

REPORT OF THE KRISHNA GODAVARI COMMISSION



ANNEXURE XVI
Irrigation Practices, Policy and Administration in
Krishna and Godavari Basins

CONTENTS

		PAGE
	Foreword	(i)
SECTION I	General	1
SECTION II	Irrigation Acts and the Rules thereunder ; their scope and application	1
SECTION III	Control of supplies in rivers and streams for public purposes	3
SECTION IV	Classification of irrigation works	5
SECTION V	Right to the use of waters of an irrigation work—Procedure laid down for a cultivator to acquire the right to take water from an irrigation work, long-term contracts, agreements, application for individual crop seasons, registered <i>Ayacuts, etc.</i>	10
SECTION VI	Obligations of irrigators—in respect of maintenance of works and division of land into <i>kiaries</i>	17
SECTION VII	Water-courses—Construction, maintenance and settlement of disputes regarding mutual rights and liabilities of persons interested	17
SECTION VIII	Regulation of crop pattern	19
SECTION IX	Regulation of supplies and distribution of water—General system of operation of irrigation system, rotational turns, method adopted to ensure equitable distribution of supplies between individual channels, individual outlets and individual cultivators	20
SECTION X	Water-rates—Basis for fixing water-rates ; current water-rates ; whether water-rates merged with land revenue or separate; since when in force ; other charges, such as irrigation cess, water advantage rate, cost of pumping, <i>etc.</i> , remission of water-rates	21
SECTION XI	Assessment and recovery of water-rates—Method adopted for assessment and recovery ; agency	24
SECTION XII	Betterment Levy—Legislation, basis, assessment and collection	24

Foreword

Management and administration of irrigation works play an important role in the successful development of irrigation and in the optimum utilization of water resources. Though not specifically covered by its terms of reference, the Commission considered it important to study this aspect of irrigation development in the Krishna and Godavari basins together with some of the practices and procedures which have a bearing on the optimum use of the potential created by irrigation works. The scope being large, the subject has been dealt with in this Annexure under various heads.

The information given herein is based on the Irrigation Acts and the Rules thereunder, which are at present applicable to each State or a part of it. On some points regarding which the relevant information was not available in the Acts and the Rules, as supplied to the Commission, enquiries were made from representatives of the States concerned and the information supplied by them is given in this Annexure.

Section I—General

1-1 Irrigation must have been practised in the Krishna and Godavari basins from ancient times. The old irrigation works, however, consisted mainly of wells, small size tanks and minor diversion works, built generally as a result of co-operative effort of people belonging to a village or a group of villages whose land was irrigated or benefitted by such works. The works were maintained by the people and the supplies available shared by them. As the scope of each individual work was limited and it benefitted only a small section of the people who, apart from having a common interest, were knit together by village ties, the need for legislation to administer such small irrigation works was seldom felt.

1-2 Construction of some major irrigation schemes was undertaken by the British Government in the latter half of the Nineteenth Century. To begin with, the main object was development of navigation, to facilitate transport for purposes of trade and the schemes were generally confined to deltaic regions or tracts where navigation was considered to be important. Before long, these schemes extended irrigation facilities to hundreds of villages. Their administration required appropriate legislation.

1-3 In the Krishna and the Godavari basins, most of the major irrigation schemes were in the old Bombay and Madras Presidencies. During the last few decades, some major irrigation schemes were also undertaken in the former States of Hyderabad and Mysore.

1-4 As explained in Chapter II of the Report, State boundaries have undergone numerous changes during the last decade ; but, in general, irrigation works continue to be governed and administered under the Acts which were applicable to them when they formed part of the parent Province or State. It is thus, a common feature in each State that irrigation works are being administered under different rules, and there is no uniformity in this respect. Proposals for having a uniform Act for all irrigation works in a State are under consideration in some States.

Section II—Irrigation Acts and the Rules thereunder; their scope and application

Andhra Pradesh

2-1 As it now exists, Andhra Pradesh consists of Andhra region, which was separated from the Madras Presidency in 1953, and Telangana region of the erstwhile Hyderabad State. Irrigation works in the Andhra region continue to be administered by the Acts and the Rules which were applicable to them when they formed part of the Madras Presidency and irrigation works in Telangana are governed by the Acts and Rules of the erstwhile Hyderabad State.

2-2 Though Madras Presidency had a number of major irrigation systems in operation, there was no comprehensive Irrigation Act in force. Various Bills in different forms were sponsored by Government from time to time but they could

not be passed into an Act due to criticism from one quarter or the other. The last Bill was drafted in 1953 and is stated to be still under consideration. A history of the steps taken from time to time to have a comprehensive Irrigation Act for Madras Presidency is given in the Compendium* recently published by the Madras Government.

2-3 During the last century, for maintenance and administration of irrigation works, piecemeal Acts were passed by Madras Government and amended from time to time, as follows:

- (i) The Madras Compulsory Labour Act, 1858;
- (ii) The Madras Irrigation Cess Act No. 2 of 1865; amended in 1930, 1935, 1938, 1940, 1942, 1943, 1945 and 1949.

Irrigation works in the Andhra region of Andhra Pradesh continue to be administered under these two Acts.

2-4 The erstwhile Hyderabad State passed an Irrigation Act in 1948 under the name of the Hyderabad Irrigation Act No. 24 of 1357 Fasli. As already stated, that Act and the Rules thereunder continue to apply to such irrigation works as lie in the Telangana region of Andhra Pradesh.

Hyderabad Irrigation Act applies to all irrigation works built after 1948, and to older irrigation works having an Ayacut of 2,000 acres each or more.

Madhya Pradesh

2-5 The Central Provinces Irrigation Act of 1931 as amended from time to time, applies to all irrigation works in Madhya Pradesh. This Act was amended in 1945, 1948, 1949 and 1951.

Maharashtra

2-6 Maharashtra State, as at present constituted, consists of:

- (i) parts of old Bombay State known as Western Maharashtra;
- (ii) parts of erstwhile Hyderabad State; region known as Marathwada;
- (iii) parts of Madhya Pradesh State, region known as Vidarbha.

Irrigation works in Western Maharashtra region which formed part of the old Bombay State are being administered under the Bombay Irrigation Act of 1879.

In Marathwada region, Hyderabad Irrigation Act, No. 24 of 1357 Fasli, applies to all irrigation works.

In the Vidarbha region, the Central Provinces Irrigation Act of 1931, as amended from time to time, applies to all irrigation works.

*Compendium. History of various Irrigation Bills and the need for an Irrigation Act (1961).

Mysore

2-7 Mysore, as at present constituted, consists of:

- (i) parts of erstwhile Mysore State;
- (ii) part of former Bellary district transferred from Madras Presidency in 1953;
- (iii) Bijapur, Dharwar, Kanara and Belgaum (excluding Chandgad taluk) districts transferred from old Bombay State in 1956; and
- (iv) Raichur, Gulbarga and parts of Bidar districts transferred from erstwhile Hyderabad State in 1956 ;
- (v) Coorg.

2-8 In the erstwhile Mysore State, the administration of irrigation works was governed by the Mysore Irrigation Act, 1932 and the Rules thereunder. After the re-organization of States, the irrigation works in the regions which were transferred from Hyderabad, Bombay or Madras, continue to be governed by the Irrigation Acts which were applicable to the respective parent States.

Orissa

2-9 Orissa, as at present constituted, was formed in 1936 by carving out some parts from Madras, Bengal, Bihar and the Central Provinces. Until recently, irrigation works in various regions were administered under the Acts which were applicable to them when they formed parts of the parent Provinces.

2-10 In 1959, Orissa Government passed the Orissa Irrigation Act, 1959. The Rules under that Act were promulgated in 1961. The new Act and the Rules thereunder repealed all the Acts and the Rules which formerly applied to irrigation works in different regions of Orissa.

Section III—Control of supplies in rivers and streams for public purposes

3-1 The Madras Irrigation Cess Act, 1865 made no specific provision empowering Government to utilize the waters of any river or stream for public purposes. Under that Act, the Government was, however, empowered to levy water cess if water is used for irrigation.

3-2 The Hyderabad Irrigation Act, 1948, provides in Section 6:

“Whenever it appears expedient to the Government that the water of any river or stream or lake flowing in a natural course or the still water of any other natural reservoir of water should be used by the Government for the purposes of any existing or projected irrigation work, the Government may declare, that such water will be so used after a date specified in the notification, not being within three months from the date thereof.”

The Act makes no specific mention of payment of any compensation to people having existing rights in such waters,

3-3 The Central Provinces Irrigation Act, 1931, provides for control by Government over the waters of any river, natural stream or natural drainage channel, *etc.* on the same lines as the Hyderabad Irrigation Act, after due notification in the Gazette. The Act specifies that compensation shall be payable where as a result of the construction of a canal:

- (i) the rent or revenue of any land has been reduced, or
- (ii) the supply of water to or from a tank or other constructed work has been diminished.

No compensation is, however, payable for any damage arising from:—

- (i) Stoppage or diminution of the percolation or flow of water, or
- (ii) the deterioration of climate or soil, or
- (iii) stoppage of navigation, or of the means of drifting timber or watering cattle.

3-4 The Central Provinces Irrigation Act, 1931 was amended in 1949 to provide for construction by a permanent land-holder of a private irrigation work or a grant-in-aid irrigation work, on a river, natural stream or drainage channel after obtaining permission of the Government, subject to such conditions and payment of such charges as the State Government may decide.

3-5 The Bombay Irrigation Act VII of 1879 provides for control of the waters of any river or stream by Government for public purposes on the same lines as set out above for the Hyderabad Irrigation Act.

3-6 Section 55 of the Bombay Land Revenue Code (1879) provides that, with the permission of the collector and subject to payment of such water-rates as he may deem fit to impose, land holders and other persons, may use for purposes of irrigation, waters, the right for which vests in the State Government and in respect of which no water-rate is leviable under the Bombay Irrigation Act, 1879. Persons using such waters without permission are liable to pay penalty rates not exceeding Rs. 50 per annum per acre of land so irrigated.

Since 1939 no charges are, however, being levied where water is taken from a source on which no expenditure has been incurred by Government at any time, or when land is irrigated by means of a pumping plant.

3-7 The Mysore Irrigation Act, 1932, makes no provision for control of waters in natural rivers and streams by Government. In the new Bill which is under consideration of the Government, provision has been made regarding this on the same lines as in the Bombay Irrigation Act.

3-8 The Orissa Irrigation Act, 1959 makes no provision for control of waters of natural rivers and streams by Government.

Section IV—Classification of irrigation works

4-1 From the point of view of construction, maintenance, assessment of water-rates or administrative control, irrigation works in various States have been classified as explained below for each State :

4-2 In *Andhra Pradesh*, irrigation works are divided into three classes :

(a) private irrigation works ;

(b) minor irrigation works and tanks with Ayacut less than 200 acres each in Andhra area and 100 acres each in Telangana area ;

(c) major tanks and other irrigation works.

4-3 Class (a) above covers tanks of very small size irrigating only a few acres each, originally constructed by private individuals and maintained by them. The number of such tanks now in existence is small.

4-4 Works under category (b) have been always maintained by the Revenue Department. After the formation of Zila Parishads, works in this category were transferred to them and put under the control of Superintending Engineer, Local Administration, under the Chief Engineer, Buildings and Public Health, Public Works Department. The Superintending Engineer, Local Administration, maintains all minor tanks within his competency of sanction. Funds required for such works are provided by the Zila Parishad.

4-5 Works in category (c) above comprise large size tanks or a system of tanks built one below the other on a single stream, operation and regulation of which would be fairly involved. Such works are built and maintained by the Public Works Department, Irrigation Branch, of the State.

4-6 All other major and medium canal systems with appurtenant works also fall in category (c) and are constructed and maintained by the Public Works Department, Irrigation Branch.

4-7 The functions of the Public Works Department are limited to the construction and maintenance of the engineering works. After an irrigation work is constructed, the development of its Ayacut which involves construction of water-courses, soil surveys, localization work, setting up of agricultural research stations and demonstration farms, advancement of loans for breaking and levelling of land, purchasing of manure, seeds, live stock, *etc.* rests with the revenue authorities under a Member of the Board of Revenue. The Public Works Department has little to do with these processes.

The development of Ayacut involves heavy expenditure, which, in case of a major irrigation scheme, like Nagarjunasagar, might be of the order of 50 percent of the cost of construction of the project. All this work of development is managed and controlled by the revenue authorities.

4-8 The Public Works Department is not concerned with the assessment of water charges and are, therefore, generally unacquainted with the actual process of irrigation or the problems arising therefrom.

The assessment of water charges is made by revenue officials and collected by the village officer.

4-9 In *Madhya Pradesh* irrigation works are divided into three classes :

- (a) private irrigation works ;
- (b) grants-in-aid irrigation works ;
- (c) government controlled works :
 - (i) under the management of Revenue authorities ;
 - (ii) under the control of the Public Works Department.

Any permanent land holder desiring to construct a dam or any other work of a similar nature in any river, natural stream, natural drainage channel, natural lake or other natural collection of water as part of a private irrigation work, or a grant-in-aid irrigation work, may apply in writing to the State Government through the Deputy Commissioner for permission to construct such dam or work. After notifying publicly and making an enquiry the case is forwarded by the Deputy Commissioner to the State Government for orders. In according sanction the rate to be charged for water likely to be appropriated by the permanent holder and other conditions are specified.

4-10 Under the Central Provinces Irrigation Act, the State Government may make a grant or loan of money to a permanent holder of land towards the cost of construction or improvement of a private irrigation work. The Act also makes provision for acquisition of land for private irrigation works where the private individual is unable to acquire land by private negotiations. The cost of acquisition is paid by the individual concerned. If the permanent holder fails to properly maintain the work for which the grant is sanctioned, the grant can be recovered in such instalments and with such interest as may have been agreed upon at the time when the grant was sanctioned.

There are a large number of irrigation tanks in the State and most of the smaller ones fall in the category of private irrigation works. These are maintained by the persons interested in them.

4-11 Other tanks and minor irrigation works each having a C.C.A. of 200 acres or less, are under the control and management of the revenue authorities*

4-12 Tanks and other irrigation works having a C.C.A. of more than 200 acres each are under the control of the Public Works Department, Irrigation Branch of the State.

*The Government of *Madhya Pradesh* have tentatively decided to hand over the tanks, in which irrigation less than 100 acres is being done, to the Gram panchayats. -

4-13 An Irrigation Panchayat is established for a village and, at the discretion of the Deputy Commissioner, for a *chak* in which the permanent holders of land have entered into an irrigation agreement or which comprises area compulsorily assessed to water rates. Irrigation Panchayats consist of a *Sarpanch* and two or more members (number to be determined by the Deputy Commissioner) elected by the permanent holders and occupiers of land from amongst themselves. Elections to the Panchayat are subject to the approval of the Deputy Commissioner who has powers to nominate one member to any Panchayat and, for reasons to be recorded in writing, to dismiss any member and to dissolve any Panchayat, subject to an appeal to the Commissioner. Generally, an Irrigation Panchayat holds office for a period of three years.

4-14 The primary functions of Irrigation Panchayats are :

- (i) to assist officers of the Irrigation Department in detecting and preventing encroachments on canal lands, to prevent damage to irrigation works and to report any wilful damage caused to them ;
- (ii) to assist officers of the Irrigation Department in arranging for construction of water-courses, in recording and checking irrigation and in making measurements and settling disputes ;
- (iii) to collect irrigation revenue and credit it to the treasury ;
- (iv) to arrange for repairs to water-courses.

Panchayats also have power to accept from any person, against whom a reasonable suspicion exists that he has committed an offence under the Irrigation Act, a sum not exceeding Rs. 10 by way of composition for such offence. Money so collected by a Panchayat can be spent by it, subject to the control of the Deputy Commissioner, on any work of public utility in the village.

4-15 Irrigation Panchayats are remunerated by grant of Commission :

- (i) for collection of revenues for each crop season, at the rate of about 3 per cent for the first Rs. 1,000 of canal revenue collected by it and about 1.5 per cent for all sums in excess of this amount.
- (ii) for administrative work at the discretion of the Executive Engineer taking into consideration the efficiency of the work done by the Panchayat; the maximum amount payable for this is Re. 0.1 per acre assessed or irrigated free of charge.

The amount of remuneration both on account of collection of revenue and administrative work is paid to the Panchayat by a canal officer twice a year. Out of the total amount paid, the *Sarpanch* gets double the amount paid to each member.

4-16 In *Maharashtra*, irrigation works are divided into three classes :

- (a) private irrigation works ;
- (b) second class irrigation works ;
- (c) other irrigation works,

4-17 A large number of irrigation works, particularly tanks were built by the people themselves on a co-operative basis. Bombay Irrigation Act No. VII of 1879, provides for declaring any canal, channel, stream, river, pipe or reservoir, natural or artificial, or any part thereof, whether constructed, maintained or controlled by Government or not, which is actually used or required for the purposes of irrigation, a second-class Irrigation work by notifying in the Gazette. Before such works are declared as second-class irrigation works, due consideration is given to the objections and rights of the people interested in them, and, if necessary, adequate compensation is paid, where such rights are infringed. After the objections and the rights have been enquired into by a revenue officer, a record-of-rights is prepared and use of irrigation supplies thereafter is regulated according to the record-of-rights.

4-18 For second-class irrigation works, it is obligatory on the beneficiaries to maintain them in proper condition. Supplies from such works for agricultural purposes are allowed free of water-charge for growing food and fodder crops on receipt of application from the cultivators. Since no water-rates are charged, no claim for compensation on account of damage to crops due to failure or deficiency of water lies. Areas irrigated by such works have to be kept separate from all areas irrigated by water supplies from other works by at-least 50 feet at all places.

If at any stage, the Government finds it necessary to undertake, at its own cost, any work whereby the supply of water is increased, the right to such surplus water vests in the Government to be used as it may deem fit, and the record-of-rights is revised accordingly.

4-19 While a number of small tanks are still maintained by the people, there is an appreciable number of tanks with a C.C.A. of 250 acres or less which fall under the category of second-class irrigation works, and which are controlled by the revenue authorities. No application for supply of water from such tanks is required and a consolidated revenue charge is made.

4-20 Tanks having a C.C.A. of more than 250 acres each, and all other irrigation works are generally under the charge of the Public Works Department, Irrigation Branch of the State.

4-21 In *Mysore*, irrigation works are divided into two classes :

- (a) irrigation works under the charge of revenue authorities ;
- (b) irrigation works under the control of the Public Works Department, irrigation Branch.

In the old Mysore State region, all tanks are controlled by the Revenue Department until specifically transferred to the Public Works Department.

In the Bombay-Karnatak region, all new tanks are administered by the Irrigation Branch until transferred by specific orders to the Revenue Department.

In old Hyderabad areas, all tanks having an Ayacut of less than 10 acres each are administered by the Revenue Department and those having an Ayacut of more than 10 acres each are built and maintained by the Public Works Department.

All major canals are built and maintained by the Public Works Department but all other work is with the revenue authorities as described in paragraphs 4-7 and 4-8

4-22 Under the provisions of the Mysore Irrigation Bill, 1959, which is under consideration, where the State Government consider it necessary that the maintenance of a certain irrigation work should be undertaken by the State Government and the cost of such maintenance or a part thereof should be recovered from the people who are benefited by such irrigation work, such irrigation works shall be notified. Only irrigation works in which a number of people have got joint interest can be notified. For notified irrigation works, a cess will be levied by the State Government, called the "maintenance cess", which would not exceed Rs. 5 - per acre per annum. This cess is recoverable in addition to land revenue. The proceeds of the "maintenance cess" together with such grants as the Government may make from time to time of an amount equal to 50 per cent of the proceeds of the cess will be credited to a fund, called "Irrigation Works Maintenance Fund". This fund may be for the whole State or for any area within the State. The fund will be administered by the Public Works Department of the State and will be used for maintenance of notified irrigation works including construction and maintenance of roads and other works connected with the use of such works.

4-23 A special feature of the Mysore Irrigation Act, 1932 is that it provides for the constitution of an Irrigation Panchayat for a village or constitution of an Irrigation Board where an irrigation work is found to serve more than one village. Where an Irrigation Panchayat or an Irrigation Board is set up it is responsible for the maintenance and upkeep of the Irrigation work, under its control.

4-24 Irrigation works in *Orissa* may be classified into two categories :—

- (a) irrigation works under the control and management of P.W.D. Irrigation Branch ;
- (b) irrigation works under the control and management of Revenue Department.

4-25 Generally, all major irrigation works having an Ayacut of more than 4,000 acres each, fall under category (a) and the rest under category (b). The Collector is incharge of the maintenance and repairs of works under his charge and maintains a list and ledger of all such works. In technical matters the Collector is assisted by an irrigation officer who inspects each irrigation work at least once annually and submits a report to the Collector regarding the condition of the work, indicating the repairs needed, if any. The Collector submits a report to the Board of Revenue each year, regarding the condition of irrigation works under his control and the repairs needed and carried out.

4-26 There are no irrigation works of category (a) above in the Godavari basin in *Orissa*.

Section V—Right to the use of waters of an irrigation work

Procedure laid down for a cultivator to acquire the right to take water from an irrigation work, long-term contracts, agreements, application for individual crop seasons, registered Ayacuts, etc.

Andhra Pradesh

5-1 Cultivators are entitled to supplies from old tanks and old irrigation works if their lands are classified wet, for purposes of assessment. In case of new irrigation works, like Tungabhadra project, supplies are given only to "localized" areas.

Supplies are also sanctioned by an Executive Engineer on a temporary annual basis, on receipt of application from cultivators, if there are any waters surplus to earlier commitments. If such supplies are sanctioned continuously for a period of three years, they are made permanent with the concurrence of the Collector.

5-2 The work of "localization", for new major and medium irrigation schemes, is done by a team consisting of an officer each from the Irrigation Branch, Agricultural Department and the Revenue Department. The irrigation officer prepares a contour map of each village showing contours at one or two feet intervals and the area which can be commanded. The agricultural officer on the basis of soil-surveys specially made for the purpose, classifies each field indicating its suitability for different irrigated crops. After this information has been collected, the team visits each field and prepares the "localization scheme" for each village, indicating the area to which irrigation facilities are to be extended and the crops to be grown. In doing this work, the following points are required to be taken into consideration:

- (a) the benefits of irrigation be extended to as large an area as possible, consistent with the economic utility of water and other local considerations;
- (b) demand for irrigation supplies should be steady in a year of normal rainfall;
- (c) the economic conditions of the people and their willingness to take to irrigation;
- (d) the adequacy of the existing resources in the village with regard to cattle population, transport facilities, etc.;
- (e) the prospect of developing irrigation in the "localized" areas within a reasonable time.]

The lands considered suitable for different types of crops are generally kept in large compact blocks and, as far as practicable,* separate distributaries are provided for wet crops and dry crops. Irrigation of small patches in the dry belt of a village is generally avoided.

5-3 The Scheme for "localization", as drawn out by the team, is sent by the revenue officer to the Collector who gives due publicity to it in the village and, on an appointed date, calls a meeting of the villagers to ascertain their views and objections, if any. After taking these into consideration, the scheme is finalized and a copy of the final scheme is posted in the village for information of the cultivators concerned. On the basis of the localization scheme, an Ayacut Register is prepared and individual notices are issued to persons whose lands are included in the localization scheme directing them to prepare their land for receiving water before the prescribed date. For all areas included in the localization scheme it shall be compulsory for the land owner to pay consolidated wet assessment rate as may be determined by the Collector, irrespective of the fact whether he takes canal water or not.

5-4 Each cultivator thus acquires a right to get irrigation supplies according to the classification of his land, either as recorded in the settlement records, or as decided at the time of localization. The cultivator is required to pay water-rates according to the classification of his land.

Madhya Pradesh

5-5 According to the Central Provinces Irrigation Act of 1931 as amended from time to time, lands classified as "Wet" do not fall under the category of irrigable lands.

5-6 Water may be supplied from a canal

- (a) under an irrigation agreement ;
- (b) on demand for irrigation of specified areas ;
- (c) to supplement a village tank ;
- (d) for industrial, urban or other purposes not connected with agriculture ; and
- (e) for irrigation of a compulsorily assessed area.

5-7 If 95 per cent of the permanent holders of all irrigable land in a village or *chak* or the owners of two third of such land, so desire, irrigation agreements may be made for irrigation of paddy or wheat for a period not exceeding 10 years at special rates. Such agreements are binding on the permanent holders and occupiers of, and canal dues are payable in respect of,

- (a) all irrigable land in the village or *chak* under cultivation with the crops under agreement at the time from which the agreement has effect or at any time during two years prior thereto ; and
- (b) all land which may be cultivated with the crops under agreement at any time during the period of the agreement.

Irrigation agreements are subject to the general or special approval of the State Government or of a canal officer specially authorised in this behalf by the State Government.

5-8 Wet lands and high lands may be included in an irrigation agreement if so desired by the occupier. In such cases the rates charged are lower and generally half of the normal rates.

5-9 Irrigation agreements may be cancelled at any time

(a) by mutual consent;

(b) if the permanent holders and occupiers persistently fail to maintain water-courses in proper repair; and

(c) with the previous sanction of the State Government.

In case of cancellation by the State Government, damages are paid to the permanent holders in respect of land under agreement, equal to double the amount of canal revenue which would have been payable in respect of such land for the remainder of the period of the agreement.

5-10 Apart from the supplies given under irrigation agreements, water may be supplied for other areas from a canal at any time on receipt of an application for the supply of water for irrigation. Water thus supplied on demand is required to be paid for according to the area actually irrigated.

Water may also be supplied from a canal at any time to irrigate a compulsory assessed area; in other words, to areas notified as compulsorily assessed to water rate under the Irrigation Act.

5-11 Supply of water for industrial, urban or other purposes not connected with agriculture is subject to the approval of the State Government and covered by a special agreement specifying the terms and conditions.

5-12 Water required for supplementing supplies in village tanks may be supplied at any time at the discretion of the Executive Engineer. Charges for water supplied to a village tank are calculated on volumetric basis.

Maharashtra

5-13 The Bombay Irrigation Act lays down rigid rules for regulating sanctions for use of irrigation waters. Under this Act, irrigation by 'Block' system is practised in the Western region of Maharashtra. It is applicable to Nira Canals, Pravara Canals and Godavari Canals. The 'Block' system is not so far introduced in the Marathwada and Vidharbha regions.

Lands required to be irrigated are generally, divided into blocks of varying size, nearly four acres to 16 acres, according to the crops to be grown in each block. Two-seasonal blocks are generally smaller in size.

5-14 Cultivators requiring irrigation supplies have to apply to the Executive Engineer in-charge in the prescribed form on or before the dates fixed and notified. Full details of the field numbers, total area for which the supplies are required and the outlet from which the area is to be irrigated, are required to be given in the application. Subject to orders issued by Government from time to time, the Executive Engineer may sanction or reject wholly or in part, any such request.

If an applicant is in arrears of water-rates, the application may be summarily rejected.

When applications for use of irrigation supplies are sanctioned, a 'Pass' is issued to the cultivator indicating the area for which supplies are sanctioned, the source from which, and the period for which, the cultivator would get the supplies.

5-15 The types of blocks and the conditions pertaining to each type are as follows:

(a) *Two-seasonal blocks* :

For crops grown during monsoon and cold weather seasons; supply is limited to 8 months' period from 15th June to 14th February. Cultivators can replace one acre of two-seasonal crop for 1.5 acres of a *kharif* or a *rabi* crop.

A new type of two-seasonal block in which 50 per cent of the area is irrigated during *kharif* and 50 per cent during *rabi* has recently been introduced. In this case, *rabi* crops may overlap *kharif* crops and get one watering before 15th October (even if *kharif* crops are standing) without additional charge.

(b) *Rabi blocks* :

For irrigating such *rabi* crops as are sown on September-October rains. Normally, only two waterings at an interval of about 30 days are allowed. In a year of good supply a third watering may be given. If supplies are found inadequate, only one watering is given. In case of total failure of rains, water is supplied only for sowing till about 10th of October.

(c) *Sugar-cane blocks with one third *sugar-cane* :

For one-third of the area which may grow sugar-cane, water is supplied all the year round. For the remaining two-thirds, water is supplied only for eight months, 15th June or break of monsoon to 14th February. Sugar-cane crop may be replaced by twice the area of other crops, excluding long term fruit trees and *pan* gardens. No second *ratoon* of sugar-cane is allowed. During a period of five years, more than three sugar-cane crops are not allowed in any field. These blocks are sanctioned for a period of six to eight years at a time and are limited to water supplies expected to be available each year.

(d) *Fruit blocks* :

This applies to trees with normal life of 15 years or more, excluding plantains, papayas and other short-lived species. Inter-cropping is allowed with no additional charge. If fruit trees fail, short lived perennial or seasonal crops may be grown after informing the Executive Engineer. Supplies can be discontinued by the Executive Engineer at any time after giving 12 months' prior notice.

*Sometimes sugar-cane blocks are sanctioned in which only one-fourth of the area can grow sugar-cane. In such cases, not more than two sugar-cane crops may be grown in a period of five years.

(e) Garden blocks :

For perennial crops (including lucern grass and plantains) other than sugarcane, *pan* or long term fruit trees. Instead of gardens or perennial crops, cultivators may grow seasonal crops. Executive Engineer may at any time, after giving 12 months' notice, cancel any block or any part of a block if in his opinion further continuance of supply to it is objectionable.

5-16 If in any year it is found at the end of the monsoon season that supplies are actually available in addition to those required for sanctioned blocks, sanction may be accorded for additional waterings *i.e.*, for waterings required for areas already sanctioned under the block system for a short period not covered by the original sanction. Full water rates are payable for the area and the period sanctioned by the Executive Engineer whether the area is irrigated or not, provided water is available during the period.

5-17 There are large blocks of areas attached to sugar factories on which intensive cultivation of sugarcane is practised. One factory generally covers 2,000 to 4,000 acres. There are eight large sugar factories distributed as follows :

	<i>Number of factories</i>	<i>Approximate acreage under sugarcane.</i>
(i) Pravara Canal System	3	7,750 acres
(ii) Godavari Canal System	2	3,850 ..
(iii) Nira Canal System	3	9,600 ..
TOTAL	8	21,200 ..

Irrigation supplies for sugarcane farms attached to sugar factories are regulated by means of long term agreements which generally extend over a period of 30 years. An entire distributary, and in some cases more than one distributary channel, serves each farm. Supplies to be delivered are worked out on the basis of a delta of 112 inches per annum, with suitable monthly distribution. Water-rates are charged on volumetric basis. For a delta of 112 inches, the rate charged is as per normal schedule of water-rates, *i. e.*, Rs. 160 per acre exclusive of irrigation cess, which is Rs. 30 per acre. Land under such sugarcane farms is partly owned by factories and is partly taken on long term lease from individual landowners. Under the agreement, factory owners are required to make adequate arrangements for drainage of area under each farm.

Mysore

5-18 The irrigation officer-in-charge of a project, in consultation with the deputy commissioner and the District Agricultural Officer, decides how the supplies from an irrigation work should be distributed. Such decision is taken in respect of

- (a) the time for letting out water for irrigation;
- (b) the period of supply;
- (c) the quantity of supply; and
- (d) the areas to be supplied at different times.

The decision taken and the rules framed in respect of any irrigation work hold good for one year or more. Cultivators desiring to have water for irrigating lands not already assessed as wet or which are not already getting irrigation supplies from some other source are required to apply. Supplies to such areas are sanctioned for a period not exceeding five years. If after a period of five successive years, the owner of particular area applies for supply of water being made permanent, the area is classed as wet or garden in consultation with the Deputy Commissioner.

The Mysore Irrigation Bill, 1959, provides that an irrigation officer, having regard to the quantity of water available in any year for an irrigation work under his control, may issue orders regulating the distribution of supplies to areas served by that particular irrigation work.

5-19 On the Tungabhadra Right Bank Canal, the Ayacut has been localized in accordance with the instructions originally issued by Madras Government in 1948 for areas in Bellary District. These instructions required that:

- (a) blocks for irrigation of wet crops and dry crops should be selected in each village in the ratio of 50 : 160;
- (b) night irrigation of dry crops should be avoided as far as possible;
- (c) long-term variety of paddy should be grown in the months of June to November and a short-term variety from November to March, in the ratio of 25 : 10 (Mysore Government subsequently ordered that the long and short term varieties of paddy should have a ratio of 1:1); the area under short-term variety may, in the alternative, be used for cultivation of, vegetables, wheat, maize, etc.
- (d) land should be localized also for growing two-seasonal crops like sugarcane betel, plantains and other perennial crops;
- (e) any water that remains after meeting requirements of perennial crops from the months of March to May should be used mostly for growing green manure and fodder crops;

- (f) wet and perennial blocks should be localized at a distance of at least half a mile from village and where there are natural drains. in order to keep villages free from malarial incidence and to provide proper drainage for excess water.

5-20 Instructions at (a) and (b) above were primarily based on the consideration that there would be physical difficulties in irrigating dry crops during night. The extent of the area under dry crops was, therefore, so fixed as to use during day time the quantity of water that serves wet lands during night.

5-21 On the Tungabhadra Left Bank Canal, it was found that the soil suitable for wet crops was very limited. Out of a total Ayacut of 660,000 acres, only 75,000 acres were, therefore, localized for sugarcane and paddy. As far as possible, crops of a particular kind were restricted to large well-defined blocks under a single distributary or field channel.

Orissa

5-22 For supplying water for irrigating staple cereal crops generally grown in the area, irrigation works are to be divided, under the Orissa Irrigation Act, 1959, into following classes with reference to the period and the quantum of supplies required:

<i>Class</i>	<i>Period of supply</i>	<i>Depth of supply in inches to be guaranteed</i>
1st ; .	June to November	28
2nd .	July to November	23
3rd .	July to October	18
4th] .	July to October	9

5-23 For irrigating crops other than staple cereal crops the land is divided into blocks and the crop pattern determined for each block by the land holders by mutual agreement. In case of disagreement, the irrigation officer prepares a draft crop pattern for each block after due notification to the land-holders concerned and hearing their objections. The crop pattern fixed for a block may be revised at the close of every third year.

5-24 Any person desiring to have water from an irrigation work has to apply in the prescribed form to the officer-in-charge two months before the date from which supply of water is desired. If the application is for a crop according to the crop pattern determined for the block, or for a crop with similar water requirement, the supply is sanctioned and a permit in the prescribed form is issued to the applicant. If the irrigation officer finds that the supply of water for irrigation to any land would in his opinion, lead to excessive or wasteful use of water, or cause or contribute to cause damage or injury to such land or any other land, he may refuse to sanction supply of water. If the applicant is in arrears of water rates, supply of water may be refused on that ground.

Section VI—Obligations of irrigators

*In respect of maintenance of works and division of land into *kiaries*.*

Andhra Pradesh

6-1 There is no system of dividing fields into *kiaries*. On the other hand, except in case of small holdings, large size fields are a common practice. It is stated that small size fields would lead to wastage of land under dowels and bunds.

Maharashtra

6-2 To ensure economical use of irrigation supplies, land is required to be divided into plots of 20 gunthas (1/2 acre) for perennial crops and one acre for light seasonals each surrounded by bunds or dowels which have to be properly maintained. A system of field channels has to be maintained to ensure that water required for irrigating any plot can be supplied directly from a channel. No irrigation is allowed by passing water from one field or plot into another except in the Vidharbha area where irrigation from field to field is still practised on old tanks.

Mysore

6-3 Every occupier of land irrigated or served by an irrigation work, as well as inhabitants of the village or villages, and all others who derive any benefit directly or indirectly from that work are required to maintain such work without payment, in respect of jungle and weed clearance, removal of silt, repairs to bunds and channels and watching the work during rainy weather. The *patel* of each village is responsible for maintaining the work in good condition. Those who fail to perform customary labour can be penalised by being charged an equivalent amount.

Section VII—Water-courses

Construction, maintenance and settlement of disputes regarding mutual rights and liabilities of persons interested.

Andhra Pradesh

7-1 In constructing distributary channels, care is taken to ensure that the size of individual *chaks* is not more than 150 acres, both for dry and wet areas. Land required for construction of water-courses is acquired by Government and charged to cost of development. The work of excavation of water-courses is, however, done by cultivators.

For areas which are required to grow dry crops, water-courses provided by Government extend to each field; in case of wet area, water-courses are extended upto a point where the size of the *chak* is reduced to 25 acres. Beyond that, the necessary water-courses, and field channels may be constructed by cultivators themselves.

7-2 Maintenance of water-courses, in all cases, is carried out by the cultivators.

7-3 Generally, no difficulty is experienced in regard to water-courses as all the cultivators are jointly interested. In case of difficulty in any particular case, the matter is attended to by the village officer.

Madhya Pradesh

7-4 In case of *chaks* more than half a mile long or having an irrigated area of more than 80 acres or in compulsorily assessed area the Irrigation Act provides for construction of water courses by the State.

In cases where not less than one-half of the permanent land holders, holding not less than two-thirds of irrigable land in a village or *chak*, give their consent, water-courses are constructed by Government under water course contracts, at the cost of Government.

In either of the above two cases the responsibility for maintenance of water-courses lies on permanent land holders of the *chak*.

7-5 The Act also provides for construction of water-courses by Government at the cost of permanent holders when asked to do so, by acquiring land as for a public purpose.

Where the State Government has constructed water-courses in a *ryotwari* village, *ryots* holding irrigable land in that village are required to maintain such water-courses.

7-6 Irrigation Panchayats for a village are required to look after proper maintenance of water-courses. Permanent holders and occupiers of all land, which is ordinarily irrigated or may be irrigated under an agreement through these water-courses, are required to render assistance and in case of default they have to pay such sums as may be assessed by the Executive Engineer. If at any time the Executive Engineer finds that a water-course which has been constructed under agreement or which the *ryots* in a *ryotwari* village are required to maintain, is not in proper repair, he may, by public proclamation in the village, require that the repairs be made to his satisfaction before a specified date and if the repairs are not carried out to his satisfaction, he may stop supply of water to the water-course. Thereafter, he may also cause the repairs to be made and collect a sum, not exceeding twice the cost incurred, from the permanent holders or occupiers in proportion to their holdings. Money so recovered is credited to the Panchayat fund.

Maharashtra

7-7 Normally the cultivators concerned are required to construct and maintain all water-courses and field channels. The Bombay Irrigation Act of 1879 which applies to the western region of the present Maharashtra State, however, makes adequate provision for construction of water-courses or field channels by Government at the cost of cultivator when the latter is unable to do so with his own resources. When a canal officer considers the construction of a water-course expedient, on re-

ceipt of an application from a cultivator, the Act provides for acquisition of land required for water-course and even for its construction, if found necessary, at the cost of the cultivator. The Act also makes adequate provision for allowing the use of an existing water-course to others, or to admit other persons as joint owners thereof, on payment of adequate compensation or rent as may be decided by the canal officer.

7-8 The Act also provides for settlement of disputes as to mutual rights and liabilities of persons interested in a water-course.

Mysore

7-9 The new Mysore Irrigation Bill, 1959, provides for construction by Government agency of all water-courses having a capacity of not less than one cusec leaving the responsibility for construction of water-courses having a smaller capacity (called field-channels) to *ryots*. The Bill also provides for construction of field channels by Government agency in the event of failure on the part of *ryots* to construct them, subject to recovery of cost from the holders of lands benefited from such field channels.

7-10 Other provisions in respect of water-courses are on the same lines as in the Bombay Irrigation Act, 1879.

Orissa

7-11 Regarding water-courses provision in the Orissa Irrigation Act, 1959, is more or less on the same lines as in the Bombay Irrigation Act, 1879. Appeal against orders of a canal officer lies to the collector of the district concerned.

7-12 In addition, Government is empowered to construct and maintain, in the first instance, water-courses for any irrigation work, and effect recovery of the cost so incurred from the owners and occupiers in the form of general enhancement of the compulsory basic water-rate or water-cess or imposition of a special rate per acre.

Section VIII—Regulation of crop pattern

Andhra Pradesh

8-1 As stated in Section V, the crops that may be grown in any field are determined at the time of settlement or localization. Crops are defined as wet, dry, sugar-cane or perennial. Under each category, no further details are specified.

Madhya Pradesh

8-2 Supplies for irrigation of paddy and wheat are regulated by agreements at special rates on a long term basis, period not exceeding 10 years.

Maharashtra

8-3 Broadly speaking, crop pattern is regulated by the sanctions accorded for use of water as explained in Section V.

Mysore

8-4 Provision is made in the Mysore Irrigation Bill, 1959, to prescribe the kind of crop to be grown and the period of sowing such crops when supplies are given for irrigation.

Orissa

8-5 As specified under Section V crop-pattern is regulated by allowing supplies which are considered necessary for growing different staple cereal crops. Areas for crops are divided into blocks, according to the crop-pattern determined for each block by the persons having land in the block by mutual agreement. In case of disagreement, Canal Officer decides the crop-pattern for each block. The crop pattern fixed for a block may be revised after three years.

Section IX—Regulation of supplies and distribution of water

General system of operation of irrigation systems, rotational turns, method adopted to ensure equitable distribution of supplies between individual channels, individual outlets and individual cultivators.

Andhra Pradesh

9-1 Canals and distributary channels are fitted with regulators having sluice gates to enable regulation and distribution of supplies on a proportionate basis. On distributaries, outlets more than six inches in size or having a head of more than one foot, are, generally, of orifice type, fitted with sluice gates. Smaller outlets or those having a head of less than one foot are, generally, pipe outlets.

9-2 To ensure equitable distribution of supplies all channels are run proportionately on a day-to-day basis. It is the primary duty of the Sub-Divisional Officers to issue instructions for regulation and distribution of supplies every morning on the basis of supplies available at head. It is only in cases when supplies available are very low that on a distributary system rotational running of outlets is adopted. Channels are seldom run in rotation.

9-3 To ensure equitable distribution of supplies "irrigation conservancy subordinates" and "delta laskars" are employed under overseers. Their main duty is regulation and distribution of supplies. Irrigation conservancy subordinates and delta laskars also maintain a record of area irrigated from day-to-day. This is just to watch the progress of irrigation and does not form the basis of assessment of water-rates.

9-4 There are two main irrigation seasons :

(i) June to December,

(ii) January to April.

The channels are generally kept closed during the month of May.

Maharashtra

9-5 The distributary channels are fitted with ordinary orifice type outlets with locking arrangement. The distributary channels are generally run full supply. In case of supplies being deficient, distributaries are kept periodically closed, or the outlets are run in rotation. This system of distribution ensures each water-course getting its authorised supply when it is being run.

9-6 For distribution of supplies according to sanctions, an official who is designated as '*patkari*' is employed by the Irrigation Department. This official is responsible for proper distribution of supplies to ensure that each cultivator gets his share according to sanction. The *patkari* generally looks after distribution of supplies to 1,000 acres of fully developed area or about 1,500 to 2,000 acres of partially developed area.

9-7 Each time a cultivator is given water, the 'Pass' issued to him is marked with date of watering and punched as proof of the supplies having been delivered to him to guard against frivolous claims for remission.

Orissa

For regulating the distribution of supplies, a chart is prepared by the irrigation officer-in-charge, which is duly notified to the cultivators concerned. The irrigation officer is responsible for supplying water at outlets according to the chart. The internal distribution of water to lands on a water-course is left to the cultivators. Any dispute relating to distribution of water in the block is referred to the *Patwardi*, or *Amin* and his decision is final.

Section X—Water-rates

Basis for fixing water-rates: current water-rates: whether water-rates merged with land revenue or separate; since when in force; other charges, such as, irrigation cess, water advantage rate, cost of pumping, etc. remission of water-rates.

Andhra Pradesh

10-1 In case of old irrigation works and tanks, a consolidated rate inclusive of land revenue is charged. These rates have been in force since last settlement which in case of most of the districts was made 20 to 30 years ago. The share of water-rate varies according to the source of supply and its reliability.

In case of *Jagirs*, a large number of which have now come under Government control, rates are now being fixed on an *ad-hoc* basis pending the next settlement of the district.

Water-rates are generally higher in Telangana area than in Andhra area.

In case of some irrigation works, water rates were increased during recent years by levying a surcharge of 50 per cent.

10-2 In case of new irrigation works, water-rates are exclusive of land revenue and are Rs. 15 per acre for wet crops and Rs. 10 per acre for dry crops. For a second wet crop in the year, the rates are lower and generally half of those for the first crop.

10-3 Water-rates charged at present on different irrigation works for various crops are given in Schedule I.

10-4 In case of pumping schemes, cultivators pay pumping charges, generally varying from Rs. 15 to Rs. 25 per acre, in addition to the usual water-rates.

10-5 No irrigation cess is levied.

Madhya Pradesh

10-6 Rates for supply of water under irrigation agreements, on demand for irrigation of specified areas, and for supplementing supplies to a village tank are approved by the State legislature on the recommendations of the Standing Committee for Irrigation. In case of supplies for industrial, urban or other purposes, not connected with agriculture, water charges are also approved by the Legislature on the recommendations of the Standing Committee for Irrigation. Schedule II shows water-rates applicable to various classes of irrigation in Godavari basin, part of Mahakoshal region in Madhya Pradesh.

10-7 Charges for "wet" land and land irrigated by lift included under irrigation agreements are at reduced rates which are generally half of the normal rates.

10-8 For unauthorised use and wastage of water, penalty rates are charged. These are limited to twice the normal rate.

10-9 In case of areas covered by irrigation agreements, applications for remissions in prescribed form are submitted by the Panchayat, on behalf of the occupier of the land. After inspection and enquiry, remissions are granted by the Executive Engineer on the following scale :—

- (a) half remission in case of fields in which the crop is less than an eight anna and more than a five anna wet crop;
- (b) full remission in case of fields in which the crop is a five anna wet crop or less.

In case of areas having irrigation on demand on receipt of an application for remission of water-rate, full remission is granted by the Executive Engineer, if he is satisfied that there was a failure to supply water to the area in respect of which the application is made.

10-10 When water is not delivered, when required in any area, owing to a defect in the distribution system of a canal and not shortage of supply, the Superintending Engineer may grant remission of canal revenue.

In years of general failure of the monsoon, half or full remission is granted to individual fields on the basis of estimated out-turn of the block of area affected adversely.

Maharashtra

10-11 The Rules under the Bombay Irrigation Act prescribe water-rates to be charged for different crops and the charges are assessed accordingly. The water-rates prescribed under the Bombay Irrigation Act for different principal crops are shown in Schedule III.

10-12 Water-rates are charged for the monsoon and cold-weather seasons for the whole period of the sanction, so long as water is made available, whether the area is irrigated or not.

10-13 In case of new irrigation works, to encourage quick development, no water-rates are charged for the first year after commencement of irrigation, only one-third water-rates are charged in the second year, two-thirds in the third year and full water-rates are charged only from the fourth year.

10-14 For unauthorised use of water, such as, growing crops other than those sanctioned, using water at times other than those specified in the sanction, *etc.*, penalty rates are imposed.

10-15 The rules also provide for remission of water-rates if in any particular year a cultivator, due to supplies available being deficient, is unable to irrigate the whole or part of block area for which water has been sanctioned.

Mysore

10-16 Water rates charged for principal crops on various important irrigation works are given in Schedule IV.

Orissa

10-17 For each class of irrigation work, a compulsory basic water-rate, water-rate or water cess is fixed by the State Government. All lands under the command of an irrigation work, when staple cereal crops are generally grown in the area, are liable to compulsory basic water-rate.

In respect of low lands which are ordinarily liable to be water-logged (where transplantation of paddy is not possible or water cannot be drained off at the time of harvest) compulsory basic water-rate is not levied.

In case of other low-lying lands which do not ordinarily require irrigation except in years of draught, and in case of areas for irrigation of which water is required to be lifted, compulsory basic water-rate is charged at half rates.

10-18 In case of lands which are already under irrigation from private sources, the basic water-rate is the difference between the compulsory basic water-rate of the irrigation work which is provided and the estimated rate for the existing source of irrigation. The latter would be equal to the compulsory basic water-rate for the class of irrigation work to which the private irrigation source relates.

10-19 Compulsory basic water-rates for various classes of irrigation works and water-rates for crops other than the staple cereal crops are charged according to Schedule V. The rates specified in the schedule have come into force in September 1961.

10-20 In addition to, or in lieu of water-rates, State Government can levy a water cess. No water-cess can, however, be levied in addition to basic water-rate.

10-21 For unauthorised use or waste of water, the Rules provide for levy of penalty rates not exceeding six times the ordinary rates.

10-22 In case there is any failure, interruption or stoppage of water at outlet, the collector is empowered to grant remissions on receipt of application from cultivators adversely affected.

Section XI—Assessment and recovery of water-rates

Method adopted for assessment and recovery; agency.

Andhra Pradesh

11-1 The work of assessment and recovery of rates on all irrigation works is under the revenue authorities. Assessment is based on measurements as recorded by *patwaris* working under the Revenue Department.

11-2 Revenue authorities also deal with applications for remission.

Madhya Pradesh

11-3 Demand statements showing the amount of water-rates due for irrigation under agreements and irrigation on demand are issued by section subordinates of the Public Works Department to all permanent holders and occupiers of land in each village. After attending to objections, if any, at site, a statement showing the amount due from each occupier is sent to Sarpanch of the Panchayat for collection of revenue and crediting it in the sub-treasury within 5 days of the dates fixed for recovery of the dues, *viz.* 15th February for *kharif* crops and 15th May for *rabi* crops. Any sums payable as canal revenue which remain unpaid on the day following the date on which it is due is an arrear of canal revenue and is recoverable by the deputy commissioner as arrears of land revenue.

Maharashtra

11-4 On the basis of the sanctions accorded for use of water, on receipt of applications from cultivators, water-rates are assessed by canal officers. Demand statements showing the amount due from each cultivator are prepared and sent to the collector for collection of the dues.

Orissa

11-5 Assessment of water-rates is based on the sanctions accorded for use of irrigation supplies. Compulsory basic water-rates are required to be paid by 1st February each year, and other water-rates by 15th May.

Section XII—Betterment Levy

Legislation, basis, assessment and collection.

Andhra Pradesh

12-1 Betterment Levy Act was passed in 1956 according to which betterment levy is chargeable on areas irrigated from all new irrigation works costing more than

Rs. 100,000. When a new irrigation work is nearing completion, cultivators in the Ayacut are informed by notification about levy of betterment fee, and after hearing their objections, betterment fee is levied. The rates are Rs. 200/- per acre for wet irrigation and Rs. 100/- per acre for dry. These are based on the principle that 50 per cent of the increase in value of land is charged as betterment fee. The amount is recoverable in 20 annual instalments.

12-2 Levy and recovery of betterment fee is the responsibility of revenue authorities.

12-3 In addition to betterment fee, no water advantage rate is charged.

12-4 It is understood that betterment fee has been levied in the State on all the new schemes which came into operation after 1953. It is stated that the amount is being recovered without any difficulty.

Madhya Pradesh

12-5 The Central Provinces Irrigation Act, 1931, was amended in 1951 to make provision for levy of betterment fee on all areas to be benefited (irrigated by flow) by a new canal. After due notification by the State Government, betterment fee is leviable on all areas served by a new canal including improvement or extension of an existing canal taken up after 1951. In case of improvement or extension of an existing canal, the area which was being irrigated already by such existing canal is not deemed to be benefited.

12-6 Betterment contribution is levied on an acreage basis and is recoverable in 15 annual instalments. Each of the first five instalments amount to 3 per cent of the cost of construction, improvement or extension, incurred per acre of area benefited, during the period of five years preceding the date of issue of the notification. Each of the last ten instalments amount to 4.5 per cent of the cost incurred per acre of area benefited.

12-7 In issuing notification for levy of betterment fee the boundaries of the area benefited by the new canal are specified and objections invited. After considering objections, the amount payable by each land holder is fixed and announced. A statement showing the amount of the annual instalments due is given to each permanent holder.

12-8 No betterment levy has, however, been charged so far. The matter is stated to be under consideration of Government in conjunction with the report of the State Water-Rates Committee.

Maharashtra

12-9 Bombay State Government passed the Betterment Levy Bill in 1950. This provides for levy of betterment fee on all areas to which irrigation facilities have been extended after 1950.

12-10 The rates vary as follows :—

In Western Maharashtra Region betterment levy amounts to half the increase in the value of land as a result of introduction of irrigation. Amount is required to be paid within 60 days from the date it becomes payable under the Act or in annual instalments not more than 20 in number, with interest at 5 per cent.

In Vidharbha Region the betterment charges are payable at 3 per cent of the expenditure incurred on construction, improvement or extension of the irrigation work, per acre irrigated, per annum for the first 5 years and at 4·5 per cent per annum for the next 10 years.

In Marathwada Region betterment levy is limited to half the increase in the value of new lands and one-fourth in the case of old wet lands. If the amount is paid lumpsum within six months of its determination, a rebate of 10 per cent is allowed, otherwise it can be paid in 15 equal instalments free of interest.

12-11 It is understood that no betterment fee has been levied so far.

Mysore

12-12 An Act for levying betterment contribution and water-rate was passed by Mysore Government in 1957. The Act has been brought into force on 1st September, 1960. Rules relating to levy of betterment contribution were framed and brought into force from March 1961. The Act was also amended in 1961. In accordance with that Act, betterment contribution is leviable on all new irrigation works including works of restoration, expansion or alteration benefiting the lands with retrospective effect as follows:—

- (i) 1st January, 1944, for areas formerly in Mysore ;
- (ii) 1st January, 1947, for areas formerly in Madras ;
- (iii) 1st August, 1947, for areas formerly in Hyderabad ;
- (iv) 1st January, 1950, for areas formerly in Bombay.

According to the amended Act, betterment contribution is to be limited to the estimated increase in the capital value of the land.

12-13 It is understood, Government have recently appointed five Betterment Levy Officers with the necessary staff for determining betterment contribution leviable on the areas benefited by a number of major and medium irrigation projects in the State.

Orissa

12-14 For levy of betterment charges the Government of Orissa had passed the Orissa Betterment Charge Act in 1955, applicable only to the lands to be benefited by the proposed canals under the Hirakud Dam Project. It is understood that no betterment charges have so far been levied.

12-15 For other irrigation works in the State, the necessary legislation has yet to be enacted.

SCHEDULE I

**SCHEDULE
WATER-RATES IN**

(Rupees per

<i>Serial number</i>	<i>Canal System or Scheme</i>	<i>Ist Wet Crop</i>	<i>2nd Wet Crop</i>	<i>Garden Crop and Sugar-cane</i>	<i>Wet Crop</i>	<i>Dry Crop</i>
<i>Projects Under</i>						
1	Godavari and Krishna Anicuts	9·37		14·06		
2	Muniyeru Project	6·2	3·1	9·4		
3	Bhavanasi Tank	9·4	4·7	14·1		
4	Venkatapuram Tank	4·2	2·1	6·2		
5	Mopad Reservoir	7·8	3·9	11·8		
6	Siddipuram Tank;	6·0	3·0	9·0		
<i>Projects Under</i>						
Major						
1	Krishna Barrage	15·0			15·0	
2	Tungabhadra Project High Level Canal				15·0	10·0
3	Nagarjunasagar	15·0	6·2			10·0
Medium						
4	Bhairavanitippa					
5	K. C. Canal					
6	Rullapad Reservoir					
7	Vegavati anicut					
8	Reservoir across Kalangi river					
9	Pincha Reservoir	15·0	7·5			
10	Reservoir across Paleru					

I

ANDHRA PRADESH

acre)

<i>Perennial</i>	<i>Dry to Wet</i>	<i>Precari-ous Wet to irriga- ted wet</i>	<i>Dry to irrigated; dry</i>	<i>Dufasla</i>	<i>Existing wet</i>	<i>All Crops</i>	<i>Jute</i>	<i>Waste to irrigated dry</i>
------------------	-------------------	---	----------------------------------	----------------	---------------------	------------------	-------------	-------------------------------

Operation

14.06

Construction

24.0

15.0

7.5

15.0

7.5

10.0

22.5

15.0

10.0

5.0

15.0

7.5

15.0

**SCHEDULE
WATER RATES IN
(Rupees per**

Serial Num- bers	Canal system or Scheme	1st Wet Crop	2nd Wet Crop	Garden Crop and Sugar Cane	Wet Crop	Dry Crop
11	Upputeru Lower Anicut					
12	Reservoir across Zurreru river					
13	Reservoir across Bhudda river					
14	Narayanapuram Anicut					
15	Bandu Kattu Channel Reservoir				15.0	
16	Gambheeramedda Reservoir					
17	Reservoir across Uppu Vagu					
18	Torrighedda Pumping Scheme				6.2	3.1
19	Naggavalli Right Side Channel					
20	Mathmuduga Reservoir				9.4	
<i>Projects Under Contemplation</i>						
1	Siddeswaram Project				15.0	7.5
2	Pulichintala Project			6.2		
3	Pennar Dam or Somasila Project	15.0	7.5			
4	Vamsadhara Project		7.5			
5	New Gandikota Project					
6	All minor schemes					

ANDHRA PRADESH—(concl.d.)
acre)

<i>Perennia.</i>	<i>Dry to wet</i>	<i>Precarious wet to irrigated wet</i>	<i>Dry to irrigated dry</i>	<i>Dufusala</i>	<i>Existing wet</i>	<i>All Crops</i>	<i>Jute</i>	<i>Wastet irrigated dry</i>
		7.5						
	10.0	5.0						
	15.0	10.0						
	15.0	10.0					10.0	
	15.0	10.7	7.5					8.8
	15.0	7.5	10.0					

SCHEDULE II
WATER-RATES IN MADHYA PRADESH

<i>Crops</i>	<i>Water-rate</i> <i>(Rupees per acre)</i>
<i>Kharif</i>	
1. Paddy under agreement	2·0 to 8·0
2. Paddy on demand	6·0 to 12·0
3. Cotton, castor oil plants, <i>Mung, Moth, Urad, Maize, Bajra, Kangni, Sawan,</i> Sun flower, Soya beans nijer tobacco and other minor <i>Kharif</i> crops	1·0 to 4·0
4. Sweet potatoes, ground-nuts, and turmeric (on demand)	4·0 to 6·0
5. For ploughing followed by wheat (on demand) (1st July to 31st Dec.) in addition to crop rate	1·0 to 2·0
6. Preparing land for cultivation for ploughing only (on demand) (1st July to 31st Dec.)	1·0 to 2·0
7. Water supply for filling private tanks and for cultivating water-nuts (15th July to 31st Oct.) (on demand)	1·5 to 3·0
<i>Rabi</i>	
8. Wheat under agreement	No rates
9. Wheat on demand	1·5 to 12·0
10. Ground-nuts, Cotton, Summer Juar, Winter rice, bamboo plants, <i>mung,</i> sun- flower, gur-beans and tobacco (on demand).	4·0 to 6·0
11. Castor-oil, barley, oats, mustard, peas and Soya beans (on demand)	2·0 to 4·0
12. Coriander and minor rabi crops, <i>masur, kusum, gram arhar, Mughaitilli</i> and linseed (on demand)	1·0 to 4·0
13. For ploughing followed by wheat irrigation from 1st Jan. to 30th June (on demand)	2·0 to 4·0
14. Preparing land for cultivation for ploughing only (on demand) (1st Jan. to 30th June)	2·0 to 4·0
15. Water supply for filling private tanks and for cultivating water-nuts (1st Nov. to 15th July)	3·0 to 6·0 per 10,000 cubic feet
<i>Perennial</i>	
16. Sugarcane	15·0 to 25·0
17. Garden crops and vegetables (on demand)	10·0 to 15·0
18. Sun-hemp, clover, berseem, lucern and other fodder crops (on demand)	10·0 to 15·0
19. <i>Pan,</i> plantains, and mulberry plants (on demand)	15·0
20. Fruit orchards, Rubber plant (on demand)	15·0

SCHEDULE III
WATER-RATES IN MAHARASHTRA.

Rupees per acre

Serial Number	Crop	(a)			
		Western Maharashtra		Vidharbha region.	Marathwada region
		Major irrigation Canals	Minor irrigation Canals		
1	Sugarcane	160·0	80·0	25·0 (b) 15·0 (c)	
2	Other perennials	160·0	80·0	15·0	
3	Pan gardens	170·8	..	15·0	
4	Other perennials	100·0	54·0	15·0	
5	Two-seasonal	15·0	14·0		
6	Hot weather	18·0	12·0		
7	Kharif	6·0	6·0		4/- to 6/- (i)
8	Rabi	9·0	8·0		6/- to 10 (i)
9	Pre-seasonal watering in Hot weather	9·0	7·5		
10	Post-seasonal watering in Hot weather	4·0	3·0		
11	Post-seasonal watering in Rabi	3·0	3·0		
12	Paddy			2·0 (d) 4·0 (e) 12·0 (f)	
13	Wheat, Barley, Millet and Maize			1·5 and 2·0	
14	Single watering			..	
15	Sweet potatoes ground-nut (kharif) and turmeric			4·0	
16	Vegetables			10·0	
17	San, clover, berseem, lucern and other fodder crops			10·0	
18	Rubber plant			15·0	
19	For preparing land or ploughing			1·0 (g) 2·0 (h)	

SCHEDULE III (concluded)
WATER-RATES IN MAHARASHTRA

(a) Irrigation cess is levied in addition to water-rates in Western Maharashtra region at the following rates :

	Rs. per acre per year
(i) Perennial crops like sugar-cane and other equivalents	30
(ii) Other perennial crops	15
(iii) Perennial crops like sugar-cane receiving water for only one or two seasons	10
(iv) Other perennial crops receiving water for only one or two seasons	5
(v) For all crops other than those mentioned above	3

In the case of all new works the cess is leviable after 3 years from the commencement of irrigation. It is understood that the question of applying Irrigation cess to other areas under a unified Irrigation Law is separately under consideration of the State Government.

- (b) By wet irrigated method.
- (c) By dry or sparsely irrigated method.
- (d) On agreement basis on Sadepur and Kumbli tanks in Bhandara district.
- (e) On agreement basis on all tanks (except Sadepur and Kumbli) in Bhandara, Chanda and Nagpur districts.
- (f) On demand basis on all tanks in Chanda, Nagpur and Bhandara districts.
- (g) From 1/7 to 31/12.
- (h) From 1/1 to 30/6.
- (i) The land revenue assessment is inclusive of water-rates. The assessment varies from Rs. 4/- to Rs. 6/- per acre for *Kharif* and Rs. 6/- to Rs. 10/- per acre for *Rabi*.

SCHEDULE IV

**SCHEDULE
WATER-RATES IN**

Rupees per

Serial num- ber	Project	Perennial	
		Sugarcane	Garden
1	Tungabhadra Project		
	Left Bank Canal	35·0	15·0
	Right Bank Canal	18·0	..
2	Rajolibanda diversion scheme . . . . .	..	15·0
3	Ghataprabha project	60·0	60·0 37·0 (For eight months)
4	Bhadra Reservoir Project	25·0 20·0	10·0 ..
5	Tunga Anicut	20·0	..
6	Krishnarajasagar	15·0	..
7	Upper Krishna Project	120·0	80·0
8	Malaprabha Project . . . . .	..	..

IV

MYSORE

acre

<i>Kharif</i>		<i>Rabi</i>		<i>Two seasonal</i>	<i>Hot weather</i>	<i>Remarks</i>
<i>Paddy</i>	<i>Other dry crops</i>	<i>Paddy</i>	<i>Other dry crops</i>			
12·0	4·0	..	6·0	18·0 (Garden)	..	
12·0	4·0 (food crops) 6·0 (commercial crops)	7·0	4·0 (food crops) 6·0 (commercial crops)	..	..
12·0	4·0	..	..	..	..	Single watering— food crops Rs. 3·0 cash crops Rs. 5·0
5·0	5·0	..	8·0	13·0	22·0	Sugarcane— <i>Kharif</i> Rs. 15·0 <i>Rabi</i> Rs. 22·0
15·0	7·0					
10·0	6·0					
10·0	..	..	..	..	..
10·0	5·0	..	..	..	..
10·0	8·0	—	8·0	16·0	..	
..	8·0	..	8·0	13·0	..	

SCHEDULE V

WATER-RATES IN ORISSA

A. COMPULSORY BASIC WATER-RATE

<i>Class of Irrigation work</i>	<i>Rate per acre per year</i>
	Rs.
1st Class	8
2nd class	6
3rd class	4
4th class	2

In respect of new irrigation works or irrigation works where compulsory basic water-rate is levied for the first time, the levy is phased as follows :—

- (a) In the first year when water is let out in Ayacut Nil
- (b) In the second year when water is let out in Ayacut 50 % of the appropriate rate.
- (c) In the third year when water is let out 75 % of the appropriate rate.
- (d) In the fourth year and thereafter per year 100 % of the appropriate rate.

In respect of old Irrigation works where water-rates have been in force hitherto, the levy of compulsory basic water-rates is phased as follows :—

- (a) First year of enforcement of the provisions of the Orissa Irrigation Act, 1959 50 % of the appropriate rate or the rate already in force whichever is higher.
- (b) Second year of enforcement of the Act 75 % of the appropriate rate or the rate already in force whichever is higher.
- (c) Third year of enforcement of the Act and thereafter per year 100 % of the appropriate rate.

SCHEDULE V—(concluded)
WATER RATES IN ORISSA

B.—WATER-RATES FOR CROPS OTHER THAN THE STAPLE CEREAL CROPS

<i>Serial No.</i>	<i>Name of crop</i>	<i>Rate per acre</i>
<i>Koraput and Kalahandi Zone.</i>		
		<i>Rs. nP.</i>
1	<i>Dalua (Rabi paddy)</i>	20·0
2	<i>Tobacco</i>	12·5
3	<i>Potato</i>	15·0
4	<i>Onion</i>	15·0
5	<i>Wheat</i>	5·0
6	<i>Maize</i>	12·5
7	<i>Groundnut</i>	17·5
8	<i>Sugarcane</i>	21·0
9	<i>Pulses</i>	1·5
10	<i>Cotton</i>	17·5
11	<i>Til (oilseeds)</i>	2·5
12	<i>Chilly</i>	7·5

The principles of phasing indicated in part "A" in respect of new irrigation works and old irrigation works apply mutatis-mutandis to water rates for the above crops.