



Government of Bombay

# Irrigation Administration Report for the Year 1953-54

## Part I



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# IRRIGATION ADMINISTRATION REPORT, PART I, FOR 1953-54.

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**IRRIGATION ADMINISTRATION REPORT, BOMBAY STATE,  
PART I, FOR 1953-54.**

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**PHYSICAL FEATURES—GENERAL DESCRIPTION OF IRRIGATION.**

The area under irrigation in the Bombay State is not compact. Rainfall is available for agricultural operations but it is often precarious. Tanks and canals provide irrigation for valuable crops such as sugarcane and also provide a source of supply to other crops when the rainfall is deficient or irregular. The old irrigation works consist chiefly of a few small canals and moderately large tanks some 12,000 smaller tanks mostly in the southern part of the State and in Gujarat, and of about 400 bandharas in Nasik and Khandesh Districts. The tanks have earthen dams and the larger ones irrigate areas up to 1,300 acres, and the smaller ones up to 500 acres, situated immediately below the dams. The chief crop irrigated is rice. The bandharas are masonry weirs built across rivers to head up the water to a level sufficient to irrigate lands on the banks of the streams by means of channels taking off from the flanks of the bandharas. The areas irrigated are up to 800 acres and the chief crops are sugarcane, wheat, bajri and gram. From these small beginnings have evolved the magnificent irrigation works which now form such a conspicuous feature in the Deccan and have so successfully fulfilled their beneficent purpose in banishing the famines which formerly devastated this portion of the State.

2. The irrigation works in the Deccan are fundamentally different from those in Sind, Punjab, Egypt or Mesopotamia, where wide alluvial plains have been formed by great deltaic rivers in perennial flow. The Bombay Deccan consists of a sloping table-land running eastward from the ridge of the Western Ghats. These form a ridge running parallel to the sea-coast at a distance from it of 50 to 100 miles; precipitous on the western side, they fall away more gradually to the East. The heaviest rainfall occurs on the peak of the ridge where anything up to 270 inches of rain is recorded in the four monsoon months. The intensity of the rainfall rapidly decreases as we go eastward from the highest ridge, reaching a figures of 20 or 25 inches at a distance of 100 to 150 miles east of the Ghats. The rivers in the Deccan rise in the valleys close to the ridge, flow in an eastward direction and are dry or practically so for 7 or 8 months of the year. The line of the Ghats, like the ridge of a roof, divides the rainfall into two parts; one the small portion, falling westward into the Indian Ocean, and the other flowing through long lengths of tortuous rivers to the east and joining the rivers, which reach the sea on the south-eastern coast of the peninsula. These rivers are in flow during the monsoon months only and if no artificial means of conserving their waters were provided the whole monsoon rainfall would be wasted so far as the Bombay Deccan is concerned, and would simply flow away to the sea benefiting but to a small extent the country traversed.

3. The large irrigation system in the Deccan are all of the same type. Each depends upon a storage lake near the head of one of the river valleys, where sufficient water is collected during the monsoon to supply the country on either side of the river valleys below. The water stored during the rains is let out during the

dry months of the year in accordance with requirements ; and at a point on the river which may be as far as 50 miles from the main storage lake, a "pick-up-weir" is constructed across the river course to divert the water into canals which take off on either side of the weir. In one case only, that of lake Fife at Khadakwasla near Poona, do the canals take off from the flanks of the dam itself. The canals are always constructed at a considerably flatter slope than that of the river, and consequently are able to diverge from the river itself on each side of the valley. As a rule each canal only irrigates the areas between itself and the river.

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## **A brief general estimate of the work done during the year 1953-54.**

### **NORTH GUJARAT CIRCLE.**

The year under review was marked by the rainfall, which was quite satisfactory. All the tanks were filled except the Tranza Tank which was partially filled and Nagrama Tank was not filled. There was no carry over of storage from last year's Hot Season in most of the tanks. The supply of water for the year was utilised mostly in irrigating Kharif Crops.

Maximum irrigation was done during the year under review by the Savli Tank in the History of Irrigation done by this tank.

During the year under review there were 286 works existing in this Circle.

### **SOUTH GUJARAT CIRCLE.**

Repairs to old tanks, bunds and drainage channels were carried out at a total cost of Rs. 56,541 and Rs. 60,852 respectively. The proposal to raise the Doswada dam by 5 feet and to remodel and extend the right bank canal was approved for Rs. 4,25,000 and the work has been taken up under the Rs. 4.87 crores Loan Programme. The work is in progress during the year under review.

Certain Minor Irrigation works were taken up under Special Loan Programmes of Rs. 1 crore, Rs. 30 lakhs, Rs. 40 lakhs and Rs. 4.87 crore Loan Programmes. The most important work taken up out of the Loan Programme of Minor Irrigation works is Tichakiya—Weir and its canal system. The weir work is completed and the expenditure during the year was Rs. 1,52,545. It is expected that right bank canal system will afford irrigation facilities to about 6,700 acres while Left Bank Canal will protect about 7,000 acres the right bank canal is expected to be completed by 1955. The survey work of left bank will be taken at a later stage. About 4,000 tons of additional food production is expected on completion of the canal system.

### **GUJARAT IRRIGATION CIRCLE.**

The Meshwa Canal Project one of the Medium Irrigation Projects started under Development Programme of the Bombay State is completed. The land under command is 18,000 acres. The area irrigated during the year under review is 8,644 acres. In addition 8,000 acres of Kalambandi area were irrigated. The work of Mahi Right Bank Canal Project Stage I i.e. the construction of Pick-up-weir at Wanakbori and the Right Bank Canal is in progress.

As regards Vijapur Tube Wells Scheme in Mehsana District, 33 tube-wells were operated during the year under report, 21 on electric power and 12 on oil engines. During Kharif Season as in the previous year, the concessional water rate of Rs. 1 per 21,000 gallons for paddy, groundnuts and hemp was sanctioned by Government from 1st July 1953 to 30th September 1953.

The work of restoration of the Dhanora Tank along with the Canal System was taken up under Rs. 1 crore Special Loan Programme for Minor Irrigation Works. The work is practically completed. The total area that can be served by the tank is 1,250 acres.

### BOMBAY CIRCLE.

The works of Bandhara across the Mahisdana Nalla at Mutholli, taluka Rohi, District Kolaba and Bandhara at Shil, Taluka Khalapur, District Kolaba, are nearly completed. An expenditure of Rs. 26,980 was incurred on the above schemes during the year under report. The work of Raja Nalla estimated to cost Rs. 13,33,100 which is taken under Community Project area of Karjat, is in progress.

### DECCAN IRRIGATION CIRCLE.

The work of remodelling Nira Right Bank Canal from miles 0 to 50 has been completed. The Canal was tested this year and was found to carry, 1,500 cusecs safely. It was due to this extra available capacity that about 3,800 acres of Rabi on Form VII could be sanctioned and irrigated on the canal during the year under report. The work of Gangapur Storage Project estimated to cost Rs. 397 lakhs is under execution. The target date of completion for the dam is June 1955, and that for the canals is March 1958. More than 99 per cent. of the dam work is completed. The canal work is in progress.

Irrigation was started in the Rabi season of the year under report, on the seven newly constructed tanks viz : (i) Banganga Tank, (ii) Durgaon, (iii) Bahirobawadi, (iv) Gunjale, (v) Gunodi, (vi) Nolgaon and (vii) Zadi. As this was the first year of irrigation on the above tanks, water was supplied at half the usual rates chargeable for irrigation on similar existing tanks.

In the Deccan when a large perennial canal is opened, wide spread water logging is liable to ensue and unless steps are taken to arrest and set it right, the damage consisting mainly of salt efflorescence becomes permanent. The Irrigation Development Division is entrusted with research and investigation into all the problems relating to irrigation by means of actual experiments. Drainage schemes were carried out in the various Sugar Factory areas to save lands from damage due to cultivation of Sugar by Sugar Companies. The detailed work done by this Division in this respect is given in section III of the Report.

### CENTRAL CIRCLE.

The works of Sangwi, Parewadi, Javala and Chincholi tanks were in progress during the year under report. The work of Mangi tank is now in progress as normal P. W. D. work after closure of scarcity. The dam outlet and waste weir of the Palasdeo tank was completed. The construction of Right and Left Bank Canals was completed and cross drainage works on both these canals was also completed during the year under report.

The Ranand tank, estimated to cost about Rs. 21.5 lakhs is under execution. An expenditure of Rs. 15,36,443 was incurred on this work during the year under report.

### KARNATAK IRRIGATION CIRCLE.

During the year under report, water was also supplied to the Mission Colony situated near Ghataprabha Colony, for drinking purposes at the rate of Rs. 0-12-0 per thousand gallons, and the amount realised on this was Rs. 135.

The work of Ghataprabha Left Bank Canal Project, consisting of the first 44 miles of the Ghataprabha Left Bank Canal and two Branches 31 miles in length was in full swing during the year under report. The first 17 miles of the canal have been completed and opened for irrigation. An expenditure of Rs. 2,63,06,625 was incurred on this Project to end of the year 1953-54.

During the year under report, an amount of Rs. 14.010 was spent on 29 Minor Irrigation works. In addition, an amount of Rs. 20.341 was spent on surveying and preparing plans and estimates for repairs to Minor Irrigation Works under Rs. one crore loan programme. On closure of the scarcity works, in October 1953, the work of extensions and improvements to the tanks at Kudrihal and Agadi continued as normal works during the year under review. Five works were taken up for execution in this Circle from Rs. 4.87 crore loan programmes and an expenditure of Rs. 23.138 was incurred on these works during the year under report. 81 Works were in progress up to the end of the year under review under the Rs. 30 lakhs loan programme and so far an expenditure of Rs. 41,439 has been incurred.

### SOUTHERN CIRCLE.

In the Belgaum Division, repairs to 30 tanks were carried out at a cost of Rs. 22,744 and in addition a sum of Rs. 4,80,870 and Rs. 31,396 was spent on 19 bandhara works and on the work of surveying and preparing estimates for repairs to second class tanks respectively. In Dharwar Division about 10 tanks were repaired at a cost Rs. 25,367. In addition, two minor irrigation works were started as scarcity works and an expenditure of Rs. 6,71,408 has been incurred to the end of March 1954. In Bijapur Division an amount of Rs. 4,800 was incurred on Maintenance and Repairs on 3 irrigation works and about 6 minor irrigation works were completed during the year under review.

In Kanara and Ratnagiri Divisions, an expenditure of Rs. 9,971 and 28,098 was incurred on repairs and construction of bandharas and tanks respectively. In Kolhapur Division an expenditure of Rs. 1,63,537 was incurred to end of March 1954 on Radhanagari Hydro Electric Project. In addition an amount of Rs. 33,665 was spent on the work of construction of a Jack Well with pump at Valivade under emergency irrigation scheme.

The Kolchi Weir Scheme estimated to cost Rs. 42.95 lakhs is under execution. An expenditure of Rs. 16,90,722 was incurred up to the end of the year under review. The masonry work of the weir has been completed. The weir is expected to be completed during the next year and to irrigate about 3,700 acres in the Belgaum District.

## SECTION I.

COMPRISING IRRIGATION WORKS FOR WHICH CAPITAL AND REVENUE  
ACCOUNTS ARE KEPT.

DETAILED REPORTS BY LOCAL OFFICERS.

### NORTH GUJARAT CIRCLE.

The year under review was marked by the rainfall, which was quite satisfactory as compared to that of last three years. The monsoon broke out in the 3rd week of June 1953 and ended in the 4th week of August 1953. However, all the tanks were fully filled except the Tranza Tank, which was partially filled and Nagrama Tank was not filled. There was no carry over of storage from last year's hot season in most of the tanks. The supply of water for the year was utilised mostly in irrigating Kharif crops. Due to failure of last rains, during the last week of August 1953, which is essential for the paddy crops, the demand for water was great in Kharif and the water according to requirement of cultivators was, therefore, distributed to Kharif and Rabi crops.

The principal irrigation works in operation in this Circle are (1) The Wangroli Tank, (2) The Savli Tank, (3) Tranza Nagrama Tanks.

#### First Class Irrigation Tanks in Gujarat.

The three first class tanks viz., Wangroli, Savli, and Tranza Nagrama were constructed between the years 1904 and 1917 at the aggregate cost of Rs. 8 lakhs. They rarely yield any return as demand therefrom in the years of good rainfall is small, whereas in the years of scanty rainfall the tanks themselves store insufficient supply of water as they are mainly dependent on local rains. All the three tanks are situated in Kaira Collectorate.



The area irrigated, the revenue assessed and the working expenses in connection with the tanks during the year are compared with the average of the preceding 3 years as under :—

Name of tank.	Year.	Khariff.		Rabi		Total.	
		Area irrigated.	Assessment.	Area irrigated.	Assessment.	Area irrigated.	Assessment.
		Acres	Rs.	Acres.	Rs.	Acres.	Rs.
Wangroli	... Average 1953-1954.	1,218	6,273	310	1,209	1,528	7,482
		1,624	8,190	9	35	1,633	8,225
Savli ...	... Average 1953-1954.	1,889	9,277	19	74	1,908	9,351
		2,097	10,493	305	467	2,402	10,960
Tranza Nagrama	... Average 1953-1954.	114	454	7	12	121	466
		143	515	2	4	145	519

#### WANGROLI TANK.

The rainfall gauged at the site of the tank was 29·90". The tank was nearly full and the water was utilised in irrigating Kharif crops mainly of rice and some acres of Rabi crops.

The miscellaneous revenue realised during the year amounted to Rs. 3,378 against Rs. 1,123 of the previous year.

#### SAVLI TANK.

The rainfall gauged at the site of tank was 34·27". The tank was fully filled in, which was utilised for irrigating Khariff and Rabi crops. Maximum irrigation was done during this year by this tank in the history of Irrigation by this tank.

The miscellaneous revenue realised during the year amounted to Rs. 3,130 against Rs. 2,449 of the previous year. No remission was granted during the year.

#### TRANZA NAGRAMA TANKS.

The rainfall gauged at the site of the tank was 42·98". Tranza Tank was partially filled with a maximum storage of 36·73 M. cft. Nagrama tank was not filled. There is unusually heavy seepage through, the tank bed which is sandy and porous; thus percolation losses were heavy. The supply of water was mainly utilised in irrigating mainly in Khariff Crops.

The miscellaneous revenue realised during the year amounted to Rs. 3 691 against Rs. 1,152 of the previous year. No remission was granted during the year under report.

*Statement showing the area irrigated, water rates assessed, Revenue realisation and rain fall during the year under report as compared with the corresponding averages of the past three years for North Gujarat Circle.*

Serial No.	Name of work.	Area irrigated.		Water rate assessed.		Gross assessed Revenue.				
		During the year.	Average of the past 3 years.	During the year.	Average of the past 3 years.	During the year.				
1	2	3	4	5	6	Tank bed lands.	Grazing of areas.	Fishing.	All other Revenue.	Total gross assessed Revenue.
		Acres.	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
KAJRA DISTRICT.										
1	Wangroli Tank, Thasra ...	1,633	1,528	8,225	7,482	3,166	121	.....	156	11,668
2	Savli Tank, Taluka Kapadwanj.	2,402	1,908	10,960	9,351	3,402	106	.....	35	14,503
3	Tranza Nagrama Tank ...	145	121	519	466	.....	.....	.....	.....	519

Serial No.	Name of work.	Gross assessed Revenue.					Realisation.		Rainfall.		
		Average of the past 3 years.					During the year.	Average of past 3 years.	During the year.	Average of the past 3 years.	
		Tank bed lands.	Grazing of areas.	Fishing.	All other revenue.	Total gross assessed revenue.					
1	2	12	13	14	15	16	17	18	19	20	
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Inches.	Inches.	
<b>KAIRA DISTRICT.</b>											
1	Wangroli Tank, Thasra	...	2,101	152	.....	224	9,959	11,668	9,959	28.90	35.53
2	Savli Tank, Taluka Kapadwanj.		3,436	64	.....	19	12,870	14,503	12,870	34.27	32.57
3	Tranza Nagrama Tank	...	.....	.....	.....	.....	466	519	466	42.83	26.27

## GUJARAT IRRIGATION CIRCLE.

The area under irrigation in Gujarat is not compact. Rainfall is often insufficient and always ill-distributed. The irrigation tanks and canals help to tide over unevenness of precipitation of rain and give the crucial waterings to rise in a long break in the monsoon itself or after the end of rains in September and October, thus ensuring a successful rice crop irrespective of the distribution of rainfall in the monsoon months. Tanks and canal systems depend on the total rainfall of the region, for filling or for yielding a sufficient flow to meet irrigational demands. The catchment areas as well as the irrigated areas are nearly of the same rainfall characteristics.

Monsoon in Gujarat generally starts in July. In the year under review, the monsoon started in the 3rd week of June 1953 and was nearly continuous up to 1st week of September 1953 and it ceased totally thereafter. The rainfall was more than the average of the past three years but it was not well spread over throughout the season. The river discharges continued nicely and as such irrigation to a very good extent could be done. Due to heavy intensity of precipitation, all the irrigation tanks, big and small except that of Sarsi got not only their full replenishment but had their waste weirs overflowing. On account of the downpour, some serious piping in the earthen dams of Dhanora, Wadadla and Muval tanks was noticed. This was checked and serious damage prevented to these tanks by taking timely precautionary measures. Constant patrolling day and night helped a great deal in detecting and thus arresting such piping in due time. The total area protected under irrigation was 58,430 acres excluding 7,000 acres of Kalambandhi area.

The principal irrigation works in operation in this circle are :—

### VIJAPUR TUBEWELLS SCHEME.

During the year under report, 27 tubewells of Ex-Baroda State and 6 tubewells constructed by North Gujarat Tubewells Division were handed over to Ahmedabad Irrigation Division, Ahmedabad. In all 33 tubewells were operating during the year under report, 21 on electric power and 12 on oil engines.

Water is sold on volumetric basis at Re. 1 per 10,500 gallons. The average discharges of the tubewells comes to about 18,000 gallons per hour. In addition to this, a slab rate of Rs. 50 on cash crops viz. :—cane, fruit trees, vegetables, variali, tobacco, cotton, jiru and sarsav, were charged from 1st September 1953.

During Kharif Season just like the previous year, the concessional water rate of Re. 1 per 21,000 gallons for paddy, groundnuts and humps was sanctioned by Government from 1st July 1953 to 30th September 1953. Under these orders a slab rate of Rs. 4 per bigha in addition was to be charged for other crops. The benefit of the concessional rates was taken by the irrigators for 23 acres of paddy. Due to heavy slab rate of Rs. 50 on cash crops, there was a marked decrease in demand. It is difficult at this stages to say conclusively that this concession has been either a success or a failure in creating a stable demand for water during monsoon period.

This experiment is to be continued for some years, coupled with an experiment on the Agricultural Departments farm to establish paddy, sunn hemp, green manuring, groundnuts and such other monsoon crops in the annual cropping scheme of the area. During Rabi, the demand is intense. Commercial crops like variali, jiru and tobacco are grown to the extent of 50 per cent. and wheat 50 per cent. In Hot Weather, poor type millets like Kang, Cheno and Chasto are grown to a fair degree.

The area irrigated, revenue assessed etc. in respect of the Vijapur Tubewells Scheme as compared with the average figures of the previous three years are shown below :—

Year.			Area irrigated.	Net revenue assessed.
			Acres.	Rs.
1953-54	...	...	2,758	1,09,884
Average	...	...	1,793	1,04,632

No remission was sanctioned during the year under report. The gross revenue realised from all sources amounted to Rs. 1,03,892-7-0, while the working expenses were Rs. 84,591 during the year under review. This may show a net profit of 1.3 per cent. on the Capital Outlay of Rs. 14,74,611 because the expenditure indicated above does not include expenses of the Power House incurred to generate power and supply it free to the Civil Engineering Organisations on the Tubewells. If the maintenance expenditure including work-charged establishment on electrical side during the year under report be taken into account, the revenue may fall short of working expenses even.

#### HATHMATI AND KHARI CUT CANALS.

This system includes a diversion weir on rock foundations across Hathmati River at Himatnagar and a canal which feeds Bokh reservoir of 300 million cubic feet formed in depression and bunded by an earthen dam. In addition to doing some direct irrigation under the canal, it also supplements after filling Bokh reservoir, the flow in the neighbouring Khari river across which a weir on permeable foundations exists at Raipur. From this weir, a canal in cutting diverts the water into Motia Vehla and thence to a canal system which is meant to fill up a series of tanks till middle of August every year and thereafter do direct irrigation.

This is an old system first opened in 1873-74. It irrigates a tract of land lying between the Sabarmati and Khari rivers. In addition to irrigating the area dependent on it, it is designed to pass surplus water, when available, first into Bokh reservoir of 300 million cubic feet and then into the Khari river direct via Bhujwa channel and through Bokh reservoir. The Bokh reservoir has no direct command under it. It only acts as a storage reservoir for supplementing the flow in the Khari river to be picked up at Raipur weir and used in the commanded area of Khari Cut Canal.

Further down-stream of Raipur on the Khari river is situated the irrigation system of Khari sluices. According to High Court Decree, the riparian rights of the Kalambandhi people claimed the natural flow in Khari river for the Khari sluices system. But now as per agreement between the "Government of Bombay and Kalambandhi Village for the waters of Meshwa Canal" dated 22nd January 1948, the Kalambandhi people get 70 cusecs of water at Pingraj during the monsoon season from the Meshwa canal from the year 1950-51 and onwards, in lieu of their riparian right over the natural flow of Khari river. Now the natural flow of Khari river is also diverted at Raipur into Khari Cut Canal for irrigation. This has assured the filling up of Chandola and other tanks and has improved the flow conditions in the Khari Cut Canal so that larger areas of rice can be protected in the commanded area.

The rainfall gauged at Himatnagar Headworks of Hathmati canal and at Prantij in its commanded area are 30.25 inches and 44.53 inches respectively as against the average figures of 31.98 inches and 26.31 inches, respectively of the previous three years. Similarly the rainfall at Ahmedabad and Bareja at the head and tail of the commanded area of Khari Cut Canal system was 40.38 inches and 44.53 inches, respectively, as against the average figures of 30.35 inches and 23.14 inches, respectively, of the previous three years.

The Hathmati river was once in normal floods during the year under report. The weir over-flowed for more than 42 days and to a depth varying from 0.20 feet to 3.20 feet. Bokh reservoir was filled up to gauge 23 feet or 350 million cubic feet. The canal discharge was 253 cusecs on 1st September 1953 and 305 cusecs on 1st October 1953. During the Rabi season the average daily discharge admitted into canal at its head was 100 cusecs which was fully utilised for irrigation. The Khari river rose in floods five times during the year under report. All the available stable discharge of the river at Raipur was taken into Khari Cut Canal for filling the tank and direct irrigation.

The gross area sanctioned, the net area irrigated and revenue assessed in respect of the Hathmati and Khari Cut Canals as compared with the average figures of the previous three years are shown below :—

Year.	Kharif.			Rabi.			Total.		
	Gross area sanctioned.	Net area irrigated.	Net assessment.	Gross area sanctioned.	Net area irrigated.	Net assessment.	Gross area sanctioned.	Net area irrigated.	Net assessment.
1	2	3	4	5	6	7	8	9	10
	Acres.	Acres.	Rs.	Acres.	Acres.	Rs.	Acres.	Acres.	Rs.
1953-54	18,339	18,310	1,76,124	7,133	6,964	58,820	25,472	25,274	2,34,944
Average of previous three years.	13,726	12,417	79,094	3,134	2,950	16,095	16,860	15,367	95,189

The total gross assessment worked out to Rs. 2,53,001-13-6 out of which remission amounting to Rs. 1,907-4-0 was sanctioned during the year

under report for failure of crops on account of shortage of water or submergence under water. There are other sources of revenue viz., lotus, Shingodi, plantation, grass tank bed cultivation, etc. Total recovery on these during the year under review was Rs. 16,150-0-6. The gross revenue realised from all sources amounted to Rs. 1,60,548-5-0 during the year under report while the working expenses were Rs. 1,35,299. This showed a net profit of Rs. 1.91 per cent. on the total capital outlay of Rs. 13,18,729.

#### WADHWANA AND JOJWA IRRIGATION SYSTEM.

There is a shallow diversion weir at Jojwa founded on rock across the Orsang river. The Jojwa feeder canal channel takes off from the Jojwa Head works with a small direct irrigation system near Bahadurpur. It feeds the artificial Wadhwana tank of about 453 million cubic feet capacity. The system as it exists at present comprises of :—

(1) The Head works i.e. a low weir across the Orsang at Jojwa with a right bank canal of 60 cusecs capacity, and

(2) A storage tank near Wadhwana about 11 miles lower down.

Until the year 1950-51, there was practically no deemed for direct irrigation from the Jojwa canal. The canal therefore served merely as a feeder to Wadhwana tank. Irrigation under this tank was not quite popular and the scheme could not pay even its bare maintenance. Of late, the prospects have much improved. Inclusive of some 300 acres of direct irrigation under it, the system reached a figure of some 4,500 acres during 1951-52, 6,100 acres during 1952-53 and 4,341 acres during 1953-54 i.e. the year under report. In order to meet the increasing demand of irrigation, proposals for adequate extensions and improvements to the existing system, to irrigate an additional area of 8,000 acres of land and estimated to cost Rs. 7,52,000 were approved by the Government and the work is being financed from the Government of India loan of Rs. 40 lakhs. The scheme consists of raising the pick-up weir at Jojwa by 3 feet and increasing the discharging capacity of the existing feeder from 60 cusecs to 300 cusecs and extending direct irrigation of the Jojwa feeder with improvement to that under Wadhwana tank. The rainfall at Jojwa and Wadhwana was 39.89 inches and 44.39 inches respectively as against 34.60 inches and 34.33 inches, respectively the average precipitation of the past three years.

The area irrigated and revenue assessed during the year under review as compared with the average figures of the previous three years are shown below :—

Year.	Kharif.		Rabi.		Total.	
	Area irrigated.	Net assessment.	Area irrigated.	Net assessment.	Area irrigated.	Net assessment.
1	2	3	4	5	6	7
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.
1953-54	1,930	10,191	2,404	18,470	4,334	28,661
Average of previous three years.	3,420	18,089	1,705	12,020	5,131	30,118

The Gujarat Irrigation Circle took over charge of the tanks on the 16th May 1950. Water was given free of cost in the past. The other two sources of revenue viz., grass and tanks bed cultivation are also showing appreciable rises as can be seen from the figures shown below :—

Year.	Revenue.	
	Grass.	Tank bed cultivation.
	Rs.	Rs.
1949-50	... 1,821	4,506
1950-51	... 3,500	9,591
1951-52	... 4,631	25,609
1952-53	... 6,433	37,788
1953-54	... 2,795	52,726

The gross revenue actually realised during the year under review from all sources was Rs. 55,521 (Rs. 2,795 realised by the Public Works Department, Division and Rs. 52,726 through the Revenue Department). The working expenses were Rs. 29,440 during the year under report. This showed a net profit of 2.2 per cent. in the total capital of Rs. 11,78,000.

#### MESHWA CANAL PROJECT.

This canal takes off from the Mehsana river with a pick-up across the river at Raska in Mehmedabad taluka of Kaira district. The weir is 8.5 feet high founded on permeable foundation to raise and divert the water of Meshwa river for purposes of irrigation. The canal is on the right bank and it goes in deep cutting (maximum 25 feet) till the water comes about ground level in mile Number 7 from where the commanded area starts. This is the first medium irrigation scheme completed since the construction of Hathmati and Khari Cut Canals.

The main purpose of this scheme is to give a discharge of 70 cusecs during monsoon at Pinglaj for the Kalambandhi areas and thus to enable Government to divert the natural flow of the Khari river into the Khari Cut Canal system. The Kalambandhi people had withdrawn the rights over the natural flow of the Khari river. The riparian rights were the cause of many disputes, almost every monsoon and were mainly responsible for the restriction of irrigation in the area commanded by Khari Cut Canal. This situation has been improved after the additional supply of water to Kalambandhi area from the Meshwa canal was made available.

In addition to supply of water to the Kalambandhi people, the Meshwa project aimed at filling in an unfailing manner, the Galki and Goblej tanks which were not filling up annually from the spills of Khari river. It is also to do direct irrigation from such supply in excess of above two requirements. The canal started functioning in 1950 monsoon. The total expenditure incurred on works up to 31st March 1954 was Rs. 46,49,169 and the working expenses for the year under review were Rs. 45,975.



The monsoon was an average one, but it was not well distributed throughout the monsoon season. There was no rain after the end of August. The total rainfall gauged at Barejadi was 37.30 inches. The Galki and Goblej tanks which now form part of Meshwa canal were filled up to their F. S. L. capacity without affecting the requirement of other areas. The Kalambandhi people were supplied 75 cusecs up to the middle of November 1953.

The gross area sanctioned, the net area irrigated and the revenue assessed in respect of the Meshwa canal project, as compared with the average figures of the previous three years, are shown below :—

Year.	Kharif.			Rabi.			Total.		
	Gross area sanctioned.	Net area irrigated.	Net assessment.	Gross area sanctioned.	Net area irrigated.	Net assessment.	Gross areas sanctioned.	Net area irrigated.	Net assessment.
1	2	3	4	5	6	7	8	9	10
	Acres	Acres	Rs.	Acres	Acres	Rs.	Acres	Acres	Rs.
1953-54	7,146	7,146	71,450	1,498	1,498	10,502	8,644	8,644	81,952
Average of previous three years.	2,230	1,706	13,839	1,443	1,429	12,627	3,673	3,135	26,466

The total gross assessment worked out to Rs. 81,952 during the year under review. No remission was sanctioned during the year under report. About 7,000 acres of paddy crops thrived in the Kalambandhi area (Khari Sluices area) due to this canal. The administration of the Khari Sluices are under the control of the Revenue Department. It is a Second Class irrigation work with Himayat levied by the Revenue Department.

#### NANI FATEWADI CANAL INCLUDING INTERCONNECTING CHANNELS TO THE BUND SYSTEM.

This is an inundation canal taken off of Sabarmati river near Fatewadi village of Daskroi taluka in Ahmedabad district, without any diversion weir across the river.

The year under report was of average rainfall but it was not well distributed throughout the season. There were in all six floods, low and high, in the river Sabarmati during the monsoon. After the floods

subsided, discharges from 225 cusecs to 30 cusecs were maintained in the canal. On account of falling discharge day by day, it was essential to start the river training work in order to satisfy the requirement of watering as usual. This is only the period when watering is badly needed for paddy crops. The work of constructing a cutcha bund was carried out with the help and co-operation of the irrigators.

The gross area sanctioned, the net area irrigated and the revenue assessed in respect of the work, as compared with the average figures of the previous three years, are shown below :—

Year.	Kharif.			Rabi.			Total.		
	Gross area sanctioned.	Net area irrigated.	Net assessment.	Gross area sanctioned.	Net area irrigated.	Net assessment.	Gross area sanctioned.	Net area irrigated.	Net assessment.
1	2	3	4	5	6	7	8	9	10
	Acres.	Acres.	Rs.	Acres.	Acres.	Rs.	Acres.	Acres.	Rs.
1953-54	10,978	10,848	1,27,417	5,506	5,497	53,701	16,484	16,345	1,81,118
Average of previous three years.	4,690	4,555	55,783	6,536	6,532	66,294	11,226	11,087	1,22,017

The total gross assessment worked out to Rs. 1,82,673-15-0 out of which remission amounting to Rs. 1,555-10-0 was sanctioned for failure of crops on account of shortage of water or submergence under water.

*Statement showing the area irrigated, water rates assessed Revenue, realisation and rainfall during the year 1953-54 under report as compared with the corresponding averages of the past three years.*

Name of work.	Area irrigated.		Water rates assessed.		Gross assessed Revenue.				
	During the year.	Average of the past 3 years.	During the year.	Average of the past 3 years.	Tank bed lands.	Grazing of areas.	Fishing.	All other revenue.	Total gross assessed revenue.
1	2	3	4	5	5	7	8	9	10
	Acres.	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(1) Hathmati & Khari Cut canals in Ahmedabad Sabarkantha and Kara Districts.	25,274	15,367	2,34,945	95,189	6,094	3,244	.....	2,41,757	2,51,095
(2) Mshwa Canal including Galki and Goblej Tanks in Kara District.	8,644	3,135	81,952	26,466	2,434	216	.....	83,155	85,805
(3) Nani Fatwadi Canal including inter-connecting channels to the bund system in Ahmedabad District.	16,345	11,087	1,81,118	1,22,077	.....	.....	.....	1,81,120	1,81,120
(4) Tubewells in Vijapur and Dehgam areas.	1,793	2,758	1,04,632	1,09,884	.....	.....	.....	1,04,772	1,04,772
(5) Wadhena Irrigation Tank including Jijwa Orsang Main Canal Baroda District.	4,340-38	5,130	28,661	28,971	18,512	7,084	.....	28,661	54,257
(6) Irrigation tanks (9 Nos. in all) in Baroda District.	4,074-10	3,937	21,465	10,582	34,859	1,358	.....	21,465	57,682

Name of work.	Gross assessed Revenue					Realisations		Rainfall	
	Average of the past 3 years					During the year.	Average of the past 3 years.	During the year.	Average of the past 3 years.
	Tank bed lands.	Grazing of areas.	Fishing.	All other revenue.	Total gross assessed revenue.				
1	11	12	13	14	15	16	17	18	19
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Inches.	Inches.
(1) Hathmati and Khari Cut canals in Ahmedabad, Sabarkantha and Kaira Districts.	1,501	3,831	....	1,22,234	1,27,566	1,45,227	66,470	40.38	30.35
(2) Meshwa Canal including Galki and Goblej Tanks in Kaira District.	....	....	....	26,466	26,466	44,274	39,474	37.30	24
(3) Nani Fatewodi Canal including inter-connecting Channels to the bund system in Ahmedabad District.	....	....	....	1,22,082	1,22,082	1,18,083	1,25,380	43	30
(4) Tubewells in Vijapur and Dehgam areas.	....	....	....	1,09,884	1,09,884	1,03,892	1,01,762	....	....
(5) Wadhena Irrigation Tank including Jojwa Orsang Moin Canal, Baroda District.	14,706	5,747	....	23,971	49,424	55,521	49,222	44.39	40.78
(6) Irrigation tanks (9 Nos. in all) in Baroda District.	44,133	3,589	....	20,563	68,285	52,622	34,528	30.23	32.2

## DECCAN IRRIGATION CIRCLE.

The year under review began with a normal storage in the Lake Whiting at Bhatgar and Lake Arthur Hill at Bhandardara and with somewhat less than normal storages in the case of the Lake Fire, Lake Beale, Chankapur Tank and Waghad Tank. The rainfall between June to October was generally satisfactory in the irrigation tracts of all Canals except the Girna Canal and part of Mutha Right Bank Canal. There were no rains in November and December. There was thus a large deficit in the anticipated river gains, particularly in the case of the Chankapur Tank. In order to economise the use of the available water, a cut of 25 per cent. had therefore, to be applied this year also on the Girna Canal in the case of Sugar cane crop of local irrigators and the Sugar Factory as well.

The following ten Sugar Factories have been established on the Deccan Canals and the acreages for which water is guaranteed at present, are noted against each :—

Name of Sugar Factory.	Annual guarantee of water supply for areas of sugar cane.	Cane standing on 15th June 1953.	Crushing capacity in tons, per day.
1	2	3	4
	Areas.	Area.	Tons.
(1) The Belapur Co. Harigaon, (Pravara Left Bank Canal).	3,550	2,570	1,200
(2) The Maharashtra Sugar Mills Ltd., near Shrirampur. (Pravara Left Bank Canal).	4,250	2,597	1,000
(3) The Walchandnagar Industries Ltd., Walchandnagar. (Nira Left Bank Canal & Nira Rt. Bank Canal).	3,500	1,929 } NRBC } 1,571 } NLBC }	1,200
(4) The Phaltan Sugar Works Ltd., near Tadawali. (Nira Rt. Bank Canal).	2,500	2,075	650
(5) The Saswad Mali Sugar Factory Ltd., Near Akluj (Nira Right Bank Canal).	1,600	1,434	745
(6) The Brihan Maharashtra Sugar Syndicate Limited Borgaon. (Nira Right Bank Canal).	2,000	2,000	1,000
(7) The Ravalgaon Sugar Farm Limited, near Ravalgaon Girna Canal.	1,505	1,161	750
(8) The Godavari Sugar Mills Limited (Godavari Right Bank Canal and Godavari Left Bank Canal).	2,850	650 GRBC 1,001 GLBC	650 950
(9) Shri Changdeo Sugar Mills Limited Godavari Right Bank Canal.	1,000 100	731	350
(10) The Belwadi Sugar Farm near Visapur, Visapur Canal.	No guarantee in respect of area, is given but 3/4th of the water available in the tank on 15th November is guaranteed annually.	Nil.	250

The area of sugarcane standing on 15th June 1953 by the Sugar Factories was about 17,719 acres as compared with 21,241 acres in the previous year. The decrease in the area is due to the fact that on account of the unsatisfactory position of storages at Lake Arthur Hill, Lake Beale and

Chankapur Tank in Rabi season of last year, certain percentage cut had to be applied to supply of water to Sugar Factories on the Pravara, Godavari and Girna Canals in the Hot Weather season of 1953. A number of drainage schemes have been carried out in the various Sugar Factory areas to save lands from damage caused due to intensive cultivation of sugarcane by Sugar Companies.

### POONA IRRIGATION DIVISION.

#### LLOYD DAM AT BHATGAR.

The Lloyd Dam at Bhatgar is 190 feet high, 5,333 feet long (including the waste weir), 4,266 feet long (excluding the Waste Weir) and 124 feet wide at the base and was completed in 1928 at a cost of Rs. 172 lakhs to replace the old dam constructed in the eighties of the last century which stored about 5,300 million cubic feet of water. The new dam now supplies water to the Nira Left and Nira Right Bank Canals. The Lake itself lies in the Poona District and hence is placed under the Executive Engineer, Poona Irrigation Division. This Dam is one of the largest masonry dams in India and contains  $21\frac{1}{2}$  million cubic feet of masonry. The Lake formed by the construction of the Dam, has a stretch of 17 miles at full supply level with a storage capacity of 24,200 million cubic feet. The catchment area is 128 square miles in extent with an annual rain fall varying from 250 inches in the Ghats to 40 inches at Bhatgar. In addition to the sluices required for releasing water for irrigation purposes, there are 81 waste weir gates for the control and regulation of flood level in the Lake. Hydro-electric power is being generated with the help of turbines located for the purposes at the down stream of the Dam.

#### THE PICK-UP WEIR AT VIR.

This is an old small Bandhara at Vir across the Nira River. It is situated to the east of the Lloyd Dam at a distance of about 17 miles. This Bandhara impounds only 232 million cubic feet of water. It cannot store water from the monsoon floods of the Nira River beyond 11 feet high above when it begins to overflow. The two Nira Canals draw off water from this Weir.

#### POSITION OF STORAGE IN THE LAKE WHITING AT BHATGAR.

On 15th February 1953, the depth of water in the Lake was 98.94 feet, the corresponding contents being 9,364 million cubic feet. On 1st April 1953, the level came down 86.45 feet, the corresponding contents being 6,137 million cubic feet. The water level was the lowest on 20th June 1953 with a depth of 44.90 feet, the corresponding content being 572 million cubic feet. The Lake began to get replenishment from 21st June 1953 and reached the maximum level of 143 feet on 24th August 1953, contents being 24,200 million cubic feet. The first draw off commenced on 19th September 1953. During the Rabi rush, the level of the water began to fall rapidly till it reached 99.57 feet, on 14th February 1954, contents being 9,520 million cubic feet.

#### NIRA LEFT BANK CANAL.

This canal forms part of the Scheme known as the "Nira Valley Development Project" and irrigates lands situated on the left bank of

the Nira River. It is one of the pioneer irrigation works in the Deccan and protects a tract in the Poona District which has a very precarious rainfall. The original scheme consisted of :—

(a) A ghat-fed storage tank at Bhatgar (Lake Whiting) about 32 miles south of Poona, on the Yelwandi river impounding 5,300 million cubic feet of water ;

(b) Pick-up-weir at Vir on the Nira river about 17 miles down stream from Bhatgar ;

(c) A Canal, 100 miles long irrigating about 80,000 acres annually ; and

(d) The Shetphal Tank at the tail of the Canal with an effective capacity of 592 million cubic feet for the purpose of storing a portion of the surplus monsoon discharge.

The original masonry dam at Bhatgar, 127 feet high, has since been replaced by the Lloyd Dam mentioned above. The original works were commenced in 1881 and the Canal came into operation in 1885-86. The Canal originally had a capacity of 456 cusecs but it has now been remodelled to carry a discharge of 720 cusecs. The Canal together with the Tank commands a gross area of 2,01,000 acres, of which the area commanded by the Shetphal Tank is 23,000 acres. The culturable area under the canal is 1,49,821 acres.

The Project was designed for complete development of irrigation in the Nira Valley. It provided *inter-alia* for widening and remodelling of the Nira Left Bank Canal in order that the Canal should irrigate an additional area of 19,000 acres of various types of crops and for the construction of a new dam at Vir with a storage capacity of 8,000 million cubic feet, designed to supplement the storage of 24,000 million cubic feet impounded by the Lloyd Dam at Bhatgar. The construction of the Vir Dam, estimated to cost about a crore of rupees, was shelved in 1928 on the assumption that by economical use of water available, the storage at Bhatgar would be sufficient to meet all irrigation requirements of the Nira Valley for some years. This will have to be reconsidered now owing to the development of irrigation by the advent of Sugar Companies in the Valley and because at present the demand has overtaken the supply available. The remodelling of the Nira Left Bank Canal which was started in 1925-26, was practically completed by the end of 1942-43. The construction of the new Vir Dam is necessary for the complete development of Nira Valley.

Average rainfall in the irrigation tract of the Nira Left Bank Canal was 19.88 inches as against 11.01 inches of the previous year. The level of water in the Shetphal Tank (Tail Tank of the Nira Left Bank Canal) went down to the lowest depth of 11.70 feet on 21st June 1953, the corresponding contents being 49 million cubic feet. The tank reached the full supply level of 37.50 feet on 28th September 1954. The entire discharge, let down from the Nira Left Bank Canal to this tank, was 716 million cubic feet. The following table gives the figures of area

irrigated, revenue assessed, etc. during the year under report as compared with the average of the previous three years :—

Year.	Area irrigated.	Water rates assessed.	Gross Revenue assessed.	Realisations.	Rainfall.
	Acres.	Rs.	Rs.	Rs.	Inches.
1953-54 .. .. .	80,352	15,00,153	16,18,131	15,43,154	19·88
Average of previous three years ..	78,501	13,34,594	13,93,038	12,14,741	17·10

The increase in area irrigated and revenue assessed during the year under report was on account of sanctioning more acreage of Monsoon seasonals on Form VII.

The figures of areas of sanctioned block and crops during the year under review as compared with the figures of the previous year are shown below :—

Kind of Block.	Nira Left Bank Canal		Shetphal Tank	
	1952-53.	1953-54.	1952-53.	1953-54.
1	2	3	4	5
	Acres.	Acres.	Acres.	Acres.
(i) Sugar cane Blocks .. .. .	14,108	13,903	786	750
(ii) Fruit and Garden Blocks.	425	425	20	20
(iii) Two seasonal (Food Fodder) Blocks	23,312	22,483	1,348	1,344
(iv) Kharif (Monsoon) crops of Form VII.	....	12,515	Included in the corresponding figures for Nira Left Bank Canal.	
(v) Rabi crops on Form VII .. .. .	....	15,390		

The small decrease in the area of cane blocks was due to 25 per cent. cut applied during the year under report to the cane blocks of those irrigators who took unauthorised canal water to more than 5 acres of Rabi crops in the Rabi season of the previous year. The decrease in the case of two seasonal blocks area was due to the fact that some of the block holders had not applied for extension of the periods of sanctions, which expired on 14th February 1953 for their blocks by one year up to 14th February 1954. Hot Weather Fodder crops were allowed on Shetphal Tank where water was available.



The cost incurred on measuring establishment was 15 pies per acre during the year under report as against 17 pies per acre of the previous year. Remissions sanctioned during the year amounted to Rs. 20,461. The expenditure incurred on maintenance and repairs during the year under review amounted to Rs. 1,10,896 as against Rs. 1,06,319 of the previous year. The perennial limit of the Nira Left Bank Canal is up to mile 75 and that of the Shetphal Tank is up to mile 10.

#### MUTHA CANALS AND MATOBA TANK.

This system came into operation in 1874/75. The Canals were constructed at a cost of about 65½ lakhs including the cost of a large ghat-fed reservoir (Lake Fife) on the Mutha River at Khadakwasala about 12 miles from Poona. The Dam is 107 feet high spanning the valley of the Mutha River. The system comprises of two canals — Mutha Right Bank and Left Bank Canals, 70 and 18 miles long respectively. The maximum designed discharges of the the two canals at their heads were 412 and 38.5 cusecs but the present maximum discharging capacity is about 300 cusecs and 20 cusecs, respectively. Due to constant running for town Water supply and weed growth and silting, it is not possible permanently to improve the capacity of the Mutha Right Bank Canal until a separate pipe line is provided from the dam to the city for town water supply. Both the canals take off direct from the lake which has a storage capacity of 3,091 million cubic feet out of which 500 million cubic feet are reserved for the Water supply to Poona for drinking purposes, as a margin of safety in the event of replenishment being received late. The storage is partly utilised for drinking and domestic purposes of Poona and partly for irrigation. The supply available for irrigation being insufficient, the perennial limit of the Mutha Right Bank Canal is now reduced from Distributary 9 to Distributary 6. The Matoba tank is the tail tank receiving the surplus water through the Mutha Right Bank Canal during the Monsoon months. Due to inadequacy of water supply, block system has not been introduced on this canal and it cannot be introduced until the question of city water supply is solved independently.

On 1st April 1953, the level of the water in Lake Fife was 18.0 feet, the corresponding contents being 1,185 million cubic feet. The Lake began to get replenished on 20th June 1953 when the lowest level was 8.10 feet (contents 430 million cubic feet). The full supply level of 34.00 feet was reached on 3rd September 1953 and draw off commenced from 16th October 1953. The maximum flood occurred on 29th June 1953 for three hours, the discharge over waste weir being 40,907 cusecs with 5.80 feet depth over the crest. The Mutha Right Bank Canal was closed in compartments eight time during the year under report for weeds and silt clearances. The rain-fall at Khadakwasala was 35.21 inches during the year under review as compared with 32.05 inches of the previous year. The average rain-fall in the canal tract was 17.71 inches against 16.09 inches of the previous year.

## MATOBA TANK.

This is the tail tank of the Mutha Right Bank Canal with a full supply height of 29 feet and full supply capacity of 184 million cubic feet. It is replenished by the Mutha Right Bank Canal in Monsoon months when surplus water is available. On 15th February 1953, there was no water in the tank. It began to receive replenishment from the Mutha Right Bank Canal from 23rd June 1953. The full supply level of 29 feet, had reached on 15th October 1953. After Rabi irrigation, the tank dried up completely on 4th January 1954.

The following table gives the figures of area irrigated, revenue assessed etc. during the year under report as compared with the average of the previous three years :—

Year.	Area Irrigated.	Water rates assessed.	Gross assessed Revenue	Realisa-tions.	Rainfall.
	Acres.	Rs.	Rs.	Rs.	Inches.
1953-54 .. ..	13,954	2,85,178	7,75,087	7,36,656	17.71
Average of previous three years ..	15,902	2,31,012	6,97,526	6,79,724	26.20

The decrease in the area irrigated was on account of reducing the perennial limit of the Mutha Right Bank Canal from Distributary 9 to Distributary 6. The increase in revenue was due to the increase water rates for fruits with effect from 15th February 1953.

The figures of the areas sanctioned under the different types of blocks during the year under review as compared with the figures of the previous year are shown below :—

Type of Block.	Areas standing as sanctioned in the year 1953-54.	Areas standing as sanctioned in the previous year i.e., 1952-53.
	Acres.	Acres.
(i) Sugar cane blocks ... ..	...	No sugar cane blocks are on this canal. ...
(ii) Fruit blocks ... ..	190	181
(iii) Two seasonal (Food and Fodder) blocks ...	2,076	2,042
(iv) Kharif (Monsoon) crops on Form-VII ...	6,518	.....
(v) Rabi on Form-VII ... ..	744	.....

The quantity of water supplied to the Poona Cantonment and Poona City Municipal Corporation was 4,157 and 4,382 million cubic gallons, respectively. The revenue assessed thereon was Rs. 2,29,536 and Rs. 2,49,398 respectively. The other smaller concerns also took 498 million gallons of water and the revenue assessed there on was Rs. 22,961. The cost of measuring establishment was 23 pies per acre during the year under report as against 21 pies of the previous year. Remissions granted during the year amounted to Rs. 1,114. The expenditure on maintenance and repairs was Rs. 56,257 during the year under review as against Rs. 62,016 of the previous year.

#### EFFLUENT IRRIGATION ON THE MUTHA RIGHT BANK CANAL.

The average discharge of effluent pumped during the year under report was 15.40 cusecs as against 15.20 cusecs of the previous year. The whole discharge was utilised for irrigation particularly for vegetables. The area to which effluent was supplied, was 2,467 acres and the assessment amounted to Rs. 1,02,763.

#### NIRA RIGHT BANK CANAL DIVISION.

##### NIRA RIGHT BANK CANAL.

The Nira Right Bank Canal has its head works at Vir, 17 miles below the Lloyd Dam. The designed discharges of the Canal at the head and tail are 1,500 and 400 cusecs, respectively, the corresponding full supply depths being 8.5 feet and 6.5 feet, respectively. The Canal which is about 106½ miles in length commands lands situated in part of the North Satara and Sholapur Districts. Water was first supplied from the Canal for irrigation of Rabi crops in 1924/25. There are three branches and 69 distributaries taking off from the Canal. The culturable area command by it, is 4,48,000 acres. The water regulation and distribution works are constructed on modern lines and the latest types of Standing Wave Flume measuring devices are provided at distributary heads and on the channels.

The designed discharging capacity of 1,500 cusecs was never attained on the Canal and the maximum that could be passed safely was only 1,100 cusecs at the time of peak demand. In order to remedy this defect, a project amounting to Rs. 20 lakhs was sanctioned for raising the banks by 2½ feet for a discharging capacity of 1,500 cusecs and the work of remodelling Canal from miles 0 to 50 was taken in hand in 1949, and has been practically completed now. The Canal was accordingly tested this year and was found to carry 1,500 cusecs safely. It was due to this extra available capacity that about 38,000 acres of Rabi on Form VII could be sanctioned and irrigated on the Canal during the year under report.

There was a good rainfall from about the middle of June to end of October in the irrigation tract of the Canal. There were, however, no rains in November and December. The total rainfall in the irrigation tract of the Canal was 15.10 inches during the year under report as against 11.0 inches of the previous year. The following table gives the figures of the area irrigated, revenue assessed, etc., during the year

under review as compared with the corresponding average figures of the previous three years :—

Year.	Area irrigated.	Water rates assessed	Gross revenue assessed	Realisations	Rainfall.
1	2	3	4	5	6
	Acres.	Rs.	Rs.	Rs.	Inches.
1953-54 average of the previous three years.	95,869	21,29,154	21,75,258	22,15,096	15.10
	76,783	18,08,473	18,08,473	17,15,729	16.22

The increase in the irrigated area was mainly to sanction given to all demand for Rabi crops.

The figures of areas of sanctioned blocks during the year under review as compared with those of the previous year, are shown below :—

Type of Blocks.	Areas standing as sanctioned in the year 1953-54.	Areas standing as sanctioned in the previous year i.e., 1952-53.
1	2	3
	Acres    gunthas	Acres    gunthas
(i) Cane blocks ...	7,485    00	5677    20
(ii) Fruit and Garden blocks ...	130    20	130    20
(iii) Two seasonal (Food Fodder) blocks ...	18,566    00	18,566    20
(iv) Kharif Crops on Form-VII ...	20,830    00	...    ...
(v) Rabi Crops on Form-VII ...	38,623    00	...    ...

The increase in cane block area was due to conversion of cane areas, which were continued so far on Form VII, into cane blocks.

The cost of measuring establishment employed during the year under report was 15 pies per acre as against 18 pies per acre of the last year. Remission sanctioned during the year was Rs. 8,994. The expenditure incurred on maintenance and repairs amounted to Rs. 1,85,577 during the year under review as against Rs. 1,98,365 for the previous year. The perennial limit of the Canal is up to mile 79.

#### NASIK IRRIGATION DIVISION. GODAVARI CANALS.

This is one of the major irrigation works undertaken in the Deccan for protection of the areas liable to famine. It was started in 1907 and completed in 1915-16 at a cost of about one crore of rupees. This system comprises of :—

(a) A storage reservoir (Lake Beale) on the Darna river, a tributary of Godavari, situated about 20 miles from Nasik.

(b) A pick-up weir at Nandur Madhmeshwar on the Godavari 47 miles below the Darna Dam which impounds the water released from the storage reservoirs; and

(c) Two canals, the Right Bank Canal 69 miles long, which serves the northern tracts of Ahmednagar District and the Left Bank Canal 48 miles long which irrigates lands north of the Godavari in the Nasik and Ahmednagar Districts.

The length of the Darna Dam (inclusive of its Waste weir) exceeds a mile and the dam has a maximum height of 92 feet above its lowest foundation level. The lake has a storage capacity of 7,763 million cubic feet and the catchment area is 156 square miles. The weir at Nandur Madhmeshwar is 3,618 feet long inclusive of the Right and Left Bank Canal Regulators. It has a maximum height of 34 feet above the level of the river bed. Scouring sluices have been constructed close to the Head Regulators of the two Canals with the object of keeping the approach canals to the latter, clear of silt. The total area under the command of the canals is 2,32,390 acres. The two canals (Right and Left) are designed to carry a discharge of 384 and 228 cusecs, respectively at head with full supply depth of 7 feet and 6 feet, respectively.

On the 1st April 1953, the level of the water in Lake was 49.4 feet, the corresponding contents being 2,060 million cubic feet. The lowest level of 12.7 feet was reached on 10th June 1953, the contents being 18 million cubic feet when the lake began to receive replenishment. The draw off for irrigation commenced from 3rd November 1953 with the water level at 74.80 feet, the corresponding contents being 7,694 million cubic feet. The perennial limit of Godavari Right Bank Canal is up to mile 69 and that of Godavari Left Bank Canal is up to mile 44/4. (temporarily extended up to 48 miles). The average rainfall in the catchment area of the Lake was 80.98 inches during the year under report is against the same figure of the last year.

The following table gives area irrigated, revenue assessed etc., during the year under report as compared with average figures of the previous three years :—

Year.	Area irrigated.	Water rates assessed	Gross Revenue assessed.	Realisations.	Rainfall.
	Acres.	Rs.	Rs.	Rs.	Inches.
<i>1953-54—</i>					
Godavari Right Bank Canal ...	38,846	8,47,859	15,08,729	16,26,812	18.05
Godavari Left Bank Canal ...	28,997	6,30,679	.....	.....	19.63
<i>Average of the previous three years.—</i>					
Godavari Right Bank Canal ...	32,033	7,12,300	.....	12,11,249	15.22
Godavari Left Bank Canal ...	26,153	5,91,330	13,30,338	.....	18.24

The increase in area irrigated, was due to heavy demand for Kharif crops and increase in assessment was on account of the increase in water rates for fruit trees.

The figures of sanctioned areas of blocks and crops during the year under review as compared with the figures of the previous year, are shown below :—

Kind of Block and Crop.	Godavari Right Bank Canal		Godavari Left Bank Canal.	
	1952-53.	1953-54.	1952-53.	1953-54.
(i) Sugarcane Blocks ... ..	6,261	7,338	4,033	4,615
(ii) Fruit and Garden Blocks ... ..	.....	907	Including figur of Godavari	1,395
(iii) Garden and Seasonal Blocks ... ..	3,075	687	Right Bank Canal.	580
(iv) Two Seasonal Blocks ... ..	305	200	119	110
(v) Kharif crops on from No. ... ..	.....	6,276	.....	4,017
(vi) Rabi Crops on Form No. VII ... ..	.....	14,147	.....	7,641

The increase in cane block area was due to some pending cases finalised during the year under review and on account of sanctioning concentrated blocks.

The cost of measuring establishment was 16 pies per acre during the year under report as against 19 pies per acre of the last year. The total remission sanctioned during the year under review amounted to Rs. 388-9-0. The expenditure incurred on maintenance and repairs on Canals during the year under report amounted to Rs. 1,38,296 as against Rs. 60,429 of the last year.

#### CHANAKAPUR TANK.

##### *Girna Canal.*

This is comparatively a small irrigation system situated in the Nasik District having its storage reservoir at Chankapur fed from a catchment of 100 square miles in extent and its pick-up-weir at Thengoda situated further down stream on the Girna River from which Girna Canal (19 miles in length) takes off. The tank is situated on the Girna River, a tributary of the Tapi and has been formed by the construction of a masonry dam 140 feet high which impounds 1,550 million cubic feet of water. The dam and the canal (up to mile 13) were completed in 1909-10 and the canal has been in operation since then. The extension of this canal designed to carry about 40 cusecs up to mile 19 was completed in 1920-21. The designed discharge of the Canal at its head is 90 cusecs and at its tail it is 15 cusecs, the corresponding full supply depth being 4½ feet and 2 feet, respectively. The total area under the command of the canal is 29,182 acres and the irrigable area is 8,500 acres. The canal has now been remodelled to increase the discharge to 155 cusecs at head and 43 cusecs at tail. The pick-up weir at Thengoda was raised by 15 inches for a better supply to the canal.

On 1st April 1953, the level of the water in the tank was 64.85 feet, the corresponding contents being 501 million cubic feet. The lowest level of 39.05 feet was reached on 7th June 1953, the corresponding contents being 160 million cubic feet when the tank began to receive replenishment. The draw-off for irrigation purposes commenced on 5th November 1953 with the water level at 92 feet, the corresponding contents being 1,548 million cubic feet.

The following table gives the figures of the area irrigated, revenue assessed etc., as compared with the average figures of the previous three years :—

Year.	Area irrigated.	Water rates assessed.	Gross revenue assessed.	Relissions.	Rainfall.
	Acres.	Rs.	Rs.	Rs.	Inches.
1953-54—					
Average of the previous three years.	20,862	3,82,557	3,95,407	3,57,927	22.71
	20,005	3,16,602	3,32,174	2,53,149	19.53

The small increase in area irrigated during the year under review was due to more demand on account of scanty rains and the increase in revenue assessed was partly due to enhanced water rates for fruit trees and increase in area.

The figures of areas of sanctioned blocks during the year under review as compared with the figures of the previous year, are shown below :—

Type of Blocks.	Area standing as sanctioned in the year 1953-54.	Area standing as sanctioned in the previous year i.e., 1952-53.
	Acres.	Acres.
(i) Cane Blocks .. .. .	2,694	2,431
(ii) Fruit and garden blocks .. .. .	114	114
(iii) Garden and Seasonal blocks .. .. .	Nil.	Nil.
(iv) Two Seasonal (Food and Fodder) blocks .. .. .	8	8
(v) Kharif Seasonal on Form-VII .. .. .	3,460	....
(vi) Rabi Seasonal on Form-VII ... .. .	6,850	....

The increase in area was due to sanctioning concentrated blocks.

The cost of measuring establishment was 17 pies per acre as compared with 14 pies per acre of the last year. The remissions sanctioned during the year under report amounted to Rs. 16,727-10-0. The expenditure incurred on maintenance and repairs amounted to Rs. 35,603 during the year under report as against the expenditure of Rs. 10,863 for the last year.

#### KADWA CANALS.

These works which come into operation in 1868-69 consists of 3 small canals viz., the Palkhed, the Ozar Tembat and Wadali, taking off from weirs constructed across the Kadwa River and its tributory, the Banganga. The System comprises 38 miles of canals and distributories. The Storage Reservoir is at Waghad (a ghat-fed storage) situated on the Kadwa river in the Nasik District. The catchment of tank is 29.09 square miles in extent. The tank is remarkable for the size of its earthen dam which has a maximum height of 96 feet. The designed discharges of the Palkhed canal at its head and tail are 63 cusecs and 15 cusecs, respectively, the corresponding depths at full supply level being 3½ feet and 2 feet, respectively. The designed discharges of the Ozar Tambat Canal at its head and tail are 33 cusecs and 5 cusecs, respectively, the depths at full supply being 3½ feet and 2 feet, respectively. The designed discharges of the Vadali Canal at its head and tail are 19 cusecs and 5 cusecs, respectively, depths at full supply being 2 feet and 1 feet, respectively.

On 1st April 1953, the level of water in the Waghad tank was 108.25 feet, the corresponding contents being 173 million cubic feet. The lowest level of 94.95 feet was reached on 18th June 1953 with corresponding contents of 49 million cubic feet, when the tank began to receive replenishments. The draw-off for irrigational purposes commenced on 26th October 1953 with water level at 127.80 feet the corresponding contents being 599 million cubic feet.

The following table gives the figures of areas irrigated, revenue assessed etc. during the year under review as compared with the average figures of the previous three years :—

Year.	Area irrigated.	Water rates assessed.	Gross revenue assessed.	Realisations.	Rainfall.
	Aores.	Rs.	Rs.	Rs.	Inches.
<b>1953-54—</b>					
Palkhed Canal .. ..	2,166	53,506	1,37,541	1,25,257	19.24
Ozar Tambat Canal .. ..	1,452	47,874			
Wadali Canal .. ..	894	23,311			
Total .. ..	4,502	1,24,691			20.41
<b>Average of the previous three years—</b>					
Palkhed Canal .. ..	2,306	51,805	1,61,754	1,02,118	31.82
Ozar Tambat Canal .. ..	1,542	43,019			
Wadali Canal .. ..	1,289	24,949			
Total .. ..	5,137	119,773			21.92



The decrease in area irrigated and increase in water rate assessment during the year under report was very small as compared with the average figures of the previous three years.

The area of two seasonal blocks during the year under review was 28.32 acres. There are no blocks of other types sanctioned on these canals. The expenditure incurred on maintenance and repairs amounted to Rs. 21,106 during the year under report as against the expenditure of Rs. 6,364 for the last year. The cost incurred on measuring establishment was 15 pies per acre during the year under review as against 17 pies per acre of the last year. Remission sanctioned during the year amounted to Rs. 40.

#### PARSUL TANK.

This system comprises of an earthen reservoir, 2,270 feet in length and 62.37 feet high having useful capacity of 118.5 million cubic feet above lowest sluice, across Parsul River. It has a pick-up weir (Pucca Bandhara) at Umarane and Soundane villages and the three channels viz. Umarane, Right Bank, Umarane Left Bank, and Soundane Right Bank Channels. The last two channels take off from the pick-up weir (Bandhara) whereas the Umarane Left Bank Canal takes off direct from the tank. The tank was dry on the 1st April 1953. The first replenishment was received on 22nd June 1953 and the tank filled up to full supply level on 4th August 1953. The first draw off for irrigation purposes commenced on 26th June 1953 with a discharge of 4.33 cusecs. The total rainfall in the catchment at two Stations viz. Nandur, Tek and Umarane was 16.46 inches and 15.91 inches, respectively during the year under report. The average rainfall during the year under report worked out to 16.19 inches as against 7.43 inches of the last year.

The figures of area irrigated, revenue assessed etc. for the year under review as compared with the average figures of the previous three years are shown below :—

Year.	Area irrigated.	Water rate assessed.	Gross revenue assessed.	Realisations.	Rainfall.
	Acres.	Rs.	Rs.	Rs.	Inches.
1953-54	22,261	10,414	10,924	7,372	16.19
Average of the previous three years.	2,331	8,684	9,053	10,232	12.18

The decrease in irrigated area and increase in assessed revenue during the year under review was small as compared with the average figures of the previous three years.

## AHMEDNAGAR DIVISION.

## PRAVARA RIVER WORKS.

This canal system which was constructed at cost of Rs. 1½ crores comprises of the following :—

(a) The Wilson Dam at Bhandardara on the Pravara River. This dam which impounds the water of Lake Arthur Hill, is one of the highest dams in India having a height of 282 feet. It is 1,600 feet in length and the Lake formed by the dam has a storage capacity of some 11,189 million cubic feet.

(b) A pick-up weir, 890 feet long situated at Ozar 53 miles down stream from Lake Arthur Hill and about 8 miles east of Sangamner and

(c) Two canals, the Pravara Right Bank Canal 23 miles long and the Pravara Left Bank Canal 48 miles long, which take off at the weir at Ozar.

These canals irrigate lands in Ahmednagar District and command an area of 2,28,729 acres. The designed discharges of the two Canals (Pravara Right and Left Bank Canals) at head are 152 and 530 cusecs, respectively, the corresponding full supply depths being 5 feet and 9 feet respectively. The work of remodelling the first 16½ miles of the Pravara Left Bank Canal and the Northern Branch, which was undertaken in order to meet the increased demand for water from the Sugar Factories established on the Left Bank Canal, has almost been completed. The work of remodelling Distributory Numbers 8 and 9 Water course Numbers 32, 33 and 34 of the Pravara Left Bank Canal, has also been completed. The work of remodelling Lakh Canal 0 to 5-3/8 miles, was started in 1946 and was partly completed and the work of completing the Musalwadi Tank (Tail tank of the Pravara Right Bank Canal) was in progress. With the remodelling of the canal and the rotational running now practised, the weed trouble has disappeared. The Ozar weir has been raised by two feet for additional storage. The height of waste weir at Bhandardara was raised by 5.70 feet by constructing a crest wall. The construction of the Wilson Dam which impounds the water of Lake Arthur Hill, was commenced in 1911 and completed in 1926. The catchment area of the lake is 47 square miles and it is situated in the ghats and has an assured run off. The dam is designed to impound a maximum depth of water of 270 feet and is constructed across a gorge in the valley of the Pravara river. At present water is impounded to a depth of 265.70 feet giving a storage of 11,189 million cubic feet.

On the 1st April 1953, the level of water in the Lake was 205.40 feet, the corresponding contents being 3.551 million cubic feet. The lowest level of 145.50 feet was reached on the 13th June 1953, the contents being 823 million cubic feet. Replenishment commenced with effect from 14th June 1953 and the full supply level of 265.70 feet, was reached on the 6th August 1953, the contents being 11,189 million cubic feet. The maximum flood during the year under report occurred on 7th August 1953 when the level was 267.40 feet and lasted for about 12 hours. The draw off for irrigation purposes commenced on 23rd September 1953. The

level of water gradually fell to 228.15 feet on the 15th February 1954, the contents being 5,588 million cubic feet. The average rain fall of the two Rain-gauge Stations at Bhatghar and Bhandardara was 181.55 inches during the year under review as against 159.73 inches of the previous year.

The following table gives the figures of area irrigated, revenue assessed etc. during the year under review as compared with the average figures of the previous three years :—

Year.	Area irrigated.	Water rates assessed.	Gross revenue assessed.	Realisations.	Rainfall.
1953-54—					
Pravara Right Bank Canal ...	20,284	4,32,254	4,40,769	26,65,128	10.25
Pravara Left Bank Canal ...	50,187	14,89,822	15,26,460		17.41
<i>Average figures of the previous three years—</i>					
Pravara Right Bank Canal ...	20,892	3,89,339	3,98,528	3,36,342	16.48
Pravara Left Bank Canal ...	62,464	14,23,244	14,32,665	10,68,286	20.53

The decrease in irrigated area and revenue assessed was on account of 25 per cent. cut in Hot Weather Season for want of sufficient water supply.

The figures of areas of sanctioned blocks and crops during the year under review as compared with the figures of the previous years, are shown below :—

Particulars.	Pravara Left Bank Canal		Pravara Right Bank Canal		Total	
	1952-53.	1953-54.	1952-53.	1953-54.	1952-53.	1953-54
	Aores.	Aores.	Aores.	Aores.	Aores.	Aores.
(i) Sugar cane blocks ...	3,954	6,015	3,431	3,731	7,385	9,746
(ii) Fruit and garden blocks ...	1,287	1,287	1,684	1,684	2,971	2,971
(iii) Garden and seasonal blocks.	128	128	84	84	212	212
(iv) Two seasonal blocks ...	3,971	3,971	877	867	4,848	4,848
(v) Kharif crops on Form-VII ...	Not available.	4,693	Not available.	4,038	Not available.	8,731
(vi) Rabi crops on Form-VII ...	Do.	15,051	Do.	6,739	Do.	21,790

The increase in cane block area during the year under review was due to the fact that the year 1952-53 was the first year of new revision and some pending cases in that year, were finalised in 1953/54 and on account of the conversion of owner irrigator's cane on Form VII in factory areas, into cane blocks.

The remission sanctioned during the year under review amounted to Rs. 3,095. The cost of measuring establishment was equivalent to 13 pies per acre during the year under report as compared with 15 pies per acre of the previous year. The expenditure incurred on maintenance and repairs during the year under review amounted to Rs. 1,18,504 as against Rs. 1,15,638 of the previous year.

#### BHATODI TANK.

This is a small old tank situated on the Mehekari River about 12 miles from Ahmednagar. It depends entirely on local rains for its supply. Due to silting, the storage capacity of the tank has been reduced from 154 million cubic feet to about 40 million cubic feet. The first replenishment was received on 14th June 1953 and the level of water reached was 22.50 feet.

The following table gives the figures of areas irrigated, revenue assessed etc. during the year under review as compared with the average of the past three years :—

Year.	Area irrigated.	Water rates assessed.	Gross revenue assessed.	Realisations.	Rainfall.
	Acres.	Rs.	Rs.	Rs.	Inches.
1953-54	615	3,248	5,499	4,835	15.51
Average of past three years	588	3,171	5,324	4,164	17.72

The increase in area irrigated and revenue assessed during year under review was due to favourable storage condition during Monsoon and Rabi Seasons. No remissions were sanctioned during the year under review. The expenditure incurred on Maintenance and Repairs during the year under report amounted to Rs. 1,513.

*Statement showing the area irrigated, water rates assessed, Revenue, realisations and rainfall during the year 1953-54 as compared with the corresponding averages of the past three years.*

K.A.P. 138 E 3452-4

Name of work.	Gross assessed Revenue								
	Area irrigated		Water rates assessed		During the year.				
	During the year.	Average of past 3 years.	During the year.	Average of past 3 years.	Tank bed lands.	Grazing of grass.	Fishing.	All other Revenue.	Total gross assessed Revenue.
1	2	3	4	5	6	7	8	9	10
	Acres.	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(1) Nira Right Bank Canal ..	95,669	76,783	21,29,154	17,61,918	....	1,526	....	44,578	21,75,258
(2) Nira Left Bank Canal and Shetphal Tank.	80,352	81,489	15,00,153	13,34,594	2,454	670	54	1,14,800	16,19,131
(3) Mutha Canals with Matoba Tank ..	13,954	17,549	2,85,178	2,29,915	....	1,179	266	4,88,444	7,75,067
(4) Godawari Right Bank and Left Bank Canal.	67,843	57,961	14,78,538	13,03,627	....	....	....	30,191	15,08,729
(5) Pravara Right and Left Bank Canals.	59,236	83,357	19,22,076	17,89,247	....	3,098	26	42,029	19,67,229
(6) Chankapur Tank Girna Canal ..	20,862	20,005	3,82,557	3,19,936	....	....	1,049	11,801	3,95,407
(7) Kadwa Canals ..	4,502	5,138	1,24,691	1,21,011	....	....	714	12,136	1,37,541
(8) Parsul Tank ..	2,261	1,767	10,414	8,808	....	....	110	400	10,924
(9) Bhatodi Tank ..	617	589	3,248	3,171	....	703	....	1,543	5,499

Name of work.	Gross assessed revenue								
	Average of past three years					Realisations		Rain-fall	
	Tank bed lands.	Grazing of grass.	Fishing.	All other Revenue.	Total gross assessed Revenue.	During the year.	Average of past 3 years.	During the year.	Average of past 3 years.
1	11	12	13	14	15	16	17	18	19
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(1) Nira Right Bank Canal .. ..	....	1,642	....	26,862	17,90,322	22,15,096	17,15,920	15·10	16·19
(2) Nira Left Bank Canal and Shetphal Tank.	1,921	784	67	55,672	13,93,038	15,43,154	13,32,027	19·88	17·10
(3) Mutha Canals with Matoba Tank ..	67	165	188	4,68,324	6,98,659	7,36,656	6,79,424	17·71	29·16
(4) Godawari Right Bank and Left Bank Canal.	....	....	395	26,136	13,30,158	16,26,812	13,01,633	18·89	16·73
(5) Pravara Right and Left Bank Canals.	94	9,079	379	30,061	18,28,860	26,65,128	14,89,193	13·68	18·51
(6) Chankapur Tank Girna Canal ..	....	....	989	11,249	3,32,174	3,57,927	2,59,882	22·71	19·53
(7) Kadwa Canals .. ..	....	....	50	6,759	1,28,420	1,25,257	1,07,484	20·20	25·15
(8) Parsul Tank .. ..	....	....	....	245	9,053	7,372	8,417	16·19	12·18
(9) Bhatod Tank .. ..	987	707	....	459	5,324	4,835	5,194	15·51	17·72

## CENTRAL CIRCLE.

## WEST KHANDESH DIVISION.

## SHAHADA CHANNEL.

The Shahada channel is fed by the River Gomai, which has a perennial flow. The rainfall gauged at Shahada was 23.93 inches against 19.33 inches which is the average of the last three years. There was sufficient water in the Gomai River to meet the demand. The irrigation work is dependent solely upon the river supply from Satpura ranges. The work of remodelling the old Shahada canal and extension was taken up as a scarcity work in 1952-53 and was in progress during the year under review.

## LOWER PANZRA RIVER WORKS.

This work comprises of 8 Bandharas and 9 channels between Dhulia and Betawad on the Panzra River, supplemented by water from Mukti tank, situated 4 miles to South West of Dhulia City. The tank is under control of the Public Works Department in all respects but in the case of bandharas and channels the Public Works Department carries out only repairs as required. The channels get their supply of water from the river which is supplemented by water from Mukti tank. The rainfall gauged within the catchment of the tank at Dahyane and Sadgaon during the year under report was 13.63 inches against 10.42 inches which is the average of the last three years.

On 1st April 1953, the contents of the tank were 31.08 million cubic feet which gradually diminished to 14.98 million cubic feet before the first replenishment which was received on 16th June 1953. The maximum storage reached was 324.405 Million Cubic Feet on 5th August 1953. The year closed with a storage of 47.414 Million Cubic Feet.

The area irrigated and gross revenue assessed thereon in respect of two irrigation works mentioned below, as compared with the average figures of the preceding three years are shown below :—

Name of work.	Area Irrigated		Gross revenue assessed	
	1953-54.	Average.	1953-54.	Average.
1	2	3	4	5
	Aores.	Acres.	Rs.	Rs.
Shahada Channel Patasthal	...	1,014	...	...
Jirayat ... ..	...	1,984	...	...
Total ...	2,998	3,566	26,147	21,728
Lower Panzra River Works Patasthal.	1,276	...	...	...
Jirayat ... ..	2,909	...	...	...
Total ...	4,185	4,054	48,085	32,675

## JAMDA CANALS.

These canals received their water supply from the Girna river near Jamda. The rainfall during the year under report was 24.59 inches against 16.43 inches which was the average of past three years. The extension of Jamda right bank canal was taken up as scarcity work during the year 1952-53 and it is expected to be completed during the year 1954-55. The Jamda right bank canal has been extended by 7.8 miles. Most of the masonry works have been completed and the construction of outlets are in hand. The work of widening both the right and left bank canals was also taken up as a scarcity work during 1952-53 and the same was in progress during the year under review.

## MHASWA TANK.

The tank derives its supply from local rains in its catchment area. The rainfall gauged at Mhaswa tank was 19.95 inches against 16.00 inches which was the average of the last three years. On 15th February 1954, the contents of the tank were 2.95 Million Cubic Feet and the same were gradually reduced to 0 Million Cubic Feet on 15th March 1954. The first replenishment was received on 14th June 1953 raising the contents from 0 million cubic feet to 38.97 million cubic feet. The maximum contents of water were 153.76 million cubic feet on 3rd August 1953. The tank became dry on 8th April 1954.

The area irrigated and the gross assessed revenue in respect of the two irrigation works mentioned below, as compared with the average figures of the preceding three years, are shown below :—

Name of work.	Area Irrigated		Gross assessed revenue	
	1953-54.	Average.	1953-54.	Average.
1	2	3	4	5
	Acres.	Acres.	Rs.	Rs.
Mhaswa Tank ... ..	713	254	5,601	840
Jamda Canals ... ..	7,461	7,397	62,460	78,401

## SHIRSUPHAL TANK.

The water level in the tank on 6th March 1953 was 12.85 feet (29.56 million cubic feet) including silt 11.25 feet (20.58 million cubic feet) and the quantity of water available was given to old crops in Hot Weather. The water was gradually increasing due to rains in July, September and October 1953. The highest water level in tank during the year under review was 19.30 feet (85.29 million cubic feet) on 9th October 1953. No Kharif crops were done to end of July due to non-receipt of replenishment of water in tank. Rabi block irrigation was started on 12th November 1953, when water level was 18.90 feet (80.36 million cubic feet). The rainfall gauged at Shirsuphal was 4.80 inches against 10.66 inches which was the average of past three years.



## BHADALWADI TANK.

There was no water in the tank during Hot Weather. The first replenishment was received in the tank on 16th June 1953 raising the water level to 27.00 feet (96.74 million cubic feet) including silt 24.00 feet (65.78 million cubic feet). The water which was available in the tank was supplied during Kharif season for irrigation. Due to rains in September and October 1954, the water level in the tank rose to 26.50 feet (85.19 million cubic feet) on 28th September 1953. The highest water level in the tank was 33.40 feet (168.05 million cubic feet) on 21st October 1953. Rabi blocks for irrigation have been accepted. The tank became dry on 30th December 1953. The rainfall gauged at Bhadalwadi was 14.00 inches during the year under report as against 6.50 inches, the average of the past three years.

The area irrigated and the gross assessed revenue of the two following irrigation works in the Poona division as compared with the average figures of the preceding three years are shown below :—

Name of work.	Area Irrigated		Gross assessed revenue	
	1953-54.	Average.	1953-54.	Average.
	1	3	4	5
	Acres.	Rs.	Acres.	Rs.
Shirsuphal ... ..	866	1,684	7,372	12,566
Bhadalwadi ... ..	1,482	1,407	11,935	11,335

## SATARA DIVISION.

## KRISHNA CANAL.

The total rainfall gauged at Ratre-Budruk which is situated in the centre of commanded area was 41.09 inches during the year under review as against 23.89 inches which was the average of the past three years. The Krishna Canal takes off from the left bank of the weir built across the river Krishna near the village Khodshi about 2 miles upstream of Karad. There is no storage reservoir to support the irrigation—work capacity with the result that the irrigation depends upon the natural flow of the river during the season. It passes through the boundary of 31 villages in Karad, Valve and Tasgaon Talukas and irrigates land in these villages. The supply of water to this canal mainly depends upon the rainfall at Mahabaleshwar from where the Krishna river starts. The perennial limit of the canal is extended up to mile number 20. The design capacity of the canal is 110 cusecs but due to removal of silt from the canal, it can carry a maximum discharge of 120 cusecs.

## REWADI CANAL.

The rainfall gauged at Rewadi which is situated one mile below the weir, was 24.20 inches during the year under review as compared with the average of the past three years which was 20.52 inches.

## YERLA RIVER WORKS.

The rainfall gauged at Nehr was 46.62 inches during the year under review as compared with the average of the past three years which was 24.11 inches.

## UPPER MAN RIVER WORKS.

The rainfall gauged at Pingli was 16.57 inches during the year under review as compared with the average of the past three years which was 14.69 inches.

## MAYANI TANK.

The rainfall gauged at Mayani was 17.32 inches during the year under review as compared with the average of the past three years which was 18.80 inches.

The area irrigated and gross assessed revenue as compared with the average figures of the preceding three years in respect of the following irrigation works in North Satara Division are shown below :—

Name of Work.	Area irrigated		Gross assessed revenue	
	1953-54.	Average.	1953-54.	Average.
	2	3	4	5
	Aores.	Aores.	Rs.	Rs.
Krishna Canal ... ..	9,888	11,215	73,690	74,083
Rewadi Canal ... ..	274	764	2,406	4,983
Yerla River Works ... ..	5,865	5,394	43,973	34,196
Upper Man River Works ... ..	952	1,292	7,586	7,878
Mayani Tank ... ..	1,964	1,607	14,676	10,034

## SHOLAPUR DIVISION.

## EKRUK TANK.

The Ekruk tank is situated about five miles from Sholapur and it has been in operation since 1872-73. It is an artificial reservoir formed by a large embankment 7,000 feet long with a maximum height of 76 feet. The water is supplied mainly to Sholapur city and the mills etc. for non-irrigational purposes and the remaining is used for irrigation.

On the 1st April 1953, the level of water in the tank was 31.16 feet above the silt level of outlet. The water available in the tank was utilised for irrigation during Hot Weather season and Kharif season.

The first replenishment of 173.26 million cubic feet was received on 18th June 1953. The maximum gauge height of water reached on 31st July 1953, was 40.35 feet and contents about 2,500 million cubic feet. The total replenishment of 1,642 million cubic feet was received. The areas of 485 acres during Hot Weather, 928 acres during Kharif and 4,763 acres during Rabi season, were irrigated during the year under review. The rainfall gauged at rain gauge stations at Hiperga, Housal and Suratgaon etc. was 34.19 inches as against 23.13 inches, the average of the last three years.

#### ASHTI TANK.

The tank was dry from 1st April 1953 to 13th June 1953. The first replenishment of 7.29 million cubic feet was received on 14th June 1953. On 15th June 1953, the gauge was 4.68 feet and contents being 7.03 million cubic feet and on 15th October 1953, the gauge was 10.22 feet and corresponding contents being 153.27 million cubic feet. The total replenishment of 266.48 million cubic feet was received in the tank during the year under review. The available water was used for irrigation purposes to the extent of 3,713 acres in Rabi season. Only two waterings in general were given during Rabi to standing jowar, wheat and gram in order to give benefit of canal water to the maximum area possible. The mean rainfall gauged at Yeoti and Modnimb stations was 22.16 inches during the year under review as against 17.87 inches, the average of the past three years.

#### PATHRI TANK.

On the 1st April 1953, the level of water in the tank was 15.71 feet with corresponding contents of 82.41 million cubic feet. The first replenishment of 14.09 million cubic feet was received on 14th June 1953. There were rains from June 1953 to October 1953. The total replenishment of 377.08 million cubic feet was received in the tank during the year under review. The waste weir was overflowing from 3rd October 1953 to 12th November 1953. The maximum level reached during the year under review was 33.70 feet on 5th October 1953.

The water is supplied mainly to Barsi town and the mills etc. for non-irrigational purposes and the remaining is used for irrigation. The water available was used for irrigation of 1,306 acres in Rabi season. The mean rainfall gauged at Pathri and Ukadgaon stations was 28.74 inches during the year under report as against 18.23 inches, the average of the past three years.

#### MHASWAD TANK.

The tank is situated on the eastern border of Satara District. The tank is formed by an earthen dam across the river Man. The dam is 900 feet long and 80 feet high at its highest point. It is provided with masonry overflow waste weir. The project was commenced in the year 1876-77 and completed in 1888-89. There is only one canal taking off from the left bank of the dam called Mhaswad Canal Number 1. The canal was

designed to carry a discharge of 180.7 cusecs whereas the present Canal discharge is about 146 cusecs. The Canal discharges into a small balancing tank at Katphal nine miles below and the latter is used as a balancing reservoir for irrigation purposes. Mhaswad Canal number 2 takes off from Katphal tank and has a designed discharge of 176.93 cusecs with full supply depth of 3.5 feet. The present carrying capacity of the Canal is about 100 cusecs.

The tank was dry from 1st April 1953 to 30th July 1953. The first replenishment of 64.34 million cubic feet was received on 31st July 1953. The total replenishment of 1,538 million cubic feet was received during the year under review. The waste weir was overflowing from 5th October 1953 to 14th October 1953. The water available in the tank was utilised for irrigation of 2,351 acres during Kharif and 6,267 acres in Rabi season. Some surplus water of 4,430 cusecs was received from Nira Right Bank Canal during Kharif season which was utilised for irrigation in the same season. The mean rainfall in the catchment area of the tank was 10.88 inches during the year under review as against 14.83 inches, the average of the past three years.

The area irrigated and gross assessed revenue as compared with the average figures of the preceding three years in respect of the following irrigation works in Sholapur division are shown below :—

Name of work.	Area irrigated		Gross assessed revenue	
	1953-54.	Average.	1953-54.	Average.
1	2	3	4	5
	Acres.	Acres.	Rs.	Ra.
Ekruk Tank .. ..	6,176	6,965	49,798	52,279
Ashti Tank .. ..	3,713	5,931	25,732	40,801
Pathri Tank .. ..	1,306	1,532	11,939	11,609
Mhaswad Tank .. ..	8,618	12,793	62,138	99,892

*Statement showing the area irrigated, water rates assessed, Revenue realisations and rainfall during the year 1953-54 as compared with the corresponding averages of the past three years.*

Name of work.	Gross assessed Revenue									
	Area irrigated		Water rates assessed		During the year.					
	During the year, 1953-54	Average of the past 3 years.	During the year, 1953-54	Average of the past 3 years ending up to 1952-3	Tank bed lands.	Grazing areas.	Fishing.	All other revenue.	Total gross assessed revenue	
1	2	3	4	5	6	7	8	9	10	
	Acres.	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
<b>EAST KHANDESH DIVISION.</b>										
Jatada Canal .. ..	7,461	7,397	52,031	78,401	....	319	....	4,696	57,046	
Mhaswa Tank .. ..	713	254	5,601	840	....	50	1,036	260	6,947	
<b>WEST KHANDESH DIVISION.</b>										
Shahada Channel .. ..	2,908	3,566	19,948	17,596	81	....	75	11	20,065	
Lower Panzra River works .. ..	✓ 4,185	4,054	28,664	18,801	100	1,421	503	190	30,878	
<b>SHOLAPUR DIVISION.</b>										
Ekrak Tank .. ..	6,176	6,965	43,576	49,040	46	2,980	1,600	3,45,271	3,49,897	
Ashti Tank .. ..	3,713	5,931	25,567	36,170	....	65	....	25,667	25,732	
Pathri Tank .. ..	1,306	1,532	8,810	9,269	....	102	3,000	17,640	20,742	
Mhaswad Tank .. ..	8,618	12,793	59,082	96,241	421	1,438	....	60,279	62,138	
<b>POONA DIVISION.</b>										
Shirsuphal Tank .. ..	866	1,684	7,372	12,566	....	177	....	257	10,746	
Bhadalwadi Tank .. ..	1,482	1,470	11,935	11,335	....	9	....	193	12,137	
<b>NORTH SATARA DIVISION.</b>										
Rewadi Canal .. ..	274	764	2,406	4,983	....	36	....	100	2,542	
Upper Man River works .. ..	952	1,292	7,586	7,878	169	115	....	255	8,095	
Yerala River work .. ..	5,805	5,394	43,973	34,196	309	1,592	....	224	46,128	
Mayani Tank .. ..	1,964	1,607	14,676	10,034	....	167	....	180	15,023	
Krishna Canal .. ..	9,888	11,215	73,690	74,083	....	162	....	177	74,029	

Name of works.	Gross assessed revenue					Realisations		Rainfall	
	Average of the past 3 years					During the year.	Average of the past 3 years.	During the year.	Average of the past 3 years.
	Tank bed lands.	Grazing areas.	Fishing.	All other revenue.	Total gross assessed revenue.				
1	11	12	13	14	15	16	17	18	19
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Inches.	Inches
<b>EAST KHANDESH DIVISION.</b>									
Jamda Canal ... ..	.....	496	.....	7,148	7,644	65,309	63,490	24.59	16.43
Mhaswa Tank ... ..	535	195	150	595	1,475	.....	1,565	19.95	16.00
<b>WEST KHANDESH DIVISION.</b>									
Shahada Channel ... ..	50	.....	86	12	148	23,721	14,399	23.93	19.33
Lower Panzra River works ... ..	100	1,582	894	351	1,927	20,631	19,825	13.63	10.42
<b>SHOLAPUR DIVISION.</b>									
Ekrak Tank ... ..	54	2,114	3,204	3,48,529	3,53,901	3,51,828	3,46,631	34.19	23.13
Ashti Tank ... ..	1,908	34	6	38,853	40,801	47,757	35,347	22.16	17.87
Pathri Tank ... ..	.....	136	1,765	20,631	22,532	4,971	21,717	28.74	18.23
Mhaswad Tank ... ..	750	1,595	147	97,400	99,892	83,788	69,283	10.88	14.83
<b>POONA DIVISION</b>									
Shirsuphal Tank ... ..	.....	19	.....	167	186	8,733	.....	4.80	10.66
Bhadalwade Tank ... ..	.....	12	.....	331	343	738	.....	14.00	6.50
<b>NORTH SATARA DIVISION.</b>									
Rewadi Canal ... ..	.....	139	.....	87	226	2,542	5,209	24.20	20.52
Upper Man River works ... ..	1,193	93	.....	156	1,442	8,095	9,320	16.57	14.69
Yerala River work ... ..	958	2,081	.....	1,500	4,539	46,128	38,735	46.62	24.11
Mayani Tank ... ..	2,609	150	.....	215	2,974	15,023	13,008	17.32	18.80
Keshna Canal ... ..	.....	81	.....	251	332	74,029	74,415	41.90	23.92

## KARNATAK IRRIGATION CIRCLE.

### GHATAPRABHA LEFT BANK CANAL DIVISION No. I.

#### GOKAK CANAL 1ST SECTION AND STORAGE WORKS.

This Canal System is the most important First Class Irrigation Scheme in the Belgaum Collectorate. It consists of a Reservoir formed by a masonry pick-up weir across the Ghataprabha River at Dhupdal at a distance of about 2 miles from the Ghataprabha Railway Station, together with 16.13 miles of Main Canal and Branches and 35.43 miles of distributaries. The total capacity of the Reservoir, as ascertained from the Silt Survey carried out during the year 1952, works out to 870 million cubic feet, at F.S.L. R.L. 2,012.06 of the temporary crest level. The masonry weir is 2,985 feet in length with masonry flank walls and flank embankments on either side. The total area under the command of the Gokak Canal is 18,668 acres and that of irrigable command is 17,627 acres.

The Dhupdal storage reservoir is mainly intended for irrigation of the lands under the command of the Canal. However, a stipulated quantity of water is issued to the Gokak Mills Limited, in accordance with an agreement between the Government and the Company, in consideration of which, a sum of Rs. 14,313 is paid by the Mills to Government annually subject to a rebate in the event of the supply falling short of the quantity contracted for. During the year under report, no rebate was given to the Mills as the short supply given was at the request and convenience of the Mills. Water was supplied to the Southern Railway at the Ghataprabha Railway Station for the use of the Railway Engines, passengers and the Railway staff, at the rate of Rs. 122 per mensem. Water was also supplied to the Karnatak Health Institute for the use of drinking and gardening purposes to the inmates of the Institute, at the rate of Rs. 11 only per year. During the year, water was also supplied to the Mission Colony situated near Ghataprabha Colony, for drinking purposes at the rate of Rs. 0-12-0 per thousand gallons, and the amount realised on this during the year was Rs. 135.

During the year under review, the condition of the storage was satisfactory on account of heavy rainfall. It was, therefore, possible to issue two single waterings to the Rabi maize crop after 31st December to an area of 1,674 acres and 3 single waterings to an area of 59 acres of sugarcane during Rabi. The water level of the storage dropped down to 23.5 feet during the second week of February 1954. It was possible to issue Canal water to all other Rabi crops to the satisfaction of the irrigators although Rabi irrigation has to be stopped when the storage level dropped down to 23.5 gauge as the water below this level is reserved for the supply to the Gokak Mills.

On 1st April 1953, the gauge reading of the water level in the Dhupdal lake was 16.76 feet. This level gradually dropped down to 15.25 feet on 15th April 1953. On account of replenishment, this level began to rise from 16th April 1953 till it reached 21.10 feet on 20th April 1953. On 24th April 1953 the level dropped down to 20.70 feet. On 25th April 1953

the level again rose to 22.06 feet (permanent crest level) on account of heavy replenishment when some of the under-sluices had to be kept open. The highest level was 23.10 feet on 27th April 1953. The level reduced to 14.80 feet on 20th June 1953. The overflow started on 21st June 1953 with a level of 22.60 feet. Water was let into the Canal on 24th June 1953 for Kharif irrigation. On account of heavy rains during the last week of June, the highest flood level reached was 24.7 feet on 1st July 1953 i.e., 2.64 feet above the permanent crest level and the maximum discharge of the day was found to be 1,12,052 cusecs.

The capacity of the storage has been considerably reduced on account of enormous silting. In order to store water in the reservoir from the post-monsoon floods for Rabi irrigation and for the supply to Gokak Mills, the work of raising the temporary crest was started on 25th September 1953. It was nearing completion by the last week of October 1953. But on account of heavy and continuous floods, the level reached 27.00 feet i.e. 4.94 feet level above the permanent crest. The portion of the permanent crest between bays 282 to 302 i.e. a length of 160 feet was washed away. The work of reconstructing the washed away portion was completed on 20th November 1953. The water level then rose and reached 26.06 feet on 2nd December 1953.

The details as to full supply depth etc. are as shown below :—

(i) Full supply depth in feet	.. 26.06 feet.	.. Corresponding capacity.	1,094 million cubic feet.
(ii) Rate of obtaining maximum replenishment.	1st July 1953	.. Depth above silt and capacity.	870 million cubic feet.
(iii) Depth of silting above all level.	Silt survey is not conducted every year. It was done in 1941 and 1952.	Corresponding reduction in capacity.	224 million cubic feet (20.38 M. Cft. every year).

Depth of silt works out to 1.9 inches every year.

There was no Cane area guaranteed on the Gokak Canals to any Sugar Factory.

**BANDHARA WORKS IN BELGAUM DISTRICT TO BE TREATED AS PART OF  
FIRST CLASS IRRIGATION WORKS, VIZ. GOKAK CANAL  
1ST SECTION AND STORAGE WORKS.**

Four Bandhara works in Gokak Taluka were taken up for execution. The progressive expenditure on these works was Rs. 89,730. It is anticipated that 1,050 acres of land will receive irrigation and that there will be a yield of additional food grains to the extent of 263 tons at the rate of 0.25 ton per acre. These works are proposed to be treated as part of the First Class irrigation work viz. Gokak Canal 1st Section and Storage works.



### GHATAPRABHA LEFT BANK CANAL

The second important Major Irrigation Scheme taken up in the Belgaum Collectorate is the construction of the Ghataprabha Left Bank Canal with a length of 44 miles and 31 miles of the two branches called the North Branch and the Jamkhandi Branch. The work of construction which started in June 1949, was in full swing during the year under report. The second section of miles 9 to 17 of the Ghataprabha Left Bank Canal was opened for irrigation in June 1953. The Ghataprabha Left Bank Canal is also fed by the existing Ghataprabha Storage Reservoir. In fact, the alignment of the new Ghataprabha Left Bank Canal coincides with that of the old Gokak Canal for a length of the first 2½ miles. The old Gokak Canal has been widened in this Section to carry more discharge for increased irrigation.

During the year under review, the first 17 miles of the Ghataprabha Left Bank Canal were under operation. The total area under the command of this portion is 30,000 acres of which 5,046 acres were irrigated during the year under report. There is keen demand for water during Rabi under this Canal but it is not usually possible to issue canal water to Rabi crops, as the capacity of the Ghataprabha Storage is limited and a stipulated quantity is required to be reserved for the Gokak Mills. However, during the year under report, it was possible to issue post-seasonal single waterings to the Kharif crops during Rabi till 20th November 1953.

### GHATAPRABHA LEFT BANK CANAL DIVISION No. II.

With a view to expedite the progress of the part Project of the Ghataprabha Left Bank Canal, another Division viz., the Ghataprabha Left Bank Canal Division No. II, with headquarters at Jamkhandi, was opened on the 22nd June 1953 and was placed in charge of work from miles 33 to 44 of the Main Canal, the Jamkhandi Branch and the entire distribution system in the Krishna Valley. Since all the preliminaries for starting work on the Main Canal were completed, execution of work was taken up on opening of the Division.

The preliminary surveys and collection of field data for the distribution system in the commanded area of Krishna Valley under the North Branch was in progress. Those for the Jamkhandi Branch were ready by September 1953 and earth work on this Branch was started on 2nd October 1953. The earth work on one Minor distributary and two distributaries was also in progress during the year under report. The work of collection of data for the various cross drainage works, head-works, road-bridges and regulators and the designs of the same was also in progress, during the year. All the 13 miles of Main Canal and 12 miles of the Jamkhandi Branch were covered up within a period of 9 months and work was in full swing in these miles and 90,00,000 cubic feet of earth work was completed.

## DHARWAR IRRIGATION DIVISION.

## DHARMA CANAL.

The Dharma Canal gets its supply from the Dharma River and irrigates lands directly and also through a number of small irrigation tanks fed by the canal. The canal started flowing from 21st June 1953 and ceased to flow by the 12th discharge of the river in 1953. During the year under report, the rains were satisfactory in time. Water distribution to all the lands including lands storage by the Canal was done without any complaints from the irrigators. The total commanded and irrigated areas under the Canal were 13,562 acres and 12,870 acres, respectively.

## ASUNDI TANK.

On 1st April 1953, the tank was empty. On account of replenishment from rainfall, the water level rose to R.L. 103.50 on 21st June 1953 and remained steady till 24th June 1954. This level went on increasing gradually and rose up to R.L. 105.45 on 15th July 1953. This level remained constant till 25th July 1953 and rose further up to R.L. 105.80 on 1st August 1953. Due to replenishment on account of rains on 12th August 1953, the water level rose further and reached R.L. 105.95 on 16th August 1953 and it remained at this level till 29th August 1953. Thereafter the level came down gradually to R.L. 105.70 on 18th September 1953. Due to replenishment from rains, the level rose up to R.L. 105.55 on 11th October 1953. The level again fell down to R.L. 103.91 on 31st March 1954. The waste weir overflowed from 11th October 1953 to 12th October 1953 and 16th October 1953. On account of late rains during the year under report, there was no irrigation during Kharif season. Irrigation during Rabi season was satisfactory. The total commanded and irrigable areas under this tank are 1,800 acres and 1,100 acres, respectively.

The details as to full supply depth etc. are as shown below :—

(i) Full supply depth in feet	.. 9.50 feet	.. Corresponding capacity.	87.40 million cubic feet.
(ii) Date of obtaining maximum replenishment.	16th October 1953	Depth above silt and Capacity.	R. L. 108.51 9.52 feet.
(iii) Depth of silting above silt level.	Extent of depth of silting is not known.	Corresponding reduction in capacity.	Not available.

## MADAG TANK.

On 1st April 1953, the water level in the tank was at R.L. 1876.30 i.e. 3.05 feet above the silt of the outlet. This level went on falling gradually and reached R.L. 1876.20 on 11th April 1953. On account of rains in the second week, there was replenishment in the tank and the level reached R.L. 1876.25, which remained steady till 16th May 1953. Thereafter the level came down and reached R.L. 1875.68 on 13th June

1953. After rains in the third week on May, the level rose and went on rising till it reached R.L. 1887.25 on 4th July 1953. Thereonwards the water level went down gradually and reached R.L. 1875.00 on 11th July 1953. Due to the rains the level rose to R.L. 1884.00 on 12th July 1953. It then came down and rose, the highest level reached being R.L. 1891.75 on 16th August 1953. The level ultimately came down to R.L. 1877.12 on 31st March 1954. During the year under report, the waste weir overflowed from 26th June 1953 to 4th July 1953 and from 12th July 1953 to 2nd February 1954. The supply of water from this tank was quite adequate both during the Kharif as well as the Rabi seasons to meet the requirements of the irrigators. The total commanded and irrigable areas under this tank are 2,851 acres and 1,345 acres, respectively.

The details as to full supply depth etc., are as shown below :—

(i) Full supply depth in feet	.. 4.48 feet	.. Corresponding capacity.	54.63 million cubic feet.
(ii) Date of obtaining maximum replenishment.	16th August 1953..	Depth above silt and capacity.	R. L. 1891.75 18.50 feet.
(iii) Depth of silting above silt level	Not available	.. Corresponding reduction in capacity.	Nor available.

#### MEDLERI TANK.

On 1st April 1953, the water level in the tank was at R.L. 171.25 i.e. 6.25 feet above the silt of the outlet. This level went down gradually and reached R.L. 169.70 on 28th April 1953. On account of rains in June 1953, the level rose and reached R.L. 175.60 on 5th June 1953. On 20th June 1953, it went down to 175.00. However, in July it went on rising till it reached R.L. 176.60 on 13th July 1953. Thereonwards, the water level went down and reached R.L. 176.33 on 26th July 1953. Due to replenishment on account of rains, the level went on increasing and reached R.L. 177.10 on 1st August 1953. This level went down gradually and reached R.L. 175.15 on 19th September 1953. Due to rains in the third week on September, there was again rise in the level, the highest level reached being R.L. 180.50 on 21st September 1953. This was the highest level reached during the year. The level came down to R.L. 174.68 on 31st March 1954. During the year under report, the waste weir overflowed at periods between 20th September 1953 to 4th November 1953 as shown below :—

From 20th September 1953 to 23rd September 1953.

From 1st October 1953 to 8th October 1953.

From 10th October 1953 to 19th October 1953.

From 23rd October 1953 to 4th November 1953.

The supply of water from the tank was quite adequate to meet the requirements of the irrigators during Kharif and Rabi seasons. But the area applied for during the year under review was less than that of the previous year. This was mainly due to the tendency of the irrigators for

depending upon the rain water for irrigation than for tank water. The total commanded area under the tank is 830 acres with an irrigable area of 600 acres.

The details as to full supply depth etc., are as shown below :—

---

(i) Full supply depth in feet	.. 15.00 feet	.. Corresponding capacity.	ca- 57.60 million cubic feet.
(ii) Date of obtaining maximum replenishment.	21st September 1953	Depth above silt and capacity.	R. L. 180.50 15.50 feet.
(iii) Depth of silting above silt level.	Details not known..	Corresponding reduction in capacity.	Not available.

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#### MAVINKOP TANK.

On 1st April 1953, the water level in the tank was at R.L. 104.33 i.e. 4.33 feet above the silt of the outlet. The waste weir overflowed from 30th June 1953 to 24th July 1953 at intervals, the last being from 19th December 1953 to 26th December 1953 on account of adequate rainfall during the year under review. The tank did not dry up during the year. The total commanded area under the tank is 755 acres with an irrigable area of 617 acres.

The details as to full supply depth etc. are shown below :—

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(i) Full supply depth in feet	.. 10.98 feet	.. Corresponding capacity.	ca- 43.75 million cubic feet.
(ii) Date of obtaining maximum replenishment.	30th June 1953	Depth above silt and capacity.	R. L. 111.50 12 feet.
(iii) Depth of silting above silt level.	Not available	Corresponding reduction in capacity.	Not available.

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Statement showing the areas irrigated, water rates assessed, Revenue, realization and rainfall during the year under report, as compared with the corresponding average of the past three years.

Serial No.	Name of work.	Area irrigated		Water rate assessed		Gross assessed Revenue				
		During the year.	Average of the past 3 years.	During the year.	Average of the past 3 years.	During the year				
1	2	3	4	5	6	Tank bed lands.	Grazing of areas.	Fishing.	All other Revenue.	Total gross assessed Revenue.
		Acres.	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
<b>PRODUCTIVE.</b>										
1	Mavinkop tank ...	590	531	2,037	2,013	.....	110	250	.....	2,397
<b>UNPRODUCTIVE.</b>										
2	M-dleri tank ...	217	201	2,148	1,365	.....	50	355	80	2,633
3	Asundi tank ...	436	370	3,191	2,163	.....	65	1	25	3,282
4	Madag tank ...	723	705	6,065	3,294	.....	259	.....	730	7,054
5	Dharma Canal ...	10,257	9,633	32,819	27,252	.....	.....	.....	28	32,847
6	G-kak Canal First Section and Storage Works.	16,521	15,387	1,33,979	1,04,500	3,442	.....	7,484	16,796	1,61,701
7	Ghataprabha Left Bank Canal ...	5,046	853	25,211	3,345	.....	.....	.....	5,180	30,391

Serial No.	Name of work.	Gross assessed Revenue					Realizations		Rainfall			
		Average of the past 3 years.					During the year.	Average of the past 3 years.	During the year.	Average of the past 3 years.		
		Tank bed lands.	Grazing of areas.	Fishing.	All other revenue.	Total gross assessed revenue.						
1	2	12	13	14	15	16	17	18	19	20		
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Inches.	Inches.		
<b>PRODUCTIVE.</b>												
1	Mavinkop tank	...	.....	122	192	.....	2,327	2,397	2,327	91·29	57·09	
<b>UNPRODUCTIVE.</b>												
2	Medleri tank	...	.....	50	366	98	1,879	2,528	1,468	29·48	23·42	
3	Asundi tank	...	.....	332	27	1	3	2,526	1,047	2,951	32·57	15·67
4	Madag tank	...	.....	298	.....	860	4,452	5,759	4,055	34·15	31·58	
5	Dhatma Canal	...	.....	.....	.....	.....	27,252	29,112	26,367	125·36	85·61	
6	Gokak Canal First Section and Storage Works.	2,281	.....	6,153	16,550	1,29,484	1,29,714	1,37,039	33·10	23·14		
7	Ghataprabha Left Bank Canal	.....	.....	.....	20,290	23,635	8,254	21,782	33·10	23·14		

## SOUTHERN CIRCLE.

## BELGAUM DIVISION.

## GADDIKERI TANK.

The lands under the command of the tank are all assessed at consolidated assessment. The area irrigated and irrigation share of the Land revenue assessed were 423 acres and Rs. 2,344 respectively for the year under report. The rainfall during the year was 57". The water in the tank during the year was 27.56 Mc. ft.

## DHARWAR DIVISION.

## DAMBAL TANK.

Part of the land under this tank is assessed at water rates and the rest at consolidated assessment. The total area irrigated and the assessment were 512 acres and Rs. 2,880 respectively. The area irrigated under consolidated assessment and the Irrigation Share thereon were 144 acres and Rs. 920 respectively.

During the year under report, the work of raising the F.S.L. of the tank by 2 feet was taken up and an expenditure of Rs. 1,541 was incurred. This work is in progress.

The rainfall during the year was 27". The water level in the beginning of the year was at R.L. 138.60 and at the end of the year was at R.L. 141.00. The higher water level was at R.L. 145.50 on 10th October 1953.

## BIJAPUR DIVISION.

## MUCHKUNDI TANK.

The tank is mainly dependent on local rains and has very uncertain replenishment owing to insufficient and irregular rainfall in the area of the catchment. The rainfall recorded during the year under report was 27.34" as against 22.33" — the average of the past three years. The highest water level during the year under report was at R.L. 1789.44.

The area irrigated during the year was 6 acres only. The revenue collection as per demand statement for lands under irrigation was only Rs. 12 while the collection on account of right of cultivating the tank bed was Rs. 1681.

About 10 years ago, the lowest level was 1787.84, whereas the silt level now is 1789.44, with the result that there is about 3½' silt over the upper outlet and 6' on the lower outlet.

## KOLHAPUR DIVISION.

## CHIKHLI CANAL.

The canal starts from the masonry pick up weir across the river Nandini at Chikhli. There is no reservoir for this canal, with the result that the irrigation is dependent on — post-monsoon flow available in the river Nandini.

A sum of Rs. 22,088 was spent on desilting the canal in addition to the usual M.&R. amounting to Rs. 967 during the year under report. Due to this desilting, additional land was irrigated.

The area irrigated and the revenue assessed during the year under report was 509 acres and Rs. 4,017 respectively.

The total rainfall gauged at Chikhli was 18·38" as against 11·50" of the previous year.



*Statement showing the area irrigated, water rates assessed, Revenue Realisation and Rainfall during the year under report as compared with the corresponding averages of the past three years.*

Name of work.	Area irrigated		Water rates assessed		Gross assessed revenue				
	During the year.	Average of past 3 years.	During the year.	Average of past 3 years.	During the year				Total gross assessed Revenue.
					Tank bed lands.	Grazing of areas.	Fishing.	All other Revenue.	
1	2	3	4	5	6	7	8	9	10
	Acres.	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(1) Gaddikeri tank .. ..	423	423	2,344	2,344	....	....	....	2,344	2,344
(2) Muchkundi tank .. ..	6	13	12	21	1,470	....	....	12	1,482
(3) Chikhali Canal .. ..	405	411	2,949	3,447	....	....	....	3,958	3,958
(4) Dambal tank .. ..	512	565	2,880	2,448	160	....	45	2,945	3,150

Name of work.	Gross assessed revenue					Realisations		Rainfall	
	Average of the past 3 years.					During the year.	Average of the past 3 years.	During the year.	Average of the past 3 years.
	Tank bed lands.	Grazing of areas.	Fishing.	All other revenue.	Total gross assessed revenue.				
1	11	12	13	14	15	16	17	18	19
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Inches.	Inches.
(1) Gaddikeri tank	.....	.....	.....	2,344	2,344	2,110	2,110	57	43
(2) Muchkundi tank	1,470	.....	.....	31	1,501	—457	31	26	26
(3) Chikhali Canal	.....	.....	.....	3,347	3,347	5,113	3,448	18	21
(4) Darnbal tank	29	.....	85	2,701	3,080	5,441	2,472	27	20

## SECTION II

COMPRISING IRRIGATION WORKS FOR WHICH NEITHER CAPITAL NOR  
REVENUE ACCOUNTS ARE KEPT.

## DETAILED REPORTS BY LOCAL OFFICERS.

## NORTH GUJARAT CIRCLE.

The works in charge of this Circle are (1) Timba Tank at Harsol in Sabarkantha District, (2) Saiat Tank in Kaira District, (3) Gangasagar Tank in Banaskantha District, (4) Kanewal Tank in Kaira District and the following are irrigation works in Mehsana and Amreli Districts.

## TANKS IN MEHSANA DISTRICT.

- (1) Shri Chimnabai Sarovar.
- (2) Thol Tank.
- (3) Ambela Pipardi Tank.
- (4) Vatrasar Tank.
- (5) Chandrasan Tank.

## TANKS IN AMRELI DISTRICT.

- (1) Mota Ankadia Tank.
- (2) Mota Bhandaria Tank.
- (3) Kumbhnath Tank.
- (4) Dhamel Tank.
- (5) Pichhavi Tank.
- (6) Gomti Tank.

The tank of serial No. 6 is in charge of Port Officer and Harbour Engineer, Okha. They have not been declared either as first class or second class irrigation except three viz. (1) Bedi Padwa irrigation tank in Amreli District, (2) Kanewal tank in Kaira District, (3) Gangasagar tank in Banaskantha District, which have been declared as first class irrigation tanks.

## TIMBA TANK (SABARKANTHA DISTRICT).

The rainfall gauged at the site of this tank was 35.42" as compared with 25.76" of the last year. The tank was filled up to full supply level R.L. 107.00 on 18th August 1953. The irrigation in Khariff season was not done as the cotton crop was standing; the application for Rabi season were also somewhat less than last year. The irrigation is done by flow on this tank and the lands irrigated by cultivators during the Rabi season of 1953-54 was 350 acres. The gross revenue assessed was Rs. 1,050.

The miscellaneous revenue on account of tank bed cultivation during Khariff and Rabi seasons was Rs. 454. The tank was maintained at a cost of Rs. 2,985 during the year under report.

## SAIAT TANK (KAIRA DISTRICT).

The rainfall gauged at the site of this tank was 27.85". The tank was nearly full of water which was utilised for irrigating Khariff crops and some acres of Rabi crops.

The miscellaneous revenue realised during the year amounted to Rs. 205 against Rs. 163 of the previous year. The tank was maintained at a cost of Rs. 2,447.

#### KANEWAL TANK (KAIRA DISTRICT).

The rainfall gauged at the site of the tank was 33·62". The tank was fully filled and the water was utilised for Khariff crops, mainly rice and for Rabi Crops also.

The miscellaneous revenue realised during the year amounted to Rs. 1,792 against Rs. 1,207 of the previous year. Revenue assessed for Khariff crops was Rs. 3,510 for 664 acres and Rs. 1,911 for Rabi in 446 acres. No remissions were granted. The tank was maintained at a cost of Rs. 6,121.

#### GANGASAGAR TANK (BANASKANTHA DISTRICT).

The area irrigated during the Khariff and Rabi seasons of the year under report was 184 acres and the revenue assessed was Rs. 920. The tank was maintained at the cost of Rs. 3,000 per year.

#### TANKS IN MEHSANA DISTRICT.

The monsoon began in the 3rd week of June 1953, which continued only for the period of two and a half months with 25" rainfall on average i.e. more rain than last year.

The area irrigated and the revenue realised are as under —

#### TANKS IN MEHSANA DISTRICT.

Serial No.	Name of Tank.	Irrigation		Tank bed cultivation	
		Area Irrigated.	Revenue realised.	Area Irrigated.	Revenue realised.
		Acres.	Rs.	Acres.	Rs.
1	Shri Chimnabai Sarovar	629·60	4,554 (Only water charges).	629·60	17,553 1,417 (Mis).
2	Vatrasar Tank	Nil.	Nil.	23·02	424 43 (Mis).
3	Thol Tank	60·47	3,811	651·90	3,083
4	Chandrasan Tank	Nil.	Nil.	40·00	357
5	Ambela Pipardi Tank	Nil.	Nil.	55·26	191

## TANKS IN AMRELI DISTRICT.

The monsoon began by the third week of June 1953 and the rainfall was 33".

The area irrigated and the revenue realised are as under :—

Serial No.	Name of Tank.	Irrigation		Tank bed Cultivation	
		Area Irrigated.	Revenue realised.	Area Irrigated.	Revenue realised.
		Acres.	Rs.	Acres.	Rs.
1	Mota Ankadia Irrigation Tank	58	388	114	1,347
2	Mota Bhandaria Irrigation Tank	.....	.....	50	1,028
3	Kumbhnath Irrigation Tank. ...	261	1,765	67	1,098
4	Dhamel Futasar Tank ...	32	222	.....	.....
5	Badi Padwa Irrigation Tank ...	296	2,005	18	198
6	Pichavi Irrigation Tank ...	135	622	227	1,765
7	Gomti Tank ...	97	128	.....	.....

## SOUTH GUJARAT CIRCLE.

The Principal irrigation works in operation in this Circle are Futelao and Muvalia tanks in Panchmahals district and Doswada dam and Chikhli bandhara Canal in Surat district. The Futelao tank which was classified under the head "XVII-Irrigation, Navigation, Embankment and Drainage works for which Capital accounts are kept" has now been classified under the head "18-A Irrigation Works for which no Capital accounts are kept" with effect from the year 1953-54. All these works are financially unproductive as the annual revenue derived therefrom in ordinary years is not sufficient to cover the working expenses of the tanks.

The position regarding the original and special repair works carried out during the year under review is shown below :—

Serial No.	Name of work.	Amount spent	
		Original works.	Special repairs works.
		Rs.	Rs.
<i>Panchmahals District.</i>			
1	Constructing Irrigation Canal to Mursheda Tank	2,237	.....
2	Constructing Irrigation Canal to Motihandi Tank	1,158	.....
3	Special repairs to Muvalia Tank ...	.....	707
<i>Surat District.</i>			
4	Doswada dam and Chikhli bandhara and Canals	5,196	9,166
5	Re-construction of the old breached Tichakiya Weir	1,52,545	.....

### FUTELAO TANK.

Futelao tank was taken up for construction during the years 1904 to 1907. It was completed in 1926, as an ordinary P.W.D. work. During the scarcity of 1937-38, strengthening of bunds and widening of waste weir were carried out. The tank does not yield full return, as the demand of water therefrom in the years of good rainfall is very poor while in the years of deficient rainfall, the tank itself does not get sufficiently replenished, as it depends on local rainfall and catchment of old Vijayagadh Gam tank and new Vijayagadh tank. Moreover, the irrigators in this area who are mostly Bhills are not irrigation minded.

The rainfall gauged at the site of Futelao tank was 15.37 inches during the year under report as against 29 inches, the average of previous three years. The tank was filled up to R.L. 106.00 i.e. 1.0 foot below F.S.L. The water was utilised in Kharif and Rabi seasons. There was no irrigation in Hot season as there was no demand.

### MUWALIA TANK.

The Muwalia tank was taken up for construction during the year 1900 and was completed in the year 1910. Since its construction, the scheme has proved to be a great success and is a boon to the very backward people. This irrigation tank is the biggest in the whole of Panchmahals and is situated in the vicinity of Dohad town. The people were not so much irrigation-minded previously as they are at present. They have been utilising the water and that also to a great extent during the last five years. Looking to the irrigation done by this tank and cultivation on its basin when dry, for the last five years, the tank has helped the "Grow More Food" Scheme to a remarkable extent. This tank is dependent on the local rainfall. The catchment area of this tank is 30 square miles. The Khareta and the Delsari tanks are feeder tanks to Muwalia canals.

The rainfall gauged at the site of tank was 15.25 inches during the year under review as against 31 inches, the average of previous three years. The tank was filled up to R.L. 138.00, 1.0 foot below the F.S.L. of the tank during the year under report. The water was utilised in Kharif and Rabi seasons. There was no irrigation in Hot season for want of sufficient water storage.

### DOSWADA DAM AND CHIKHLI BANDHARA CANAL.

This work was constructed in the year 1912-13 at the aggregate cost of Rs. 2,40,387. The rainfall gauged at the site was 64.69 inches during the year under report as against 53.58 inches, the average of the previous three years. The proposal to raise the Doswada dam by 5 feet and to remodel and extend the right bank canal was approved for Rs. 4,25,000 and the work was taken up under the Rs. 4.87 Crores Loan Programme. This work was in progress during the year under review.

### OLD TANKS, BUNDS AND DRAINAGE CHANNELS.

Repairs to old tanks, bunds and drainage channels were carried out at a total cost of Rs. 56,541 and Rs. 60,582 respectively, during the year under review as shown below :—

Name of Division.	Cost or repairs.	
	Tanks.	Drainage channels and bunds.
	Rs.	Rs.
(i) Panchmahals.	15,054	...
(ii) Baroda.	...	11,657
(iii) Broach.	10,444	34,590
(iv) Surat.	21,462	9,687
(v) Navsari and Dangs.	9,581	4,918
Total ...	56,541	60,852

### MINOR IRRIGATION WORKS TAKEN UP UNDER THE SPECIAL LOAN PROGRAMME.

In furtherance of the "Grow More Food Campaign" a sum of Rs. one crore was made available by the Government of India as a loan to the Government of Bombay for minor irrigation works for the years 1950-51 to 1952-53. Also certain works were taken up out of Rs. 30 Lakhs Loan Rs. 40 Lakhs Loan and Rs. 4.87 Crores Loan Programmes.

#### TICHAKIYA WEIR AND CANAL SYSTEM.

The most important work taken up out of the Minor Irrigation Works Loan Programme, is Tichakiya-weir and its canal system.

The river Zankhri is a perennial river with its origin in the ranges of Western Ghats. It meets river Purna near village Mulakavi of Valod Mahal in Surat district. It has the Mindhola river on the North and the Purna river on the South. The land in the Doabs formed by these rivers is rich and fertile. The crops generally are paddy, jowar and cotton.

The work on the Tichakiya weir with six miles of right bank canal was started in the year 1910 as a first stage of the full fledged Zankhri Irrigation Scheme. The work was completed in 1917. During the heavy floods of the succeeding monsoon, the weir about 280 feet in length was washed away. No repairs were undertaken presumably due to the controversy about the work being at all proving successful as envisaged without the construction of a storage reservoir upstream. With no reservoir, this weir can be useful only for irrigating Kharif crops like paddy and initial soaking of Rabi crops. The work of reconstruction of the old breached Tichakiya weir was approved for Rs. 4,79,400 and taken up under the Special Loan Programme of Minor Irrigation Works. In this case condition of popular contribution is waived by Government but betterment charges are to be levied on the beneficiaries of the scheme, who do not want to contribute towards the cost of the work. The weir work is completed. The expenditure during the year was Rs. 1,52,545. It is expected that the right bank canal system will afford irrigation facilities to about 6,700 acres while Left Bank canal will protect about 7,000 acres. The work of right bank canal is expected to be completed

before monsoon of 1955. About 4,000 tons of additional food production is expected on completion of the canal system. The survey work of left bank canal will be taken up at a later stage.

The details of works taken up, works completed and expenditure incurred in various Divisions of this Circle during the year under review under the various loan programmes for Minor Irrigation Works are shown below :—

#### RS. ONE CRORE LOAN PROGRAMME.

Name of Division.	Number of works taken up.	Number of works completed.	Expenditure incurred.
1	2	3	4
			Rs.
(i) Navsari and Dangs ... ..	28	28	29,599
(ii) Surat ... ..	22	21	82,772
(iii) Broach ... ..	.....	•	22,843
Total ...	50	52	1,35,214

\*Works taken up in previous year.

#### RS. THIRTY LAKHS LOAN PROGRAMME.

Name of Division.	Number of works taken up.	Number of works completed.	Expenditure incurred.
1	2	3	4
			Rs.
(i) Navsari and Dangs ... ..	42	.....	19,978
(ii) Surat ... ..	4	.....	3,202
(iii) Panchmahals ... ..	2	.....	4,891
Total ...	48	.....	28,071

#### RS. FORTY LAKHS LOAN PROGRAMME.

Name of Division.	Number of works taken up.	Number of works completed.	Expenditure incurred.
1	2	3	4
			Rs.
(i) Surat ... ..	1	.....	1,52,545
(ii) Broach ... ..	.....	.....	479*
Total ...	1	.....	1,53,024

\* Works are not actually started but this expenditure is for the cement transferred to the works.

#### RS. 4.87 CRORES LOAN PROGRAMME.

Name of Division.	Number of works taken up.	Number of works completed.	Expenditure incurred.
1	2	3	4
			Rs.
(i) Surat ... ..	2	.....	6,779
Total ...	2	.....	6,779



**GUJARAT IRRIGATION CIRCLE.****BARODA DISTRICT.**

**SHRIPORE TIMBI TANK IN WAGHODIA TALUKA AND DHANORA, HARIPURA,  
WADADLA, MANORPURA, KARACHIA, JAVLA, MUVAL AND SARSI  
TANKS IN SAVLI TALUKA.**

These are small tanks in Baroda District.

**SHRIPORE TIMBI TANK.**

The capital cost of this tank is Rs. 1,26,242. It has a catchment area of 6 square miles. The tank is designed for a storage capacity of 68 million cubic feet. The area under its command is 857 acres out of which 686 acres of land are being irrigated.

**DHANORA TANK.**

The tank has a catchment area of 10.5 square miles. It is designed for a storage capacity of 126 million cubic feet. This tank was lying in a breached condition for the last 40 years. The work of restoration of this tank along with the canal system was taken up under the Special Loan of Rs. one crore for Minor Irrigation works. This is now practically completed except some cross drainage works. The total area that can be served by this tank is 1,250 acres.

**HARIPURA TANK.**

The capital cost of this tank is Rs. 65,032. It has a catchment area of 3.6 square miles and the storage capacity of 56 million cubic feet. Three hundred and forty acres of land are being irrigated by this tank.

**WADADLA TANK.**

The capital cost of this tank is Rs. 69,249. It has a catchment area of 6.5 square miles and the storage capacity of 80 million cubic feet. The area under its command is 571 acres out of which 457 acres of land are being irrigated.

**MANORPURA TANK.**

The catchment area of this tank is 7 square miles. It has storage capacity of 85 million cubic feet and area to be irrigated is 800 acres.

**KARACHIA TANK.**

The capital cost of this tank is Rs. 1,15,233. It has catchment area of 4.5 square miles. The area under its command is 857 acres out of which 686 acres of land are being irrigated with a storage of 96 million cubic feet.

**JAVLA TANK.**

The catchment area of the tank is 3.7 square miles with a capacity of 28 million cubic feet. Three hundred and fifty acres of land are being irrigated by this tank.

**MUVAL TANK.**

The capital cost of this tank is Rs. 76,144. This is one of the important irrigation tanks in the area and has a capacity of 131 million cubic feet. The catchment area of the tank is 7.5 square miles. The area under its command is 1,337 acres out of which 1,031 acres of land are being irrigated.

**SARSI TANK.**

The capital cost of the tank is Rs. 46,120. It has catchment area of 3.44 square miles. The area under its command is 371 acres out of which 297 acres of land are being irrigated. The capacity of the tank is 31.62 million cubic feet.

**BOMBAY CIRCLE.****BANDHARA ACROSS THE MAHISDARA NALLA AT MUTHOLI,  
TALUKA ROHA, DISTRICT KOLABA.**

This work which was described in the last year's report is nearing completion except fixing of one Pen Stock gate. Land irrigated during the year under report was only 5 acres. The total area under command is 1,147 acres. Expenditure incurred during the year was Rs. 4,792.

**BANDHARA AT SHIL, TALUKA KHALAPUR, DISTRICT KOLABA.**

This work which was described in the last year's report is nearly completed. The scheme when completed will irrigate 150 acres of land. Additional food production will be about 90 tons. The expenditure during the year was Rs. 22,188.

**DECCAN IRRIGATION CIRCLE.****POONA IRRIGATION DIVISION.****RAKH TANK.**

This tank is situated about 5 miles from Walha Railway Station of the Southern Railway and is formed by an earthen dam constructed across a nalla near Rakh village in Purandhar Taluka of the Poona District. The catchment area of the tank is 5.36 square miles and its capacity is only 34.2 million cubic feet. The depth of this tank is 23 feet. The tank has two channels of a total length of 3 miles. The area under command on channel No. 1, which is on the Left Bank, is 265 acres and that on channel No. 2 is 321 acres. The main channel is designed to discharge 12.8 cusecs leaving sufficient margin for all losses in transit.

An area of 248 acres was irrigated and the revenue assessed amounted to Rs. 1,029-9-0 during the year under review as against 87 acres and Rs. 558 respectively, for the previous year. The increase in the area irrigated and assessed revenue during the year under report was due to more demand for food and fodder crops on the tank. The average rainfall during the year was 5.30 inches.

## VICTORIA TANK.

This is an incomplete tank situated near mile 65 of the Mutha Right Bank Canal. It has no storage and there is no area under irrigation. This tank was handed over to the Revenue Department in 1942 and only maintenance is done by the Public Works Department.

## KHAMGAON TANK.

This tank which is situated in mile 43 of the Mutha Right Bank Canal, is only partially completed and receives replenishment during the monsoon from the Mutha Right Bank Canal Distributory Number 17. The supply available was issued for the irrigation of 968 acres and the irrigation revenue assessed was Rs. 6,824 during the year under review. The tank was raised to impound 84 million cubic feet.

The new Khamgaon tank is constructed near the existing tank. The work was taken up on 18th January 1953, as a scarcity work and was continued up to 30th September 1953. The unfinished work was again started on 21st February 1954 and was stopped on 13th April 1954. The catchment area of the new tank is 10.75 square miles and the storage capacity is 45 million cubic feet. An additional area of about 900 acres will be benefitted by the new tank. The earthen dam of the tank is 831 feet in length and 42 feet in height. There are two waste weirs having 340 feet and 200 feet length, respectively.

## BANDHARAS (POONA DISTRICT).

Bandharas are small weirs built across streams in order that the level of the water flowing in the streams may be raised sufficiently to command the lands to be irrigated. The following table gives the area irrigated and the consolidated assessed revenue on the bandharas in the Poona Collectorate during the year under review :—

Particulars.	Area Irrigated.	Consolidated Revenue		
		Irrigation Share.	Land Share	Total.
1	2	3	4	5
Year.	Acres.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1953-54	6,200	18,161 8 0	10,122 13 0	28,284 5 0
Average	89	353 0 0	309 0 0	662 0 0

The figures for the year under report show a great increase over the average figures of the past three years, because the figures given up to the year 1952-53 were for Bandharas only in the Haveli Taluka of the Poona District whereas, the figures for the year under report are in respect of the Bandharas in whole of the Poona District.

## NASIK IRRIGATION DIVISION.

## BANDHARAS (NASIK DISTRICT).

There are numerous Bandharas situated in this District. There are in all 296 such Bandharas on the list. The expenditure incurred on repairs to bandharas (8 in number) during the year under report amounted to Rs. 6,953-11-0. The following table gives the area irrigated and the consolidated assessed revenue during the year under report :—

Particulars.	Area Irrigated.	Consolidated Revenue.		
		Irrigation Share.	Land Share.	Total.
1	2	3	4	5
Year.	Acres.	Rs.	Rs.	Rs.
1953-54 ... ..	28,225	1,83,051	58,939	2,41,090
Average ... ..	28,837	1,80,823	56,883	2,37,706

## KHIRDI SATHE TANK.

This is a small tank in Yeola Taluka of the Nasik District. The tank is formed by an earthen dam and is dependent on local rains for its supply. There is no security of supply of water to last for full year and hence perennial irrigation is allowed by sanctioning water applications for each season. The irrigators maintain perennial crops on storage water as far as possible and then maintain on well water up to maturity when storage is found insufficient. Lucerne and fruit trees are also allowed in small areas.

On the 1st April 1953, there was no water in the tank. The tank was dry from 25th October 1952. Replenishment commenced on 18th June 1953. The draw off for irrigation purposes commenced on 2nd July 1953 with a discharge of 1.95 cusecs. The area irrigated during the year under review was 745 acres. The assessed revenue during the year under report amounted to Rs. 4,580. The average area irrigated for the last three years was 665 acres. The total rainfall was 17.85 inches during the year under review.

## AHMEDNAGAR DIVISION.

## VISAPUR TANK.

The Visapur tank dam is situated about two miles from the Visapur Railway Station on Dhond-Manmad Railway line. It is built across the Ranga river, a tributary of the Bhima river. It was started as a famine relief work in 1896 and was subsequently completed in successive stages by criminal tribes and convict labour, by June 1927. This earthen dam

which is 7,440 feet long and 84 feet high forms a lake having a net capacity of 1,510 million cubic feet. The estimated cost of the whole scheme was Rs. 41 lakhs of which a sum of Rs. 21 lakhs was spent on the dam and head works and the balance on the construction of the canal, distributaries and minors which aggregate 46 miles in length. The total area under command is 95,000 acres of which 26,000 are irrigable. The catchment area of the tank is 159 square miles in extent and it has a capacity of 1,510 million cubic feet. The irrigation from this tank was first started during the Rabi season of 1929-30. Owing to an increased demand for water due to the starting of a small Sugar Factory on the Chimbla Distributary, the waste weir was raised by 2 feet in March 1934 to increase the storage in the tank by 130.20 million cubic feet.

On the first April 1953, there was no water in the tank. The tank was dry since December 1952 to the date of new replenishment in 1953. Replenishment was received in the tank on 16th June 1953 and the level of water rose to 11.50 feet, the corresponding contents being 62.23 million cubic feet. The highest level of 27.80 feet was reached on the 9th October 1953, with a storage equivalent to 369 million cubic feet. The tank did not overflow during the year under report.

The area irrigated and revenue assessed etc. during the year under report were as shown below :—

Year.				Area Irrigated.	Water Rates assessed.	Gross assessed Revenue.
1				2	3	4
				Acre.	Rs.	Rs.
1953-54	...	...	...	1,025	10,546	11,182
Average	...	...	...	5,105	46,015	53,011

The reason for less irrigation during the year under report was that there was less storage supply available for irrigation. The rainfall during the year under report was 18.40 inches.

#### LIMJIWADI TANK.

Limjiwadi tank was constructed with the object of growing more food crops. The construction work was completed in the year 1946-47. This tank is situated in Shrigonda Taluka of the Ahmednagar District. Irrigation was first started on this tank for food and fodder crops in the Rabi season of 1946-47. The area irrigated during the year under review was 322 acres as against 489 acres of the previous year.

#### NEW TANKS.

Irrigation was started in the Rabi season of the year under report, on the following newly constructed tanks in the Deccan Irrigation Circle.

(G.C.P.) L-B F 3452-6

Nira Right Bank Canal Division.						Area irrigated.
						Acres.
(i) Banganga Tank	...	...	...	...	...	198
<b>AHMEDNAGAR DIVISION.</b>						
(ii) Durgaoon Tank	...	...	...	...	...	101
(iii) Bahirobawadi Tank	...	...	...	...	...	310
(iv) Gunjale Tank	...	...	...	...	...	55
(v) Gunodi Tank	...	...	...	...	...	697
(vi) Kolgaon Tank	...	...	...	...	...	40
<b>NASIK IRRIGATION DIVISION.</b>						
(vii) Zadi Tank on Suki Nala	...	...	...	...	...	366
<b>Total ...</b>						<b>1,767 acres</b>

As this was the first year of irrigation on the above tanks, water was supplied at half the usual rates chargeable for irrigation on similar existing tanks.

### CENTRAL CIRCLE.

#### KOREGAON TANK.

On the first April 1953, the tank was dry. The first replenishment of 5.11 million cubic feet was received on 20th June 1953. On 15th October 1953, the gauge was 16.40" with corresponding contents of 86.90 million cubic feet. The waste weir was overflowing from 26th September 1953 to 30th October 1953. The water available was utilised for 632 acres of Rabi irrigation. The rainfall gauged at Koregaon was 24.90 inches against 16.92 inches, the average of the past three years.

#### WADSHIVNE TANK.

On 1st April 1953, the tank was dry. The first replenishment of 2.69 Mcft. was received on 20th July 1953. On 15th October 1953, the gauge was 14.18" with corresponding contents of 81.26 mcft. The total replenishment of 106.94 Mcft. was received during the year under report. The water available was utilised for irrigation purposes. Total area to the extent of 1.146 acres was irrigated during Rabi season. The rainfall gauge was 21.97 inches against 16.14 inches, the average of the past three years.

**GHERDI TANK.**

On the first April 1953, the level of water in the tank was 14.59" with corresponding contents 24.62 Mcft. The first replenishment of 13.82 Mcft. was received in June 1953. On 15th October 1953, the gauge was 26 ft. with corresponding contents of 102.53 Mcft. This was utilised for irrigating an area to the extent of 62 acres in Hot Weather, 44 acres in Kharif Season and 563 acres in Rabi Season. The total rainfall was 15.12 inches against 15.33 inches, the average of the past three years.

**HOTGI TANK.**

The tank has been constructed in the year 1944 as scarcity work. The tank is an artificial reservoir with an earthen embankment of 5,600 feet in length and 41 feet maximum height. The work is nearly completed. The first 6 miles of the canal functioned during the year under report. An earth work of mile No. 7 was started as scarcity work and was nearly completed. Cross drainage works on this length were given on contract and were in progress during the year under report.

On the first April 1953, the level of water in the tank was 6.335 feet. The first replenishment of 3.15 million cubic feet was received on 23rd June 1953. Total replenishment of 165.95 Mcft. up to F.S.L. was received during the year under report. Quantity of replenishment including overflow was 2,185 Mcft. The water available was utilised for irrigating an area to the extent of 931 acres. The rainfall gauged at Hotgi was 33.55 inches against 18.82 inches, the average of the past three years.

**TALSANGI TANK.**

The tank is situated in Mangalwedha Taluka and has been taken over from the Sangli State on its merger with the Bombay State. The tank is managed by the Mamlatdar of Mangalwedha. An area to the extent of 219 acres was irrigated during Rabi season only.

**WAKI BANDHARA.**

The area to the extent of 29 acres was irrigated during Rabi season.

**SANGWI TANK.**

The work is still in progress. Irrigation to the extent possible was however started from Rabi season of the year 1947-48. In the year under review, earth work for mile No. 7 (Right Bank Canal) was taken up as scarcity work and is completed. Work of Cross Drainage works on this length is in progress. In the year under report, an area to the extent of 569 acres was supplied with water for irrigation purposes.

**PAREWADI TANK.**

This work is still in progress. Irrigation to the extent possible was however started for the Rabi season of 1947-48. Irrigation to the extent of 1,087 acres was done during the year under report. The work of Left Bank Canal up to 6 miles out of 12 miles of the projected length is also

completed during the year. Earth work of Left Bank Canal for miles 6 to 9 was taken as scarcity work and is nearly completed. Work of Cross-Drainage works on this length is given on contract and is in progress.

#### VAIRAG TANK.

The work was started in April 1953 as scarcity work and was in progress up to September 1953 (i.e. closure of the scarcity period). During this period earth work on both flanks was done leaving gorge portion open. Work was discontinued as per Government orders. This work consists of a dam of full earthen section 1,700 feet long with a maximum height of 32 feet above Nala bed. It will have one canal on left bank and about 4 miles in length. At present work is not in progress.

#### SAPATNA TANK.

It is situated near Village Venegaon in Madha Taluka. Work was started in February 1953 as scarcity work and discontinued by the end of September 1953, when scarcity condition ceased. During this period, work of dam, waste weir and outlet was completed only Canal work is remaining. It consists of an earthen dam 3,460 feet with a maximum height of 39 feet above Nala bed. It will have one canal on Right Bank 9 miles in length.

#### CHINCHOLI TANK.

It is situated near village Chincholi, Taluka Sangola. Work was started as scarcity work and was in progress as scarcity work till the end of September 1953. Since then it is in progress as normal P.W.D. work. During the period under report, earth work of dam (except gap left for temporary waste weir) was completed. Canal earth work for one mile was also completed. Remaining earth work is in progress through contract. It consists of an earthen dam 2,600 feet long with maximum height of 50 feet above Nala bed. It will have one canal on Right Bank 7 miles in length.

#### BUDHIAL TANK.

Dam site is situated near village Budhial, Taluka Sangola. This work is one of the old unfinished scarcity works. It was originally started in the year 1890 and was left incomplete. Work is again started under the Programme of Rs. 4.87 crores from Government of India's Loan Scheme. Dam will be a full earthen section 8,700 feet long with a maximum height of 60 feet above Nala bed. It will have one canal only on left side. Dam work in gorge portion is in progress. Flank work was done previously. Earth work of canal is in progress through contract.

#### MANGI TANK.

The Dam is situated near village Mangi in Taluka Karmala. This is an unfinished scarcity work. It was originally started in the year 1897 as a relief work. Some work was also done in the years 1899 and 1921. Work is again resumed in January 1953 as a scarcity work. Dam will be



a full earthen section of 488 feet in length with a maximum height of 75 feet above nala bed. It will have two canals, one on left bank 6 miles in length and other on Right Bank 17½ miles in length. Earth work on both flanks was done in old scarcity. Work is resumed in January 1953 as scarcity work. During 1953-54 work of filling gorge portion leaving a gap for temporary waste weir in outlet position is done. Work is now in progress as normal P.W.D. work after closure of scarcity.

#### JAWLA TANK.

Dam is situated near village Jawla, Taluka Sangola. The work was originally started in the year 1942 as a scarcity work and subsequently remaining work was given on contract in the year 1944. Work was left incomplete due to some doubts regarding its foundation. Work was taken up again in January 1953 as a scarcity work and was in progress as normal P.W.D. work. During this period remaining earth work of dam, outlet and canal work is completed. It consists of an earthen dam 1,680 feet long with a maximum height of 35 feet above Nala bed.

#### WAKESHWAR BANDHARA.

The area to the extent of 332 acres was irrigated during the year under report.

#### NAGARDEOLA BANDHARA.

This work was started as scarcity work in January 1953. Again this was resumed as a normal P.W.D. work and completed during the year under review. Area to the extent of 160 acres was irrigated during the year under report.

#### MADANWADI TANK.

The plan and estimate for this work have been administratively approved and technically sanctioned. The work was actually started on 12th April 1948. This work originally under the control of Director of Agriculture Engineer, Poona and subsequently transferred to the Central Circle in November 1949. The dam, waste weir and outlet work are completed. During the year under report, area to the extent of 881 acres was irrigated.

#### PALASDEO TANK.

The plan and estimate for this work have been administratively approved and technically sanctioned for Rs. 6,53,237. The work was actually started on 10th March 1948. This work was, in the first instance, under the control of the Director of Agriculture Engineer, Poona but was subsequently transferred to the Central Circle in November 1949. The dam, outlet and waste weir etc., have been completed. The construction of Right and Left Bank canals have been completed under scarcity works. The work of cross drainage works on both the canals has been completed. The area to the extent of 212 acres was irrigated during the year under report.

## EAST KHANDESH DIVISION.

The old Bandharas and Channels in the East Khandesh District are grouped as under :—

- (1) Girna River group—
  - (a) Patonda Bandhara and Channel.
- (2) Bori River group—
  - (a) Toli (Tamaswadi) Bandhara.
  - (b) Phapura (Amalner) Bandhara and Channel.

Area irrigated by these bandharas and channels was 504 acres during the year under report as against 539 acres the average of the past three years.

## WEST KHANDESH DIVISION.

The old Bandharas and Channels including small tank borne on the P.W.D. list are grouped as under :—

- (1) Upper Panzra Group including Gondur tank.
- (2) Kan River Group.
- (3) Burai River Group.

The total area irrigated by the above canals was 8,260 acres during the year under review.

## PURMEPADA TANK.

The work of constructing an irrigation tank at Purmepada was started as scarcity work in the year 1952-53. The work was in progress during the year under review.

## CHIMTHANA BANDHARA.

This work was started as scarcity work during the year 1952-53 and the same is still in progress during the year under report.

## SAYADNAGAR BANDHARA.

This work was started as scarcity work during the year 1952-53. The canal was brought under irrigation to the extent of 5 miles and irrigation was done to the extent of 147 acres during the year under review.

## SUSARI CANAL.

This work was started as scarcity work during the year 1952-53 and the same is still in progress during the year under report.

### KARNATAK IRRIGATION CIRCLE.

There are in all 6,723 Minor Irrigation works under the following categories situated in the jurisdiction of Districts of Dharwar and the Upghat Talukas of North Kanara in this Circle :—

Class of Irrigation work.	Dharwar District.	North Kanara District, Upghat Talukas.
	Number.	Number.
(i) Second Class Tanks declared	987	197
(ii) Second Class Tanks undeclared	658	1,409
(iii) Bandharas	.....	1,641
(iv) One Man's Tanks	740	521
(v) Inamdar's Tanks	590	Nil.
	2,955	3,768
Total ...	6,723	

#### WORKS UNDER THE SPECIAL LOAN PROGRAMME OF MINOR IRRIGATION WORKS OF RS. ONE CRORE.

During the year under report, an amount of Rs. 14,010 was spent on repairs to 29 Minor Irrigation tanks. In addition an amount of Rs. 20,341 was spent on surveying and preparing plans and estimates for repairs to Minor Irrigation works under the Rs. "One Crore Loan Scheme". The Loan Programme period was extended up to 30th June 1953. The up-to-date progress was as shown below :—

District.	Number of works completed.	Number of works in progress.	Area of Irrigation assured by the completed works.	Total expenditure.	Additional area brought under Irrigation.
1	2	3	4	5	6
	Number.	Number.	Acres.	Rs.	Acres.
Dharwar ..	388	5	32,666 acres of rice land.	14,29,158	1,257
North Kanara ..	189	11	8,702 acres of rice land.		171

One new Bandhara work and one new tank work taken up for execution are practically completed during the year under report.

**MINOR IRRIGATION WORKS UNDER 111.3 LAKHS LOAN PROGRAMME.**

On closure of the scarcity works during October 1953, the progress of extensions and improvements to the following tank works, continued as normal works, during the year under review was as shown below :—

	Expenditure under Scarcity loan.	Expenditure from normal grants under 18, Ordinary etc.
	Rs.	Rs.
(i) Constructing the proposed Irrigation tank at Kudrihal, Taluka Ranebennur, District Dharwar.	2,35,583	700
(ii) Improvements to tank in Survey Number 319 at Agadi, Taluka Haveri, District Dharwar.	1,73,825	3,835

Area of irrigation under the above two tanks will be 1,050 acres.

**IRRIGATION WORKS UNDER 4.87 CRORES LOAN PROGRAMME.**

From the Loan of Rs. 4.87 crores granted by the Government of India to the Government of Bombay, for Medium and Minor Irrigation works in the State, the following works estimated to cost approximately Rs. 23.87 lakhs, were taken up for execution in this Circle during the year under report :—

	Expenditure incurred.	Area likely to be irrigated.
	Rs.	Acres.
(i) Improvements to tank in Survey Number 198 at Ganjigatti, Kalghatgi Taluka, District Dharwar.	4,002	1,284
(ii) Constructing an Irrigation tank at Arwatgi, Taluka Dharwar, District Dharwar.	7,723	740
(iii) Proposed new tank at Benchi, Taluka Dharwar, District Dharwar.	4,973	720
(iv) Repairs to tank in Survey Number 202 at Hammardi, Taluka Haveri, District Dharwar.	3,947	1,818
(v) Kalloli Bandhara, Taluka Gokak, District Belgaum.	2,493	3,300
Total ..	23,138	7,862

The additional annual food production that is anticipated at the assumed rate of 0.25 ton per acre on this area would be 1,966 tons.

### 30 LAKHS LOAN SCHEME.

93 works in Dharwar District and 86 works in North Kanara District were originally proposed to be taken up. But as neither necessary contribution nor any promise for the same could come forth in respect of certain works, a fresh programme has been formulated. 41 works in Dharwar District and 40 works in North Kanara District (upghat talukas) were in progress up to end of the year under review. The total expenditure incurred so far under this Programme was Rs. 23,237 in Dharwar District and Rs. 18,202 in North Kanara District.

#### BANDHARAS IN BELGAUM DISTRICT.

As regards the Second Class works in progress in Belgaum District, there are three works in charge of the Ghataprabha Left Bank Canal Division No. I as shown below :—

- (i) Kalloli Bandhara,
- (ii) Kochari Weir-cum-Causeway,
- (iii) Gotur Weir-cum-Causeway.

The Kalloli Bandhara is, however, proposed to be treated as part of the First Class irrigation work viz., Gokak Canal.

#### ALL OTHER MINOR IRRIGATION WORKS.

The Minor Irrigation Works which are being carried out from the annual Maintenance and Repairs, grants have also been included in the First Five Year Plan. 159 works in Dharwar District and 44 works in North Kanara District were in progress when the Dharwar Irrigation Division in this Circle was opened. In addition, 36 new works in Dharwar District and 34 works in North Kanara District (upghats) were taken up for execution since 1952-53. All the above works have been completed except 36 works in Dharwar District and 24 works in North Kanara District. From these tanks, an area of about 14,748 acres in Dharwar District and 1,998 acres in North Kanara District has been brought under irrigation. The additional food production from the above projects that is anticipated would be 3,687 tons in Dharwar District and 500 tons in North Kanara District.

### SOUTHERN CIRCLE.

#### BELGAUM DIVISION.

There are about 525 second class irrigation tanks situated in the Belgaum Division. The lands under the command of these tanks are assessed at consolidated water rates. Repairs to 30 tanks were carried out at a total cost of Rs. 22,744. Besides a sum of Rs. 4,80,870 was spent on 19 bandharas works and in addition, a sum of Rs. 31,396 was spent on the work of—surveying and preparing plans and estimates, for repairs to second class irrigation works. A sum of Rs. 14,848 was also spent on River and rain gauge works.

During the year under report, the construction of the bandhara at Karalhatti near Ajur was completed at a cost of Rs. 2,43,536. The area irrigable under this work is about 2000 acres.

The total area irrigated during the year under report was 23,758 acres and irrigation share of the land revenue thereon was Rs. 7,87,332. The total direct and indirect receipts amounted to Rs. 1,05,646 as against Rs. 1,04,179 during the previous year.

#### DHARWAR DIVISION.

There are only 24 irrigation tanks lying in the jurisdiction of this division in so far as irrigation—administration is concerned. Out of these, about 10 have been repaired during the year at a cost of Rs. 2,52,667. One bandhara at Meundi is in charge of this Department and the area irrigated and the assessment thereon during the year was 48 acres and Rs. 472 respectively.

The following two minor irrigation works were started during the year under report :—

Name of Work.	Estimated Amount.	Expenditure to end of March 1954.
	Rs.	Rs.
(1) Constructing an irrigation work at Alur, Petha Mundargi.	9,74,796	3,84,903
(2) Constructing an irrigation work at Shirol, Petha Mundargi.	7,06,032	2,86,505

These works are in progress.

#### BIJAPUR DIVISION.

##### NANDARGI TANK.

This tank is solely dependent on local rains or its supplies. The rainfall recorded during the year under report was 8·15". The tank is expected to fill up to F. S. L. in all normal years. The highest water level was at R.L. 206·90 and the lowest was at R.L. 198·10. The gross revenue assessed and the area irrigated were Rs. 860 and 169 acres respectively. An amount of Rs. 1,400 was spent on M. & R.

##### MAKHANAPUR TANK.

This tank also is solely dependent on local rains for its supplies. The rainfall recorded was 6·10". The highest water level was at R.L. 76·00 and the lowest at R.L. 64·04. The area actually irrigated and revenue assessed were 191 acres and Rs. 974 respectively. An amount of Rs. 1,500 was spent on M. & R.

##### ASANGI TANK.

This tank also solely depends on local rains for its supplies. The rainfall recorded during the year was 21·75". The highest water level was at R. L. 525·50 and the lowest was at R.L. 516·90. The area irrigated and revenue assessed were 160 acres and Rs. 812 respectively. The expenditure on M. & R. during the year under report was Rs. 1,900.

### SECOND CLASS TANKS AND BANDHARAS.

There are in all 11 second class irrigation works out of which 7 are bandharas. All these works in charge of Revenue Department and only the necessary repairs are carried out by this Department.

During the year under report, 6 minor irrigation works were completed.

#### KANARA DIVISION.

In this Division there are only 11 second class irrigation works. Besides, there are 1367 undeclared tanks, 469 bandharas and 86 springs. During the year under report, an expenditure of Rs. 10,151 was incurred by this Department.

#### RATNAGIRI DIVISION.

There are only 4 second class irrigation tanks in this Division. The area irrigated during the year under report was 1379 acres and an expenditure of Rs. 11,978 was incurred on repairs and Rs. 16,120 on construction of Masonry bandharas, improvements to tanks etc.

#### KOLHAPUR DIVISION.

There are only three important second class tanks in this Division in addition to the Krishna weir at Sangli and Emergency Lift Irrigation scheme at Kolhapur.

#### RANKALA TANK.

The total area irrigated and revenue assessed—during the year under report were 420 acres and Rs. 48,265 respectively, against 376 acres and Rs. 43,750 respectively of the previous year. The highest and lowest water level was 13' 5" and 9' 3" respectively. An amount of Rs. 7,200 was spent on M. & R.

#### RAJARAM TANK.

The area irrigated and revenue assessed during the year under report were 85 acres and Rs. 2,093 respectively. The rainfall recorded during the year was 31.76". An amount of Rs. 2,440 was spent on M. & R. In addition an amount of Rs. 30,785 was spent on repairs to the embankment.

#### WADGAON TANK.

The area irrigated and revenue assessed during the year were 108 acres and Rs. 13,515 respectively against 76 acres and Rs. 8,928 respectively of the previous year. The highest and lowest water level during the year were 28' and 18' 4" respectively. An amount of Rs. 4,931 was spent on M. & R. during the year under report.

#### KRISHNA WEIR.

The weir has been constructed in the State regime near Sangli City. The incomplete work was completed after the merger of States. The weir is not as yet functioning due to want of diversion of sullege water. An amount of Rs. 467 was spent on M. & R.

In addition to the above works—Radhanagari Irrigation-cum-Hydro Electric Project (Irrigation Part) and Emergency Lift Irrigation works are in charge of this Division. These works were started by the Ex-State of Kolhapur.

#### RADHANAGARI HYDRO ELECTRIC SCHEME.

Five weir-cum-barrages have been proposed to be constructed on Bhogawati river and ten pumps of 4 cusecs each are proposed to be installed between Kolhapur and Shirol in Panchaganga river. The work of constructing four weirs is in progress and 6 pumps have already been fixed so far. An expenditure of Rs. 1,63,537 was incurred up to end of March 1954.

#### EMERGENCY LIFT IRRIGATION SCHEME.

The Scheme consists of 39 pumps on the banks of Panchaganga river and 38 pumps have already been erected. Most of them are of 1 cusec capacity. A few have capacity of 2 to 5 cusecs. During the year, the pump at Valivade was erected with a jackwell and an expenditure of Rs. 33,665 was incurred during the year under report bringing the total up to date expenditure to Rs. 53,618. The area irrigated and revenue assessed were 3376 acres and Rs. 3,02,121 respectively against 5301 acres and Rs. 2,81,089 respectively of the previous year. An amount of Rs. 2,93,138 was incurred during the year under report on M. & R. of these pumps.

### SECTION III

#### ACTIVITIES PERTAINING TO IRRIGATION RESEARCH AND INVESTIGATION.

##### DECCAN IRRIGATION CIRCLE.

In the Deccan when a large perennial canal is opened, wide-spread water logging is liable to ensue some of this water logging extends rapidly into the valleys and unless steps are taken to arrest and set it right, the damage consisting mainly of salt efflorescence becomes permanent. The seriousness of the menace was realised as early as 1888 and the controversy regarding the relative effect of channel losses and wasteful irrigation and the best method to adopt to safeguard the land became yearly more acute. Various experiments were carried out at the instance of the Agriculture Department but by 1913 it was clear that all the methods tried then had failed. It was eventually decided to open a Special Irrigation Division in order that the question of canal development especially as regards safeguarding the soil, might form the subject matter of investigation. In June 1916, the Division (now called the Irrigation Development Division) was formed and the work, entrusted to it, was the contouring of the commanded areas, the carrying out of a careful survey and classification of the surface and sub soil, the selection and marking out of definite areas suitable for Blocks for perennial and other crops, the designing of the drainage works required, and the study of the question of the reclamation of waste lands and areas damaged by water logging, salt efflorescence and the growth of useful timber in such tracts and along the main canal. In short, research and



investigation into all the problems relating to irrigation by means of actual experiment, has been the sphere of work of the Special Irrigation Division which is now called Irrigation Development Division.

The investigations carried out during the year under review consisted of the following items in addition to the main work of construction of drains in the damaged areas :—

- (1) Silting of reservoirs in the Bombay State.
- (2) Flood and flood damages.
- (3) Measurement of evaporation losses and climatological observations in irrigated and non-irrigated areas in the Bombay State.
- (4) Station rating curves.
- (5) Regeneration observations in the catchment of the Nira River.
- (6) Analysis of soils in the projected roads in the Bombay Deccan.
- (7) Silt load in rivers of Bombay State.
- (8) Utilisation of subsoil waters for irrigation and cost of lift irrigation.
- (9) Pollution of river waters in Bombay State.
- (10) Weed growth in the Deccan Canals with special reference to Mutha Right Bank Canal.

The summary of work done during the year under report is as under :—

### **I. Survey and Preparation of Plans and Estimates of Drainage Works.**

#### **NIRA CANALS.**

##### **I. Factory Area.**

(i) Walchandnagar Industries, 2nd Extension area on Dy. No. 39 of Nira Right Bank Canal—Survey work is completed and the project is under scrutiny.

(ii) Saswad Mali Sugar Factory, 1st Extension area on Dy. No. 9 Br. No. I of Nira Right Bank Canal. As the damaged area in the catchment increased from 138 acres to 302, drainage is required to be proposed for which survey estimate will be prepared and submitted for sanction.

(iii) Saswad Mali Sugar Factory, 2nd Extension area on Dy. 32-32A, 35 and 38 of Br. No. I of Nira Right Bank Canal.

Survey work is completed. Plans and estimates are under preparation.

##### **II. Non-Factory Area.**

(i) Survey work of the following drainage schemes outside the factory area is carried out :—

(a) *Dy. No. 31-33 drainage scheme.*—The survey work is completed. The plans and estimates are under preparation.

(b) *Borgaon nala drainage scheme.*—The survey work is completed. The plans and estimates are under preparation.

(c) *Khunte drainage scheme.*—The Survey work is completed. The plans and estimates are under preparation.

(ii) *Dy. No. 33-35 drainage scheme.*—The survey project plans are under scrutiny.

(iii) The following schemes are proposed and survey works will be taken in hand during 54/55.

- (i) Sansar nala drainage scheme.
- (ii) Pandhara Nala Drainage Scheme.
- (iii) Dy. No. 24 (N.L.B.C.) Malad Drainage Scheme.
- (iv) Dy. No. 25-26 (N.L.B.C.) Baramati Kasba Dr. Scheme.

#### PRAVARA CANALS.

I. No survey for land drainage projects within factory area has been done during the year.

#### II. Non-Factory Area.

(a) *Kolhar Khurd Drainage Scheme on Pravara Right Bank Canal.*—The survey work is completed. The plans and estimates are under preparation.

(b) *Musalwadi Drainage Scheme for Nala No. 31 between the catchment of W.C. No. 36 of Pravara Right Bank Canal and O.L. 1 and 2 Musalwadi tail tank channel etc.*—The survey work of the above drainage scheme is in progress.

(c) *Gangapur Drainage Scheme between W.C. 29 and Dy. No. 1 of Pravara Right Bank Canal.*—The project is under preparation.

(d) *Chincholi Drainage Scheme on Pravara Right Bank Canal.*—The Project is under scrutiny.

(e) *Khairi Nimbgaon Drainage Scheme.*—The project is under scrutiny.

#### GODAVARI CANALS.

I. No Survey for drainage Scheme in the factory area is done during the period under report.

#### II. Non-Factory Area.

(a) *Wakad area between W.C. 11 to 13 of Godavari Left Bank Canal.*—The survey work is completed and the work of preparing the plans and estimates will be taken in hand as per priority list.

(b) *Kolgaon area (C.V. 22) bet. Dy. 6 and 7 on Godavari Right Bank Canal.*—The survey work is completed and the plans and estimates of the project will be taken in hand as per priority list.

(c) *Dixi Jivali Drainage Scheme under Kadwa Canal system.*—The survey work is completed and the work of preparing the plans and estimates will be taken as per priority list.

(d) *Suregaon Drainage Scheme on Godavari Right Bank Canal.*—The project is under scrutiny.

(e) *Pohegaon Drainage Scheme on Godavari Right Bank Canal.*—The project is under scrutiny.

(f) *Madhi area W. C. 21 of Godavari Right Bank Canal.*—The survey estimates are prepared and survey work will be taken up during 1954-55.

(g) *Mahegaon area Dy. 5-6 of Godavari Right Bank Canal.*—The Survey estimate is prepared and work will be taken during 1954-55.

## II. Damage Classification.

### NIRA CANALS.

No damage classification work is done during the period under report.

### PRAVARA CANALS.

Demarcation of damaged area on Pravara Right Bank Canal is in progress and the statement and plans are under preparation.

### GODAVARI CANALS.

The damage classification of Godavari Left Bank Canal is already in hand and will be completed soon.

### GIRNA CANALS.

The damage classification in the factory area of Ravalgaon Sugar Mills was carried.

## III. Well Observation.

Wells on Pravara Right Bank Canal were observed along with the work of damage classification during the year under report and the work is still in progress. Well observation work in the areas irrigated by the Godavari Left Bank Canal and area in catchments of Sonewadi, C. V. 29 and Douch Drainage schemes on Godavari Right Bank Canal as also in the factory area of R. S. Farm on Girna Canal was carried out during the year of report and it is in progress.

## IV. Collecting Data for fixing X Limits.

### NIRA CANALS.

The work of collecting data for the X limits proposals on Nira Right Bank Canal and Nira Left Bank Canal is done this year.

### PRAVARA CANALS.

Refixation of X limit on Dy. No. 1 part and W. C. 1 to 9 of Northern Branch of Pravara Left Bank Canal has been done during the year under report.

### GODAVARI CANALS.

The work of fixing R limits in the case of area drained by the Takli Brahmangaon Dy. Scheme is carried out.

Investigated the question of change in X limits under W.C. 3 and 4 of Godavari Left Bank Canal and Dy. No. 19 of Godavari Right Bank Canal.

#### V. Fruit block case and fixation of soil suitability and $\frac{1}{4}$ mile limit cases.

A few cases of fruit block and  $\frac{1}{4}$  the mile limit cases were dealt with along Godavari, Pravara and Nira Canals during the year under report.

#### VI. Nira, Godavari and Pravara Canals.

Anna valuation plans and statements are under preparation.

#### VII. Nira Canals.

##### *Drainage schemes in the factory area.*

(1) *Phaltan Sugar Works Dy. 7 to 17, original area, D/19, 26 extension area on Nira Right Bank Canal.*—Some drains have been constructed by the Factory and construction of the remaining drains is in progress and factories have been expedited.

(2) *Walchandnagar Industries 1st Extension area on Dy. No. 39 of Nira Right Bank Canal.*—Most of the drains are required to be constructed for which the factory has been expedited.

(3) *Walchandnagar Industries—Original area on Dy. No. 45/46 of Nira Left Bank Canal.*—Almost all the drains have been completed except a few drains which will be completed shortly.

(4) *Saswad Mali Sugar Factory on Dy. No. 21 22, 25, 27, 29 on Br. No. I of Nira Right Bank Canal.*—Some drains are constructed by the Company and for the remaining drains the work is in progress. The survey for preparation of working drawings of S.P. No. III and IV completed.

(5) *Brihan Maharashtra Sugar Syndicate Ltd. on Dy. No. 19 and 24 Br. No. I of Nira Right Bank Canal.*—The factory has not constructed any drains due to some Land Acquisition question though the projects are sanctioned long ago. The factory is being expedited for construction of drains.

(6) *Chitale Agricultural Products Ltd. on Dy. No. 52-58 of Nira Right Bank Canal.*—The factory has not constructed any drains so far. The survey for the preparation of working drawings of all drains in all sub projects is completed. The working drawings for S.P. No. IV have already been prepared.

*Drainage Schemes outside the Factory Area.*

1. *Disty. No. 2-3 drainage scheme.*—This work was taken in hand in December 1951 and the execution work on this drainage scheme is completed in all respect. The masonry works are also completed. Total expenditure up to end of March 1954 is Rs. 14,926.

2. *Distributary No. 4-4A drainage scheme.*—This scheme was taken for execution in February 1952 and the work is completed in all respects. Total expenditure on construction is Rs. 24,931.

3. *Distributary No. 5-6 Murum Drainage Scheme.*—The execution work was taken in hand in the January 1950 and completed in all respects. Total expenditure on construction is Rs. 1,01,753.

4. *Distributary No. 8-11 Hol Drainage scheme.*—The construction work of the drainage scheme is taken in hand in the year 1952 and it is in progress.

5. *Distributary No. 22-24—Melgaon Khanelaj Distributary scheme.*—All the drains except pipeline chainage 1400 to 4300 are completed in all respects. Drain No. 3 is in progress up to chainage 4,000. Most of the masonry works in this Drainage Scheme are also completed.

6. *Distributary No. 29-30—Gunewadi Drainage Scheme.*—The work has been taken in hand in the year 1952 and the work was in progress during the year.

7. *Lasurna Nala Drainage Scheme.*—The work has been taken in hand in the year 1953 and is in progress.

8. *Tawashi Drainage Scheme.*—The plans and estimates of this Scheme are technically sanctioned and an allotment of Rs. 30,000 has been granted for the scheme.

9. *Haturna Nala Drainage Scheme.*—The plans and estimates for this drainage scheme have been sanctioned and the allotment of Rs. 50,000 is sanctioned recently. The work will soon be started.

10. *Distributary No. 13-15-Korhala Drainage Scheme.*—Plans and estimates for the project are completed.

11. *Distributary No. 36—Udhat Drainage Scheme.*—The plans and estimates are approved by Government and the work will be taken in hand shortly.

12. *Distributary No. 5-B Nimbut Drainage Scheme.*—Plans and estimates are sanctioned by the Government and the work will soon be taken up.

**VIII. Pravara Canals.**

1. *Matapur Drainage Scheme between Dy. No. 10 and 11 of Pravara Left Bank Canal.*—The work is in progress.

2. *Loni Drainage Scheme.*—The excavation work of all the 3 drains and the Masonry work on Drainage No. 1 and 2 are completed.

3. *Male Mutha Vadgaon Drainage Scheme.*—This drainage scheme is both within and outside factory area relating to Belapur Sugar Co. Drains No. 3 and 3/1 within factory area are completed and the work of Drainage No. 3, 3/2 and 3/3 outside factory area is in progress.

4. *A. C. Nala Drainage Scheme.*—There are three drains in this drainage scheme and the work is in progress.

5. *Kolhar Bhagwatipur Drainage Scheme between W.C. No. 21 and Dy. No. 3 of Pravara Left Bank Canal.*—This drainage scheme is recently sanctioned and an allotment of Rs. 50,000 is placed at the disposal. The preparation of working drawings etc., is in progress and the work will be started of shortly.

### IX. Godavari Canals.

The following works were in progress :—

1. Takli Brahamangaon Drainage Scheme between Dy. 6 and 7 of Godavari Left Bank Canal.

2. Khirdi Drainage Scheme between Dy. No. 8 and W.C. 24 of Godavari Left Bank Canal.

3. Sonewadi Drainage Scheme between Dy. No. 9 and W.C. 27 of Godavari Right Bank Canal.

4. Chikewadi Drainage Scheme between Dy. No. 15 and W.C. 36 of Godavari Right Bank Canal.

### River Gauging Works.

River gauging work which was discontinued since the year 1926, was again revived in accordance with Government orders and a River Gauging Sub-Division was formed in April 1945, at Poona under the Poona Irrigation and Research Division (Now the Irrigation Development). With a view to establishing a Water Board for the State, an Irrigation Officer, Special Duty was appointed to look after this work under the direction of a technical committee. A new Division called the Water Resource Investigation Division was created for this work for a few years and after its closure the work in the Deccan is entrusted now to the Irrigation Development Division. The work consists of measuring discharges of rivers, rainfall in their catchments and collecting all the necessary data regarding hydrological resources of the State.

The expenditure on "Water Board" established on 1st July 1947, under Scheme No. 203 is Rs. 11,00,125 to the end of the year 53/54 against the estimated cost of Rs. 15 lakhs.

As detailed in the Government Resolution, P.W.D. No. 8181/36 of 4th June 1947, information on the following points is being collected :—

(i) An analysis of the catchment of rivers and their tributaries with the respective run-offs.

(ii) Discharge at various sections of rivers and their tributaries in different months.

(iii) The existing irrigation and water supply works and the amount of water extracted by them and the amount regenerated in the rivers.

(iv) New water supply and irrigation works contemplated on the rivers and their tributaries, with an estimate of discharges, likely to be utilised by them and their effect on other regions etc., violation of the riparian rights etc.

(v) Division of the available discharges between States.

(vi) Recommendations for making up deficiencies of the data and statistics such as establishment of new stream gauging and rain gauge stations.

So far the following river valleys have been analysed by this Division :—

(1) Tapti River Valley, (2) Bhima River Valley, (3) Godavari River Valley, (4) Krishna River Valley.

During the year under report the following works have been carried :—

(i) Observing rain gauges in the four valleys.

(ii) Observing river gauges in the four valleys.

(iii) Maintaining all the existing rain and river gauges.

(iv) Installing 16 new rain gauges.

(v) Erecting 10 new river gauges.

(vi) Observing rain by self-recording rain gauges for testing etc.

(vii) Obtaining data regarding about 300 rain gauges maintained by other P.W.D. Divisions. Local Board, Tata Hydro Electric Works and Rlys. etc.

(viii) Observing data regarding flow of rivers in the Hot Weather period at eight places.

(ix) Observing water levels by automatic water level recorders at Koregaon on Bhima river.

(x) Installing Stev. Screens and climatological apparatus at six river gauging stations and collecting climatological data at various stations.

(xi) Collection of flood samples at the gauging sites.

(xii) Compilation of data and writing note on the rainfall of 1952-53 and behaviour of Deccan Rivers.

(xiii) Compilation of data and a note on Station Rating Curve for four gauging sites.

The following table gives the number of river and rain gauges fixed from year to year. The number of self-recording rain gauges is also given in the same statement :—

*Progressive Totals.*

Financial year.	Total No. — for maintenance			Remarks.
	River gauges.	Ordinary rain gauges	Self recording rain gauges.	
	Nos.	Nos.	Nos.	
1945-46	11	3	....	
1946-47	22	22	....	
1947-48	31	40	....	
1948-49	46	83	....	
1949-50	50	88	....	
1950-51	53	96	9	
1951-52	54	99	15	
1952-53	58	103	15	
1953-54	*60	108	17	

\*During 1953-54 seven river gauges were discontinued and twelve new ones were established hence increase is only of five numbers.

### KARNATAK IRRIGATION CIRCLE.

The Soil Research Sub-Division, Dharwar, was opened in the year 1948 mainly with the following objects in view :—

- (1) Carrying out the soil surveys in the commanded areas of the proposed canals in Bombay-Karnatak region.
- (2) Study of rocks, soils and sub-soils in Karnatak region.
- (3) Study of agricultural problems affecting the irrigated areas of the Bombay-Karnatak.
- (4) Study of engineering properties of soils.
- (5) Study of the ground-water resources in the Ghataprabha Valley region.

Most of the apparatus required for testing the chemical and physical properties of soils and waters have been purchased. Major part of the apparatus ordered for Soil Mechanics Section from abroad has been received and the remaining minor items will be received in the near future.



A brief description of the work done by this Sub-Division during the year 1953-54 is given below :—

### **I. Classification of Soils of Ghatprabha Valley Region.**

Soil Survey and Classification work that is being done on the lines indicated in the report of 1952 has been in progress and is nearing completion. The area completed during the year is 1,3,938 acres. The soil survey of all the area coming under the command of Ghatprabha Left Bank Canal will thus be completed. The work of Collection of Soil samples, on profile basis, from ridge to valley, in the areas representative of the tract is in progress and the work of testing these samples will be completed thereafter.

### **II. Study of Rocks.**

(a) A few minerals and rock samples occurring in Ghatprabha Left Bank Canal area have been collected for the Museum in the year under report.

(b) A few samples of Lime from Ghatprabha Right Bank Canal area have been collected and their analysis is in hand.

(c) Two sample of Lime Kankar were received from the Deputy Engineer, Neersagar Head Works, Dhumwad, for analysis. They were analysed and the results reported.

### **Study of Typical Soils and Sub-soils in Different zones of Karnatak Region.**

(a) Study of typical Soils and sub-soils in the proposed Ghatprabha left Bank Canal area started two years ago is continued during this year. Five typical sections—each from ridge to valley were selected in the B and E groups of villages of the Ghatprabha Left Bank Canal and profiles were taken in them. Soil samples from these profiles were analysed. From the results, it can be said that the Soils in this area are free from harmful salts and that they possess good drainage conditions. There is a zone of salt accumulation near the 4th or 5th foot in deep soils in all the cross sections. But since the sub-soil is of murum—a permeable strata—the salts are likely to be leached away when there will be perennial irrigation in these lands.

Further testing of soils of the remaining groups is in hand.

(b) The work of the study of nature of soils formed from different geological formation in Karnatak is in progress. The soils from soil profiles on different geological formation and in different climatic zones from West to East are to be collected. During the year under report, the analytical work of soil sample on profile basis from two cross sections is completed. One cross section runs across the Trap series. It consists of a set of soil profiles collected at different places from Kolharur to the west to Bagewadi in the East. Second cross section runs across Sand stone series. It is made up of a set of soil profiles collected at different places from Daddi to the West to Hungund on the East.

### **Behaviour of Deep Soils under Irrigation.**

(a) Experiment to ascertain the effects of intensive irrigation on the water table in deep soil area irrigated by Lift Irrigation started in 1952, was conducted during the year under report. The plots selected in 1952, are in Ugar and Ainapur area belonging to the Ugar Sugar Factory. From these plots, this year soil samples are collected for study exactly in the same manner as was done in 1952. The soil samples were analysed and the results are indicative of the following points—

#### *Ugar Area.*

- (1) Soils in the plots studied show moist to wet soil layers up to a depth of 20 feet though saturated moisture condition has not yet reached.
- (2) The total moisture content held by soils of different layers is more in 1954 as compared to that in 1952.
- (3) There has been slight leaching of salts in lower layers.
- (4) PH is not much affected.

#### *Ainapur Area.*

- (1) Soils in both irrigated and non-irrigated survey Nos. are moist and air dry soil is not met with.
- (2) Total salts content in irrigated soils is more than the salt content of unirrigated soils, though there is no definite layer of accumulation of salts.
- (3) Total moisture content of soils in different layers has an increase in 1954, as compared to the contents in 1952.
- (4) PH is on alkaline side and has remained unaffected.

### **(B) Don Valley Irrigation Project.**

As done in previous year, the work of analysing water samples of Don River collected before during and after floods was continued during the year 1953. The rainfall during the year 1953 was well distributed and hence the flood period of Don River was comparatively of a longer duration than in Monsoon of 1952.

Similarly water samples of Don River during months of Summer of 1954, are also collected and analysed.

There are 5 big nalas that join the Don River upstream the proposed dam site near Kumatgi. These are locally known as Ukumnal, Hitnally, Honwad and Rampur nalas. Water Samples from these nalas were collected in January 1954 and analysed. The waters have salt content varying from 28 to 288 parts per 100,000 parts of water. It may therefore, be said that these nala waters may not be solely contributing to high salt content of Don water during summer.

### III. Study and Research of Irricultural problems affecting Irrigated Areas.

Besides the work mentioned above the following items of study and investigations were also dealt with during the year :—

#### (A) *Salt Tolerance of Crops—Maize.*

The study was taken up to know (i) the effect of irrigation water containing high proportion of soluble salts on maize grown on normal soil,

(ii) effect of irrigation water containing low proportion of soluble salts on maize grown on a (a) normal soil, (b) apparently affected soil with good drainage, and (c) salt affected soil.

The plot for experiment (i) was at Yabaratti and plots for experiment, (ii) were at Kalloli.

#### (B) *Silt Load in River Waters of Ghataprabha and Markandeya during the Monsoon of 1953*

Silt loads carried by the Ghataprabha and Markandeya rivers during the monsoon of 1953 were observed. The results obtained for the months June 1953 to October 1953 are incorporated in this report.

#### (C) *Common Weeds of Ghataprabha Left Bank Canal Area.*

The common weeds met with in Ghataprabha Left Bank Canal have been collected and analysed to know if they form good fodder.

### IV. Soil Mechanics Section.

During the year under report most of the apparatus ordered from the United Kingdom has been received.

(a) 32 samples of soils were received from the Executive Engineer, Dharwar Irrigation Division, Dharwar, for soil Mechanics Test, such as grain size distribution. All these were analysed and the results reported.

(b) 4 samples of soils were received from the Deputy Engineer, Dharwar Irrigation Projects Sub-Division, Dharwar, for Soil Mechanics Tests, e.g. grain size distribution and Atterberg's Limits. These soils are to be used in construction of tank at Arwatgi.

4 samples of soils were received from the Deputy Engineer, Haliyal Irrigation Sub-Division, for the above tests for using these in construction of tank at Benchi.

Samples from both the places were analysed and the results reported.

(c) 10 samples of soils from Honnatti tank were received from the Deputy Engineer, Havasbhavi, Irrigation Sub-Division, Ranebennur, for the soil mechanics tests, e.g., grain size distribution, Atterberg's Limits, Compaction Shear test and Specific gravity. All were analysed and the results reported.

10 Samples of soils (another set) from Honnatti Tank were analysed for the above tests, later on.

(d) 4 Samples of sand were sent by the Deputy Engineer, Dharwar Irrigation Projects Sub-Division, Dharwar, in connection with the study

of scour near Bridge No. 182 in mile No. 116 of K. B. Road for test of grain size distribution. The results of analysis were duly communicated.

#### General.

Most of the problems that were under study were continued during the year report. In the year under report, 444 samples were analysed in connection with the investigations on hand. The following table gives the number of different samples tested during the year.

TABLE.

Soils	...	...	...	...	209
Water (irrigation purposes)	...	...	...	...	31
Water (silt content only)	...	...	...	...	120
Lime Kankar	...	...	...	...	2
Soil for embankments	...	...	...	...	66
Other samples	...	...	...	...	16
				Total	444

#### GUJARAT IRRIGATION CIRCLE.

*Soil Mechanics and Concrete Testing Section.*—This Sub-Division was formed in the year 1950 under Gujarat Irrigation Circle, with a view to establishing a full fledged Engineering experimental station to deal with Irrigation and Highway Engineering problems in Gujarat. Soil Mechanics Laboratory for testing soils was initiated in the first instance, which later developed into a fully equipped soil mechanics laboratory on modern lines, with necessary equipment imported from U. K.

References and testing work in this field are regularly being received from various divisions in this area for testing samples for concrete roads and bridges. This work is of immense value in this field for day to day problems for judging the quality of work (concrete) in the present road programme. After analysis of coarse and fine aggregates, suitable mixes for concrete are suggested. Cubes taken in the field by the various supervising agencies are then tested in this laboratory to determine the crushing strength of concrete and the results reported.

On Soil Mechanics side, for dealing with irrigation and road problems, the following tests can be undertaken by this laboratory :—

1. Mechanical analysis (wet and dry).
2. Plasticity test.
3. Shrinkage.
4. Proctor density and Opt. Moisture content.
5. Shear.
6. Triaxial compression.
7. Unconfined compression.
8. Consolidation.
9. California Bearing Ratio Test.
10. Permeability.
11. Field density.
12. Total dissolved salts in soil.

Inquiries for testing soils were received from various sub-divisions of Gujarat Irrigation Circle, as well.

## A. Outdoor Soil Survey Works.

### (I) *Reconnaissance Soil Survey.*

(A) *Lower Fatewadi Canal Project.*—Soil suitability surveys were carried out over an area of 400 square miles likely to be irrigated through the bund system and through direct irrigation. The sub-soil water table and the quantity of the sub-soil waters were studied.

(B) *Banas Valley Project.*—An area of 0.96 square miles covering lands on both the banks of the river was surveyed to ascertain the suitability of the soils for irrigation and for the prospects of crop-growing under conditions of irrigation.

(C) *North Gujarat Tube Well Project.*—Soil suitability surveys, examination of the condition and the quality of the artesian water and ascertaining the irrigation prospects were carried out over an area of about 100 square miles in the Banaskantha district.

### (II) *Soil Classifications.*

(A) *The Fatewadi 8 months Canal Bund Area.*—Detailed classification of soils covering 12,000 acres was carried out. Analytical work and the soil mapping work are in progress.

(B) *Jojwa Wadhvana Irrigation System.*—Soil classification and soil mapping was done for an area of about 10,000 acres. Further area is being surveyed.

### (III) *Observation of Sub-Soil Water Table and Studies into the Composition of Ground Water.*

(A) *Shetrunji River Project.*—Hydrological and the ground water observations were carried out u/s of the proposed Medhi weir site in an area of about 12 square miles on both the banks of the river. The work is being continued.

(B) *Mahi Right Bank Canal Project.*—Analytical work of the sub-soil waters collected from an area of 700 square miles and mapping the ground water contours were carried out and are in progress.

(C) *Analytical Work.*—(I) Collection of the Tube-well waters from parts of North Gujarat and the Analytical studies as to their quality were carried out.

(II) Complete chemical analysis of the waters from the newly drilled tube-wells at Dehgam and Vijapur were done and their suitability or otherwise for irrigation was reported.

(III) Flood-water samples collected from the Manek Nalla as received from the Ahmedabad Irrigation Division were analysed and their suitability for irrigation was reported.

A note giving information regarding, the activities pertaining to irrigation of the Public Works Department for the welfare of the Backward classes in the Bombay State and showing the benefits derived by the Backward Classes from the irrigation schemes during the year under review viz. 1953-54.

#### NORTH GUJARAT CIRCLE.

In the Scheduled areas in the North Gujarat Circle following Minor

1. Improving gam tank at Laxmipura.

Irrigation works were carried on :—

2. Special Repairs to tank at Agia.
3. Improving of Kherpa tank at Kheroj.
4. Constructing tank at Napda.
5. Improving of tank at Ramgadhi.
6. Improving tank at Raghdiwad, Taluka Khedbrahma.
7. Itwa tank at Abhapur (flood damage and land acquisition).

#### SOUTH GUJARAT CIRCLE.

In Panchmahals Division the backward class cultivators will derive equal benefits as other cultivators. In Surat Division the backward class cultivators will derive benefits as other cultivators from the following works :—

- (i) Construction of Tichakiya weir on Zankar River. ... .. Vyara Taluka.
- (ii) Raising of Dam Doswada and remodeling of extension of Right bank canal system. ... .. Songadh Taluka.
- (iii) Construction of a weir and canal on Ver River in Adivasi area. ... .. Mandvi Taluka.

#### GUJARAT IRRIGATION CIRCLE.

During the year under report, the benefits derived by the Backward class people from the various irrigation schemes in the Gujarat Irrigation Circle, are detailed as shown below :—

Name of Work.	Number of Acres.
<b>AHMEDABAD IRRIGATION DIVISION.</b>	
(i) Hathmati and Kharicut Canals ... ..	1066—34
(ii) Meshwa Canal including Galki and Goblej Tanks. ... ..	284—4
(iii) Nani Fatewadi Canal including inter-connecting channels to Bund system. ... ..	1546—6
(iv) Vijapur Tubewells ... ..	84—10
<b>BARODA IRRIGATION DIVISION.</b>	
(v) Wadhvana Tank including Jojwa orsang Main Canal. ... ..	156—15
(vi) Nine tanks in Baroda District ... .. (8 in Savali Taluka and one in Waghodia Taluka).	168—23

Total ... 3305—12

## BOMBAY CIRCLE.

The activities done by the Public Works Department in this Circle in respect of irrigation works, during the year under report, are as shown below :—

	Expenditure during 1953-54. Rs.
(i) Constructing a new well at Andheri, taluka Jawahar, district Thana.	... 1,663
(ii) Constructing a new well at Waki, taluka Jawahar, district Thana.	... 1,448
(iii) Constructing a new well at Haveli, taluka Jawahar, district Thana.	... 2,617
(iv) Constructing a new well at Shivshi taluka Jawahar, district Thana.	... 475
(v) Repairs to the well at Kasaewadi	... 263
<b>Total</b>	<b>... 6,466</b>

## DECCAN IRRIGATION CIRCLE.

In this circle, the following are the areas belonging to Backward Class irrigators who derived benefits of irrigation facilities during the year under report :—

Name of Canal.	Acreage of land.
(i) Godavari Right Bank Canal	... 2,525
(ii) Godavari Left Bank Canal	... 1,218
(iii) Girna Left Bank Canal	... 788
(iv) Kadwa Canal	... 1,117
(v) Pravara Left Bank Canal	... 737
(vi) Pravara Right Bank Canal	... 110
(vii) Visapur Tank and Canal	... 3
(viii) Nira Right Bank Canal	... 2,880
(ix) Nira Left Bank Canal	... 2,979
(x) Mutha Canals and Matoba Tank	... 393
<b>Total</b>	<b>... 12,843</b>

## CENTRAL CIRCLE.

In this Circle, following are the areas belonging to Backward Class persons who derived benefits of irrigation facilities during the year under Report :—

## EAST KHANDESH DIVISION.

Name of work.	Acres.
Jamda Canal	134
Mhaswa Tank	44
Nagordeola Bandhara	2

## POONA DIVISION.

Shirsuphal Tank	35
Bhadalwadi Tank	65
Madanwadi Tank	52

## WEST KHANDESH DIVISION.

Lower Panzra River works	391
Sayyadnagar Bandhara	47
Chimthana Bandhara	205
Shahada Channel	274

## SHOLAPUR DIVISION.

Pathri Tank	54
Koregaon Tank	72
Wadshivne Tank	66
Parewadi Tank	97
Sangavi Tank	10
Ekrur Tank	28
Hotgi Tank	6
Ashri Tank	104
Mhaswad Tank	444
Walki Bhandara	11
Gherdi Tank	16

## NORTH SATARA DIVISION.

Revdi Canal	10
Mayani Tank	7
Yerla River Works	107

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## KARNATAK IRRIGATION CIRCLE.

In this Circle, no specific irrigation schemes for the welfare of the Backward Class people were taken up during the year under report.

## SOUTHERN CIRCLE.

In the Southern Circle, no specific irrigation schemes for the Welfare of the Backward class people were taken up, during the year under review.



**A Note on Major and Medium Irrigation Projects included in the First Five-Year Plan which are under execution in the Bombay State.**

Providing additional irrigation facilities to step up food production is one of the first concerns of the Government and so of the Department. In addition to the existing tanks, provision has, therefore, been made for the construction of the following major and medium irrigation schemes which have been included in the First Five-Year Plan and are briefly reviewed as under :—

(i) *The Mahi Right Bank Canal Project (Stage 1).*—The project which consists of a pick up weir, 2,450 feet long at Wanakbori across the Mahi River in Kaira District and Right Bank Canal of about 44 miles in length is in progress. Two more Divisions have been sanctioned. The Project estimated to cost Rs. 425 lakhs is being revised. An expenditure of Rs. 50,55,116 was incurred on this Project up to the end of March 1954.

(ii) *Kakrapar Weir and Canals Project.*—The Project is in progress. The total expenditure to the end of 1953-54 is Rs. 390.85 lacs.

(iii) *Gangapur Storage Project.*—The work of Dam proper is nearly complete. The total earth work completed was 151 M.cft. out of the total of 157 M.cft. The work of remodelling Godavari Canals has commenced during the year. The cost of original project is being revised.

An expenditure of Rs. 2,35,86,773 was incurred on the Dam up to the end of March 1954.

(iv) *Ghataprabha Left Bank Canal Project.*—In order to expedite the construction of the project, one more Division has been sanctioned during the year under Report. The work of the Project is in full swing. The first 17 miles of the canal have been completed and opened for irrigation. An expenditure of Rs. 2,63,06,625 was incurred on this Project to the end of the March 1954.

(v) *Ranand Tank Project.*—The work of constructing Ranand Tank is practically completed in all respects. Earth work in Section II and cross drainage works are in progress. An expenditure of Rs. 15,36,443 was incurred on this Project to end of March 1954.

(vi) *Kolchi Weir Scheme.*—The scheme estimated to cost Rs. 42.95 lakhs is under execution. The masonry work of the weir has been completed. The work is expected to be completed in all respects in 1956 and to irrigate about 3,700 acres in the Belgaum District. An expenditure of Rs. 16.90 lakhs was incurred on this project to end of March 1954.

## **A short Note on Minor Irrigation Works and North Gujarat Tube Wells Scheme in the Bombay State.**

### **MINOR IRRIGATION WORKS.**

The year 1953-54 saw an increase in the constructional activity in the field of Minor Irrigation works also. During the year, 127 Second Class Minor Irrigation works estimated to cost Rs. 71,86,123 were completed and 176 works estimated to cost about Rs. 3,17,01,783 were still in progress. The irrigation potential of the 127 completed works on full development will be about 24,663 acres.

The position at the end of the year was that in all 10,674 Second Class Minor Irrigation works were in existence and an area of about 2,44,886 acres was actually irrigated during the year by these works.

### **TUBE WELLS.**

The scheme provides for construction of 400 tube wells in the North Gujarat area during the First Five-Year Plan period. Each tube well is expected to irrigate about 200 acres on full development. Owing to the failure of Messrs. National Tube Wells Ltd. (now in liquidation) to whom the contract to drill the tube wells was given, only 24 tube wells could be drilled during years 1951—1953. The work was therefore taken up departmentally and further 23 tube wells were drilled during 1953-54. The work of harnessing these wells as also of the 24 tube wells drilled earlier is in progress.

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STATEMENT.

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## STATEMENT

*Statement of area irrigated by Irrigation Works in*

No°	Name of Work.	Area irrigated		
		Kharif.	Rabi.	Total.
1	2	3	4	5
<b>WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.</b>				
<b>PRODUCTIVE.</b>				
1	Ekrak Tank .. ..	1,413* (784)	4,763* (4,291)	6,176* (5,075)
2	Shahada Channel .. ..	1,047* (954)	1,951* (1,968)	2,998* (2,922)
3	Gadikeri Tank .. ..	423†	....	423†
4	Mavinkop Tank .. ..	590†	....	590†
	Total—Productive ..	1,738 1,013†	6,259	7,997 1,013†
<b>UNPRODUCTIVE.</b>				
5	Wangroli Tank.. ..	1,624	9	1,633
6	Savli Tank .. ..	2,097	305	2,402
7	Tranza-Nagrama Tank .. ..	143	2	145
8	Hathmati and Khari Cut Canals .. ..	3,208 15,102	3,416 3,548	6,624 18,650
9	Meshwa Canal .. ..	7,146	1,498	8,644
10	Nani Fatewadi Canal .. ..	10,848	5,497	16,345
11	Vijapur Tube Wells .. ..	429	1,364	1,793
12	Wadhvana Irrigation Tank including Jojwa Main Canal.	1,820	2,520	4,340
13	Shirsuphal Tank .. ..	35* (33)	831* (816)	866* (849)
14	Bhadalwadi Tank .. ..	429* (429)	1,053* (1,051)	1,482* (1,480)
15	Mhaswad Tank and Branch No. III of the Nira Right Bank Canal.	2,351* (1,300)	6,267* (5,047)	8,618* (6,347)
16	Ashti Tank .. ..	....	3,713* (3,071)	3,713* (3,071)

I-E.

*the Bombay State during the year 1953-54.*

irrigated in acres.				Average discharges	
Flow.	Lift.	Double cropped.		At Head.	
		Area irrigated.	Percentage of Total Area.	Kharif.	Rabi.
6	7	8	9	10	11
6,121* (5,020)	55* (55)	.....	.....	7.20	28.90
2,998* (2,922)	.....	.....	.....	.....	.....
423†	.....	.....	.....	.....	.....
500†	.....	.....	.....	.....	.....
7,942 1,013†	55	.....	.....	.....	.....
1,546	87	.....	.....	134	0.6
2,402	.....	.....	.....	153	13.1
141	4	.....	.....	Not available.	
6,605 17,997	19 653	.....	.....	174 165	60 47
7,783	861	.....	.....	54	40
14,818	1,527	.....	.....	100	58
.....	1,793	.....	.....	.....	.....
4,340	.....	.....	.....	125	50
866* (849)	.....	.....	.....	8.4	11.5
1,482* (1,480)	.....	.....	.....	8.84	16.6
8,610* (6,339)	8* (8)	.....	.....	36.66	65.10
3,713* (3,071)	.....	.....	.....	.....	14.24

## STATEMENT

No.	Name of Work.	Cubic Feet per Second.		Area irrigated per	
		Utilized.		Discharged at Head.	
		Kharif.	Rabi.	Kharif.	Rabi.
1	2	12	13	14	15
<b>WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.</b>					
<b>PRODUCTIVE.</b>					
1	Ekrak Tank .. ..	7.20	28.90	109	48
2	Shahada Channel .. ..	....	....	130	80
3	Gadikeri Tank .. ..	....	....	....	....
4	Mavinkop Tank .. ..	....	....	....	....
	Total—Productive ..				
<b>UNPRODUCTIVE.</b>					
5	Wangroli Tank .. ..	99	0.33	12	15
6	Savli Tank .. ..	116.5	12.88	14	23
7	Tranza-Nagrama Tank .. ..			Not available.	
8	Hathmati and Khari Cut Canals ..	65 165	60 47	18 92	57 75
9	Meshwa Canal .. ..	54	40	132	37
10	Nani Fatewadi Canal .. ..	100	58	108	98
11	Vijapur Tube Wells .. ..	....	....	....	....
12	Wadhvana Irrigation Tank including Jojwa Main Canal.	125	50	1,456	5,004
13	Shirsuphal Tank .. ..	4.2	6.8	35	123
14	Bhadalwadi Tank .. ..	6.35	10	67	64
15	Mhaswad Tank and Branch No. III of the Nira Right Bank Canal.	36.66	65.10	12	71
16	Ashti Tank .. ..	....	14.24	....	215

I-E—contd.

Cubic Foot per Second.		Base to which the Duties of Water are calculated.			Remarks.
Utilized.		Kharif.	Rabi.	Rabi.	
Kharif.	Rabi.				
16	17	18	19	20	
109	48	....	....		*Area assessed.
130	80	....	....		Figures in brackets show area actually irrigated.
....	....	....	....		†Area wholly under consolidated assessment.
....	....	....	....		
12	15	....	....		
14	23	....	....		
Not available.		....	....		Irrigation is done directly from tanks.
49	57	15th June 1953 to	16th November		
92	75	15th November 1953.	15th November 1953 to 14th February 1954.		
132	37	Do. ..	Do.		
108	98	Do. ..	Do.		
....	....	....	....		Water is pumped out and supplied for irrigation.
14.56	50.4	15th June 1953 to 15th November 1953.	16th November 1953 to 15th February 1954.		
147	270	15th February 1953 to 14th October 1953.	15th October 1953 to 14th February 1954.		
410	236	Do. ..	Do.		
12	71	Do. ..	Do.		
....	215	Do. ..	Do.		

## STATEMENT

No.	Name of Work.	Area irrigated		
		Kharif.	Rabi.	Total.
1	2	3	4	5
<b>WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—contd.</b>				
<b>UNPRODUCTIVE—contd.</b>				
17	Pathri Tank .. ..	.... ....	1,306* (1,100)	1,306* (1,100)
18	Jamda Canals .. ..	2,581* (1,813)	4,880* (4,139)	7,461* (5,952)
19	Mhaswa Tank .. ..	.... ....	713* (633)	713* (633)
✓ 20	Lower Panjhra River Works ..	1,586* (1,560)	2,599* (2,288)	4,185* (3,848)
21	Krishna Canal .. ..	5,152* (3,662)	4,736* (3,069)	9,888* (6,731)
22	Revari Canal .. ..	25* (7)	249* (216)	274* (223)
23	Upper Man River Works .. ..	15* (13)	937* (872)	952* (885)
24	Yerla River Irrigation Works ..	1,114* (856)	4,751* (4,428)	5,865* (5,284)
25	Maini Tank .. ..	455* (267)	1,500* (1,446)	1,964* (1,713)
26	Nira Left Bank Canal .. ..	59,136* (38,023)	23,278* (61,455)	82,414* (99,478)
	Shetphal Tank .. ..	4,025* (2,485)	1,948* (3,952)	5,973* (6,437)
27	Nira Right Bank Canal .. ..	47,858* (36,643)	70,629* (59,026)	1,18,487* (95,669)
28	Mutha Canals .. ..	10,303* (9,805)	3,639* (3,405)	13,942* (13,210)
	Matoba Tank .. ..	2,295* (2,076)	2,184* (2,167)	4,479* (4,243)
29	Godavari Right Bank Canal ..	21,197* (16,197)	17,649* (22,722)	38,846* (38,919)
	Godavari Left Bank Canal ..	18,070* (10,865)	10,927* (16,365)	28,997* (27,230)
30	Chankapur Tank—Girna Canal ..	14,419* (10,484)	6,443* (12,117)	20,862* (22,601)



I-E—*contd.*

in acres.		Average discharges			
Flow.	Lift.	Double cropped.		At Head.	
		Area irrigated.	Percentage of Total area.	Kharif.	Rabi.
6	7	8	9	10	11
1,304* (1,098)	2* (2)	.....	.....	.....	10.84
7,461* (5,952)	.....	.....	.....	98	48
713* (633)	.....	.....	.....	.....	31
4,174* (3,337)	11* (11)	.....	.....	0.21	49.3
8,380* (5,971)	1,508* (760)	.....	.....	42	61.17
274* (223)	.....	.....	.....	0.94	2.24
944* (878)	8* (7)	.....	.....	1.05	8.88
5,753* (5,192)	112* (92)	.....	.....	27.84	38.06
1,943* (1,695)	21* (18)	.....	.....	2.28	14.20
81,574	840	1,454	1.4	391	471
5,973	.....	42	0.7	16	29
95,669	.....	1,875	2.0	621	749
13,423	519	.....	.....	174	18
4,479	.....	.....	.....	13	14
26,690	2,156	1,295	2.4	172	235
25,581	3,416	763	2.6	105	123
20,862	.....	.....	.....	57	106

## STATEMENT

No.	Name of Work.	Cubic Feet per Second.		Area irrigated per		
		Utilized.		Discharged at Head.		
		Kharif.	Rabi.	Kharif.	Rabi.	
1	2	12	13	14	15	
WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT— <i>contd.</i>						
UNPRODUCTIVE— <i>contd.</i>						
17	Pathri Tank .. ..	..	....	10.84	....	101
18	Jamda Canals .. ..	..	98	48	27	54
19	Mhaswa Tank .. ..	..	....	31	....	23
20	Lower Panjhra River Works	..	0.21	49.3	100	46
21	Krishna Canal .. ..	..	42	61.17	102	70
22	Revari Canal .. ..	..	0.94	2.24	7	97
23	Upper Man River Works ..	..	1.05	8.88	12	98
24	Yerla River Irrigation Works	..	27.84	38.06	31	116
25	Maini Tank .. ..	..	2.28	14.20	117	107
26	{ Nira Left Bank Canal .. ..	..	238	344	97	130
	{ Shetphal Tank .. ..	..	16	29	155	136
27	Nira Right Bank Canal ..	..	380	548	59	89
28	{ Mutha Canals: .. ..	..	102	82	56	26
	{ Matoba Tank .. ..	..	13	14	160	155
29	{ Godavari Right Bank Canal	..	105	148	93	96
	{ Godavari Left Bank Canal ..	..	80	100	103	129
30	Chankapur Tank—Girna Canal	..	48	88	184	114

I-E—contd.

Cubic Foot per Second.		Base to which the Duties of Water are calculated.			Remarks.
Utilized.		Kharif.	Rabi.	Remarks.	
Kharif.	Rabi.				
16	17	18	19	20	
....	101	15th February 1953 to 14th October 1953.	15th October 1953 to 14th February 1954.		
27	54	Do.	..	Do.	
....	23	Do.	..	Do.	
100	46	....		....	
102	70	Do.	..	Do.	
7	97	Do.	..	Do.	
12	98	Do.	..	Do.	
31	116	Do.	..	Do.	
117	107	Do.	..	Do.	
160	179	Do.	..	Do.	
155	136	Do.	..	Do.	
96	108	Do.	..	Do.	
96	42	Do.	..	Do.	
160	155	Do.	..	Do.	
156	153	Do.	..	Do.	
135	163	Do.	..	Do.	
219	130	Do.	..	Do.	

## STATEMENT

No.	Name of Work.	Area irrigated			
		Kharif.	Rabi.	Total	
1	2	3	4	5	
<b>WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—contd.</b>					
<b>UNPRODUCTIVE—contd.</b>					
31	Kadwa River Works.	Palkhed Canal ..	1,435* (839)	731* (1,316)	2,166* (2,155)
		Ojhar Tambat Canal.	932* (655)	520* (918)	1,452* (1,571)
		Wadali Canal ..	508* (432)	378* (627)	884* (1,059)
32	Pravara River Works.	Pravara Right Bank Canal.	12,468* (9,421)	7,816* (13,484)	20,284* (22,905)
		Pravara Left Bank Canal.	33,094* (20,594)	17,093* (37,029)	50,187* (57,623)
33	Bhatodi Tank ..	.. ..	251* (234)	382* (381)	633* (615)
34	Parsul Tank ..	.. ..	1,098* (1,051)	1,163* (1,150)	2,261* (2,201)
35	Chikhli Canal ..	.. ..	159	248	405* (509)
36	Muchkundi Tank	.. ..	6	....	6
37	Dambal Tank ..	.. ..	19 144A	349 ....	368 144A
38	Gokak Canal: First Section and Storage Works.		9,708	6,813	16,521
39	Medleri Tank ..	.. ..	199	18	217
40	Madag Tank ..	.. ..	528	195	723
41	Asundi Tank ..	.. ..	.... ....	254 182A	254 182A
42	Dharma Canal ..	.. ..	1,609 8,648A	.... ....	1,609 8,648A
43	Ghataprabha Left Bank Canal	.. ..	4,217	829	5,046
		Total—Unproductive ..	2,28,606 8,792A	2,91,151 182A	5,19,757 8,974A
		Grand Total—Productive and Un-productive.	2,30,344 9,805A	2,97,410 182A	5,27,754 9,987A
			2 40,149	2,97,592	5,37,741

I-E—contd.

in acres.				Average discharges,	
Flow.	Lift.	Double cropped.		At Head.	
		Area irrigated.	Percentage of Total Area.	Kharif.	Rabi.
6	7	8	9	10	11
2,089	77	70	3.5	17	23
1,425	27	37	2.5	5	7
832	52	31	3.5	7	6
20,117	167	878	4.3	111	132
49,396	791	2,062	4.1	358	444
633	....	....	....	2	3
2,261	....	....	....	9	6
400	5	....	....	....	....
....	....	....	....	....	....
....	....	....	....	1.44	2.18
16,342	179	....	....	86.03	84
212	5	....	....	1.04	1.37
723	....	....	....	18.77	20.48
250	4	....	....	0.27	5.32
1,609	....	....	....	136.5	33.57
4,614	432	....	....	60.6	25.7
4,78,0.4	14,512	8,507	1.6	....	....
4,85,946					
1,013A	14,567	8,507	1.6	....	....
4,86,959	14,567				

## STATEMENT

No.	Name of Work.	Cubic Feet per Second.		Area irrigated per		
		Utilized.		Discharged at Head.		
		Khariif.	Rabi.	Khariif.	Rabi.	
1	2	12	13	14	15	
<b>WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—concl'd.</b>						
<i>UNPRODUCTIVE—concl'd.</i>						
31	Kadwa River Works.	Palkhed Canal ..	11	16	49	57
		Ojhar Tambat Canal.	5	6	131	131
		Wadali Canal ..	4	6	61	104
32	Pravara River Works.	Pravara Right Bank Canal.	68	93	85	102
		Pravara Left Bank Canal.	241	313	57	83
33	Bhatodi Tank ..	.. ..	1	2	117	127
34	Parsul Tank ..	.. ..	9	6	117	192
35	Chikhli Canal ..	.. ..	3	4.8	....	....
36	Muchkundi Tank ..	.. ..	....	....	....	....
37	Dambal Tank ..	.. ..	1.44	2.18	113.19	160.09
38	Gokak Canal: First Section and Storage Works.		86.03	84	100.73	106
39	Medleri Tank ..	.. ..	1.04	1.37	191.38	13.15
40	Madag Tank ..	.. ..	18.77	20.48	28.13	9.52
41	Asundi Tank ..	.. ..	0.27	5.32	....	81.95
42	Dharma Canal ..	.. ..	136.5	33.57	75.14	....
43	Ghataprabha Left Bank Canal ..	.. ..	60.6	25.7	63.2	30.62
	Total—Unproductive ..		....	....	....	....
	Grand Total—Productive and Un-productive.		....	....	....	....

I-E—*conold.*

Cubic Foot per Second.		Base to which the Duties of Water are calculated.			Remarks.
Utilized.		Kharif.	Rabi.	Remarks.	
Kharif.	Rabi.				
16	17	18	19	20	
76	82	15th February 1953 to 14th October 1953.	15th October 1953 to 14th February 1954.		
131	152	Do. ..	Do.		
108	104	Do. ..	Do.		
139	145	Do. ..	Do.		
85	118	Do. ..	Do.		
234	190	(Actual number of days for which the canal was flowing.			
117	192	Do.	Do.		
2	2.5	15th February 1953 to 14th October 1953.	15th October 1953 to 14th February 1954.		
....	....	15th February 1953 to 14th June 1953.	15th June 1953 to 14th November 1953.		
113.19	160.09	15th February 1953 to 14th October 1953.	15th October 1953 to 14th February 1954.		
100.73	106	15th June 1953 to 14th October 1953.	Do.		
191.38	13.15	15th February 1953 to 14th October 1953.	Do.		
28.13	9.52	15th June 1953 to 14th October 1953.	Do.		
....	18.95	15th February 1953 to 14th October 1953.	Do.		
75.14	....	15th June 1953 to 14th October 1953.	Do.		
62.2	30.62	Do. ..	Single watering.		
....	....				
....	....				

## STATEMENT

Statement showing Water-rates per Acre in force during 1953-54

No.	Name of Work.	WATER			
		Irrigation in blocks.	Perennial.	Early, eight months.	Monsoon, four months.
1	2	3	4	5	6
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
<b>WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.</b>					
<b>PRODUCTIVE.</b>					
<i>Central Circle.</i>					
1	Ekrak Tank (aa) ...	...	(M) 52 8 0 (B) 26 4 0	(C) 12 0 0	(B) 5 4 0 (C) 4 8 0
2	Shahada Channel ...	...	(M) 42 0 0 & (B*) (B) 28 0 0	13 0 0	
<i>Southern Circle.</i>					
3	Gadikeri Tank* ...	...	.....	.....	.....
<i>Karnatak Irrigation Circle.</i>					
4	Mavinkop Tank* ...	...	.....	.....	.....
<b>UNPRODUCTIVE.</b>					
<i>North Gujarat Circle.</i>					
5	Wangroli Tank (a <sup>2</sup> ) ...	...			(D) 5 0 0 (F) 2 8 0
6	Savli Tank (a <sup>2</sup> ) ...	...			(D) 5 0 0 (F) 4 0 0
7	Tranza Nagrama Tank (a <sup>2</sup> ) ...	...			(D) 4 0 0 (F) 2 0 0
<i>Gujarat Irrigation Circle.</i>					
8	Hathmati and Khari Cut canals... (a3).	...	.....	.....	(D) 10 (n) (D) 12 (a) (F) 5 0 0
9	Meshwa Canal (a <sup>2</sup> ) ...	...	.....	.....	Do
10	Nani Fatewadi Canal (a <sup>2</sup> ) ...	...	.....	.....	Do.
11	Vijapur Tubewells (a <sup>4</sup> ) ...	...			Gallons 10,500 per Ro. plus Rs. 50
12	Wadhwa Irrigation Tank including Jojwa Main Canal.	...	.....	.....	(A) 5 4 0 (A-1) 3 8 0 (H) 1 12 0



I-F.

*on Irrigation Works in the Bombay State.*

RATES.

Rabi, four months.	Hot weather.	Miscellaneous.	Single watering.	Occupier's Rate.	Owner's Rate.	Water advantage.	Remarks.
7	8	9	10	11	12	13	14

Rs. a. p.    Rs. a. p.    Rs. a. p.    Rs. a. p.    Rs. a. p.    Rs. a. p.

(B) 9 0 0	(B) 12 0 0		(C) 3 0 0
(C) 7 8 0	(C) 10 8 0	.....	
8 0 0	10 0 0	(Q) 5 0 0	3 0 0

.....                      .....

.....                      .....

4 0 0            6 0 0            .....            1 8 9

4 0 0            6 0 0            .....            1 8 0

4 0 0            6 0 0            .....            1 0 0

10 0 0            12 0 0            .....            4 0 0

Do.            Do.            .....            Do.

Do.            Do.            .....            Do.

per acre for Cash Crops as per (h).

Please see note (1)

(G) 7 0 0	(K) 14 0 0
(H) 3 8 0	(L) 7 0 0

@ 2  
(Per Bigha  
accept for  
dangar.)

## STATEMENT

		WATER			
No.	Name of Work.	Irrigation in blocks.	Perennial.	Early, eight months.	Monsoon, four months.
1	2	3	4	5	6
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
<b>WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—contd.</b>					
<b>UNPRODUCTIVE—contd.</b>					
<i>Central Circle.</i>					
13	Shirsuphal Tank	} (a-1) ...	(M) (B) 42 0 0	13 0 0	5 0 0
14	Bhadalwadi Tank		(M) (B) 28 0 0		
15	Mhaswad Tank and Branch No. III of the Nira Right Bank Canal.		(M), 42 0 0 (B3)	13 0 0	5 0 0
16	Ashti Tank	... ..	} (M) 42 0 0 (B) 21 0 0	(B),(C) 12 0 0	(B), 4 8 0 (C)
17	Pathri Tank	... ..			
18	Mhaswa Tank (a-1) ...	} ...	(M), 42 0 0 (B3) (B) 28 0 0	13 0 0	
19	Jamda Canals (a-1) ...				
20	Lower Panjhra River Works (a-1)				
21	Krishna Canal	} (ab) ...	(M) (B3) 42 0 0	(B),(C) 12 0 0	(B), 4 8 0 (C)
22	Revvari Canal		(B) 21 0 0		
23	Upper Man River Works (ab) ...	} ...	(M) (B3) 42 0 0	13 0 0	5 0 0
24	Yerla River Irrigation Works (ab)		(B) 21 0 0		
25	Maini Tank (ab) ...				
<i>Deccan Irrigation Circle.</i>					
26	} Nira Left Bank Canal	(d).	... (G-1) 37 0 0 (C-1) 120 0 0 (M4) 13 0 0 (M4) 5 0 0		
			(R) 60 0 0 (M2) 90 0 0 (B) 15 0 0 (B) 6 0 0		
			(S) 90 0 0 (P) 128 4 0		
			(T) 36 11 0 (B) 60 0 0		
	} Shetphal Tank	... ..	(U) 51 11 0		
27	Nira Right Bank Canal (d)	...	Same as per Serial No. 26.		
28	Mutha Canal.	Sugarcane under the Mutha Canals within the Poona City and Suburban Municipal and Cantonment limits or within one mile of these limits.	No Canal Blocks.	99 0 0	
	Matoba Tank.	On all remaining land commanded by both Canals.		90 0 0	
		Pan Gardens	...	128 4 0	Same as per Serial No. 26
		Plantains	...	90 0 0	
		Other perennial crops.	...	60 0 0	

I-F—*contd.*

## RATES.

Rabi, four months.	Hot weather.	Miscellaneous.	Single watering.	Occupier's Rate.	Owner's Rate.	Water advantage.	Remarks.
7	8	9	10	11	12	13	14
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	

8 0 0      10 0 0 (Q) 5 0 0      3 0 0

8 0 0      10 0 0 (Q) 5 0 0      3 0 0

(B), 7 8 0    (B), 9 0 0      .....    (B), 3 0 0  
(C)            (C)

8 0 0      10 0 0 (Q) 5 0 0      3 0 0

(B), 7 8 0    (B), 9 0 0      .....    (B), 3 0 0  
(C)            (C)

8 0 0      10 0 0 (Q) 5 0 0      3 0 0

(M4) 8 0 0    (M4) 12 0 0    (M4) 6 8 0      3 0 0  
(B) 9 0 0    (B) 13 8 0    (B) 7 8 0

Same as per Serial No. 26.

Same as per Serial No. 26.

## STATEMENT

						WATER
No.	Name of Works.	Irrigation in blocks.	Perennial.	Early, eight months.	Monsoon, four months.	
1	2	3	4	5	6	
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT— <i>contd.</i>						
UNPRODUCTIVE— <i>concl'd.</i>						
<i>Deccan Irrigation Circle—cont'd.</i>						
29	{ Godavari Right Bank Canal (d) Godavari Left Bank Canal (d) ...					Same as per
30	Chankapur Tank—Girna Canal (d)					Same as per
31	Kadwa River works (d)	{ Palkhed Canal Ojhar Tambat Canal Wadali Canal	No per- ennial blocks.	(M) 120 0 0 (B3) 90 0 0 (B) 60 0 0		Same as per
32	{ Pravara Right Bank Canal Pravara Left Bank Canal (d) ...	..				Same as per
33	Bhatodi Tank (d-3)	..	....	(M) 37 0 0 (B3) 37 0 0 (B) 18 8 0	(d3) 10 0 0	4 0 0
34	Parul Tank ..	..	No blocks.	{ (M) 28 0 0 (B3) 28 0 0 (B) 14 0 0	(z1) 8 0 0	3 0 0
<i>Southern Circle.</i>						
35	Chikhli Canal (ac) ..	..		(M) 42 0 0 (B) 21 0 0	(y) 13 0 0	(M) 5 0 0
36	Muchkundi Tank (ad)	..		(M) 10 0 0	(y) 5 0 0	(K) 2 0 0
37	Dambal Tank (w)	..		(M) 18 11 0	(y) 8 0 0	(M) 5 5 0
<i>Karnatak Irrigation Circle.</i>						
38	{ Gokak Canal, First Section and Storage Works. }	(y).		53 0 0	33 0 0	5 0 0
39	Medleri Tank (b-1)	..	....	18 11 0	(y) 8 0 0 (z) 10 0 0	(m) 5 5 0
40	Madag Tank (b-1) ..	..	....	16 11 0	(y) 8 0 0 (z) 10 0 0	Do.
41	Asundi Tank (b-1)	..	....	18 11 0	(y) 8 0 0 (z) 10 0 0	Do.
42	Dharma Canal (b-2)	..			(z) 10 0 0	(m) 6 0 0
43	Ghataprabha Left Bank Canal (u)			53 0 0	33 0 0	5 0 0

I—F—concl.

## RATES

Rabi, four months.	Hot weather.	Miscellaneous.	Single watering.	Occupier's Rate	Owner's Rate.	Water advantage.	Remarks.
7	8	9	10	11	12	13	14

Rs. a p. Rs. a p. Rs. a p. Rs. a p.

Serial No. 26.

Serial No. 26.

Serial No. 26.

Serial No. 26.

6 0 0 7 8 0 5 0 0 2 0 0

5 0 0 6 0 0 4 0 0 2 0 0

(g) 8 0 0 (n) 10 0 0 (j) 5 0 0 (f) 3 0 0

(n) 2 0 0 (l) 5 0 0 .... 1 0 0

(n) 8 0 0 (j) 9 5 0 .... (j) 1 5 0  
(k) 2 11 08 0 0 20 0 0 (c) 13 0 0 5 0 0 (For money crops.)  
3 0 0 (For other crops.)

Please see note (3).

(n) 8 0 0 (l) 9 5 0 .... (g) 1 5 0  
(i) 2 11 0

Same as per Serial No. 39.

Same as per Serial No. 39.

(g) 1 8 0  
(i) 3 0 08 0 0 20 0 0 (c) 13 0 0 5 0 0 (For money crops.)  
3 0 0 (For other crops.)

Please see note (3).

## Note 1—

(i) 21,000 Gallons per Re. 1 for the T. W. S. for paddy ground nuts and hems during the period 1st July 1953 to 30th September 1953 was effective only *vide* G. R. P. W. D. No. WTR-1453, dated 30th September 1953.

(ii) For lift irrigation by Mote half the ordinary rates are charged and 3/4 by power pumps.

(iii) Upto treble the ordinary rates are charged as penal rates for taking over water without permission.

(iv) Leakage or percolation rates are the same as ordinary rates.

## Note 2—

(i) *Lift Irrigation on Canals*.—Full rates for sugarcane for other crops, 3/4 rates where power pumps are installed and 1/2 rates where "Motes" work.

(ii) *Irrigation on Rivers, Nalas etc. in irrigation tract*:—

	Lift up to 30'.	Lift up to 45'.	Lift up to 60'.
(a) Cane ... ..	Rs. 45	Rs. 40	Rs. 35
		Lift above 60'	Rs. 30
(b) Other crops ...	{ For lift up to 50'—Half the flow rates. { For lift above 50'—Half the flow rates less Rs. 15 for cane (G. R. P. W. D No. 7667/30, dated 14th January 1946.)		

## Note 3—

(i) Tur, when sown as a mixed crop with any Kharif crop in the monsoon season, shall be charged the monsoon season rates plus the single watering rate for the post seasonal watering that may be required in the cold weather season.

(ii) In the case of pomogranates (perennial) 8 months brack if water is supplied during the period from 15th June to 31st December, it should be charged at the rate of Rs. 12 per acre.

(iii) When sun is grown along with maize, the water rates for the mixed crops should be Rs. 4. When sun is grown for manure purposes only, the water rate should be Re. 1 per acre.

(iv) For irrigation by, lift by mote worked by bullocks and for irrigation by lift by power pump the water rates should be half the three fourths of the flow rates respectively.

## \*Lands wholly assessed at consolidated rates—

A—For Fine Rice.

A-1—For Coarse Rice.

B—For other perennial Crops.

B-3—For Bananas.

C—For Bhusar or Seasonal.

C-1—For Cane Outside Blocks.

D—For Rice.

F—For other Kharif Crops.

G—For Wheat.

G-1—For 1 : 3 Cane Blocks.

H—For Vasaal.

K—For Vegetable, Garden Fruits etc.

L—For Sundhia.

M—For Sugar Cane.

M-2—For Cane, in Blocks, overlapping Cane, Sugar factories Cane and also for Plantains.

M-4—For Food and Fodder Blocks.

P—Pan Gardens.

Q—Preseasonal Water Rates.

R—For fruit and Garden Blocks without plantains.

S—Garden Blocks with plantains.

T—Garden and Seasonal Blocks without plantains.

**U—Garden and seasonal Blocks with Plantains.**

- a-1**—Rates sanctioned in G. R. P. W. D. No. WTR-1051, dated 15th January 1952 for the period from 15th February 1952 to 14th February 1954.  
Short term rates for sugar cane are double the seasonal rate for other perennial crops.
- a-2**—Rates sanctioned in G. L. P. W. D. No. WTR-2152-1, dated 23rd February 1953.
- a-3**—Rates sanctioned in G. R., P. W. D. No. WTR-9452, dated 11th August 1953 and 14th November 1953.
- a-4**—Water is given on volumetric basis.  
—As per G. R., P. W. D., No. 2043-48, dated 7th November 1950.
- aa**—Rates sanctioned in G. R., P. W. D. No. WTR-1053, dated 31st August 1953.
- ab**—Rates sanctioned in G. R., P. W. D. No. WTR-1051, dated 22nd September 1951 for the period from 15th February 1952 to 14th February 1954.
- ac**—Rates sanctioned in G. R., P. W. D. No. WTR-1051, dated 22nd September 1951.
- ad**—Rates sanctioned in G. R., P. W. D. No. 5594/36, dated 3rd April 1950.
- b-1**—Rates sanctioned in G. R., P. W. D. No. 2933/48, dated 3rd February 1951.
- b-2**—Rates sanctioned in G. L., P. W. D. No. 4996/36, I. B. ( ), dated 28th December 1950.
- c**—Two seasonal—8 months.
- d**—Rates sanctioned as per G. R., P. W. D. No. 929/36, dated 18th May 1945 and increased by 50 per cent from 15th February 1952 under G. L., P. W. D. No. 2177/48-I. B. (I), dated 20th February 1950. They are continued up to 14th February 1954 *vide* para 1 of G. R., P. W. D. No. WTR-1551, dated 10th August 1953. Increased rates for plantains and other perennials are sanctioned under G. R., P. W. D. No. 2177/48, dated 11th August 1953.
- d-1**—Rates except for sugar cane sanctioned under G. R. P. W. D. No. 929/36, dated 18th May 1945 and continued upto 14th February 1954. *vide* G. L., P. W. D. No. WTR-1551-I, dated 11th August 1953.
- d-3**—Rate for plantains is the same as for Cane from 15th February 1953 *vide* G. R., P. W. D. No. 2177/48, dated 1st November 1951.
- f**—Preseasonal watering in the case of two season crops.  
**g**—15th June to 14th October.  
**h**—(1) Cane, (2) Fruit trees (3) Vegetables (Kharif, Rabi and hot weather), (4) Warial (5) Tobacco, (6) Cotton, (7) Jira and (8) Sarsav.  
**j**—For any crop or filling ground on any day during the period from 15th June to 14th October  
**k**—For any crop or filling ground on any day during the period from 15th October to 14th June.  
**l**—From 15th February to 14th June.  
**m**—For four months from 15th June to 14th October or 15th July to 30th November.  
**n**—From 15th October to 14th February.  
**t**—From 15th October to 14th June.  
**u**—Rates sanctioned in G. R., P. W. D. No. WTR-2251, dated 17th January 1952.  
**u**—Rates sanctioned in G. R., P. W. D. No. 2933/48, dated 3rd February 1951.  
**y**—For 8 months from 15th June to 14th February.  
**z**—for 8 months from 15th October to 14th June or 1st August to 31st March.  
**z-1**—Water rates sanctioned as per G. R., P. W. D., No. 929/36, dated 31st May 1945, and continued up to 14th February 1954 *vide* G. L., P. W. D., No. WTR/1551—I, dated 11th August 1953.

*Statement showing information regarding total area, cultivable area, cultivated area*

Serial No.	Name of District.	Total Area of the District.	Culturable area.	Cultivated area.	Area	
					Works for which Capital & Revenue Accounts are kept i.e. First class Irrigation works.	Works Tanks.
1	2	3	4	5	6	7
		Acres.	Acres.	Acres.	Acres.	Acres.
1	Banaskantha	25,14,279	17,40,034	15,89,551	.....	1,116
2	Sabarkantha	15,70,464	10,65,978	10,52,806	1,40,735	1,746
3	Mehsana	27,84,823	23,12,474	19,96,016	1,150	15,419
4	Amreli	8,09,305	6,00,930	5,49,941	.....	702*
5	Baroda	18,25,521	14,03,872	12,78,955	284	7,078
6	Ahmedabad	21,23,088	17,01,568	15,84,488	3,973	25,514
7	Kaira	16,44,174	13,29,372	12,99,758	6,937	18,622
8	Panch Mahals	22,40,768	12,62,202	11,61,670	.....	8,686
9	Broach	18,91,356	11,20,362	10,76,736	.....	496
10	Surat	26,24,792	19,82,553	17,48,854	3,817	10,604
11	Dangs	4,22,700	44,642	40,235	.....	.....
12	Bombay Suburban	40,756	20,037	11,220	.....	.....
13	Thana	22,40,040	10,97,444	7,39,536	.....	.....
14	Kolaba	16,94,715	9,61,994	4,76,616	.....	.....
15	East Khandesh	28,76,300	20,62,600	19,88,300	8,585	.....
16	West Khandesh	39,79,900	17,48,000	17,97,500	7,183	396



*and area irrigated in each District in Bombay State during the year 1953-54.*

under Irrigation in respect of

for which neither Capital nor Revenue Accounts are kept.

Bandharas.	Lift Irrigation.		Other Sources.	Total (Columns 7 to 11).	Total area irrigated (column 6 plus column 12).	Remarks.
	Wells.	Other Lift Irrigation works.				
8	9	10	11	12	13	14
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
.....	89,829	....	7,826	98,771	98,771	
....	92,367	11	8,753	1,02,877	2,43,612	
....	2,21,359	....	4,025	2,40,803	2,41,953	
....	....	....	....	702	702	*This figure includes the area of 216 Acres irrigated by the Badi Padwar tank which is first class tank for which neither Capital nor Revenue Accounts are kept.
....	10,296	....	115	17,489	17,773	
10,912	34,272	1,434	3,127	75,259	79,232	
3,672	1,00,763	8,477	1,015	1,32,549	1,39,486	
205	14,044	....	135	23,070	23,070	
....	3,764	1,272	3,145	8,677	8,677	
1,274	8,627	683	5,666	26,854	30,671	
....	12	20	8	40	40	
....	....	....	....	....	....	
....	63	....	2,538	2,601	2,601	
684	21	....	....	705	705	
109	....	....	....	109	6,694	
23,661	20,843	1,795	1,238	47,933	55,116	

## STATE-

Serial No.	Name of District.	Total Area of the District.	Culturable area.	Cultivated area.	Works for which Capital & Revenue Accounts are kept i.e. First class Irrigation works.	
					Works	Tanks.
1	2	3	4	5	6	7
		Acres.	Acres.	Acres.	Acres.	Acres
17	Nasik ...	38,29,317	22,93,033	20,87,384	35,885	745
18	Ahmednagar ...	42,01,781	30,77,637	30,40,979	94,070	30,179
19	Poona ...	36,37,684	26,94,345	25,49,531	96,664	2,330
20	Sholapur ...	37,03,300	32,85,600	31,24,400	16,026	7,664
21	North Satara ...	25,98,000	18,74,400	16,76,300	40,051	839
22	South Satara ...	21,29,656	18,59,554	18,22,646	10,799	.. ..
23	Ratnagiri ..	31,09,283	17,68,328	8,51,282	.....	1,324
24	Kolhapur ...	17,31,501	12,75,134	11,24,988	.....	667
25	Belgaum ...	35,44,066	27,20,764	24,76,370	21,900	12,944
26	Bijapur ...	42,23,461	36,99,278	36,35,191	6	947
27	Dharwar ...	34,02,085	31,83,967	27,69,142	12,145	1,03,025
28	Kanara ...	25,26,795	3,46,211	2,61,061	590	34,253
Grand Total		6,99,24,910	4,87,32,619	4,38,11,456	4,98,890	2,85,326

MENT—*contd.*

under Irrigation in respect of

for which neither Capital nor Revenue Accounts are kept.

Bandharas.	Lift Irrigation.		Other Sources.	Total (Columns 7 to 11).	Total area irrigated (column 6 plus column 12).	Remarks.
	Wells.	Other Lift Irrigation works.				
8	9	10	11	12	13	14
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
28,225	45,278	....	2,011	76,259	1,12,144	
....	1,43,402	....	1,526	1,75,107	2,69,177	
6,200	46,737	2,372	24,374	82,013	1,78,677	
6	1,61,076	442	359	1,69,547	1,85,573	
34,758	60,519	Nil.	2,998	99,114	1,39,165	
2,327	94,465	197	25,467	1,22,456	1,33,255	
....	10,507	9,544	4,873	26,248	26,248	
32	3,373	8,765	11,419	24,256	24,256	
526	68,842	....	16,210	98,522	1,20,512	
649	42,878	3,186	20,038	67,698	67,704	
48	4,579	....	3,548	1,11,200	1,23,345	
4,534	2,989	414	11,561	53,781	54,371	
1,17,822	12,80,905	38,612	1,61,975	18,84,640	23,83,530	

Statement showing capacity, replenishment received, supply used for irrigation,  
(Lakes and Tanks) for which Capital and Revenue Accounts are kept and  
State of Bombay for

Serial No.	Name of Tank.	Catchment area in sq. miles.	Full supply Gauge above outlet sill.	Capacity in M.Cft. above outlet sill upto full level.
1	2	3	4	5
<b>NORTH GUJARAT CIRCLE.</b>				
<b>MAJOR IRRIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.</b>				
1	(a) Tranza Tank .. ..	5.5 direct.	9.52'	} 105.10
	(b) Nagrama Tank .. ..	7.5 Indirect (for both tanks to- gether).	7.5'	
2	Wangroli Tank .. ..	13.0	R.L. 102'	199.48
3	Savli Tank .. ..	11.0	103.50'	172.26
<b>MINOR IRRIGATION TANKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.</b>				
4	Kanewal Tank .. ..	31.4	4.5 to 6.5'	166.88
5	Chimabai Sarovar .. ..	33.40	34.00'	632.10
6	Thol Tank .. ..	60.00	11.00'	308.00
7	Ambli Pipardi Tank .. ..	0.66	4.00'	5.75
8	Chandrasar Tank .. ..	21.00	8.00'	42.5
9	Vatrasar Tank .. ..	Nil.	8.00'	11.2
10	Badi Padwa Tank .. ..	23.50	22.00'	87.34
11	Kumbhnath Tank .. ..	4.25	10.00'	34.59
12	Mota Ankadia Tank .. ..	10.00	12.00'	67.50

*area irrigated, revenue assessed, etc., in respect of Irrigation Storage Works  
Minor Irrigation Tanks in charge of the Public Works Department, in the  
the year 1953-54.*

Rainfall in inches during monsoon rabi and during the year.	Date when the tank was filled and if not filled, when and what maximum level was reached.	Periods of waste weir overflow and the overflow in M. Cft.	Total replenishment received (columns 7 plus 8).	Date when the level fell to outlet sill or the lowest level in case of carry over and the date of this level.	Details of crops irrigated.
6	7	8	9	10	11
25.75"	Not fully filled Maximum level on 10-9-53 w th storage 76.68 M.Cft.	....	38.73 M.Cft.	5-12-53.	Rice Wheat and Gram.
	Not Filled. Water level rose to 0.82 M.Cft. on 12th September 1953.	....	0.82 M.Cft	14-9-1953.	Do.
28.90"	8th September 1953 .. R. L. 99.50	....	143.57 M.Cft.	14-2-1954.	Do.
34.27"	6th September 1953 .. R. L. 103.50	Nil	172.26 M.Cft.	1-2-1954.	Do.
33.62"	14th August 1953 .. Filled by 166.88 M.cft	15 days. 2500 M.Cft.	166.88 M.Cft.	29-5-1954.	Do.
29.45"	6th September 1953 .. Maximum level 81.80.	Nil.	151.52	11-6-1954. water level was 69-45.	Sarsavi, Wheat and Gram.
29.95"	20th August 1953 .. R. L. 161.00	Nil.	161.00	15-3-1954.	Rice and Wheat.
23.83"	....	Nil.	Nil.	Nil.	Rice. ..
15.99"	.....	Nil.	Nil.	Nil.	Rice ..
29.45"	6th October 1953 .. R. L. 11.2	Nil.	Nil.	Jan. 1954.	Rice ..
29.12"	23rd June 1953 ..	....	8.34	10-6-1953.	Wheat, vegetable Sugar Cane, Gram, Bajri etc.
39.20"	23rd June 1953 ..	....	34.59	....	Wheat, Gram and Sugar Cane.
30.78"	22nd June 1953 ..	....	67.50	....	Wheat, Gram. ..

Serial No.	Name of Tank.	Kharif Area irrigated in acres and supply consumed in M. Cft.	Rabi Area irrigated in acres and supply consumed in M. Cft.	Hot weather Area irrigated in acres and supply consumed in M. Cft.
1	2	12	13	14

NORTH GUJARAT CIRCLE—*contd.*MAJOR IRRIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—*contd.*

1	(a) Tranza Tank	.. ..	.. 143 Acres. 36.73 M.cft.	2 Acres. bylift.	<i>Nil.</i>
	(b) Nagrama Tank	.. ..	.. <i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>
2	Wangroli Tank	.. ..	.. 1,624 Acres. 99.12 M.Cft.	9 Acres. 0.33 M.Cft.	<i>Nil.</i>
3	Savli Tank	.. ..	.. 2,097 Acres. 116.44 M.Cft.	305 Acres. 12.68 M.Cft.	<i>Nil.</i>

MINOR IRRIGATION TANKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT—*contd.*

4	Kanewal Tank	.. ..	.. 664 Acres. 95 M.Cft.	446 Acres. 72 M.Cft.	24 Acres. bylift.
5	Chimabai Sarovar	.. ..	.. <i>Nil.</i>	629.60	<i>Nil.</i>
6	Thol Tank	.. ..	.. 651.90	60.47	<i>Nil.</i>
7	Ambli Pipardi Tank	.. ..	.. 55.26	<i>Nil.</i>	<i>Nil.</i>
8	Chandrasar Tank	.. ..	.. 40	<i>Nil.</i>	<i>Nil.</i>
9	Vatrasar Tank	.. ..	.. 598.42	<i>Nil.</i>	<i>Nil.</i>
10	Badi Padwa Tank	.. ..	.. 43.30 Acres. 2 M.Cft.	126.16 Acres. 6 M.Cft.	126.30 Acres. 9M.Cft.
11	Kumbhnath Tank	.. ..	.. <i>Nil.</i>	261 Acres. 13.00 M.Cft.	<i>Nil.</i>
12	Mota Ankadia Tank	.. ..	.. .....	57 Acres. 3.00 M.Cft.	.....

MENT—*contd.*

Total area irrigated in acres and supply consumed in M. Cft.	Revenue Assessed.	Working expenses.	Remarks.
15	16	17	18
	Rs. As.	Rs. As. Ps.	
145 Acres. 36.73 M.cft.	....	....	
<i>Nil.</i>			
1,633 Acres. 99.45 M.cft.	8,225	....	
2,402 Acres. 129.12 M.cft.	10,960	....	
1,134 Acres. 167.00 M.cft.	5,562	....	
629.60	4,553 12 0	17,473 8 6	
712.37	3,810 11 5	2,384 0 0	
55.26	<i>Nil.</i>	679 0 0	} Himayat charges are paid on the land of the Tank.
40.00	<i>Nil.</i>	535 0 0	
598.42	4,287 3 3	4,206 2 6	
295.76 Acres. 17.00 M.cft.	2,005 0 0	4,021 0 0	
261 Acres. 13.00 M.cft.	1,765 0 0	1,141 0 0	
57 Acres. 3.00 M.Cft.	388 0 0	837 0 0	

Serial No.	Name of Tank	Catchment area in Sq. miles.	Full Supply Gauge above outlet sill.	Capacity in M. Cft. above outlet sill upto Full level.
1	2	3	4	5
<b>NORTH GUJARAT CIRCLE—contd.</b>				
MINOR IRRIGATION TANKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT—contd.				
13	Mota Bhandaria Tank .. .. .	15.75	6'	70.41
14	Dhamel Fatasar Tank .. .. .	6.25	7'	70.38
15	Pichhavi Tank .. .. .	22.75	18.5'	215.39
16	Ganga Sagar Tank .. .. .	6.5	26.0'	95.25
17	Timba Tank .. .. .	6.5	10'	78.10
<b>SOUTH GUJARAT CIRCLE.</b>				
WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.				
18	Fut'elao Tank .. .. .	19.10	R.L. 107.00 17' above Outlet Sill.	56.35 M. Cft.
19	Muwalia Tank .. .. .	30	139.15	237.00 M. Cft.
20	Doswada Dam Chikhali Bandhara and Canals ..	24	19' Sill R.L. 376.00 F.T. R.L. 395.00	75.00 M. Cft. (Nearly).
21	Bandharpada Pick up Weir .. .. .	7	Level not available.	Nil. It is a Pick up Weir and Storage Capacity is not there. Natural available flow of nala is being utilised for irrigation.



MENT—*contd.*

Rainfall in inches during monsoon rabi and during the year.	Date when the tank was filled and if not filled, when and what maximum level was reached.	Periods of waste weir overflow and the overflow in M. Cft.	Total replenishment received (columns 7 plus 8).	Date when the level fell to outlet Sill or the lowest level in case of carry over and the date of this level.	Details of crops Irrigated.
6	7	8	9	10	11
32.50	12th June 1953 ..	....	70.41 M.Cft.	....	Paddy, Bajri, Jowar, Sugar Cane.
23.45	.....	....	1.50 M.Cft	....	Wheat vegetables.
41.32	18th August 1953 ..	....	....	....	Wheat, Sugar cane.
20.48	Maximum water level 183.16	No over flow.	57.80 M.Cft.	24-2-54	Jiru, Tobacco, Gram.
35.42	18th August 1953 .. F. S. L. 107.00	3 days 15.00 M.Cft.	93.10	11-3-54.	Wheat, Gram.
15.37	Maximum level 106.00 on 17th September 1953.	....	48.17 M.Cft.	Lowest level .. 92.3 on 13-3-54.	Perennial Kharif Seasonal 8 months Rabi Seasonal. Hot weather Seasonal & Miscellaneous.
15.25	Maximum level 138.00 on 11th September 1953.	....	218.56 M.Cft.	Lowest level 115.00 on 3-4-54.	Perennial 8 months Kharif Seasonal Rabi Seasonal. Hot weather seasonal Miscellaneous.
65.69	Not available It is a storage weir and remains full in monsoon.	....	....	Generally the tank gets emptied in month of May.	Perennial Two Seasonal (Kharif and Rabi) Kharif seasonal. Rabi .. Perennial ..
No gauge maintained.	.....	July to March.	....	....	8 monthly .. Seasonal ..

Serial No.	Name of Tank.	Kharif Area irrigated in acres and supply consumed in M. Cft.	Rabi Area irrigated in acres and supply consumed in M. Cft.	Hot weather Area irrigated in acres and supply consumed in M. Cft.
1	2	12	13	14
NORTH GUJARAT CIRCLE— <i>concl.</i>				
MINOR IRRIGATION TANKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT— <i>concl.</i>				
13	Mota Bhandaria Tank .. ..	.....	.....	.....
14	Dhamel Fatasar Tank .. ..	.....	32 Acres. 2·00 M.Cft.	.....
15	Pichhavi Tank .. ..	.....	134·26 Acres. 7·00 M.Cft.	.....
16	Ganga Sagar Tank .. ..	Nil.	155 Acres. 42·95 M.Cft.	Nil.
17	Timba Tank .. ..	Nil.	350 Acres. 47·00 M.Cft.	Nil.
SOUTH GUJARAT CIRCLE— <i>contd.</i>				
WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT— <i>contd.</i>				
18	Futelao Tank .. ..	Nil. 40-9 Nil. 294-26  142-3 <u>476.38</u>	40-9  22·32 M.Cft.. (Including evaporation etc.)	294-26  22·33 M.Cft.
19	Muwalia Tank .. ..	15-12 75-9 443-23  1374-11 Nil. 304-8 <u>2212-23</u>	443·23 87·87 M.Cft. (Including evaporation etc.)	1374-11  113 M. Cft.
20	Doswada Dam Chikhali Bandhara and Canals.	37-0 185-0 874-0 91-0	874 32·50 M.Cft.	91 39·50 M.Cft.
21	Bandharpada Pick up Weir. ..	3-0 Nil.  20-0	19-0 (Seasonal). 2 M.Cft. Approximate.	Perennial 3-0 Seasonal. 1-0 0·2 M.Cft. Approximate.

MENT—*contd.*

Total area irrigated in acres and supply consumed in M. Cft.	Revenue Assessed.	Working expenses.	Remarks.
15	16	17	18
	Rs. a. p.	Rs. a. p.	
....	....	1,601 0 0	
32 Acres. 2·00 M.Cft.	222 0 0	1,142 0 0	
134·26 Acres. 7·00 M.Cft.	622 0 0	1,152 0 0	
155 Acres. 42·95 M.Cft.	323 0 0	3,000 0 0	
350 Acres. 47·00 M.Cft.	1,736 0 0	2,985 0 0	
.....	334-35 44·65 M.Cft.	1,277 15 0	1,277 0 0 C. R. Nil. S. R.
.....	1,817-34 200·87 M.Cft.	7,080 1 0	4,998 0 0 C. R. 707 0 0 S. R. <hr/> 5,705 0 0
.....	1,187 0 0 72 M.Cft.	16,555 6 6	18,699 0 0
.....	23-00 2·2 M.Cft.	418 0 0	168 0 0

Serial No.	Name of Tank	Catchment area in sq. miles.	Full supply gauge above outlet sill.	Capacity in M. Cft. above outlet sill upto full level.
1	2	3	4	5

## GUJARAT IRRIGATION CIRCLE.

## WORKS FOR WHICH REVENUE AND CAPITAL ACCOUNTS ARE KEPT.

22	Wadhvana Irrigation Tank	.. .. .	180.00 F.S.L.	386.00
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## WORKS FOR WHICH NEITHER REVENUE NOR CAPITAL ACCOUNTS ARE KEPT.

23	Karachia	.. .. .	4.5	186.00	95.96
24	Jawala	.. .. .	3.70	170.50	52.50
25	Wadadla	.. .. .	6.50	192.00	80.32
26	Haripura	.. .. .	3.60	216.00	56.00
27	Sarsi	.. .. .	3.44	103.00	32.62
28	Muval	.. .. .	7.50	187.00	131.51
29	Shripore Timbi	.. .. .	6.00	128.00	68.00
30	Dhanora	.. .. .	13.50	204.00	126.00
31	Manorpura	.. .. .	7.00	214.00	85.00

## CENTRAL CIRCLE.

## MAJOR IRRIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.

32	Mayani Tank	.. .. .	52.5	35.00	80.60
33	Shirsuphal Tank	.. .. .	23.50	31.00	356.64 Silt. 20.58
					336.06 M. Cft.

## MENT—contd.

Rainfall in inches during monsoon, rabi and during the year.	Date when the tank was filled, and if not filled, when and what maximum level was reached.	Periods of waste weir overflow and the overflow in M. Cft.	Total replenishment received. (Columns 7 plus 8).	Date when level fell to outlet sill or the lowest level in case of carry over and the date of this level.	Details of crops Irrigated.
6	7	8	9	10	11
44.39	R. L. 177.00 on 6th September 1953.	....	250.61 M.Cft.	6-3-54.	Kharif Rabi .. ..
30.23	R. L. 185.40 on 23rd August 1953.	....	85.69	16-1-54.	Kharif Rabi .. ..
23.23	23rd August 1953 ..	....	52.50	16-1-54.	Kharif Rabi 331 153
23.23	11th August 1953 ..	....	80.32	16-1-54.	Kharif Rabi 39 399
23.23	215.90 on 4th September 1953.	....	55.77	16-1-54.	Kharif Rabi 58 293
23.23	99.00 on 10th September 1953.	....	10.02	8-11-53.	Kharif 144
23.23	185.00 on 5th September 1953.	....	85.32	16-1-54.	Kharif Rabi 635 234
33.32	9th August 1953 ..	....	68.00	22-2-54.	Rabi 994
43.71	10th August 1953 ..	....	126.00	31-3-54	Rabi 191
....	207.90 on 10th August 1953.	....	19.60	.....	.....
Monsoon 15.42	2nd October 1953 .. 80.618	2-10-53 to 20-11-53	770.618	30-1-54.	Perennials 36.00
Rabi 1.90		690.00 M. Cft			8 months 18.00
Total 17.32					Seasonals 1,964.00
Kharif 4.40	10th October 53	Not filled	60.89	18-10-53 11.25 (Sill level).	Seasonals 866.00
Rabi 0.40	19.30				
Total 4.80					

Serial No.	Name of Tank.	Kharif Area irrigated in acres and supply consumed in M. Cft.	Rabi Area irrigated in acres and supply consumed in M. Cft.	Hot weather Area irrigated in acres and supply consumed in M. Cft.
1	2	12	13	14

GUJARAT IRRIGATION CIRCLE—*contd.*WORKS FOR WHICH REVENUE AND CAPITAL ACCOUNTS ARE KEPT—*contd.*

22	Wadhvana Irrigation Tank	1,820 2,521	1,820	2,521 73·42 M.Cft.
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## WORKS FOR WHICH NEITHER REVENUE NOR CAPITAL ACCOUNTS ARE KEPT.

23	Karachia .. ..	77 485	77	485 65·67 M.Cft.
24	Jawala .. ..	331	153 31·27 M.Cft.	.....
25	Wadadia .. ..	39	399	.....
26	Haripura .. ..	58	293	.....
27	Sard .. ..	144	....	.....
28	Muval .. ..	635-22	234	.....
29	Shripura Timbi .. ..	.....	994	.....
30	Dhanera .. ..	.....	191	.....
31	Manorpura .. ..	.....	.....	.....

CENTRAL CIRCLE—*contd.*MAJOR IRRIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—*contd.*

32	Mayani Tank .. ..	267	1,416	..... 2·40 M.Cft. 14·97 M.Cft.
33	Shirsuphal Tank .. ..	.....	831 59·78 M.Cft.	35·00 11·11 M. Cft.

MENT—*contd.*

Total area irrigated in acres and supply consumed in M. Cft.	Revenue Assessed.	Working expenses.	Remarks.
15	16	17	18
	Rs. a. p.	Rs. a. p.	Rs. a. p.
.....	4,341 0 0	28,661 0 0	28,440 0 0
.....	562	3,956 8 0	2,826 4 0
484	2,405 2 0	1,268 8 0	
438	3188 0 0	2302 4 0	
391	1,675 0 0	2,179 8 0	
144	584 0 0	1,708 11 0	
869	4,253 7 0	2,258 5 0	
994	4,140 9 0	4,400 0 0	
191	1,262 6 0	.....	
.....	.....	.....	
1,713-00	14,676 0 0	15,595 0 0	
17-37 M.Cft.			
868-00 60-89 M.Cft.	7,372 0 0	4,980 0 0	

Serial No.	Name of Tank.	Catchment area in square miles.	Full supply Gauge above outlet sill.	Capacity in M.Cft. above outlet sill upto full level.	
1	2	3	4	5	
<b>CENTRAL CIRCLE—contd.</b>					
<b>MAJOR IRRIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—contd.</b>					
34	Mhaswa Tank	.. ..	13.45	22.00	153.09
35	Bhadalwadi Tank	.. ..	17.00	40.00	268.50 Silt. —65.78 <hr/> 202.42
36	Ekruk Tank	.. ..	159.00	39.00	2,349.00
37	Mhaswad Tank	.. ..	480.00	24.00	1,538.38
38	Ash' Tank	.. ..	92.00	22.00	1,064.29
39	Pathri Tank	.. ..	27.5	31.50	407.00
<b>MINOR IRRIGATION WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.</b>					
40	Wadshivane Tank	... ..	14.50	19.00	158.20
41	Hotgi Tank	.. ..	23.00	14.00	186.45
42	Parewadi Tank	... ..	39.60	18.00	178.26



## MENT—contd.

Rainfall in inches during monsoon rabi and during the year.	Date when the tank was filled and if not filled, when and what maximum level was reached.	Period of waste weir overflow and the overflow in M. Cft.	Total Replenishment received (columns 7 plus 8).	Date when the level fell to outlet Sill or the lowest level in case of carry over and the date of this level.	Details of crops Irrigated.
6	7	8	9	10	11
Monsoon, 19·95	2-8-53			8-4-54	Seasonals 633·00
Rabi ...		3-8-53 to 25-8-53	153·76		
Total 19·95		3-10-53 to 5-10-53 1·15 M.cft.			
Khariif 11·59	22-10-53	Not filled	111·62	30-12-53	Seasonals 1,482·00
Rabi 2·40				24·50'	
Total...13·99					
Monsoon 30·37	7-9-52	31-7-53 to 31-8-53,	9,804·00	14-6-53	Perennials 84·00
Rabi 3·32	42·00'	5-9-53 to 21-11-53		27·90	8 months 378·00
	1,642·00 M.cft.	8,162·00 M.cft.		826·09	Seasonals 5,714·00
				M.cft.	
	34·19				
Monsoon 10·78	The Tank was	5-10-53 to 4-10-53	3,735·00	15-2-54	Perennials 1·00
Rabi 0·10	filled on	19-10-53 to 20-10-53.		17·30	8 months 15·00
	5-10-53			730·00	Seasonals 8,602·00
Total...10·88		27-10-53 to 31-10-53		M.cft.	
	1555 M.cft.	2,180·00 M.cft.			
Monsoon, 15·26	27-10-53	.....	266·48	17.11-53	Seasonals 3,713·00
Rabi 6·90	11·57'			3·47	
Total...22·16	266·48 M.cft.				
Monsoon 26·59	5-10-53	3-10-53 to 12-11-53	2,207·75	13-6-53	.....
Rabi 2·15	33·70'	1,844·17 M.cft.		12·76	
Total...28·74	377·08 M.cft.			55·93 M.cft.	
Monsoon 19·25	19-10-53	.....	106·94	Tank was	...
Rabi 2·72	15·00 ft.			dry from	
Total...21·97	106·94 M.cft.			1-5-53	
				to 19-7-53.	
Monsoon 30·43	27-10-53	24-10-53 to 3-12-53	2184·95	13-6-53	8 months 21·00
Rabi 3·12	29·70'	2,019·00 M.cft.		17·54	Seasonals 910·00
	(14·70 ft.)			(2·54)	
Total...33·55	165·93 M.cft.			42·23 M.cft.	
No. rain gauge.	.....	.....	.....	.....	8 months 13·00 Seasonals 1,074·00

Serial No.	Name of Tank.	Kharif Area irrigated in acres and supply consumed in M. Cft.	Rabi Area irrigated in acres and supply consumed in M. Cft.	Hot weather Area irrigated in acres and supply consumed in M. Cft.
1	2	12	13	14

CENTRAL CIRCLE—*contd.*MAJOR IRRIGATION WORKS FOR WHICH  
CAPITAL AND REVENUE ACCOUNTS  
ARE KEPT—*contd.*

84	Mhaswa Tank	.....	633·00 138·11 M.cft.	.....
35	Bhadalwadi Tank	.. ..	429·00 13·50 M.cft.	1,053·00 98·12 M.cft. .....
36	Ekruk Tank	.. ..	928·00 53·08 M.cft.	4,763·00 307·17 M.cft. 485·00 97·19 M.cft.
37	Mhaswad Tank	.. ..	2,351·00 386·48 M.cft.	6,267·00 691·80 M.cft. .....
38	Ashti Tank	.. ..	.....	3,713·00 161·37 M.cft. .....
39	Pathri Tank	.. ..	.....	1,306·00 115·08 M.cft. .....

MINOR IRRIGATION WORKS FOR WHICH  
NEITHER CAPITAL NOR REVENUE  
ACCOUNTS ARE KEPT.

40	Wadshivane Tank	.. ..	.....	1,146·00 64·74 M.cft. .....
41	Hotgi Tank	... ..	.....	811·00 46·48 M.cft. 120·00 26·56 M.cft.
42	Parewadi Tank	... ..	847·00	702·00 38·00

## MENT—contd.

Total area irrigated in acres and supply consumed in M. Cft.	Revenue Assessed.	Working expenses.	Remarks.
15	16	17	18
	Rs. a. p.	Rs. a. p.	
633.00 138.11 M.cft.	5,601 0 0	32,655 0 0	
1,482.00 111.62 M.cft.	11,935 0 0	5,106 0 0	
6,176.00 457.14 M.cft.	43,576 0 0	43,332 0 0	
8,618.00 1,078.28 M.cft.	59,032 0 0	76,899 0 0	
3,713.00 151.37 M.cft.	26,567 0 0	16,564 0 0	
1,306.00 115.08 M.cft.	8,810 0 0	7,990 0 0	
1,146.00 64.74 M.cft.	7,653 0 0	1,989 0 0	
931.00 73.04 M.cft.	1,509 0 0	11,732 0 0	
1,037.00	1,635 0 0	28,462 0 0	



MENT—*contd.*

Rainfall in inches during monsoon rabi and during the year.	Date when the tank was filled and if not filled, when and what maximum level was reached.	Periods of waste weir overflow and the overflow in M. Cft.	Total replenishment received (column 7 plus 8).	Date when level fell to outlet sill or the lowest level in case of carry over and the date of this level.	Details of crops Irrigated.
6	7	8	9	10	11
No rain gauge.	.....	.....	.....	.....	8 months 6-00
Monsoon 12.58	12-10-53	.....	99.46	14-6-53	...
Rabi 2.54	26.00 ft.			8.69	
Total 15.12	99.64 M.cft.			10.18 Mcft.	
Monsoon 24.20	3-10-53	26-9-53 to 30-10-53	135.16	Tank was dry.	Seasonals 632-00
Rabi 0.70	17.70 ft.	58.80 M.cft.		from 1-5-53 to 17-6-53	
Total 24.90	78.36 M.cft.				
No. raingauge.	On 3-10-53 the tank showed signs of leakage through the bank about 12-00 ft. gauge hence the outlet was opened and cuts were taken in the waste weir and water level lowered to R. L. 201.00 and hence no data was possible.				
Monsoon 43.72	1st January 1953 ..	1-10-53 to 24-10-53.	614.00	12-3-54.	Perennials 4
Rabi 2.90		200-00 M.C.ft.		10.50	8 months 20
Total 46.62				11.294 M.cft.	Seasonals 5,865
Monsoon 11.79	8th October 1953	8-10-53 to 7-11-53.	213.992	14-2-1954. Became dry.	Perennials ... 2
Rabi 4.78	102.992	111.00 M.Cft.			Seasonals 952
Total 16.57					
Monsoon 15.71	4-10-53	.....	263.72	15-6-53	Perennials 106
Rabi Nil	29.00				8 months 134
Total 15.71					Seasonals 2787
Kharif 11.95	4.10-53	Do.	... 177.26	14-2-54	Seasonal 881.00
Rabi 1.46					
13.81					

Serial No.	Name of Tank.	Kharif Area irrigated in acres and supply consumed in M. Cft.	Rabi Area irrigated in acres and supply consumed in M. Cft.	Hot weather Area irrigated in acres and supply consumed in M. Cft.
1	2	12	13	14
<b>CENTRAL CIRCLE—conold.</b>				
<b>MINOR IRRIGATION WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT—conold.</b>				
43	Sangwi Tank	85.00	460.00	15.00
44	Gherdi Tank	44.00 4.21 Moft.	563.00 36.63 Moft.	62.00 3.89 Moft.
45	Koregaon Tank		632.00 87.52 Moft.	.....
46	Jawala Tank			.....
47	Nehr Tank	856 29.60 M.cft.	4,428 890 M.cft.	.....
48	Pingli Tank	13 6 M.cft.	881 96 M.cft.	.....
49	Mukti Tank	374.00	2,682.00	32.00
50	Madauwadi Tank	205.00 79.38 M.cft.	676.00 97.88 M.cft.	.....

MENT—*contd.*

Total area irrigated in acres and supply consumed in M. Cft.	Revenue Assessed.	Working expenses.	Remarks.
15	16	17	18
	Rs. a. p.	Rs. a. p.	
569·00	884 0 0	10,055 0 0	
669·00	4,519 0 0	926 0 0	
44·73 M.cft.			
632·00	4,293 0 0	15,849 0 0	
37·53	.....	.....	
.....	.....	.....	
.....	.....	.....	
5,284 427·65 M.cft.	43,978 0 0	33,532 0 0	
894 102·00 <sub>2</sub> M.cft.	7,586 0 0	13,130 0 0	
2,998·00	43,085 0 0	1,00,446 0 0	
881·00	6,947 0 0	.. ..	.. ..
177·21 <sub>1</sub> M.cft.			

Serial No.	Name of Tank.	Catchment area in Sq. miles.	Full supply Gauge above outlet sill.	Capacity in M. Cft. above outlet sill upto full level.
1	2	3	4	5

## DECCAN IRRIGATION CIRCLE.

## WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.

51	Matoba Tank (Tail Tank of the Mutha Rt. Bank Canal).	Replenished by Mutha R. B. Canal.	29.00 -9.00 silt <hr/> 20.00	184.00 -24.00 <hr/> 160.00
52	Lake Fife (Khadakwasla Dam)	.. ..	196.00	34.00 3,091.00
53	Lake Whiting (Bhatghar Dam)	.. ..	128.00	2143.00 24198.00
54	Shetphal Tank (Tail tank of Nira L. B. O.)	...	2.33	37.50 592.00
55	Lake Arthur Hill (Bhandardara Dam)	..	47.00	265.70 11,189.00



## MENT—contd.

Rainfall in inches during monsoon rabi and during the year.	Date when the tank was filled and if not filled, when and what maximum level was reached.	Periods of waste weir overflow and the overflow in M. Cft.	Total replenishment received (column 7 plus 8).	Date when the level fell to outlet Sill or the lowest level in case of carry over and the date of this level.	Details of crops Irrigated.
6	7	8	9	10	11
13.38	Mar. level 29.00 ft. on 2-10-53.	2-10-53—12 hours 3-10-53—24 hours 5-10-53—24 Hours. The Q. over flowed is not measured, r	7.00 from Nala. 163.00 from M.R.B.C. <hr/> 160.00 M.cft.	Lowest level on 3-1-54 and the tank were dry on 4-1-54.	Perennial 18-00 8 months 138-00 Seasonals 2,807-00
35.35	Max. level reached on 3-9-53. 3,091.00 M.cft. Over and low.	29-6-53 to 21-7-53 2-8-53 to 25-8-53 and 10-9-53 Total. 45,961-00 M.cft. Overflow.	49052.00	lowest level 8-10 ft. on 20-6-53 430.00 M.cft.	Perennials 756.00 8 months 4,436.00 Seasonals 9,970.00
34.89 at Bhatghar.	Max. level reached on 28-8-53 24,198.00 M.cft.	Waste-weir overflow was for 20 days. 7,769.00 M.cft.	31,967.00	Lowest level 44.70' on 16-9-53 561.00 M.cft.	Perennials 24,450.00 8 months 17,007.00 Seasonals 58,688.00 Perennials 40,043.00 8 months 4,759.00 Seasonals 72,668.00 Pre post Seasonals. 265.00
25.11	28-9-53 37.50 592.00 M.cft.	No over flow.	592.00	Lowest level 11-70' on 21-6-53 49-00 M.cft.	Perennials 819.00 8 months 1706.00 Seasonals 4,379.00
124.15	Full Supply level was reached on 6-8-53 11,189.00 M.cft.	6-8-53 to 22-9-53 10,229.00 M.cft.	21,148.00	Lowest level 143-40 ft. on 20-6-54 775-00 M.cft.	Perennials 49,846.00 8 months 2,374.00 Seasonals 41,761.00

Serial No.	Name of Tank.	Kharif Area irrigated in acres and supply consumed in M. Cft.	Rabi Area irrigated in acres and supply consumed in M. Cft.	Hot weather Area irrigated in acres and supply consumed in M. Cft.
1	2	12	13	14

DECCAN IRRIGATION CIRCLE—*contd.*~~DECCAN~~WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—*contd.*

51	Matoba Tank (Tail Tank of the Mutha Rt. Bank Canal).	932-00 84-00 M.cft.	2,031-00 141-00 M.cft.	.... ....
52	Lake Fife (Khadkwasla Dam) ..	.. 8,817-00 705-00 M.cft.	5,242-00 540-00 M.cft.	1,103-00 156-00 M.cft.
53	Lake Whiting (Bhatghar Dam) ..	..	<i>Nira Left Bank Canal.</i>	
		34,024-00	58028-00	7,083-00
		2,305-80 M.cft.	3,668-20	1,714 M.cft.
			<i>Nira Right Bank Canal.</i>	
		40,830-00	65569-00	11,336-00
		5,158-00 M.cft.	5,804-00 M.cft.	2,792-00 M.cft.
54	Shetphal Tank (Tail tank of Nira L. B. C.) ..	.. 2,485-00 221-00 M.cft.	4,175-00 298-00 M.cft.	244-00 116-50 M.cft.
55	Lake Arther Hill (Bhandardara Dam) ..	.. 29,421-00 5,187-00 M.cft.	50,513-00 6,022-00 M.cft.	14,047-00 5,149-00 M.cft.

## MENT—contd.

Total area irrigated in acres and supply consumed in M. Cft.	Revenue Assessed.	Working expenses.	Remarks.
15	16	17	18
	Rs. a. p.	Rs. a. p.	
2,963·00 225·00 M.cft.	26,660 0 0	Included in those of the Mutha Canals i.e. Lake Khadka wala Dam.	
14,162·00 1,401·00 M.cft.	2,58,518 0 0	2,68,618 0 0	
1,00,145·00 7,688·80 M.cft.	14,16,959 0 0	4,23,705 0 0 (N.L.B.C. including Shetphal Tank.)	
1,17,735·00 13,754·00 M.cft.	21,29,164 0 0	6,73,513 0 0	
6,904·00 635·50 M.cft.	83,194	Included in that of Nira L.B.C. above.	
93,981·00 16,358·00 M.cft.	20,56,330 0 0	4,82,175 0 0 (for Pravara River works.)	

STATE-

Serial No.	Name of Tank.	Catchment area in Sq. miles.	Full supply gauge above outlet sill.	Capacity in M. Cft. above outlet sill up to full level.
1	2	3	4	5
DECCAN IRRIGATION CIRCLE— <i>contd.</i> WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT— <i>contd.</i>				
56	Lake Beale (Darna Dam)	.. 156.00	65.00	7,763.00
57	Chankapur Tank	.. .. 100.00	92.00 Lowest Sill Level 30.00	1,548.00 —84.00 <hr/> 1,464.00 (Available for irriga- tion.)
58	Waghad Tank	.. .. 29.00	48.00 R.L. 128.00	60.600
59	Bhatodi Tank	.. .. 44.00	22.50 R.L. 92.50	37.63 —8.29* <hr/> 29.34 *Due to Silting.
60	Parsul Tank	.. .. 17.33	35.00 (Inclusive of about 12.00 silt depth).	118.70 —20.00* <hr/> 98.70 *Due to Silting.

## MENT—contd.

Rainfall in inches during monsoon, rabi and during the year.	Date when the tank was filled and if not filled, when and what maximum level was reached.	Periods of waste weir over flow and the over-flow in M. Cft.	Total replenishment received (Columns 7 plus 8).	Date when the level fell to outlet sill or the lowest level in case of carry over and the date of this level.	Details of crops irrigated.
6	7	8	9	10	11
81.89	Full Supply level was reached on 4-10-53 7,763.00 M. Cft.	7-7-53 to 24-7-53 2-8-53 to 27-8-53 2-9-53 to 8-9-53 26,010.00 M. Cft.	33,773.00	Lowest level on 11-6-53 1812.70 M. Cft. water from Gangapur St. Dam was used for irrigation and hence, there appears more carry over in this lake	<i>Godavari</i> Perennials 23,785.00 8 months 1,616.00 Seasonals 20,311.00  <i>Godavari</i> Perennials 18,078.00 8 months 896.00 Seasonals 12,721.00
28.28 at Tank Site.	Fully Supply Level of 92.00 was reached on 18-9-53 1548.00 M. Cft.	4-8-53 to 21-8-53 3-9-53 to 13-9-53. 3-10-53 to 4-10-53 4,287.00	5,835.00	Lowest Level 39.00 on 2-6-53 159.00 M.cft.	Perennials 12,485.00 8 months 410.00 Seasonals 13,045.00
72.55	Full Supply Level of 128.00 was reached on 8-10-53 606.00 M.Cft.	13.28 and 29-7-53 3-8-53 to 21-8-53 3123.00 M. Cft.	3,729.00	Lowest Level 95.01 on 12-6-53 49.00 M.Cft.	Perennials 1,429.00 8 months 2987.00 Seasonals 1,141.00
15.51	Full Supply Level was reached on 5-10-53 37.63 M.Cft.	14 days in Kharif Season and 2 days in Rabi Season. Quantity of over flow. not observed.	37.63 + 3.50 (River gains) ----- 41.13	Lowest Level on 12-12-53 and Since then, the tank was dry.	Perennials ..... 8 months 2.00 Seasonals 613.00.
16.18	Full Supply level of 35.00 was reached on 4-8-53 118.70 M.Cft.	4-8-53 to 27-10-53 1,093.00 M.Cft.	1,211.70	Lowest level on 12-2-54 and after that the tank was dry.	Perennials 187.00 8 months 27.00 Seasonals 1,999.00

STATE-

Serial No.	Name of Tank.	Kharif Area irrigated in acres and supply consumed in M. Cft.	Rabi Area irrigated in acres and supply consumed in M. Cft.	Hot weather Area irrigated in acres and supply consumed in M. Cft.
1	2	12	13	14

DECCAN IRRIGATION CIRLE—*contd.*  
WORKS FOR WHICH CAPITAL AND REVENUE  
ACCOUNTS ARE KEPT—*contd.*

56	Lake Beale (Darna Dam).	..	..	..	<i>Right Bank</i>
		16,200.00	22,722.00	6,790.00	
		1,306.00 M. Cft.	1,572.00 M. Cft.	891.00 M. Cft.	
					<i>Left Bank</i>
		10,870.00	15,645.00	5,180.00	
		987.00 M. Cft.	1,345.00 M. Cft.	734.00 M. Cft.	
57	Chankapur Tank	..	..	..	10483.00 12216.00 3,241.00
		605.75 M. Cft.	939.00 M. Cft.	404.00 M. Cft.	
58	Waghad Tank	..	..	..	2,300.00 3,090.10 167.00
		Not measured	112.10 M. Cft.	105.60 M. Cft.	
59	Bhatodi Tank	..	..	..	234.00 381.00 .....
		20.70 M. Cft.	20.43 M. Cft.	.....	
60	Parsul Tank	..	..	..	1,052.00 1,161.00 .....
		19.60 M. Cft.	64.00 M. Cft.	.....	

## MENT—contd.

Total area irrigated in acres and supply consumed in M. Cft.	Revenue Assessed.	Working Expenses.	Remarks.				
15	16	17	18				
	Rs.	a.	p.	Rs.	a.	p.	
<i>Canal.</i>							
45,712·00							
3,769·00							
<i>Canal.</i>	15,08,729	0	0	5,17,158	0	0	
31,695·00	.....						
3,066·00 M. Cft.	.....						
25,940·00	3,95,407	0	0	1,12,870	0	0	
1,994·00 M. Cft.							
5,557·00	1,37,541	0	0	64,339	0	0	(Whole Kadwa Canals System)
217·70 M. Cft.							
615·00	4,689	0	0	5,597	0	0	
41·13 M. Cft.							
2,213·00	7,372	0	0	8,308	0	0	
73·60 M. Cft.							

STATE-

Serial No.	Name of Tank.	Catchment area in sq. miles.	Full supply gauge above outlet sill.	Capacity in M. Cft. above outlet sill up to full level.
1	2	3	4	5
<b>DECCAN IRRIGATION CIRCLE—contd.</b>				
<b>WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.</b>				
61	Rakh Tank	5.36	23.00	34.22 —2.05
				32.17 (Available capacity.)
62	Khangao Tank	11.78	22.00	84.00
63	Kasurdi Tank	6.00	5.00 Available.	14.17
64	Visapur Tank	159.00	41.50 —12.50 (silting). <hr/> 29.00	1,510.00 —80.00 (silting). <hr/> 1,430.00
65	Limjiwadi Tank	7.80	24.00	48.00
66	Khirdi-Sathe Tank	7.05	20.00	91.00



—contd.

Rainfall in inches during monsoon rabi and during the year.	Date when the tank was filled, and if not filled, when and what maximum level was reached.	Periods of waste weir overflow and the overflow in M. Cft.	Total replenishment received (columns 7 plus 8).	Date when the level fell to outlet sill or the lowest level in case of carry over and the date of this level.	Details of crops Irrigated.
6	7	8	9	10	11
5-30	Did not fill to full level. Max. level of 16-50' was reached on 19-10-53. 19-68 M. cft.	No over flow ..	19-68	14-12-53	Perennials ... 8 months ... Seasonals 170-00
11-94	Did not fill to full level. Max. level of 18-70' was reached on 13-10-53. 54-85 M. cft.	Do. ..	54-85 from M.R. B.C. 0-15 from Nala. 55-00 M. cft.	Lowest level on 5-7-53 and dry from 15-2-53 to 5-7-53.	Perennials ... 8 months 4-00 Seasonals 964-00
15-00	Max. level of 2-65' reached on 19-9-53 3-00 M. cft.	Do. ..	3-00	Lowest level 0-20 on 8-11-53 and was dry from 9-11-53 onwards.	Perennials ... 8 months ... Seasonals 98-00
18-40	Did not fill to full level. It began to be replenished from June 1953 and total replenishment received was 396-00 M. cft. on 9-10-53.	Do. ..	396-00	190-00 M. cft. were carried over to next year starting from 15-2-54. The tank was dry from December 1952 to June 1953.	Perennials 125-00 8 months 13-00 Seasonals 887-00
No rain gauge.	Did not fill to full level. Max. level 17-45' was reached 1-8-53. 22-71 M. cft.	Do.	22-71	Lowest level on 11-12-53 and dry till end of the year.	Perennials ... 8 months ... Seasonals 305-00
17-85	Filled on 4-9-53. 91-00 M. cft.	4-9-53 to 24-9-53. 28-9-53 to 16-10-53. 117-80 M. cft.	208-80	The tank went dry on 9-4-54.	Perennials 230-00 8 months ... Seasonals 501-00

STATE-

Serial No.	Name of Tank.	Kharif. Area irrigated in acres and supply consumed in M. Cft.	Rabi. Area irrigated in acres and supply consumed in M. Cft.	Hot weather. Area irrigated in acres and supply consumed in M. Cft.
1	2	12	13	14

DECCAN IRRIGATION CIRCLE—*concl.*WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.—*concl.*

61	Rakh Tank	.. .. .	170·00. Not observed.	....
62	Khamgaon Tank	.. .. .	970·00 55·00 M. cft.	....
63	Kasurdi Tank	.. .. .	91·00 2·90 M. cft.	7·00 0·10 M. cft. ....
64	Visapur Tank	.. .. .	1025·00 206·00 M. cft.	....
65	Limjiwadi Tank	.. .. .	305·00 22·71 M. cft.	....
66	Khirdi-Sathe Tank	.. .. .	91·00	640·00 ....

M.cft. consumed cannot be given as

MENT—*contd.*

■ Total area irrigated in acres and supply consumed in M. Cft.	Revenue assessed.	Working expenses.	Remarks.
15	16	17	18
	Rs. a. p.	Rs. a. p.	
170·00 Not observed.	1,144 0 0	1,054 0 0	
970·00 55·00 M. cft.	6,824 0 0	197 0 0	
98·00 3·00 M. cft.	601 0 0	Not available.	
1,025·00 206·00 M. cft.	10,433 0 0	12,672 0 0 (M. & R.).	
305·00 22·71 M. cft.	2,029 0 0	Not available.	
731·00	4,580 0 0	.....	

there is no measuring device.

Serial No.	Name of Tank.	Catchment area in sq. miles.	Full supply gauge above outlet sill.	Capacity in M. Cft. above outlet sill up to full level
1	2	3	4	5
<b>SOUTHERN CIRCLE.</b>				
<b>IRRIGATION STORAGE WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.</b>				
67	Gaddikeri Tank	.. ..	4.68	0.00 27.50
<i>Note.</i> —Total acres assessed under Consolidated assessment under the the Gaddikeri is				
68	Muchkundi Tank	... ..	26.00	23.30 571.62
69	Dambal Tank	.. ..	43.00	F.S.L. 145.30 R.L. out let sill 125.00 R. L. silted bed 138.60 R.L. 96.70
<b>MINOR IRRIGATION WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT IN CHARGE OF P. W. D.</b>				
70	Rajaram Tank	.. ..	Natural 0.50 Feeder Channel 2.00	29.50 26.72
71	Wadgaon Tank	.. ..	2.27	28.00 119.00
72	Rankala Tank	.. ..	Not known.	13.3 " Not known.
73	Naridargi Tank	.. ..	10.00	21.00 50.50
74	Makhanapur Tank	... ..	15.00	22.00 101.73
75	Asangir Tank at Bagewadi (Bijapur Dn.)	..	18.00	15.50 47.33

## MENT—contd.

Rainfall in inches during monsoon, rabi and during the year.	Date when the tank was filled, and if not filled, when and what maximum level was reached.	Periods of waste weir overflow and the overflow in M. Cft.	Total replenishment received (columns 7 plus 8).	Date when the level fell to outlet sill or the lowest level in case of carry over and the date of this level.	Details of crops Irrigated.
6	7	8	9	10	11
57.00 31-8-53.	31-8-53 R.L. 2134.05	9" height for 10 days.	Not available.	Not known.	Perennials 150.00 Kharif 268.00
423 acres i.e. area under cultivation 418 acres.					
27.34 Monsoon.	28-10-53 R.L. 1796.84.	No over flow.	157.00	Lowest level R. L. 1789.44 on 2-8-53.	Kharif 6.00
Monsoon 20.89. Rabi 6.87 Total 27.76	Filled on 10-10-53. Max. 145.50 on 10-10-53.	11-10-53 to 3-11-53 93.31 M.cft.	190.01	Dried up on 4-5-53.	Perennials 144.00 Kharif 19.00 8 months 7.00 Rabi 342.00
33.00	30'-1½" on 12-8-53	10-7-53 to 24-7-53 with 1" height. 28-7-53 to 13-8-53 with 1½" height.	26.73	Level reached to out let sill on 3-6-53.	Kharif 24.30 Rabi 33.00 Perennials 17.24
Not available.	21'-6".	35 days.	Not known.	Not known	Kharif 19.30 Rabi 7.30 Perennial 48.10 <hr/> 75.30
Do.	30'-1" on 12-8-53.	56 days.	Do.	Below C.B. L. 18-6-53 5".	Kharif 63.30 Rabi 36.10 Perennial 320.30 <hr/> 420.30
8.15"	1-11-53 R.L. 206.90.	No over flow.	44.62	Lowest level R. L. 198.10 on 31.3-54.	Rabi 169.37
6.10"	31-10-53 R.L. 76.00	Do.	50.79	Lowest level R. L. 64.04 on 28-8-53.	Kharif 5.30 Rabi 170.30 Hot weather 14.30 <hr/> 191.10
22.00	25-10-53 R.L. 525.50	25-10-53 to 15-11-53	47.33.	Water has not gone down below Sill	Kharif 95.17 Rabi 59.16 Hot weather 6.20 <hr/> 160.35

Serial No.	Name of Tank.		Kharif. Area irrigated in acres and supply consumed in M. Cft.	Rabi. Area irrigated in acres and supply consumed in M. Cft.	Hot weather. Area irrigated in acres and supply consumed in M. Cft.
1	2		12	13	14
<b>SOUTHERN CIRCLE—contd.</b>					
<b>IRRIGATION STORAGE WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—contd.</b>					
67	Gaddikeri Tank	.. ..	423·00 cannot be stated.	....	....
68	Muchkund Tank	.. ..	6·00	....	....
69	Dambal Tank	... ..	Perennials 144·00. Kharif 26·00. 8·80 M.cft.	Perennials 144 00. Rabi 349·00. 16·00 M. cft.	Perennials 144 00. Hot weather Nil. 8·20 M. cft.
<b>MINOR IRRIGATION WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT IN CHARGE OF P. W. D.</b>					
70	Rajaram Tank	.. ..	34·30	33·00	17·24 (Perennials)
71	Wadgaon Tank	.. ..	18 30 1·00 Two Seasonal	7·30	48·10 (Perennial)
72	Rankala Tank	.. ..	63·30	36·10	320·30 (Perennial)
73	Neridargi Tank	.. ..	....	169·37 19·72	....
74	Makhanapur Tank	.. ..	5·30 0·50 M. cft.	170·30 29·96 M. cft.	14·30 6·09 M. cft.
75	Asangi Tank at Bagewadi (Bijapur Dn).	.. ..	95·17	59·16	6·20

## MENT—contd.

Total area irrigated in acres and supply consumed in M. Cft.	Revenue assessed.	Working expenses.	Remarks.
15	16	17	18
	Rs. a. p.	Rs. a. p.	
423.00 Cannot be stated.	2,344 0 0	328 0 0	
6.00	12 0 0	1,035 0 0	
512.00 33.00 M. cft.	Consolidated 920 0 0 Non-consolidated 1,960 0 0	6,025 0 0	
	Total 2,880 0 0		
85.14	2,093 0 0	33,225 0 0	
75.30	8,928 0 0	3,047 0 0	
420.30	48,265 0 0	7,200 0 0	
169.37 19.72 M. cft.	860 0 0 161 0 0 L. F. Cess	1,400 0 0	
	1,021 0 0		
191.10 37.55 M. cft.	974 0 0 183 0 0 L. F. Cess.	1,500 0 0	
	1,157 0 0		
160.35	812 0 0 153 0 0 L. F. Cess.	1,900 0 0	
	965 0 0		

STATE-

Serial No.	Name of Tank.	Catchment area in sq. miles.	Full supply gauge above outlet sill.	Capacity in M. Cft. above outlet sill upto full level.
1	2	3	4	5

## KARNATAK IRRIGATION CIRCLE.

IRRIGATION STORAGE WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.

76	Mavinkop Tank	...	6.25	R. L. 110.50 (10.98 ft.)	43.75
77	Asundi Tank	...	23.00	R. L. 108.50 (9.50)	87.40
78	Medleri Tank	...	11.00	180.00 (15.00)	57.60
79	Madag Tank	...	540.00	1,877.73 (4.48)	54.63
80	Dharma Canal	...	51.00	4'-6" Canal depth.	It is not a storage Reservoir.
81	Dhupdal Store Reservoir	...	1,089.00	R. L. 2,011.18 (25.18')	478.00 upto the existing crest level of the weir. 1094.00 upto the crest of the temporary shutters.
82	Ghatprabha Left Bank Canal on 17 miles	...	Do.	Do.	Do.



## MENT—contd.

Rainfall in inches during monsoon, rabi and during the year.	Date when the tank was filled and if not filled, when and what maximum level was reached.	Periods of waste weir overflow in M. Cft.	Total replenishment received (columns 7, plus 8).	Date when the level fell to outlet Sill or the lowest level in case of carry over and the date of this level.	Details of crops Irrigated.
6	7	8	9	10	11
Monsoon 84.29 Rabi 7.00 Total ... 91.29	30.6.53, R. L. 111.50	30.6.53 to 24.7.53. 26.7.53 to 6.8.53. 8.8.53 to 25.8.53. 29.8.53 to 30.8.53. 3.9.53 to 5.9.53. 8.9.53 to 13.9.53. 2.10.53 to 3.10.53. 6.10.53 to 14.10.53. 16.10.53 to 19.10.53. 21.10.53 to 22.10.53. 24.10.53 to 7.11.53. 19.12.53 to 26.12.53. 201.00 M. cft.	244.75	R. L. 104.15 on 11.4.53.	Perennial 12 00 Kharif 578 00 590.00
Monsoon 27.32 Rabi 5.25 Total ... 32.57	11.10.53 R. L. 108.55	11.10.53 to 12.10.53. and 16.10.53. 31.11. M. cft.	118.51	Empty from 1.4.53 to 20.6.53.	8 months 239.00 Rabi 15 00 Consolidated area. 182.00 436.00
Monsoon 24.40 Rabi 5.08 Total ... 29.48	21.9.53 R. L. 180.50	20.9.53 to 23.9.53. 1.10.53 to 8.10.53. 10.10.53 to 19.10.53. 23.10.53 to 4.11.53. 582.35 M. cft.	639.95	R. L. 167.60 on 3.6.53.	Perennial 45 00 Kharif 154.00 Rabi 18.00 217.00
Monsoon 29.35 Rabi 4.80 Total ... 34.15	16.8.53 R. L. 1891.75	26.6.53 to 4.7.53. 12.7.53 to 2.2.54. 420.00 M. cft.	474.63	R. L. 1875.00 on 11.7.53	8 months 170 00 Kharif 528 00 Rabi 25.00 723.00
Monsoon 122.51 Rabi 2.85 Total ... 125.36	There is no storage Reservoir but simply a Pick-up weir exists.	22.6.53 to 24.6.53. 30.6.53 to 2.7.53. 4.7.53 to 6.7.53. 9.7.53 to 12.7.53. 13.7.53 to 16.7.53. 6.8.53 to 10.8.53. 16.8.53. 23.8.53 to 30.8.53. 2.10.53 to 4.10.53. 8.10.53. 7857.14 M. cft.	9,653.14	Canal ceased to flow from 12.12.53.	8 months 500 00 Kharif 1609 00 Consolidated area 8148 00 10257.00
Monsoon 21.68 Rabi 8.88 Total ... 30.56	The tank reached its F.S. L. R. L. 2012.06 gauge reading on 2.12.53 870.00 M. cft.	25.4.53 to 27.4.53. 21.6.53 to 31.8.53. 4.9.53 to 5.9.53. 12.10.53 to 14.10.53. 27.10.53 to 31.10.53. 1.11.53 to 2.11.53. 1,55,859.00 M. cft.	156729.00	Lowest level on 21.10.53 i. e. 2.40 gauge reading R. L. 1988.40 M. cft.	Perennial 164.00 8 months 2396 00 Kharif 7063 00 Rabi 6804 00 Hot weather 94 00 16521 00
Do. ..	Do. ..	Do. ..	Do. ..	Do. ..	Kharif 4217.00 Single water in Rabi 829.00 5046.00

Serial No.	Name of Tank.	Kharif Area irrigated in acres and supply consumed in M. Cft.	Rabi Area irrigated in acres and supply consumed in M. Cft.	Hot weather Area irrigated in acres and supply consumed in M. Cft.
1	2	12	13	14
KARNATAK IRRIGATION CIRCLE— <i>contd.</i>				
IRRIGATION STORAGE WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT— <i>contd.</i>				
76	Mavinkop Tank	.. .. 578·00 (Area is completely assessed at consolidated rates and hence the supply consumed is not gauged.)	....	12·00
77	Asundi Tank	.. ..	436·00 57·16 M.cft.	....
78	Medleri Tank	... .. 154·00 12·50 M.cft.	18·00 14·50 M.cft.	45·00 9·50 M.cft.
79	Madag Tank	.. .. 528·00 183·10 M. cft.	195·00 228·50 M. cft.	....
80	Dharma Canal	... .. 10,257·00 1,796·00 M. cft.	....	....
81	Dhatpdal Storage Reservoir	.. .. 9,569·00 806·00 M. cft.	Pure Rabi 6,813·00 8 months ordinary 2,396·00 8 months Perennia's 112·00 <hr/> 9,321·00 762·00 M. cft.	139·00 (Main weir and down weir)          River water taken by lift. Supply con- sumed cannot be assured.
82	Ghatprabha Left Bank Canal on 17 miles	.. .. 4,217·00 450·00 M.cft.	Single water- ing to Kha- rif and Rabi 829·00 122·00 M. cft.	....

## MENT—concl'd.

Total area irrigated in acres and supply consumed in M. Cft.	Revenue Assessed.	Working expenses.	Remarks.
15	16	17	18
	Rs. a. p.	Rs. a. p.	
590·00	2,936 0 0	2,073 0 0	
436·00 57·16 M. cft.	3,282 0 0	127 0 0	
217·00 36·50 M. cft.	2,633 0 0	1,508 0 0	
723·00 411·60 M. cft.	7,054 0 0	16,111 1 0	
10,257·00 1,796·00 M. cft.	32,847 0 0	15,296 0 0	
16,521·00 1,568·00 M. cft.	1,33,979 0 0	47,906 0 0	
5,046·00 572·00 M. cft.	25,211 0 0	.....	

STATEMENT " A "

*Statement showing all existing Second Class Irrigation Works for which no Capital and Revenue Accounts are kept, including those completed during the year 1953-54.*

Serial No.	District	Total number of Works,		Irrigable Command,		Irrigation				Remarks.
		Tanks.	Bandharas.	Tanks.	Bandharas.	During the year.		Average for last three years.		
						Tanks.	Bandharas.	Tanks.	Bandharas.	
1	2	3	4	5	6	7	8	9	10	11
		No.	No.	Acres	Acres	Acres	Acres	Acres	Acres	
1	Banaskantha	...	13	...	1,484	.....	1,086	.....	987	.....
2	Sabarkantha	...	1	...	.....	.....	350	.....	325	.....
3	Mehsana	...	5	...	5,893	.....	1,921	.....	1,208	.....
4	Amreli	...	7	1	5,833	895	930	140	828	150
5	Baroda	...	.....	...	.....	.....	.....	.....	.....	.....
6	Ahmedabad	...	317	11	15,713	2,308	13,909	1,356	3,717	329
7	Kaira	...	203	...	14,349	.....	7,846	.....	6,722	.....
8	Panchmahals	...	39	...	6,247	.....	4,281	.....	4,599	.....
9	Broach	...	39	1	15	.....	458	.....	305	.....
10	Surat	...	2,039	...	1,000	150	4,557	23	3,081	30
11	Thana	...	.....	24	.....	2,564	.....	842	.....	574
12	Ahmednagar	...	9	8	1,04,646	1,295	2,949	826	5,999	.....
13	East Khandesh	...	1	8	426	1,843	.....	631	426	617

14	West Khandesh	...	...	...	...	...	.....	.....	.....	
15	Nasik	...	3	305	9,183	33,933	3,372	31,771	3,362	31,605
16	Poona	...	5	308	4,089	...	2,331	6,200	894	89
17	North Satara	...	...	...	...	...	.....	.....	.....	
18	Sholapur	...	8	8	19,343	1,222	5,507	397	5,512	408
19	Kolaba	...	...	17	...	2,300	...	150	.....	716
20	Ratnagiri	...	4	...	1,408	...	1,408	.....	1,408	.....
21	South Satara	...	...	19	...	3,074	...	816	.....	.....
22	Kolhapur	...	1	25	...	2,577	...	955	.....	948
23	Dangs	...	...	...	...	...	.....	.....	.....	
24	Belgaum	...	450	17	25,845	3,982	23,922	1,060	23,782	1,077
25	Bijapur	...	19	16	3,692	3,669	1,752	400	1,795	311
26	Dharwar	...	2,983	1	91,180	338	85,633	48	85,231	48
27	Kanara	...	2,128	1,641	44,803	1,341	36,593	1,066	37,204	4,289
28	Bombay Suburban	...	.....	.....	.....	.....	.....	.....	.....	.....
<hr/>										
Grand Total		..	8,274	2,410	3,55,149	61,491	1,98,805	46,681	1,87,385	41,191

These works have been completed during 1951-52 and 1952-53 and hence average of 1st three years is not given.

STATEMENT " B "

Statement showing Second Class Irrigation Works for which no Capital and Revenue Accounts are kept, completed during the year 1953-54.

Serial No.	District.	Total number of Works.		Estimated Cost.		Irrigable Area.		Remarks.
		Tanks.	Bandharas.	Tanks.	Bandharas.	Tanks.	Bandharas.	
1	2	3	4	5	6	7	8	9
				Rs.	Rs.	Acres.	Acres.	
1	Banaskantha	...	.....	.....	.....	.....	.....	
2	Sabarkantha	...	.....	.....	.....	.....	.....	
3	Mehsana	...	.....	.....	.....	.....	.....	
4	Amreli	...	.....	.....	.....	.....	.....	
5	Baroda	...	.....	.....	.....	.....	.....	
6	Ahmedabad	...	12	98,191	.....	2,341	.....	
7	Kaira	...	.....	.....	.....	.....	.....	
8	Panch Mahals	...	.....	.....	.....	.....	.....	
9	Broach	...	1	400	.....	27	.....	
10	Surat	...	5	14,703	.....	522	.....	
11	Thana	...	.....	8	52,048	.....	669	
12	Ahmednagar	...	6	8	50,41,980	26,522	9,496	1,295
13	East Khandesh	...	.....	.....	.....	.....	.....	

14	West Khandesh	...	...	...	.....	.....	.....	.....	.....	
15	Nasik	...	...	.....	4	.....	53,124	.....	460	
16	Poona	...	...	...	3	.....	7,27,703	.....	1,470	
17	North Satara	...	...	.....	.....	.....	.....	.....	.....	
18	Sholapur	...	...	...	1	3	2,49,651	50,969	530	365
19	Kolaba	...	...	.....	5	.....	3,43,701	.....	1,255	
20	Ratnagiri	...	...	...	5	1	60,875	34,421	535	200
21	South Satara	...	...	.....	.....	.....	.....	.....	.....	
22	Kolhapur	...	...	.....	.....	.....	.....	.....	.....	
23	Dangs	...	...	.....	.....	.....	.....	.....	.....	
24	Belgaum	...	...	.....	.....	.....	.....	.....	.....	
25	Bijapur	...	...	...	1	5	1,03,389	2,29,214	254	1,081
26	Dharwar	...	...	...	30	1	88,173	7,152	3,592	60
27	Kanara	...	...	...	27	1	41,181	2,726	650	61
28	Bombay Suburban	...	...	.....	.....	.....	.....	.....	.....	
.....Nil.....										
Grand Total ..		91	36	64,26,246	7,09,877	19,417	5,446			

STATEMENT "C".

*Statement showing Second Class Irrigation Works for which no Capital and Revenue Accounts are kept, which are in progress but not completed during the year 1953-54.*

Serial No.	District.	Total number of Works.		Estimated Cost.		Irrigable Area.		Remarks.
		Tanks.	Bandharas.	Tanks.	Bandharas.	Tank.	Bandharas.	
1	2	3	4	5	6	7	8	9
				Rs.	Rs.	Acres	Acres	
1	Banaskantha	.....	.....	.....	.....	.....	.....	
2	Sabarkantha	1	.....	48,502	.....	110	.....	
3	Mehsana	4	.....	2,48,867	.....	2,243	.....	
4	Amreli	.....	.....	.....	.....	.....	.....	
5	Baroda	.....	.....	.....	.....	.....	.....	
6	Ahmedabad	5	.....	1,03,962	.....	1,577	.....	
7	Kaira	3	.....	49,313	.....	1,200	.....	
8	Panchmahals	.....	.....	.....	.....	.....	.....	
9	Broach	.....	.....	33,627	.....	524	.....	
10	Surat	.....	.....	.....	.....	.....	.....	
11	Thana	.....	3	.....	13,733	.....	243	
12	Ahmednagar	1	.....	14,52,699	.....	1,660	.....	
13	East Khandesh	1	3	8,37,752	8,71,361	1,472	4,380	

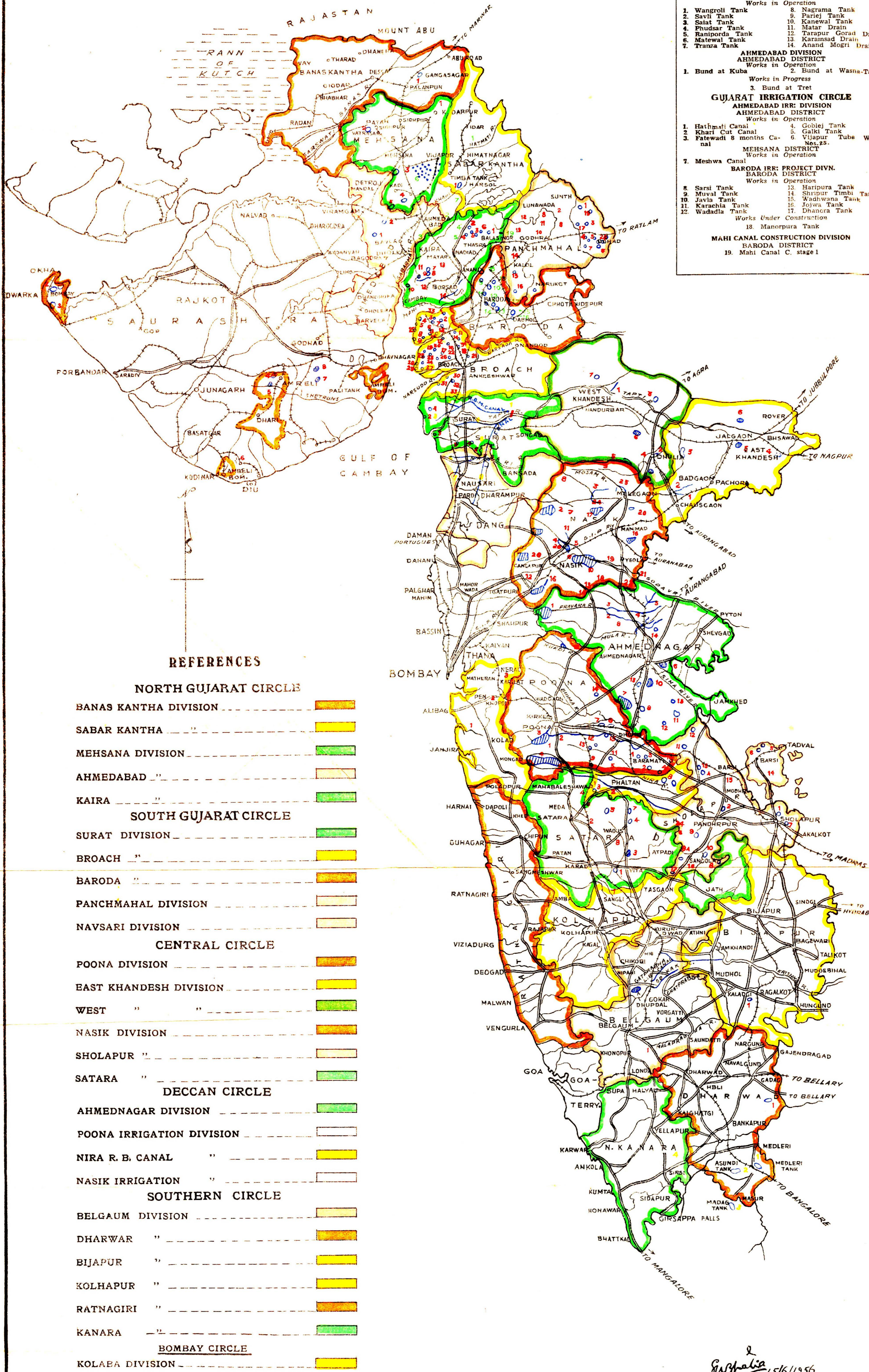


14	West Khandesh	...	.....	.....	.....	.....	.....	
15	Nasik	...	.....	2	.....	38,373	.....	650
16	Poona	...	6	.....	24,71,793	.....	3,400	.....
17	North Satara	...	1	4	13,42,000	2,01,073	4,000	852
18	Sholapur	...	8	1	1,55,46,817	11,624	23,788	100
19	Kolaba	...	.....	2	.....	13,92,463	.....	4,150
20	Ratnagiri	...	.....	.....	.....	.....	.....	.....
21	South Satara	...	.....	.....	.....	.....	.....	.....
22	Kolhapur	...	.....	.....	.....	.....	.....	.....
23	Dangs	...	.....	.....	.....	.....	.....	.....
24	Belgaum	...	1	9	1,28,436	5,16,692	178	8,411
25	Bijapur	...	.....	.....	.....	.....	.....	.....
26	Dharwar	...	62	.....	39,42,315	.....	14,513	.....
27	Kanara	...	57	2	1,22,526	8,855	3,504	132
28	Bombay Suburban	.....	.....	.....	.....	.....	.....	.....
	Grand Total ..	.....	150	26	2,63,28,609	30,53,174	58,169	18,918

# MAP OF THE STATE OF BOMBAY

TO ACCOMPANY THE IRRIGATION ADMINISTRATION REPORT FOR 1955-56

SCALE 40 MILES TO 1 INCH



## REFERENCES

### NORTH GUJARAT CIRCLE

- BANAS KANTHA DIVISION
- SABAR KANTHA
- MEHSANA DIVISION
- AHMEDABAD
- KAIRA

### SOUTH GUJARAT CIRCLE

- SURAT DIVISION
- BROACH
- BARODA
- PANCHMAHAL DIVISION
- NAVSARI DIVISION

### CENTRAL CIRCLE

- POONA DIVISION
- EAST KHANDESH DIVISION
- WEST
- NASIK DIVISION
- SHOLAPUR
- SATARA

### DECCAN CIRCLE

- AHMEDNAGAR DIVISION
- POONA IRRIGATION DIVISION
- NIRA R. B. CANAL
- NASIK IRRIGATION

### SOUTHERN CIRCLE

- BELGAUM DIVISION
- DHARWAR
- BIJAPUR
- KOLHAPUR
- RATNAGIRI
- KANARA

### BOMBAY CIRCLE

- KOLABA DIVISION

### NORTH GUJARAT CIRCLE

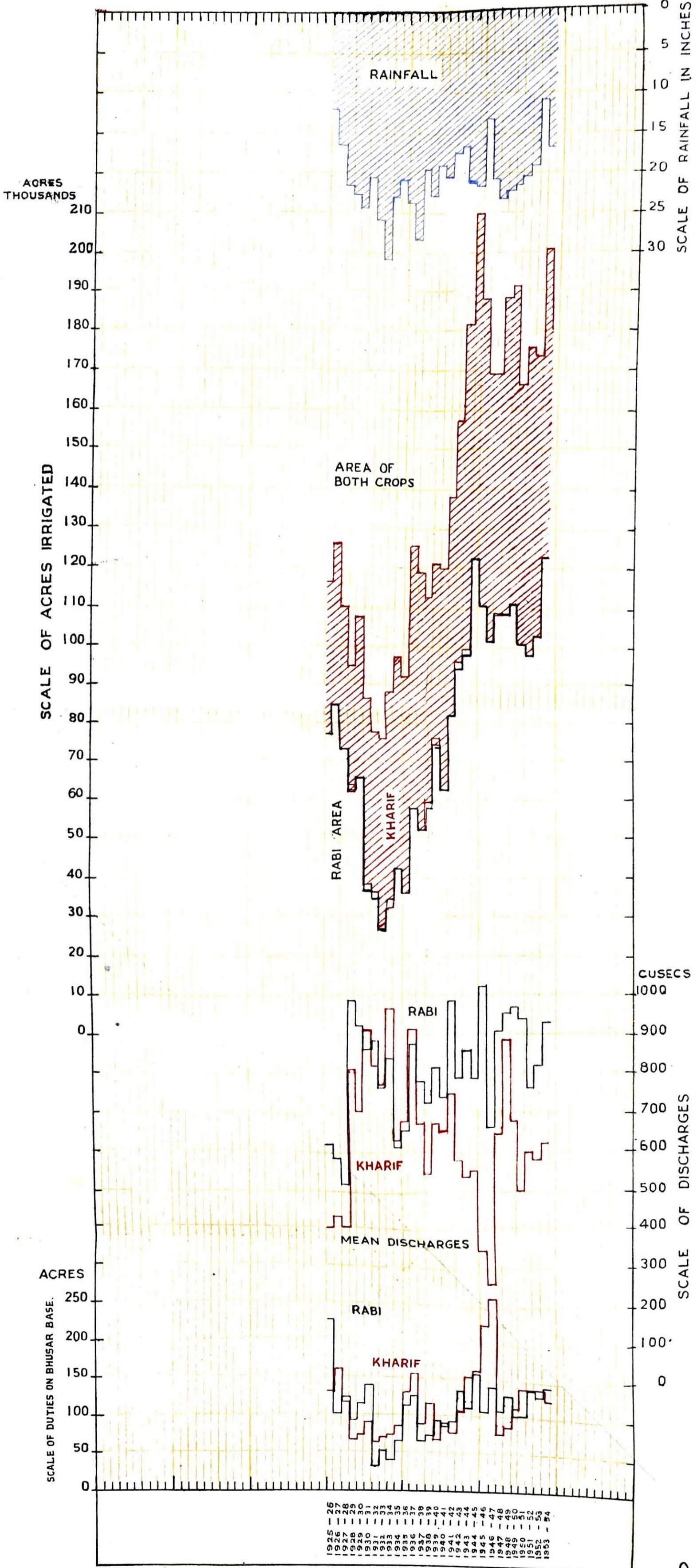
- BANASKANTHA DIVISION  
BANASKANTHA DISTRICT  
Works in Operation
- MEHSANA DISTRICT
- SABARKANTHA DIVISION  
SABARKANTHA DISTRICT  
Works in Operation
- MEHSANA DIVISION  
MEHSANA DISTRICT  
Works in Operation
- AMRELI DISTRICT
- KAIRA DIVISION  
KAIRA DISTRICT  
Works in Operation
- AHMEDABAD DIVISION  
AHMEDABAD DISTRICT  
Works in Operation
- GUJARAT IRRIGATION CIRCLE  
AHMEDABAD IRR. DIVISION  
Works in Operation
- MEHSANA DISTRICT  
BARODA IRR. PROJECT DIVN.  
BARODA DISTRICT  
Works in Operation
- MAHI CANAL CONSTRUCTION DIVISION  
BARODA DISTRICT  
Works Under Construction

### SOUTH GUJARAT CIRCLE

- BROACH DIVISION  
BROACH DISTRICT  
Works in Operation
- SURAT DIVISION  
SURAT DISTRICT  
Works in Operation
- PANCHMAHALS DIVISION  
PANCHMAHALS DISTRICT  
Works in Operation
- TAPI CONSTRUCTION CIRCLE  
SURAT DISTRICT  
Works Under Construction
- BOMBAY CIRCLE  
KOLABA DIVISION  
Works Under Construction
- CENTRAL CIRCLE  
POONA DIVISION  
POONA DISTRICT  
Works in Operation
- SATARA DIVISION  
SATARA DISTRICT  
Works in Operation
- SHOLAPUR DIVISION  
SHOLAPUR DISTRICT  
Works in Operation
- WEST KHANDESH DIVISION  
WEST KHANDESH DISTRICT  
Works in Operation
- EAST KHANDESH DIVISION  
EAST KHANDESH DISTRICT  
Works in Operation
- DECCAN IRRIGATION CIRCLE  
NASIK IRRIGATION DIVISION  
NASIK DISTRICT  
Works in Operation
- AHMEDNAGAR DIVISION  
AHMEDNAGAR DISTRICT  
Works in Operation
- GANGAPUR STORAGE DIVISION  
NASIK DISTRICT  
Works Under Construction
- POONA IRRIGATION DIVISION  
POONA DISTRICT  
Works in Operation
- NIRA R. B. CANAL DIVISION  
SATARA DISTRICT  
Works in Operation
- SOUTHERN CIRCLE  
BELGAUM DIVISION  
BELGAUM DISTRICT  
Works in Operation
- DHARWAR DIVISION  
DHARWAR DISTRICT  
Works in Operation
- BIJAPUR DIVISION  
BIJAPUR DISTRICT  
Works in Operation
- KOLHAPUR DIVISION  
KOLHAPUR DISTRICT  
Works in Operation
- KARNATAK IRRIGATION CIRCLE  
GHATAPRABHA L. B. C. DIVISION  
BELGAUM DISTRICT  
Works in Operation
- DHARWAR IRRIGATION DIVISION  
DHARWAR DISTRICT  
Works in Operation

PREPARED BY:-  
S. H. MALHOTRA, 15/6/1956

# POONA IRRIGATION DIVISION WORKING RECORD OF NIRA R.B. & L.B. CANALS, 1925-26 TO 1953-1954

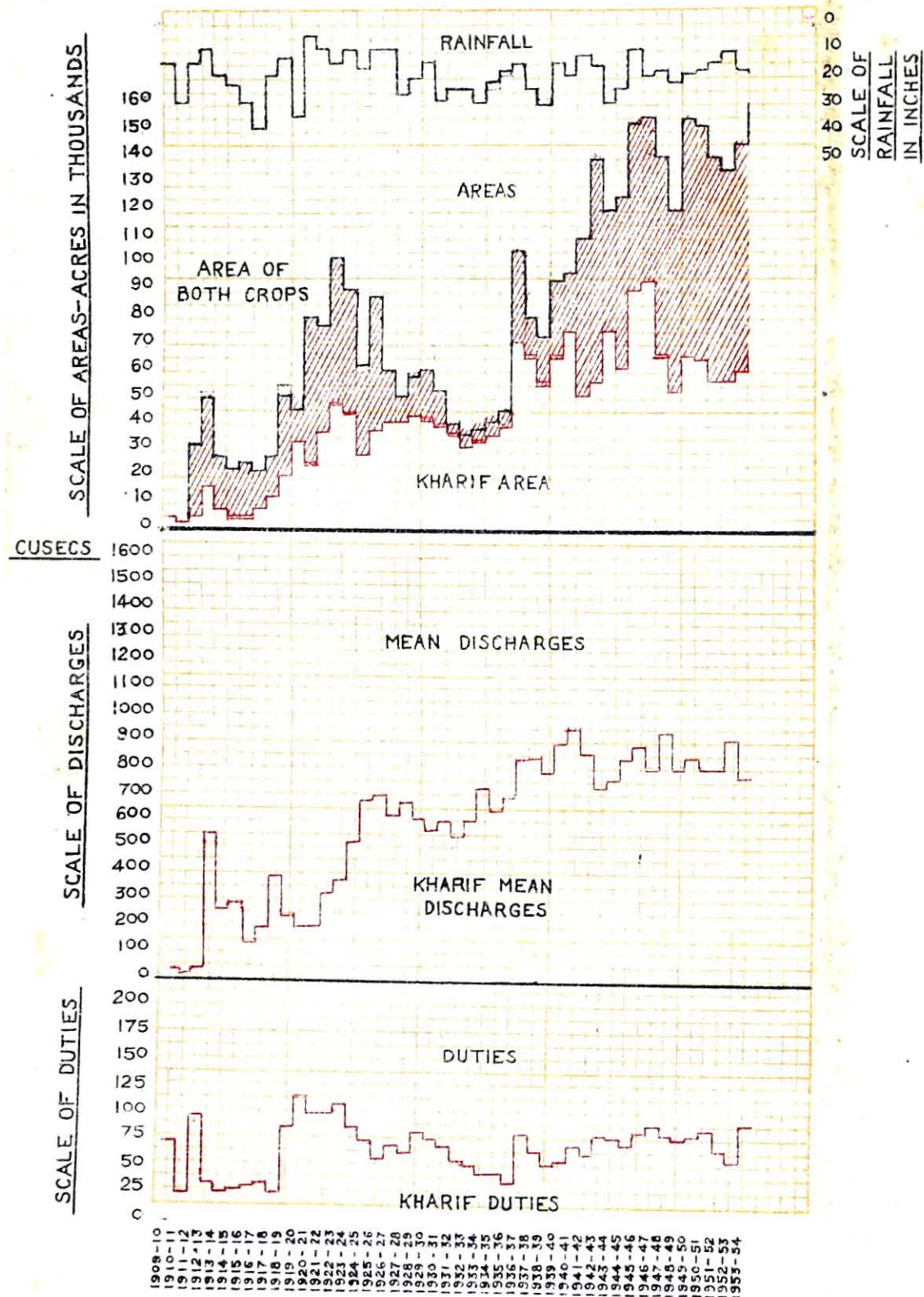


G.P.Z.P. POONA, 1960

  
 12/2/59  
 EXECUTIVE ENGINEER  
 POONA IRRIGATION DIVISION

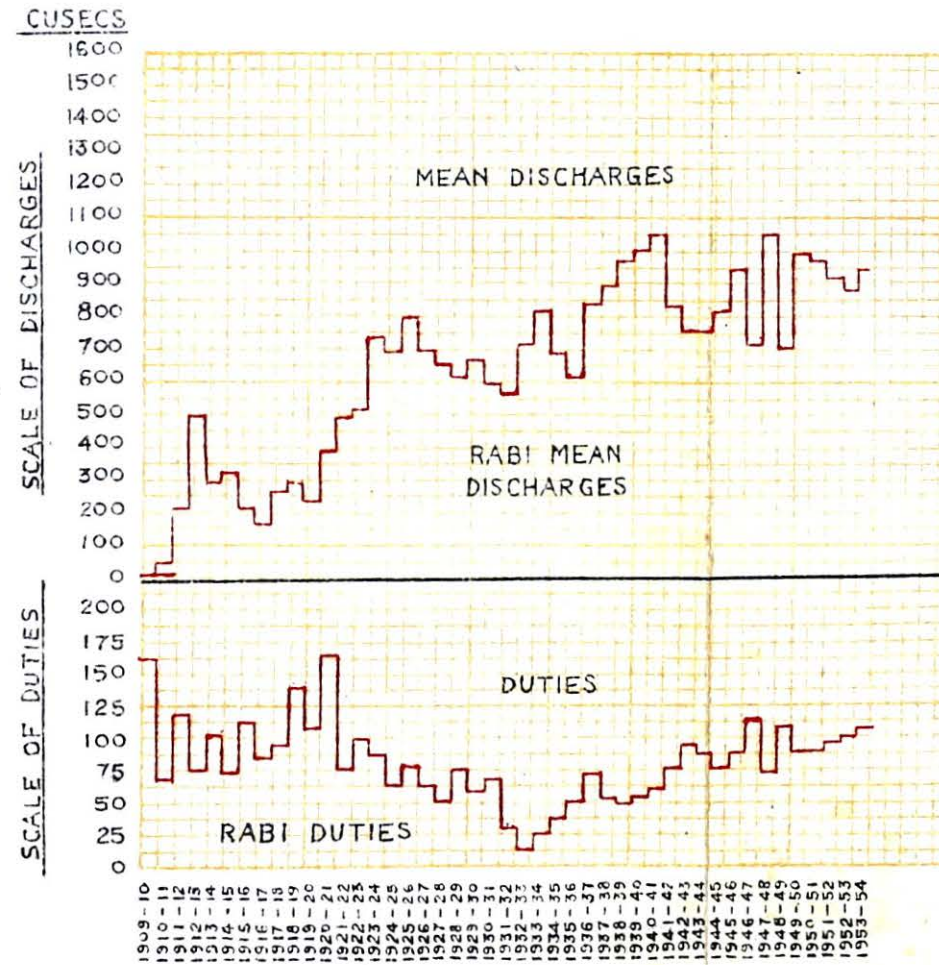
**AHMEDNAGAR DIVISION**  
**GODAVARI & PRAVARA CANALS**  
**COMBINED WORKING RECORD**  
**UP TO THE YEAR 1953-1954**

DRAWING No. 40 OF 1957.



NOTE :-

- 1 THE INTERCEPTS IN THE RED AREA SHOW THE RABI AREAS EACH YEAR.
- 2 THE AREAS SHOWN EXCLUDE THOSE OF THE LAKH CHANNEL TILL IT WAS AMALGAMATED WITH THE PRAVARA L.B. CANAL IN 1925-1926.
- 3 THE DISCHARGES ARE AVERAGE DISCHARGES AT THE HEAD CALCULATED ON THE TOTAL NUMBER OF DAYS OF THE SEASON CONCERNED.
- 4 THE DUTIES ARE CALCULATED ON ABOVE AREAS AND DISCHARGES.
- 5 THE RAINFALL IS AVERAGE RAINFALL OF ALL THE STATIONS ON THE CANALS.
- 6 THE DISCHARGES AND DUTIES FOR KHARIF AND RABI 1912-1913 ARE FOR GODAVARI R.B. CANAL AND PRAVARA CANAL. ONLY FIGURES FOR GODAVARI L.B. CANAL ARE NOT AVAILABLE.



*[Signature]*  
 27-2-58  
 SUPERINTENDING ENGINEER  
 DECCAN IRRIGATION CIRCLE.

*[Signature]*  
 18.6.57  
 Sd. S.G. Balekundri  
 EXECUTIVE ENGINEER,  
 AHMEDNAGAR DIVISION.

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