Development Projects and the present favourable atmosphere may be fully utilised and a beginning made. In the early stages, till the Panchayats gain adequate experience there may be a little direction and supervision by Technical Officers.

8. The Committee recommends that normal repairs to small irrigation sources with an ayacut of 50 acres or less but not forming part of a chain of tanks may be entrusted to Irrigation Panchayats consisting of ayacutdars of those sources as these works do not generally require any technical skill and that the Public Works Department or the Minor Irrigation staff can render such technical help as is found necessary free of any charge.

*Paragraph 14.—Irrigation by private parties by pumping water from rivers, springs and channels.*

In the Andhra region the erection of pumping installations in Government or private lands by ryots for the irrigation of their own lands as well as lands belonging to others is governed by the rules issued in G.O. No. 295 (I), dated 17th October 1919 as amplified in G.O. Ms. No. 117, Public Works and Transport, dated 12th January 1956. Any person who desires to erect a pumping installation on any margin of, or island in the Collair lake or on the bank of the Godavari or the Krishna river or of any drainage channels under the control of the Public Works Department, shall execute an agreement with a set of conditions, the main among other clauses being that there should be previous sanction, in writing, of the Superintending Engineer and the Collector, that water shall not be pumped direct from the lake, river or from any water course or drain, that it shall be lawful for the Executive Engineer concerned on giving three months previous notice in writing or without any notice in cases of emergency to refuse the use of the water, that the lands irrigated under the installation shall be subject to all the rules applicable from time to time to the irrigation of dry lands and that no land which can be irrigated by direct flow from any Government channel shall be included in the ayacut of the installation without the special sanction of the Superintending Engineer. Provisions are made under this order for grant of remissions, for enhanced charge, for unauthorised use of water for lands not covered by the agreement, and for the regulation or prohibition of forming bunds or tanks or ponds. Although these rules were framed to prevent unauthorised irrigation by pumps from the Collair or from the Godavari and the Krishna rivers, etc., they are

general in nature and they apply to all pumping schemes. But the Government have been imposing special additional conditions as and when necessary. The Government have imposed special conditions and permitted the Narasayapalem Lift Irrigation Society to install a pump at mile 44/6 of the right bank of the Kommamur canal in Bapatla taluk, Guntur district, and operate a pumping scheme for irrigating an extent of 56 acres of Narasayapalem village for a period of ten years. The special conditions are chiefly to the effect that food crops should be raised on the lands, that water should be taken only by pumping and that the supply should be at 90 duty. These rules provide for the masonry and shuttering arrangements, for the particular months during which supply is to be made, for the time of commencement of supply, for meeting the cost of construction of the installation, for the place of installation and for excavation of field bothies. In Telangana, these pumping installations are similar to Bhurkies and the maximum dry rates of the village are charged for irrigation by pumps. Bhurkies correspond to Doruvu wells in Andhra. Dry lands under Bhurkies constructed on the banks of natural rivers and nalas are charged at 1 and one eighth maximum dry rate of the village in the case of pucca Bhurkies and 1 and one fourth maximum dry rate in the case of katcha Bhurkies. The same rates apply even for new Bhurkies situated in patasthal wet land on which no assessment has been fixed by settlement and which are constructed by ryots on the banks of natural rivers and nalas. These rules do not however apply to Bhurkies on irrigation canals.

2. The points to be considered are whether irrigation should be allowed by private parties, by pumping water from rivers, streams and irrigation canals and if allowed what rate should be charged in each of these cases. Opinions of Engineers are not unanimous on this question. Some Engineers opine that private parties may be allowed to pump water from rivers and streams in Telangana area provided such pumping does not affect the irrigation sources. The Chief Engineers, Sri L. Venkatakrishna Iyer, and Sri G. A. Narasimha Rao consider that such permission may be granted and baling remission allowed. Sri G. A. Narasimha Rao is of the view that present baling remission should be increased from one-fourth to half of the charge for water. Sri C. Seshavatharam is of the view that the erection of pumping installations on irrigation canals and channels should be restricted and that in respect of rivers and streams it may be allowed if it is not detrimental to the interests of the riparian owners in the lower-

down reaches and if it does not cause any permanent damage to the irrigation source. He has further opined that in the case of canals with fixed and fully-developed ayacuts one to one and half times the water rate should be charged to work pumping schemes, and that concessional rates of half to three fourth may be adopted under rivers and streams depending on the nature of crops raised on the lands.

3. The rules now in force cover a wide range and provide safeguards to protect the interests of the ryots lower down. Meticulous precautions are taken both on the technical and the administrative side while granting permission to install pumps. The ryot has to utilise only the surface flow in the rivers and streams and so long as the rights of the riparian owners lower-down are not affected there will be no harm in liberally allowing pumping from such sources. There is no fear of any person who is thus permitted wasting water as he incurs additional expenditure in pumping more water than necessary for his crops. More than 80 per cent of our river water is getting emptied into the sea and hence water drawn by pumping for agriculture will be insignificant and will in no way be harmful to the existing interests. Provision of irrigation facilities, at present, cost about Rs. 500 and above per acre to Government and the direct return does not cover even interest charges. The distinction between productive and protective works has ceased in practice. The exercise of the right of Government to charge for water taken by pumping should not suppress the ryots' initiative for undertaking pumping schemes and expansion of irrigation. To-day, it has become the duty of the State to create incentive to people to use water made available at great cost. For increased food production, the Government are subsidising well sinking upto a sum of Rs. 750 per well. It will therefore be quite proper to encourage pumping even by granting subsidies where called for so long as the existing rights of others are not infringed. As observed earlier the scheme may be technically checked up and approved before permission is accorded. This checking will also be in the interest of the ryot. As for pumping from irrigation canals, the chief point that should weigh in favour of the grant of such permission is the availability of adequate surpluses. In designing new canals provision should be made for carrying a little surplus to allow for pumping on the higher side, if there should be any such demand for irrigation. It is, therefore, evident that every case will have to be decided on its own merits. As no two cases are similar it is a salutary principle that prior permission should be obtained so that the officer granting per-

mission could safeguard the established rights of the ayacutdars lower-down. Permission need not be refused on the ground that land under another pump is affected as the criterion is that no settled ayacut should be affected. The Revenue Department can as usual permit the installations. As the chief principle underlying the grant of permission is to allow the use of water going waste to the sea, it will, in our view, be quite sufficient, if the right of the Government is enforced by a symbolic levy and by the grant of permission. We, therefore, finally recommend that irrigation by direct pumping from rivers and streams may be permitted liberally with the previous sanction of the Collectors who may obtain if necessary, technical advice. A small licence fee at the rate of one rupee per horse-power of the engine per annum may be levied to preserve the right of the Government to the water. In all other cases, where power is not utilised for lifting, Government may fix a nominal licence fee. We are further of the view that irrigation by direct pumping from irrigation canals should not be permitted except when there is obvious surplus and that the area so irrigated should be charged at one third of the normal water rate and also subject to the condition that the rights of the registered ayacutdars are not affected. For this purpose any other person who had obtained prior permission for pumping in a similar manner will not be considered to be an ayacutdar.

*Paragraph 15.—Steps for the prevention of unauthorized use of water.*

1. Unauthorized use of water beyond the localised ayacuts of irrigation projects and also ordinary irrigation sources has almost become a menace. There are many ways in which ryots resort to unauthorised or irregular irrigation. They are, irrigation by breaches, cuts, cross-bunds, unauthorised diversion of water from one source to another, and unauthorised irrigation of lands not included in the ayacut. According to Board's Standing Orders, irrigation is said to be irregular when water from a Government source is taken or used in the following cases.—

(1) When the water is taken or used for a ryotwari or minor inam land registered as wet in the Revenue Registers or for any land in proprietary tracts recognised by Government as mamul wet otherwise than in accordance with the conditions on which it is so registered or recognised.

(2) When the water is taken or used for any other land otherwise than under and in accordance with the terms of a general or a special permit in force issued by a competent authority.

(3) When the water is taken or used for any land in a manner involving any unauthorised interference with an irrigation or a drainage work such as cross-bunding a channel, making a cut or a hole in the bund, opening or breaking a sluice, changing a pipe or altering the position of a pipe.

(4) When the water is taken or used for any land contrary to the orders of any authority competent to give such orders.

(5) When the water is taken or used for any land, in breach of any rule or regulation directing from what source or on what conditions water may be taken to or used for such land.

2. All kinds of unauthorized irrigation except those relating to irrigation by making breaches and cross-bunding are generally booked by village officers, inspected by Revenue Inspector and reported to the Tahsildar for orders. Unauthorized irrigation by breaches and cross-bunding are expected to be booked by the Public Works Department and sent to the Tahsildar for immediate verification and passing orders. Revenue Officers are also authorised to bring to No. 6 account, cases of unauthorised irrigation of breaches but generally it is the Public Works Department officers that do this. After the account is sent by the Public Works Department Officers it will be verified by the Revenue Inspector and his remarks obtained. The Tahsildar inspects the case, if necessary, and passes orders. The orders of the Tahsildar are subject to review by the Jamabandi Officer at the time of Jamabandi. Collectors, Divisional Officers, Tahsildars and Deputy Tahsildars are empowered to levy penalties for irregular or unauthorised irrigation, in accordance with the rules contained in Section-H of Appendix-I to Board's Standing Order 4. The Board of Revenue in its proceedings Mis. No. 17/57, dated 5th January 1957, issued instructions to the effect that the Tahsildar should arrange to give wide publicity in each village to the fact that breach irrigation is an offence liable for punishment. The Revenue Inspector should invariably inspect all Tiruvajasti and Fasalijasti cases. He should also watch all breach irrigation cases and leave detailed remarks about such cases in the

adangals. The Tahsildar should over-check a fair percentage of such cases. All cases of breach irrigation detected and reported by Public Works Department officers should be invariably inspected either by Revenue Inspector or Tahsildar immediately after a report about such breach irrigation is received from the Public Works Department Officials. Care should be taken to detect the genuineness of the breach irrigation. The Revenue Officers should be in constant touch with the local Public Works Department officials and steps should be taken to launch prosecutions in deserving cases. In Telagana region, under section 31 of the Hyderabad Irrigation Act, if water supplied through a water course is used in an unauthorised manner, the person or persons responsible shall be liable for the charges which shall be recovered as an arrear of land revenue in addition to other penalties. Usually the penalty which can be levied for irregular irrigation is only dry assessment in addition to the usual wet assessment. If on the other hand, the matter is reported to the Collector under section 49 (1) of the Hyderabad Irrigation Act, 1357 fasli, the person concerned shall on conviction be punished with a fine which may extend to Rs. 500. The Collector may if he so considers refer the case to a Special Magistrate for disposal, if he considers that the person who is responsible for irregular irrigation and damage to the works deserves to be punished with a sentence of imprisonment. An appeal lies to the Board of Revenue against the orders of the Collector imposing the fine. Thus it can be seen that in both Telangana and Andhra regions of the State, the unauthorised irrigation is controlled by the Officers of the Revenue Department by imposing penalties. But the Public Works Department is the agency for distributing water except in the case of the minor irrigation sources, controlled by the Revenue Department.

(3) The Engineers' opinion in regard to the prevention of unauthorised irrigation is that the distributing agency *i.e.*, the officers of Public Works Department should be authorised to levy penalties as in States like Mysore, the Punjab and Bombay and that a few Revenue Officers may be attached to Public Works Department to help the latter in the principles of water assessment. Sri A. R. Venkataraman, Chief Engineer (Irrigation) Hyderabad, suggested that Public Works Department Officers might be entrusted with magisterial powers to punish offenders then and there.

(4) This divided responsibility has led to misunderstandings and inefficiency. There is a lot of complaint that the

officers of the Revenue Department are not co-operating with the officers of the Public Works Department to prevent damage to irrigation works; that the penalties imposed are mostly remitted at the time of Jamabandi on the scope that no damage has been proved or that the damage if proved, is trifling or not material and that the diminution of supply has not been proved. This attitude has led to an increase in the number of cases of unauthorised irrigation. Sri C. Seshavataram, a retired Chief Engineer is of the view that unauthorised irrigation has assumed even notorious proportions. Leniency in cases of breach irrigation cannot be justified. Any body who diverts water high-handedly from the prescribed ayacut to another area will be certainly damaging the interests of the ryots who have their lands under that sluice. The present method of preventing unauthorised irrigation by the agency of the village officers has not given any fruitful results as the village officers, on account of local party affiliations are unable to function properly in this respect. It is also noticed that in a good number of cases the village officers themselves are the persons concerned.

(5) The Committee feels that technical persons however highly qualified they may be, cannot function as Magistrates without special training. They have to follow the Evidence Act in recording the evidence and follow the procedure in the Code of Criminal Procedure, if they are to act as Magistrates. It will be wasting technical personnel, if the Public Works Department officers are made to take training in judicial work. It will also be inadvisable to place an extra burden on the Public Works Department officials who are occupying a very important position with regard to the distribution of water which is the life blood of the Delta. Moreover prosecutions cannot be successful unless some body can be caught in the act of breaching or putting the cross-bund and witnesses who will not retract, are produced. Statements taken otherwise than before a Magistrate are inadmissible in evidence and the parties can go back on them with impunity. The menace of unauthorised irrigation cannot be stamped out without the co-operation of the ryots. We are of the view that deterrent punishment is called for.

(6) We therefore recommend that,—

(a) Firstly warning should be given to the ryots that heavy penalties would be imposed if a ryot takes water without permission.

(b) Where there is a breach caused as a result of flood or other natural causes it should be reported to the authorities by the ryots concerned. If no such report is made within a reasonable time, it should be presumed that it has been caused by the ryots who irrigate their lands by means of the water through the breach and all irrigation under it should be heavily penalised. Steps should be taken to legislate to this effect.

(c) Till now no clear-cut distinction has been made between irregular irrigation and unauthorised irrigation. We feel that a class distinction has to be made as indicated below:—

The term Irregular-Irrigation has to cover all cases of water taken or used for any land in a manner involving any unauthorised interference with an irrigation or drainage work, such as cross-bunding a channel, making a cut or hole in the bund; opening or breaking a sluice, changing a pipe or altering the position of a pipe.

The term Unauthorized Irrigation should be applicable to cases of water taken or used for any land contrary to the orders of any authority competent to give such orders.

(7) We recommend the adoption of the following schedule for the levy of penal water charge—which includes the charge for water also—for irregular and unauthorized irrigation from the Government source or work:

Number of occasion	FOR	
	Irregular irrigation	Unauthorised irrigation
(i) On the first occasion ..	Three times the water charge.	Three times the water charge.
(ii) On the second occasion	Six times the water charge.	Six times the water charge.
(iii) On the third occasion ..	Twelve times the water charge.	Twelve times the water charge.
(iv) On the fourth or any subsequent occasion.	Twenty times the water charge.	Twenty times the water charge.
	<i>Note.</i> —The officer levying the penal water charge for irregular irrigation has no discretion to remit any portion of it.	<i>Note.</i> —The Officer levying the penal water charge may, at his discretion, remit any portion of the enhanced water-cess in deserving cases to not less than one rate.

The existing rules may be modified in accordance with the above recommendations where necessary.



*Paragraph 16.—Abandonment of tanks in project areas and their assignment for cultivation or maintaining them as supplemental reservoirs for irrigation.*

Tanks are mostly rain-fed and depend on an intermittent supply resulting from surface drainage. There are some tanks which receive supplies from rivers and streams. In some areas even cultivation of paddy is carried on purely under rain-fed conditions. But in most of the areas, from very ancient times, tanks, big and small, have been constructed to store up the rain water. During summer, the water in the tanks served the needs of men and cattle. Even when all the water evaporates in summer, the saturated bed is a very good receptacle for the occasional supply from storms in summer. These small tanks have served as an insurance against famine even during years of low rainfall.

2. Construction of reservoirs in the vicinity of these small tanks brings in its wake problems of drainage, as provision of proper drainage facilities is essential for successful agriculture in the ayacuts of such tanks. Drainage and irrigation channels have to be provided simultaneously wherever water other than rain water is made available for the irrigation of crops. When tanks already exist in areas which come under the command of bigger projects, in some tracts, new drainage problems arise and extensive areas either get submerged partially or totally. Even when there is no actual submersion, water stagnation in the sub-soil is caused. In such cases abandonment of such tanks has to be considered, if water-supply for their original ayacuts is assured direct from the projects. While harnessing flood waters of rivers and streams by means of reservoirs the rain-fed tanks in that area are generally linked with the canals from the reservoirs. The question of breaching the tanks arises only where the original ayacut of the tank is commandable directly by the project canals and no drainage facilities other than the drainage into the tank are available for lands, in the catchment of the tank which become saline as a result of such lack of drainage facilities. There is no unanimity in the opinion of Engineers on this question. They are also not definite whether these tanks can be abandoned or whether they can be retained. Shri G. A. Narasimha Rao, Chief Engineer, Nagarjunasagar Project and Sri A. R. Venkataraman, Chief Engineer (Irrigation)

suggested that each case should be considered on its merits. Sri L. Venkatakrishna Iyer, the Special Chief Engineer (Irrigation), Hyderabad, opined that all such tanks with less than 50 acres of ayacut each which can be fed by a project canal can be breached and the bed reclaimed for cultivation. In the case of tanks having an ayacut of over 50 acres, each has to be considered on its merits. If the supply to the tank from its own catchment is sufficient—all that is required is stabilization—it need not be breached. If the supply is very much short of requirements, it may be breached. According to Sri C. Seshavatharam, retired Chief Engineer, tanks with 30 to 50 acres of ayacut or more may be retained, fed from the project canal, for storage for an additional second crop and thus assure the second crop which will ultimately go to the credit of the project. Sri Lakkaraju Venkata Subba Rao is in favour of retaining the tanks and utilizing them.

3. There is thus marked difference of opinion with regard to the need for retaining or breaching tanks in the areas commanded by projects. Conditions vary from district to district and from project to project. Rainfall, intensity of summer, availability of drinking water for the cattle, the nature of the soils and their salt-contents also vary considerably even within the same tract. The opinions of the ryots in the area and of the local officers will be of much help in deciding whether a tank has to be breached or not, especially during the investigation of the project. It is not possible to lay down a hard and fast rule on this question. The Committee, therefore, is of the view that each case should be decided on its merits due weight being given to the views of the ayacutdars and also the ryots in the foreshore who may be affected adversely. In case of abandonment the bed will have to be assigned for cultivation. If retained, the water charge for lands under it must be upgraded to that under the project.

*Paragraph 17.—Is the rotation of crops fixed by the Government under projects like Tungabhadra followed? If not what are the difficulties?*

“Cropping Pattern” is the term used to describe the type of crops to be raised, the season, the period, and the duration of each such crop as also the order in which such crops should be rotated.

The Tungabhadra project low-level canal scheme was originally designed to benefit mainly the famine stricken areas in parts of Bellary district (now in Mysore State), parts of the Kurnool district, and some area of erstwhile Hyderabad State (now in Mysore State). The high-level canal which is still to be executed is intended to serve the needs of Anantapur and Cuddapah districts. A research station was established at Siriguppa in 1937 and there is another at Yemmiganur to investigate all the problems incidental to irrigation in black-soils as the Tungabhadra Project chiefly benefits lands comprising black cotton soils. The Tungabhadra Project, low-level canal scheme, though first conceived as an all-wet scheme for the irrigation of only wet crops, has now been evolved into a scheme for the irrigation of chiefly dry crops for the following reasons:—

(i) that the soil of the tract, in general, is said to be unsuited for heavy irrigation,

(ii) that the ryots in the area, are not used to wet cultivation but prefer to grow dry crops; and

(iii) that, as a wet scheme, the irrigable area would be considerably reduced and that it was essential to spread the benefits of irrigation over as large a part of the famine-stricken area as possible.

Consequently a dry-cum-wet scheme was evolved by which the waters could be regulated for perennial, wet and irrigated dry crops.

*Wet Zone.*—The wet ayacut is 36,097.11 acres. This ayacut was divided into half to half for early and late planting of paddy. The former will require water for planting from June onwards while the latter from October. Only 50 per cent of the ayacut will receive water at one time either in early Mungari season commencing from June or late in the Hingari season commencing from the middle of October to the end of February. Thus it is made possible to raise single wet crop in the early season over half the extent and on the remaining half in the late season. This has been done with a view to extend the benefit of irrigation to as large an extent as possible. The system of canals has also been designed and excavated so as to feed only half the area in wet and dry-cum-wet blocks in either of the seasons (early or late seasons). At pre-

sent the following cropping pattern has been advocated in the Tungabhadra Project area as only half the wet ayacut will be irrigated in either seasons.

Crop	Variety	Planting season	Harvesting season	Remarks
(1)	(2)	(3)	(4)	(5)
(a) Green manure	Sunhemp.	June.	July	To be ploughed in after 7 weeks.
Early or main season paddy	GEB-24.	July-August	December-January.	
(b) Green manure crop.	Dhaincha or Sunhemp.	June-July.	August-September.	..
Late season paddy. Early type varieties.	ADT-18 or MTU-15	September-October.	January-February.	..
Late varieties	Co. 2 or ASD-5	September-October.	February-March.	..

*Dry irrigated zone.*—The dry-cum-wet ayacut of the Tungabhadra Project in our State is 1,12,627.89 acres. In this zone water supply is available from June to February. Only one dry irrigated crop can be raised during the period. The crops are indicated below:—

Particulars	Crop	Variety	Sowing season	Harvesting season	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
(a) 3-year course rotation for deep black soils.	Groundnut red gram mixture.	TMV. 2, 2900.	June-July.	Groundnut can be harvested in October, November, and redgram in January-February.	1st year.
	Mungari Jonna	Co. 9	June-July	November-December.	2nd year.
	Green-manure.	Sunhemp	June.	July (to be ploughed in after 7 weeks.	} 3rd year.
	Combodia cotton,	Lakshmi	Middle of August.	..	

Particulars	Crop	Variety	Sowing season	Harvesting season	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
(b) 3-year course rotation shallow soils.	Groundnut Redgram mixture.	TMV. 2, 2900.	June-July.	Groundnut October-November, Redgram January-February.	1st year.
	Green-manure.	Sunhemp.	June.	July.	} 2nd year.
	Cambodia.	Lakshmi.	Middle of August.	March-April.	
	Korra	N. 1.	June-July	October November.	3rd year.
(c) 4-year course. rotation for deep and shallow soils.	Green-manure.	Sunhemp.	June-July.	August September	} 1st year.
	Glummed wheat.	local.	October-November.	February-March.	
	Groundnut Redgram mixture.	TMV. 2, 2900.	June-July.	Groundnut October to November, Redgram, January-February.	2nd year.
	Jonna.	Co. 9	June-July.	October-November	} 3rd year.
	Green-manure.	Sunhemp.	June.	July.	
	Cambodia cotton.	Lakshmi	Middle of August.	March-April.	

The ayacutdars in this zone can adopt any one of the above rotations suggested. It is possible to raise Bengalgram as dry rain-fed rabi crop sowing in November in the same land soon after the harvest of Mungari Jonna which should be sown early in June and harvested in October-November. In place of pulse crop, the ryot can grow a fodder crop if he so desires. In addition to the crops mentioned above other minor crops such as chillies, vegetables, maize and fruit crops can be grown in

small extents according to the requirements and demand. According to the existing arrangements in Tungabhadra Project area, water supplied in the ratio of 50:160 to wet and dry-cum-wet areas. On this basis of water requirement, the cropping pattern has been determined.

2. Proper utilization of the large volume of water supplied through this project has been achieved to a great extent by resorting to a proper rotation of crops. Moreover it is proved that dry crops irrigated, give several times more yield than dry crops grown exclusively under rain-fed conditions. This has led to an increase in the extent of cotton crop from 21.9 per cent to 33 per cent of the area already sown in the ayacut.

3. As seen from the answers to question 22 of Part IV of the questionnaire issued by this Committee no difficulties have been experienced by ryots in adhering to the said cropping pattern. The Special Collector, Tungabhadra Project, has suggested that a slight change in the cropping pattern of Tungabhadra Project area is required for the following reasons:—

(i) Reported non-availability of suitable strain of paddy to be grown, between September and February and consequent necessity to push in all wet crops into the Mungari season.

(ii) Lack of demand for water for irrigation of jonna and korra in Mungari season and hence the need to divert area to Lakshmi cotton.

One difficulty which was brought to our notice by the ryots in this area was the general inadequacy of supply felt during the overlapping period when both Mungari and Hingari crop are in the field and both need water. However problems such as these and continuous improvement of the cropping pattern should engage the attention of the Irrigation Development Board.

4. No cropping pattern has been fixed in other project areas either in Telangana or in Andhra regions of the State. Incidentally under all irrigation projects in Telangana only paddy is grown and as such the question of evolving a separate cropping pattern does not seem to have been considered,

We understand that for a given quantity of water, more food can be produced through light irrigated dry crops—rather than through paddy. This must be kept in view and suitable cropping pattern evolved for each area.

5. A cropping pattern similar to the one evolved for the Tungabhadra Project area will be necessary in the Nagarjunasagar Project area also which is designed to irrigate wet crops in one-third of the ayacut and dry crops in the remaining two-thirds of the ayacut.

### CHAPTER XIII.

*Paragraph 18.—The reasons for the time lag between the creation of the irrigation potential and its utilization.*

Governments have been spending large amounts on irrigation projects in answer to the persistent demands of the people in the areas. Nevertheless the ryots have not been able to take full advantage of the facilities. A statement showing the projects which have been completed and have commenced supplying water together with the targets fixed for the development of ayacuts and the progress so far made is appended (Appendix 15).

2. In this connection it is necessary to go into the reasons for not developing the ayacuts, whether it is due to lack of minor distributaries or to the heavy cost of conversion of dry lands to wet. Questions 24 and 25 of Part IV of the questionnaire issued by this Committee relate to these matters which are extracted below:—

*Question No. 24.—Are there any indications, that commandable land under any project has not been brought under wet irrigation on account of heavy cost of conversion to wet?*

If so, what are your suggestions to solve the problem?

*Question No. 25.—Has the utilization of irrigation facilities of projects been impeded in any way by lack of minor distributaries or their timely maintenance?*

The answers received are summarized below:—

*Question No. 24.—A majority of the individuals (both official and non-official) have stated that there are indications*

of commandable area having been left unirrigated due to heavy cost of conversion of dry lands into wet. They consider that if the ryots are provided with bull-dozers, tractors, agricultural implements, chemical fertilizers, improved seeds besides financial assistance in the shape of long-term and lump-sum loans at low rate of interest, the problem will be solved. Some are of the view that concessions from one-fourth to half assessment, or exemption of water charge for a period of five years would afford relief to the ryots and as a result conversion from dry to wet would be accelerated. Some others suggested that 10 per cent of the cost of the project should be reserved for giving loans for the development of such lands. Another suggestion is that the excess land from the ryots should be acquired and assigned to ryots who would convert land to wet. Some desire that the Government themselves should make the land fit for cultivation by ploughing and levelling it with tractors.

*Question No. 25.*—According to a majority of persons who answered the question, the utilization of irrigation facilities has been impeded either due to the lack of minor distributaries or their timely maintenance. Some others have stated that since the maintenance and repairs are expected to be done by the ryots—and these ryots lack the spirit of co-operation—the maintenance is very unsatisfactory. Some suggested that the Village Officers and ayacutdars should be made responsible for the timely repairs of the distributaries or to entrust this work to Village Panchayats. A few expressed the view that the cost of construction of the field channels should not be collected from the ryots and that financial assistance should come from the Government to the ryots to bring their lands under irrigation.

3. Steps, to provide facilities in several directions like grant of takkavi loans, education of ryots by means of Government demonstration plots in the project areas in respect of improved methods of cultivation, provision of bull-dozers and tractors, formation of Co-operative Societies for advancing loans, upgrading of cattle are taken by the Government in consultation with the State Irrigation Development Board, the District Irrigation Development Boards and Irrigation Consultation Committees specially formed by the Government. We suggest that the Agricultural Department should study and find solutions to the problems of the ryots in areas which are saline or are difficult to work.



4. We dealt with these aspects at length earlier while discussing the principles of levy of water charge on land newly brought under cultivation, and recommended a revision of the schedules of water rates to be levied on red and black soils over a period of five and six years respectively from the time, the water is made available to the ryot at his field when effective potential can be said to have been created and not from the time when the headworks are completed, and water is let into the main canals. The creation of such effective potential and provision of concession spread over a period of five or six years will in our view accelerate the development of the ayacut.

*Paragraph 19.—Is it desirable to transfer the maintenance of works of minor distributaries to the ayacutdars?*

For a correct understanding of the term 'Minor distributaries' from a technical point of view it is necessary to enumerate the several means of distributing water to the ayacut under an irrigation system. The distribution works of a system are the canals and channels by which the irrigation water is conveyed from the head-works to the fields, with the subsidiary works pertaining to them. The canals or channels, which take their supply directly from the head works are main canals, or channels, while canals and channels taking off from main canals are termed "branch canals" or "distributaries".

2. The canals and channels of a large canal system may be classified as follows:—

(i) Main canals.

(ii) Branch canals: Canals taking off from a main canal and having a head capacity of not less than 300 cusecs.

(iii) Distributary channel: A channel taking off from a main, or branch canal or from another distributary having a head capacity as below:—

(a) A major distributary under 300 and above 25 cusecs.

(b) A minor distributary carrying 25 cusecs and below.

The above channels constitute the Government distribution works of an irrigation system.

(iv) Field channels also termed "water courses"—These are small channels constructed by cultivators and are not the property of Government; they run from outlets in the Government channels through the cultivators' own lands and convey and distribute waters to the individual fields. Under modern systems, these channels seldom carry more water at the head than three or four cusecs and often much less.

3. It is thus clear that in an irrigation system, all works except field channels or water courses which ultimately carry water to the fields from the head works are the property of the Government. The point at issue is whether it is desirable to transfer the maintenance of the works of minor distributaries to the ayacutdars. In the ladder of distribution works "the minor distributaries" occupy a position above field channels and are to be maintained by the Government. They have a head capacity of 25 cusecs and under. In project areas, the Public Works Department look after and maintain all distribution works at Government cost except the fields channels. The Public Works Department is also in charge of all tanks having an ayacut of 200 acres and more in Andhra area and acres 100 and more in Telangana area. In the maintenance of these irrigation sources there is dual responsibility. The Public Works Department Officers attend to the maintenance of only the tank bund, sluices, surplus weirs and aprons. But all distribution works like canals and channels which mostly correspond to minor distributaries and which are even directly connected with the sluices are to be maintained in good repair by the ayacutdars irrespective of the "head capacity" of each channel and the extent of ayacut under it. This part of the work has to be got done and supervised by the Revenue Officials. The provisions of the Madras Compulsory Labour Act (Kudimaramat Act), 1858 are applicable to such works. As observed by Sri.S. Y. Krishnaswamy "Kudimaramat is now-a-days an accident as no ayacutdar realizes his responsibility for the maintenance and upkeep of the irrigation sources. In such cases notices are served on the ayacutdars to execute the repair within a stipulated time and if the work is not carried out, it will be executed by the Revenue Officials, and cess levied". These works are carried out by the Minor Irrigation staff which has since been strengthened by the addition of an Assistant Engineer to work under the Collector in some dis-

tracts. In spite of all these steps, there have been complaints about the disrepairs of these distributaries and the consequent diminution in water supply to the tail-end lands under such distributaries. The ryots under the Pennar-Kumudvati Project of Hindupur taluk specially represented their difficulties as the channels taking off from the sluices have a length of five miles. We are of the view that it is not desirable to transfer the maintenance of distributaries to the ayacutdars just at present. For special reasons we have, however, recommended elsewhere the handing over of small minor irrigation tanks and kuntas with an ayacut of 50 acres and below and also the maintenance of small irrigation tanks with an ayacut of 50 acres and less to irrigation panchayats consisting of ayacutdars under the source as its members, so that a beginning in placing responsibility in the hands of ayacutdars may be made. In a similar manner the maintenance of minor distributaries supplying water to small blocks of 150 to 200 acres—may be handed over to the ryots in the ayacut if there are responsible people who can co-operate with each other.

*Paragraph 20.—A parity or uniformity in the levy of water rates on sources in other States irrigating land in this State and vice versa.*

The Government in their D.O. No. 24203/M/58-1, dated 27th May 1958, have referred to the levy of water cess on lands in Andhra Pradesh irrigated with the aid of water from sources belonging to other States and of cases where the lands in other States are irrigated from sources belonging to the Andhra Pradesh. "The general idea has been to amend the Irrigation Cess Act so as to permit the State Government to levy water cess in respect of lands in this State irrigated from sources in other States, and to address the Governments of neighbouring States to take steps to collect appropriate irrigation charges on lands irrigated in those States from sources in this State and to credit the amount to this State. Obviously all arrangements in this matter will have to be reciprocal in nature". The Government sought the recommendations of this Committee.

2. The Government have stated that a consolidated list of cases of the kind referred to was called for from the Board and that it would be furnished to the Committee on its receipt from the Board. The list has not so far been received either from the Government or from the Board.

3. Information obtained from the Board's Office shows that there are lands in this State irrigated from sources belonging to other States and *vice versa* as detailed below:—

(a) Lands in this State irrigated from sources belonging to other States:

Serial Number	Name of the district	Name of source	Name of the State in which source lies
1.	Srikakulam district	.. Suvani tank of Berhampur taluq	.. Orissa State
		Lakshmisagaram	.. do
		Buragamgedda	.. do
		Radhasagaram	.. do
		Krishnasagaram	.. do
		Chintalacheruvu	.. do
		Mahendratanaya river	.. do
		and Battisiripuram anicut	.. do
2.	Chittoor district	.. Anjuram channel of North Arcot District	Madras State
		Sholingar tank of North Arcot District	.. do
		Egava Voddu of Bangari village	Mysore State
		Chokkabanda tank	.. do
3.	Mahaboobnagar district	.. Weir of Ajlapur tank of Yadgir taluk	.. do
		Kunta situated in Pollaladoddi of Raichur district	.. do
4.	Kurnool district	.. Tungabhadra project	.. do

(b) Lands irrigated in other States from the sources belonging to this State:

Serial Number	Name of irrigation source and the district in which situated	Name of villages in other States in which lands irrigated from sources in Col. 2	Name of the State
(1)	(2)	(3)	(4)
ANANTAPUR DISTRICT			
1.	Cherlopalli tank of Moda village of Hindupur taluq.	Lands of Mysore state.	Mysore state.
2.	Pargi tank of Sirekolam village of Hindupur taluq.	do	do
CHITTOOR DISTRICT			
3.	Keelapudi Eti kalva of Puttur taluq.	Lands of Tiruvallur taluq.	Madras State.
4.	Srirangapuram Eti kalva of Puttur taluq.	do	do
5.	Athurkasam kalva of Fattur taluq	do	do
6.	Javvajirama-samudram tank in Kangundi Forest Reserve of Palmaner taluq.	Lands of Madras State	do
7.	Gollapalli tank in Kangundi forest reserve of Palmaner taluq.	do	do

4. There is no information in the Board's Office regarding the rate of water-charge levied in either case. We have no time to enquire into this question as the lists have not been received from the Government. In any case we consider that there should be uniformity in the levy of water charge within our State, and we have recommended the charging of rates in accordance with the table suggested in our report. We, therefore consider that it is not possible to have parity or uniformity in the levy of water charge on sources in other States irrigating lands in this State and *vice versa*.

*Paragraph 21.—Betterment levy and the special rates for contributed ayacut schemes.*

Most of the States in India have accepted the principle of collecting contributions from the beneficiaries under completed

irrigation and river valley projects called "betterment contribution" besides levying the usual land assessment and water charges. The National Developmental Council, has also recognised this principle of recovering a portion of the capital invested on the construction and completion of the several irrigation projects. The principle underlying the collection of betterment contribution is that a portion of the additional value that accrues to the land by the provision of irrigation facilities and the guarantee of water supply should be available to the Government. This contribution would enable the Government to take up other development schemes and irrigation projects proposed to be constructed during the several periods of phased programmes. Therefore, every possible effort has to be made to augment the resources of the Government by an equitable levy of betterment contribution from the owners of lands receiving new or improved irrigation facilities. Many State Governments have taken measures to enact laws in this regard. There are separate enactments in force with regard to betterment levy in Andhra and Telangana regions. The collection of betterment contributions, however, has not yet commenced.

2. The basis and the quantum of betterment contribution levied or proposed to be levied differ from State to State. Generally speaking the factors taken into account for its levy are:—

(i) The increase in the market value of land as a result of the new facilities made available on completion of the project after deducting the reclamation charges,

(ii) in Andhra, increase in the value of the land is calculated, by capitalizing the increase in the net additional income from agricultural produce, in a year by multiplying it with 25 and by multiplying the value of the gross additional increase in production with ten in Telangana, and

(iii) increase in the yield of staple food crops only is taken into account.

3. Other factors like the quality of soil, the expenditure involved in converting dry land to wet and the type of irrigation are also kept generally in view. The proposed recovery is only a fraction of the additional unearned benefit. Provisions are also made for the recovery of the betterment contributions in lumpsum or in equitable instalments and also in the shape of land to be surrendered to Government in

lieu of cash payments. This provision for recovery in the shape of land is mainly intended to enable the persons who cannot make a payment in cash to be relieved of the burden of paying the betterment contribution, especially in the case of owners having large extents of dry land.

4. The erstwhile Andhra Government passed Act XXV of 1955 for the levy of betterment contribution. The Hyderabad Government also passed Act V of 1952 (The Hyderabad Irrigation "Betterment Contribution and Inclusion Fees" Act, 1952) in this regard. The Government of Andhra Pradesh have already taken steps to integrate both the Andhra Act XXV of 1955 and the Hyderabad Act V of 1952 and the integrated Bill is awaiting the approval of the Legislature.

5. We are of the opinion that the idea behind the levy of betterment contribution is that the general tax payer should not bear the burden of the works intended for the benefit only of a section of the community. The important question is whether the minimum limit for the levy of betterment contribution should be the cost of the project which should be more than a lakh of rupees as in Andhra or whether it should be on the basis of a minimum ayacut of 2,000 acres as in Telangana. The Board of Revenue has recommended that the cost of the project should be the criterion and this provision was adopted in the integrated Bill. We consider that a rigid floor of one lakh of rupees will not cover all cases of improvements made to various kinds of irrigation sources. For instance there is the Madras Tank Improvement Act XIX of 1949 enacted by the Composite Madras State, now in force in the Andhra region, which provides for the improvements effected to tanks and recovery of the cost thereof from owners of lands under them irrespective of the size of the tanks or the total costs incurred. We consider that this is a very desirable principle. We, however, consider that instead of having a separate Act for this purpose the Act for the levy of Betterment Contribution should be modified suitably by making it applicable to irrigation sources falling under Classes I to IV in the table of water rates recommended by us.

6. We also feel that the provisions for the surrender of land in lieu of betterment contribution and the fixation of the proportion of the land to be surrendered require modification.

7. The proposal of the Board of Revenue was that the provision in the Hyderabad Act allowing a rebate of 10 per cent

if the full amount is paid within six months from the date of the determination of the amount of contribution due should be incorporated in the integrated Act. We agree with the Board's proposal.

8. The Board has also recommended that the provisions in section 26-A of the Hyderabad Tenancy Act should be incorporated in the integrated Act permitting the person interested to pay the betterment contribution, and to recover the same from the tenant. We also agree with this proposal.

9. We consider, as indicated elsewhere, that drainage improvements should be considered under Land Improvement Schemes as it would be very difficult to evaluate the improvement brought about by a new drainage work. The provision relating to drainage works in section 2 (6) (b) of the Andhra Act may be deleted.

10. In addition, we recommend that—

(i) Any improvement to sources falling under Classes I, II, III and IV in the table of water rates newly recommended by us which will increase the value of lands should come under the purview of the Act and rules relating to the levy of betterment contribution instead of having a rigid floor of Rs. 1 lakh for the cost of the work for levying the contribution.

(ii) When a landholder surrenders half the extent of his holding commanded by the source he should be free from any further liability to pay on account of betterment contribution. The Collector, however, will have to see that this concession is not in any way abused and that comparatively inferior land is not offered to the Government. The land that a ryot surrenders should be just as valuable as the land he retains. The land surrendered should be as far as possible, in a compact block. We feel that there may not be many offers of this kind but there may be a few special cases. As the choice is going to be left to the ryot, the ryot who makes the offer can judge for himself and decide whether he can accept this arrangement.

(iii) Principles which are applied for the levy of betterment contribution should also be applied to fixing the inclusion fee on lands newly included in the ayacut of old irrigation works.



If any particular area has been under irrigation without penalty being levied, continuously for more than five years before the passing of the Act, no betterment contribution or inclusion fees should be levied, and

(iv) Inclusion fee should be charged only for lands under sources of Class III and above as described in the table of irrigation sources and grades of soils recommended by this Committee. The cost of the project should not be taken into consideration for the levy of inclusion fee in the case of old works, but, only the class of the sources as fixed by the Committee should be taken into consideration.

*Paragraph 22.—Whether the existing minor irrigation tanks should continue to be in charge of the revenue or transferred to Public Works Department.*

In Andhra region, minor irrigation works with an ayacut of 200 acres and less are under the control of the Revenue Department whereas in the Telangana region, only works having an ayacut of 10 acres and less are under the control of the Revenue Department. To secure a uniform system in the maintenance of Minor Irrigation Works throughout the State, the Government in their Order Ms. No. 1979, Revenue, dated 24th October 1958 have ordered that the practice now obtaining in Andhra region with regard to the maintenance of Minor Irrigation sources of having an ayacut of less than 200 acres each should be extended to Telangana region also as soon as possible, and that in the first stage, sources with an ayacut of acres 100 and below which have been brought up to standards and have been restored by Public Works Department should be made over to the Revenue Department with effect from 1st November 1958. One of the chief reasons for recommending the entrustment of the works to the Revenue Department is the fact that the Tahsildar with his many faceted work has greater contact with the ayacut-dars and small contractors, than the officers of the Public Works Department who are intended for more important and larger works involving careful designing and technical matters.

2. We are of opinion that the repairs to Minor Irrigation works should be attended to efficiently and promptly. The Government have transferred tanks with an ayacut of 100 acres and less in Telangana to the Revenue Department only

recently. The results may be watched and changes effected as and when necessary.

*Paragraph 23.—The Madras Irrigation (Voluntary Cess) Act, 1942—Madras Act XIII of 1941—Its application to Telangana.*

The maintenance of irrigation and drainage works in the ryotwari tracts of Andhra region which according to local custom should be attended to by ryots is enforced under the provisions of the Madras Compulsory Labour Act (Kudimaramat Act) of 1858. The Composite Madras Government found the procedure under this Act cumbersome and unpopular and enacted the Madras Irrigation (Voluntary) Cess Act of 1942 to meet these difficulties. This Act provides for the levy of a voluntary cess for the maintenance of irrigation and drainage works of all kinds which are owned and controlled by the State Government and serving ryotwari tracts and also estate areas not taken over by the Government. There is provision in this act for the levy of a cess in lieu of Kudimaramat only when the holders of two-thirds of the land served by the irrigation or drainage work so desire. The provisions of this Act do not affect the rights and obligations of the registered holders of lands served by any work to which the Madras Compulsory Labour (Kudimaramat) Act applies provided that no customary aid shall be requisitioned under section 6 of the said Act during any period in respect of which cess is levied under the Madras Irrigation (Voluntary Cess) Act, 1942.

2. The points to be considered are whether the provisions of this Act require any alteration and whether they have to be extended to Telangana where no similar act is in force. No information is available with the Board of Revenue regarding the number of cases in which this Act was applied. In all probability some cases might have been dealt with by the Collectors at the district level, in view of the fact that the Act was enacted as early as 1942. We consider that there is no point in extending the provisions of the Act unless they have been found in actual working to be feasible and beneficial. In the absence of information from Collectors it is not possible to give our opinion on either of these two points. We, therefore, think it appropriate to leave the matter to the Board of Revenue to examine it and to report to the Government on the need to extend the Act to the Telangana region.

## CHAPTER XIV.

*Reclassification of soils and re-estimation of yields unnecessary.  
Re-survey of particular tracts necessary.*

1. (a) *Soils*—The principles of settlement and soil-classification, in the Andhra region, have been explained in detail, in Chapter III, paragraph 1 of this report, while those in the Telangana region have similarly been explained in Chapter IV, paragraph 1.

An intelligible and systematic classification of soils is an essential pre-requisite for fixing the assessment on land based on its productive power and such classification, to be correct and generally useful, must be founded on a consideration of the nature, composition and properties of the several soils. This is accepted by the systems of settlement, prevailing in Andhra and Telangana. There is a fundamental similarity in the methods followed in both the regions of the State, though, in detail, there is some diversity. The classification already adopted is good enough for fixing assessment. We, therefore, consider that no revision of the classification of soils is now necessary.

2. (b) *Re-estimation of yields*.—In the Andhra region, the yield from the land forms the basis for giving it a suitable classification and sort, on which is fixed the appropriate rate of assessment. In the Telangana region, the yields of the lands are considered, only to see whether there is justification for enhancement or reduction of the maximum rates. The report of Sri N. Raghavendra Rao shows that the yields adopted at the settlement cannot be said to be accurate. (This relates to the Composite Madras State of which Andhra was a part). The Wet Rate Committee of Hyderabad observed that it was difficult to arrive at a true estimate of the average yield of a crop. The estimates of yields furnished in the answers to the questionnaire vary so considerably that it will be unsafe to come to any general conclusions on their data. We are of the opinion that it is not possible to get a correct idea of the yield for each class and sort of land now, without conducting elaborate crop-cutting experiments, in different kinds of soils. The cost of such a process will be prohibitive. The present policy of the Government is not to have any resettlements. In view of this also, we consider that a re-estimation of yields is not now necessary.

3. (c) *Re-survey of lands necessary for an up-to-date revenue registry.*—The basis of ryotwari settlement is the direct relationship of the Government with the ryot, who is the owner and cultivator of the land. Changes in ownership arise due to sale, gift or succession. During the original settlement and re-settlement, every effort was made to see that the name of the actual owner was entered in the appropriate records. Efforts were also made to keep the registry up-to-date by incorporating the changes, as they arose. Detailed instructions have been issued from time to time, prescribing with meticulous detail, the procedure to be followed in effecting the transfers of registry. But in spite of all these orders and in spite of the supervision of the higher officers of the Revenue Department, registry is hopelessly out-of-date, both in Telangana and in Andhra. The Marjorie Banks Committee had taken note of this state of affairs. The Wet Rate Committee of Hyderabad had also taken note of the same. A good survey, detailed plans, F. M. Books and clear demarcation of the boundaries and fields are necessary for the maintenance of Revenue Records and Registration up-to-date.

4. Before considering whether a re-survey, in the State, is necessary, it is desirable to know the main principles of survey followed in both the regions of the State.

5. Survey, in Andhra region, may be broadly divided into: (1) Topographical, and (2) Revenue or Cadastral. A Revenue or Cadastral survey deals with each individual holding so that necessary particulars may be furnished to the Revenue Department, in order to determine the correct annual assessment, to be paid to the Government. The boundaries of porambokes and other lands belonging to Government are demarcated, thus providing a safeguard against encroachment. Further, every boundary in a Cadastral survey is laid down under the Survey and Boundaries Act. The survey thus acquires legal validity. Before the survey is finalized under the Act, every registered holder is given an opportunity to object to any boundary laid down, which concerns him. Thus a Cadastral survey is beneficial both to the Government and the ryot.

6. Individual holdings are clubbed to form survey fields convenient both for survey and maintenance. As wet land contains more holdings than dry land, the average area of a survey field is fixed at 5 acres in wet and 10 acres in dry land,

subject to the provision that when the number of subdivisions exceeds 20, the area of a field should not be less than 2 acres in wet and 4 acres in dry land.

7. The main object in forming a survey field is to have holdings demarcated separately but put together in the same unit of a convenient size, so that the fields formed may be laid down on the basis of an accurate frame work which would permit of being maintained conveniently.

8. Before the Cadastral survey is undertaken in a village, traverse survey is done. The village boundaries are determined and surveyed with the help of the theodolite and this frame work is divided into sub-circuits or khandams of about 200 acres each in dry and 100 acres each in wet tracts. The survey of the khandam is also made with the theodolite. After the plotting of the traverse is completed, the individual fields are fitted into the respective khandams and the village map is then completed. The frame work of the survey field is laid out by means of 'G' lines connecting the field junctions and diagonals to complete the triangles and all bends are off-setted on the respective 'G' lines. This field to field survey is carried out with the chain and cross staff on the diagonal and off-set system. All topographical details such as wells, channels, ponds and tanks are also off-setted and exhibited in the survey records. The field measurement book is plotted to scale and the measurements are recorded therein. The survey numbers are plotted with the help of the measurements taken and the area computed with the help of the area square paper and the computing instrument. The area of each fields are plotted with the off-set measurements so recorded with the area of the village calculated on the basis of the traverse measurements.

9. In the Telangana region, Traverse survey was not done before Cadastral survey was undertaken because the importance of the former was not realised in the beginning. In some taluks, Traverse survey was taken up long after the Cadastral survey was completed. Consequently their Cadastral survey had to be revised.

10. Under the Cadastral survey, in force, in Telangana, a base line called 'Athar' is ranged from one end of the village to the other and off-sets of field bends are measured on it. The fields are plotted with the off-set measurements so recorded

and the area of the field is calculated. The operation is continued till the survey of the entire village is completed. For controlling the survey in the large villages and ensuring the correctness of the maps, a perpendicular is drawn on the base line and connected with hypotenuses. The perpendicular line and the hypotenuses are utilized as subsidiary 'Athars' for measuring the off-sets of bends of fields. The fields are surveyed at initial settlements according to enjoyment but subject to the restriction that each field should not be more than 4 acres in wet and 30 acres in dry. At the time of the revision settlement, sub-division of lands having an area of less than one acre in wet and 8 acres in dry is not usually undertaken.

11. The sketch of each field called 'Tippan' is not prepared to scale. Only a rough sketch of every number is drawn and the field measurements are recorded therein. With the help of the offset measurements of bends, the area is mathematically calculated and the map is drawn according to scale. The area calculation book is prepared separately. It is called 'Pukka book'. Unlike, in Andhra, no copy of the field sketch is given to the Patwaris as they are not trained in survey work.

12. Thus the system of survey is different in the two regions of the State. The system in the Andhra area, even though it goes into details, is one which the ryots could follow and use in the case of disputes. In Telangana, the records containing the maps and the measurements are a closed book, so far as the ryots are concerned. From the technical point of view also, it is not so easy to replace a missing survey mark in Telangana region or to relay and show a field boundary called 'F' line, whereas in Andhra this could easily be done with the aid of the field sketch.

13. Further, the survey and settlement records in Telangana are mostly in Marathi and there is, after the re-organization of States, a dearth of Marathi knowing personnel in the service of Government. It is also stated that in Telangana after the survey was made survey marks have not been planted in several areas. A re-survey of the whole tract in Telangana on the lines followed in Andhra is, therefore, essential. As the work of the survey parties in Andhra region is coming to a close, it may not be difficult to get the services or trained personnel. During the survey, it is possible to secure agreement between enjoyment and registry, as the statutory notices issued to the parties would force them to raise objec-

tions, if any, before the Survey Officer. Further, in the Five-Year Plans, several irrigation projects are now being completed. Unless proper plans of ayacuts are prepared after proper survey and localisation, the period of development would be prolonged. It has been mentioned in Chapter VI of this report, that originally the Nizamsagar project was designed to irrigate 2,75,000 acres. According to the latest decision, the project is to irrigate only 1,04,360 acres of new area in Abi and 62,000 acres in Tabi, besides the old area of 21,055 acres in Abi under old tanks. In the year 1956-57 the area irrigated in Abi is 95,023 acres, and in Tabi 57,701 acres. The above acres, shown under Abi and Tabi are inclusive of 22,164 acres under sugarcane. Hence an area of 13,600 acres remains to be developed, which has not yet been located by the Public Works Department. The Public Works Department is making necessary investigation to locate the said area. The Special Chief Engineer for irrigation, is of opinion that as a period of over 20 years has lapsed since the previous survey and as the previous settlement was not based on the contour maps, it is necessary to relocalise the ayacut, under the project, which is said to have reached the saturation point of irrigation.

14. It can thus be seen, that in the absence of proper survey and records as also the absence of boundary marks properly maintained, it has not been possible for the Revenue and Public Works Department officials to know whether, the total area for which the project has been designed, has been actually developed or not, whether clandestine irrigation is going on and whether the development or irrigation is made on proper lines. We consider that there is an absolute necessity for an initial survey of the entire Telangana, on the lines followed in the Andhra region and of the area not recently surveyed by the Government in the Estates of the Andhra region, after the abolition of the Zamindari system and accordingly recommend it strongly.

15. The introduction to the Manual of Record of Rights published by the erstwhile Hyderabad State gives the position of the revenue registry as it stands at present, in the Telangana region. It is extracted below for ready reference to stress the need for a fresh survey on the system, in force, in the Andhra region.

“The basic concept of ryotwari tenure is that the Government should deal directly with the cultivators for assessment and collection of Land Revenue. When initial sur-

veys were undertaken the assessment, for different fields was settled with the actual occupants. These were then designated as pattadars and upon them rested the responsibility for payment of the assessment. Each pattadar was a separate Khatedar in the village records. Due to the operation of the laws of succession, partitions and unrestricted transfers of lands, the land became encumbered with several interests. In many cases, the pattadar ceased to be in actual possession of the land. His name, however, continued to be entered in the Revenue Records and the other interested persons had to contend themselves with a mere entry of their names and shares in the records. In quite a few cases the occupants who were in actual possession were not shown in the records. Under the Hyderabad Land Revenue Act, the occupant's liability to pay the assessment arose only when the pattadar failed to pay it. In practice, the erstwhile pattadars continued as Khatedars, long after they had ceased to have any material interests in the land. Even where a pattadar had not more than a nominal interest in the land, he was held responsible for the payment of Land Revenue Assessment. It was only on his default, that the Revenue authorities turned their attention to the occupants, whose identity, extents of land held by them, and apportionment of assessments according to their shares, were mysteries, known only to the village officers. This gave to the Village Officers a great scope for sharp practices, as the collection of land revenue depended more upon their private knowledge than the information recorded in village records. No attempt was made to keep the records up-to-date. There was some social distinction attached to the position of a 'KHATEDAR' and cases, where nominal Khatedars fondly clung to the shadow, were not a few.

"The revenue records, therefore, very soon ceased to reflect the actual conditions on the spot. Since this defect did not affect the amount of Land Revenue due to Government, no serious attention was given to it. With such defective revenue records the ryotwari tenure deteriorated in practice, and against its very spirit, a few intermediary interests cropped up. These defects became more and more pronounced, as time went on. As a result, the whole position regarding rights in land became shrouded in obscurity. The Government had no information regarding subdivision or sizes of holdings, transfer of land or rural indebtedness. Proper administration of land revenue was not possible in such circumstances.



“It was in this background that the Record of Rights Act of 1346 fasli was passed. The work of preparing a Record of Rights was started in 1936-37 and had been in progress for 18 years. The general approach was that the Record of Rights was to be prepared purely as a Register of Rights in land. The Revenue system remained unchanged and unrelated to it. In other words the record of rights was not made a Record of Liability. It was treated as a Census Register of Rights in Land, as they existed, at the time of its preparation. Without any care for its maintenance, it was consigned to oblivion soon after it was prepared. The preparation of the record in such manner was of no practical value, either to the land holders or the Government. The scheme did not thus succeed. During the period of 18 years the Record of Rights was prepared in the Diwani areas of five Marathwada districts only and with that speed it would have taken another 20 years to cover the whole area of the State.

“It was realised in the light of this sad experience that the Record of Rights could be useful to the public and the administration only if it contained reliable and up-to-date information of rights in land and that the record itself could be maintained correctly and up-to-date only if it was made the basis of annual Revenue Accounts.

“The Land Census operations started in 1953 led to a reorientation of the policy regarding the Record of Rights. The object of the census was to collect correct information regarding sizes of holdings, land use, tenancies, rents, fragmentation, etc., for all ownership and cultivation holdings in the State. Based as it was on the old Pattadari rights, the ‘pahani-patrika’ or other village registers could not be used for the census which aimed at enumerating holdings actually held by land-holder. So, what was needed for the land census was a correct and up-to-date Record of Rights in land. It was therefore decided that the record that was to be prepared for the Census could easily become the record of rights and be used as such in future. Trained staff and adequate funds were available for the Land Census operations. The only requirement was to ensure proper maintenance in future. It was, therefore, decided to combine the Record of Rights work with that of the Land Census. It was also decided to integrate the Record of Rights and Land Census work with the annual Revenue Accounts. To serve the three purposes of common form known as ‘Khasra pahani’ was evolved and the preparation of a preliminary Record of Rights has now been com-

pleted in the entire State along with the Land Census operations. Jamabandi is now being conducted on the basis of occupancy rights. Mutation Rules have been made and the Revenue establishments at the Tahsil and Division level have been strengthened to enable them to cope with the increased work of maintenance of the Record of Rights.

“One great effect of these reforms was to remove the defects which had crept into the ryotwari system. The nominal pattedars and Khatedars have now disappeared from the Revenue Accounts and the Government deals directly with the actual occupants each of them being an independent Khatedar. Proper maintenance will ensure direct relations between the Government and each landholder. Thousands of landholders who were not recorded previously even as his-sadars have now been registered as occupants. Such recognition and certainty of their title have raised their social status and they now really have the pride of owning land. Litigation will be minimized. Such irrigation as will be undertaken would be less expensive and less tortuous.

The Record of Rights envisages a system of public transfers which is rightly described as the greatest legal discovery of the age. The system of public transfers has special benefits in a society where one of the contracting parties is generally unable single-handed to protect his own interests. This is always to be preferred to cumbrous and ambiguously worded conveyances which consequently result in litigation, trouble and waste of time and money.

“The systematic registration of tenancies and the terms upon which the land held by bigger landholders is leased out will afford valuable indications of the incidence of rents and land revenue and will greatly assist the Government in proper regulation of tenancy conditions.

It is of paramount importance that the Government should know how far the cultivators are really in beneficial occupation of the land and how far that occupation is passing into other hands. An up-to-date Record of Rights would give a clear picture regarding this.

“The Record of Rights contains many other details regarding the interests actually subsisting on the land. This information will be advantageous in framing of policies and in assessing their effects. It is always better to put these

facts regularly on record and have them readily available instead of having to institute special inquiries to find out the actual position whenever any need arises. With the implementation of land reforms and enforcement of tenancy laws it is essential that the Government should know the actual conditions on the spot. The Record of Rights meets this great need and has in fact become a necessary adjunct of Land Reforms”.

16. The Record of Rights was no doubt an improvement, but all the benefits it was expected to confer on the people remained merely on paper, in the absence of a reliable survey of the holding. As an illustration ‘A’ was entered as having ownership of ‘X’ acres out of a survey number, ‘Y’, while the balance belonged to ‘B’. When actually dispute arose, no one could know where exactly these acres were located and whether ‘X’ represents the correct area at all.

17. In the matter of Tenancy rights as well, the land owner only reported that the Tenant is the occupant of ‘p’ acres in a survey No. ‘M’. On this basis, the Land Revenue is being collected by the Government and sale value has been received by the landlord. There is now no chance whatsoever of satisfying him of the correct area, save through a fresh survey.

18. After the passing of this Regulation in fasli 1358, the Board of Revenue issued instructions to the Collectors to delete the names of the occupiers in Column 13 of the ‘Khasara pahani’ and to note the names of only the Pattadars in it. This order was issued in May 1957 and this has created a commotion in Nizamabad area among the settlers who came from Krishna and Guntur districts. We heard the plight of these settlers, in detail, when we toured in Nizamabad district. We have also indicated a solution to the problem to the Board of Revenue. It appears that Government have taken a decision in this regard, and are proposing an amendment to section 47 of the Hyderabad Tenancy Act.

19. In the Andhra region, prior to 1940, the Revenue Inspectors were made responsible for the maintenance of Survey and Revenue Registry. They had to check-measure the sub-divisions created and submit the record to the Tahsildar for sanction, after scrutiny by a technical staff, maintained only in the Collector’s office. Later on, the work was transferred from the Revenue Inspector to the Taluk Surveyor, who is not able to cope with the work. The ryots also do not pay the sub-

division fees and apply for sub-division of portions of survey fields purchased by them. The result is that there are several joint pattas, about which, except the Karnam, nobody knows the real position. Moreover, the ryot himself is not very much interested in getting the registry up-to-date, as the patta is not a deed conferring any title, but merely a statement showing his liabilities of assessment, to be paid to the Government. The Village Officers' Committee have made a recommendation that 'pass books' containing all the details of the S. Nos. owned by each ryot might be given. This document, will have more value than an ordinary patta. At present, the ryot relies only upon the sale deeds to establish his title.

20. The village Karnam is either interested in keeping the registry hopelessly out of date or in any case not interested in bringing it up-to-date. The existence of joint pattas is becoming a source of difficulty, in the collection of Land Revenue. If the village officers so choose, they may collect more from a person who is not liable to pay and collect less from a person who has to pay more. No revenue officer will be able to find fault with them. In some cases they may collect even more than the taxes due from all the joint pattadars together. Unless a Revenue Officer gets all the joint pattadars together and unless sufficient details are given, he will not be able to detect the mischief. The sub-division fees provided for, are still inadequate inspite of the recent enhancement. If there is a duty cast on the karnam to get subdivision measured before sale deeds are registered and if the Sub-Registrars also insist on the production of the relevant sub-division records before registration is effected, this state of affairs will be remedied to a large extent. The seller and the purchaser should also mention in the deed of transfer that they have demarcated the portion transferred, by metes and bounds. Before the registration is effected by the Sub-Registrar, he should verify whether it has been mentioned in the deed that the field in question has been demarcated by metes and bounds, that the sub-division fees are collected by him, and that the sketch of the field is filed with the document. Changes in possession, must be intimated through a written document and a copy of the same must be filed with the karnam, within a time, to be prescribed and any failure to do so must be penalised under a statute. Whenever a Karnam observes that a person not registered as an occupant in his account or not entitled to possession, is in possession of any land, the karnam should report the fact to the Tahsildar, who should get the matter enquired into.

21. As regards the authority who should be empowered to order transfer of registry, the Revenue Inspectors may be entrusted with the work. He can also get the portions sold, subdivided and incorporate the changes in the records, after the subdivision record is scrutinised by the technical staff, which is available at the rate of one taluk surveyor at each Taluk Headquarters. Such changes should also be entered in the pass-book of concerned ryots. The Revenue Inspectors should be asked to verify the enjoyment during the revenue collections and pass orders on them, then and there. The files relating to each case, in which the Revenue Inspector passes orders transferring the registry, may be sent to the Tahsildar for scrutiny and filing. The Tahsildar could interfere, modify or revise any order passed by a Revenue Inspector, *suo motu*, or on an appeal, after giving due notice to the parties concerned.

22. The orders relating to the mutation of registry are passed, in the Telangana, on a statutory basis, while those in Andhra region, are passed under executive instructions, in the Board's Standing Orders. We are of the opinion that it is necessary to bring all the orders passed in Revenue administration on a statutory basis as it is the procedure in all other States, except Madras (Composite) and that the position that the pattedar is the owner of the land subject to the conditions and terms in the patta should be recognised.

## CHAPTER XV.

### SUMMARY OF THE RECOMMENDATIONS.

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
1	Steps may be taken to popularise the practice of green manuring wherever possible.	IX-1-3
2	The demand for green leaf from the forests is mostly a local problem. The ryots may be allowed to gather green leaves from the coupes which are proposed to be auctioned in the next year, so that the defoliation might not affect the growth. If the Forest Department apprehends defoliation and danger, the green leaf manure may be gathered by the Department and sold to villagers at a reasonable price.	IX-1-4

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
3	<p>(i) The ultimate solution should be to grow one's own green manure and to utilise the available green leaf to the maximum extent.</p> <p>(ii) The Forest Department should be liberal in granting permits, by issuing them in lumpsum to Panchayats for distribution among the needy. The removals, however, should be under the strict supervision of the officers of the Forest Department.</p>	IX-1-5
4	<p>(i) The use of good seed is very important and with each variety should be distributed pamphlets containing detailed instructions for growing a good crop therefrom.</p> <p>(ii) Each variety of seed has its own requirements of water and fertilizer, time of planting, spacing and, therefore, seed-rate would be different for each strain. All these details must be worked out, for each improved strain for each area, before seeking to distribute the same.</p> <p>(iii) The quantity of fertilizers supplied should be on the basis of the extent of land that a particular ryot owns.</p> <p>(iv) There is an urgent need to revise the rules governing the supply of chemical manures on credit and make them applicable to the whole State.</p> <p>(v) More scientific talent must be concentrated on the problem of controlling pests and more research carried out, to precisely determine the dosage and time of application, etc. No effort should be spared to make plant protection methods a success.</p> <p>(vi) The wooden country plough and the country bullock cart, without either a machined axle or even a ring-oil-bearing or a grease cup, are symbols of the backward-</p>	IX-2-1

*Serial No.**Recommendation.**Reference to  
the Chapter  
and Para in  
the Report.*

ness of our agriculture and as long as this continues, so long will production and productivity and, therefore, the taxable capacity will remain at the lowest ebb.

(vii) Tractors are not being imported but there are operations like reclamation, ploughing, grading, levelling, etc., which can be done well and more economically by tractors alone with appropriate attachments.

(viii) Indigenous manufacture of pumpsets is not keeping pace with demand and is not even able to maintain quality. It is a wrong policy to allow quality of pumpsets to deteriorate and make farmers suffer; It may be better to subsidize the indigenous industry and enable them to compete with imported material, in quality and workmanship. The Indian Farmer, technically backward as he is, should not be further burdened with less efficient equipment.

- 5 (i) The articles essential to agriculture should be allotted village-wise on the basis of the cultivated land and should remain without sale for atleast six months if there is no demand. This method can be adopted in the case of iron at present.

IX-2-4

(ii) In the case of fertilizers, the supplies should be kept at Firka levels atleast two months in advance of the sowing season and the necessity for diverting elsewhere should be examined only fifteen days after such date.

(iii) There will be need for fertilizers for persons who sow seed late and also those who transplant late. Decentralisation of power, quick movement of stocks to local depots and avoiding delay in fixing prices, might improve the situation.

*Serial No.**Recommendation**Reference to  
the Chapter  
and Para in  
the Report.*

- 6 (i) In our country, the supply of essential goods to cultivators is so small and the expected demand so unsteady, that trade cannot be expected to do the distribution efficiency. Therefore, for easing the position regarding the supply of essential goods, we recommend the following.
- (a) The State should provide the supplies of essential goods until trade is able to take over the functions.
- (b) The quality should be of prescribed standard.
- (c) The price should be fair to the cultivators.
- (d) The supply should be timely and adequate.
- (ii) Farmers cannot be expected to check up these points, by themselves, and the Agricultural Department will have to undertake this job.
- (iii) The supply agency, therefore, has to be separate from the technical staff.
- 7 While welcoming the Government of India's decision to subsidize all pesticides, we make the following suggestions.
- (i) A similar subsidy in equipment and liberal import of power-sprayers and dusters is necessary.
- (ii) Free demonstrations of the use of pesticides is necessary all over the country.
- (iii) Farmers should be trained on a large scale in plant-protection methods at Government expense.
- (iv) Organization of pest-warning service is essential.
- (v) Complete plant-protection at the cost of the State in 2 per cent of the villages to

IX-2-6

IX-3-3



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and Para in  
the Report.*

study the economics and organisation problems and to provide training for plant-protection personnel should be undertaken.

(vi) The research should continue into the technical and agronomic problems relating to plant-protection.

(vii) Cultivators must be told that plant-protection equipment is as much a 'must' on their farm as a 'Plough' or a 'Gorru' or a 'Guntaka' and plant-protection is as much their responsibility as any other operation on the farm.

(viii) State does come in for providing advice and facilities and may come in also with their equipment in grave emergencies when trouble flares up in an epidemic form.

8 The following suggestions are recommended for consideration by the Government.

IX-4-2

(i) The activities of the Agricultural Department which is a technical department depend upon the availability and quality of trained personnel. The department has been in existence for a long time and we can only endorse the views of Shri A. P. Jain with regard to better co-ordination of Research extension and Administration. Recent report of Agricultural Administration Committee of the Government of India deserves speedy acceptance.

(ii) The idea to arrange for tours of farmers throughout the State to visit not only agricultural research stations and well-organized farms but also selected areas in the State where cultivation is done in a very efficient manner, is worth a good trial.

(iii) The Village Level Workers should take greater interest in agricultural activities.

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the Report.*

They should not stop by merely achieving the targets prescribed for them but should take keen interest in developing modern methods of agriculture by a vigorous campaign in the villages.

(iv) It is not possible for Agricultural Department by itself, to extend all the technical knowledge that is needed to all the agricultural population. In addition to Agricultural Department, the village level workers, revenue officials, village officers and some others may transmit this to the villagers. To this end, we suggest that agricultural education may be expanded and the trainees may be given preference in recruitment to revenue and other allied departments. Short courses may be run for the village school teacher and the village officer. The ideal to be aimed at is that every employee of the Government coming in touch with the villagers should have a fair knowledge about science and practice of agriculture.

(v) A technical man should be asked to teach and train a good farmer of a village and others would naturally copy the performance of the trained farmer.

(vi) The quickest way to upgrade farming is to make every bad farmer, copy a good neighbour. Every attempt must be made to enlist the voluntary services of good farmers in this task of agricultural extension . .

- 9 (i) The quality of cattle has been deteriorating very fast with the result that the price of cattle fulfilling certain recognized standards have gone up enormously. This problem should be tackled very quickly and on a very extensive scale. Otherwise, this deterioration of cattle will go on with disastrous results.

IX-5-3

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
	(ii) In order to keep the best bulls out of available stock in the village for service till replaced by better animals, a rapid survey of all the villages, and if that is not possible, rapid collection of information with the help of village officers should be taken up. As a first step some kind of subsidy should be given for keeping them available in the village.	
10	(i) It is desirable that rules similar to those in Telangana relating to grazing grounds and lands to be set apart for pasturage should also be made for the Andhra region.  (ii) We understand that a 'Standing Fodder and Grazing Committee' is being constituted for the State of Andhra Pradesh. The new committee may be constituted at an early date so as to enable it to advise the Government on problems relating to fodder.	IX-5-9
11	(i) Forest Department may undertake preparation of hay wherever it is plenty in the forests and make it available to the scarcity areas.  (ii) Upgrading of cattle is the quickest way to improve the economic condition of the people in villages.  (iii) The deterioration in cattle due to natural causes is far faster than the progress in the reverse direction achieved by all the Governmental and private efforts put together. As time goes on, there will only be a net deterioration. We cannot lay too much emphasis on a plan calculated to stop the rot and make positive gain. To this end the following suggestions are made for consideration by the Government.  (a) To consider problems of land with reference to their effect on cattle wealth;	IX-5-14

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
	(b) to intensify research in breeding and management problems of cattle;	
	(c) to use private breeders as spearheads of progress;	
	(d) to extend concessions where green fodder is grown for cattle;	
	(e) to educate people on the economics of having good cattle and looking after them well, and	
	(f) to emphasise milk production and improve marketing facilities for milk.	
12	We recommend to the Government for making special provision in the matter of foreign exchange for acquiring suitable equipment for artificial insemination in an adequate measure.	IX-5-16
13	(i) The broker or the buyer in the regulated market does not pay for the sweeping, the market fee and the hammalies. The expenditure on the above items should be shifted to the purchaser and not to the producer.  (ii) There is need for having regulated markets in larger numbers all over the State and they should not be confined only to commercial crops but extended to the sale of all agricultural commodities including perishables like vegetables, fruits, milk, eggs, etc.	IX-6-7
14	Rice is the biggest crop in Andhra area and its exemption from the operation of market laws is wrong. We urge that this be set right and all agricultural commodities brought to market, must be brought under marketing regulation.	IX-6-8

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
15	All help and encouragement should be extended by the State to co-operative marketing.	IX-6-9
16	(i) Private trade must be encouraged to compete amongst themselves and as against the growers' co-operative. The traders will thrive if only their profits plus overheads are less than overheads alone of the co-operative marketing societies. Monopoly in trade, whatever may be the agency will work against the interests of the producer.  (ii) We suggest a speedy integration of the marketing regulations in the State.	IX-6-10
17	We recommend that the Government have to encourage construction of farm houses and to expand the village sites generally.	IX-7-3
18	The existing credit facilities are absolutely inadequate and they require to be stepped up and the delay in the grant of loans should be minimised.	IX-8-2
19	(i) Joint pattas may be allowed to be turned into individual pattas and sub-division of land may be made promptly.  (ii) The pass book recommended by The Village Officers' Enquiry Committee to be given to the ryots should be distributed very early.  (iii) Law, governing state and co-operative credit may be integrated early, and  (iv) Private money lending may be regulated and encouraged to compete with other forms of State-sponsored credit.	IX-8-7
20	It is in the fitness of things that successive five year plans should emphasise the importance of cottage industries.	IX-9-1

<i>Serial No.</i>	<i>Recommendation</i>	<i>Reference to the Chapter and Para in the Report.</i>
21	We think that the Government is already alive to the importance of khadi, handloom, blacksmithy and carpentry and that they will certainly do all in their power to foster them.	IX-9-2
22	Occupations ancillary to crop production may be treated as cottage industries and given due State patronage.	IX-9-3
23	We can encourage mixed farming and add livestock to each farm, so that summer may no longer be a lean season.	IX-9-4
24	In any scheme of things under which State aid is made available, cottage industries like rural housing, etc., must receive a higher priority than the production of consumer goods.	IX-9-8
25	(i) Village Officers if paid a collecting fee, may add to efficiency of loan collections.  (ii) Lending by Government out of a revolving fund which is reimbursed by collections would pin point attention on failure to recover the moneys.  (iii) In Telangana the village officers must be made to maintain loan registers and outstandings may be entered in pass books the maintenance of which we have supported elsewhere.	IX-10-2
26	(i) Rigorous steps should be taken to collect the arrears of loan instalments when seasonal conditions are fair and ensure that credit is made available for the people who really need them.  (ii) The amount allotted by the Government should roll and serve the needs of many and not get locked up as at present.	IX-10-3

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the Report.*

(iii) Only constant demand by the concerned officials at the appropriate time after the harvest will yield good results. Any undue leniency in the matter is certainly not a favour to the ryot.

(iv) All Government credit to land owners must be channelled through same agency.

(v) Instalments must be fixed keeping in view the benefits likely to accrue to the borrower, and

(vi) Collecting staff must bear a relation to volume of lending.

- 27 (i) In view of the rapidly increasing volume and variety of work to village officers with the increasing tempo of planning and developmental activities, it is quite necessary that there should be a suitably trained body of village officers who will be able to respond more efficiently to the needs of a Welfare State. We consider that special training is necessary to the karnams and patwaries and that such training should be at the cost of the Government.

IX-11-1

(ii) The period of training need not exceed two months at a time, but it should include the training in survey, the knowledge of Revenue and other rules, the methods of collecting statistics, estimation of crop yields, an elementary course of Veterinary science and practical training in an agricultural farm.

(iii) We consider that the Board of Revenue must issue a monthly journal of a suitable size containing the latest orders and supply it to all village officers and revenue inspectors direct by post.

- 28 There should be adequate number of Revenue officers to attend to the Revenue

IX-12-4

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work; otherwise there would be loss to the exchequer. It is imperative that the whole set up, should be reorganised to meet the demands of the present concept of the administrative machinery of the Revenue Department and that it should be possible to do so without increasing the cost to the exchequer of the state, if different agencies now working, at village, block, taluk and district levels are integrated, by suitably distributing the load of work and responsibility.

- 29 (i) The Collector should continue to be the Chief Civil Administrator of the district and to achieve this end, he should be given an assistant who should be an officer in the run for a Collector's place and who might dispose of most of the administrative and statutory items of revenue work.

IX-12-5

(ii) The officer may be called joint Collector and should be subordinate to the Collector.

(iii) The designation of the Collector of the district might be changed as Civil Administrator.

- 30 (i) The methods of work in the set up should be examined in detail, by a special Committee. The time is now very opportune, as Revenue laws in both the regions of the State are being integrated. Along with integration, the frame work should be modified to suit present day conditions.

IX-12-7

(ii) The jurisdiction of the Revenue Inspector, Tahsildar and Deputy Collector might be reduced and he should be made responsible for the discharge of various items of Revenue work instead of appointing special officers.



<i>Serial No.</i>	<i>Recommendation</i>	<i>Reference to the Chapter and Para in the Report.</i>
	(iii) Normally a district should comprise of 4,000 sq. miles and those which are bigger should be bifurcated.	
	(iv) The supply of small machines like 'Addressograph', 'Numbering machine', 'Addition and Multiplication instruments', etc., will be much beneficial to the various offices in the state and these will eliminate enormous expenditure spent on the establishment, for routine work.	
31	The roads, connecting each village to the nearest Public Works Department road, may be aligned according to correct highway principles and the land may be acquired to improve village communications.	IX-13-1
32	(i) Where there is black cotton soil, rubble stone soling may be given and if this much is done by the Government, the work of maintaining the rest of the road in a reasonably good condition may be left to the initiative of the local people.	IX-13-2
	(ii) Funds available under Local Development works and under Community Projects, and National Extension Schemes can be diverted to improve and maintain village communications.	
	(iii) It is very necessary that efforts in the next few years should be concentrated on the correct alignment of roads, so that we may at least have in the next few years a net work of village roads over which at least bullock carts could travel with ease.	
33	It is necessary that estimates for developmental activities also should be got prepared along with the main estimate for the Irrigation project, so that the development of the ayacut might commence and proceed simultaneously, with the work relating to	IX-14-1

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the construction of the project works, dam, head works and canals. Then only, it would be possible to utilise the benefits of the project from the first year in which water is let out for irrigation. We strongly recommend to the Government to accept Sri J. Raghotham Reddy's suggestions in his note at Appendix 11 and issue suitable instructions to the Chief Engineers and the Administrators, in charge of the execution of the projects.

- 34 The Government may give preference and undertake the construction of drainage improvement works, the cost of which is proposed to be contributed by the public either in full or in a large portion of it, provided that three fourth of the persons who hold not less than two thirds of the area to be benefited, agree voluntarily to pay the contribution. In such cases the Government should waive the collection of betterment contribution. An appropriate method like a referendum of the affected persons should be devised to give a legal sanction for the collection of promised contributions subsequent to construction.

IX-14-2

- 35 As there is not much disparity in the rates of assessment of unirrigated dry lands, in the two regions and as they have been standardised recently on the basis of the recommendations in the Taxation Inquiry Commission, 1954 (in Andhra region) we do not recommend any alteration except the abolition of "milewar deductions" in Telangana allowed for the distance of the land from the village. In our opinion, it would be enough, if the dry rates are reviewed and if necessary, revised once in five years on the basis of price fluctuations and other agro-economic factors. The review and revision may coincide with the Five-Year Plans,

X-1-4

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
36	The calculations to arrive at the dry component of the wet assessment on the wet lands in both the regions of Andhra and Telangana would not involve undue expenditure or labour.	X-1-6
37	<p>(i) The settlement registers of the Andhra region known as Diglotts and the Sethwars of the Telangana region should be rewritten, on a common form through the agency of Revenue and Settlement departments, printed and supplied to the village officers.</p> <p>(ii) The proforma of the Diglott register of Andhra may be adopted for the whole State with necessary additional columns to show the new soil grade; class or irrigation source and the corresponding water charges and the dry assessment.</p> <p>(iii) Copies of the Diglott printed in English and Telugu should also be available for sale, to the ryots.</p>	X-1-7
38	In view of our recommendation to levy water charge and dry assessment separately, the standardized assessment levied on wet lands in the Andhra region and the special assessment levied on wet lands in the Telangana region may be abolished and the relevant Acts passed enhancing water rate and wet assessment may be repealed to that extent.	X-2-3
39	That Andhra Land Revenue (Additional wet-assessment) (Andhra Pradesh Amendment) Act, 1957, may be repealed as according to the recommendation of the Committee, there will not be any lands classified as consolidated wet, in future.	X-2-4
40	(i) In the definitions under the Andhra Pradesh Land Revenue (Surcharge) Act, 1957, 'Land Revenue' may be made to	X-2-7

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>										
	mean and include water charge also but not the land and education cesses. The Surcharge levied on the land revenue may be revised as follows.—											
	<table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"><i>Amount of land Revenue.</i></th> <th style="text-align: right;"><i>Rate of Surcharge per rupee.</i></th> </tr> </thead> <tbody> <tr> <td>Rs. 50 or less</td> <td style="text-align: right;">Nil.</td> </tr> <tr> <td>Exceeding Rs. 50 but not exceeding Rs. 100.</td> <td style="text-align: right;">Rs. 0.13 nP.</td> </tr> <tr> <td>Exceeding Rs. 100 but not exceeding Rs. 250.</td> <td style="text-align: right;">Rs. 0.25 nP.</td> </tr> <tr> <td>Exceeding Rs. 250</td> <td style="text-align: right;">Rs. 0.50 nP.</td> </tr> </tbody> </table>	<i>Amount of land Revenue.</i>	<i>Rate of Surcharge per rupee.</i>	Rs. 50 or less	Nil.	Exceeding Rs. 50 but not exceeding Rs. 100.	Rs. 0.13 nP.	Exceeding Rs. 100 but not exceeding Rs. 250.	Rs. 0.25 nP.	Exceeding Rs. 250	Rs. 0.50 nP.	
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	No cesses should be levied on the surcharge imposed.											
	(ii) The Andhra Pradesh Land Revenue (Surcharge) Act, 1957, may be amended suitably.	X-2-8										
41	As the levy of tax on commercial crops, on the basis of acreage is leading to anomalies and inequities, we recommend that the special assessment on commercial crops, now levied may be abolished and that in lieu of it, the rate of purchase tax levied on the products from commercial crops might be suitably increased.	X-2-11										
42	The land cess in Andhra and local cess in Telangana are the main sources of income to the local bodies and they should be continued.	X-2-12										
43	Education cess is now levied at three annas on a rupee of land revenue in the Andhra, but there is no such tax in the Telangana region. Education cess may be levied in the Telangana region also at the rate of three annas on a rupee of the land revenue payable to the Government and	X-2-13										

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
	necessary legislation may be undertaken by the Government to that effect to maintain uniformity.	
44	As the income from the education cess is utilised not only for the benefit of land-owner but also for the non-agriculturists, we are not able to justify its levy only on the landowners. We, therefore, recommend that either a new tax should be levied on the non-agricultural population or the education cess that is now recommended for imposition, in Telangana, should be abolished in the Andhra region also and that every one, including land owners, taxed on a new and uniform basis and the revenue thus derived, utilised for education.	X-2-14
45	As long as the same ryot pays to the same Government for almost the same purpose, it would be convenient and administratively less costly to have one tax instead of many, if it could possibly be helped.	X-3-9
46	Sales Tax cannot serve as an alternative to the existing system of land revenue.	XI-3
47	The existing system of land revenue cannot profitably be replaced by the levy of a tax either as a percentage of rental value or as a percentage of capital value of the land.	XI-6
48	It is neither feasible nor practicable to levy agricultural income-tax, either as an alternative to the existing system of land revenue, or in addition to it.	XI-13
49	The introduction in this State of the sliding scale system, based on annual fluctuations of prices is not recommended.	XI-15
50	The fixation of assessment on land should not be as a share of the gross produce.	XII-1-12

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
51	Land Revenue should be fixed as a percentage of the net produce.	XII-2-1
52	The depreciation of cattle and agricultural implements and the cost of maintenance of the cattle should be taken into account and deducted from the gross yield to arrive at the net yield.	XII-2-11
53	As periodical settlements or resettlements are not recommended and as revisions in future will be based on prices and other relevant factors, it is not necessary to give an opinion as to what percentage of the net produce, the share of the Government should be.	XII-2-13
54	In future as the revision of assessments will be on the basis of prices, etc., it is not necessary to state whether different percentages should be fixed, for wet and dry lands, as the proper share of the Government towards the land revenue.	XII-3-4
55	Consequent on the abandonment of resettlements, there is need for the Government to review the assessments on the basis of the variations in prices and other relevant factors at short intervals of five years.	XII-4-5
56	The production requirements of agriculture have increased in number and value. The cash income of the ryot has not risen in proportion to rise in prices. The rise in real incomes has been slower still. These are a few of the many relevant factors which should be taken note of at each quinquennial review and revision.	XII-4-6
57	Cost of production studies must be organised by the State in typical areas and for representative soil and climatic tracts and this data alone will give a clear indication of the trends of incomes in farming, which alone can sustain all taxes on land.	XII-4-7

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
58	Refixation or revision of commutation rates is essential for the purpose of revising the assessments periodically and the old theory of fixing commutation rates on the basis of prices in 20 non-famine years, is now out-of-date and should be modified.	XII-4-8
59	The deduction of 15 per cent towards cartage and merchants' profits, from the average of prices over the period of revision is necessary while working out the commutation rates, even in future for the purpose of review and revision.	XII-4-9
60	The Standardized assessments should be reviewed and if need be, revised once in five years and this period may coincide with the periods of future Five-Year Plans.	XII-4-13
61	It is not feasible to take the prices of commercial crops into account for fixing the commutation rates for the revision of assessments.	XII-5-2
62	The levy of sales tax or purchase tax, affects the ryots, though 'indirectly' and reduces to that extent, the value of the produce sold by him.	XII-6-2
63	There should be one collecting agency to collect the assessment on land from the owner along with the municipal taxes and the municipality or corporation should be the single collecting agency in the municipalities and corporations.	XII-7-6
64	As correspondence is going on between the Government and the Board of Revenue to revise or rationalise the existing rates of ground rent in the Andhra Region or the special assessment levied on agricultural lands put to non-agricultural uses in Telangana, it is not necessary to make any recommendation in this regard except to say,	XII-7-7

<i>Serial No.</i>	<i>Recommendation</i>	<i>Reference to the Chapter and Para in the Report.</i>
	that for good farming, it would be necessary that the farmer should have his house in the land itself, the advantages being better supervision and higher production and that in such cases special assessment should not be levied.	
65	The existing system of land revenue assessment obtaining in the unsettled agency areas should continue, till the hill-tribes reach a stage when they could compete, successfully, with the plains folk; but however, any survey or other steps necessary may be taken for soil-conservation and allied purposes, in areas relating to big projects like Machkund.	XII-8-9
66	Pending examination of the question of introducing the crop insurance scheme by the economists and what is costs to ryots, it is not possible to make any recommendation in this behalf.	XII-9-1
67	The existing remission rules in Board's Standing Orders may be extended to Telangana subject to the modifications indicated below:—	XII-9-4
	(i) Every ryot who wishes to claim remission must apply on unstamped paper to a Deputy Tahsildar or Tahsildar before a specified date to be notified by the District Collector in respect of each crop. The District Collector should fix a date for completing inspection. The Deputy Tahsildar or Tahsildar should arrange for the inspection of crop on a date fixed by him which should be intimated to the parties. If inspection is not made before the last date fixed for inspection the presumption is that crop is totally lost or lost to the extent represented in the remission application.	



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the Report.*

(ii) In respect of A, B and C class irrigable dry lands, remission should be of both the dry assessment and the water charge.

(iii) Out-turns should be recorded in terms of imperial maunds or other local weights, per acre, and not in terms of annas.

(iv) The order regarding the grant or rejection of remission should be passed only after personal inspection either by the Tahsildar or the Deputy Tahsildar and not on the basis of the Revenue Inspector's remarks.

(v) The reasons for the low yields should be recorded by the Inspecting Officer.

(vi) For the purpose of granting remission, one acre or a full survey number or a sub-division whichever is less, should be taken as a unit.

(vii) Remission should be granted in the case of damage to irrigated crops due to insect pests and plant diseases.

(viii) If the yield of paddy on irrigated land is below three bags or six imperial maunds per acre, it should be treated as a case of total loss of crop.

(ix) If the yield is five bags of paddy or less but not less than three bags per acre, half remission should be granted. If, however, the remaining half of the assessment and water rate is less than Rs. 8 the amount remitted should be only the assessment which is in excess of Rs. 8.

(x) Remission for other irrigated crops should be granted considering the yield of each crop. For purpose of granting remission the yield for cholam or jowar is 2 bags or 4 imperial maunds per acre; for cotton 250 lbs. per acre and for groundnut 3 bags

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or 3 imperial maunds per acre. For other irrigated crops one-fourth of the normal yield should be taken as a case of total loss of crop and remission granted.

(xi) In the case of light irrigated crops, the same broad principles suggested for other irrigated crops in item (x) above should be followed.

(xii) The distinction made in B.S.O. No. 13 (12), in charging for water only in respect of the extents cultivated under the precarious sources in certain districts should be removed and it should be made to apply to precarious sources in all other districts, also.

(xiii) In the case of unirrigated dry crops when the area affected by bad seasonal conditions, such as drought, heavy rains, floods, etc., is a contiguous tract of not less than 50 square miles, the Collector of the district may order the inspection of fields to estimate the out-turn and grant full remission if the yield is one-fourth the normal yield or less, or half remission, if the yield is half of the normal yield. This concession should also be extended to cases of loss of crop due to insect pests and plant diseases.

(xiv) In the case of unirrigated dry crops affected by hail-storm, the damage caused need not be over an area of not less than 50 square miles. Remission should be granted for such damage, even in smaller areas, down to individual survey fields, in the manner prescribed in item (xiii) above.

(xv) In respect of coconut gardens ravaged by cyclones, remission should be granted for a period of three years so as to enable

<i>Seri./ No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report</i>
	the trees to recoup adequately to yield normal crops. The limit of 50 square miles should not be insisted upon, where the damage is caused by cyclone, floods, etc., and in such cases, remission should be granted even for smaller areas, even down to individual survey fields.	
	(xvi) The instructions in B.S.Os. No. 13 and 14 should be followed in the entire State as they are exhaustive subject to the above modifications.	
68	The suggestion of the Village Officers' Enquiry Committee to issue a pass book to a ryot should be implemented.	XII-10-5
69	An amount of Re. 1 per patta may be collected from each landholder for payment to the karnam to make the entries in the pass book.	XII-10-6
70	The collection of land revenue should commence after Pongal (Sankranthi) festival, as prices of grains will be settled then. The kist months should be altered and collections made in the months of February and March in equal proportions for the demand accruing on kharif and first irrigated crops and in the months of June for the demand accruing on rabi, second and third irrigated crops including the miscellaneous items of revenue, settled during the jama-bandi.	XII-10-11
71	In future, the assessment on irrigated land should be fixed on the basis of the dry land potential and the charge for irrigation should be on the basis of a charge, for service, by the Government.	XIII-1-6

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
72	The productivity of the soils, the capacity of the source based on the duration of supply and the ability of the ryots to bear the charge, are the chief factors which should be considered in determining the water charges.	XIII-2-3
73	In future, the assessment on irrigated land should consist of dry assessment depending on the quality of soil and the charge for irrigation, based on the quantum of service rendered by the Government. Eventhough, the income from irrigated land is several times that of dry land, still for the service done, it is not suggested to levy a uniform rate, but graduated rates, related to the soil value of the lands, on which the yields would depend.	XIII-2-11
74	It is proposed to divide the existing soils into four grades as follows:—	XIII-2-12
	Grade I ... .. Superior alluvial soils.	
	Grade II ... .. Good soils.	
	Grade III ... .. Medium soils.	
	Grade IV ... .. Inferior soils.	
75	Soils in Telangana are classified in terms of wet Bhagannas. In arriving at the dry component of the assessment on these irrigated lands, the 'milewar', which is now allowed as a defect for lands, situated at a distance of more than a furlong from the village, will be omitted and the corresponding dry assessment worked out on the basis of Bhagannas, assigned for the wet land.	XIII-2-14
76	(i) In future, no land should be registered as wet, but dry lands should be classified as A, B, C and D to enable the ryot to know the type of irrigation he is entitled to, for growing suitable crops.	XIII-2-15

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the Report.*

'A' class dry lands will be those which now stand registered in the revenue accounts as compounded double crop wet lands or double crop wet lands and for which there is an assurance of water supply for raising two heavily-irrigated wet crops or a dofasal crop.

'B' class dry lands will be those which now stand registered in the revenue accounts as single crop wet lands and for which there is an assurance of water supply for raising a single heavily-irrigated crop of not more than six months duration.

'C' class dry lands will be those which are now included in the light-irrigated zones of projects and for which there is an assurance of water supply for raising one dry crop with light-irrigation.

'D' class dry lands will be those which are not entitled to any supply of water but include Manavari, Asmanitari and Kariveda lands.

(ii) Irrigation of lands falling under classes A, B and C is compulsory and not optional. Eventhough these lands are not irrigated, the land owner has to pay the dry assessment and water charge, unless they are remitted under the rules.

(iii) There will be no need to prepare water rate accounts as the total of dry assessment and water charge due will be noted in the new Village Settlement Registers to be prepared in the place of present Diglott or Sethwar Registers.

77 There should be a change in the principles of classification of the irrigation sources in

XIII-2-17

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the Andhra and Telangana regions. It is proposed to re-classify the irrigation sources as follows:—

*Class I.*—Major projects and tanks in the ayacut of big projects fed by channels from the projects which supply water throughout the year, except during closure, for repairs.

*Class II.*—Medium-size projects and tanks in the ayacut of medium-size projects fed by canals from the projects which usually supply water for the first and second crop.

*Class III.*—River channels and tanks which, not only regularly irrigate more than 200 acres, but also support a 'Tabi' crop on at least 20 per cent of the irrigable area and which can supply water for more than eight months.

*Class IV.*—Sona, Bila, Kasam or Uppalavatbonda, spring channels and tanks with an irrigable area of 200 acres and more which usually supply water for more than six months but less than eight months.

*Class V.*—Tanks with an irrigable area of 30 acres and above but below 200 acres which usually supply water for more than three months but less than six months.

*Class VI.*—Tanks with an irrigable extent of less than 30 acres and which are precarious and supply water usually for less than three months. Only sources of this class will be declared as precarious sources.

78 The charge levied for water should have a relation to the yield, which the ryot receives from his land, by the use of the water.

XIII-2-18

(i) The soils of superior fertility should be charged more than inferior lands.

(ii) Lands under different new projects like Tungabhadra, Bhairavanithippa are being

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charged at Rs. 15 per acre, for a single wet crop. It is only fair that alluvial lands which are far superior in fertility should be charged more. Lands which are inferior to regar-loam and red-clay should be charged less.

(iii) (a) The water rate for raising single wet crops of not more than six months duration should be according to the table recommended by us.

(b) The charge for irrigating sugarcane should be as follows:—

(i) Three times the water charge fixed in the table should be charged for 'Adsali' sugarcane of eighteen months' duration.

(ii) In respect of 'Eksal' sugarcane of eleven months' duration twice the water charge will be charged, only if water is supplied in summer.

(iii) If, however, the sugarcane is sown with the aid of well water, and water from a Government source is not taken during the months of April, May and June, it should be charged one and half times the appropriate water charge.

- |    |   |           |
|----|---|-----------|
| 79 | The existing ratios of water charges applied to the irrigation by mutation of wet and dry (systematically and occasionally irrigated) crops in the first and second crop seasons, are moderate and reasonable and the same proportion may be adopted. | XIII-2-19 |
| 80 | As regards the charge for the third irrigated crop, now being levied under some sources, for which separate water rates are fixed by the Government, the following rates may be charged.  | XIII-2-20 |

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
	(i) If the crop raised is green manure or fodder crop, there should be no charge;	
	(ii) if irrigation is supplemented by wells, there should be no charge; and	
	(iii) if a third crop, whether it is heavy or light irrigation, is exclusively irrigated from a Government source, the charge should be one-fourth of the charge for the first heavily irrigated crop.	
81	The levy of any water charge is not recommended for the irrigation of 'Mundlavari' crop.	XIII-2-21
82	(i) Betel-vines, plantains, turmeric, elephant-yam, coconut and other crops requiring water for more than six months, should be treated as dofasal crops and charged at one and a half times the charge for the first heavily irrigated crop.  (ii) Crops like casuarina bamboos and other timber and fuel plantations, if watered for more than six months, the charge should continue to be three-fourths of the water charge. If they are watered for less than six months, the charge should continue to be at half the water charge.	XIII-2-22
83	(i) As regards baling remissions, there should be a distinction depending on the height of the lift. One-fourth baling remission should be granted for a single lift of six feet and below and half baling remission for a lift of above six feet for both heavy and light irrigation, without fixing any maximum limit per acre.  (ii) There should be no further registry of lands as 'motasthal' or 'baling wet' and under doruvu and desabandham wells.	XIII-2-23



<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
84	The existing rates for irrigation under drains in the Krishna and Godavari deltas may be continued, but an investigation is necessary whether the water contains injurious salts detrimental to the growth of the crop, in which case a substantial concession would be justified.	XIII-2-24
85	The lands under pumping installations do not enjoy the same advantage and benefit as by direct flow from the source and they should be charged at one-third of the appropriate water charges given in the table.	XIII-2-25
86	Charging the ryot for water supplied for irrigation, on a volumetric basis is not a practical proposition in this State, at present.	XIII-3-4
87	(i) There is an urgent need to stop further indiscriminate expansion of ayacuts, specially under rainfed tanks, unless a detailed investigation of the hydraulic particulars justifies such an expansion or until special improvements to increase the capacity of the tanks are effected.  (ii) Adequate penalties should be imposed if extension of ayacut is objectionable.  (iii) If there is surplus water in any particular year temporary permission may be given for irrigation.	XIII-4-4
88	Storage tanks and other similar sources must be made as deep as possible or evaporation prevented to avoid injury to crops on account of the presence of salts, in solution, in large quantities.	XIII-4-5
89	It is not possible to make any distinction between the water received directly from the river or anicut and water from a reser-	XIII-4-8

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the Report.*

voir, as it will be difficult to assess the quantum and quality of silt carried and the exact amount of benefit it confers on the crop.

- 90 The proximity of the land to the source and sluice need not be taken into consideration in assessing water charge as it would lead to complications in the matter of distribution of water. XIII-5-5

- 91 (i) Water rates should be levied on the following scales on lands requiring extensive reclamation for raising irrigated crops. XIII-6-5

Year	Red soils	Black soils
First year ... ..	Nil	Nil
Second year ... ..	$\frac{1}{4}$	Nil
Third year ... ..	$\frac{1}{2}$	Nil
Fourth year ... ..	$\frac{3}{4}$	$\frac{1}{4}$
Fifth year ... ..	Full	$\frac{1}{2}$
Sixth year ... ..	...	Full

(ii) The above concessions should be adopted from the time when the water is made available to the ryot at his field and not from the year when the dam is completed and water is let into the main canals.

(iii) With the above modification, the proposals submitted by the Board of Revenue for the integration of laws relating to the levy of compulsory water cess, in force in Andhra and Telangana, are recommended.

- 92 (i) The provision of adequate drainage facilities is just as important as the problem of providing irrigation and should be tackled by the Government with equal zeal. XIII-7-4

(ii) The drainage works may be taken up as land improvement works and the cost, partly recovered from the beneficiaries, the Gov-

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
	ernment paying only a portion of the cost. There are always indirect revenues flowing from increased production and these would justify the State's contribution, in part.	
93	The liberalization of the procedure for obtaining permission, for the construction of private kuntas will tend to increase food production.	XIII-8-2
	(i) Prior permission of the Collector is necessary for the construction of a private tank.	
	(ii) Water must be for the grantees' own use.	
	(iii) Submerged area and ayacut must belong to the same person.	
	(iv) The irrigated extent should not exceed fifteen acres.	
	(v) Collectors should examine the question whether the interests of others are materially affected before granting permission.	
	(vi) Bunds put up to intercept merely the surface flow, for providing irrigation for lands below should not be charged, if the area irrigated is below three acres and no permission is necessary for putting up a bund. The quantity of water that will be intercepted by the bunds will not be much and in all probability would be lost by evaporation and percolation, if it is not intercepted.	
	(vii) Dry assessment should be levied for the area occupied by the bund and the submerged area.	
	(viii) Only dry assessment should be charged on the area irrigated in each of the above cases.	

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
	(ix) The above recommendations would not apply to the cases of permission already granted. But the concession regarding assessment will apply unless payment of assessment is one of the conditions under which permission was granted.	
94	(i) Dry assessment plus appropriate water rate should be charged for lands in Andhra which are now charged under B.S.O. No. 6 (5) and for lands in Telangana which are now charged under Rules 37 (1) (a), 37 (1) (b) and 37 (1) (c) and 2 of the Hyderabad Land Revenue Rules.  (ii) No distinction need be made between the wells in the ayacut and those outside it and it will be reasonable, if the appropriate dry assessment alone and not water charge is collected for such irrigation.  (iii) No separate class need be assigned to the poramboke wells and no charge need be made for irrigation under these wells situated in poramboke lands and constructed even after 20th August 1884.	XIII-9-4
95	All wells in the ayacut of Government irrigation sources in Telangana should be treated as private wells just as it is done in the case of wells outside the ayacut and all concessions applicable to the latter should be extended for these wells also. No highest dry assessment need be charged in such cases.	XIII-9-5
96	The provisions in Rule 67 (1) and (2) of the Hyderabad Land Revenue Rules should apply to the entire State.	XIII-9-6
97	(i) If a heavily irrigated crop is raised successfully by percolation and without a well, there should be a charge for water as though	XIII-10-6

*Serial No.**Recommendation.**Reference to  
the Chapter  
and Para in  
the Report.*

the irrigation is from a regular source. The irrigation of dry crops by percolation should not be charged.

(ii) If a dry land is irrigated by a well situated in private land which receives supply by percolation, such irrigation should not be charged as it is very difficult to estimate the quantum of percolation from the canal or tank and from the natural springs.

(iii) No well should be allowed to be excavated within the boundary of the canal or tank bund and where this is not demarcated within twenty-five feet of the outer toe of such bund.

- 98 (i) It will be appropriate, if river channels and parrekalwas or river spring channels are included under Class III of the table of water rates and that Sonas, Bilas, Kasams, Uppalavatbonda and spring channels which consist of sub-artesian spring ponds are included in Class IV of the table. XIII-11-7
- (ii) The open mouth river channels which involve some contribution by ryots by way of labour to divert water by forming Korombo, should be charged half of the water rates proposed under Class III of the sources and the parrekalwas or river spring channels which require constant labour to maintain regular flow should be charged one-third of the water rates proposed under the same class.
- 99 (i) All minor irrigation tanks should be adequately repaired and restored. XIII-12-8
- (ii) Further extension of ayacuts under irrigation sources should be stopped unless the capacity of the tank is increased by special repairs or unless the existing capacity itself warrants such an extension;

*Serial No.**Recommendation.**Reference to  
the Chapter  
and Para in  
the Report.*

(iii) Instead of converting the lands, for which water cannot be supplied for raising paddy, into dry, the ayacut can be split up, whenever possible into B class and C class dry lands after giving notice of the proposal to the owners and hearing their objections;

(iv) Whenever ayacuts are fixed either after the construction of a new tank or the completion of repairs to an old tank, the area should be localized, and properly demarcated so as to avoid haphazard development and future trouble.

100 It will be expedient that tanks with an ayacut of 50 acres or below but not forming part of a chain of tanks might be transferred to the control of irrigation panchayats, which should consist of the ayacutdars of the source, as its members, subject to the payment of 75 per cent of the total of dry assessments and water charges on lands already included in the ayacut of the said source subject to the following further conditions:—

XIII-13-5

(i) that Public Works Department should bring up the tanks to the required standards before handing them over to the panchayats;

(ii) that the capacity of the tank should not be increased. (Standards should not be interfered with);

(iii) that dry lands in the periphery of the ayacut of the tank could be irrigated with tank water only at the risk and hazard of the ayacutdars;

(iv) that dry assessments should continue to be paid on all dry lands irrigated with tank water; and

(v) that no remission would be granted for failure of crops, for reasons which are not

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
	beyond the control of the ryots except in the case of wide spread drought affecting the tract as a whole.	
101	The normal repairs to small irrigation sources with an ayacut of 50 acres or less but not forming, a part of a chain of tanks may be entrusted to Irrigation Panchayats consisting of ayacutdars of those sources as these works do not generally require any technical skill and the Public Works Department or the Minor Irrigation staff can render such technical help as is found necessary, free of any charge.	XIII-13-8
102	(i) Irrigation by direct pumping from rivers and streams may be permitted liberally with the previous sanction of the Collectors who may obtain, if necessary, technical advice.	XIII-14-3
	(ii) A small licence fee at the rate of one rupee per horse power of the engine per annum may be levied to preserve the right of the Government to the water.	
	(iii) In all other cases, where power is not utilized for lifting, Government may fix a nominal licence fee.	
	(iv) Irrigation by direct pumping from irrigation canals should not be permitted except when there is obvious surplus and the area so irrigated should be charged at one-third of the normal water rate and also subject to the condition that the rights of the registered ayacutdars are not affected. For this purpose, any other person who had obtained prior permission for pumping in similar manner will not be considered to be an ayacutdar.	

*Serial No.**Recommendation.**Reference to  
the Chapter  
and Para in  
the Report.*

Till now no clear cut distinction has been made between irregular irrigation and unauthorized irrigation. A clear cut distinction has to be made as indicated below:—

- 103 (i) The term 'Irregular irrigation', has to cover all cases of water taken or used for any land in a manner involving some unauthorized interference with an irrigation or drainage work, such as cross bunding a channel, making a cut or hole in the bund, opening or breaking a sluice, changing a pipe or altering the position of a pipe. XIII-15-6
- (ii) The term unauthorized irrigation should be applicable to cases of water taken or used for any land contrary to the orders of any authority competent to give such orders.
- (iii) First, a warning should be given to the ryots that heavy penalties would be imposed if a ryot takes water without permission.
- (iv) Where there is a breach caused as a result of flood or other natural causes, it should be reported to the authorities by the ryots concerned. If no such report is made within a reasonable time, it should be presumed that it has been caused by the ryots who irrigate their lands by means of water through the breach and all irrigation under it should be heavily penalized. Steps should be taken to legislate to this effect
- 104 The following schedule should be adopted for the levy of penal water charge which includes the charge for water also for irregular and unauthorized irrigation from the Government source of work. XIII-15-7



Number of occasion	FOR	
	Irregular irrigation	Unauthorised irrigation
(i) On the first occasion . .	Three times the water charge.	Three times the water charge.
(ii) On the second occasion	Six times the water charge.	Six times the water charge.
(iii) On the third occasion . .	Twelve times the water charge.	Twelve times the water charge.
(iv) On the fourth or any subsequent occasion.	Twenty times the water charge.	Twenty times the water charge.
	<i>Note.</i> —The officer levying the penal water charge for irregular irrigation has no discretion to remit any portion of it.	<i>Note.</i> —The Officer levying the penal water charge may, at his discretion, remit any portion of the enhanced water cess in deserving cases to not less than one rate.

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
105	In the case of rainfed tanks in the project areas, each case should be decided on its merits, whether they should be breached or retained, due weight being given to the views of the ayacutdars and also the ryots in the foreshore who may be affected adversely. In case of abandonment, the bed will have to be assigned for cultivation. If retained, the water charge for lands under it must be upgraded to that under the project.	XIII-16-3
106	Problems relating to supply of water and continuous improvement of the cropping-pattern should engage the attention of the Irrigation Development Board.	XIII-17-3
107	For a given quantity of water, more food can be produced through light irrigated dry crops rather than by paddy. This must be	XIII-17-4

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
	kept in view and suitable cropping-pattern evolved for each area.	
108	A cropping-pattern, similar to the one evolved for the Tungabhadra Project, will be necessary for the Nagarjunasagar Project also, under which there will be heavy and light irrigation zones.	XIII-17-5
109	The Agricultural Department should study and find solutions to the problems of the ryots in areas which are saline or are difficult to work.	XIII-18-3
110	The revision of the schedules of water rates to be levied on red and black soils spread over a period of 5 and 6 years respectively has been recommended, from the time the water is made available to the ryot at his field, when effective potential is said to have been created and not from the time when the head-works are completed and water is let into the main canals. The creation of such effective potential and the provision of concession spread over a period of 5 to 6 years will accelerate the development of the ayacut.	XIII-18-4
111	It is not desirable to transfer the maintenance of distributaries to the ayacutdars, just at present. The maintenance of minor distributaries supplying water to small blocks of 150 to 200 acres, may be handed over to the ryots in the ayacut if there are responsible people who can co-operate with each other.	XIII-19-3
112	(i) There should be uniformity in the levy of water charge within our State and the charging of rates should be in accordance with the table recommended by us.  (ii) It is not possible to have parity or uniformity in the levy of water charge on	XIII-20-4

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
	sources in other States irrigating lands in this State and <i>vice versa</i> .	
113	Instead of having a separate Act like the Madras Tank Improvement Act (XIX of 1949) the Act for levy of betterment contribution should be amended suitably by making it applicable to irrigation sources falling under Classes I to IV in the table of water rates.	XIII-21-5
114	The provision in the Hyderabad Act allowing a rebate of 10 per cent, if the full amount is paid within six months from the date of determination of the amount of contribution, should be incorporated in the integrated Act as proposed by the Board of Revenue.	XIII-21-7
115	The provisions in section 26-A of the Hyderabad Tenancy Act should be incorporated in the integrated Act permitting the person interested to pay the betterment contribution and to recover the same from the tenant as proposed by the Board of Revenue.	XIII-21-8
116	The drainage improvements should be considered under Land Improvement Schemes as it would be very difficult to evaluate the improvement brought about by new drainage work and the provision relating to drainage works in section 2 (6) (b) of the Andhra Act may be deleted.	XIII-21-9
117	(i) Any improvement to sources falling under Classes I, II, III and IV, in the table of water rates which will increase the value of the lands, should come under the purview of the Act and Rules relating to the levy of betterment contribution, instead of having a rigid floor of rupees one lakh for the cost of the work, for levying the contribution.	XIII-21-10

*Serial No.**Recommendation.**Reference to  
the Chapter  
and Para in  
the Report.*

(ii) When a land holder surrenders half the extent of the holding commanded by the source, he should be free from any further liability to pay on account of betterment contribution. The land that a ryot surrenders should be just as valuable, as the land he retains. The land surrendered should be, as far as possible, in compact block. There may not be many offers of this kind but there may be a few special cases. As the choice is going to be left to the ryot, the ryot who makes the offer can judge for himself and decide whether he can accept this arrangement.

(iii) Principles which are applied for the levy of betterment contribution should also be applied for fixing the inclusion fee on lands newly included in the ayacut of old irrigation works. If any particular area has been under irrigation, without penalty being levied, continuously for more than five years, before the passing of the Act, no betterment contribution or inclusion fee should be levied.

(iv) Inclusion fee should be charged only for lands under sources of Class III and above, as described in the table of irrigation sources and grades of soils. The cost of the project should not be taken into consideration for the levy of inclusion fee in the case of old works but only the class of the sources should be taken into consideration.

118 The repairs to Minor Irrigation Works should be attended to efficiently and promptly. The Government have transferred tanks with an ayacut of 100 acres and less in Telangana to the Revenue Department recently. The results may be watched and changes effected as and when necessary.

XIII-22-2

<i>Serial No.</i>	<i>Recommendation</i>	<i>Reference to the Chapter and Para in the Report.</i>
119	There is no point in extending the provisions of the Madras Irrigation (Voluntary Cess) Act, 1942 to Telangana unless they have been found in actual working to be feasible and beneficial. In the absence of information from the Board and Collectors on these points, it is not possible to give an opinion. It is, therefore, appropriate to leave the matter to the Board of Revenue to examine it and report to the Government on the need to extend the Act to the Telangana region.	XIII-23-2
120	The classification of soils already adopted in Andhra and Telangana is good enough for fixing assessments and the revision of the classification of soils is not now necessary.	XIV-1
121	It is not possible now to get a correct idea of the yield for each class and sort of land without conducting elaborate crop-cutting experiments, in different kinds of soils. The cost of such a process will be prohibitive. The present policy of the Government is not to have any resettlements. In view of this also a re-estimation of yields is not necessary.	XIV-2
122	There is an absolute necessity for an initial survey of the entire Telangana region on the lines followed in the Andhra region and of the area not recently surveyed by the Government in the estates of Andhra region after abolition of the zamindari system, to bring revenue registry and enjoyment up-to-date and to accelerate the localization and development of the ayacuts under new projects.	XIV-4
123	(i) If there is a duty cast on the karnam, to get sub-division measured before sale deeds are registered and if the Sub-Registrars	XIV-20

*Serial No.**Recommendation.**Reference to  
the Chapter  
and Para in  
the Report.*

also insist on the production of the relevant sub-division records before the registration of the deed of transfer is effected, the present state of affairs will be remedied to a large extent.

(ii) Changes in possession must be intimated through a written document and a copy of the same must be filed with the karnam, within a prescribed period, and any failure to do so must be penalized, under a Statute.

(iii) Whenever a karnam observes that a person not registered as an occupant in his account or not entitled to possession, is in possession of any land, he should report the fact to the Tahsildar who should get the matter enquired into.

124 (i) The Revenue Inspectors may be empowered to order transfer of registry.

XIV-21

(ii) The Revenue Inspectors can also get the portions sold sub-divided and incorporate the changes in the records after the sub-division record is scrutinized by the technical staff, which is available at the rate of one Taluk Surveyor at each Taluk headquarters. Such changes should also be entered in the Pass Book of the ryots.

(iii) The Revenue Inspectors should be asked to verify the enjoyment during the revenue collections and pass orders then and there.

(iv) The files relating to each case, in which the Revenue Inspector passes orders transferring the registry, may be sent to the Tahsildar for scrutiny and filing. The Tahsildar could interfere and modify or revise any order passed by a Revenue Inspector

<i>Serial No.</i>	<i>Recommendation.</i>	<i>Reference to the Chapter and Para in the Report.</i>
	either <i>suo-motu</i> or on an appeal, after giving due notice to the parties concerned.	
125	It is necessary to bring all the orders passed in Revenue administration on a statutory basis as it is the procedure in all other States except Madras (composite) and the position that the pattadar is the owner of the land subject to the conditions and terms in the patta, should be recognized.	XIV-22

K. N. ANANTA RAMAN,  
*Chairman.*

D. BASAVA RAJU,  
*Secretary.*

H. SITARAMA REDDY,  
C. VIVEKANANDA MURTY,  
D. V. RAO,  
J. RAGHOTHAM REDDY,  
*Members.*

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\* Supplemental note signed and given by the members, Sri J. Raghatham Reddy, Sri H. Sitarama Reddy and Sri D. V. Rao on 26th January 1959 is appended.

**REPORT**  
**OF THE**  
**LAND REVENUE REFORMS COMMITTEE**  
**PART II—Volume (iv)**



## APPENDICES

### APPENDIX 1.

(Vide paragraph 1 of the report.)

Copy of G.O. Ms. No. 2417 (Revenue Department), dated 23rd December, 1957

*Subject* :—Land Revenue—Examination of Land Revenue assessments and Irrigation charges—constitution of committee—ordered.

#### ORDER :

There are wide disparities in the pitch of land revenue assessments and irrigation rates in the different regions of the State. These have arisen partly due to the adoption of different methods of levy in different tracts at different times. The Government have, therefore, decided to appoint a Committee to examine the existing systems and rates of land revenue assessments and irrigation charges obtaining in the various regions of the State and to make suitable recommendations for their rationalization. They accordingly set up the following Committee :—

#### *Chairman :*

Sri K. N. Anantharaman, I.C.S.,

#### *Members :*

1. Sri. H. Sitarama Reddy, Halaharvi—Alur taluk, Kurnool district.
  2. Sri. C. Vivekanandamurthy, Retired Chairman, Andhra Pradesh Public Service Commission, Kakinada.
  3. Sri D. V. Rao, B.Sc. (London), M.I.E., Retired Chief Engineer, Hyderabad.
  4. Sri J. Raghotham Reddy, Hyderabad.
2. Sri K. N. Anantharaman, I.C.S., will be in whole time charge of the duties of the Chairman of the Committee.
  3. Sri D. Basavaraju, I.A.S., will act as Secretary of the Committee.
  4. The Committee is requested :
    - (1) to examine the principles and methods of levy of land revenue assessments followed in the various regions of the State and make recommendations for their rationalization ;
    - (2) to examine the rates of assessment levied in respect of different classes of land in the various regions of the State and to make suggestions for their revision, in the light of its recommendations under item (1) above, with a view to reduce inequities in their incidence ;
    - (3) to take account of the principles and methods followed in the various regions of the State in regard to the levy of charges for irrigation of lands under various sources of irrigation and make recommendations for their rationalization ;

(4) to examine the rates of irrigation charges levied in respect of various classes of crops under different sources of irrigation in the various regions of the State and to make suggestions for their revision, in the light of its recommendations under item (3) above ;

(5) to examine all other matters incidental to the levy of land revenue assessment and irrigation charges and make appropriate recommendations thereon.

5. The Committee is requested to submit its report within one year.

6. The Committee will have its headquarters at Hyderabad but may undertake tours throughout the State of Andhra Pradesh. The Committee shall be treated for the purposes of T.A. as a First Class Committee. The Secretary of the Committee will be the Controlling Officer for the purpose of signing the T.A. Bills of the Members of the Committee.

7. The expenditure should be debited to "25. General Administration—J. Civil Secretariat—C. Revenue Secretariat".

8. The Board of Revenue and all the Collectors are requested to furnish to the Committee any material the committee may require from time to time in connection with the preparation of their report.

↓  
M. T. RAJU,  
*Secretary to Government.*

Copy of G.O. Ms. No. 2386, dated the 29th December, 1958.

*Subject* :—Land Revenue Reforms Committee—Committee and Establishment—Continuance—Sanctioned.

*Reference* :—G.O. Ms. No. 2417, Revenue, dated 23-12-1957.

**ORDER :**

In Paragraph 5 of the G. O. first read above, the Land Revenue Reforms Committee was requested to submit its report within one year. In partial modification of these orders, the Committee is now requested to submit its report by the end of January, 1959.

RAM LAL,  
*Secretary to Government.*

## APPENDIX 2.

## Questionnaire of the

## Land Revenue Reforms Committee, Andhra Pradesh.

*Chairman* : Sri K. N. Anantharaman, I.C.S.

- Members* :
1. Sri H. Sitarama Reddy, Former Revenue Minister of Composite Madras State, Halaharvi, Alur Taluq, Kurnool District.
  2. Sri D. V. Rao, B.Sc. (Lond.), M.I.E., Retired Chief Engineer, (P.W.D.), Hyderabad.
  3. Sri C. Vivekananda Murthy, I.A.S. (Retd.), Retired Chairman, Andhra Pradesh Public Service Commission, Kakinada.
  4. Sri J. Raghotham Reddy, Vice-President, Hyderabad Farmers' Union, Hyderabad.

*Secretary* : Sri D. Basava Raju, I.A.S.

As there are wide disparities in the pitch of Land Revenue assessments and irrigation charges in the different regions of the State, which have arisen partly due to the adoption of different methods of levy in different tracts and at different times, the Government in G.O. Ms. No. 2417, Revenue, dated 23-12-1957 appointed a Committee to examine the existing systems and rates of land revenue assessments and irrigation charges obtaining in the various regions of the State and to make suitable recommendations for their rationalisation.

In the terms of reference the Committee has been requested—

(1) to examine the principles and methods of levy of land revenue assessments followed in the various regions of the State and make recommendations for their rationalisation ;

(2) to examine the rates of assessment levied in respect of different classes of land in the various regions of the State and to make suggestions for their revision, in the light of its recommendations under item (1) above, with a view to reduce inequities in their incidence ;

(3) to take account of the principles and methods followed in the various regions of the State in regard to the levy of charges for irrigation of lands under various sources of irrigation and make recommendations for their rationalisation ;

(4) to examine the rates of irrigation charges levied in respect of various classes of crops under different sources of irrigation in the various regions of the State and to make suggestions for their revision, in the light of its recommendations under item (3) above ; and

(5) to examine all other matters incidental to the levy of land revenue assessment and irrigation charges and make appropriate recommendations thereon.

After examining the systems of settlement, in force, in both the regions of the State and also ascertaining the current problems relating to land tenures, irrigation and agriculture, by touring in two typical districts in each of the two regions of the State, the Committee issues the following questionnaire for eliciting all the information relevant to the enquiry. The questionnaire is published for the information of the public. All persons, institutions and associations interested in

evolving a rationalised system suitable for both the regions, for the levy of land revenue assessments and charges for irrigation, are requested to answer the questions, in the questionnaire, and to send it to the Secretary of the Committee, as early as possible and *not later than 15-6-1958*. The Persons, Associations and Institutions interested are requested to answer as many of the questions as possible and also express opinions in the form of a note in respect of points not mentioned in the questionnaire but which, they consider, have a bearing on the matters covered by the terms of reference.

The Committee looks forward to the public with confidence, for their valuable suggestions to solve the problems referred to the Committee.

Copies of the questionnaire may be obtained on application from the Secretary or the Collector of the district.

D. BASAVA RAJU,  
*Secretary.*

Name:

Profession:

Full address of the person, etc.,:

PART I

DETAILS OF THE PERSONAL HOLDING

**Q. No. 1.**—Do you hold land as a Pattadar, Inamdar or Landholder as defined in the Estates Land Act, 1908 or otherwise in the Andhra Area and Pattadar, Bilmaqtadar, Hissedar, Shikmidar, Protected Tenant or Tenant or otherwise in the Telangana area ?

**Q. No. 2.**—Please give information as per the following *pro forma* in respect of your lands :

Name of the village, taluq and district.	Ryotwari, Zamindari, private land of a landholder or inam estate.	Survey number or number and subdivision.	Extent.		Wet (with name and nature of irrigation source, whether it is a rainfed tank, a riverfed channel or tank) Dry/Garden/Manavari or Asmani Thari.	Class and sort, in Andhra and alluvial, black, cotton or red chalka soils in Telangana region.	Rate of assessment per acre.	Details of assessment, water rate, land cess, etc., paid.
			Acres	Cents or guntas.				
(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)

Crops usually grown in each survey number or sub-division, including the catch crops and green manure crop raised.	Details of the years in which remissions were granted of— (1) Assessment and (2) Water rate with reasons.	No. of wells or private tanks in each survey number or sub-division and the means adopted to lift water for irrigation by picottah, yetham, mota or engine worked by diesel oil or electricity.	No. of cattle owned with costs— (a) work animals (b) milch cattle (c) sheep, and (d) goats.	No. of permanent farm servants with details of pay in cash and kind, etc.	Remarks.
(9)	(10)	(11)	(12)	(13)	(14)

**Q. No. 3.**—If the lands are situated in an estate or jagir, abolished and taken over by the Government, the details of the rents paid to the landholder, inamdar or jagirdar on each holding or subdivision may be given along with the reduced rents paid to the Government after the abolition of the estates or jagirs. If settlement rates have since been introduced, please state the total assessment fixed for your holding ?

**Q. No. 4.**—Are your lands irrigated for growing single or double wet crops ? Are they charged consolidated wet assessment or dry assessment and water rate, separately ? What are the rates of water-cess or fashijasti levied ?

**Q. No. 5.**—(a) What is the market value of different types of agricultural lands in your area ?

(b) Can the values stated in registered sale deeds be taken as correct ?

(c) If not how could correct values be determined ?

## PART II

### COSTS OF CULTIVATION AND ECONOMICS OF FARMING

**Q. No. 1.**—What are the single wet, double (dofasal) wet crops, irrigated dry crops, garden crops (Baghat), catch crops and manure crops which you grow in your lands ?

**Q. No. 2.**—What are the rotations of crops followed in your area for :

(a) Wet lands,

(b) Alluvial Soils,

(c) Black Cotton Soils,

(d) Red Chalka,

(e) Land irrigated under wells by lift irrigation,

(f) Land under light irrigation (by gravitational flow),

(g) Lands irrigated under spring channels.

*NOTE.*—Please state with reference to each type of land situated in your area whether it is 2, 3, 4 or 5 year-rotation. If rotation on your land is different from the standard rotation in the area, please give the rotation you follow and state reasons for the deviation.



**Q. No. 3.**—Please give details of the cost of cultivation, land revenue assessment, water-rate, land cess and tax paid under :

(1) The Andhra Pradesh Commercial Crops (Assessment) Act, 1957,

(2) The Andhra Pradesh Land Revenue (Surcharge) Act, 1957,

(3) The Andhra Land Revenue (Additional Wet Assessment) (Andhra Pradesh Amendment) Act, 1957, and

(4) The Andhra Land Revenue Assessment (Standardisation) Act, 1956, separately and yields in respect of the best and average crop (the following form may be used) giving values of yields at the prevailing market prices. The yields themselves may be given in terms of Imperial maunds and seers of 80 tolas :

*NOTE.—One form may be filled up for each crop grown by the individual or the institution answering the questionnaire.*

*Please also give the statement of cost of cultivation for fodder crops, green manure crops, catch crops and mixed crops. Please include the value of the manual labour contributed by the members of the family at current rates.*

*Cost of labour may be stated as per rates at which it is actually paid. The unit for preparing the statement may be taken at the discretion of the cultivator as one acre or the area actually sown of each crop.*

*(In each one of the operations please state whether the operations are done by permanently employed labour or labour engaged on daily wages or on piece work basis).*

	In kind with the cash value noted below.	In cash.	Total.	Re- marks.
(1)	(2)	(3)	(4)	(5)
<p>(a) Preparatory cultivation: Ploughing.</p> <p>(b) Sowing: Seed rate, dibbling, drilling, broadcasting or transplanting. (In case of transplanting give separate figures for nursery).</p> <p>(c) Weeding : Please mention the estimated cost of animal power and manual labour separately giving the number of men engaged with rates of wages. In case labour is paid on piece-work basis, please mention the conditions.</p> <p>(d) Manuring: Cattle manure, compost, sheep penning, carting of silt, appli- cation of green leaf, growing of green manure <i>in situ</i> or appli- cation of fertilisers both as basic dose or as top dressing. (Please give cost, time and method of each application.)</p> <p>(e) Irrigation: Method (whether by gravitation- al flow from a Government sour- ce or from a well by means of a lift).  (Please give irrigation rate in the former case and cost of lifting water in the latter case).</p> <p>(f) After care: The distribution of water, scar- ing away birds and watching.</p>				

	In kind with the cash value noted below.	In cash.	Total.	Re- marks.
(1)	(2)	(3)	(4)	(5)
<p>(g) Plant protection :</p> <p>Mention the various insect pests or diseases that affected the crop. State the cost of protection measures you have adopted. What is the estimated damage caused in spite of the protective measures ?</p> <p>(h) Harvesting : Methods and the cost.</p> <p>(i) Threshing: Methods: Hand-threshing or by means of cattle. Cost of the same, and</p> <p>(j) Transporting to the farm storage.</p> <p>2. (a) Total yield of crop in Imperial maunds and seers and its cash value.</p> <p>(b) Total cash value of subsidiary produce like straw.</p>				

**Q. No. 4.**—What are the prevailing rates for casual labour (male and female) for ploughing, transplanting, weeding, harvesting and threshing, etc., and piece-work rates for operations such as transplanting, weeding, “earthing up sugarcane”, harvesting, threshing of different crops and stacking straw or stalks, etc. ?

**Q. No. 5.**—What is the usual pay for farm servants who are employed on an annual basis ?

**NOTE.**—Pay (1) with food and (2) without food may also be stated.

**Q. No. 6.**—Are there any special problems with regard to recruitment and availability of (a) casual labour (b) annual labour ?

**Q. No. 7.**—What is the cost of a pair of bullocks in your area ? Give the cost of maintaining them and the average period for which they serve ?

**Q. No. 8.**—(a) What are the agricultural implements that are needed for cultivation in your area ?

(b) What is the cost of the implements and their normal life ?

**Q. No. 9.**—(a) What are different methods of lifting or baling water for irrigation, in use, in your area ?

(b) what is the cost of lifting or baling water per acre of wet and irrigated dry crops ?

(c) What is the concession or ‘baling-remission’ allowed for lifting water in your area ?

(d) Do you consider that the concession is adequate or do you suggest any modification ?

**Q. No. 10.**—Are any of your lands irrigated under a channel by cross-bunding and turn system ?

If so, what is the procedure adopted in raising the bunds or in removing them ?

What is the average cost per acre in raising and removing the bunds ?

**Q. No. 11.**—What is the average cost per acre, of labour engaged or contributed for the excavation of spring channels in river beds ?

### PART III

#### PRINCIPLES OF LAND REVENUE ASSESSMENT

**Q. No. 1.**—What do you consider to be the appropriate basis for fixing the land revenue assessment ?

- (a) Gross produce from the land, or
- (b) Net produce from the land.

**Q. No. 2.**—If you consider that gross yield should be the basis—what percentage of the gross yield would you consider to be proper share of the State.

**Q. No. 3.**—If you consider that net yield should be the basis, what are the items that should be deducted from the gross yield to arrive at the net yield and what percentage of such net yield would you consider to be a proper share of the State ?

**Q. No. 4.**—Do you consider that the percentage should be different for wet and dry land, in view of the inherent differences in the returns ?

**Q. No. 5.**—The procedure followed during settlements is to take the average price of standard foodgrains, in the area, of the past twenty non-famine years, immediately preceding the settlement, as the basis. Do you agree that the same procedure might be continued or whether it should be modified ?

If it is to be altered, what modification would you suggest and why ?

**Q. No. 6.**—Commercial crops are now grown extensively due to the attractive returns. During the past settlements, the commutation prices of commercial crops were not taken into account

Do you consider that they should be taken into account for levying land revenue assessment ?

If so, can it not continue to be levied as a special assessment, as at present ? What are your views on the Andhra Pradesh Commercial Crops (Assessment) Act, 1957 ?

**Q. No. 7.**—(a) Would you link up assessment of land revenue with the price level of important food crops or commercial crops ?

(b) If you agree, do you consider that it should be linked up with the prices of the year immediately preceding the one on which the assessment has to be paid or with the average of prices over a period of three, five or ten years ?

**Q. No. 8.**—What would you consider to be a reasonable margin for a fall or rise in prices of the foodgrains which might require a remission of assessment or enhancement of assessment—e.g., 12½ per cent for a fall or 25 per cent for a rise in prices ?

*NOTE.—The margin should be sufficiently wide to prevent frequent changes in demand due to minor fluctuations in prices.*

**Q. No. 9.**—What do you consider should be a reasonable enhancement in the assessment, if the prices rise by 25 per cent expressed in Naye Paise for every Rupee of assessment ?

**Q. No. 10.**—Do you consider that enhancement due to rise in prices should not be worked out at the same rate as remission due to fall in prices ?

*NOTE.—If it is considered that there should be a remission of Re. 0-4-0 when the prices fall by 25 per cent should increase for a rise of 25 per cent of the prices above the reasonable rate be less than 25 per cent, say 12½ per cent ?*

**Q. No. 11.**—What do you consider should be a reasonable remission, if the price of the standard foodgrains fall below the commutation rates adopted in settlements by 25 per cent ?

**Q. No. 12.**—Should there be a consolidated wet assessment on land or should there be an appropriate dry rate depending on the fertility of the soil and other factors and separate appropriate water charge for the use of water ?

**Q. No. 13.**—(a) According to the local theories and experience, what are the cycles of

(a) good

(b) drought and

(c) famine years in

periods of 60, 30, 10 or 5 years ?

(b) Are these cycles, the same for dry crops also ? If not please give details.

**Q. No. 14.**—(a) Do you consider that there is any portion of your village, taluk or tract or district, under-assessed ?

If so, give your reasons in support of your opinion and also please state by what percentage the assessment could be raised so as not to be a burden on the ryot impeding him from carrying on with his avocation efficiently ?

(b) Do you consider, similarly, that there are any areas over-assessed ?

If so please specify them and give reasons in support of your opinion.

Also state by what percentage the assessment should be reduced.

**Q. No. 15.**—What are your views on the graded surcharge levied on land revenue assessment ?

#### PART IV

#### IRRIGATION CHARGES AND ALLIED MATTERS

**Q. No. 1.**—What should be the appropriate basis for levying charges for irrigation from projects, major tanks, minor tanks, doruvu wells, springs and open mouth channels from minor rivers ?

**Q. No. 2.**—In order to economise the use of water for irrigation and to avoid wastage, do you consider that the levy of water charge on the basis of the quantity of water used, would be appropriate ?

**Q. No. 3.**—What relative importance should be given to the duration of the supply of water and the nature of the water (river water, laden with silt, or water from reservoir, poor in silt) in fixing water charges ?

**Q. No. 4.**—(a) Do you consider that different rates should be charged for irrigation of lands near the sluices where the supply could be expected to be adequate and timely—and for irrigation of lands further away where the supply could not be expected to be either so timely or adequate, by suitably reducing the class of irrigation sources ?

(b) Do you similarly consider that if the supply of water is from a channel taking off just above the lock, the source could be assigned a superior classification over that of the channel taking off below it, if both the channels supply neighbouring lands which are more or less of the same level ?

**Q. No. 5.**—It is an accepted fact that irrigation confers different degrees of benefit in the shape of increased yield on different types of soils even though the quality and quantity of water supplied are the same. In computing the water-rates for these lands, should not the different degrees of benefit derived be taken into consideration ?

**Q. No. 6.**—Should there be any concession in fixing the charges for irrigation for lands which require extensive reclamation for conversion to wet ?

If so, for what period should such concession be extended and how it should taper off ?

**Q. No. 7.**—What are the difficulties, if any, experienced by you—

(a) in getting timely and adequate supply of water for irrigation ; and



(b) due to inadequate drainage facilities ?

What are your suggestions to remedy them to improve the yields ?

**Q. No. 8.**—Wherever it is established that early supplies of irrigation water result in higher yields, do you suggest that time of supply should be one of the factors governing the quantum of irrigation charge ?

**Q. No. 9.**—Do you think that supply of irrigation water is a service for which a levy commensurate with the benefit, it is expected to confer, has to be levied irrespective of what it costs the Government in any given area ?

**Q. No. 10.**—Where sowing of paddy is practised under well-irrigation and the ryot raises small bund to impound rain water to help his crop, do you think water rate or wet assessment should be levied ?

Is it not fair that a small area of say 1, 2 or 5 acres served by such source should be exempted and only beyond it, a tax levied ?

Do you think that such impounding of water is sometimes necessary for preventing soil erosion ?

**Q. No. 11.**—Irrigation under spring channels is possible only if ryots contribute labour constantly, for removing silt. Do you think that the usual wet assessment should be collected in those cases and if not, what concession would be suitable ?

To what extent can be recurring labour of the ryot be saved, in such cases, by the Government undertaking the construction of a dam with shutters in suitable cases ?

Are there any conventions observed in your area to see that the ayacut does not unduly expand beyond the irrigating capacity of the source ?

**Q. No. 12.**—In the case of rain-fed tanks, big or small, would you not consider that a limit should be fixed for the ayacut, based on the recommendations of the Public Works Department ?

In cases where the area irrigated is too large and there are constant failures of crops due to inadequate supply and ryots had to construct wells, what concession in wet assessment or water-rate would you consider suitable ?

**Q. No. 13.**—Where there are kuntas or minor irrigation tanks irrigating not more than 10 acres, 20 acres or 30 acres, do you think handing them over to an Irrigation Panchayat (exclusively of ayacutdars) on payment of a fixed annual sum irrespective of seasonal conditions and area cultivated would be a desirable course ?

**Q. No. 14.**—Do you think, that at least, the maintenance of such sources (rain-fed tanks irrigating less than 10 acres, 20 acres or 30 acres) could be entrusted to the above mentioned Irrigation Panchayats by diverting normal maintenance grants to them ?

**Q. No. 15.**—Should irrigation by private parties be allowed by pumping water from (a) rivers, (b) streams and (c) from irrigation canals ?

If allowed, what rate should be levied in each of these cases ?

**Q. No. 16.**—Should irrigation wells be permitted to be sunk so near an irrigation canal as to receive water by percolation ?

If allowed, what charge for such irrigation would be fair ?

**Q. No. 17.**—Should perennial cropping under well-irrigation be allowed in non-perennial zones under irrigation projects ?

And if allowed, is it desirable to levy an extra water-charge ?

**Q. No. 18.**—Unauthorised use of water beyond the localised ayacut or under irrigation projects is reported to have become a menace.

What steps do you suggest to mitigate this evil ?

Which of the following suggestions would you consider suitable :—

(a) giving powers of levying penalty to Public Works Department Officials ?

(b) creating a special agency within Public Works Department for launching prosecutions before courts ?

(c) fixing the responsibility on village officers, ayacutdars to prevent and report such occurrences ?

**Q. No. 19.**—Within the localised area or settled ayacut of a project, there are tanks which were originally rain-fed.

Is it desirable to breach them and irrigate their beds and ayacut under project or feed them from project canals and utilise the tanks ?

In the latter case, would you recommend the same assessment as for the rest of the ayacut or an enhanced assessment ?

**Q. No. 20.**—Are your lands in the perennial or rotational zones of the river anicut systems or projects? If so, please give details of the period of supply.

**Q. No. 21.**—If your lands are in a dry irrigated zone, please specify the periods of supply and the rotation of crops prescribed by the Government or adopted by you.

**Q. No. 22.**—If you are growing irrigated dry crops by rotation under projects like the Kurnool-Cuddapah Canal, Thungabhadra Project etc., please describe the rotation of crops adopted by you.

What are the difficulties, if any, for adopting the rotation of crops, suggested by the Agricultural Department ?

**Q. No. 23.**—Are the provisions in the Andhra Irrigation Works (Levy of Compulsory Watercess) Act, 1955, adequate to induce ryots to bring their lands commanded by irrigation works under irrigation ?

If not, what further steps should be taken by the Government to see that the lands commanded by irrigation works are brought under irrigation, so that there may be increase in food production and judicious use of water ?

**Q. No. 24.**—Are there any indications, that commandable land under any project has not been brought under wet irrigation on account of heavy cost of conversion to wet ?

If so, what are your suggestions to solve the problem ?

**Q. No. 25.**—Has the utilization of irrigation facilities of projects been impeded in any way by lack of minor distributaries or their timely maintenance ?

**Q. No. 26.**—Is it feasible for the Public Works Department to carry out necessary maintenance work of minor distributaries in time ? Could the work be done more expeditiously by the ayacutdars to whom the normal maintenance grant could be diverted ?

#### PART V

### ROLE OF DEVELOPMENTAL ACTIVITIES IN PROMOTING AGRICULTURAL PROSPERITY

**Q. No. 1.**—Are agricultural supplies, such as, good seeds, fertilisers, pesticides, cement, iron, fuel and lubricating oils, agricultural implements pumping sets, etc., available to you, in time in adequate quantities, at reasonable rate and of acceptable quality ?

**Q. No. 2.**—Has the extension agency of Agricultural or Community Development Departments supplied improved seeds, new ideas which have added to your income or increased your yields ?

**Q. No. 3.**—Have you sought any advice on planting seasons, varieties of crop to be grown, manuring and irrigation schedules, pests and diseases and other cultivation techniques from the officers of Agriculture, National Extension Scheme or Community Development Departments ? Have you benefited from their advice, and if so, to what extent ?

**Q. No. 4.**—Is any difficulty experienced in getting permit from Forest Officers for obtaining green-manure leaves from forests ?

**Q. No. 5.**—What are the green-manure or fodder crops raised by you on your land and are they irrigated ? What are your suggestions to increase the extent under these crops so that the yield of main crops might be improved ?

**Q. No. 6.**—Have you any special difficulties in raising dry crops ?

**Q. No. 7.**—What is the crop rotation pattern adopted by you on dry lands ?

**Q. No. 8.**—*Cattle, their life, epidemics, milk supply, etc., and maintaining herds for manures—*

(a) What is the cost per pair of bullocks in your area for small, medium and large varieties ?

*NOTE.—If there are more than two breeds (e.g.) Ongole, Devuni and Hallikar—prices for each breed for all the three varieties may be given. If buffaloes are used for cultivation, similar particulars may be furnished.*

(b) How many years of effective service can be expected from a pair of cattle in your area assuming that normal care is bestowed on their maintenance ?

(i) For cattle utilised for ordinary agricultural operations like ploughing, threshing, etc.

(ii) For cattle utilised for specially arduous work like lifting water from wells by motah, etc.

(c) What is the annual cost of maintenance of a pair of cattle ?

*(The price of straw and the price of concentrates may be furnished separately.)*

**Q. No. 9.**—Are pests and diseases, a problem in your area and if so, mention them in relation to each crop grown in the locality ? Are these pests and diseases controlled by plant-protection measures, and if so, mention methods and give costs and if not, state the extent of damage caused by these to the respective crops and also suggest what help the cultivators need to combat them ?

**Q. No. 10.**—What are the diseases from which cattle suffer in your area? Is the veterinary assistance available to you, timely and adequate with regard to—(a) epidemics and (b) normal diseases?

**Q. No. 11.**—What is the milk-yield of cows and buffaloes in your area? Are both used as milch animals or only one kind. If the yield is low, to what do you ascribe this defect—

- (a) lack of roughage, green or dry;
- (b) lack of concentrates;
- (c) defective breed; and
- (d) bad maintenance?

**Q. No. 12.**—Have any breeds been brought in your area from outside, and if so what are the breeds and from where? How do they compare with the locals in milk yield and draught capacity? If they are better, is it due to better maintenance or their inherent qualities?

**Q. No. 13.**—What are the sources of credit to the cultivators in your area for—

- (a) normal cultivation expenses;
- (b) purchase of good seed and chemical fertilisers;
- (c) medium term loans for the purchase of bullock, pump-sets, construction of wells, etc., and
- (d) long term loans for the purchase of lands, etc.?

**Q. No. 14.**—What is the relative importance of the following agencies with reference to each one of the above items:—

- (a) relatives and friends;
- (b) substantial farmers;
- (c) village money-lenders and traders;
- (d) village co-operative societies;
- (e) land mortgage banks;
- (f) Government Taccavi loans;
- (g) Agricultural Department loans.

Are there any difficulties in obtaining credit from any of the above sources ? Please state the terms on which credit is available and suggest ways and means for increasing the quantum of credit and the quality of service ?

**Q. No. 15.**—Are the cultivators prompt in repaying loans to the different agencies and if not what are the causes ? Is it due to indifference or unprofitable farming ? What are your suggestions to improve the situation ?

**Q. No. 16.**—Are Co-operative Societies working successfully in your area and if not what factors militate against their success ?

**Q. No. 17.**—How are the improvements to the productive capacity of land, held up, for want of credit ? Mention some typical items and suggest ways to improve the situation.

**Q. No. 18.**—What are the normal channels of marketing your produce—

- (a) paddy ;
- (b) other foodgrains ;
- (c) oilseeds and cotton ;
- (d) chillies, turmeric, etc.,
- (e) sugarcane, jaggery ;
- (f) fruits, vegetables, milk, eggs, etc. (perishables) ; and
- (g) other commodities ?

**Q. No. 19.**—Do you sell them to the village trader or at the regulated market ? In the latter case, how far is the regulated market from your village ? Do you get the full value paid by the purchaser, and if not, what are the deductions made, and to what extent can these be minimised ?

**Q. No. 20.**—Is there a Co-operative Marketing Society in your area ?

Are you a member ?

If so, what are the benefits derived by you and if not, give the reasons for your abstaining from joining the same ?

**Q. No. 21.**—Is there a Farmers' Organisation in your area? If there is one, are you a member? If not, do you wish to organise one for promoting the economic interests of the community of farmers?

PART VI

PROBLEMS RELATING TO LEVYING AND COLLECTION OF LAND REVENUE AND OTHER TAXES FROM RYOTS AND THE GRANT OF REMISSIONS AND OTHER ALLIED MATTERS

**Q. No. 1.**—Are you satisfied with the present system in respect of the following and if not, suggest remedies :—

- (a) time of collection of land revenue ;
- (b) the form of issuing land revenue receipts ;
- (c) the timing of collection of arrears whether of land revenue, Government or co-operative loans ;
- (d) granting of remissions, whether due to general crop-failures, in dry lands, or specific failures in wet and irrigated lands ;
- (e) system of fixing area to be cultivated for second crop paddy (Tabi) (called Thaibandi in Telangana) ;
- (f) system of permanently including dry lands cultivated as wet over a period of years in the ayacut :
- (g) Azmoish, over azmoish or sanctioning the remission ;
- (h) mutation or transfer of registry of patta consequent upon succession, partition or sale ;
- (i) survey, subdivision and maintenance of boundary stones and supply of field sketches and field particulars to the cultivators ; and
- (j) holding of Jamabandi?

**Q. No. 2.**—Are there many cases of land revenue sales for arrears of land revenue ?

**Q. No. 3.**—Are there many cases where Government had to purchase the lands in the auctions for want of bidders ?



**Q. No. 4.**—What are your views regarding the levy of sales-tax or purchase tax on foodgrains and commercial crops and to what extent is this burden shifted to the land-owner?

**Q. No. 5.**—Are any of the conditions in the ryotwari patta causing any hardship to the cultivators? If so, what modifications would you suggest to remedy the same?

**Q. No. 6.**—What rate of remission do you consider would be appropriate for dry and wet crops which are ravaged by cyclones?

**Q. No. 7.**—Do you consider that any special concession is necessary for coconut gardens, ravaged by cyclones, as these gardens do not bear a normal crop for a period of two or three years after a cyclone?

**Q. No. 8.**—What scale of remissions do you consider would be appropriate for the crops damaged extensively by insect pests and plant-diseases?

ADDRESS :

Station :

Date :

*Signature and designation of  
person answering the questionnaire.*

## APPENDIX 3.

*Statement showing the number of officials and non-officials from whom replies to questionnaires have been received in each district.*

Name of the district	Replies received to the questionnaire from	
	Officials	Non-officials
1. Srikakulam .. .. .	33	33
2. Visakhapatnam .. .. .	14	14
3. East Godavari .. .. .	35	36
4. West Godavari .. .. .	15	19
5. Krishna .. .. .	28	13
6. Guntur .. .. .	40	54
7. Nellore .. .. .	30	39
8. Kurnool .. .. .	42	19
9. Anantapur , .. .. .	22	22
10. Cuddapah .. .. .	17	26
11. Chittoor .. .. .	29	57
12. Hyderabad .. .. .	14	19
13. Mahabubnagar .. .. .	15	11
14. Adilabad .. .. .	9	14
15. Nizamabad .. .. .	10	18
16. Medak .. .. .	12	17
17. Karimnagar .. .. .	4	21
18. Warangal .. .. .	12	7
19. Khammam .. .. .	10	10
20. Nalgonda .. .. .	14	18
	405	467
Total ..	872	

## APPENDIX 4.

*Abstract of places visited and the number of witnesses examined (Officials and Non-officials), by Land Revenue Reforms Committee, Hyderabad.*

Name of the place visited	No. of witnesses examined		Name of the place visited	No. of witnesses examined	
	Officials	Non-officials		Officials	Non-officials
<i>Hyderabad.</i>			<i>Mahabubnagar.</i>		
1. Hyderabad ..	13	10	1. Mahabubnagar ..	15	92
2. Rajendra Nagar .	1	..	2. China-rajampur ..	..	3
<i>Nizamabad.</i>			3. Bandarupalli ..	1	..
1. Bardipur ..	2	4	4. Yenugonda ..	..	1
2. Nizamabad ..	8	12	5. Badepalli at } Jadcherla	..	..
3. Jakora ..	..	3	6. Thimmajipet }	..	1
4. Durki ..	..	1	7. Bijjanapalli ..	..	2
5. Ibrahimpet ..	..	2	8. Jannapeta ..	..	1
6. Tirumalapur ..	..	1	9. Wanaparti ..	A gathering of ryots	
7. Malarial Centre .	1	..	<i>East Godavari.</i>		
8. Nizam Sagar dam.	1	4	1. Kakinada ..	6	4
9. Banswada ..	1	4	2. Rajupalem } 3. Divila	2	..
10. Deccan Plantations (Private) Limited, Sulaimansagar. }	1	..	4. Pulimeru } 5. Samalkota		
11. Rudrur Agl. farm.	1	..	6. Ramachandrapuram.	4	1
12. Warni ..	..	3	7. Jagannadhagiri ..	..	1
13. Visit to Nizam Sugar Factory farm. }	..	3	8. Amalapuram ..	3	13
14. Visit to Nizam Sugar Factory }	..	..	9. Rajole ..	2	7
15. Bodhan ..	4	13	<i>West Godavari</i>		
16. Arumur ..	1	7	1. Settipeta ..	1	..
17. Kamareddi ..	1	6	2. Agricultural Rice Research Station, Maruteru }	2	6

Name of the place visited	No. of witnesses examined		Name of the place visited	No. of witnesses examined	
	Officials	Non-officials		Officials	Non-officials
<i>Nellore.</i>			G. Singavaram .. ..		1
1. Nellore ..	8	19	5. Gargeyapuram .. ..		..
2. Sangam Anicut ..	..	..	6. Nandikotkur ..	1	3
3. Kadaguntla ..	..	..	7. Mandalam .. ..		2
4. Hamlet of Atmakur. ..	..	1	8. Lockinsula ..	1	..
5. Vinjemur } ..	..	6	9. Atmakur ..	1	2
6. Amancherla } ..	..	6	10. Bandiatmakur .. ..		1
7. Podalakur } ..	..	6	11. Doobaguntla .. ..		3
8. Visit to Shaw-mines. ..	1	3	12. Batulur .. ..		3
9. Balayapalli } ..	1	1	13. Allagadda ..	2	5
10. Yechasamudram. } ..	1	1	14. Nandyal, (Agricultural basic school) } ..	3	5
<i>Chittoor.</i>			15. Panyam .. ..		5
1. Tirupathi ..	2	5	16. Kodemuru .. ..		3
2. Chandragiri } ..	..	2	17. Adoni ..	4	7
Inspection of Suwarnamukhi river } ..	..	2	18. Adoni Market Committee. ..	1	..
3. Putalpattu } ..	1	7	19. Siriguppa ..	1	..
Peeler } ..	1	7	20. Peddaharivanam ..	2	3
Vayalpadu } ..	1	7	21. Yemmiganur ..	1	5
Madanapalli } ..	1	7	22. Yemmiganur farm. ..	1	..
4. Punganur ..	1	6	23. Bhavanasi farm (Cattle breeding diary farm) .. ..		1
5. Chittoor ..	9	21	<i>Guntur.</i>		
<i>Kurnool.</i>			1. Nagarjunasagar ..	5	1
1. Kurnool ..	5	3	Inspection dam site and submergible area. ..		
2. Yedurur water lagoon and Kunthalapadu lagoon ..	1	..	2. Guntur ..	6	22
3. Sunkesala ..	3	2	Visited Lam farm. ..	3	..
4. Kothakota ..	1	1			

APPENDIX 5.

Table of water classification in Telangana

Bhaganna Soil classification	WATER CLASS									
	1	1½	2	2½	3	3½	4	4½	5	
	anna.	annas.	annas.	annas.	annas.	annas.	annas.	annas.	annas.	annas.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
16 annas ..	.. 12 0 0	11 4 0	10 8 0	9 12 0	9 0 0	8 4 0	7 8 0	6 12 0	6 0 0	6 0 0
15½ „ ..	.. 11 10 0	10 14 0	10 2 0	9 6 0	8 10 0	8 1 0	7 5 0	6 9 0	5 13 0	5 13 0
15 „ ..	.. 11 4 0	10 8 0	9 12 0	9 3 0	8 7 0	7 11 0	6 15 0	6 6 0	5 10 0	5 10 0
14½ „ ..	.. 10 14 0	10 2 0	9 9 0	9 0 0	8 4 0	7 8 0	6 12 0	6 0 0	5 7 0	5 7 0
14 „ ..	.. 10 8 0	9 15 0	9 3 0	8 7 0	7 14 0	7 2 0	6 9 0	5 13 0	5 4 0	5 4 0
13½ „ ..	.. 10 2 0	9 6 0	8 13 0	8 4 0	7 8 0	6 15 0	6 6 0	5 10 0	5 1 0	5 1 0
13 „ ..	.. 9 12 0	9 3 0	8 7 0	7 14 0	7 5 0	6 12 0	6 0 0	5 7 0	4 14 0	4 14 0
12½ „ ..	.. 9 6 0	8 13 0	8 4 0	7 11 0	6 15 0	6 6 0	5 13 0	5 4 0	4 11 0	4 11 0
12 „ ..	.. 9 0 0	8 7 0	7 14 0	7 5 0	6 12 0	6 3 0	5 10 0	5 1 0	4 8 0	4 8 0
11½ „ ..	.. 8 10 0	8 1 0	7 8 0	6 15 0	6 6 0	5 13 0	5 4 0	4 11 0	4 5 0	4 5 0
11 „ ..	.. 8 4 0	7 11 0	7 2 0	6 12 0	6 3 0	5 10 0	5 1 0	4 11 0	4 2 0	4 2 0
10½ „ ..	.. 7 14 0	7 5 0	6 15 0	6 6 0	5 13 0	5 7 0	4 14 0	4 5 0	3 15 0	3 15 0
10 „ ..	.. 7 8 0	6 15 0	6 9 0	6 0 0	5 10 0	5 1 0	4 11 0	4 2 0	3 12 0	3 12 0
9½ „ ..	.. 7 2 0	6 9 0	6 3 0	5 13 0	5 4 0	4 14 0	4 8 0	3 15 0	3 9 0	3 9 0
9 „ ..	.. 6 12 0	6 6 0	5 13 0	5 7 0	5 1 0	4 11 0	4 2 0	3 12 0	3 6 0	3 6 0
8½ „ ..	.. 6 6 0	6 0 0	5 10 0	5 4 0	4 11 0	4 5 0	3 15 0	3 9 0	3 3 0	3 3 0
8 „ ..	.. 6 0 0	5 10 0	5 4 0	4 14 0	4 8 0	4 2 0	3 12 0	3 6 0	3 0 0	3 0 0

BASIS : Hypothetical rate of Rs. 12 per acre.

## APPENDIX 6.

*A. Standard scale of watercess on dry lands.*

DESCRIPTION OF CROP	CHARGE PER ACRE					
	1st class source			2nd class source		
	Rs.	as.	ps.	Rs.	as.	ps.
(a) Sugarcane, betel, plantain, turmeric and elephanyam ..	6	0	0	4	8	0
(b) Any other crop which requires water for more than six months .. .. .	6	0	0	4	8	0
(c) Crops other than those specified in clauses (a) and (b) ..	..			..		

No.	1st Crop	2nd Crop	First class source		Second class source									
			1st crop	2nd crop	1st crop	2nd crop								
			Rs.	as.	ps.	Rs.	as.	ps.						
1.	Wet	.. Wet	4	0	0	2	0	0	3	0	0	1	8	0
2.	do.	.. Dry systematically irrigated..	4	0	0	1	8	0	3	0	0	1	2	0
3.	do.	.. Dry occasionally irrigated ..	4	0	0	1	0	0	3	0	0	0	12	0
4.	Dry systematically irrigated	Wet occasionally irrigated ..	3	0	0	2	8	0	2	4	0	1	14	0
5.	do.	.. Dry systematically irrigated..	3	0	0	2	0	0	2	4	0	1	8	0
6.	do.	.. Dry occasionally irrigated ..	3	0	0	1	8	0	2	4	0	1	2	0
7.	Dry occasionally irrigated	Wet occasionally irrigated ..	2	0	0	3	0	0	1	8	0	2	4	0
8.	do	.. Dry systematically irrigated..	2	0	0	2	8	0	1	8	0	1	14	0
9.	do	.. Dry occasionally irrigated ..	2	0	0	2	0	0	1	8	0	1	8	0

Description of crop	Charge per acre						
	1st class source			2nd class source			
	Rs.	as.	ps.	Rs.	as.	ps.	
(d) Third crop : if wet .. .. .	..			..			
if dry, whether .. .. .	..	2	0	0	1	8	0
systematically or occasionally irrigated ..	..	1	0	0	0	12	0

*Explanation (1).*—Irrigation sources are divided into two classes for purposes of charging fixed rate of watercess. Irrigation sources placed in the 1st or 2nd group by the settlement department should be treated as first class and those placed by the settlement department in groups lower than the second should be treated as second class. In the district of Anantapur and in the taluks of Adoni and Alur of Kurnool district however, irrigation source classed in the third group by the settlement department should also be treated as first class.

(2) *Explanation.*—Coconuts and other trees forming tope plantations will be charged the same rates as the crops included in clause (a) if they take water for more than six months. If not, they will be charged the rate for a single wet crop specified in clause (c).

(3) *Explanation.*—Casuarina, bamboo and other timber and fuel plantations should be treated as dry crops and charged as for occasional irrigation. The charge appropriate for the irrigation of a first dry crop should be levied if water is taken for a period, not exceeding six months. If water is taken for a longer period one and a half times the above charge should be levied.

(4) *Explanation.*—For purposes of these rules Collectors from time to time shall publish in the respective district Gazette, list of crops which are to be regarded as 'Systematically irrigated' and as 'occasionally irrigated'. Provided that no charge in the notified classification of a dry crop shall take effect until the commencement of the fasli succeeding that in which the change is notified.

*Watercess payable under pedda Kandleru Project in Vinukonda Taluk  
of Guntur District*

1. Duffasal Crop :                      Rs. 9-0-0 per acre.
2. All other crops :—

I crop	II crop	Rate per acre		
		I crop	II crop	
		Rs.	as.	ps.
Wet .. ..	.. Wet .. ..	6	0	0
Wet .. ..	.. Dry systematically irrigated	6	0	0
Wet .. ..	.. Dry occasionally irrigated	6	0	0
Dry systematically irrigated	.. Wet .. ..	4	8	0
do .. ..	.. Dry systematically irrigated	4	8	0
do .. ..	.. Dry occasionally irrigated	4	8	0
Dry occasionally irrigated	.. Wet .. ..	3	0	0
do .. ..	.. Dry systematically irrigated	3	0	0
do .. ..	.. Dry occasionally irrigated ..	3	0	0
	3rd crop if wet	..	..	3 0 0
3rd crop if dry whether occasionally irrigated or systematically irrigated	.. ..	..	..	1 8 0

*C. Rates of watercess under Tungabhadra Project : Low level canal*

Crop	Rate per acre:		
	Rs.	as.	ps.
1. Duffasal crop, or two wet crops	..	..	.. 22 8 0
2. For the first or single wet crop	..	..	.. 15 0 0
3. Dry irrigated crop	..	..	.. 10 0 0

Government Memo No. 133980. M. 57, dated 16-5-1958.





## Statement showing the Water Rates prescribed

S. No.	Name of the project	I wet crop	I dry crop	II wet crop following a 1st. wet crop	II wet crop following a 1st. dry crop	II dry crop
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Rs.	Rs.	Rs.	Rs.	Rs.
1.	Godavari & Krishna deltas I class irrigation	6 4 0	3 2 0	3 2 0	6 4 0	3 2 0
	II class irrigation ..	5 0 0	2 8 0	2 8 0	5 0 0	2 8 0
	Yenamadurru drain below Bhimavaram tidal lock. & Collair and Upputeru ..	4 0 0	2 0 0	2 0 0	2 0 0	2 0 0
	Muniyeru anicut system	6 4 0	3 2 0	3 2 0	3 2 0	3 2 0
2.	Tanks and other upland sources of Godavari & Krishna systems 6 months & more					
	Group I ..	5 0 0	2 8 0	2 8 0	2 8 0	2 8 0
	3 months & more Group II ..	4 0 0	2 0 0	2 0 0	2 0 0	2 0 0
	less than 3 months Group III ..	3 0 0	1 8 0	1 8 0	1 8 0	1 8 0
	Bangarappa Tank in Polavaram Taluk ..	6 0 0	3 0 0	3 0 0	3 0 0	3 0 0
3.	Polavaram Island project..	10 8 0	5 4 0	5 4 0	5 4 0	..
4.	Bhavanasi project Guntur district ..	9 6 0	4 11 0	4 11 0	4 11 0	4 11 0
5.	Mopad reservoir in Nellore district ..	7 13 0	3 15 0	3 15 0	3 15 0	3 15 0
6.	Vavveru channel & its branches in Kovur taluk of Nellore district..	6 4 0	..	3 2 0	..	..

under various Projects in Andhra Region.

III wet crop	III dry crop	Compounded rate for 2 crops for a period of not less than 5 years	Duffasal crops such as sugar- cane, betel, plantain, turmeric, elephantyam, etc. when water is taken for more than 6 months	Casuarina, bamboo and other timber & fuel plantations if irrigated for a period		Re- mar- ks.
				Not ex- ceeding 6 mns.	Exceeding 6 mns.	
(8)	(9)	(10)	(11)	(12)	(13)	(14)
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
2 8 0	1 4 0	10 3 0	9 6 0	3 2 0	4 11 0	
2 0 0	1 0 0	8 2 0	7 8 0	2 8 0	3 12 0	
2 0 0	2 0 0	..	6 0 0	..	3 0 0	} (A)
3 2 0	3 2 0	..	9 6 0	..	4 11 0	
2 8 0	2 8 0	..	7 8 0	..	3 12 0	
2 0 0	2 0 0	..	6 0 0	..	3 0 0	} (A)
1 8 0	1 8 0	..	4 8 0	..	2 4 0	
3 0 0	3 0 0	..	9 0 0	..	4 8 0	
5 4 0	..	..	15 12 0	..	..	
..	4 11 0	..	14 1 0 (B)			
..	3 15 0	..	11 12 0 (C)			
3 2 0	..	..	9 6 0			

(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Rs.	Rs.	Rs.	Rs.	Rs.
7.	Pedda and Chinna Cheruvus & their supply channels in Chamadala village Nellore District	.. 9 6 0	..	4 11 0	..	..
8.	Gundamadakala tank in Udayagiri taluk of Nellore District	.. 6 0 0	..	.. ..	..	..
9.	Siddapuram Tank in Kurnool district	.. 6 0 0	2 0 0	3 0 0	..	2 0 0
10.	Venkatapuram Tank in Kurnool district	4 3 0	2 1 0	2 1 0	..	2 1 0
11.	Tippayapalam reservoir in Kurnool dt.	10 0 0	7 8 0	5 8 0	..	5 0 0
12.	Eguva Cherlopalle project.	.. 6 0 0	3 0 0	..	..	..
13.	Nagavaram Tank & supply channel Cuddapah District	6 0 0	3 2 0	4 0 0	..	3 2 0
14.	Aswartharayani Kunta in Cuddapah district	6 4 0	..	3 2 0	..	..
15.	Peddasettipalli Spring Channel in Cuddapah district.	.. 5 8 0	..	1 6 0	..	..
16.	Channarayasawmi Gudi project, in Anantapur district & Lanka & Tirumalasaka Channels in Guntur dt.	15 0 0	10 0 0	..	..	..
17.	Vegavati Anicut Srikakulam district	15 0 0	10 0 0	..	..	..
18.	Ravanapalle Reservoir scheme in Visakhapatnam District	.. 15 0 0	10 0 0	..	..	..

6.—(Contd)

(8)	(9)	(10)	(11)	(12)	(13)	(14)
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
..	..	..	..			
4 11 0	..	..	14 1 0			
..	..	..	9 0 0 (E)			
3 0 0	2 0 0	..	9 0 0 (F)			
2 1 0	2 1 0	..	6 4 0			(A) The rates in column 3 are chargeable for a first crop of paddy and for a coconut garden and other plantation of trees which are regarded as a wet crop. For any other first wet crop the rates in column 14 are charged.
..	..	..	15 0 0 (G)			
..	..	..	9 0 0 (H)			
4 0 0	3 2 0	..	10 0 0*			(B) Total charge in a fasli should not exceed rupees 14-1-0 per acre.
3 2 0	..	..	9 6 0 (I)			(C) Total charge in a fasli should not exceed rupees 11-12-0 per acre.
1 6 0	..	..	6 14 0 (J)			
						(D) The rates are applicable for irrigated crops.
..	..	..	22 8 0			(E) For first, second or third irrigated dry crops Rs. 3 are charged per acre if they are not duffasal crops.
..	..	..	22 8 0			(F) If dry crops remain for more than 6 months on the ground the charge is Rs. 3 per acre.
..	..	..	22 8 0			

\*The charges are for irrigated crops.

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(1)	(2)	(3)	(4)	(5)	(6)	(7)
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6.—(contd.)

(8)	(9)	(10)	(11)	(12)	(13)	(14)
					<p>(G) The rates are sanctioned in G.O. Ms. 1336, dated 17-7-58.</p>	
					<p>(H) The rates given are for wet, dry and Duffasal crops and not for first, second, or third wet or dry crops.</p>	
					<p>(I) The rates are applicable for crops which are irrigated. For an irrigated duffasal crop following an irrigated crop in the same fasli, the rate is Rs. 6-4-0.</p>	
					<p>(J) The rates are applicable for crops which are irrigated. For a duffasal crop following an irrigated crop in the same fasli the rate is Rs. 2-12-0.</p>	

## APPENDIX 7.

Statement showing the rates sanctioned under the projects of  
ex-Hyderabad State (Telangana)

Sl. No.	Name of Project	Old or new project i.e. whether project started working from or after 1948-49	Group	Rates	Remarks
				O.S. Rs.	
1.	Palair (Khammam)	.. old ..	II	18 0 0	
				16 0 0	
2.	Baithpalli (Madhira)	.. ..	II	16 0 0	
				14 0 0	
3.	Wyra (Khammam and Madhira)	.. ..	II.	18 0 0	
			Khammam	16 0 0	
			II	16 0 0	
			Madhira	14 0 0	
4.	Singabhopalam (Yellandu)	.. ..	II	14 0 0	
				12 0 0	
5.	Manair (Sirsilla)	.. ..	II	18 0 0	
				16 0 0	
6.	Chegaon (Sultanabad)	.. ..	II	16 0 0	
				14 0 0	
7.	Bheemanpur (Parkal)	.. ..	VI	16 0 0	to
				12 0 0	
8.	Fatehnahar (Medak)	.. ..	V	20 0 0	to
				17 0 0	
9.	Mahaboobnahr (Medak)	.. ..		do	
10.	Rayanpalli (Medak)	.. ..		do	
11.	Pocharam (Medak)	.. ..		do	
12.	Pendlipakla (Deverkonda)	.. ..	III	15 0 0	
				12 0 0	
				10 0 0	
13.	Dindi (Deverkonda)	.. ..		do	
14.	Chandrasagar (Achampet)	.. ..	III	16 0 0	
				12 0 0	
15.	Nizamsagar (Bodhan, Banswada, Nizamabad and Armour)	.. ..	II	20 0 0	} Armour
				17 0 0	
				14 0 0	} Banswada.
			II	20 0 0	
				17 0 0	
			II	20 0 0	} Bodhan
				17 0 0	
			II	20 0 0	} Nizamabad.
16.	Kadam	.. ..		12 0 0	
17.	Koilsagar	.. ..		10 0 0	for single crop.



## APPENDIX 8.

## Note for "Registered Farmers' Association" submitted

by

J. R. REDDI, IN 1942.

In a provisional note of mine submitted for your scrutiny I had emphasised certain principles for acceptance if our approach to the general mass of agriculturists is to be effective. To see is to believe and nothing can induce so much confidence as seeing the innovations give conspicuous results under the actual conditions of the cultivator's farm. Again the approach will be most fruitful if it is through their natural leaders—the intelligentsia and the better class of farmers. The idea of making accomplished facts appeal to the realism of the farmer has taken the shape of demonstration farms but in practice there is always a certain amount of prejudice against them in the public mind. They are always approached with certain mental reservations for it is felt that these are not worked on economic lines and that too much money has been invested to take them beyond the reach of a private farmer. It would be a great achievement if we could organise men—intelligent, literate and influential all over the State naturally willing to abide by the advice of the department and employ them for purposes of propaganda. If their farms could be improved where they are, they will make an appeal far more effective than any department is capable of.

2. The organisation may be called either a Registered Farmers' Association or a Scientific Farmers' Society. The name may be anything so long as the purpose it is made to serve is the same.

3. The ownership of land, cultivation at his own risk, residence in the village where lands are situate, literacy and finally the capacity to keep the profit and loss account of his whole farms or of a part will constitute the tests of eligibility to the membership of the association.

4. A member will be required to allot a fifth of his holding or 20 acres dry 3 acres garden or 2 acres wet land to receive the improved treatment under the closest supervision of the department. It will be a part of his responsibility to keep an account for allotted part very accurately and circumstances permitting of another equal part to serve as a control.

5. All those that freely accept this responsibility and satisfying the eligibility test will be brought together into a primary society organised for every taluk. The Taluka Development Officer will be an ex-officio secretary and the whole body will work as one of the members as the elected president.

6. The agricultural magazine to be started by the department will be supplied free to the members. In any credit system that may be organised for financing agriculture their needs will be given the first priority. Their children will have a claim to free agricultural education, of course without any obligation to employ them thereafter.

7. Each member's holding will thus be split up into an allotted area receiving improved treatment and the benefit of scientific management and the remaining portion continuing in the usual way. Permanent improvements on the allotted part will be introduced through the land-owner at State's expense to be realised without in terest out of profits of better farming.

8. The Department of Agriculture will guarantee to make good the loss that may result from the altered practices. The guarantee will in practice amount to nothing for only those practices will be introduced that have been tried and tested on the experimental field.

9. I suggest that under this scheme any graduate of a University though landless at present but applying for a loan to buy land and settle on it an undertaking to abide by the other conditions may be given the requisite finance at a low rate of interest and admitted to the membership of the association.

10. On the general improvement of the holding of a member the State loses nothing by granting a priority in matter of finance and the loss of interest alone on the money spent for the improvement of the allotted area will be amply repaid in the form of creating public opinion in favour of these improvements. If in course of time we could bring into being a sufficient number of these improved or registered farms well distributed over the entire country side we can convert most of our demonstration farms into experimental stations and thus effect an economy under the head 'Agricultural Propaganda'.

11. Improved seed is a great need at any time and this organisation in being will be a great boon and all these allotted areas may in one way or the other be used as seed farms.

12. If we could have one or more of these registered farmers in every village the task of collecting reliable and accurate statistics—agricultural and rural will become considerably easy and simple.

13. Ordinarily for an improvement to reach from the initial stages to a stage at which it could be recommended to a common peasant it takes nearly 5 to 7 years, of this period 2 or more years are taken to try them here and there on cultivators plots and thereafter the actual propaganda in its favour starts. In the presence of the organisation I have described this trial of 2 years and more will itself be a propaganda in its favour. Again any improvement suggested may at once be demonstrated in every village and in all areas and crop behaviour watched with reference to the improvement for consistency under varying conditions.

14. Indian Agriculture has a hoary tradition behind it and our men of the villages have learnt by experience certain things that science has not been able to explain. Thanks to centuries of experience and the single-minded devotion of our lands-men our agriculture has developed into a complicated art and by inducing the native intelligence of the villages to co-operate with the scientifically-trained officer we may be able to synthesise out of this art and science something we have been eagerly longing for.

15. There is no limit to the extent to which we may go forward with this scheme for indeed our aim is to convert our whole countryside into one uniform improved and scientifically managed farm.

16. If we succeed in the initial stages more and more men will apply for membership and afford the department the much desired opportunity to serve the society in an expanding sphere.

17. Lack of agricultural aristocracy and the educated middle class is greatly responsible for the poor standard of farming and hence we should employ every opportunity to attract educated men into this profession and to better organise the aristocracy that still remains in the rural areas.

18. The various primary societies must be further linked up into district and a central organisation. This union of practical farmers functioning along with the Agricultural Department testing its recommendations on the anvil of field experience, suggesting problems for investigation and criticising it fearlessly whenever it serves from its path of duty will be a tower of strength to it and will earn for it an enviable place among the other sister departments of the State.

19. Taluk, District and Central associations may meet quarterly, half-yearly and annually and may deliberate about the problems facing them. It will have a semi-official executive to represent grievances and to strive to maintain a balance of power between rural and urban classes.

20. To-day the greatest difficulty of the Government is to know facts unbiased and true. This organisation will bridge the gulf and carry facts and grievances directly from the "lowliest and the last" in the villages to the most highly placed in the seat of power. Heads of Departments and Ministers of State will have an opportunity to know real facts without taking recourse to the official reporting agency. An organisation of this type will be a great asset when the drive for efficiency will have to be undertaken one day or the other among the nation building services.

21. Having earned first the good-will and then the gratitude of these scores of thousands of educated, literate and liberal minded farmers the Government will be free to employ them in its crusade against poverty, ignorance and disease.

22. This country in general and the farming population in particular is living under the influence of a vicious circle. Society is divided into various classes differing in economic status, extent of literacy and level of education and general culture and each class has got to be met on its own ground. Problems are so complicated and limitations are so many that if success is to be ours we must battle on many fronts and must use newer weapons. I suggest the setting up of this organisation in the hope that it may serve as one of the many effective weapons in our great fight against poverty and want.

## APPENDIX 9.

**Note for consideration of agricultural propaganda submitted  
by**

J.R. REDDI, IN 1942.

Agricultural propaganda aims at conveying the results of research to the great mass of agriculturists and presenting them in an acceptable and practicable form to them. The first requisite, therefore, is that the results of research must be sound and must have the backing of thorough and exhaustive work. This aspect will be taken up more fully by the Committee of scientific research and we need only emphasise that agricultural research may be considered separately so that its distinctive features may receive due attention.

2. Propaganda Section has to perform another essential service of suggesting the problems of research to the scientific worker both in the laboratory and on the experimental farm. Without taking this inspiration from people for whom the research is intended the scientist as well as the propaganda officer is liable to lose touch with actual life and function in an artificial atmosphere.

3. For purposes of co-ordination between the various nation building departments a post of a Taluka Development Officer should be created. It is best this officer of the grade of a Tahsildar is attached to the Revenue Department. The selection of men to fill this office must be done with care and circumspection. There is a crying need for Rural Development Services to start from a single Ministry and after spreading outwards into various departments to converge into a Development Officer. Nothing can achieve so much as perfect co-ordination.

4. The present practice of appointing a scientifically qualified person for every three or four taluqs is inadequate and serves no purpose whatsoever. An Agricultural Graduate Inspector for every 30 villages is the minimum needed under the present conditions. Finance should not stand in the way but the lack of sufficient number of qualified men may hold up the scheme for quite a length of time and I emphatically submit that the Agricultural Colleges may be started forthwith even during the war—and the scheme pushed forward stage by stage as the qualified staff becomes available. Nothing is lost by having no Inspectors for the first few years in certain areas but it is simply wasteful and unproductive of any good results to have one of the men for more than 30 villages. The idea of importing men from outside to fill vacancies in Agricultural Department should be discouraged altogether. Indeed a very persistent attempt should be made to induce people from villages and from families of farmers to join colleges of agriculture even if it be to recruit them to the Department.

5. Colleges should be started in rural surroundings and rural atmosphere must be maintained so that when men go out to villages from these institutions they may not feel the change unpleasant or acutely.

6. A Development Board for every taluka and like institutions for every district and at the centre meeting periodically and exercising supervision over the nation building activities of the Government will be a very desirable feature.

7. Recommendations framed by the department should suit local conditions must fit well into prevailing systems. They must take into account those peculiarities that make growing of certain crops extremely profitable in certain areas. Besides the local conditions the economic status of the men, their education, size of their farms etc., have a bearing on the practicability of the recommendations.

8. The practice of doing propaganda for any single improvement should be discontinued. The unit in all cases is a whole holding and results will be conspicuous only when all improvements are introduced and practised persistently over a certain minimum period of time.

9. Propaganda staff should be allowed a wide margin within which to function freely and unhampered. They need only be equipped well with general principles and policy and must be allowed freedom to think together with the farmer and recommend improvements and practices not only in furtherance of the general policy but to suit the individuals' needs.

10. The personality of the Graduate Inspector is all important. He must be allowed to stay at a place for sufficient length of time, to know things fully and correctly and gather around himself sufficient prestige for his word to be heeded by the men around him. If one has been doing a useful work he should never be faced with the need to seek promotion elsewhere. A good man should be remunerated where he is without the necessity of disturbing his good work.

11. Dress, manners and language of such a man are powerful enough to make him popular or otherwise in the locality in which he aspires to serve. Purity of personal life should be emphasised for that appeals tremendously to the Indian masses.

12. Technical knowledge alone is not enough and his general culture must win for him an unchallengeable place within the village community.

13. He must appear as little of an official as possible and he must be recognised by the familiarity of his person and manners and not by his uniform and a sun hat or other official paraphernalia. I would go further and suggest that he should champion the cause of the villager against the forces that contribute to the official tyranny in the villages. When done with zeal and discretion, this championing will win him an amount of popularity that cannot be got by any other means. He may play the role of an investigator and a prosecutor whenever he sees the economic interest of an individual or a class wrongly jeopardised. He should guard himself against getting entangled in the party politics of the village and should not allow himself to be overwhelmed by this type of work alone.

14. The principle of approaching the great mass of people through their natural leaders—the intelligentsia—must be accepted and must be given effect to.

15. Starting of a monthly magazine in all languages of the State and its distribution free of charge at the rate of one to a village and at a nominal price to all those that may desire is very urgently called for. Editorial Board must consist of eminent and highly talented persons and contributors must be drawn largely from those that are actively engaged in the profession.

16. Registered Farmers Association to bring together all literate farmers willing to abide by certain conditions will have a very good effect. Once these men naturally willing to carry out the recommendations of the department are convinced of its value we will have so many centres all over the State from which we may begin to operate. I suggest that these organisations may be started at the centre and allowed to spread into the districts for without a central body no organisation can have enough prestige to command a hearing from the authorities.

17. Such other organisations that aim at bringing together fruit farmers, cattle breeders, sugarcane growers, etc., should be started, encouraged and fostered.

18. Criticism of Governments' nation building activities must be encouraged to develop along healthy and constructive lines and Officers in places high and low must learn to take and deal with opposition in a big manner without rancour or

bitterness. In the absence of opposition and criticism any institution is liable to develop a fascist state of mind and nothing other than this is so damaging to the ultimate goal of Rural Development.

19. Educated farmers settled in a compact colony in every taluk working on most modern lines and adopting co-operative principles wherever practicable will have a great educative value and will be a source relieving the educated unemployed. Here also I emphasise the need to leave the initiative in the hands of the men subject to the general policy of the Government land for this purpose could be purchased or acquired in typical areas.

20. Demonstration farms must be started in greater number and they must be worked on a commercial basis. Unless this is insisted upon I see no chance of their appealing to the realism of the farmers. Costly buildings, complicated machinery and other expensive equipment make the gulf between it and a typical farm of the area very wide indeed. Demonstration farms must represent a state of affairs attainable by at least a middle class farmer. Separation of demonstration and experimental farms will make it possible to run the former in business lines. It must be recognised that facts appeal better than any amount of vocal propaganda. Attempt should be made to distribute the demonstration farms, educated farmers' colonies and other like institutions as uniformly as possible.

21. Here again I would emphasise the need to induce the well-to-do men in the villages to organise their farms better and on more scientific lines.

22. Possibility of introducing improvements presupposes a certain level of economic status on the part of the farmer. All other things being equal richer the man easier is it for him to reform his farming. These people are very often intelligent and invariably literate and no stone should be left unturned to induce such men to run their farms on model lines. A few of these in every taluk will have a great propaganda value. We will have done a great thing if we could have one such farm for every village. It is wrong to feel that these men need neither advice nor guidance. Indeed these are just the people that commit costly mistakes and create in advance an atmosphere of prejudice against all innovations and improvements.

23. If well-to-do people cannot take to the suggested improvements it logically follows that the poorest can hardly carry them out. What Agricultural Department appeals to is not the spirit of sacrifice but the desire to improve and live better. This latter instinct is better developed in a well-to-do man and that is just the reason why our propaganda will achieve spectacular results among this category of persons.

24. While trying to improve the lot of the farmers the Agricultural Department must look with special favour on those agriculturists who have improved themselves without any effort on its part. The middle class and richer farmers stand in the greatest need of scientific advice. They have the means and a desire to introduce improvements but the correct way of going about the business is not clear to them.

25. One can easily go into the districts and see ill-planted orchards, wrongly dug wells, ridiculously expensive cattle sheds and so on all due to lack of guidance and advice. All this means so much of energy wasted and enthusiasm mis-employed I plead for a thorough and efficient organisation of advisory services and a change of outlook in the personnel of the Agricultural Department enabling them to be more friendly and less suspicious of the better class of farmers. I do not mean that small men should be neglected but I only repeat that easier things may also be done to achieve results and to gain a foot-hold.

26. The impression in administration circles that an Agricultural Graduate is only a technical man should be corrected early. *Agriculture is not only a Profession but Essentially a way of Life.* For any purpose he is as well qualified as any other science graduate. Even in languages he is as good as any other Intermediate of a University and, therefore, there is no reason why he should be thought fit for Agricultural Department alone.

27. Knowledge of Agricultural science must be made more widespread. Revenue Inspectors, staff of Co-operative Department and all other men working in rural areas may be recruited from among agricultural graduates. Village officials should be taught the elementary principle of agricultural science and may be required to answer a paper or two on agriculture as a part of the examinations now conducted to test their eligibility.

28. Civil Service Rules should be altered if necessary to enable the graduates of agriculture to compete for the said service. Indeed attempt must be made to draw the brilliant men of these colleges into the higher ranks of service. All this will induce confidence in the men of the Agricultural Colleges and the Institutions in their turn will be able to attract the cream of country's intelligentsia.

29. There can be no progress, so long as study and practice of agriculture is kept as a job of the poor and the unintelligent.

30. Our greatest hope lies with the next generation and nothing could be more imprudent than neglecting a man during his impressionable age and trying to teach him when he is either too old to learn or too used to present day practices to take to anything new. Schools have to be tackled, teachers must be trained and farm work must find a definite place in the schools' timetable. A small farm must be attached to every school and steps must be taken to interest the boys in improved implements and practices. What a boy learns in his boyhood he will not easily forget and if we can make the millions of children carry into their adolescence a bias and a partiality for scientific farming we will have won greatest battle.

31. In suggesting these various things I plead for a policy of saturating the atmosphere of Hyderabad with agricultural information so that it may not any longer be a novelty but a common place knowledge.

32. Ours is an agricultural country and, therefore, we need not feel ashamed of giving preference to agricultural knowledge as against the knowledge of stars, the moon, the minerals and as a matter of that of English, Roman and Greek history. It will be an act of faithlessness on the part of the urban population not to study and appreciate the problems of a community to which it owes all the finer things of life.

33. We are used to seeing most of our ambitious schemes crash on the bed-rock of finance. When it is a question of improving agricultural and raising the standard of life of a farmer it is a most short-sighted policy to allow finance to stand in the way. Both as producers and consumers the farming population of Hyderabad—contributes the greatest part to the public exchequer. All these years they have been unfairly treated inasmuch as nothing in proportion to their contribution has been spent for their benefit. The time has come when their productive efficiency is perceptibly on the decline and any further tinkering with the problem will mean a first class disaster to our very existence as a self-sufficient economic unit. I would rather see the town improvement schemes, arts faculties of the University, civil aviation, construction of public offices and other like activities starved than contemplate the refusal to organise vital services to the farmer on the plea of lack of finance.

*From : 'The Theory of Economic Growth'*

W. ARTHUR LEWIS

*Agricultural Research :*

"There is no doubt that one of the main deficiencies of underdeveloped countries is their failure to spend adequately upon research, and upon the development of new processes and materials appropriate to their circumstances. Part of the reason for this is institutional. In industrial countries private entrepreneurs spend great sums on industrial research, because they hope it will pay them to do so. The underdeveloped countries, on the other hand, are agricultural. Where their agriculture includes large commercial companies, these companies have invested in research (e.g. rubber, bananas, sugar) either individually or collectively, but, in all that part of their agriculture (the major part) which is not organized on the basis, there are no private interests financing research. It follows that almost the whole of the research expenditures needed in these countries (i.e. excluding mining and commercial agriculture) has to fall upon the public purse, whereas in industrial countries research can be thought of primarily as a matter for private interests, with the government plugging gaps, in underdeveloped countries research is primarily a matter for governments, and ought to be one of their major fields of activity.

How much ought they to spend ? This is of course an unanswerable question. Current expenditure on industrial research and development in the United Kingdom is estimated at a little under one per cent of the income generated in industry. In the United States industrial research is at a similar level, while agricultural research is a little less than one half of one per cent of the net value of agricultural output. On the same basis it would not be unreasonable if the underdeveloped countries were to spend on research of all sorts (technical, social, health, etc.) a sum equal to between  $\frac{1}{2}$  and 1 per cent of their national incomes (not to be confused with government expenditure). There is no firm basis for such a suggestion. All the same, current expenditures, which do not reach a fraction of this level, are clearly too low.

*(b) Agricultural extension :*

Agricultural education illustrates very well several points which we have just discussed, namely the problem of priority, the role of the partially trained, and the importance of enthusiasm.

As for priority, expenditure on bringing new knowledge to peasant farmers is probably the most productive investment which can be made in any of the poorer agricultural economies. For raising the productivity of the soil is in most places the surest and quickest way now available of increasing the national income substantially. For example, some agricultural experts assert that agricultural yields per acre could be doubled in India, by the application of techniques now known—the most important sources of gain being better seed selection and control, more use of artificial fertilizers, greater use of pesticides, and better conservation and utilization of water supplies. Such striking possibilities are not open everywhere, because the gap between what is known to the experts and what is done by the farmers is not everywhere as great as this. In many places, however, this is merely because there has been failure to do necessary research on food production. For reasons already mentioned, agricultural research in the tropics has concentrated upon the commercial crops which are exported to industrial countries (sugar, cocoa, rubber, tea, etc.), and has almost wholly neglected what is produced for



home consumption (yams, cassava, sorghums and the like) despite the fact that in nearly all these economies the manpower and acreage devoted to food production is four or more times as great as that which is devoted to commercial crops.

Research is a pre-requisite to extension, so where the basic research has still to be done, there is not yet scope for agricultural extension. However, once the knowledge becomes available, the need for extension workers is tremendous. If we assume that there should be one extension worker to every thousand persons gainfully employed in peasant agriculture, that two-thirds of the population are so employed, and that to maintain an extension worker costs four or five times as much as a farmer receives, then the cost of the service, including supervisory staff works out at more than a quarter of one per cent of the national income. Add to this the desirable cost of agricultural research [this chapter, section 1 (b)] and we arrive at the conclusion that the Department of Agriculture should be spending on research and education somewhere between three-quarters and one per cent of the national income. The United States of America maintains something like this ratio of service expenditures to agricultural income ; it has one extension worker to every 700 persons gainfully occupied in agriculture, and it spends upon agricultural extension and research about three-quarters of one per cent of net agricultural output. The United Kingdom also has a ratio of 1 to 700, but among the poorer countries of the world the only country which spends at this level upon agricultural services is Japan (it is also the only one which has had spectacular increases in peasant productivity).

If an annual expenditure of one per cent of national income per annum could increase agricultural productivity by one per cent per annum (equivalent to one half of one per cent of national income) this would be an extremely productive investment, since it is equivalent to a return of fifty per cent per annum. The increase in productivity cannot be credited exclusively to agricultural extension, since capital has also to be provided, for water supplies, tools, fertilizers, etc. However, even when allowance is made for other needs, this complex of investments is the most profitable that agricultural countries can make. The rates we have used are well within the bounds of possibility. In Japan between 1880 and 1920 productivity per acre grew at a cumulative annual rate of 1.3 per cent per annum. Rates of one per cent have been attained also by England and by the United States. Countries which start with a much wider gap between what is known and what is done should have no difficulty in achieving spectacular yields from what they spend on agricultural services.

In order to provide agricultural service at this rate there would have to be a tremendous expansion in the number of agricultural officers. Many very highly trained people would be needed for research, and also to supervise the extension service, but the biggest expansion of all would be among the extension workers themselves, since one is needed for every five to ten villages. It would be impossible to provide these numbers if each had to be given a full University education in agriculture. But it is also unnecessary and undesirable to have University graduates for this work. It is unnecessary because the extension worker's job is only to transmit to the farmers techniques which have been thoroughly tried elsewhere. He needs to have his wits about him, and to know a good deal about practical agriculture, since he will otherwise be ineffective with the farmers. The best training for this is to have worked on a farm himself, doing all the farm jobs, and then to have spent a year or at most two being trained in the new techniques. It is also undesirable that the officer be a university graduate since his main problem is to make contact with the farmers and be accepted by them and this is much more difficult for a university graduate than it is for someone whose background is not far removed from that of the farmers themselves.

The extension officer's main problem is to make contact ; not just social contact, which is easy enough in village communities, but that contact of minds which results in imitation. For example, the main work of extension officers used at one time to be done on demonstration farms, owned and operated by the agricultural service.

These farms cultivated the best plants in the best ways, and farmers were invited to visit them and to see the results for themselves. Even when yields were very high the farmers did not always imitate what they were shown. They argued that the results achieved on the demonstration farm would not necessarily be achieved on their own holdings. Perhaps the farm had been specially selected for soil or other qualities ; perhaps equipment was being used, which the ordinary farmer did not possess ; or perhaps the workers on the farm had had special training, or were receiving special supervision which would not be available on the peasants' holdings. To get round these difficulties, modern extension techniques supplement the demonstration farm by persuading a few farmers to try out the innovation themselves on their own holdings. It is then clear to the remainder that good results have been achieved by farmers just like themselves on holdings just like their own. The success is no longer the success of a remotely controlled institution ; it is the success of their neighbours, and hence it calls for gossip, interest, investigation, discussion, and emulation. One of the first tasks of the newly arrived extension officer is now to find out which farmers are most respected in the district, and most likely to be imitated, and to try to enlist their co-operation in the campaign he has in hand.

There is a world of difference between doing extension work in a community where the farmers are not used to the idea of technical change, and doing it in an environment where farmers look naturally to the scientist to solve their problems. In an advanced community like England or the United States the farmers know that the geneticists are breeding better varieties, that the entomologists and the pathologists are producing ways of controlling pests and diseases, and that manufacturers of machinery are constantly introducing improved equipment. They are keen to hear about these things, and so they subscribe to farm journals, they listen to radio programmes for farmers, and they attend meetings of farmers' clubs. In these ways new ideas are disseminated rapidly. The extension problem in backward communities is to create a similar atmosphere, in which the farmers look upon the agricultural officers as an essential part of the agricultural community existing in order to make life easier for the farmer. Part of the secret of this consists in getting the farmers to form agricultural societies, for discussion, for visiting each other's farms, and for demonstrations. The other part consists in really having something to offer. If the extension officer succeeds in solving some problem which has worried the farmers—some disease for example—he will gain their confidence ; whereas if nothing comes from taking his advice, the farmers will not take him seriously”.

## APPENDIX 11:

**Irrigation Development**

It is now widely accepted that, while the bulk of expenditure is incurred in constructing reservoirs and excavating canals and distributaries, the benefits do not begin until the water so made available is utilised by the land-owners under the irrigation work. The time-lag between creating the potential and the utilisation of such a facility has been unduly long. The Planning Commission is agitated over this, and the result has been the appointment of a team of Engineers to investigate the causes. The causes may be slightly different in different places, but to a large extent these are common under all major irrigation projects. The dry land ryot is incapable of using the water unaided by Governmental agencies, whether it be in relation to the technical knowledge or the where-withal to clothe such an advice with action.

It is the job of the State to evolve and recommend suitable varieties, determine and advocate correct agronomic practices and plant protection methods. The State or the Trade must provide supplies mainly in the form of fertilisers, implements and power. Communications will have to be improved and suitable village sites provided. While all this has to be done by the State, the individual himself will have to level his land and build up the fertility of the soil. He requires credit not merely for positive investment on land but also for his own consumption while he is putting in his personal and family labour to develop his land. This credit is needed on a very massive scale and today there is no other agency except the State which is competent to do the needful.

Apart from the problems mentioned above, irrigation development gives rise to a host of other problems too numerous to mention and too difficult to foresee. If the time-lag is to be reduced to a minimum and the invested capital is not to remain locked up in the area, it is necessary that, when the project is being investigated on the construction side by the Engineers, Economists and Agricultural Experts must also investigate the problems of developing the area on the basis of optimum utilisation of land and water resources. These two reports as also the estimates of cost must be treated as pertaining to a single project and must be viewed as such by the Government concerned. The reports of Administrator and Economist may raise problems on which a policy decision is needed by the Government, and all such policy decisions must be taken before the first clod of earth is lifted at the site. I do feel that the only way in which our irrigation development can keep pace with the creation of irrigation potential is to adopt this method.

To summarise, the process would be as follows :

(i) The Engineers investigate the feasibility of constructing a project and make a summary report to the Government.

(ii) A committee with economists and agricultural experts on it investigate the problems that are likely to arise in the course of development and make estimates of the amount needed both on Government account and for the purpose of advancing as credit to the people of that area.

(iii) The estimates for construction and development are compiled into a single report with a prominent mention of the points which need policy decisions by the Government.

(iv) The Government announces its policy decisions and sanctions the estimates together.

(v) the Administrator takes charge of the construction and development of the area and proceeds with the work in a balanced way, developmental work keeping pace with the progress of construction.

*Nagarjunasagar* represents an improvement over the previous project like Tungabhadra. The administrator is already in saddle and I think he is expected to take balanced view of the project as a whole—construction and development. Even here, no steps have so far been taken to create an extension service or equip it with appropriate knowledge for the purpose of instructing the cultivators in the area. Before the instruction actually begins, considerable amount of work has to be done—research farms must gather know<sup>l</sup>edge; the experience gained and such knowledge must be imparted to the extension personnel; an extension organization has to be set up, and it is only then that actual instruction to the people of the area could begin. While more than 20 crores have gone into the construction of the project, it is a sad commentary that the research farm of 400 acres proposed for that area has not as yet been sanctioned.

Indeed, we could profitably make another suggestion that, at this point of time, when the lands are fairly cheap, the Government should enter the market and freely purchase land for all the experimental and seed farms they may need. 30 lakhs of acres are likely to come under irrigation. Half per cent of the area would be about 15,000 acres and such an area could be purchased in different blocks at the rate of 50 acres per 10,000 acres proposed to be brought under irrigation. These little farms of 50 acres each could be developed into demonstration farms at State expense. Once the whole area gets developed, this could either be retained or again sold in open market at tremendous profit. 15,000 acres turned into farms may not cost more than 75 lakhs in capital investment (price plus cost of development). The advantage of such small farms all over the area would be not only to test the efficacy of our technical advice before it is actually put across to the ryot but also to train up a team of development experts who may go from one project to another ahead of actual development. A capital expenditure of 75 lakhs on a matter like this for a project which may not cost less than 150 crores cannot be excessive. If a special organization can be created for its purpose and money advanced to it at 6 per cent, I have no doubt whatsoever that at the end of a 20-year period this organization can return back to the exchequer the whole amount along with interest.

One of our biggest misfortunes in this country is that the need for science in agriculture is not accepted to the extent to which it is necessary.

## APPENDIX 12.

**Note on priorities to be given for construction of irrigation projects and improvement of drainage works.**

It is by now accepted that, whenever the value of any land or property goes up due to any work carried out by the State at public expense, the State, in return, is entitled to a share in the enhanced value. Basing on this principle, Acts have been passed providing for levy of a betterment tax. This has also been called "Inclusion Fee" in the case of dry lands that are included in the ayacut of irrigation works. This Committee has also considered this problem in its various aspects and made appropriate recommendations.

The application of even this Act is not very simple, when the dry land is converted into wet by the waters of an irrigation source newly constructed. There has been some difficulty in assessing the enhanced value and deducting therefrom the cost of conversion of the land and accurately determining the enhancement due to the public work. In the initial stages of the construction of a reservoir, the supply of irrigated land is far greater than effective demand, and, therefore, there is a depression in values. As an escape from these difficulties, another concept has also been enunciated; this is of capitalising the difference between the income derived from the land when it was dry and when it is converted into wet.

With the increase in population and spread of consciousness among the people, there is a very great desire among the rural population to raise their living standards; and since the spread of irrigation is the quickest means to that end, there is a persistent demand from all parts of the State that the irrigation facilities may be expanded at a rapid pace. Indeed, the demand is so great that it is beyond the normal resources of the State to satisfy it in any appreciable degree. It, therefore, becomes necessary that the State should fix priorities and provide irrigation in a predetermined order.

Of the 20 districts of Andhra Pradesh, 5 districts in Andhra, namely, East and West Godavary, Krishna, Guntur and Nellore, and one District in Telangana, namely, Nizamabad, stand out very prominently as the heavily irrigated districts. The highest priority should now be given to districts which are poorly provided with irrigation. Districts like Anantapur in Andhra and Mahabubnagar in Telangana deserve special priority. In any case, for a long time to come, it would not be fair to divert moneys to a further growth of irrigation in the six districts mentioned above, where the irrigation intensity is already very high. These very districts have also the problem of drainage. In the tours, representations have been made to this Committee that the drainage problem is assuming menacing proportions; and if all the benefits of irrigation are not to be undone, there is a very urgent need for attending to this. Besides, more, in these very districts there is demand for improving the quality of irrigation as also the spread of it: for example, Nellore is clamouring for Somasila; Godavaries for Sabari; Nizamabad for Devanoor; Krishna is expecting protection from Nagarjunasagar; and the erstwhile Pithapuram Estate areas want irrigation under the hill stream (Yeleru) stabilised by a reservoir across it. Nizamabad, in addition to asking for Devanoor, has pointed out several cases where, at a little expense, it would be possible to extend irrigation. Such examples are too numerous to be mentioned in a short note of this type.

In each one of these cases, the people who made the demand offered to pay a substantial part, if not the whole, of the expenditure, as a contribution for the construction of these works. If this offer is seriously made—and I have no doubt

whatsoever that at this point of time they are extremely serious about it—it would be unjust to the people of that area and to the country as a whole not to take up those works. While I do feel that it may not be correct in principle to give priority to these works in the normal course against the demands from dry districts, it is equally wrong to delay the construction of these works when there is an offer from the local people to bear the cost of it. It is, therefore, necessary to devise a method by which these could be taken up.

When we stabilise the irrigation of an already irrigated area or convert a single crop into a double crop area or provide water earlier in the season by ensuring a carry-over of water from the previous season, it is next to impossible to determine the enhancement in value of land and to collect betterment levy on that basis. It has also been the experience that, when construction is undertaken in the hope of collecting the local contributions, these promises are never voluntarily fulfilled after the construction.

In Hyderabad, there is a Land Improvement Act, under which the Land Improvement Board constituted by the Government can declare any work as a work of land improvement, carry it out at public cost, and then collect the money from the beneficiaries. I would suggest that the provisions of this Act may be invoked in situations where people make a demand for an irrigation source at their own cost wholly or in a larger part. This Act may have to be amended slightly to provide for a procedure somewhat as follows :

The Government may make a summary investigation into all demands such as have been mentioned earlier, and on being convinced that there is a sufficient amount of public opinion in favour of undertaking such work at the cost of the beneficiaries, the work may be sanctioned. A scheme may be prepared with the proportion of the cost to be borne by the beneficiaries fixed along with the method of recovery. Once this is done all the land-owner slikely to be benefited may be asked to vote 'yes' or 'no' with regard to the scheme ; and once  $\frac{3}{4}$  of the owners owning more than  $\frac{2}{3}$  of the land vote 'yes', it must be possible under the amended provisions of the Land Improvement Act to enforce such decision on the whole area. The work can then be undertaken and the local contributions, already determined as a part of the scheme may be collected. The Land Improvement Act, and this referrendum carried under it, would give a legal sanction to the collection of local contributions.

It would then be possible to advance the moneys needed for carrying out such works from a fund created for the purpose and this fund can be reimbursed from the collections made thereafter and partly from the general revenues, if a part is to be borne by the State. It is generally seen that some of the works can be carried out in these prosperous districts with very good financial results both to the Exchequer and to the people in that area. While generally Rs. 500 are needed for every acre brought under irrigation giving an yield of about 1,000 lb., a year, some works carried out in these districts would give one acre for every Rs. 100 or Rs. 200 and the increase in yield might even be higher than 1,000 lb., per acre, and this increase would be attained almost instantaneously.

In the normal course, it may be difficult to give priority to works in these districts. A way-out has got to be found, and if this way is accepted with such modifications as are necessary, then we could add to the prosperity of these areas without generating discontent in the poorer districts. This is all the more advisable because these districts are definitely more prosperous and can afford to finance their own development, and the people voluntarily agree to pay.

This is not an entirely novel idea. We have a Pest Control Act in some States of India where we compel all cultivators in an area to compulsorily take to recommended plant protection methods. Soil conservation schemes have been undertaken in areas involving the compelling of recalcitrant elements. United States affords a very good example of the application of this principle. Wheat-growers periodically have got to vote 'yes' or 'no' as to whether they would prefer price support along with quotas for areas to be sown to wheat or no price support with freedom to sow any area they like to that crop.

Any failure to do some such thing both with regard to expansion and stabilisation of irrigation or improvement to drainage works in these districts would result in stagnation in those areas.

## APPENDIX

Rain-

	1915	1916	1917	1918	1919	1920	1921
Anantapur ..	28.80	33.42	32.77	19.22	28.95	12.42	24.18
Chittoor ..	43.60	35.83	37.14	30.76	40.83	32.51	32.75
Cuddapah ..	32.61	40.00	37.93	21.28	31.92	25.61	29.89
East Godavari (Agency) ..	..	..	..	..	..	..	48.04
East Godavari (Plains) ..	44.29	62.32	61.58	33.29	46.93	30.73	41.08
Guntur ..	46.75	50.97	46.16	30.45	28.09	24.28	35.06
Krishna ..	51.48	50.19	55.76	30.05	40.51	26.26	44.35
Kurnool ..	31.44	48.50	31.66	20.62	28.73	14.99	21.88
Nellore ..	48.25	36.82	51.39	46.16	39.06	40.12	32.95
Srikakulam ..	..	..	..	..	..	..	..
Visakhapatnam ..	40.88	40.88	40.81	40.81	39.83	39.83	39.59
West Godavari ..	57.12	63.20	56.99	28.24	46.02	26.74	44.97
Adilabad ..	36.84	35.69	46.99	24.57	39.18	18.40	47.12
Hyderabad ..	48.81	50.98	37.42	22.26	36.90	21.60	28.19
Karimnagar ..	..	36.75	44.72	21.33	45.36	15.32	33.59
Khammam ..	..	..	..	..	..	..	..
Mahbubnagar ..	38.79	55.06	44.55	15.75	29.34	18.40	24.15
Medak ..	38.31	48.58	51.57	29.42	32.59	13.67	28.85
Nalgonda ..	48.73	59.05	36.92	24.87	29.15	24.48	25.97
Nizamabad ..	38.97	39.14	57.83	26.50	31.47	24.65	46.49
Warangal ..	40.16	48.21	51.74	22.35	43.98	15.14	43.31



13.

fall

1922	1923	1924	1925	1926	1927	1928	1929	1930
17.59	12.51	21.18	23.54	19.24	22.86	22.21	24.20	26.43
38.17	22.80	32.05	36.46	33.44	26.07	31.84	31.38	52.22
28.65	16.93	24.96	33.53	25.40	25.90	24.64	26.01	35.68
47.14	52.82	48.06	57.50	44.63	48.55	47.29	38.92	48.13
32.52	51.70	56.50	55.25	42.22	40.24	42.18	35.91	57.12
32.10	28.15	31.61	39.90	21.73	35.41	33.57	22.75	39.61
32.43	34.49	40.46	45.63	27.83	39.72	34.73	28.71	51.06
18.93	21.08	22.27	28.41	18.60	26.79	24.58	20.34	23.76
40.40	29.45	37.58	52.52	26.30	33.15	32.27	33.87	54.62
..	..	..	..	..	..	..	..	..
32.43	49.04	46.18	47.97	35.24	43.63	52.27	38.44	45.23
32.75	50.25	43.73	49.34	34.08	43.86	37.71	33.71	49.68
..	..	..	..	32.94	41.73	40.43	35.14	34.39
24.85	24.12	28.02	34.38	23.03	35.98	32.58	22.81	27.27
41.04	25.43	39.81	48.32	27.24	35.88	36.91	32.43	35.35
..	..	..	..	..	..	..	..	..
20.13	24.51	28.02	32.98	29.84	31.83	32.24	19.72	30.27
24.75	24.00	27.25	39.90	29.43	26.42	30.82	25.38	27.14
34.31	21.32	33.27	28.22	16.62	34.92	33.78	27.43	21.55
37.67	31.15	34.43	32.22	36.63	35.73	62.20	32.07	32.40
34.67	33.92	43.88	54.54	29.64	39.98	42.51	33.07	38.69

## APPENDIX

Rain-

	1931	1932	1933	1934	1935	1936	1937
Anantapur ..	15.35	22.28	26.06	12.06	23.82	21.53	22.17
Chittoor ..	35.77	31.03	30.30	30.62	34.64	33.94	41.46
Cuddapah ..	22.33	19.63	23.35	21.04	28.92	23.52	26.96
East Godavari (Agency) ..	58.68	48.56	56.57	45.36	43.43	63.23	48.09
East Godavari (Plains) ..	50.47	42.16	42.22	35.59	33.36	61.93	37.46
Guntur ..	37.93	34.59	33.57	29.04	23.69	41.02	30.54
Krishna ..	43.06	37.57	42.08	30.80	30.71	46.03	32.68
Kurnool ..	23.66	22.47	27.01	20.18	26.70	23.78	24.90
Nellore ..	42.75	31.74	37.19	29.22	28.41	40.67	38.32
Srikakulam ..	..	..	..	..	..	..	..
Visakhapatnam ..	52.71	37.47	42.87	36.41	27.31	48.97	34.89
West Godavari ..	48.51	46.14	49.97	30.82	34.70	57.31	33.48
Adilabad ..	46.48	42.40	59.53	42.58	37.59	50.17	41.03
Hyderabad ..	37.12	28.69	45.44	22.31	25.32	27.58	28.14
Karimnagar ..	40.07	37.22	73.11	48.89	37.41	49.11	38.54
Khammam ..	..	..	..	..	..	..	..
Mahbubnagar ..	20.94	28.75	34.45	26.69	25.86	28.64	22.75
Medak ..	35.60	28.81	50.92	29.61	37.51	36.77	34.00
Nalgonda ..	26.95	29.58	35.83	24.98	25.53	33.43	28.45
Nizamabad ..	45.27	33.81	53.62	42.16	40.15	49.94	38.17
Warangal ..	45.66	36.71	50.84	40.41	32.96	49.97	31.32

## 13.—(Contd.)

fall

1938	1939	1940	1941	1942	1943	1944	1945	1946
29.03	21.51	26.28	21.54	13.44	20.89	24.19	14.48	24.25
25.71	40.98	40.67	33.34	25.13	51.06	48.87	25.98	45.25
26.28	26.94	38.10	25.82	22.25	39.92	34.86	20.92	35.02
52.81	43.09	52.36	37.24	42.07	39.32	42.37	58.33	50.08
50.32	55.50	42.87	52.19	40.34	39.32	49.58	42.79	34.94
34.27	43.34	37.68	30.58	20.71	33.62	41.74	32.09	38.49
43.73	43.30	41.80	33.48	26.35	35.97	41.95	32.49	39.47
29.45	25.08	30.20	18.26	19.31	28.99	28.83	24.41	29.12
25.21	44.93	53.24	33.04	29.08	50.09	53.41	24.63	58.58
..	..	..	..	..	..	..	..	..
49.19	33.48	44.46	39.72	36.09	40.96	39.80	39.38	37.32
46.39	49.33	41.63	40.73	38.54	44.77	47.16	37.43	37.11
56.16	34.92	43.61	25.26	41.57	34.50	41.20	42.84	34.95
30.97	22.61	24.55	18.54	27.43	33.11	33.91	40.43	26.63
47.40	83.78	34.32	19.62	34.65	34.98	35.95	32.60	37.26
..	..	..	..	..	..	..	..	..
37.94	21.12	32.37	15.82	36.51	27.87	28.32	24.41	29.81
48.06	25.42	27.46	22.24	28.62	35.39	31.53	40.44	31.04
25.07	26.37	31.29	18.19	24.37	28.32	28.04	28.80	22.99
53.61	28.81	42.24	29.32	45.50	41.90	37.30	38.51	36.27
41.23	27.06	48.63	25.65	36.32	35.84	36.91	40.86	40.20

## APPENDIX

Rain-

	1947- 1948	1948- 1949	1949- 1950	1950- 1951	1951- 1952	1952- 1953	1953- 1954
Anantapur ..	21.20	19.10	24.80	21.70	15.00	15.80	28.10
Chittoor ..	26.20	31.20	33.00	29.20	24.60	29.50	37.00
Cuddapah ..	25.40	21.00	28.10	19.70	21.00	20.00	29.80
East Godavari (Agency)	59.30	48.00	} 53.90	50.80	45.20	30.10	35.20
East Godavari. (Plains)	49.60	48.70					
Guntur ..	35.70	31.00	41.50	27.00	26.80	20.60	31.10
Krishna ..	43.00	38.90	45.70	34.20	35.20	24.00	33.70
Kurnool ..	33.70	24.60	33.70	22.70	31.60	14.70	20.70
Nellore ..	25.00	34.10	32.10	32.50	32.60	24.10	38.30
Srikakulam ..	..	..	N.A.	38.70	41.80	39.20	46.90
Visakhapatnam ..	48.50	39.90	48.50	35.10	41.50	38.10	37.10
West Godavari ..	49.50	42.90	53.70	46.90	41.50	28.60	41.20
Adilabad ..	40.83	36.79	53.45	26.54	33.52	28.64	53.83
Hyderabad ..	35.03	30.76	24.86	33.88	26.95	16.77	31.46
Karimnagar ..	40.79	37.80	37.31	29.35	32.05	26.35	45.29
Khammam ..	..	..	N.A.	N.A.	N.A.	N.A.	6.67
Mahbubnagar ..	38.07	24.31	33.65	27.22	30.22	19.47	32.76
Medak ..	36.04	33.42	37.65	29.18	29.92	23.02	39.92
Nalgonda ..	33.33	20.22	28.12	26.99	23.41	19.16	31.17
Nizamabad ..	40.20	49.35	45.14	32.22	40.14	24.44	54.91
Warangal ..	46.30	31.05	41.25	35.37	36.32	25.90	45.15

## 13.--(Contd.)

fall

1954- 1955	1955- 1956	1956	Normal
21.10	24.90	27.03	22.40
41.50	28.00	29.18	33.70
35.20	30.60	35.64	27.10
52.40	42.40	48.64	41.80
38.60	33.70	42.72	32.40
46.70	45.10	53.79	37.00
25.20	31.60	35.95	24.20
44.70	21.60	47.58	35.50
46.30	58.80	57.38	42.7
59.00	48.70	54.88	39.00
53.60	46.50	47.74	40.70
39.81	31.30	50.42	41.7
27.23	43.70	40.83	30.4
32.27	40.80	44.85	35.0
40.75	45.80	41.41	37.9
30.92	57.60	42.43	28.4
36.52	60.60	49.35	36.3
32.46	50.10	37.78	26.8
36.79	41.00	56.84	41.5
37.57	53.90	40.60	38.2

## Notes on drainage problems in Andhra Pradesh

## INTRODUCTION

*Physical Features.*—The State of Andhra Pradesh consists of a part of Deccan Plateau with its level from plus 1,900 to plus 400 uplands adjoining the coastal districts of Nellore, Guntur, Krishna, East and West Godavari, Visakhapatnam and Srikakulam extending from the Eastern Ghats to the Delta head roughly at a level from plus 400 to plus 50 and deltaic tracts of Godavari, Krishna and Pennar, with a coast line of 540 miles length popularly known as Coromondel and Circars coast. The slope of the country from the western part of the State to the head of the Godavari and Krishna deltas is nearly 10 ft. / mile and does not present any difficulties\* for drainage. But from the head of the Godavari and Krishna deltas to the Sea the slope is only 1 ft. / mile and the country is low lying, having a very poor drainage. Normally even if there is no obstruction the drainage and the flood waters find their way to the Sea with some difficulty because of the flatness of the country. The first obstruction to the drainage is the contour canals of the two deltas viz the Samalkotah, the Godavari and Krishna—Ellore canals and the Commamur canal. The second obstruction is the Southern Railway line. The third is the sand dunes formed near the coast through which all drainages have to pass to Sea cutting them and as the velocity of the water is negligible, the drainages take a winding and tortuous course to reach the Sea.

2. Due to peculiar geographical and topographical features of our State, large tracts of areas in the coastal districts suffer from chronic drainage congestion, which affect agricultural production more or less seriously. Such areas amount to nearly a lakh of acres in Godavari and Krishna deltas. The drainage needs of these areas are catered to by some 2,000 miles of drains.

The improvements to these drains have not received the attention they deserve due to paucity of funds. The drains in the two deltas come under the following categories.

(1) Drains entering the sea directly like East Tungabhadra stream, Nallamada drain, Romperu drain, etc. in Krishna Western Delta, the Biccavolu and the Tulyabhagh drains in Godavari Eastern Delta.

(2) Drains which enter a creek or arm of the river such as the Teki, Pekeru in Godavari Eastern Delta, the Sankaragupatam, Antervedi, Pedatippa, Upper and Lower Kowsika, the Inapuram, Kunavaram, Rangarajucodu, Vasalatippa and Panchanadi drains of Godavari Central Delta which is by far the most abutted, the Nakkala drain anti Kaja in Godavari Western Delta and the Yenamadurru drain with its outfall into the Upputeru.

(3) Drains entering Collair lake which is a natural depression between the two deltas of Godavari and Krishna like the Budameru, Ramileru, East and West Thammileru, Polraj and Chandrayya drains, etc., in Godavari Western and Krishna Eastern Deltas.

3. (1) The Coromandel coast line from about 50 miles north of the Pennar infall to about 50 miles south of the Krishna mouth is almost steady and there is not much of littoral drift of sand. Consequently the straight cuts to sea for drains at their tail-reaches like East Tungabhadra, Romperu, Nallamada, Battiprole, etc., function effectively if straight cuts are excavated. For the first Three drains the straight cuts excavated have been successful and for the fourth *viz.* Battiprole, proposals are under consideration of Government. From about 50 miles south of the Krishna infall up to Kakinada the deltas of the Godavari and Krishna have advanced into the sea and consequent increase in the length of the drains has resulted in a very little surface fall and poor functioning of drains. There is no drainage trouble in any irrigated areas north of Kakinada as the sea coast is fairly in a continuous straight line and all streams and rivers have adequate falls from their sources to the mouth.

(2) With regard to lowering of Collair lake level to enable the drains falling into it, function effectively, several schemes have been formulated, and are under way. The most important of these schemes are the widening and deepening of the Upputeru, the only outlet from the lake to the sea, and detention reservoirs on the upland streams such as Budameru, Thammileru, Yerrakalva, etc. The former is under execution while proposals have been submitted for sanction in regard to the latter.

With regard to drains falling into Upputeru such as the Yanamadurru drain, though some difficulty is experienced due to high levels in Upputeru due to swelling up of the Collair for which the Upputeru is the only outlet and due to backing up of water in Yanamadurru drain, the submersion of paddy crops adjoining these drains is up to 7 to 8 days which is the maximum period the paddy crop can withstand.

(3) *Drains entering the Godavari and Krishna through the outfall sluices.*— Important examples are Nakkala drain, Kaja drain of Godavari western delta. Due to high floods in Vasista Godavari which is also tidal, the outfall sluices are closed when there are high floods and tides in the river resulting in backing up of the drainage water in the drains causing submersion to the adjoining cultivated lands. This is the most difficult to deal with as we have to fight against nature.

(1) All improvements to drains are proposed to be tackled in two directions (a) Long term improvements such as straight cuts, deepening and widening of drains for better hydraulic performance based on scientific standards and provision of outfall sluices. In some cases provision of additional drains are necessary to carry the surface drainage water effectively. These improvements may cost more than 10 lakhs of rupees for each major drain.

(b) Short term improvements such as removing silt, shoals, etc. in the ordinary floods, level section of drains, removal of water weeds, easing curves, forming banks to confine the sections. In individual deltas the general problems are :

(a) want of proper drainage course,

(b) inadequacy of existing courses,

(c) overflowing of the drains, submerging the marginal lands due to backing up of floods from the parent drains.

(2) The drains in the Krishna and Godavari deltas are the following :—

#### KRISHNA DELTA

##### *Western section*

1. Battiprole drain.
2. Repalle main drain.
3. East Tungabhadra drain.
4. Romperu drain.
5. Nallamada drain.

##### *Eastern section*

1. Budameru river.
2. East & West Thammileru rivers.
3. Ramileru river.
4. Upputeru, and
5. Gunderu rivers.
6. Polraj drain.
7. Chandrayya drain etc.

#### GODAVARI DELTA

##### *Western section*

1. Yerrakalva.
2. Yenamaduru drain.
3. Weyyeru.
4. Mondicodu.
5. Thokalapalli drain.
6. Gonteru drain and
7. Mogulturu drain.
8. Nakkala drain.
9. Kaza drain and
10. Bhaggeswaram drain.

##### *Eastern section*

1. Teki drain.
2. Injaram drain.
3. Biccavolu drain.
4. Tulyabhaga drain.
5. Patavala drain.
6. Patherlagedda drain etc.

##### *Central section*

1. Upper and Lower Kowsika drains.
2. Krapa drain.
3. Panchnadi drain.
4. Sankaragupatham drain etc.
5. Pedatippa drain.
6. Inapuram drain.
7. Kunavaram drain.
8. Vasalatippa drain.
9. Antervedi drain.

5. The problems in some of the important drains are dealt with below :

*Battiprolu drain.*—The crops on the deltaic lands draining into this drain are subject to poor yields on account of submersion due to inadequacy of the discharging capacity of the drain. This was partly rectified by providing additional vents in the bridge at Gudikayalalanka. An estimate for improvements for excavating straight cuts to the drain was submitted to the Government for improving the discharging capacity of the drain fully and to reduce over-flooding and submersion of marginal lands. The improvements proposed in the above estimate will relieve submersion of the marginal lands of about 5,400 acres, thereby improving the yield on these lands by about three bags per acre.



*Romperu drain.*—Extensive improvements at a cost of over one crore of rupees have been executed to Romperu drain and its affluents for improving the carrying capacity of the drains and to reduce over-flooding during monsoon season, besides relief from submersion of the cultivable lands in the block. An area of about 10,000 acres which was under water previously is now reclaimed for cultivation under the scheme.

*Nallamada drain.*—Straight cut to the Sea is excavated and drain is functioning satisfactorily, and no improvements are considered necessary now.

*East Tungabhadra drain.*—Deltaic lands of Doppalapudi, Kasukurru, Chin-talapalli, Mulakhundam Nagarjupalli, Yazili and Buddam were worst-affected by submersion during high floods like those of 1939, 1945, 1949 and 1954. It is also reported that a remission of Rs. 13,000 is being granted on an average per year not to speak of the low yield of crop. Improvements to the drain costing about Rs. 16 lakhs are under execution under flood control programme. These improvements consist of excavating straight cuts, providing masonry inlets, improving the section (size) of the drain and improvements to bridges on the drain. It is expected that an area of 10,000 acres will be afforded relief from harmful submersion after the above estimate is executed.

*Repalli main drain.*—The drain is said to be functioning satisfactorily. For better hydraulic performance, straight cuts have been proposed and it is under correspondence.

In addition to the above major drains there are a good number of minor drains also which require improvements and extensions. Some of these are :

- (1) Drainage facilities to Appapuram project area.
- (2) Excavating a drainage course of length 1 M.O. 330 feet near Ramabhatlapalem village.
- (3) Improvements to Nagaram south drain.
- (4) Drainage facilities to Peddapalli and Alluru blocks.
- (5) Excavating a swamp drain in Bapatla taluk.
- (6) Improvements to Kollimerla drain.

Estimates for some of the above were prepared and sent to Government and some are under preparation. These estimates when executed will provide adequate drainage facilities to deltaic lands in the Krishna western delta.

*East and West Thammileru.*—Flood banks are being formed from Eluru canal crossing, up to Collair lake to both arms of Thammileru under flood control programme at a cost of Rs. 10.35 lakhs. These will relieve submersion of marginal lands aggregating to 6,000 acres nearly.

*Budameru drainage stream.*—This is a river-cum-drain, as it receives the drainage of not only the up-land catchment but also from the delta lands. (a) A diversion channel from this river to drop into the Krishna river is under excavation under flood control programme to divert 7,500 cusecs of the flood discharge of Budameru to Krishna river. This when completed will relieve 23,000 acres of lands in the Collair lake area from harmful submersion. (b) Forming flood bank to Budameru river at a cost of Rs. 35.06 lakhs from the point of diversion to Collair lake is also under execution, under flood control programme. These, when completed will relieve 28,560 acres of lands bordering Budameru from submersion and consequent loss of yield.

*Upputeru drainage stream.*—This is also a drain akin to Budameru as this is the only outlet from the Collair lake into the Bay of Bengal.

The submersion in and around Collair lake and consequent loss of crop on irrigated lands on the margins of Collair are partly due to inadequacy of the discharging section of the Upputeru to effectively lead away the flood waters brought by the various drains and streams into the Collair. Hence improvements to Upputeru by way of widening and deepening the section to increase the present discharging capacity by 100% are taken up under flood control programme. It is expected that the above improvements will effectively drain the Collair lake.

Improvements to a number of minor drains such as Vatlur drain, Chandrayya drain and Polraj drain etc., that fall into the Collair lake are also called for and they have to be separately considered after watching the effects of the present schemes under execution.

A number of other proposals to improve the other minor drains and to relieve submersion in eastern and central deltas are also under examination by special staff.

#### GODAVARI DELTA.

*Western section.*—Almost all the drains in this section except Yerrakalva have been improved and made to function effectively.

*Yerrakalva.*—Yerrakalva stream brings in a large quantity of flood and empties itself into the Yenamaduru drain which branches into two arms, one arm falling into the Collair lake and the other falling into the Upputeru below the lake. During rainy season both Yerrakalva and Upputeru swell to their maximum resulting in heavy loss of life and property. The successful drainage of this river can be effectively solved only by forming reservoirs on the main river and its tributaries in the higher reaches for which proposals are under active consideration. An estimate for Rs. 51 lakhs for the construction of flood detention reservoir across Yerrakalva has been approved by the State Flood Control Board and is under finalisation. When this reservoir fructifies, the drainage of this tract will have been effectively relieved thousands of acres of delta irrigation from the deleterious effects of submersion and loss of crop.

*Eastern section.*—The following drains are proposed to be tanked up under the flood control programme to effectively lead the flood waters to the sea or the rivers lower down.

1. Patherlagadda drain.
2. Tulyabhaga drain.
3. Patavala drain.

These when completed will relieve an area of about 6,860 acres from drainage trouble. The Teki, Injeram, West and East Yeleru and Biccavolu drains in this section have also to be improved.

*Central section.*—The drains in this section viz., upper and lower Kowsika, Krapa, Panchanadi and Sankaraguptam etc., drains require improvements as these are not satisfactorily functioning now. There are proposals on hand for improving the north flood bank of Panchanadi drain. The improvements to the other drains in this section have also to be taken up in due course.

6. The yield from the existing irrigation in both the deltas can be improved to an appreciable extent by executing various improvements contemplated to these drains. The problem of tackling these drains and improving their condition of working has been engaging the attention of the Engineers and administrators for the last thirty years.

In the year 1953, the question of levying drainage cess of Re. 0-8-0 per acre was considered but it did not meet with favourable consideration by Revenue Department. In as much as the drainage improvement has to be taken up on a large scale, costing a few crores of rupees, levying drainage cess is an urgent necessity. The drainage congestion in deltas will be further enhanced due to increase in ayacuts proposed under N.S. Canals and Ippur project canals abutting the Krishna and Godavari deltas. It will be a great help to the ayacutdars of these deltas if the Government are able to find sufficient funds to execute them and improve these drains effectively for their proper functioning.

## Statement showing the Important Irrigation Projects with their ultimate

S. No.	Name of the project	Ultimate potential in acres	Area irrigated during the 1st plan period	1957-58	
				Targets	Achievement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Tungabhadra Low Level Canal, Kurnool district.	1,48,725	19,102	40,000	39,848
2.	Kaddam Project, Adilabad District.	65,000	827	3,600	4,165
3.	K.C. Canal, Kurnool & Guddapah districts	3,00,600	94,332	1,00,000	1,15,874
4.	Paleru Reservoir, Nellore District.	1,428	..	304	307
5.	Upputeru Lower Anicut Scheme, Nellore Dist.	1,892	..	1,296	1,477
6.	Siddalagandi, Chittoor District.	350	..	..	..
7.	Koilsagar Project, Mahboobnagar Dist.	12,000	5,539	7,100	7,100

15.

## ayacut and targets and achievements in the II Plan (Andhra Pradesh)

1958-59		1959-60	1960-61	Remarks.
Targets	Achievement up to 30-9-58	Targets	Targets	
(7)	(8)	(9)	(10)	(11)
65,000	37,014 up to 30-11-58	1,00,000	1,48,725	Hingari cultivation has just commenced. The Target is expected to be achieved by the end of the season.
9,800	8,524-38	..	..	The project breached in August 1958.
1,25,000	97,019-45	1,60,000	2,00,000	The target for 1958-59 is expected to be achieved by the end of the Second crop season.
700	21	1,000	1,428	..
1,700	1,710	1,892	..	..
100	..	250	342	This project has been completed in all respects and water is also available for supply to the ayacut but the ryots have not yet commenced reclamation of their lands to make them fit for irrigation.
9,000	7,635	10,000	12,000	..

APPENDIX 16.

Statement showing the area irrigated under different types of irrigation sources

Sl. No.	District	NET AREA IRRIGATED BY							Area irrigated more than once	Gross area irrigated
		Govt. canals	Private canals	Tanks	Tube wells	Other wells	Other sources	Total		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>Andhra region.</i>										
1.	Anantapur ..	.. 45,193	663	91,273	..	65,197	8,600	2,10,926	97,946	3,08,872
2.	Chittoor ..	.. 8,319	151	1,76,460	..	1,00,608	31,662	3,17,200	94,668	4,11,868
3.	Cuddapah ..	.. 66,349	760	73,025	..	76,415	11,775	2,28,324	64,544	2,92,868
4.	East Godavari ..	.. 4,74,102	..	1,33,594	..	301	7,819	6,15,816	94,267	7,10,083
5.	Guntur ..	.. 4,49,335	..	45,166	..	10,600	8,854	5,13,955	13,594	5,27,549
6.	Krishna ..	.. 6,38,991	..	1,17,784	..	5,152	4,940	7,66,867	68,299	8,35,166
7.	Kurnool ..	.. 53,664	..	59,956	..	10,589	30,113	1,54,322	2,417	1,56,739
8.	Nellore ..	.. 2,51,490	779	3,09,034	..	70,974	11,941	6,44,218	1,93,539	8,37,757
9.	Srikakulam ..	.. 1,65,717	13,287	2,77,692	..	25,367	20,328	5,02,391	55,659	5,58,050

10. Visakhapatnam	..	79,940	41,519	1,35,567	..	40,706	55,756	3,53,488	51,941	4,05,429
11. West Godavari	..	6,18,459	..	1,13,966	..	10,251	14,147	7,56,823	57,911	8,14,734
Total	..	28,51,559	57,159	15,33,517	..	4,16,160	2,05,935	5,00,433	7,94,785	58,59,115

*Telangana Region.*

12. Adilabad	..	7,791	..	44,382	..	1,379	1,744	55,296	15,491	70,787
13. Hyderabad	..	9,090	740	47,384	1,004	44,326	5,630	1,08,174	13,560	1,21,734
14. Karimnagar	..	30,568	1,932	1,92,245	583	36,901	19,806	2,82,035	44,762	3,26,797
15. Khammam	..	27,930	205	90,222	58	9,718	1,409	1,29,542	3,987	1,33,529
16. Mahabubnagar	..	13,947	772	1,66,966	189	41,303	7,495	2,30,672	23,449	2,54,121
17. Medak	..	12,613	106	1,46,244	392	37,212	3,606	2,00,173	41,175	2,41,348
18. Nalgonda	..	32,127	1,130	1,10,441	1,142	55,465	3,628	2,03,933	89,897	2,93,830
19. Nizamabad	..	1,28,606	741	1,07,449	470	14,776	2,340	2,54,382	47,677	3,02,059
20. Warangal	..	14,393	786	1,99,786	769	41,068	2,601	2,59,403	44,434	3,03,837
Total	..	2,77,065	6,412	11,05,119	4,607	2,82,148	48,259	17,23,610	3,24,432	20,48,042
		31,28,624	63,571	26,38,636	4,607	6,98,308	2,54,194	67,87,940	11,19,217	79,07,157

SOURCE : Statistical Abstract 1956—Table 19 published by the Director of Bureau of Economics & Statistics, Andhra Pradesh, Hyderabad.

## APPENDIX 17.

Statement showing the nature and percentage of soils in each district in the Andhra region.

District	NATURE OF SOIL				
	Regar. per cent	Red Ferru- genous per cent	Alluvial per cent	Arenaceous. per cent	
Visakhapatnam					
(plains) ..	21.00	79.00	..	..	
(agency) ..	..	..	..	..	
East Godavari					
(plains) ..	8.00	33.00	53.00	6.00	
(agency) ..	..	..	..	..	
West Godavari	..	32.00	29.00	35.00	4.00
Krishna	..	66.00	6.00	18.00	10.00
Guntur	..	90.00	7.00	..	3.00
Kurnool	..	60.00	40.00	..	..
Anantapur	..	20.00	80.00	..	..
Cuddapah	..	46.00	54.00	..	..
Nellore	..	23.00	32.00	..	45.00
Chittoor	..	11.00	89.00	..	..

SOURCE.—Report of the Special Officer for the investigation of Land Tenures on the proposals on Land Revenue Reform—Appendix—X.



## APPENDIX 18.

Statement showing the number of money rates for Wet and Dry lands and the maximum and minimum rates in each district in Andhra region including the increase made under the Andhra Land Revenue Assessments (Standardization) Act XXIX of 1956 and the Andhra Land Revenue (Additional Wet Assessment) Act 1956.

District	WET				DRY			
	No. of Tarams	Rate per acre		Ave- rage Rs.nP.	No. of Tarams	Rate per acre		Ave- rage Rs.nP.
		From Rs.nP.	To Rs.nP.			From Rs.nP.	To Rs.nP.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>1. Srikakulam District</b>								
(a) Chicacole Taluk	8	1.31	9.19	4.69	7	0.69	3.19	1.75
(b) Bobbili, Cheepurpalli, Palakonda, Parvathipuram and Salur taluks.	8	2.03	13.22	7.21	9	0.44	3.81	1.81
(c) Other taluks ..	8	2.06	13.37	7.31	9	0.44	4.06	1.94
(d) Palakonda .. agency	7	2.06	8.44	5.00	8	0.19	2.50	1.35
<b>2. Visakhapatnam District.</b>								
(a) Gudem taluk ..	7	2.06	8.56	4.75	10	0.19	3.37	1.90
(b) Other taluks ..	8	2.03	13.22	7.31	9	0.44	3.81	1.81
<b>3. East Godavari District.</b>								
(a) Delta ..	11	4.12	13.50	9.88	12	0.31	8.25	2.81
(b) Upland ..	14	1.94	13.50	7.91	12	0.31	5.06	2.00
(c) Yellavaram ..	11	1.94	11.34	6.53	9	0.31	2.81	1.50
<b>4. West Godavari District.</b>								
(a) Delta ..	11	4.12	13.50	9.88	12	0.31	8.25	2.81
(b) Upland ..	14	1.94	13.50	7.91	12	0.31	5.06	2.00
(c) Polavaram ..	11	2.37	7.22	6.53	3	0.31	0.75	0.56
<b>5. Krishna District.</b>								
(a) Delta ..	11	4.12	13.50	8.97	11	0.31	5.94	2.56
(b) Upland ..	7	3.00	10.24	6.94	9	0.31	4.19	1.81
<b>6. Guntur District.</b>								
(a) Delta ..	10	2.06	11.68	7.12	8	0.25	2.87	1.37
(b) Palnad and Sattenapalli.	10	2.06	11.68	7.37	12	0.31	5.56	2.50

## APPENDIX 18.—(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
(c) Guntur, Narsaraopet, Bapatla and Tenali	10	2.31	13.21	7.81	12	0.31	6.36	2.62	
(d) Vinukonda ..	10	2.06	11.25	6.61	8	0.25	2.87	2.62	
(e) Ongole-Coast villages.	22	2.06	13.50	7.31	16	0.25	4.50	1.31	
(f) Ongole other villages.	22	2.06	13.50	7.31	16	0.31	5.37	1.87	
7. Nellore District ..	22	2.06	13.50	7.31	28	0.25	5.12	2.00	
8. Kurnool District.									
(a) Kurnool proper	10	2.06	13.50	7.81	8	0.25	2.87	1.31	
(b) Kambham and Markapur.	10	2.06	13.50	7.81	9	0.25	3.37	1.31	
(c) Patti Konda ..	10	2.06	13.50	7.81	10	0.25	3.37	1.56	
(d) Koil Kuntla ..	10	2.06	13.50	7.81	11	0.25	4.50	1.69	
(e) Adoni and Alur	19	1.12	13.50	9.09	8	0.25	2.81	1.25	
9. Anantapur District.									
(a) Black soil taluks	11	1.12	13.50	6.88	9	0.12	2.81	1.12	
(b) Red soil taluks . 16 Villages transferred from Gooty	}	11	1.12	13.50	6.88	8	0.12	2.00	0.81
Remaining villages						10	1.12	13.16	6.80
(c) Kadiri taluk ..	10	2.6	12.68	7-14	8	0.25	2.25	1.06	
10. Cuddapah District.									
(a) Badvel, Sidhout and Rajampet.	10	2.06	13.50	7.91	12	0.25	4.50	1.81	
(b) Rayachoti ..	10	2.06	12.68	7.14	8	0.25	2.25	1.06	
(c) Other Taluks ..	10	2.06	13.50	7.91	11	0.25	4.50	1.87	
11. Chittoor District.									
(a) Chittoor and Chandragiri.	18	2.56	13.50	8.42	7	0.37	2.56	1.25	
(b) Palamaner. ..	14	2.44	8.50	5.25	7	0.37	2.37	1.19	
(c) Madanapalle and Voyalpad.	10	2.06	12.58	7.14	8	0.25	2.25	1.06	

## APPENDIX 19.

Statement showing the Maximum (16 bhaganna) rates of Dry, Wet and Garden (flow) Taluka-wise in Telengana Region including the Special Assessment.

Sl. No.	Name of the District	Name of Taluk	DRY		WET		GARDEN (FLOW)		Remarks
			Max Rate	Max Rate	Max Rate	Max Rate	Max Rate	Max Rate	
(1)	(2)	(3)	Gro- Rate up	I.G. up	Gro- Rate up	I.G. up	Gro- Rate up	I.G. up	(10)
1.	Adilabad @	Adilabad	I	1.19	I	10.92	I	9.11	
			II	0.95	II	9.11	..	..	
		@Asifabad	I	1.19	I	7.28	I	7.28	
			II	0.95	..	..	..	..	
		Boath	I	1.16	I	6.85	I	6.85	
			II	0.85	..	..	..	..	
		@Chinnoor	I	1.92	I	10.92	I	8.19	
			II	1.44	II	8.19	..	..	
			III	1.19	..	..	..	..	
		Khanapur	I	1.71	I	8.57	I	6.85	
			II	1.28	II	6.85	..	..	
		@Luxshettipet	I	1.92	I	9.11	I	7.28	
			II	1.44	II	7.28	..	..	
			III	0.95	..	..	..	..	
Mudhole	I	2.57	I	12.85	I	12.85			
@Nirmal	I	1.92	I	14.57	I	10.92			
	II	1.45	II	13.65	II	9.11			
	III	1.07	..	..	..	..			
	IV	1.72	..	..	..	..			
@Sirpur	I	1.19	I	7.28	I	7.28			
	II	0.95	..	..	..	..			
@Utnoor	I	0.95	I	7.28	I	7.28			
2. Hyderabad	Hyderabad East	I	2.78	I	14.57	I	14.57		
		II	2.14	..	..	..	..		
	Hyderabad West	I	2.78	I	14.57	I	14.57		
		II	2.14	..	..	..	..		
	Ibrahimpattam	I	2.78	I	14.57	I	14.57		
		II	2.14	..	..	..	..		

## APPENDIX 19.—(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Medchal	..	I	2.35	I	17.14	..	..
				II	1.92	II	13.71	..	..
		@Pargi	..	I	1.80	I	16.39	I	10.92
				II	1.44	II	13.65	II	9.11
				III	1.19	III	10.92	..	..
		Shahabad	..	I	2.57	I	20.57	I	20.57
				II	1.92	II	17.14	II	17.14
				III	1.50	III	13.71	III	13.71
				IV	1.28	..	..	..	..
				V	0.85	..	..	..	..
		Tandur	..	I	2.14	I	12.85	..	..
				II	1.92	II	10.28	..	..
		Vicarabad	..	I	2.61	I	16.28	..	..
3.	Karimnagar	Karimnagar	..	I	2.57	I	14.57	I	12.85
				II	2.14	II	12.85	..	..
		Huzurabad	..	I	2.57	I	12.85	I	12.85
		Jagtial	..	I	2.57	I	13.71	I	10.28
				II	2.14	II	12.00	..	..
		@Mantheni (Mahadevpur)		I	1.55	I	10.92	I	9.11
				II	1.07	II	9.11	..	..
		Metpalli	..	..	2.56	..	17.14	..	..
					to		to		
					2.14		12.00		
		Sirsilla	..	I	2.78	I	15.43	I	15.43
				II	2.35	II	13.71	II	13.71
		Sultanabad	..	I	2.89	I	14.57	I	10.92
				II	2.41	II	12.75	..	..
4.	Khammam	@Khammam	..	I	2.77	I	16.39	I	9.11
				II	2.16	II	14.57	..	..
		Burgampahad	..	I	1.28	..	..	I	8.57
				II	1.06	..	..	..	..
		Madhira	..	I	2.46	I	13.71	I	8.57
				II	1.92	II	12.00	..	..
				III	1.38	..	..	..	..
		@Palwancha	..	I	1.44	..	..	I	9.11
				II	1.19	..	..	..	..

## APPENDIX 19.—(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Yellandu	.. I	1.71	I	12.00	I	10.28	
			II	1.28	II	10.28	..	..	
5.	Mahaboob-nagar	Mahaboob-nagar.	I	2.04	I	18.21	I	10.92	
	@		II	1.69	II	13.65	..	..	
			III	1.30	III	10.92	..	..	
		Achampet (Amrabad.)	.. I	1.50	I	13.71			
			II	1.06	II	10.28			
		Atmakur	.. I	1.81	I	17.14	I	17.14	
			II	1.50	II	12.85	II	12.85	
			III	1.17			III	10.28	
		Alampur	.. I	2.57	I	10.28	I	10.28	
		Gadwal	.. I	1.71	I	8.57	I	8.57	
			II	1.28					
	@	Kalvakurthi	.. I	2.27	I	18.21	I	10.64	
			II	1.69	II	13.65	II	9.11	
			III	1.30	III	10.92			
	@	Kodangal	.. I	2.16	I	13.65	I	10.92	
			II	1.69	II	10.92			
		Kollapur	.. I	2.14	I	17.14	I	17.14	
			II	1.60	II	12.85	II	12.85	
			III	1.38	III	10.28		10.28	
	@	Makhthal	.. I	1.92	I	16.39	I	10.92	
			II	1.55	II	13.65	II	9.11	
			III	1.30	III	10.92			
	@	Nagarkurnool	.. I	2.41	I	18.21	I	10.92	
			II	1.80	II	13.65			
			III	1.55	III	10.92			
		Shadnagar	.. I	1.60	I	15.43	I	15.43	
			II	1.28	II	12.85	II	12.85	
			III	1.06	III	10.28	III	10.28	
		Wanparthi	.. I	1.92	I	12.85	I	10.28	
			II	1.50	II	12.00			
			III	1.28					
6.	Medak	.. Medak	.. I	2.78	I	17.14	I	17.14	
					II	14.57	II	14.57	
		Andole	.. I	2.77	I	20.03	I	20.03	
			II	2.16	II	16.39	II	16.39	
			III	1.55					

## APPENDIX 19.—(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Gajwel	..	2.77 to 1.72		20.57 to 13.72			*Temporary suspen- sion of As. 3 per rupee for Tabi assess- ment is allo- wed in Paigah villages since 1951.
		Narsapur	..	2.77 to 1.00		23.14 to 12.00			
		Narayankhed	..						
		Spl. group	..	3.86	I	13.71	I	8.57	
	I	"		3.20					
	II	"		2.77					
	III	"		1.72					
		@Sangareddy (Kalabgur)	..	I 2.89 II 2.16 III 1.69	I	17.30	I	17.30 II 15.48	Spl. group one village 3.86, one village 3.37.
		Siddipet	..	I 2.78 II 1.92	I	17.14 II 13.71	I	17.14 II 13.71	
		@ Zahirabad	..	3.86 to 2.36		13.71 to 5.41	12.87 to 8.57		Spl. assess- ment levied only to the extent of Nyalakal Rev. circle ;
7.	Nalgonda	.. Nalgonda	..	I 2.88 II 2.35 III 1.81	I	18.00 II 14.57 III 12.00 IV 11.14	I	14.57	
		Bhongir	..	I 2.67 II 2.14	I	15.43 ..	I	15.43	
		@ Devarkonda	..	I 1.69 II 1.34	I	13.65 II 10.92 III 9.11	I	9.11	
		Huzurnagar	..	I 2.35 II 1.92	I	13.71 II 11.14	I	13.71 II 11.14	
		Miryalguda	..	I 1.81 II 1.50	I	12.85 II 11.14	I	12.85 II 11.14	
		Ramannapet	..	I 2.67 II 2.14	I	15.43	I	15.43	
		Suryapet	..	I 1.81	I	11.14	I	11.14	

## APPENDIX 19.—Contd.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
8. Nizamabad	@ Nizamabad	..	I 2.41 II 2.04		I 18.21		I 18.21			
	@ Armour	..	I 2.41 II 1.92		I 18.21 II 15.48 III 12.75		I 18.21 II 15.48 III 12.75			
	@ Banswada	..	I 2.41 II 1.80 III 1.19		I 18.21 II 15.48		I 18.21 II 15.48			
	@ Bodhan	..	I 2.41 II 1.80 III 1.19		I 18.21 II 15.48		I 18.21 II 15.48			
	@ Kamareddy	..	I 3.00 II 2.41		I 18.21		I 18.21			
	Yellareddy	..	I 1.71		I 17.14 II 14.57		I 17.14 II 14.57			
	9. Warangal	@ Warangal	..	I 2.64 II 2.27 III 1.92		I 16.39 II 14.57 III 12.75		I 9.11		
		Jangaon (Cherial).	..	I 2.35 II 2.14 III 1.71		I 17.14 II 15.43 III 13.71		I 8.57		
		@ Mahabubabad	..	I 2.16 II 1.80		I 14.57 II 12.75 III 10.92		I 9.11		
		@ Mulug	..	I 1.44 II 1.19 III 0.96		I 10.92 II 9.11				
		@ Pakhal (Narsampet)	..	I 1.44 II 1.19		I 10.92 II 9.11		I 9.11		
		@ Parkal	..	I 2.64 II 1.92 III 1.30		I 14.57 II 12.75 III 10.92		I 9.11		

@The Maximum rates of the Taluqs are shown including the Special Assessment of Re. 0-1-0 per rupee on wet and Re. 0-2-0 per rupee on dry assessments, under the Hyderabad Land (Special Assessment) Act of 1952.

SOURCE.—Statement furnished by the Director of Settlements and the Agro Economic Reports of districts.

## APPENDIX 20.

Statement showing the average prices of principal foodgrains from 1801-02 to 1956-57 for Andhra region. (per garce of 3,200 Madras Measures by volume)

Year	Paddy average of I & II sort	Ragi	Cholam	Year	Paddy average of I & II sort	Ragi	Cholam
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
1801-2	.. 102.5	117	124	1820-21	.. 85.5	105	125
1802-3	.. 101.5	105	123	1821-22	.. 100.5	118	132
1803-4	.. 116.5	126	138	1822-23	.. 98.5	116	136
1804-5	.. 128.0	145	157	1823-24	.. 125.0	157	178.
1805-6	.. 111.5	128	140	1824-25	.. 156.0	190	219
1806-7	.. 151.0	151	210	1825-26	.. 118.0	138	164
1807-8	.. 132.5	148	183	1826-27	.. 89.5	99	105
1808-9	.. 93.0	101	104	1827-28	.. 81.0	89	91
1809-10	.. 80.5	90	96	1828-29	.. 84.0	92	95
1810-11	.. 85.5	90	100	1829-30	.. 91.0	102	114
1811-12	.. 102.5	112	119	1830-31	.. 83.0	87	90
1812-13	.. 124.0	141	159	1831-32	.. 76.5	79	85
1813-14	.. 117.0	136	156	1832-33	.. 115.5	138	149
1814-15	.. 99.5	114	135	1833-34	.. 151.0	185	200
1815-16	.. 81.0	83	104	1834-35	.. 103.5	122	137
1816-17	.. 85.5	80	100	1835-36	.. 83.0	82	91
1817-18	.. 88.5	94	116	1836-37	.. 104.0	106	113
1818-19	.. 86.5	103	119	1837-38	.. 105.5	111	124
1819-20	.. 86.5	108	120	1838-39	.. 111.5	120	132



## APPENDIX 20—(Contd.)

(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
1839-40	.. 93.5	102	112	1864-65	.. 196.0	210	227
1840-41	.. 83.5	87	91	1865-66	.. 210.0	231	260
1841-42	.. 70.5	70	76	1866-67	.. 255.0	313	334
1842-43	.. 66.0	64	68	1867-68	.. 187.5	212	214
1843-44	.. 59.0	60	66	1868-69	.. 179.5	196	206
1844-45	.. 71.0	67	79	1869-70	.. 177.5	182	194
1845-46	.. 104.0	115	125	1870-71	.. 147.5	155	173
1846-47	.. 105.0	114	129	1871-72	.. 132.0	131	151
1847-48	.. 91.0	99	114	1872-73	.. 140.0	145	172
1848-49	.. 78.0	80	90	1873-74	.. 138.0	163	187
1849-50	.. 75.0	75	86	1874-75	.. 13790	156	179
1850-51	.. 71.5	74	88	1875-76	.. 131.0	156	172
1851-52	.. 68.5	73	88	1876-77	.. 277.0	337	316
1852-53	.. 66.5	72	84	1877-78	.. 290.0	409	443
1853-54	.. 99.5	120	136	1878-79	.. 226.0	289	318
1854-55	.. 115.5	135	162	1879-80	.. 167.0	203	213
1855-56	.. 124.0	143	154	1880-81	.. 146.0	150	153
1856-57	.. 105.0	111	123	1881-82	.. 140.0	141	139
1857-58	.. 120.0	136	147	1882-83	.. 140.0	139	137
1858-59	.. 151.0	162	180	1883-84	.. 142.0	139	145
1859-60	.. 135.0	151	156	1884-85	.. 150.0	168	185
1860-61	.. 143.0	160	164	1885-86	.. 157.0	167	187
1861-62	.. 157.0	172	186	1886-87	.. 145.0	153	165
1862-63	.. 164.0	175	201	1887-88	.. 140.0	147	164
1863-64	.. 165.0	185	214	1888-89	.. 150.0	161	175

## APPENDIX 20—(Contd.)

(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
1889-90 ..	164.0	161	180	1914-15 ..	284.0	304	326
1890-91 ..	180.0	178	203	1915-16 ..	279.0	291	314
1891-92 ..	207.0	253	279	1916-17 ..	287.0	305	346
1892-93 ..	202.0	231	261	1917-18 ..	294.0	321	396
1893-94 ..	182.0	205	236	1918-19 ..	414.0	514	605
1894-95 ..	175.0	177	206	1919-20 ..	530.0	673	758
1895-96 ..	169.0	157	188	1920-21 ..	458.0	555	614
1896-97 ..	195.0	222	265	1921-22 ..	423.0	495	562
1897-98 ..	241.0	276	325	1922-23 ..	399.0	460	483
1898-99 ..	190.0	217	231	1923-24 ..	401.0	458	501
1899-1900 ..	203.0	251	278	1924-25 ..	435.0	500	553
1900-01 ..	236.0	292	322	1925-26 ..	406.0	457	492
1901-02 ..	213.0	246	268	1926-27 ..	409.0	469	514
1902-03 ..	183.0	181	196	1927-28 ..	408.0	474	523
1903-04 ..	169.0	155	168	1928-29 ..	381.0	446	477
1904-05 ..	191.0	209	232	1929-30 ..	343.0	385	422
1905-06 ..	236.0	277	298	1930-31 ..	267.0	288	306
1906-07 ..	255.0	300	315	1931-32 ..	227.0	255	276
1907-08 ..	275.0	318	338	1932-33 ..	210.0	244	263
1908-09 ..	203.0	341	369	1933-34 ..	183.0	220	227
1909-10 ..	262.0	305	334	1934-35 ..	216.0	268	290
1910-11 ..	239.0	279	318	1935-36 ..	227.0	286	314
1911-12 ..	268.0	299	353	1936-37 ..	195.0	..	..
1912-13 ..	310.0	332	396	1937-38 ..	195.0	..	..
1913-14 ..	300.0	319	352	1938-39 ..	196.0	..	..

## APPENDIX 20—(Contd.)

(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
1939-40 ..	223.0	260	289	1948-49 ..	902.0	1620	1158
1940-41 ..	257.0	298	319	1949-50 ..	903.0	1253	1238
1941-42 ..	288.0	330	347	1950-51 ..	846.0	1231	1253
1942-43 ..	413.0	501	531	1951-52 ..	877.0	1128	1370
1943-44 ..	544.0	906	933	1952-53 ..	939.0	No stock	1628
1944-45 ..	560.0	825	853	1953-54 ..	1061.0	1386	1738
1945-46 ..	572.0	916	749	1954-55 ..	997.0	1094	1149
1946-47 ...	588.0	907	899	1955-56 ..	945.0	863	946
1947-48 ..	671.0	932	1082	1956-57 ..	1252.0	1229	1497

## Conversion factors:

Paddy	average I and II sorts.	89.53 Imperial Maunds per garce of 3,200 MMs.
Ragi.	..	108.97
Cholam	..	114.49
(Vide G.O. No.	2849 Rev., dated	2-8-1918
	2,892 " "	6-8-1918
	839 " "	6-5-1922
	2,082 " "	13-10-1932
	3614 Mis. "	6-12-1932

## APPENDIX 21.

Statement showing the average prices of principal foodgrains from 1890 to 1957 for the Telanagana region (per garce of 3,200 M.Ms. by Volume).

Year	<i>Paddy</i> Price in Rs. per garce.	<i>Jowar</i> Price in Rs. per garce.	<i>Ragi</i> Price in Rs. per garce.	Year	<i>Paddy</i> Price in Rs. per garce.	<i>Jowar</i> Price in Rs. per garce.	<i>Ragi</i> Price in Rs. per garce.
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
1890-91	.. 195	234	..	1910-11	.. 245	308	..
1891-92	.. 246	283	..	1911-12	.. 313	363	..
1892-93	.. 191	296	..	1912-13	.. 323	386	..
1893-94	.. 184	294	..	1913-14	.. 301	342	..
1894-95	.. 179	226	..	1914-15	.. 233	308	..
1895-96	.. 192	206	..	1915-16	.. 243	223	..
1896-97	.. 290	451	..	1916-17	.. 299	339	..
1897-98	.. 261	388	..	1917-18	.. 367	605	..
1898-99	.. 227	271	..	1918-19	.. 527	736	..
1899-1900	.. 276	496	..	1919-20	.. 513	605	..
1900-01	.. 252	426	..	1920-21	.. 376	889	674
1901-02	.. 227	303	..	1921-22	.. 297	615	473
1902-03	.. 201	231	..	1922-23	.. 297	530	391
1903-04	.. 168	202	..	1923-24	.. 302	476	355
1904-05	.. 212	259	..	1924-25	.. 294	496	432
1905-06	.. 252	325	..	1925-26	.. 281	442	322
1906-07	.. 256	291	..	1926-27	.. 273	494	480
1907-08	.. 292	377	..	1927-28	.. 277	505	418
1908-09	.. 265	348	..	1928-29	.. 259	462	332
1909-10	.. 252	333	..	1929-30	.. 262	451	360

## APPENDIX 21—(Contd.)

(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
1930-31 ..	208	274	319	1944-45 ..	661	775	752
1931-32 ..	203	285	232	1945-46 ..	715	776	..
1932-33 ..	179	263	156	1946-47 ..	739	830	..
1933-34 ..	188	268	395	1947-48 ..	1059	1049	..
1934-35 ..	208	334	274	1948-49 ..	1421	1493	..
1935-36 ..	206	303	370	1949-50 ..	1333	1477	..
1936-37 ..	216	328	..	1950-51 ..	900	1437	..
1937-38 ..	228	313	..	1951-52 ..	1105	1535	..
1938-39 ..	227	376	..	1952-53 ..	1110	1511	..
1939-40 ..	269	397	..	1953-54 ..	1047	1665	..
1940-41 ..	273	337	287	1954-55 ..	918	1300	..
1941-42 ..	346	350	336	1955-56 ..	1006	1452	..
1942-43 ..	..	615	754	1956-57 ..	1115	2032	..
1943-44 ..	561	705	674	1957-58 ..	1113	1606	..

## APPENDIX 22.

## Area, Population and Density of population—1951

Sl. No.	District and Tahsil	Area in sq. miles	Population (persons)	Density of population of each District (persons per sq. mile)	
(1)	(2)	(3)	(4)	(5)	
1.	<i>Anantapur District</i>	.. ..	7,387	1,483,591	201
1.	Anantapur	.. ..	926	164,703	
2.	Dharmavaram	.. ..	736	114,812	
3.	Gooty ..	.. ..	896	214,851	
4.	Hindupur	.. ..	430	153,332	
5.	Kadiri ..	.. ..	1,157	219,112	
6.	Kalyandurg	.. ..	821	118,394	
7.	Madakasira	.. ..	417	120,209	
8.	Penukonda	.. ..	682	123,349	
9.	Rayadurg	.. ..	682	122,035	
10.	Tadapatri	.. ..	641	132,794	
2.	<i>Chittoor District</i>	.. ..	5,931	1,810,377	305
1.	Chandragiri	.. ..	548	165,198	
2.	Chittoor ..	.. ..	778	340,717	
3.	Kalahasti	.. ..	615	136,910	
4.	Madanapalli	.. ..	836	197,289	
5.	Palmaner	.. ..	720	169,739	
6.	Punganur..	.. ..	648	147,398	
7.	Puttur ..	.. ..	564	230,088	
8.	Tiruttani ..	.. ..	379	232,941	
9.	Vayalpad	.. ..	802	190,097	
3.	<i>Cuddapah District</i>	.. ..	5,923	1,161,731	196
1.	Badvel ..	.. ..	757	108,711	
2.	Cuddapah	.. ..	510	147,389	
3.	Jammalamadugu	.. ..	613	122,277	
4.	Kamalapuram	.. ..	303	75,588	
5.	Proddatur	.. ..	430	145,154	
6.	Pulivendla	.. ..	569	110,794	
7.	Rajampet	.. ..	1,038	185,942	
8.	Rayachoti	.. ..	1,103	190,172	
9.	Siddavattam	.. ..	606	75,704	

## APPENDIX 22.—(Contd.)

(1)	(2)	(3)	(4)	(5)
4.	<i>East Godavari District</i>	5,768	2,414,808	419
1.	Amalapuram	353	316,767	
2.	Bhadrachalam	911	77,620	
3.	Kakinada	384	355,502	
4.	Nugur	593	35,366	
5.	Peddapuram	602	287,764	
6.	Pithapuram	138	147,070	
7.	Rajahmundry	378	321,984	
8.	Ramachandrapuram	289	346,056	
9.	Rampachodavaram	710	40,273	
10.	Razole	291	314,910	
11.	Tuni	183	116,971	
12.	Yellavaram	850	54,525	
5.	<i>Guntur District</i>	5,795	2,549,996	440
1.	Bapatla	670	403,509	
2.	Guntur	541	442,073	
3.	Narsaraopet	716	266,400	
4.	Ongole	820	333,995	
5.	Palnad	1,041	192,776	
6.	Repalle	297	191,010	
7.	Sattenapalle	718	246,029	
8.	Tenali	324	357,839	
9.	Vinukonda	644	116,365	
6.	<i>Krishna District</i>	3,496	1,779,484	509
1.	Bandar (Masulipatam)	343	218,982	
2.	Divi	465	218,089	
3.	Gannavaram	295	198,579	
4.	Gudivada	230	198,940	
5.	Kaikalur	286	119,596	
6.	Nandigama	679	239,639	
7.	Nuzvid	335	107,227	
8.	Tiruvur	430	121,860	
9.	Vijayawada	436	356,572	
7.	<i>Kurnool District</i>	9,275	1,618,621	174
1.	Adoni	766	225,220	
2.	Alur	613	122,558	

## APPENDIX 22—(Contd.)

(1)	(2)	(3)	(4)	(5)
3.	Banganapalle .. ..	256	43,447	
4.	Cumbum .. ..	1,048	163,845	
5.	Dhone .. ..	836	127,234	
6.	Koilkuntla .. ..	573	93,132	
7.	Kurnool .. ..	641	198,288	
8.	Markapur .. ..	1,366	138,120	
9.	Nandikotkur .. ..	1,092	149,738	
10.	Nandyal .. ..	664	125,393	
11.	Pattikonda .. ..	747	126,922	
12.	Sirvei .. ..	613	104,724	
8.	<i>Nellore District</i> .. ..	7,942	1,795,632	226
1.	Atmakur .. ..	639	131,845	
2.	Darsi .. ..	591	118,826	
3.	Gudur .. ..	463	112,337	
4.	Kandukur .. ..	801	201,316	
5.	Kanigiri .. ..	1,000	163,958	
6.	Kavali .. ..	548	136,362	
7.	Kovur .. ..	385	188,835	
8.	Nellore .. ..	504	261,258	
9.	Podili .. ..	564	96,000	
10.	Rapur .. ..	594	88,512	
11.	Sufurpet .. ..	573	95,718	
12.	Udayagiri .. ..	871	118,685	
13.	Venkatagiri .. ..	427	81,980	
9.	<i>Srikakulam District</i> .. ..	3,902	2,123,136	544
1.	Bobbili .. ..	391	262,748	
2.	Cheepurapalli .. ..	462	292,605	
3.	Ichapuram .. ..	87	78,761	
4.	Narasannapeta .. ..	200	151,634	
5.	Palakonda .. ..	494	298,992	
6.	Parvathipuram .. ..	590	192,254	
7.	Pathapatnam .. ..	463	203,542	
8.	Salur .. ..	491	156,581	
9.	Sompeta .. ..	212	130,444	
10.	Srikakulam .. ..	227	189,389	
11.	Tekkali .. ..	272	166,186	



## APPENDIX 22—(Contd.)

(1)	(2)	(3)	(4)	(5)	
10.	<i>Visakhapatnam District:</i>	..	5,201	2,072,698	399
1.	Anakapalle	.. ..	304	229,835	
2.	Bheemunipatnam	.. ..	337	232,619	
3.	Golugonda	.. ..	516	221,727	
4.	Gudem	.. ..	1,869	109,521	
5.	Sarvasidhi	.. ..	347	241,933	
6.	Srungavarapukota	.. ..	657	225,757	
7.	Veeravalli	.. ..	594	287,994	
8.	Visakhapatnam	.. ..	196	231,907	
9.	Vizianagaram	.. ..	359	291,405	
11.	<i>West Godavari District</i>	..	2,988	1,697,727	568
1.	Bhimavaram	.. ..	292	236,092	
2.	Chintalapudi	.. ..	418	100,187	
3.	Eluru	.. ..	510	260,599	
4.	Kovvur	.. ..	391	214,522	
5.	Narsapur	.. ..	279	293,773	
6.	Polavaram	.. ..	551	97,245	
7.	Tadepalligudem	.. ..	360	217,123	
8.	Tanuku	.. ..	214	278,186	
12.	<i>Adilabad District.</i>	.. ..	6,242	831,600	133
1.	Adilabad	.. ..	580.48	101,611	
2.	Asifabad	.. ..	833.92	92,245	
3.	Boath	.. ..	553.75	57,280	
4.	Chinnoor	.. ..	688.64	86,117	
5.	Khanapur	.. ..	312.96	43,366	
6.	Lakshettipet	.. ..	734.08	98,812	
7.	Mudhol	.. ..	413.30	92,645	
8.	Nirmal	.. ..	566.40	121,029	
9.	Sirpur	.. ..	855.68	104,091	
10.	Utnoor	.. ..	726.40	34,404	
13.	<i>Hyderabad District</i>	.. ..	2,904	1,818,034	626
1.	Hyderabad East	.. ..	268.83	83,775	
2.	Hyderabad West	.. ..	277.12	1,166,860	
3.	Ibrahimpattanam	.. ..	524.80	104,075	
4.	Medchal	.. ..	307.20	78,851	
5.	Pargi	.. ..	389.76	98,458	
6.	Shahabad	.. ..	342.40	77,775	
7.	Tandur	.. ..	371.20	85,414	
8.	Vikarabad	.. ..	505.60	122,826	

## APPENDIX 22.—(Contd.)

(1)	(2)	(3)	(4)	(5)	
14.	<i>Karimnagar District</i>	.. ..	4,504	1,428,168	317
1.	Huzurabad	.. ..	560.00	242,001	
2.	Jagtiyal ..	.. ..	677.76	203,865	
3.	Karimnagar	.. ..	720.00	302,172	
4.	Manthani	.. ..	834.55	86,846	
5.	Metpalli ..	.. ..	368.00	120,635	
6.	Sirsilla ..	.. ..	721.92	228,847	
7.	Sultanabad	.. ..	706.56	243,802	
15.	<i>Khammam District.</i>	.. ..	4,232	700,006	165
1.	Burgampahad	.. ..	568.96	43,590	
2.	Khammam	.. ..	591.36	235,078	
3.	Madhira ..	.. ..	771.84	170,661	
4.	Palvancha	.. ..	1,295.36	131,310	
5.	Yellandu ..	.. ..	754.93	119,367	
16.	<i>Mahbubnagar District</i>	.. ..	6,833	1,437,879	210
1.	Achampet	.. ..	1,126.40	71,664	
2.	Alampur ..	.. ..	435.20	81,330	
3.	Atmakur ..	.. ..	446.72	98,330	
4.	Gadwal ..	.. ..	517.75	117,017	
5.	Kalvakurti	.. ..	748.64	152,159	
6.	Kodangal	.. ..	460.80	151,494	
7.	Kollapur ..	.. ..	661.12	101,759	
8.	Mahbubnagar	.. ..	460.16	152,751	
9.	Makhtal ..	.. ..	532.48	134,769	
10.	Nagarkurnool	.. ..	561.28	137,377	
11.	Shadnagar	.. ..	458.88	117,733	
12.	Wanparti	.. ..	535.68	121,496	
17.	<i>Medak District</i>	.. ..	3,804	1,124,240	296
1.	Andol ..	.. ..	470.40	153,037	
2.	Gajwel ..	.. ..	385.92	139,253	
3.	Medak ..	.. ..	520.32	152,501	
4.	Narayankhed	.. ..	384.39	86,204	
5.	Narsapur	.. ..	425.60	103,961	
6.	Sangareddy	.. ..	474.24	146,242	
7.	Siddipet ..	.. ..	618.88	209,473	
8.	Zahirabad	.. ..	519.97	133,569	

## APPENDIX 22.—(Contd.)

(1)	(2)	(3)	(4)	(5)	
18.	<i>Nalgonda District</i>	.. ..	5,385	1,252,810	233
1.	Bhongir ..	.. ..	614.40	186,464	
2.	Devarkonda ..	.. ..	1,041.28	163,442	
3.	Huzurnagar ..	.. ..	532.48	125,814	
4.	Miryalguda ..	.. ..	750.72	128,224	
5.	Nalgonda ..	.. ..	953.60	256,153	
6.	Ramannapet ..	.. ..	684.16	170,909	
7.	Suryapet ..	.. ..	803.20	221,804	
19.	<i>Nizamabad District</i>	.. ..	3,203	833,611	260
1.	Armoor ..	.. ..	748.16	182,907	
2.	Banswada ..	.. ..	560.29	147,254	
3.	Bodhan ..	.. ..	290.36	126,096	
4.	Kamareddy ..	.. ..	483.20	136,298	
5.	Nizamabad ..	.. ..	505.60	169,717	
6.	Yellareddy ..	.. ..	438.40	71,339	
20.	<i>Warangal District</i>	.. ..	5,326	1,325,984	249
1.	Jangaon ..	.. ..	872.32	291,165	
2.	Mahbubabad ..	.. ..	799.36	235,968	
3.	Mulug ..	.. ..	1,346.56	66,292	
4.	Pakhal ..	.. ..	744.96	106,753	
5.	Parkal ..	.. ..	556.16	153,499	
6.	Warangal..	.. ..	785.91	472,307	

SOURCE : Tables 2 & 3 of the Statistical Abstract 1956 published by the Director of the Bureau of Economics and Statistics, Andhra Pradesh, Hyderabad.

## APPENDIX 23.

## Yield per Acre (in lb.) of Principal crops by Districts, 1955-56

District	Rice	Wheat	Jowar	Bajra or saja	Maize (Kharif)
(1)	(2)	(3)	(4)	(5)	(6)
<i>Andhra Region.</i>					
1. Anantapur ..	1,045	280	278	356	1,000
2. Chittoor..	1,199	280	493	502	850
3. Cuddapah ..	1,046	298	351	376	850
4. East Godavari ..	1,313	308	442	541	280
5. Guntur ..	1,338	315	734	340	1,001
6. Krishna ..	1,203	336	284	485	1,001
7. Kurnool..	1,122	315	461	779	1,000
8. Nellore ..	1,102	315	734	809	920
9. Srikakulam ..	940	350	493	485	840
10. Visakhapatnam ..	1,015	..	339	483	910
11. West Godavari ..	1,203	280	388	485	900
Average ..	1,171	305	500	498	939
<i>Telangana Region.</i>					
12. Adilabad ..	627	316	319	..	607
13. Hyderabad ..	680	144	135	195	355
14. Karimnagar ..	533	187	271	..	748
15. Khammam ..	665	..	520	195	355
16. Mahbubnagar ..	586	138	333	312	..
17. Medak ..	670	192	205	195	360
18. Nalgonda ..	581	225	303	301	..
19. Nizamabad ..	894	249	182	..	556
20. Warangal ..	507	108	334	257	570
Average ..	631	225	318	291	558
Andhra Pradesh AVERAGE .	1,015	246	401	429	536

## APPENDIX 23.—(Contd.)

Ragi	Bengal Gram	Tuar or Redgram	Mung or green-gram	Kulthi or Horse-gram	Ground-nut	Castor
(7)	(8)	(9)	(10)	(11)	(12)	(13)
864	400	400	92	180	952	128
512	400	375	188	150	896	193
1,165	375	400	206	150	840	120
731	435	465	130	160	1,008	238
731	475	450	166	170	986	238
731	485	480	294	190	1,064	233
731	460	460	250	196	896	141
579	475	450	285	168	952	225
692	450	475	211	194	1,064	210
835	460	480	104	190	1,064	225
731	450	500	130	162	1,008	238
719	450	435	230	174	941	180
..	239	248	108	112	660	128
182	265	203	105	116	440	105
187	73	177	48	43	630	159
253	207	234	248	90	470	174
264	243	216	103	140	440	168
193	311	112	125	179	370	140
292	207	445	143	172	500	168
209	194	108	99	108	540	125
237	147	126	120	132	480	150
237	256	227	131	134	480	160
626	289	243	167	159	780	163

## APPENDIX 23.—(contd.)

Yield per Acre (in lb.) of Principal crops by Districts, 1955-56.

District	Linseed	Seasamum or gingelly	Sugarcane (Gur)	Tobacco	Cotton (Lint).
	(14)	(15)	(16)	(17)	(18)
<i>Andhra Region</i>					
1. Anantapur ..	..	179	3,489	837	54
2. Chittoor..	..	293	224	6,933	64
3. Cuddapah ..	..	352	179	6,858	1,117
4. East Godavari ..	..	269	8,308	708	68
5. Guntur ..	..	298	274	6,865	771
6. Krishna ..	..	319	7,339	695	71
7. Kurnool ..	..	251	202	6,878	553
8. Nellore ..	..	307	263	7,000	800
9. Srikakulam ..	..	319	6,545	1,009	47
10. Visakhapatnam ..	..	319	6,474	900	47
11. West Godavari ..	..	319	8,384	746	..
Average ..	..	291	280	7,012	756
<i>Telangana Region.</i>					
12. Adilabad ..	..	134	88	3,000	492
13. Hyderabad ..	..	108	80	3,240	346
14. Karimnagar ..	..	92	2,745	652	34
15. Khammam ..	..	170	..	827	40
16. Mahbubnagar ..	..	116	96	3,105	485
17. Medak ..	..	103	101	3,900	350
18. Nalgonda ..	..	112	122	3,375	427
19. Nizamabad ..	..	154	81	5,940	384
20. Warangal ..	..	101	855	633	39
Average ..	..	125	98	5,571	624
Average for Andhra Pradesh	128	175	6,625	744	50

SOURCE.—Statistical Abstract Andhra Pradesh, 1956, published by Director, Bureau of Economics and Statistics, Andhra Pradesh, Hyderabad.

APPENDIX  
FARM AVERAGE PRICES OF PRINCIPAL  
(Prices are in Rupees per

District	Rice	Jowar	Bajra	Ragi	Korra
(1)	(2)	(3)	(4)	(5)	(6)
<i>Andhra Region.</i>					
1. Anantapur ..	17.06	7.31	7.38	7.50	6.44
2. Chittoor..	18.56	10.00	9.19	10.75	..
3. Cuddapah ..	13.44	7.50	8.13	7.88	6.44
4. East Godavari ..	18.75	12.00	..	12.00	..
5. Guntur ..	18.44	11.50	12.63	10.88	9.00
6. Krishna ..	14.81	7.00	..	..	..
7. Kurnool..	16.50	6.19	8.06	7.63	6.56
8. Nellore ..	18.02	8.86	9.95	7.61	..
9. Srikakulam ..	16.69	11.13	11.13	11.75	11.81
10. Visakhapatnam ..	16.63	8.00	8.00	8.00	..
11. West Godavari ..	17.63	14.50	..	..	..
Average ..	16.96	9.45	9.31	9.33	8.05
<i>Telangana Region</i>					
12. Adilabad ..	5.87	6.00	..	..	..
13. Hyderabad ..	11.69	8.87	6.56	5.50	..
14. Karimnagar ..	7.44	6.94	..	..	..
15. Khammam ..	8.31	7.41	..	..	..
16. Mahbubnagar ..	9.62	9.97	7.31	5.25	..
17. Medak ..	10.06	9.91	6.94	..	..
18. Nalgonda ..	8.42	7.91	6.50	..	..
19. Nizamabad ..	8.06	12.16	..	..	..
20. Warangal ..	9.12	8.37	6.50	..	..
Average ..	8.74	8.62	6.76	5.37	..
Average for Andhra Pradesh ..	..	9.04	8.04	7.35	8.05

SOURCE.—Table No. 39 of the Statistical Abstract 1956 published by the Director.

24.

## CROPS : BY DISTRICT 1955-56.

*Standard Maund of 82-2/7 Lbs.)*

Varagu	Samai	Maize	Bengal-gram	Red-gram (tuar)	Black-gram (Mash)	Green-gram (Mung)
(7)	(8)	(9)	(10)	(11)	(12)	(13)
..	..	..	11.81	9.75	11.81	10.13
..	..	..	..	..	..	..
..	..	..	11.75	10.56	11.75	10.44
..	..	..	17.00	..	17.00	..
9.63	..	16.00	15.38	14.25	15.38	14.31
..	..	..	..	..	..	..
..	..	..	..	..	..	..
..	..	..	..	..	..	..
..	7.00	10.19	10.00	14.38	19.00	10.06
..	..	..	..	..	..	..
..	..	..	..	17.00	..	14.75
9.63	7.00	13.10	14.99	13.19	14.99	13.04
..	..	5.56	..	12.69	..	..
..	..	..	..	..	..	..
..	..	6.69	..	..	..	..
..	..	..	..	17.69	..	..
..	..	..	12.00	13.75	..	..
..	..	7.31	10.69	..	..	..
..	..	..	..	13.19	..	..
..	..	..	12.69	..	..	..
..	..	8.38	..	..	..	..
..	..	6.98	11.29	14.33	..	..
9.63	7.00	10.04	13.14	13.76	14.99	13.04

of Bureau of Economics and Statistics, Andhra Pradesh, Hyderabad.



District	Horse-gram	Cane-jaggery	Ground-nut	Castor	Gin-gelly
	(14)	(15)	(16)	(17)	(18)
<i>Andhra Region.</i>					
1. Anantapur ..	8.31	9.06	15.63	12.69	..
2. Chittoor ..	..	11.13	15.38	..	..
3. Cuddapah ..	7.69	14.69	10.56	10.88	..
4. East Godavari ..	..	14.00	..	..	..
5. Guntur ..	10.75	..	19.50	20.69	20.69
6. Krishna ..	..	..	..	..	..
7. Kurnool ..	..	..	..	..	..
8. Nellore ..	..	..	..	..	..
9. Srikakulam ..	10.06	8.38	9.63	..	..
10. Visakhapatnam ..	..	12.50	20.00	..	..
11. West Godavari ..	11.75	..	15.63	..	..
Average ..	9.71	11.63	15.19	14.75	20.69
<i>Telangana Region</i>					
12. Adilabad ..	..	..	11.00	15.56	20.00
13. Hyderabad ..	..	..	..	16.44	..
14. Karimnagar ..	..	..	11.81	..	21.69
15. Khammam ..	..	..	9.44	..	18.06
16. Mahbubnagar ..	..	..	..	..	..
17. Medak ..	..	..	7.06	15.00	17.56
18. Nalgonda ..	..	..	12.75	17.81	..
19. Nizamabad ..	..	10.62	11.81	..	..
20. Warangal ..	..	..	13.06	..	..
Average ..	..	10.62	10.99	16.20	19.33
Average for Andhra Pradesh	9.71	11.13	13.09	15.48	20.01

24--(Contd.)

Chi- lies	Onion	Cotton	Tobacco	Linseed
(19)	(20)	(21)	(22)	(23)
49.00	..	..	32.94	..
..	..	..	..	..
45.56	4.50	22.06	58.63	..
..	..	..	70.00	..
67.88	..	17.50	49.00	..
..	..	..	102.00	..
..	..	..	..	..
..	..	..	..	..
40.50	6.94	..	81.25	..
70.00	..	..	..	..
53.63	2.88	..	103.31	..
54.43	4.77	19.78	71.16	..
..	..	..	..	..
..	..	..	..	..
..	..	15.69	..	..
..	..	16.81	47.37	..
..	..	..	..	20.06
..	..	..	80.00	..
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
..	..	16.25	61.18	20.06
54.43	4.77	18.02	66.17	20.06

## FARM AVERAGE PRICES OF PRINCIPAL

*(Prices are in Rs. per*

District	Rice	Jowar	Bajra	Ragi	Korra
(1)	(2)	(3)	(4)	(5)	(6)
<i>Andhra Region (Rice)</i>					
1. Anantapur ..	19.44	12.48	10.86	10.09	9.72
2. Chittoor ..	21.85	11.14	10.11	10.61	..
3. Cuddapah ..	13.13	12.68	10.19	12.50	9.92
4. East Godavari ..	..	10.00	..	10.75	..
5. Guntur ..	20.36	14.25	12.44	9.47	10.00
6. Krishna ..	..	..	..	..	..
7. Kurnool ..	16.50	11.50	11.00	11.00	7.67
8. Nellore ..	19.10	14.04	12.70	11.88	9.00
9. Srikakulam ..	17.89	11.00	11.25	11.25	..
10. Visakhapatnam ..	20.00	14.00	13.00	11.00	6.00
11. West Godavari ..	..	..	..	..	..
Average ..	18.66	12.34	11.44	10.95	8.72
<i>Telangana Region (Paddy)</i>					
12. Adilabad ..	10.00	10.74	..	..	..
13. Hyderabad ..	10.84	13.48	12.25	11.00	..
14. Karimnagar ..	11.22	12.54	..	..	..
15. Khammam ..	11.75	13.94	..	..	..
16. Mahbubnagar ..	11.53	15.12	13.00	12.39	..
17. Medak ..	13.97	14.60	..	..	..
18. Nalgonda ..	11.35	11.70	11.06	..	..
19. Nizamabad ..	10.52	..	..	8.97	..
20. Warangal ..	11.00	13.50	13.31	..	..
Average ..	11.35	13.20	12.40	10.79	..
Average for Andhra Pradesh ..	..	12.77	11.92	10.87	8.72

## CROPS BY DISTRICTS 1956-57.

*Standard Maund of 82-2/7 lb.)*

Varagu	Samai	Maize	Bengal-gram	Red-gram (tuar)	Black-gram (Mash)	Green-gram (Mung)
(7)	(8)	(9)	(10)	(11)	(12)	(13)
..	..	..	12.05	9.67	..	10.92
..	..	..	..	..	..	..
..	..	..	15.00	12.59	..	11.40
..	..	..	15.00	..	..	..
11.00	..	10.00	13.33	11.10	15.17	12.44
..	..	..	..	..	..	..
5.11	..	..	10.04	11.89	..	10.70
14.45	..	..	..	12.00	..	16.00
..	..	11.00	..	5.00	16.00	15.00
..	..	14.00	..	..	19.00	11.00
..	..	..	..	..	..	..
10.19	..	11.67	13.08	10.38	16.72	12.49
..	..	..	..	13.37	..	..
..	..	..	8.47	..	..	..
..	..	..	..	14.00	..	..
..	..	..	..	..	..	..
..	..	..	15.90	19.81	..	..
..	..	..	14.92	20.00	..	..
..	..	..	14.87	..	..	..
..	..	..	18.00	..	..	..
..	..	..	..	..	..	..
..	..	..	14.43	16.79	..	..
10.19	..	11.67	13.75	13.58	16.72	12.49

## FARM AVERAGE PRICES OF PRINCIPAL

*(Prices are in Rs. per Standard*

District	Horse-gram	Cane jaggery	Ground-nut	Castor	Gingelly
(1)	(14)	(15)	(16)	(17)	(18)
<i>Andhra Region.</i>					
1. Anantapur ..	9.67	16.59	17.72	16.83	..
2. Chittoor..	..	11.33	15.42	..	..
3. Cuddapah ..	9.18	16.75	13.67	19.25	21.75
4. East Godavari ..	..	15.17	8.00	..	16.50
5. Guntur ..	8.88	..	30.25	..	..
6. Krishna ..	..	..	..	..	..
7. Kurnool..	8.23	..	..	10.72	..
8. Nellore ..	10.47	..	16.00	32.00	..
9. Srikakulam ..	10.60	9.80	8.50	..	32.50
10. Visakhapatnam ..	8.00	11.00	16.00	..	28.50
11. West Godavari ..	..	..	..	..	..
Average ..	9.29	13.44	15.70	19.70	24.81
<i>Telangana Region</i>					
12. Adilabad ..	..	..	17.37	22.00	34.50
13. Hyderabad ..	..	..	14.87	22.42	30.00
14. Karimnagar ..	..	..	14.75	23.33	27.80
15. Khammam ..	..	..	14.87	23.00	32.94
16. Mahbubnagar ..	..	..	11.75	..	36.61
17. Medak ..	..	..	15.06	36.00	..
18. Nalgonda ..	..	..	18.94	21.50	19.00
19. Nizamabad ..	..	..	15.00	..	19.17
20. Warangal ..	..	..	..	..	..
Average ..	..	..	15.33	24.70	28.50
Average for Andhra Pradesh..	9.29	13.44	15.01	22.20	26.65

## CROPS BY DISTRICTS 1956-57

*Maund of 82-2/7 lb.)*


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 Chillies      Onion      Cotton      Tobacco      Linseed
 

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 (19)            (20)            (21)            (22)            (23)
 

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37.50	6.81	..	46.16	..
..	..	29.25	..	..
62.22	8.72	..	..	..
..	..	..	..	..
52.60	10.00	17.33	25.00	..
..	..	..	..	..
40.14	3.35	..	..	..
56.00	..	..	..	..
45.72	7.34	..	84.88	..
60.00	6.50	..	..	..
..	..	..	..	..
53.45	7.12	23.29	52.01	..
..	..	24.16	..	13.81
..	..	20.00	..	..
..	..	..	..	..
..	..	..	39.12	..
..	..	..	..	..
..	..	..	34.35	..
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
..	..	22.08	36.73	16.31
53.45	7.12	22.68	44.37	16.31

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SOURCE:—Statistical Abstract 1957, table 39 under issue.

## APPENDIX 25.

## Livestock Population 1951 and 1956.

S.No.	Particulars	1951	1956
1. Cattle	Total .. ..	1,22,49,269	1,12,76,547
	Male .. ..	50,07,020	48,42,417
	Female .. ..	39,23,730	37,62,170
	Young stock .. ..	33,18,519	26,71,960
2. Buffaloes	Total .. ..	65,83,378	59,67,633
	Male .. ..	13,62,219	11,01,718
	Female .. ..	29,41,650	28,75,815
	Young stock .. ..	22,79,509	19,90,100
3. Sheep	.. ..	1,01,92,712	78,46,250
4. Goats	.. ..	43,30,673	36,93,412
5. Horses and Ponies	.. ..	62,893	31,514
6. Donkeys	.. ..	1,52,652	76,429
7. Mules	.. ..	527	382
8. Camels	.. ..	329	107
9. Pigs	.. ..	7,14,500	6,20,845
	Total Livestock	3,42,86,933	2,95,13,119
10. Fowls	.. ..	1,02,98,318	1,46,06,885
11. Ducks	.. ..	3,10,837	2,98,735
12. Other including Turkeys	.. ..	Not enumerated	31,672
	Total Poultry	1,06,09,155	1,47,37,292

SOURCE :—Statistical Abstract Andhra Pradesh 1956, published by the Director, Bureau of Economics and Statistics, Andhra Pradesh, Hyderabad.

## APPENDIX 26.

## GLOSSARY

## A

*Abi*.—Paddy Crop sown at the commencement of rainy season, irrigated by tanks, wells and other irrigation sources.

*Achu Kattu*.—Land divided into beds to catch and retain the surface-flowing rain water for raising short-term paddy crop.

*Adsali*.—Sugarcane crop of 18 months' duration.

*Adhar*.—Base line fixed during survey in Telangana from one end of the village to the other, on which off-sets of bends of survey fields are measured.

*Agency*.—Scheduled and specially administered area usually inhabited by Hill Tribes and Adivasis.

*Ain*.—An act or Statute.

*Ain-i-Akbari*.—A book containing the laws, rules and orders relating to land assessment during the reign of the Moghul Emperor, Akbar, the great.

*Al-Tamgha Jagir*.—A kind of Jagir granted perpetually to be continued to generations.

*Annawari Table*.—Table showing the classification of soils and irrigation sources in terms of annas.

*Asmani-tari*.—Rainfed paddy crop sown at low level lands and not irrigated by any source.

*Asami-shikmi*.—One who cultivates the land of another person and pays him a fixed rent ; a sub-tenant.

## B

*Baghat*.—Land suitable for growing garden crops with irrigation from wells or Government sources.

*Bajra*.—Sajja.

*Banjar*.—Land lying fallow for 4 or 5 years : Waste land.

*Bhagannas*.—The value of the soil expressed in terms of annas in Telangana.

*Bhurkie*.—A structure constructed on the bank of a river or nala, from which water is lifted for irrigation.

*Bigha*.—30 guntas make one Bigha equivalent to 3630 sq. yards.

*Bila*.—Spring pond in Srikakulam district used as a source of irrigation.

*Bilmaquta*.—Consolidated revenue including in one aggregate, the Mal, or land-tax and Abwab or miscellaneous items of Revenue. A fixed rent or revenue assessed at a rate below the usual standard ; Land or village held on payment of a fixed rate of rent.



## C

*Chalka*.—Loose soil consisting of a large proportion of sand in clay.

*Chicher*.—Land which was fallow for three or four years.

*Chunkhad*.—A mixture of minute fragments or nodules of lime-stone.

## D

*Dalwa*.—Second crop paddy (word usually used in Circar districts).

*Dastbund*.—The amount paid to the Inamdar for the use of water from the source of irrigation maintained by him. This amount is given at 10% of the land revenue.

*Dekudies*.—Correspond to Bhurkies or Doruvus (word used in Bombay State).

*Dupan*.—Sloping land liable to erosion by running rain water.

*Diglott*.—A printed record in two languages of settlement particulars available with Karnam, in Taluk Office and Collector's Offices in the Andhra region.

*Diwani*.—The territory which was administered by Diwan, *i.e.*, Government in Telangana region. It is also called Khalsa.

*Dufassal or Dofasal*.—Crop which remains on ground for more than six months and is irrigated. When applied it means a double crop land entitled to raise two heavily irrigated crops or a crop which remains on ground during both the seasons

*Dosh*.—Defect.

## E

*Edigari Paddy*.—A kind of paddy grown as third crop.

## F

*Fasaljasti*.—The charge for water for the irrigation of a second irrigated crop on a wet land entitled to raise only one heavily irrigated crop.

*Firman*.—The written order issued on behalf of the king.

## G

*Gairan*.—The land reserved for pasture for the village cattle to graze.

*Garce*.—3,200 Madras measures make one garce.

*Gochu*.—Soil containing large fragments of rock or nodules of limestone.

*Guda*.—A Bamboo basket with ropes on either side used by two persons for baling water from a canal, pond or pool for irrigation.

*Gulmoha Tree*.—Ippa tree, the flowers of which are used for fermenting and distilling liquor.

*Gunta*.—121 sq. yards or 2.50 Cents. 40 guntas make one acre.

## H

*Hissedar*.—Share-holder.

## I

*Ijara*.—Long lease of Banjar lands for cultivation and habilitation.

*Inam*.—Grant of land free of land revenue or at a favourable rate of land revenue.

*Inami*.—Pertaining to land granted free of land revenue.

## J

*Jagir*.—The grant of village by the kings to their Lords and Mansabdars free of all assessments.

*Jhara*.—Water percolating from the weak subsoil springs.

## K

*Kachcha*.—Temporary as opposed to pucca (permanent).

*Kami-Eksala*.—Remission or exemption from the payment of land revenue for loss or damage of crops for reasons beyond the control of the cultivator.

*Karal*.—A peculiar mixture, more or less impervious to water-saline.

*Kariveda*.—Paddy crop irrigated, by intercepted rain-water.

*Karnam*.—Village Accountant in the Andhra region corresponding to Patwari in Telangana.

*Kasam*.—Spring pond from which water is taken for irrigation. This is called Bila in Srikakulam district and Sona in Guntur District.

*Khalsa*.—Government—(Territory directly administered by Government).

*Kharif*.—Early dry crop harvested in Autumn.

*Kharij*.—The land on which no assessment is fixed.

*Khasra Pahani*.—Village Account showing details of S. Nos., extent, assessment, occupant, crops raised whether rainfed or irrigated—corresponds to the Adangal in the Andhra region.

*Khastas*.—Compartments made in a survey number for the purposes of classifying the soil in a land.

*Khata*.—Kulam, or category.

*Khatedar*.—Landholder or occupant—Pattadar.

*Khiraj*.—Tribute or assessment to be paid to king.

*Khud Kast*.—To cultivate on one's own account.

*Kistband*.—Instalments for land revenue collections.

*Korambu.*—Bund or obstruction put to divert the flow of water in a river or a stream into an open-mouth channel.

L

*nil*

M

*Maddad Mash Jagir.*—The grants made by old Rulers to their subjects.

*Madras measure.*—2.53 lb. of paddy make one Madras measure. It is roughly  $1\frac{1}{2}$  seers.

*Mamul.*—It is cash grant, which is paid once in a year or periodically to the grantee.

*Manawari.*—Rainfed land on which paddy is grown by impounding rain water.

*Maqta.*—Land granted to a person on payment of a fixed amount which is not based on any percentage of the revenue due on the land.

*Masab.*—The soil with a black colour with some white patches.

*Mashrooti Jagir.*—The grant made subject to rendering certain service.

*Mhote.*—A contrivance for lifting water for irrigating the land from wells with the aid of bullocks.

*Milewar.*—Settlement term to denote the concession given in assessment with reference to the distance of field from the village site.

*Mirasi.*—A kind of perpetual grant given to a person who has constructed the tank.

*Morum.*—Gravel.

*Motasthal.*—Land irrigated by well or nala through mhote or mota.

N

*nil*

O

*nil*

P

*Padugai.*—Land lying between the flood bank of a river and its water edge.

*Pahani Patrika.*—Village account similar to Khasra Pahani.

*Paigah.*—Territory given by the Government to feudals on condition of rendering service to the king.

*Pakka Book.*—Register prepared by the Survey Staff showing the sketch of the field with measurement and area worked out—otherwise called field measurement book in Andhra.

*Palchalka*.—The land in which the ratio of sand is more than that of clay. This land becomes uncultivable after two years, cultivation and again becomes fit for cultivation after keeping it fallow for two years.

*Panchas*.—Panchayat members.

*Paniclass*.—Classification of irrigation source in Telangana.

*Panmalla*.—The place where betel-vines are raised.

*Panmaqta*.—The nominal amount fixed on the grant of Maqta to preserve the proprietary rights of the Government over the land granted.

*Parakam*.—Flow source. (see patasthal).

*Parre Kalva*.—A kind of channel dug in the bed of non-perennial Rivers and small streams for carrying sub-soil water for irrigating fields.

*Partai Book*.—Register showing the details of classification of land.

*Patasthal*.—Land irrigated by gravitational flow.

*Patel*.—Village Headman corresponding to Village Munsiff, Naidu, Reddi in Andhra.

*Pattadar*.—The person who is directly responsible for the Government for the payment of land revenue and whose name is mentioned in Government records ; either he is in possession of the land in person or through a shikmidar.

*Patwari*.—A Village Officer who keeps accounts of land revenue corresponding to Karnam in the Andhra region.

*Phirwati*.—Land which requires periodical fallow period.

*Podu Cultivation*.—Cultivation by tribals by setting fire to the forests on hill-slopes and using the ashes as manure for crops.

*Potekharab*.—Uncultivable area in a field on which no assessment is levied. This corresponds to unprofitable areas in the patta fields in Andhra.

*Pote-Number*.—Subdivision number.

*Potpattedar*.—The person who is the holder of pote-number of a patta. Pote Number is the portion of a survey number which is charged and assessed separately, i.e., subdivision.

*Pucca*.—Permanent. Built in masonry as opposed to Kachcha.

*Pulaj*.—Land commonly cultivated.

*Punasa*.—Early dry crop (Mungari). (See Kharif).

## Q

*Qaul*.—Lease. Cowle in Andhra.

*Qauli*.—Leased out for a specified period.

## R

*Rabi*.—A dry crop sown in October and November and harvested in summer in March and May.

*Rais*.—Local Chiefs.

*Regad or Regar*.—A kind of stiff black clay soil.

*Reswat*.—Want of cohesion amongst the constituent particles of the soil. (Loose soil).

## S

*Sarbasta*.—Land revenue fixed for certain territories and collected by Talukdars through Patels and Patwaries. This system was prevalent in Marathwada. (Prior to ryotwari settlement).

*Sarf-e-Khas*.—Property of the H.E.H. the Nizam and the revenue from which went to his privy purpose. These tracts were aboliseld and taken over by the Government.

*Sarva*.—First crop paddy (word usually used in delta areas).

*Sathikam*.—Second paddy crop (used in Srikakulam district).

*Shadoof*.—Water proof device used in Egypt and India to lift water.

*Sethwar*.—Register prepared after survey containing the names of the holders of land, area and assessment, field-wise.

*Shara Navisi*.—Remarks written by the Inspecting Officers in village accounts.

*Shikmidari*.—The person who has a title in that land as a pattadar or a joint holder of the land with the pattadar since inception or has a shikmidari right according to any rule, in force, before the introduction of the Hyderabad Land Revenue Act, 1317 F.

*Sivai Jamabandi*.—The income derived from items other than the specified land revenue items ; Annual Settlement of Miscellaneous items of Revenue.

*Sona*.—Spring pond from which water flows for irrigating lands. (Found in Guntur District).

## T

*Tabi*.—The Paddy crop which is grown in summer season.

*Taccavi*.—The amount which is given to cultivators as a loan for their cultivation and which is repayable to the Government.

*Tah Bandi*.—The arrangement according to which lands are ear-marked for irrigation under Tabi crop according to the availability of water in the source.

*Tahud*.—Assessment fixed on a village or a group of villages leased out for a certain period in lieu of all Government dues.

*Tankha Jagir*.—The Jagir which was granted for paying salaries to the Army. Previously Jagirs were given to the lords who had Army under them for the payment of salary.

*Taram*.—Serial number assigned to the rate of assessment. (Dhara).

*Tawan*.—Penalty.

*Tirwajasti*.—Water-rate collectable on dry lands irrigated from a Government source of irrigation.

## U

*Umlī*.—A kind of Makta. In Karnatak, Zamindars were in possession of villages without sanads. The Inam Enquiry Commission accepted their possession on condition that one-third of land revenue will be credited to Government and 2/3 land revenue will be enjoyed by them. They were called Umlidars.

*Uppalwatbonda*.—Spring well from which water is available by over flow for irrigation as from a Patasthal source. Similar to Kasams, Bilas, and Sonas in Andhra.

*Uppalwat*.—Liability to an excess of moisture from surface springs—Damp.

*Utarvat*.—A sloping surface.

## W

*Walsar*.—A mixture of Sand.

## Y

*Yatam*.—A country contrivance by which water from a well or pit is lifted for irrigation of crops. It is also called picottah in Andhra.

## Z

*Zat-Jagir*.—The Jagir which was granted for the private expenses of the grantee.

## APPENDIX 27

## LIST OF BOOKS REFERRED TO BY THE COMMITTEE

## S. No. 1. District Gazetteers.

Krishna district	.. Vol. II	1934
Godavari	.. Vol. I, II & III	1907 1906 & 1935
Cuddapah	.. Vol. I & II	1930
Kurnool	.. Vol. II & III	1928 & 1932
Guntur	.. Vol. II & III	1929 & 1933
Chittoor	.. Vol. II & III	1928 & 1932
West Godavari	.. Vol. II	1934
Anantapur	.. Vol. II	
Visakhapatnam	.. Vol. I & II	1935 & 1907
Nellore	.. Vol. II & III	1929 & 1932
Cuddapah	.. Vol. I & III	1933
Anantapur	.. Vol. III	1933
Krishna	..	1950
Bellary	.. Vol. II & III	1933
Madras East Coast Districts.	.. ..	1906

Medak, Adilabad, Mahaboobnagar, Nizamabad, Karimnagar,  
Warangal, Nalgonda, Gulbarga, Raichur, Nanded, Bidar  
(Tables Vol. 1340 & 1345 F.).

2. Agricultural progress in Western India—1921 Edition.

3. Land Lordism in India.

by Dvijadas Datta,  
M.A.A.R.A.C.  
Late Professor of  
Agriculture C.E.  
College, Sibpore.

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5. Note on Irrigation on the block system in the Deccan Canal & Tracts. Technical paper No. 16. By C.C. Inglis, I.S.E. Executive Engineer, Special Division, Government of Bombay.
6. Land Revenue Administration Department of the Bombay Presidency. 1935 to 1936. (including soil) Issued by the Government of Bombay.
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8. Introduction to Land Revenue & Settlement system of C.P. (Second impression 1924).
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10. Tribal Hyderabad. From reports. By Christoph-Von-Furer Haimondrf., Ph.D.
- With a foreword by W.V. Guigson, C.S.I., I.C.S. Honourable Police member and Revenue Government of H.E.H. the Nizam Published by the Revenue Department, Government of H.E.H. the Nizam, Hyderabad 1945.
11. Monograph of Kurnool—Cuddapah Canal to the end of 1881.
12. Tungabhadra reserrior project Vol II. by Government of Madras.
13. Notes by the Settlement Commissioner of his annual tour of inspection in 1306 F. (1897 Print).
14. (a) Settlement report of Bellary & Anantapur Districts, black cotton soil taluks—Scheme report. G.O. No. 1332, Revenue, dated 21-7-1922.
- (b) Settlement Report on the taluks of Jamikunta and Sultanabad of Karimnagar District. (1335—1906 A.D.) .. By Gorarji Dorashaw.
- (c) Settlement report of the *Chiryal* Taluq of Warangal district, *Kamareddy* and *Yella-reddy taluks*, of Indur district, *Kabulugu* and *Bodhan* of Nizamabad district. *Madera* of Warangal district, *Suryapet* taluk of



Nalgonda district, Medak taluk of Medak district, Ibrahimpatnam taluk of Mahboobnagar district, Narayanpet taluk of Mahboobnagar district Warangal taluk of Warangal district.

15. (1) Papers relating to the Revenue Settlement & Resettlement of the Kurnool District.
- (2) Resettlement of 'Kurnool Proper' submitting to Government. Proposals (B.P. No. 31, dated 27-1-1905.)
- (3) Papers relating to Settlement of Poliams, Chittoor District.
16. (a) Taxation Enquiry Commission Report 1924 to 1925.
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17. Hungry People & Empty Lands .. By S. Chandrasekhar.
18. Land Reforms Defects in Agrarian Structure as Obstacles to Economic Development (U.N.) Development of Economic Affairs, New York.
19. Agriculture Wages in India (Vol. I), 1952 Publication.
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- 21. Agricultural Development and Rural Reforms in Denmark. By F.S.K. Rablerong Consultant on Agricultural Improvement (Agriculture Division).
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23. Indian Land System and Land Reforms .. By Bhowani Sen.
24. The Role of the Administrator, Past, Present and Future. By A. D. Gorwala.
25. Land Problems and Policies. .. By V. Webster Johnson.
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32. Land Revenue Policy of the Indian Government published by order of the Governor-General of India in Council 1902 & 1920 Edition.
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38. Irrigation in Madras Province. (In Southern India the Kaveri, Kistna Godavari, 1856-Edition) By Smith.
39. The Bombay Land System and Village Administration—in Six parts Civil Sens. 1932 Edition. By D. S. Modak, M.A., LL.B., J.P.A. I.R.O., F. S. Sc.
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41. Land System of British India (Vol. III), 1882 Edition. By B. H. Baden Powe C.I.E.
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45. Small holding and irrigation—the new form of settlement in Palestine. By Dr. S. E. Soskin (1920)
46. Hand book of Indian Agriculture, Second Edition, 1907. By Nitya Gopal Mukherji, M.A.
47. Fundamentals of Soil Science By C.E. Millar and L.M. Tinks M.A.
48. The India village community .. By P. H. Baden-Powel M.A.C.I.E.
49. The land system in South India between 800 A.D. and 1200 A.D. By K.M. Gupta, M.A.
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Road Map of Nizamabad District 4 miles = 1"  
Road Map of Karæmnagar 4 miles = 1"  
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| (5) Land Reforms Series No. 5, The Hyderabad Tenancy and Agricultural Lands Act No. XXI of 1950.  | do  |
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| (7) Land Reform Series No. 7 Reform of Pahani Patrak and Integration of Land Census, Record of Rights and Annual Revenue Accounts and crop inspections.         | do  |
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| (9) Land Reform Series No. 9 First report of the Hyderabad Land Commission on Delimitation of Local areas and delimitation of family holdings, 1954.            | do  |
| (10) Land Reform Series No. 10 Second report of the Hyderabad Land Commission on Consolidation of holdings, 1955.   | do  |
| (11) Land Reform Series No. 11 Jamabandi (Land Revenue Accounts) based on occupancy rights, 1955.   | do  |
| (12) Land Reform Series No. 12 redistribution of land in Hyderabad, 1956.   | do  |
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| (14) Land Reform Series No. 14 Rules and Notification under the Hyderabad Land Revenue Act.   | do  |
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144. Hindu Succession Act, 1956 (Act XXX of 1956) .. By V. Radhakrishnaiah.
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**REPORT**  
**OF THE**  
**LAND REVENUE REFORMS COMMITTEE**  
**PART II—Volume (v)**

*Supplementary Minute signed and given by the members Sri J. Raghotham Reddy, Sri H. Sitarama Reddy and Sri D. V. Rao on 26-1-1959.*

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At the time of first settlement and subsequent revisions, whether in Andhra area or in Telangana, the dry land assessment was fixed so as not to exceed 50% of the net income from land.

Since the days of the earlier settlements, there has been a positive gain in favour of ryots inasmuch as agricultural prices have moved up roughly 4 to 5 times the original figure, over a half-century.

As against this apparent advantage, there are several disadvantages to which the ryot is now exposed :—

(i) The dry land has progressively deteriorated in quality because of continuous cropping and soil erosion.

(ii) Since there has been an increase of irrigation, all manurial resources have been diverted away from dry lands, and in fact fertility itself is moving from dry to irrigated land through the medium of grasses and fodder like Jowar, straw, etc.

(iii) With the increase of population, the area per person has come down ; and with this development the taxable surplus has also fallen.

(iv) Government waste lands have all been assigned, and forests have been denuded, with the result that the dry land owner is compelled to keep a part of his holding fallow, for the needs of his cattle which in earlier periods was met by Government waste land and forests.

(v) Pests and diseases are a new factor, and their incidence is wholly unpredictable. Control measures are not only costly, but quite often unreliable and even uneconomic at the present level of yields.

It is some times said that the standard of farming is higher to-day than before and there are special aids to higher production like improved seeds and fertilisers, etc. It is obvious that fertilisers are generally not used in dry land farming because of the uncertainty of rains. It is important to note that under drought conditions the fertilised field suffers much more than the unfertilised field. As regards improved seeds, the varieties are very few, except in cotton, and the coverage is almost insignificant. Improved implements are not common and even contour bunding, that is to be carried at owner's cost is not yet common.

Very much is made of commercial crops grown in the dry lands, principally cotton and groundnut, and in Guntur, tobacco. Cotton may have a good price but it is paying a purchase tax of 1/2% in addition to assessment for land on which it is grown. Cotton is an industrial raw material and supports an industry which yields handsome contribution to the exchequer by way of taxes. Cotton depletes plant nutrients from deeper regions of soil, and these go in the form of cotton seed-cakes, to fertilise irrigated soils or to sustain milk production, and they rarely come back to dry land. Groundnut, again, pays a purchase tax of 2% besides enormous amounts of contribution as excise duty on oil, etc. It depletes plant food at least phosphoric acid. Large tracts of land that grew groundnut well, sometimes ago, have now become unfit for that crop. Similarly, dry land tobacco pays incredible amounts as excise duty.

This Committee's finding is that the incidence of the purchase tax on agricultural raw products levied on first purchase is shifted to the producer for the simple reason of proximity of the point of tax to the grower.

The total purchase tax collectable under present rates could not be exactly found out, but would, in no case, be less than 50% of the total dry land revenue, plus the dry component of wet land revenue.

It is true that inspite of all these, the rise in price alone would lessen the incidence of dry land revenue. It would require a very detailed study to arrive at the correct ratio that land revenue (excluding water rates) plus purchase-tax to-day bears to the net income of the dry land cultivator.

A very exhaustive and scientific enquiry into costs of production would be needed to arrive at this ratio even approximately. When allowance is made for all these, it is our rough guess that incidence today is not less than 20% of the net income, of which dry land revenue itself may represent about 12½%.

It would have been in the fitness of things to collect an agricultural income-tax, and the Committee would have had no difficulty in recommending such a course and agreeing with the proposals of the Taxation Enquiry Committee, if only the Government had not decided, as a matter of their social policy, the cutting down of all substantial holdings and thus progressively eliminate from the agricultural sector persons and institutions that make income which leaves a taxable surplus, according to present day income-tax standards. The Committee's decision not to have an agricultural income-tax in Andhra Pradesh is solely dicatated by the impracticability of such a tax or the possible insignificant yields from it, in view of the declared Land policy of the national and the State Governments in India.

Of all the taxes that go to swell the State's exchequer, Land Revenue and Income-tax are the only two direct taxes on people. It has been held by courts that Land Revenue represents the commuted value of Government's share in the produce, and the assessment is made by virtue of a 'prerogative' of Government. It has at the same time been conceded that Land Revenue is no longer a rent but a tax.

There is a very close analogy between the Income-tax and the Land Revenue inasmuch as in either of the cases, there is no direct quid pro quo or service by the State. The income is entirely due to one's own effort and enterprise. Under the Income-tax law, as at present, a person is totally exempt from tax if his income is below Rs. 3,600 annually and will be called upon to pay 12½% of his net income as tax only if his income is of the order of Rs. 25,000 annually. The power of a Government to levy or alter land revenue is of the same category as the power to levy any other tax and therefore, as far as practicable, same principles need to be applied. In a country devoted to the principles of democratic socialism, and working towards the ideal of a Welfare State, there is no justification for levying a tax on the income (Land Revenue is based on net yield or income) of people living on the borderline of abject poverty and precarious existence.

When we use the term 'Land Revenue', we mean, dry land revenue and also the dry land component of wet rate on irrigated lands. The Irrigation cess or water rate is a return for the service rendered by the State in providing water. Wet rate not only as fixed in earlier settlements but also as recently determined for major projects and recommended by this Committee elsewhere does not provide for an adequate direct return on capital invested on projects and irrigation works. It has been the practice and the Committee has endorsed the same that the State should look to indirect revenue arising out of increased prosperity to make amends for this apparent loss on irrigation works.

The age old practice has been to put all yield from land revenue in the consolidated fund of the State and draw therefrom both for development and normal administration. Other taxes levied by the State like the sales-tax, excise duties, stamps, vehicle-tax, etc., which form the bulk of the State's resources fall equally on all sections of the population,—Land-holders and others. It is but natural to expect that all services and general administration must be supported by these taxes, and land revenue should not be the main source to fall back upon. This is a tax exclusively paid by the land-holders despite their poverty, and as a tax is against modern canons of judicious taxation.

Whichever place the Committee visited and whichever land-holder it met, the most common representation was that agricultural services by the State were inadequate. Enough research information was not available. Extension was not efficient, plant protection methods were either not known or could not be practised due to some cause beyond the ryots' control, credit was neither prompt nor adequate and supplies of several materials and services were woefully below requirements. Each time the Committee talked about incidence of land revenue, the ryots talked back about the State's failure to help them farm better. Indeed, there was no witness that told the Committee that all was well on this front. Serious lacunae need to be filled in. The Committee has mentioned at length in appropriate places its own findings and recommendations regarding developmental activities of the State in their relation to the tax paying capacity of the land-holder.

When in pursuance of certain social policies the State is encouraging the growth of small holdings and of peasants hardly capable of looking after themselves, the provision of research information, training facilities, proper extension and appropriate supplies of goods and services inevitably become increasingly the State's primary responsibility. This is more so when large gaps in knowledge exist in this State with regard to the growing of most of the crops in this region.

An extract from Arthur Lewis 'Theory of Economic Growth' appended to this report would show that 1% of the value of the gross agricultural production is the minimum that needs to be spent on agricultural research education and extension. While we are planning to double our agricultural production in the next seven years, it becomes obvious that the State's investment in this field must be commensurate with the results desired. The gross agricultural production in Andhra Pradesh is computed at 600 crores and doubling that in 7 years would mean an annual increase of 85 crores. Normally if our national income is to go up by that amount each year, the order of investment may be of 3 to 4 times that amount each year. There is no doubt that the bulk of investment in agriculture will come from the ryots themselves. Yet the State's investment on research training and extension cannot be less than 1%. Indeed it will have to be more. In highly advanced countries, the State's investment of 2% has been considered very necessary to increase the agricultural output at the rate of 1% per year. The cost of research, education and extension for any given output would be naturally greater in India than in the West, primarily because of the greater number of producers involved. We are not exaggerating our requirements when we suggest that 6 crores annually is what is needed in the immediate future for organising these services. As against this the present expenditure (non-recoverable) in our State on Agriculture and Animal Husbandry is not more than 2 crores a year. Add to this the administrative cost of organising agricultural credit and Land Revenue collections, and we have a picture of all that is exclusively spent on agricultural community. The gap between the actual and the minimum requirements is very wide indeed.

In spite of the great urgency, most of the agricultural research schemes sanctioned by ICAR and the various Commodity Committees are not accepted by the State on the plea that State finances cannot bear the burden of a matching contribution. Sometime ago, there was a proposal from the Government of India to

subsidise plant protection equipment to the ryots to the extent of 50% if the State Government could equally share the burden. State Government did not do its bit and the proposal had to be dropped.

We have been unable to get an exact amount collected as Land Revenue (apart from water rate) but we presume it may be of the order of 5 to 6 crores. For the immediate future this amount well spent may satisfy our requirements of improved agricultural services. Should our future needs outstrip these resources it would be simple enough to revise it upwards, and it can be justified, since it would be exclusively devoted to the economic welfare of the Community that is called upon to bear the burden. This would be far more palatable than asking the general tax-payer for expansion of agricultural services, or *vice versa*. This idea of financing agricultural improvement through a cess is not novel, inasmuch as all commodity committees function on this basis, and several times the proposal to devote the land revenue for local needs has been made from significantly high quarters. Some years ago, the Andhra Government also promised to waive land revenue in the case of persons paying less than Rs. 10 annually.

Even if this is done the purchase tax recently levied will still bring to the exchequer substantial amounts from land-owners for the general administration and welfare schemes. There is the estate duty on agricultural land, and with increased economic activity and consequent prosperity, the resources of the State will progressively expand. The acceptance of our proposal will strengthen the agricultural base of our economy and will most certainly lead to improvements in the progress towards adding to our National Income and raising the standards of living in the rural areas.

Even now the land-holders pay 13% and 19% over and above their settled land revenue as local and educational cess. The Committee has recommended elsewhere that the use of these funds for the whole community while only the agriculturist class pays it, is rather unfair and the injustice should be put right.

There are suggestions that the whole of the land revenue may be turned over to the local bodies for community work (Orissa Land Revenue Committee) and even the Taxation Enquiry Committee of 1953-54 has favoured allotting 'a fairly reasonable share of land revenue as is done at present by certain States' to the Local bodies. It is likely that when "democratic decentralisation" as contemplated in the Panchayat Samiti and Zilla Parishad Bill now before the Select Committee of the Legislatures is implemented, a part of the land revenue may be kept at their disposal for local works.

Even though we do not see any justification in levying land revenue on an average peasant's income we realise that this has the sanction of long usage, and it will not be financial prudence to give up a tax which the people are used to paying over ages. However, we suggest, that land revenue may be turned into a cess and be exclusively earmarked for the development of Agricultural services—Education, Research and Extension. While retaining the proceeds to the State, this satisfies the sacred principle that the poorest section should be exempt from a direct tax.

While the present level of expenditure on Agricultural and Animal Husbandry Department is of the order of 2 crores, the conversion of 6 crores of Land Revenue into a cess earmarked for Agricultural Education, Research and Extension would create a gap of 4 crores in general Revenues. This will have to be made good from other sources and how best this could be done will have to be separately studied and necessary measures adopted. However, if necessary effort is forthcoming and if agricultural production gets doubled or even substantially increased during the next seven years, the indirect revenues accruing out of this increased production and consequent prosperity will also go to make up this deficit.

What is very important and needs to be borne in mind is that in economising on Agricultural Department's expenditure we are very probably not even obtaining full return for our present outlay of 2 crores. Inadequate expenditure quite often leads to the waste of the little that is spent. We cannot too strongly emphasise the need to accept the principles we have recommended in this minute of ours. Obviously the level of expenditure can be reached only in course of time. However, attempt should be made to reach the objective early.

(Sd.) J. RAGHOTHAM REDDY,  
26-1-1959.

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26-1-1959.

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26-1-1959