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IRRIGATION REVENUE REPORT  
OF THE  
BOMBAY PRESIDENCY,  
EXCLUDING SIND.  
1910-1911.

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**DESCRIPTIVE ACCOUNT OF THE WORKING OF IRRIGATION  
WORKS IN THE DECCAN AND GUJARAT  
DURING THE YEAR 1910-1911.**

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**NORTHERN DIVISION.**

In the Northern Division, the Irrigation Works are mainly small tanks, of which there are great numbers. There is also one small canal system on the Hathmati and Khari Rivers. The year was characterised by an irregular rainfall mainly in June and July. This gave a supply to the small canal system, and the rice crops failing for want of late rains greatly benefited from the canal supply, and the percentage of increase of area was large. On the other hand, the irregular rainfall was not sufficient to fill the small tanks and the demand for irrigation under them could not be met.

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**CENTRAL DIVISION.**

2. The rainfall of the year was good and unusually well-distributed for both kharif and rabi crops and irrigation was not as a rule required for ordinary cereal crops and smaller areas of these crops were irrigated than usual. On the other hand, the good rainfall filled the storage tanks and gave a longer supply from springs to the rivers than in ordinary years, and some addition was possible to the valuable class of crops like sugarcane requiring water throughout the whole of the year. The good flow in the springs and rivers also rendered practicable irrigation on some small works depending entirely on the flow of streams with a precarious supply. The net result of the year is therefore that the area of irrigation and the total assessed revenue is not reduced by so much as might have been expected from the excellence of the rainfall. This result, the comparatively small change in area irrigated, is also due to the large areas of valuable perennial crops like sugarcane grown on canals where there is an assured supply of water. The assured supply has been allotted to the valuable crops and cannot be withdrawn from these suddenly in years of bad rainfall, and in such years of bad rainfall there is, as a rule, little excess of supply available for ordinary cereals; and these cannot then get water and there is not the expansion of irrigation that is naturally expected. The total areas of irrigation under works in the Deccan as at present managed thus vary but little from year to year.

3. A most remarkable incident during the year was the occurrence of a sharp frost in the Deccan. Few cultivators could remember frost of any kind, and the expression used by them to describe the damage was that the crops had been burnt up by the cold. Fortunately, the good kharif harvest was reaped before the period of cold and the damage was confined to rabi crops only.

4. Good progress was made on the Godáveri Canals. This project consists of the storage of 8,818 million cubic feet of water by a masonry dam on the Darna tributary and of a long masonry weir across the main stream of the Godávari River at Nandurmadmeshvar, supplying canals on both banks of the river commanding 232,390 acres.

5. The estimate for Rs. 95,61,044 was sanctioned by the Secretary of State in his Despatch No. P. W.—47, dated 13th July 1906. The Darna Dam is approaching completion and water was stored in the lower half of the tank, the long weir at Nandurmadmeshvar for the head works was completed, the canals well advanced and the first 27,000 acres of command under the Right Bank Canal were provided with distributaries and water-courses and water was issued for rabi irrigation.

6. It was unfortunate that the exceptional frost reported above injured the first crops irrigated on the canal. During the year Rs. 7,16,850 (Works) were spent on the Darna storage and Rs. 6,49,873 (Works) on the canals and Rs. 2,11,665 were expended on Nandurmamleshvar weir.

7. The Pravara River Project is of a very similar character. The Masonry Dam at Bhandardara is to be built to store 8,671 million cubic feet, the water is to be passed 50 miles down the river and picked up by an existing weir and supplied to canals on either bank commanding 223,000 acres.

8. The estimate for Rs. 86,44,841 was sanctioned by the Secretary of State in his Despatch No. 38 P. W., dated 9th August 1907. The great height of the Masonry Dam, a little over 250 feet above the excellent rock in the bed of the river, is the distinguishing feature of this project. During the year, the foundation rock was cleared from end to end of the dam line which is little over 1,100 feet in length at the top. In the river bed, it was found that the rock was worn into very large and deep pot-holes. These were cleared out and some were found to be as much as 15 feet deep. They show clearly the very excellent character of the rock foundation and provide an admirable foot-hold for the masonry now under construction. Another feature of interest is that owing to the scarcity of sand in the neighbourhood, the trap rock is being crushed to form sand and so far with very satisfactory and successful results.

9. During the year, Rs. 1,53,051 (Works) were spent on the Bhandardara storage and Rs. 96,510 (Works) on the Pravara canals. The lands commanded by these two projects—the Godáveri Canal and the Pravara—lie along the Dhond-Manmad Railway line, the Pravara Project taking up the irrigation where the Godáveri irrigation ceases on the right bank.

10. The areas served are rich lands mainly in the famine district of Ahmednagar. It is estimated the Godáveri will irrigate 78,440 acres annually and the Pravara 65,088 acres annually.

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#### SOUTHERN DIVISION.

11. In the Southern Division the rainfall and its results were similar to those described for the Central Division. It was good for the crops, it filled the small tanks and it gave flow to some small canals depending on streams with a precarious supply and the general result is but slightly below the average. The unusual frost which caused damage in the Central Division was but little felt in the Southern Division.

12. On Second Class works there was an increase of 1,744 acres in the area irrigated. This is owing to the fact that the cultivated area under Second Class tanks in the Dhárwár Irrigation District has been increasing during the last four or five years and the area irrigated during the year (63,804 acres) in that district is the highest since 1894-1895.

13. During the year under report Rs. 80,163 were expended on repairs to 219 tanks, of which 47 were in the Belgaum District, 170 in the Dhárwár and Kánara Collectorates and 2 in the Ratnágiri and Kolába Collectorates. In addition to the above, Rs. 4,231 were expended on payment of compensation for the lands taken for the tanks in the Belgaum District and Rs. 1,520 and Rs. 6,880 on surveying them for repairs in that district and the Dhárwár Irrigation District. Also Rs. 2,276 were spent on water distribution and maintenance of the Dhárma and Naregal Canals.

14. The storage of the Gokák work was exhausted on 23rd May and replenishment was not received until 23rd June when the regular monsoon began.

15. On this work, it is the practice to build a light wall at the end of the season to store extra water, the surface area of the tank being large. Late floods made this difficult and less extra storage was secured than usual.

16. A slip occurred in the earthen bank of the Asundi Tank; repairs were promptly undertaken.

## GENERAL

17. For Class I Works.—Works for which Capital and Revenue Accounts are kept—the figures showing areas irrigated, revenue assessed and realised and working expenses, as compared with former years, are as follows:—

Years.	Area irrigated.	Revenue.		Working Expenses.
		Assessment.	Realization.	
	Acres.	Rs.	Rs.	Rs.
1900-1901 ... ..	124,972	6,70,788	5,24,499	4,17,504
1901-1902 ... ..	128,171	8,22,769	7,46,333	4,01,100
1902-1903 ... ..	99,290	7,73,444	7,46,315	3,39,847
1903-1904 ... ..	87,819	7,78,638	8,63,048	3,08,124
1904-1905 ... ..	131,905	8,45,905	6,65,237	3,56,124
1905-1906 ... ..	105,716	8,93,325	8,47,811	3,57,670
1906-1907 ... ..	108,787	9,47,167	8,58,820	3,67,062
1907-1908 ... ..	130,808	10,87,554	11,01,106	3,80,332
1908-1909 ... ..	142,928	10,99,014	10,67,329	3,89,423
1909-1910 ... ..	145,155	11,22,916	12,55,165	4,16,046
Average for ten years ...	120,555	9,04,152	8,67,566	3,73,323
1910-1911 ... ..	123,356	10,95,369	12,51,247	4,38,524

The decrease of 21,799 acres in the total area irrigated as compared with the previous year was distributed over the several classes of works as follows:—

	Acres.
Protective Works ... ..	—5,171
Productive „ ... ..	—7,204
Minor „ ... ..	—9,424
Total ... ..	—21,799

18. The following table gives a general comparison of the figures for works for which only Revenue Accounts are kept for the year under report, with those for 1909-10:—

	1909-10.	1910-11.	Increase.	Decrease.
	Acres.	Acres.	Acres.	Acres.
Area irrigated ... ..	155,713	152,580	...	3,133
	Rs.	Rs.	Rs.	Rs.
Revenue receipts ... ..	5,11,834	5,53,790	41,956	...
Expenditure ... ..	4,28,584	4,47,155	18,571	...
Net revenue ... ..	83,250	1,06,635	23,385	...

# IRRIGATION REVENUE REPORT, BOMBAY PRESIDENCY, EXCLUDING SIND, 1910-1911.

## PART I.

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

#### GENERAL REMARKS.

Works in Operation. The following list includes all the works in operation (41 in number) :—

Collectorate.	Number.	Names of Works.	Area of four months' crops which could be irrigated in normal years with a duty at the head of the Canal of 120 acres for the monsoon season and 120 acres for the rabi season per casec.	Whether Supply is reliable or dependent on local rain.	Storage Works completed or proposed.	Remarks.	
		<b>MAJOR WORKS.</b>	<b>Acres.</b>				
		<i>Protective Works.</i>					
Ahmednagar ...	1	Pravara River Works—Ojhar Right Bank Canal.	18,000 for completed canal.	Dependent on local rain.	Bhandardarra Storage work in progress.	Ghát catchment.	
Násik ...	2	Girna Left Bank Canal.	Information not available.	Reliable	Chankápur Tank completed.	Do.	
Násik and Ahmednagar.	3	Godaveri Canal ...	23,760 for completed Right Bank Canal.	Do.	Darna Dam work in progress. Almost completed.	Do.	
Poona ...	4	Nira Canal including Shetphal Tank.	100,000	Do.	Lake Whiting completed.	Do.	
Sholápur ...	5	Mhaswad Tank ...	17,975	Dependent on local rain.	Completed	Deccan catchment.	
		<i>Productive Works.</i>					
Ahmedsbad ...	8	Háthmati Canal and Khari Cut.	21,000	Do.	No storage work; Bokh Reservoir and Chandola Tank completed.	Forest and hilly catchment. Supply depends chiefly on the flow in the Háthmati and Khári Rivers, contents of the Bokh reservoir and the Chandola Tank.	
West Khándeash..	9	Lower Pánjhra River Works.	8,173	Pánjhra River supply not reliable.	Mukti Tank completed.	Ghát catchment for one part and Deccan catchment for the rest.	
Násik ...	10	{ Kadwa River Works. { Pálkhed Canal. Ojhar Támbat Canal. Wadáli Canal.	7,228 550 970	Reliable	Wágbad Tank completed.	Ghát catchment.	
Ahmednagar ...	11	Pravara River Works—Lakh Canal.	582	Reliable for monsoon rabi.	Storage work at Bhandardarra in progress.	Ghát catchment.	
Poona ...	12	Mutha Canals including Mátoba Tank.	49,000	Reliable	Lake Fife completed.	Ghát catchment.	
Sholápur ...	13	Ekrúk Tank ...	13,070	Dependent on local rain.	Completed	Deccan catchment.	
Sátára ...	14	Krishna Canal ...	6,412	Reliable	Proposed	Ghát catchment.	



Collector etc.	Number.	Names of Works.	Area of four months crops which could be irrigated in normal years with a duty at the head of the Canal of 130 acres for the monsoon season and 120 acres for the rabi season per outset.	Whether supply is reliable or dependent on local rain.	Storage Works completed or proposed.	Remarks.
		<b>MINOR WORKS AND NAVIGATION.</b>	<b>Acres.</b>			
Kaira	15	Wangroli Tank	3,000	Dependent on local rain.	Completed	Ordinary catchment on sloping ground.
	16	Tranza-Nagramma Tank.	800	Do.	Do.	Tranza Tank has no independent catchment. Nagramma Tank has a catchment of 150 sq. miles. Both are fed by the Matar Drainage channel which is not at all reliable.
	17	Savli Tank	1,750	Do.	Do.	Ordinary catchment on sloping ground.
	18	Saist do.	2,000	Do.	Do.	Ordinary catchment on flat ground.
East Khândesh.	19	Hartala do.	978	Do.	Do.	Deccan catchment.
	20	Mhasva do.	3,256	Do.	Do.	Do.
	21	Jámda Canals	42,000	Girna River supply not reliable.	Storage Tanks on the Girna, the Manad and the Pánjan Rivers under contemplation.	Ghát catchment for a small part and for the rest Deccan catchment.
Násik	22	Parsul Tank	3,400	Dependent on local rain.	Completed.	Deccan catchment.
Ahmednagar	23	Pravara River Works—Ojhar Left Bank Canal.	6,852	Do.	Storage work at Ebandardarra in progress.	Ghát catchment.
	24	Bhátodi Tank	1,461	Do.	Completed	Deccan catchment.
Poona	25	Kásurdi Tank	150	Do.	Do.	Do.
	26	Shireuphal do.	1,350	Do.	Do.	Do.
	27	Bhádvalvádi do.	1,800	Do.	Do.	Do.
Sholápur	28	Koregaon do.	416	Do.	Do.	Hilly catchment.
	29	Ashti do.	3,382	Do.	Do.	Deccan catchment.
	30	Pathri do.	3,094	Do.	Do.	Do.
Sátára	31	Bewári Canal	439	Do.	Nil	Do.
	32	Upper Mán River Works.	373	Do.	Pingli Tank completed.	Do.
	33	Yerla River Irrigation Works.	1,182	Do.	Nehr do.	Do.
	34	Chihkli Canal	355	Do.	Nil	Do.
	35	Maini Tank	455	Do.	Completed	Do. Supply from catchment is good.
Bijápur	36	Muchkundi Tank	750	Do.	Do.	Deccan catchment.
Belgaum	37	Gadikeri do.	418	Do.	Do.	Supply reliable.
	38	Gokák Canal, 1st Section.	10,387	Reliable	Rabi Storage only	Ghát catchment.
Dhárwár	39	Dámhal Tank	531	Dependent on local rain.	Completed	Deccan catchment.
	40	Medleri do.	231	Do.	Do.	Do.
	41	Arundi do.	303	Do.	Do.	Do.
	42	Madag do.	1,418	Do.	Do.	Ghát and forest catchment—reliable.
	43	Mavinkop do.	617	Do.	Do.	Forest catchment reliable.

Nos. 6, 7, 44 and 45—Máldávi, Budhihal and Victoria Tanks and the Dharma Canal are not included as the works were not in operation in the year under report. No. 46—Gokák Canal, 2nd Section—is in abeyance.

Interest Account.

2. The interest Account to end of the year stands as follows :—

	Amount.				Amount.		
	Protective Works.	Productive Works.	Total.		Protective Works.	Productive Works.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Total Interest charges to end of 1900-10 ... ..	83,50,364	1,51,23,558	2,34,73,922	Net Revenue realized to end of 1909-1910.	21,86,167	54,33,333	76,24,500
Do. during 1910-11 ... ..	6,36,369	4,14,163	9,50,551	Do. during 1910-1911. ... ..	2,53,583	4,73,892	7,26,475
					24,39,750	61,12,235	85,50,975
				Balance net Interest charges to end of 1910-1911 ... ..	64,48,002	94,25,516	1,58,73,518
Total to end of 1910-11 ... ..	89,86,752	1,55,37,741	2,44,24,493	Total ...	89,86,752	1,55,37,741	2,44,24,493

3. The gross revenue realized from all sources during the year, after deducting refunds of revenue (Rs. 1,298), was Rs. 12,51,247, of which Rs. 12,38,711 were direct, and Rs. 12,536 indirect receipts. The net revenue actually realized was Rs. 8,12,723. Both the gross revenue and the net revenue show decreases of Rs. 3,918 and Rs. 26,396 respectively.

Area under command and irrigable area.

4. The gross area under command was 11,30,434 acres and the area irrigable at present is 404,563 acres.

5. The financial results of the year by main heads were as follows :—

	Area irrigated.	Revenue realised.			Working expenses.	Net Revenue.	
		Direct Receipts.	Share of Land Revenue.	Total.			
<i>Class I.—Works for which Capital and Revenue Accounts are kept.</i>	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	
Major Works.	{ Protective Works .	48,942	3,71,239	...	3,71,239	1,18,656	2,52,583
	{ Productive Works .	46,271	6,90,541	4,109	6,94,650	2,20,759	4,73,892
	Total ...	95,213	10,61,780	4,109	10,65,889	3,39,414	7,26,475
Minor Works	...	31,342	1,76,931	8,427	1,85,358	99,110	86,248
Total, Class I	...	126,555	12,38,711	12,536	12,51,247	4,38,524	8,12,723

The area shown as irrigated includes 3,199 acres on which a consolidated land and water assessment has been and is proposed to be levied. This is derived from old works on which expenditure on improvements only has been incurred.

6. The figures showing areas irrigated, revenue assessed and realized, and working expenses, as compared with former years, are as follows :—

Areas irrigated.

Years.	Area irrigated.	Revenue.		Working Expenses.
		Assessment.	Realization.	
	Acres.	Rs.	Rs.	Rs.
1900-1901 ... ..	124,972	6,70,788	5,24,499	4,17,504
1901-1902 ... ..	128,171	8,22,769	7,46,333	4,01,100
1902-1903 ... ..	99,290	7,73,444	7,46,315	3,39,847
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1904-1905 ... ..	131,905	8,45,905	6,65,237	3,56,124
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1907-1908 ... ..	130,808	10,87,554	11,01,106	3,80,332
1908-1909 ... ..	142,928	10,99,014	10,67,329	3,89,423
1909-1910 ... ..	145,155	11,22,916	12,55,165	4,16,046
Average for ten years ...	120,555	9,04,152	8,67,566	3,73,323
1910-1911 ... ..	123,356	10,95,369	12,51,247	4,38,524

The decrease of 21,799 acres in the total area irrigated as compared with the previous year was distributed over the several classes of works as follows:—

	Acres.
Protective Works ... ..	—5,171
Productive „ ... ..	—7,204
Minor „ ... ..	—9,424
Total ... ..	<u>—21,799</u>

The variations in the areas irrigated may be remarked upon as follows:—

#### Central Division.

As compared with the previous year, the total area irrigated shows a net decrease of 16,920 acres distributed over the several classes of works as under:—

	Acres.
Protective Works ... ..	5,171
Productive „ ... ..	3,822
Minor „ ... ..	7,927
Total ... ..	<u>16,920</u>

The decrease is due to the seasonable and timely rainfall received everywhere.

The decreases occur on almost all the works and are due to the cause above stated. There are small increases on the Mhaswad, Kásurdi, Koregaon and Páthri Tanks. The Godáveri R. B. Canal which was brought into operation for the first time irrigated an area of 2,562 acres.

#### Southern Division.

The total area irrigated shows a decrease of 3,495 acres as compared with that of the previous year. This decrease which is made up of decreases of 1,846 acres and 1,649 acres in the kharif and rabi seasons occurs mainly on the Krishna and Gokák Canals.

In the Sátára District, the decreases in the case of the Krishna and the Chikhli Canals were due to short demand for water on account of exceptionally favourable rainfalls in both the kharif and rabi seasons. In the case of

the Rewari Canal, the Yerla River Irrigation Works, the Chikhli Canal and the Maini Tank, the good rainfall during the kharif season resulted in less demand for water and consequently decrease in the area irrigated in that season. The increase in the rabi areas irrigated by the Rewari Canal, the Maini Tank and the Yerla River Irrigation Works was due to scanty rainfall and consequently more demand for water, while in the case of the Upper Man River Works, it was due to the fact that it was found possible to open the Ladhawda Canal for rabi irrigation for the first time during the past ten years. The decrease in the case of the Gokák Canal was due to uncertainty of water for perennial and rabi crops. In the Dhárwár Irrigation District, the decrease was due in the kharif area to short supply in the tanks and in the rabi season to less demand for water on account of timely rainfall.

*Northern Division.*

The total area irrigated by the combined Háthmati and Khári Cut Project was 21,686 acres against 21,398 acres in the previous year. This figure is the highest on record. The total areas irrigated by the Tranza-Nagramma, Wangroli, Savli and Sabiat Tanks were *nil*, 264, 1,456 and 416 acres respectively, against *nil*, 438, 1,569 and *nil* acres in the previous year.

Collections of Revenue.

7. The state of the collections was as follows :—

					Rs.
Balance of demands unrealized at the commencement of the year	...	...	...	...	4,08,561
					Rs.
Demands of the year—					
Rabi, 1909-1910	...	...	...	2,00,288	
Kharif, 1910-1911	...	...	...	6,58,506	
Miscellaneous receipts	...	...	...	2,40,390	
					<u>10,99,184</u>
					Total ...
					15,07,745
Remissions	...	...	...	...	-2,278
					<u>Net Total ...</u>
					15,10,023
Amount unrealized at the close of the year	...	...	...	...	2,70,014
Actual receipts of the year	...	...	...	...	12,40,009
<i>Add—</i>					
Share of Land Revenue	...	...	...	...	12,536
					<u>12,52,545</u>
<i>Deduct—</i>					
Refunds of Revenue	...	...	...	...	1,298
Revenue realized as per paras. 3, 5 and 6	...	...	...	...	<u>12,51,247</u>

The remissions and refunds together amount to Rs.—980. The amount unrealized at the close of the year, *viz.*, Rs. 2,70,014, is considerably less than that at the close of the last year; the total is made up as follows :—

					Rs.
1. Mutha Canals and Mátoba Tank	...	...	...	...	93,136
2. Mhaswad Tank	...	...	...	...	33,543
3. Nira Canal and Shetphal Tank	...	...	...	...	31,924
4. Háthmati and Khári Cut Canals	...	...	...	...	31,183
5. Krishna Canal	...	...	...	...	19,268
6. Ekruk Tank	...	...	...	...	15,840
7. Ashti Tank	...	...	...	...	12,402
8. Kádwa River Works	...	...	...	...	8,674
9. Yerla River Works	...	...	...	...	7,133
10. Upper Mán River Works	...	...	...	...	5,572
11. Sávli Tank	...	...	...	...	2,705
12. Chikhli Canal	...	...	...	...	1,958
13. Maini Tank	...	...	...	...	1,000
14. Sabiat Tank	...	...	...	...	1,000
15. Other Works	...	...	...	...	1,000

Total

The remarks made by the Superintending Engineers regarding the amounts outstanding are given below :—

*Superintending Engineer, Central Division.*

The unrealized balance at the close of the year was Rs. 1,51,556 which is less than the previous year's figure by Rs. 92,891.

Of the above outstandings, the following amounts have been recovered since the close of the official year under report :—

	Rs.
Mutha Canals including Mátoba Tank ... ..	72,813
Nira Canal and Shetphal Tank ... ..	30,500
Mhaswad Tank ... ..	22,122
Ekrak Tank ... ..	14,960
Ashti Tank ... ..	9,688
Other Works ... ..	822

The unrealized balance on the Pálkhed and Ojhar Támbat Canals has also since been recovered.

The reasons of the unrealized balances are summarised below :—

*Mutha Canal.*—The outstandings are large. The irrigation demands could not be recovered before the close of the year as the crushing season for sugarcane begins in March and thus the usual time for collection of this revenue is between March and May.

*Mhaswad Tank.*—The irrigators under this tank were unable to pay off the outstandings all at once, as there were heavy accumulations of past years. Measures are being taken to recover the remainder.

*Nira Canal and Shetphal Tank.*—The greatest part of the unrealised balance was in the Bhimthadi Táluka, namely, Rs. 30,547, and the delay in collection is ascribed principally to the delay in the crushing operations of sugarcane due to want of labourers. Collection could not therefore be made before March.

*Superintending Engineer, Southern Division.*

The amount unrealised at the close of the year, *viz.*, Rs. 36,698, shows a decrease of Rs. 22,268 as compared with the corresponding figure for last year.

The unrealised balances on all the works, and especially on the Rewári Canal, were considerably reduced. The balances on the Krishna Canal, the Upper Mán River Works, the Yerla River Irrigation Works, the Chikhli Canal and the Maini Tank are still very large, and the Collector of Sátára is being requested to reduce them as early as possible.

8. The total working expenses for the year amounted to Rs. 4,38,524 against Rs. 4,16,046 in the previous year, showing an increase of Rs. 22,478 distributed as follows :—

		1903-10.	1910-11.	Difference.
		Rs.	Rs.	Rs.
<b>Major Works—</b>				
Protective Works	... ..	1,16,202	1,18,656	+ 2,354
Productive Works	... ..	2,05,001	2,20,758	+ 12,757
	Total ... ..	3,24,303	3,39,414	+ 15,111
Minor Works and Navigation	... ..	91,743	93,110	+ 7,367
	Grand Total ... ..	4,16,046	4,38,524	+ 22,478

The increases and decreases are explained by the Superintending Engineers as follows :—

*Superintending Engineer, Central Division.*

The total working expenses of the year amounted to Rs. 3,20,520 against Rs. 3,15,949 in the previous year, showing an increase of Rs. 4,571 distributed as under :—

				1909-10.	1910-11.	Difference.
				Rs.	Rs.	Rs.
Major Works—						
Protective Works ...	...	...		1,16,302	1,18,656	+2,354
Productive Works ...	...	...		1,60,396	1,62,813	+2,417
		Total ...		2,76,698	2,81,469	+4,771
Minor Works and Navigation ...				39,251	39,051	—200
Grand Total ...				3,15,949	3,20,520	+4,571

*Superintending Engineer, Southern Division.*

The total working expenses for the year amounted to Rs. 50,742 against Rs. 49,274 in the previous year. The net increase of Rs. 1,468 is made up as under :—

				1909-1910.	1910-1911.	Increase.	Decrease.
				Rs.	Rs.	Rs.	Rs.
Major Works—							
Productive Works ...	...	...		11,623	11,319	...	304
Minor Works and Navigation...				37,651	39,423	1,772	...
Total ...				49,274	50,742	1,772	304

The expenditure on the Krishna, the Rewári and the Chikhli Canals, the Upper Mán River Works and the Maini, the Gadikeri and the Madag Tanks was less than that of the previous year. But the sum total of the decreases on these works was exceeded by the increase in the expenditure on the Gokák Canal, the Asundi, the Mávinkop, the Dámbal, the Medleri and the Muchkundi Tanks and the Yerla River Irrigation Works. This increase was due mainly to the expenditure on the following items :—

- (a) Maintaining the water level temporarily of the Dhupdal Storage.
- (b) Urgent measures to prevent breach, and repairs to the slip, in the Asundi Tank.
- (c) Extension of the Right Bank Canal (Mávinkop Tank).
- (d) Store and Gauge Kárkuns' quarters (Mávinkop Tank).

Besides these, expenditure was incurred on providing steel Tees for silt accumulation observations in the beds of the Dambal, the Medleri, the Asundi and the Mávinkop Tanks, and on fixing new Saturation Observation pipes in the Nehr tank dam.

9. The following table contrasts the charges under the principal heads with those of the two previous years :—

				1908-1909.	1909-1910.	1910-1911.
				Rs.	Rs.	Rs.
Works	...	...	...	18,128	22,054	19,858
Repairs	...	...	...	1,50,829	1,63,173	1,71,147
Establishment	...	...	...	1,45,646	1,49,351	1,60,395
Tools and Plant	...	...	...	10,385	8,025	13,013
Total in the Public Works Department				3,24,988	3,42,603	3,63,903
Collection Charges	...	...	...	43,982	52,531	52,161
Indirect Charges	...	...	...	20,453	20,912	22,455
Total				3,89,423	4,16,046	4,38,524

The establishment charges, divided between "Direction and Accounts" and "Executive," compare as follows with those for the previous year:—

				1909-1910.	1910-1911.	Difference.
				Rs.	Rs.	Rs.
Direction and Accounts...	...	...	...	8,879	10,182	+1,303
Executive	...	...	...	1,40,472	1,50,213	+9,741
Total				1,49,351	1,60,395	+11,044

Details of working expenses.

10. The following table gives the details of the working expenses of some of the principal works:—

Name of Works.	Average incidence of water-rate per acre.	Cost of measurement.		Working expenses, total in the Public Works Department, excluding Indirect Charges.	
		Total cost.	Per acre.	Per mile of main canal.	Per acre irrigated.
<i>Canals.</i>					
		Rs.	Rs. a. a.	Rs.	Rs.
Nira Canal including Shetphal Tank ...	7.51	1,087	0 0 5	683.84	1.92
Háthmati and Khári Cut Canals ...	...	Figures not available.	...	...	...
Kádva River Works ...	5.97	.....	0 1 4	771.77	0.68
Mutha Canals including Mátoba Tank ...	17.90	678	0 0 11½	507.94	4.01
Krishna Canal ...	10.92	768	0 3 5	177.22	3.23
Jámda Canals ...	3.72	.....	0 1 5	167.64	0.55
Ojhár Left Bank Canal ...	3.42	.....	0 1 4	373.63	2.87
Gokák Canal, 1st Section ...	4.81	1,076	0 2 6	294.68	2.22
Upper Mán River Works ...	3.96	228	0 3 4	171.66	3.76
Revári Canal ...	3.78	169	0 2 0	188.97	1.44
Chikhli do. ...	5.34	.....	.....	135.54	5.03
Yerla River Irrigation Works	3.88	479	0 2 2	186.01	1.83
<i>Tanks.</i>					
Mhaswad Tank ...	4.47	.....	0 0 5	195.82	1.82
Ekrúk do. ...	6.26	.....	0 0 9	258.23	2.69
Bhátodi do. ...	4.74	.....	.....	491.1	2.07
Maini do. ...	3.92	375	0 3 8	176.47	1.85

11. The gross assessed revenue, direct and indirect, as shown in Statements IV-C and II-E accompanying the Irrigation Administration Report for 1910-1911 was Rs. 10,95,309. If Rs. 46,395, being the difference between the value at normal rates of water

issued from the Mutha Canals and the value of water supplied at special reduced rates or gratuitously for water-supply to various institutions in the Poona City, be added to the above amount, the total assessed revenue, both direct and indirect, of the year will be Rs. 11,41,764.

The details of the gross assessment were as follows:—

	Direct Revenue.			Indirect Revenue.	Total.
	Water-rates.	Other receipts.	Total.		
	Rs.	Rs.	Rs.	Rs.	Rs.
Major Works—					
Protective Works ...	3,31,700	14,889	3,46,589	...	3,46,589
Productive Works ...	3,95,702	1,93,175	5,88,877	4,109	5,92,986
Total ...	7,27,402	2,08,064	9,35,466	4,109	9,39,575
Minor Works ...	1,15,011	32,326	1,47,367	8,427	1,55,794
Grand Total ...	8,42,413	2,40,390	10,82,833	12,536	10,95,369

12. The net assessed revenue of the year, after deducting working expenses, including indirect and all other charges, and neglecting the items amounting to Rs. 46,395 referred to in the preceding paragraph, was Rs. 6,56,845 as compared with Rs. 7,06,570 in 1909-10.

13. The water-rates in force during the year are shown in Statement I-F accompanying the Irrigation Administration Report for 1910-11, in the remarks column of which the orders sanctioning them are quoted.

14. The average water-rates per acre of land actually irrigated were:—

	1909-10.	1910-11.
	Rs.	Rs.
Protective Works ...	6.45	6.78
Productive Works ...	7.91	8.55
Minor Work ...	3.23	3.67

15. The water-rate assessments and other receipts compare with those of the previous year as under:—

	1909-1910.	1910-1911.
	Rs.	Rs.
Water-rates ...	8,87,148	8,42,443
Other Receipts—		
Plantations ...	7,617	11,146
Water-power ...	13,304	12,934
Water-supply to towns ...	1,44,115	1,43,980
Miscellaneous ...	58,632	72,330
Total ...	2,23,718	2,40,390
Share of land revenue ...	12,050	12,536
Total ...	2,35,768	2,52,926
Grand Total ...	11,22,916	10,95,369

The above comparison shows a decrease under water-rates, water-power and water-supply to towns and increase under plantations, miscellaneous receipts and share of land revenue.

The decrease under water-rates is due to less area irrigated than in the previous year. The other decreases are trifling and call for no special remarks.



The increase under plantations and miscellaneous revenue is due to favourable rainfall.

16. The principal crop acreages irrigated during 1909-10 and 1910-11 were as follows :—

				1909-1910.	1910-1911.	Increase or decrease.
				Acres.	Acres.	Acres.
Gardens and Orchards	...	..	...	2,274	1,997	— 277
Sugarcane	...	...	...	15,845	15,734	— 111
Wheat	...	...	...	11,737	11,195	— 542
Rice	...	...	...	18,307	19,915	+ 708
Maize	...	...	...	3,485	3,411	— 74
Jowári	...	...	...	33,060	28,761	— 4,299
Báji	...	...	...	15,951	6,987	— 8,964
Gram, etc.	...	...	...	16,424	11,741	— 4,683
Groundnut	...	...	...	16,086	13,847	— 2,239
Condiments	...	...	...	3,988	4,537	+ 549
Cotton	...	...	...	919	829	— 90
Fodder	...	...	...	484	433	— 51

The total estimated value of crops is shown as Rs. 94,34,926 against Rs. 1,06,29,229 in the previous year and Rs. 95,82,227 for the year 1908-09. But these estimated crop values must be regarded as only roughly approximate, there being no uniform method of estimating them.

17. In Statement I-E accompanying the Irrigation Administration Report for 1910-11, the duty of water on each work, as well as the bases on which the duties were calculated, etc., are shown. The results vary with the nature of the crops irrigated, perennial crops requiring much more water than cereals. To obtain a correct comparative result it is necessary to consider the area of each class of crop grown under the canals concerned. Statement G affords means for such a comparison.

## DETAILED REPORTS BY LOCAL OFFICERS.

### GUJARAT IRRIGATION DISTRICT.

#### MAJOR WORKS.

##### *Works without storage and dependent on local rain.*

The area irrigated, net assessment, average water-rate, and working expenses under the Háthmati and Khári Cut Canals compare with those of the previous two years as under :—

Year.	Kharif.		Rabi.		Total.		Average water-rate assessed per acre.	Working expenses.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.		
1908-1909 ...	9,939	57,034	6,961	14,135	16,900	71,169	4.21	29,625
1909-1910 ...	14,124	82,054	7,274	14,451	21,398	96,505	4.51	36,043
1910-1911 ...	15,622	90,133	6,064	11,754	21,686	1,01,887	4.70	46,593

There was a sufficient supply in the Háthmati River for the canal upto the end of September. The discharge in the canal fell to 86 cusecs on the 15th November 1910, dwindled to 45 at the end of the rabi season, *i. e.*, 15th February 1911, and to 10 towards the end of May 1911.

The miscellaneous revenue realized was Rs. 4,215 against Rs. 3,580 in the previous year. The increase was due to the sale of bábul trees and grass.

The remissions amounted to Rs. 987 in the kharif season. These were due partly to the crops not coming to maturity and partly to the submergence of the fields by the percolation of water from the canal.

The gross revenue amounted to Rs. 1,06,102 and exceeded the working expenses by Rs. 59,509, equal to a return of 5.99 per cent. on the direct and indirect capital outlay on the Háthmati and Khári Cut Canals combined.

The rainfall gauged at Ahmednagar at the head of the Háthmati Canal was 37.43 and 2.22 inches respectively in the kharif and rabi seasons, while at Ráipur, at the head of the Khári Cut Canal, it was 29.27 and 0.10 inches respectively.

#### MINOR WORKS AND NAVIGATION.

##### *Works with storage tanks dependent on local rain.*

The area irrigated, net assessment and working expenses under the Tranza-Nagrama, Wangroli, Sávli and Saiat Tanks compare with those of the previous two years as under :—

Tanks.	Year.	Kharif.		Rabi.		Total.		Working expenses.
		Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	
Tranza-Nagrama	1908-09	181	467	61	122	242	589	5,039
	1909-10	...	...	...	...	...	...	4,443
	1910-11	...	...	...	...	...	...	2,247
Wangroli	1908-09	1,144	4,193	777	1,597	1,921	5,790	3,236
	1909-10	175	689	263	518	438	1,207	7,260
	1910-11	56	305	208	823	264	1,123	10,710
Sávli	1908-09	888	3,661	513	1,026	1,401	4,687	1,093
	1909-10	943	3,878	626	626	1,569	4,504	3,242
	1910-11	795	3,114	661	835	1,456	3,949	3,930
Saiat	1910-11	394	1,535	22	86	416	1,621	3,743

## (15) WANGROLI TANK.

This tank only partially filled, but the area under command being limited and the rainfall seasonable, the supply stored could not be wholly utilized.

The miscellaneous revenue amounted to Rs. 182 against Rs. 223 in the previous year.

No remissions were granted.

The rainfall gauged in the tank catchment was 35.96 and 2.06 inches respectively in the kharif and rabi seasons.

## (16) TRANZA-NAGRAMA TANKS.

These tanks were brought into operation in the year 1905-1906. They were wholly empty. There was no irrigation under them.

The miscellaneous revenue amounted to Rs. 24 from the sale of grass only against Rs. 547 in the previous year.

The Tranza Tank has no catchment and the Nagrama has a direct catchment of  $1\frac{1}{2}$  square miles only. The rainfall gauged in the catchment was 22.97 inches.

## (17) SAVLI TANK.

This tank only partially filled.

The miscellaneous revenue amounted to Rs. 343 against Rs. 287 in the previous year.

The remissions on account of *himayat* (water-rate) already assessed amounted to Rs. 64 only.

The rainfall gauged in the tank catchment was 29.69 and 0.55 inches respectively in the kharif and rabi seasons.

## (18) SAJAT TANK.

This tank was practically completed and brought into operation for the first time during the year; but it was only partially filled.

The miscellaneous revenue amounted to Rs. 11 only.

No remissions were granted.

No rain-gauge in the tank catchment was fixed, but the rainfall gauged at Thásra was 37.15 and 0.27 inches in the kharif and rabi seasons.

## POONA IRRIGATION DISTRICT.

*Works with Ghát storage.*

## (4)—NIRA CANAL AND SHETPHAL TANK.

The rainfall at Bhátghar during the year was 43.04 inches. The average of the past 5 years is 40.72 inches. The rainfall at the three representative stations along the canal and at Shetphal Tank was also above the average for the past 5 years as shown below:—

Station.	Rainfall during the year.	Average for the past five years.
Pimpra ... ..	19.71	17.97
Bárámati ... ..	21.96	19.71
Nimbgaon ... ..	23.33	19.84
Shetphal ... ..	27.95	18.82

The level of water in Lake Whiting on 1st April 1910 was 57·80 feet above the sills of undersluices. The lowest depth of water reached was 39·80 feet on 15th June 1910 when replenishment began. The undersluices were first opened for passing the floods on 22nd June 1910, when the lake had 40·80 feet of water. The lowest depth reached after the opening of the undersluices was 15·50 feet on 2nd July 1910. The undersluices were finally closed on 7th July, when the Lake had 37·80 feet of water.

Owing to an unusually long break in the rains it took nearly 4 weeks for the water to rise to the waste weir crest. The waste weir gates were finally closed and the lake was full on 22nd October and continued so till the 26th November, or nearly 6 weeks later than usual, as owing to the good rainfall the river discharge was sufficient to meet the requirements of the canal until then. The level of water on 31st of March 1911 was 61·40 feet or nearly 3½ feet higher than usual, as owing to good and seasonable rainfall the demand for Rabi irrigation was less and the draw-off began so much later than usual.

The lowest depth of water in the Shetphal Tank was 11·25 feet above the sill of canal sluices on 21st June 1910 when replenishment from the Nira Canal commenced. The tank was full on 29th September 1910.

The average discharge at the head of the Nira Canal for each month was as under :—

Month.	Average discharge in cusecs.	Month.	Average discharge in cusecs.
April 1910	143	January 1911	220
May "	141	February "	207
June "	145	March "	171
July "	282		
August "	431		
September "	228	Total	2,970
October "	350		
November "	286		
December "	365	Monthly average	247

The areas of irrigated crops and the assessment of the year under report, as compared with the figures for past years, are given in the sub-joined table :—

Period.	Kharif.	Rabi.	Total.	Water rate assessment.
<i>Nira Canal.</i>				
	Acres.	Acres.	Acres.	Rs.
Average for the triennium ending 1900-01	16,958	20,804	37,762	1,45,555
Do. do. 1903-04	20,325	18,606	38,931	2,32,803
Do. do. 1906-07	19,893	21,181	41,074	2,33,987
Do. do. 1909-10	22,846	18,054	40,900	2,96,763
Actual for 1910-11	17,393	18,341	35,734	2,66,477
<i>Shetphal Tank.</i>				
Average for the triennium ending 1906-07	1,531	1,136	2,717	15,963
Do. do. 1909-10	1,717	903	2,620	17,014
Actual for 1910-11	1,396	832	2,228	18,694

The total area under sugarcane was 7,541 acres as against 7,980 acres of the previous year, the decrease being due to the smaller area of adsali crop requiring water for 3 months.

The decrease in the total irrigated area was due to seasonable rainfall for both monsoon and rabi crops, a large area of crops not requiring irrigation.

The total culturable area under command of the Nira Canal, including Shetphal Tank is 227,670 acres, out of which 8·3 per cent. was irrigated in the kharif and 8·4 per cent. in the rabi season.

The gross assessed revenue amounted to Rs. 2,89,948, of which Rs. 2,85,172 was derived from water rates and Rs. 4,776 from other sources against Rs. 3,15,446 and Rs. 5,702 for the previous year.

The total working expenses amounted to Rs. 94,182 against Rs. 93,693 for the previous year. The rate of maintenance and administration, etc., was thus Rs. 2·47 per acre irrigated. The cost of measuring 37,962 acres was Rs. 1,087 or 5 pies per acre.

Refunds and remissions amounting to Rs. 1,330 and 2,672, respectively, were sanctioned during the year. The net revenue on the basis of assessment amounted to Rs. 1,91,764 or 2·98 per cent. on Rs. 64,33,931, the total capital outlay to end of the year, the corresponding figures for the previous year being Rs. 2,24,511 and 3·49 per cent, respectively. The fall in revenue is entirely due to the seasonable rainfall.

(12)—MUTHA CANAL INCLUDING MATOBA TANK.

The rainfall at Lake Fife during the year was 36·95 inches, the average for the previous 5 years being 32·23 inches.

The rainfall at 4 representative stations—two in the catchment of Lake Fife and two on the Right Bank Canal—and at the Matoba Tank during the year, and the average rainfall for the previous 5 years, are given in the subjoined table :—

Station.	Rainfall during the year.	Average for the past 5 years.
Mussa ... ..	115·01	97·64
Mutha ... ..	80·87	58·23
Poona (Sassoon Hospital) ... ..	32·50	24·07
Kedgaon ... ..	17·35	14·19
Matoba Tank ... ..	20·25	18·28

On the 1st of April 1910 the lake had 18·55 feet of water above the sill of canal sluices. The lowest level reached during the year was 6 feet on 16th June 1910 when replenishment commenced. The water rose to the sill of the waste weir sluices on 26th June 1910, and to the full supply level on 13th September 1910. Owing to the higher discharge in the river due to good rainfall, the draw-off commenced on 1st November 1910, or about a fortnight later than usual. The depth of water on 31st March 1911 was 20·02 feet, or 1·47 feet higher than on the same date in the previous year.

The Matoba Tank had 11 feet of water above sill of canal sluices on 1st April 1910 and dried up on 22nd May 1910. It began to receive replenishment from 20th June 1910, both from its catchment and the Mutha Right Bank Canal, and was full on 27th August 1910. The draw-off commenced on 18th November 1910, and the tank had 17·97 feet of water on 31st March 1911, or 6·97 feet more than on the same date in the previous year.

The area irrigated from the Mutha Canals during the year was 9,094 acres against 11,181 acres in the previous year. Of this, 8,551 acres were irrigated in the kharif and 540 acres in the rabi seasons. The area of sugarcane was 4,609 acres against 4,434 acres in the previous year, the total area of perennial crops for the year being 5,649 acres against 5,509 acres of the previous year. The area irrigated under the Matoba Tank during the year was 1,376 acres in the kharif and 683 acres in the rabi season.

The total assessed revenue from the Mutha Canals, including Matoba Tank, was Rs. 3,51,150 (Rs. 1,99,720 from irrigation and Rs. 1,51,430

from other sources), the corresponding figures for the previous year being Rs. 3,52,982 (Rs. 2,03,143 from irrigation and Rs. 1,49,839 from other sources).

The actual cost of measuring 11,153 acres under the Mutha Canals, including Matoba Tank, was Rs. 678 or about 11½ pies per acre.

Refunds and remissions amounting to Rs. 105 and Rs. 5, respectively, were sanctioned during the year for the Mutha Canals including the Matoba Tank.

The working expenses, excluding the charges on account of the Poona Cantonment water supply and refunds of revenue, were Rs. 60,072 for the combined work, which gives a rate of Rs. 5.39 per acre for maintenance and administration, etc. The total working expenses including charges on account of water supply, refunds and remissions were Rs. 1,19,059.

The net revenue on the basis of assessment was thus Rs. 2,32,091 or 3.05 per cent. on the total capital outlay to end of the year, namely, Rs. 76,08,820, the corresponding figure for the previous year being Rs. 2,31,391 and 3.05 per cent. respectively.

The assessed revenue from water-supply to the Poona City and Cantonment during the year amounted to Rs. 1,30,881 against Rs. 1,31,783 in the previous year. The average daily supply of filtered water delivered into the mains for distribution from the Poona Cantonment Water Works was 1,160,018 gallons.

Water was issued either gratis or at reduced rates to certain charitable and other institutes in the Poona Cantonment and suburbs in accordance with the orders of Government, the loss of revenue thus caused being Rs. 5,067.

*Storage works dependent on local rain.*

The subjoined table gives a comparison of rainfall, irrigated areas and the financial results of the year with the average figures for the previous 5 years, for the Kásurdi, Shirsuphal and Bhádalwadi Tanks:—

	Kásurdi.		Shirsuphal.		Bhádalwádi.	
	During the year.	Average of past 5 years.	During the year.	Average of past 5 years.	During the year.	Average of past 5 years.
Rainfall ... .. Inches.	21.74	15.41	18.12	13.75	21.72	19.39
Full supply capacity above sill of outlet ... Million cubic feet.	14.5		38.5		22.2	
Storage at highest level reached during the year. " "	14.5	...	154.14	...	166.14	...
Area irrigated, kharif ... Acres.	146	5	132	386	70	371
Do. rabi ... "	100	61	963	773	1,516	1,160
Total area irrigated ... Acres.	246	66	1,095	1,159	1,586	1,531
Gross assessed revenue ... Es.	782	451	2,359	3,003	4,884	3,736
Working expenses ... "	706	688	2,500	2,491	2,840	2,684
Net assessed revenue ... "	76	—237	—141	512	2,044	1,052

(25)—KÁSURDI TANK.

The tank was dry up to 18th May 1910 when it began to receive replenishment. It overflowed on 21st June and remained full till 9th July. The level gradually fell till 4th August, when it again received replenishment for 4 days, as also from 1st to 7th September and from 28th September to 4th October, on which date it was full. The tank was empty on 3rd February 1911.

(26)—SHIRSUPHAL TANK.

The tank was dry till 19th June 1910 when it first received replenishment and had 12.50 feet of water above the sill of outlet. The highest level

reached during the year was 23·80 feet above outlet sill on 28th October 1910. The level on 31st March 1911 was 12·82 feet above the outlet sill. The fall in revenue is due to short supply in the tank for monsoon crops.

## (27)—BHÁDALWÁDI TANK.

The tank was dry till 19th June 1910 when replenishment commenced. The highest level reached was 32·40 feet above outlet sill and 2·60 feet below full supply level on 29th September 1910. The level fell to 19·94 feet on 31st March 1911.

## SHOLAPUR DISTRICT.

## Storage works with Deccan catchment.

Tanka	Area irrigated.									
	Kharif.				Rabi.				Total.	
	Triennium ending 1905-06.	Triennium ending 1908-09.	1909-10.	1910-11.	Triennium ending 1905-06.	Triennium ending 1908-09.	1909-10.	1910-11.	Triennium ending 1905-06.	Triennium ending 1908-09.
Mhaswad ... ..	2,360	2,478	3,056	3,847	3,935	6,075	3,572	3,277	6,295	6,513
Ekrak ... ..	2,392	2,916	2,120	2,778	2,061	2,429	2,523	1,826	4,453	5,345
Koregaon ... ..	55	124	Nil.	...	193	400	459	683	248	524
Ashti ... ..	757	735	922	905	921	2,546	2,837	1,032	1,678	3,281
Pathri ... ..	...	167	282	57	...	209	611	915	...	376

Tanka	Area irrigated—contd.		Water assessment.				Working expenses.	
	Total—contd.		Triennium ending 1905-06.	Triennium ending 1908-09.	1909-10.	1910-11.	1909-10.	1910-11.
	1909-10.	1910-11.						
Mhaswad ... ..	6,658	7,124	18,566	38,898	28,878	31,871	16,912	15,729
Ekrak ... ..	4,643	4,604	20,524	34,800	25,820	28,815	14,534	14,712 <sup>(a)</sup>
Koregaon ... ..	459	633	544	1,308	1,116	1,365	1,617	2,416 <sup>(b)</sup>
Ashti ... ..	3,759	1,937	4,641	14,113	14,325	8,470	5,372	7,721 <sup>(c)</sup>
Pathri ... ..	893	972	...	1,205	3,019	3,149	2,540	2,314

(a) The increase is small and is due to some extent to expenditure on demarcation and preparation of land registers and land plans.

(b) The increase over the figure for the past year is due to special repairs necessitated by the slip of a portion of the dam.

(c) The increase in working expenses is due to certain special repairs to the Canals and to the demarcation and preparation of land plans and registers.

## (5)—MHASWAD TANK.

At the commencement of the year the water in the tank was 14·23 feet above the sill of outlet, the contents being 1,163·04 M. C. ft. This depth decreased to 9·71 feet above sill by the 19th June 1910, representing a volume of 667·29 M. C. ft. The level then began to rise again and the waste weir first overflowed on 29th August 1910. It did this at intervals, namely, 29th August to 3rd September, 20th September to 11th October, and 26th October to 2nd November 1910. The maximum depth of water over the crest of the weir was 2 feet.

The average rainfall gauged at five stations in the catchment, which has an area of 480 square miles from 1st June to 31st October 1910 was 26·34 inches and the replenishment received was 13,939 M. C. ft.

The area irrigated during the year was 7,124 acres against 6,658 acres of the previous year. The increase, which was chiefly under kharif,

was due partly to the extension of sugarcane cultivation in villages below 14th mile of Canal No. 2, where such irrigation was permitted as the lands are richer and closer to the canal there than above the 14th mile, and to kharif crops sown on good rainfall requiring canal water to mature them.

The decrease in rabi was due to favourable rainfall later in the season.

The gross assessed revenue from all sources amounted to Rs. 40,905 against Rs. 33,967 in the previous year. The increase is due partly to increase in the water rate and partly to increased supply of water to the Pandharpur Municipality and Pandharpur Water Works and to the sale of aloe leaves.

The working expenses amounted to Rs. 15,729 against Rs. 16,912 in the previous year, the decrease being due to the decrease in the share of collection charges in the Civil Department, as last year an exceptionally large amount of irrigation assessment was realised.

#### (13)—EKRUK TANK.

At the commencement of the year the water level in this tank was 32.58 feet above the outlet of the perennial canal, and the contents 2,185 M. C. ft. of water. Slight Replenishment. replenishment was received on 21st June 1910, but it was not steady and the water continued to fall until the 27th July 1910, when the level reached was 28.20 feet above the sill, representing 1,596 M. C. ft. of water. It then began to rise and the waste weir overflowed on 4th September 1910 and kept overflowing till 21st October 1910. The maximum depth over the crest of waste weir was 2.30 feet.

The mean rainfall gauged at the five stations in the catchment of 159 square miles from 1st June to 31st October 1910 was 27.59 inches. The total replenishment received was 6,701 M. C. ft. The decrease in the area irrigated which was in the rabi season was due to favourable and timely rainfall and is partially counterbalanced by an increase under kharif.

The increase in the water assessment over last year's revenue is due to larger area of sugarcane.

The gross assessed revenue from all sources amounted to Rs. 59,019 against Rs. 50,548 of the previous year and is due partly to the increased water-rate assessment as explained above and partly to the increased sale of water to the Sholapur Mills, two of which were started during the previous year.

#### (28)—KOREGAON TANK.

The tank was dry at the commencement of the year and received its first Replenishment. replenishment on 21st June 1910. After a gradual and steady rise, the tank filled and began to overflow on the 2nd September 1910 and continued so to the end of September. The maximum depth of water over the waste weir was 1 foot.

The rainfall gauged at Koregaon from 1st June to 31st October 1910 was 33.70 inches, which gave a replenishment of 238 M. C. ft.

The increase in the area irrigated and water-rate assessed is due to the extension of irrigation to a village called Kalamvadi.

The gross assessed revenue is Rs. 1,430 against Rs. 1,157 of the previous year. The increase is due to the increase in the water-rate, and also to a small increase in the revenue from other sources.

#### (29)—ASHTI TANK.

The depth of water in the tank at the commencement of the year was 10.55 feet above the sill of outlet representing Replenishment. 399 M. C. ft. of water. Replenishment was first received on 22nd June 1910, and the tank began to overflow on 26th September and continued so till 25th November with two short interruptions.



The mean rainfall gauged at two stations in the catchment of 92 square miles from 1st June to 31st October was 33.67 inches, which gives a total replenishment of 4,319 M. C. ft.

The decrease in the area irrigated is due to timely and sufficient rainfall in the rabi season.

The decrease in water-rate is due to the decrease in the area irrigated.

The gross assessed revenue amounted to Rs. 10,025 against Rs. 15,535 of the previous year. The decrease is due to the decrease in the water-rate assessment.

The working expenses amounted to Rs. 7,721 against Rs. 5,372 of the previous year. The increase is due to certain special repairs to the canals and to the demarcation and preparation of land plans and registers.

(30)—PA'THBI TANK.

The level of water in the tank at the commencement of the year was 27 feet above the sill of outlet, representing 285 M. C. ft. of water. The lowest level attained was 24.60 feet above the outlet on the 12th June 1910 when replenishment commenced. The tank began to overflow on 30th August 1910, and this continued till the end of November. The maximum depth of water above the crest of waste weir was 1.20 feet.

The mean rainfall gauged at two stations in the catchment of 27.5 square miles between 1st June and 31st October was 39.91 inches, and the replenishment received was 928 M. C. ft.

The increase in the area irrigated and water-rate assessed is due to the extension of irrigation.

The gross assessed revenue was Rs. 3,266 against Rs. 3,145 of the previous year. The increase is due to the reason given above.

AHMEDNAGAR DISTRICT.

*Works with storage tanks dependent on Local rain.*

(24)—BHATODI TANK.

This is a small tank situated on the Mehekari River. Its supply generally suffices for the kharif and partly for rabi irrigation. It had a sufficient supply for both the kharif and rabi areas applied for during the year. The tank was dry till 11th June 1910 when it first received its replenishment, the water then rising 3 feet above sill of outlet. The highest level water reached was 28.80 feet above outlet sill (R. L. 70.00) or 1.20 feet below the top of the dam (R. L. 100.00). The waste weir overflowed on the 29th July 1910.

The area irrigated, gross assessed revenue and working expenses are given below, in comparison with those of the previous year:—

Tank.	Area irrigated.						Gross assessed revenue.		Working expenses.	
	Kharif.		Rabi.		Total.		1909-10.	1910-11.	1909-10.	1910-11.
	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.	Rs.
Bhatodi	460	57	1,050	1,011	1,510	1,068	7,857	8,155	6,066	2,633

## NA'SIK AND AHMEDNAGAR IRRIGATION DISTRICT.

## (3)—GODAVERI CANALS.

These works are under construction and so far advanced that 27 miles of the Godavari Right Bank Canal were opened during the year. This being the first year, monsoon water was given free, but in the rabi season water was charged for.

*Canals supplied by Ghat rivers without storage works.*

## (1)—OJHAR RIGHT BANK CANAL; (23)—OJHAR LEFT BANK CANAL.

The Ojhar Right and Left Bank Canals which come under this head draw their supply from the Pravara River and flow only so long as the river-supply is sufficient. A storage reservoir in the Ghats at Bhandardara on the Pravara River is now under construction to convert them into perennial canals. The earth work of the Ojhar Right Bank Canal was done in the famine of 1899-1902 and the masonry works are now under construction and almost completed. 13 miles of this canal were opened this year and a greater length will be opened next year.

*Works without storage but on a river with Ghat catchment.*

## (11)—LAKH CANAL.

This canal draws its supply from the Pravara River just where it is crossed by the D. M. Railway. Being situated below the Ojhar Canals it only receives such water as is not required by them and the supply is usually insufficient after October. In the year under report, however, the supply was sufficient till much later owing to the good rainfall.

This canal will be taken into the Pravara Canal system when Bhandardara storage is completed.

The following table shows the areas irrigated during the year under report, as compared with those of the previous years under the four canals :—

Canals.	Area irrigated.					
	Kharif.		Rabi.		Total.	
	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Godavari Right Bank Canal ... ..	...	10	...	2,552	...	2,562
Ojhar Right Bank Canal ... ..	218	157	...	...	218	157
Ojhar Left Bank Canal ... ..	3,472	745	2,707	1,726	6,179	2,471
Lakh Canal ... ..	305	31	386	209	691	240
Total ... ..	3,995	943	3,093	4,487	7,088	5,440

The decrease in both seasons on the last three canals is due to timely and seasonable rainfall.

As there was not sufficient supply in the Pravara River for both Ojhar Right and Left Canals in rabi season, the water was reserved for the Ojhar Left Bank Canal as it has the prior claim.

The water rates assessed and other revenue receipts are shown below in comparison with those of the previous year :—

Canals.	Assessment.						Revenue from other sources.		Total gross assessed.	
	Kharif.		Rabi.		Total.		1909-10.	1910-11.	1909-10.	1910-11.
	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.				
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Godáveri Right Bank Canal ... ..	...	...	...	10,186	...	10,186	...	...	...	10,186
Ojhar Right Bank Canal ... ..	109	320	...	...	109	320	125	665	234	955
Ojhar Left Bank Canal ... ..	3,312	3,131	6,680	5,310	9,992	8,441	574	1,409	10,566	9,940
Lakh Canal ... ..	297	109	723	420	1,020	529	333	1,028	1,353	1,527
Total ...	3,718	3,560	7,403	15,916	11,121	19,476	1,032	3,192	12,153	22,668

On the Ojhar Right and Left Bank Canals the rate for monsoon irrigation was raised from Re. 0-8-0 to Rs. 2-0-0 per acre in the year under report.

The working expenses amounted to Rs. 12,845 against Rs. 14,452 as under:—

Canal.	Working expenses.	
	1909-10.	1910-11.
	Rs.	Rs.
Godáveri Right Bank Canal.	...	401
Ojhar Right Bank Canal ...	688	1,736
Ojhar Left Bank Canal ...	8,010	8,021
Lakh Canal ... ..	5,754	3,085
Total ...	14,452	13,243

*Works with Ghat Storage.*

(10)—KADWA RIVER WORKS.

On the 1st of April 1910 the level of water in the tank was 33.35 feet above the sill of outlet sluice, the contents being 251.13 million cubic feet. The lowest level reached during the year was R. L. 100.05, *i. e.*, 2005. above outlet sluice on 28th June 1910, when replenishment commenced. Water rose to crest of waste weir on 7th July 1910. Water was stored up to R. L. 127.80, *i. e.*, 47.8' above outlet sluice and 0.20' below the maximum full supply level, making the quantity of water available for irrigation 598.93 million cubic feet, an increase of 32.83 million cubic feet on the previous year's quantity. On 31st March 1911 the tank had 38.00 feet of water in store, or 4.65 feet more than that on the same date in the preceding year. The rainfall near the dam was 41.53 inches, or 2.70 inches more than in the previous year.

The following table shows the areas irrigated during the year under report as compared with those of the previous year:—

Canal.	Area irrigated.					
	Kharif.		Rabi.		Total.	
	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Palkhed ...	1,103	535	1,058	1,355	2,161	1,890
Ojhar Tambat ...	254	95	878	463	632	558
Wadali ...	224	5	276	332	500	337
Total ...	1,581	635	1,712	2,150	3,293	2,785

The decrease in the kharif season was due to copious rainfall. The increase in the rabi season was mainly in eight months' crops planted, owing to copious rainfall, in the kharif season.

The assessment and other receipts are shown below in comparison with those of the previous year:—

Canal.	Assessment.						Revenue from other sources.		Total gross assessed revenue from all sources.	
	Kharif.		Rabi.		Total.		1909-10.	1910-11.	1909-10.	1910-11.
	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.				
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Waghad ... ..	...	...	...	...	...	...	17	26	17	26
Palkhed ... ..	8,610	6,362	4,832	5,464	13,442	11,826	950	1,157	14,392	12,983
Ojhar Tambat ...	1,931	1,451	1,717	1,900	3,648	3,351	22	111	3,670	3,462
Wadali ... ..	1,372	60	1,164	1,386	2,536	1,446	45	32	2,581	1,478
Total ... ..	11,913	7,873	7,713	8,750	19,626	16,623	1,034	1,326	20,660	17,949

The working expenses amounted to Rs. 21,510 against Rs. 11,002 for the previous year:—

Canal.	Working expenses.	
	1909-10.	1910-11.
	Rs.	Rs.
Waghad Tank ... ..	2,401	7,172
Palkhed ... ..	5,840	11,222
Ojhar Tambat ... ..	1,380	1,425
Wadali ... ..	1,381	1,691
Total ... ..	11,002	21,510

The excess is due to less expenditure on Capital Account works during the year.

(2)—CHANKAPUR TANK.

*Girna Left Bank Canal.*

The tank has been used for storage since 1909-10. During the year water was stored to sill of weir R. L. 159'00, *i. e.* 84' above the under-sluice level, the contents being 1109'89 million cubic feet, and was let out from the tank from 18th December 1910 for irrigation on the Girna Left Bank Canal, also supplementing the supply to the existing bandharas on the river.

The area irrigated under the canal was 1,137 acres and the assessment Rs. 4,126 as compared with 3,099 acres and Rs. 4,784 respectively in the previous year. The decrease in area and assessment was due to copious rainfall.

The gross assessed revenue from all sources amounted to Rs. 4,449 against Rs. 5,392 of the previous year.

The working expenses, direct and indirect, amounted to Rs. 6,608 against Rs. 5,009 of the previous year. The increase is due to less expenditure on Capital Account works raising the percentage charge for establishment.

*Storage works with Deccan catchment.*

## (22)—PARSUL TANK.

The tank was dry up to 13th June 1910 when it received its first replenishment. The highest level water reached was 35 feet above outlet sill on 10th August 1910, on which date the waste weir just overflowed.

The area irrigated and the assessment were respectively 940 acres and Rs. 4,068 against 1,447 acres and Rs. 4,570 of the previous year. The decrease in area and assessment was due to copious rainfall.

The gross assessed revenue from all sources and the working expenses amounted to Rs. 4,107 and 1,409 against Rs. 4,765 and 1,123 respectively of the previous year.

## EAST KHANDESH DISTRICT.

*Works without storage but on a river with Ghat catchment.*

## (21)—JAMDA CANALS.

The discharge of the river Girna where it feeds the Jamda Canals was only 5.30 cusecs at the beginning of the year. The flow ceased altogether at the end of April 1910 and the river continued dry until 6th June 1910, on which date a fresh supply of water was received. The available water was sufficient to meet all Kharif demands—very poor this year—but was insufficient for Rabi and perennial crops.

The areas irrigated during the year and the preceding one and the corresponding assessments and working expenses are given in the accompanying statement, which also shows the realizations made during the year and the outstandings:—

Area irrigated.						Assessment.						Revenue from other sources.		Realizations.				Working Expenses.			
Kharif.		Rabi.		Total.		Kharif.		Rabi.		Total.											
1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	Water rates.	Miscellaneous Revenue receipts.	Total.	Outstandings.	1910-11.	1909-10.	Decrease.	Increase.
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
274	315	724	1,587	898	1,902	1,695	1,100	1,778	3,436	3,773	4,536	2,579	757	5,498	2,579	8,975	218	7,193	7,594	701	..

The decrease in the total assessment is due to less irrigation this year owing to timely and copious rainfall and the increase in the revenue from other sources to the handsome sale proceeds of mangoes.

*Storage works dependent on local rain.*

## (19)—HARTALA TANK.

The Hartala Tank contained at the beginning of the year 23.22 million cubic feet. It was empty on 4th June 1910, continuing to be so till 28th July 1910, when replenishment commenced. The maximum storage reached was 77.92 million cubic feet on 9th October 1910 against the full supply storage of 134.9 million cubic feet. The tank was thus only half filled.

## (20)—MHASWA TANK.

On the 1st April 1910 the contents of the Mhaswa Tank were 32.78 million cubic feet, which decreased to 17.00 million cubic feet by 9th June 1910, on which date the first replenishment was received. The tank began to overflow from 29th July 1910 and continued doing so for a week. The full supply storage is 158.5 million cubic feet.

The following table shows the rainfall and tank storages :—

Tanks.			Rainfall, June to October 1910	Full supply storage.	Maximum storage obtained during the year.	Storage on 31st October 1910.
			Inches.	M. c. ft.	M. c. ft.	M. c. ft.
Hartala	...	...	30.59	134.9	77.92	74.14
Mhaswa	...	...	31.90	158.5	9-10-10 162.69 29-7-10	145.72

The areas irrigated during the year and that preceding, and the corresponding assessments and working expenses, are given in the following statement, which shows also the realisations of the year and the outstandings :—

Tanks.	Area irrigated.						Assessment.						Revenue from other sources.		Realization.				Out standing.	Working expenses.			
	Kharif.		Rabi.		Total.		Kharif.		Rabi.		Total.		1910-11.	1909-10.	Water rate.	Miscellaneous Revenue Receipts.	Total.	1910-11.		1909-10.	Decrease.	Increase.	
	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Hartala.	...	1	...	8	...	9	...	6	...	16	...	22	694	1,184	16	694	710	...	504	334	...	179	
Mhaswa.	118	23	235	533	353	555	211	85	495	1,056	696	1,141	537	1,858	1,255	537	1,792	7	794	1,091	297	...	

There was no demand for water for cultivation under the Hartala Tank owing to the good and timely rainfall.

The decrease in the area irrigated under the Mhaswa Tank is similarly due to less demand for canal water and that in the revenue from other sources to less realisations from the sale of canal produce.

Remission of a part of the water rate levied on sugarcane under the Jamda Canals amounting to Rs. 53 was granted on account of the insufficiency of water in the hot weather.

#### WEST KHANDESH DISTRICT.

*Works depending on river supply from Ghat catchment supplemented by a tank with a local storage.*

#### (9)—LOWER PANJHRA RIVER WORKS.

At the commencement of the year the Mukti Tank had 26.23 million cubic feet of water left in it, which was drawn upon for watering the crops in the Kayam Bagayat land till the 20th May when the tank became empty and the crops had to depend upon wells where they existed.

The tank began to fill from 11th June and overflowed on 23rd August 1910. The rainfall during the year was above the average, being 29.28 against 18.52 inches of the previous year, and the year under report saw the tank full after a lapse of three years. The river supply was also better than that of the previous year.

The favourable rain, especially for cotton crops, however made the dry crop land independent of canal water and thus limited irrigation to small areas.

The following table shows the area irrigated during the year, assessments and working expenses as compared with those of the previous year. Realizations made and the outstandings during the year are also included in the table :—

Area irrigated.						Assessment.						Revenue from other sources.		Realizations.			Working expenses.					
Kharif.		Rabi.		Total.		Kharif.		Rabi.		Total.												
1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	1909-10.	1910-11.	Water rates.	Miscellaneous.	Total.	Outstanding.	1909-10.	1910-11.	Increase.	Decrease.	
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1,408	1,379	899	424	1,807	1,803	6,023	5,964	2,330	2,338	8,352	8,352	...	...	...	10,105	9,248	18,353	41	...	...	...	...
221	123	488	382	709	506	972	508	992	1,122	1,964	1,630	...	...	...	1,510	1,164	2,664	...	...	...	...	...
1,629	1,503	887	806	2,516	2,306	6,994	6,472	3,322	3,510	10,316	9,982	691	1,164	11,616	4,432	16,047	41	8,151	4,557	...	3,504	

The decrease in area irrigated is due to exceptionally good rainfall and therefore a small demand for water, which also accounts for the decrease under assessment.

Increase under revenue from other sources is due to sale of babul trees which makes up half the revenue.

Reduction in working expenses is due to the small expenditure on repairs which was found sufficient.

The cost of crop measurement was 9 pies per acre.

### SATARA DISTRICT.

#### (14) KRISHNA CANAL.

*(Supply River with Ghât Catchment.)*

The rainfall gauged at Retre Budruk was more than double that of the previous year and greater than the average :—

Year.		Kharif.	Rabi.	Total.
		Inches.	Inches.	Inches.
1909-1910	... ..	11.62	1.50	13.12
1910-1911	... ..	23.44	5.07	28.51
Average of previous ten years	... ..	...	...	20.72

The supply in the river in April 1910 was only 12 cusecs and is increased to 28 cusecs in May and to 574 in June. The discharge reached it maximum in July and at the end of the monsoon decreased steadily to 62 cusec in March 1911.

The area irrigated during the year was 3,495 acres and assessment Rs. 42,754 against 5,362 acres and Rs. 52,213 in the previous year. The decrease in area and assessment was due to copious and timely rainfall, ordinary crop not requiring water but the increased discharge in the cold season enabled more sugarcane to be grown, and the average water-rate per acre was Rs. 10.92 as compared with 9.7 of the previous year.

The working expenses amounted to Rs. 11,319 or to Rs. 3.23 per acre irrigated against Rs. 2.17 of the previous year.

Deducting working expenses, the net profit of the year was Rs. 31,435 exclusive of interest charges, compared with Rs. 41,956 during the previous year.

## (31) REWARI CANAL.

*(Deccan Catchment.)*

The rainfall was greater than that of the previous year and the average:—

Year.		Kharif.	Rabi.	Total.
		Inches.	Inches.	Inches.
1909-1910	... ..	20.76	1.25	22.01
1910-1911	... ..	25.00	1.80	26.80
Average of previous ten years		...	...	21.54

The area irrigated was 1,340 acres and the assessment Rs. 5,060 against 1,126 acres and Rs. 4,677 in the previous year. The area irrigated during the kharif season (74 acres) was less than that of the previous year owing to decrease in demand for water on account of timely rainfall. During the rabi season the water supply was ample and 1,266 acres benefited thereby.

The working expenses, direct and indirect, amounted to Rs. 1,937 against Rs. 2,051 of the previous year. The rate per acre irrigated was 1.44 compared with 1.82 of 1909-1910.

The operations of the year show a net profit of Rs. 3,193 which is greater by Rs. 68 than that of the previous year.

## (32) UPPER MAN RIVER WORKS.

*(Deccan Catchment.)*

The rainfall gauged at Gondwla was greater than that of the previous year and much above the average:—

Year.		Kharif.	Rabi.	Total.
		Inches.	Inches.	Inches.
1909-1910	... ..	21.22	2.50	23.72
1910-1911	... ..	21.87	3.52	25.39
Average of previous ten years		...	...	15.63

The supply in the Pingli Tank during the year was satisfactory. The level of water on the 1st April 1910 was 18.70 feet above the sill of sluice. The tank received replenishments, and by occasional floods filled to overflowing on the 28th August and continued in that condition for nearly 3 months. Thereafter the water level fell steadily and stood at 20 feet above the sill of the sluice on 31st March 1911.

The area irrigated during the year was 1,093 acres and the assessment Rs. 4,348 as compared with 637 acres and Rs. 2,569 of the previous year.

The working expenses, including direct and indirect charges, amounted to Rs. 4,127 against Rs. 4,338 of the previous year. The rate per acre irrigated was Rs. 3.76 against Rs. 6.30 of the previous year.

The operations of the year showed a net profit of Rs. 753.



## (33) YERLA RIVER IRRIGATION WORKS.

*(Deccan Catchment.)*

The rainfall gauged at Khatgun was greater than that of the previous year and the average :—

Year.		Kharif.	Rabi.	Total.
		Inches.	Inches.	Inches.
1909-1910	... ..	16.44	1.16	17.60
1910-1911	... ..	27.58	1.93	29.51
Average of previous ten years		...	...	21.61

On April 1st, 1910, the level of water in the Nehr Tank was nearly 23 feet above the sill of sluice. It continued to fall until the 24th May 1910, when the tank received some replenishment, ultimately overflowing on the 21st August and continued brimfull until late in October. Thereafter the water level fell steadily, standing at 26 feet above sill of sluice on 31st March.

The area irrigated and the assessment were respectively 3,684 acres, and Rs. 14,307 against 3,784 acres and Rs. 14,704 of the previous year.

The working expenses, including direct and indirect charges amounted to Rs. 6,944 against Rs. 6,756 of the previous year. The increase was due to expenses connected with fixing pipes in the dam for ascertaining the line of saturation. The rate per acre irrigated was 1.88 against 1.79 of the previous year.

The result of the year's operations was a net profit of Rs. 9,793.

## (34) CHIKHLI CANAL.

*(Deccan Catchment.)*

The rainfall gauged at Chikhli was greater than that of the previous year and the average :—

Year.		Kharif.	Rabi.	Total.
		Inches.	Inches.	Inches.
1909-1910	... ..	12.54	2.85	15.39
1910-1911	... ..	18.10	2.00	20.10
Average of previous ten years		...	...	18.52

The area irrigated and the assessment were 175 acres and Rs. 935 against 314 acres and Rs. 1,658 of the previous year. The decrease was due to good and timely rainfall.

The working expenses, including direct and indirect charges, amounted to Rs. 881 against Rs. 1,172 of the previous year.

The operations of the year showed a net profit of Rs. 893.

## (35) MAINI TANK.

*(Deccan Catchment.)*

The rainfall gauged at Maini was greater than that of the previous year and greater than the average :—

Year.		Kharif.	Rabi.	Total.
		Inches.	Inches.	Inches.
1909-1910	... ..	22·34	3·45	25·80
1910-1911	... ..	23·72	3·65	27·38
Average of previous ten years ...		...	...	17·15

The level of water in the tank on April 1st, 1910, was about  $24\frac{1}{2}$  feet above sill of sluice and about  $2\frac{1}{4}$  feet above the general level of the silted bed of the tank. The tank was almost dry on the 26th May, when it obtained a slight replenishment, followed by a further replenishment on the 10th of June. Thereafter it filled gradually until it overflowed on the 21st August 1910. The waste weir remained in action until 1st December and by the 31st March 1911 the tank had fallen  $7\frac{3}{4}$  feet, a depth of  $5\frac{1}{4}$  feet of water remaining on the silted tank bed.

The area irrigated was 1,695 acres and the assessment Rs. 6,282 against 1,615 acres and Rs. 6,782 during the previous year.

The working expenses, including direct and indirect charges, amounted to Rs. 2,970, which is equivalent to a rate of Rs. 1·85 per acre irrigated against Rs. 1·86 of the previous year.

The result of the year's operations was a net profit of Rs. 3,366.

## BIJAPUR DISTRICT.

## (36) MUCHKUNDI TANK.

*(Deccan Catchment.)*

The rainfall of the year was slightly less than the average and much less than that of the previous year :—

Year.		Kharif.	Rabi.	Total.
		Inches.	Inches.	Inches.
1909-1910	... ..	22·30	2·42	24·72
1910-1911	... ..	10·91	4·10	15·01
Average of previous ten years ...		...	...	15·42

The water level in the tank remained below the sill of sluice from 5th April to 27th August 1910. It began to rise from 28th August 1910, and on 7th October 1910 attained its maximum—5·76 feet above the sill.

Water was allowed free of charge to 2 acres of non-perennial crops during the rabi season in accordance with orders contained in Government Resolution No. A. I.-574, dated 1st March 1909.

Receipts from other canal produce amounted to Rs. 1,412 against Rs. 770 of the previous year. The increase was due to greater realizations on account of the sale of grass and *bábul* trees.

The working expenses of the year amounted to Rs. 403 against Rs. 317 of the previous year.

The result of the year's operations was a net profit of Rs. 1,009.

## DHARWAR IRRIGATION DISTRICT.

## (39) DAMBAL TANK.

*(Deccan Catchment.)*

The rainfall was greater than that of the previous year and the average :—

Year.		Kharif.	Rabi.	Total.
		Inches.	Inches.	Inches.
1909-1910	... ..	12.24	3.46	15.70
1910-1911	... ..	16.85	9.15	26.00
Average of previous ten years		...	...	16.16

The tank was dry from 26th June to 17th July 1910. Replenishments then occurred and the waste weir overflowed on 26th October, continuing to do so for 14 days. On 31st March 1911 the water stood at 6.50 feet above the silted bed of the tank, which is higher than the sill of the outlet.

The area irrigated and the water-rate assessment were 44 acres and Rs. 125 against 178 acres and Rs. 559 of the previous year. The average water-rate was Rs. 2.84 per acre against Rs. 3.14 per acre of the previous year. The decrease both in area irrigated and the assessment was due to want of water in the tank for about 2½ months of the kharif season, which scarcity was followed by heavy rains in August, September and October. Thus, some of the crops could not be sown and those ultimately sown required no tank water. The average water-rate was much below the normal (Rs. 4.03) as the irrigated area was confined almost entirely to low rated demands.

The area of irrigated lands assessed at consolidated rates were 207 acres and the irrigation revenue was Rs. 916, giving an average water-rate of Rs. 4.43 per acre.

The working expenses, including direct and indirect charges, amounted to Rs. 1,066 against Rs. 1,028 of the previous year. The increase was due to the expenditure incurred on fixing steel tee rods in the tank bed for silt observations.

The operations of the year showed a net profit of Rs. 308 compared with one of Rs. 2,108 of the previous year.

## (40) MEDLERI TANK.

*(Deccan catchment).*

The rainfall gauged was somewhat more than that of the previous year but far less than the average :—

Year.		Kharif.	Rabi.	Total.
		Inches.	Inches.	Inches.
1909-10	... ..	6.44	1.07	7.51
1910-11	... ..	6.55	3.20	9.75
Average of previous ten years.		...	...	15.55

The water level in the tank was below the outlet sill from 16th March to 15th May 1910. The tank overflowed for the first time on the 10th October 1910, the waste weir continuing in action for 13 days. By 31st March 1911 water had subsided to

Water-supply to tank.

5½ feet above outlet. Except during the first six weeks of the year, the tank's supply was sufficient for irrigation.

The area irrigated and the assessment were respectively 59 acres and Rs. 688 against 119 acres and Rs. 909 of the previous year. The decrease both in area and assessment was due to the scarcity of water in the beginning of the year, during which period only perennial crops were maintained by lift irrigation. Later on, owing to good rainfall, there was not much demand for water for other crops.

The working expenses amounted to Rs. 988 against Rs. 852 of the previous year. The increase was due to an expenditure of Rs. 97 incurred on providing steel tee rods in the tank bed for silt accumulation observation purposes.

The operations of the year show a net deficit of Rs. 300.

(41) ASUNDI TANK.

(Deccan catchment).

The rainfall gauged was more than double of that of the previous year and nearly double of the average :—

Year.	Kharif.	Rabi.	Total.
	Inches.	Inches.	Inches.
1909-10     ...     ...	13.56	1.88	15.44
1910-11     ...     ...	20.04	15.53	35.57
Average of previous ten years.	...	...	18.43

There was a small quantity of water at the beginning of the year, but the tank was dry between 20th April and 5th May 1910. Replenishments occurred subsequently and the waste weir overflowed intermittently in the period 21st August and 27th October. Owing to a slip occurring on the downstream slope of this tank's dam, it was necessary to reduce the crest of the waste weir by 18" over a length of 200 feet to avert a breach in the dam. Since then all has been put in order.

The area irrigated and the assessment were respectively 32 acres and Rs. 195 against 146 acres and Rs. 652 of the previous year. The decrease both in the area and assessment was due to the scarcity of water in the beginning of the year; later on, there were heavy rains and consequently there was no demand for canal water.

The area irrigated under consolidated assessment was 185 acres which yielded an irrigation revenue of Rs. 632, or an average of Rs. 3.42 per acre.

The working expenses amounted to Rs. 1,442, which sum is above the normal. The increase was due to the unusual expenditure incurred on (i) urgent measures to prevent breach (Rs. 164); (ii) repairs to the slip (Rs. 41); and (iii) providing steel tees in the tank bed for silt observations (Rs. 97). The remainder of the expenditure was on account of the usual maintenance and repairs (Rs. 289) and establishment and indirect charges (Rs. 851).

The result of the year's operations was a net deficit of Rs. 597.

## (42) MADAG TANK.

*(Ghat catchment).*

The rainfall gauged was greater than that of the previous year and the average:—

Year.	Kharif.	Rabi.	Total.
	Inches.	Inches.	Inches.
1909-10 ... ..	16·37	5·94	22·31
1910-11, ... ..	24·62	8·96	33·58
Average of previous ten years.	...	...	23·95

At the beginning of the year, water stood at  $1\frac{1}{4}$  feet above sill of outlet, but between 8th May and 30th June 1910 it was lower than that level. Replenishments then occurred and the waste weir overflowed continuously from 2nd July 1910 to 24th February, 1911, the highest flood depth being 10·8 feet above crest on the 10th July. The water level on 31st March 1911 was 2·9 feet above the sill of outlet.

The area irrigated was 613 acres as compared with 661 acres in the previous year and the assessment was Rs. 2,356 against Rs. 2,364. The decrease in area was due to a reduced demand for water on account of good rainfall. The average water rate per acre was Rs. 6·09, which is satisfactory.

The working expenses amounted to Rs. 1,643 against Rs. 2,111 of the previous year. The rate per acre irrigated comes to Rs. 2·68.

The operations of the year showed a net profit of Rs. 1,088.

## (43) MAVINKOP TANK.

*(Forest catchment).*

This tank irrigated an area of 627 acres, which produced a consolidated assessment of Rs. 2,563, the irrigation share of this being Rs. 2,290. The corresponding figures of the previous year were 585 acres, Rs. 2,467 and Rs. 2,203. The increase in the area irrigated and assessment is due to the extension of the Right Bank Canal carried out in 1909-1910 and 1910-1911.

The working expenses amounted to Rs. 1,236 against Rs. 998 of the previous year. The increase was due to the expenditure incurred on (i) extension of the Right Bank Canal (Rs. 133), (ii) constructing store and gauge karkun's quarters (Rs. 252), and (iii) providing steel tees in the tank bed for silt observation purposes (Rs. 91).

The operations of the year showed a net profit of Rs. 1,037.

## BELGAUM DISTRICT.

## (37) GADIKERI TANK.

*(Ghat catchment).*

The management of this tank is in the hands of the Revenue Department.

The area irrigated during the year was 377 acres and the irrigation share of the consolidated assessment amounted to Rs. 2,061. In addition to this, a sum of Rs. 10 was realised during the year on account of the sale of grass.

The working expenses were Rs. 592 against Rs. 593 in the previous year.

The result of the year's operations was a net profit of Rs. 1,479.

(39) GOKAK CANAL, 1ST SECTION AND STORAGE WORKS.

(Ghat catchment).

The rainfall gauged at Dhupdal was greater than the average and that of the previous year :—

Year.	Kharif.	Rabi.	Total,
	Inches.	Inches.	Inches.
1909-10 ... ..	14.10	2.34	16.44
1910-11 ... ..	19.22	9.58	28.80
Average of previous ten years.	...	...	18.01

The Dhupdal storage reached its lowest level on the 23rd May 1910.

River supply. The tank began to fill on 23rd June 1910 and overflowed on the 25th idem. The maximum flood occurred on the morning of the 10th August 1910, when the water stood 2.64 feet above the weir crest; this represents a flow of 47,712 cubic feet per second and a run-off of 0.068 inch per hour from the whole catchment basin (1,030 square miles).

The weir crest was temporarily raised by 2½ feet at a cost of 1,557, and thus an additional storage of 324 million cubic feet would have been secured had floods not breached it on three separate occasions. The temporary work was restored at a cost of 667 rupees. The supply of water ceased to be sufficient for the authorised discharge to the Mills on the 10th May 1910, and deficiency continued till the 22nd June 1910. This shortage of water supply necessitated grant of a rebate of Rs. 1,379 to the Gokak Mills Company.

The area irrigated during the year was 6,859 acres and the water rate assessment Rs. 32,986 as compared with 8,507 acres and Rs. 37,047 respectively in the previous year. The decrease in both the area and the assessment was due to uncertainty of water in the reservoir for rabi crops. The average of the water rates per acre was Rs. 4.81 compared with Rs. 4.36 in the previous year. The increase is due to the increase in the water rates sanctioned in Government Resolution No. A.I.-879, dated 2nd April 1910.

The area irrigated by the canal amounted to 37.2 per cent. of the culturable area under command.

An additional area of 303 acres was watered from the tank and river direct. The respective areas are :—

	Acres.
From Canal ... ..	6,556
From tank and river ... ..	303
Total ... ..	<u>6,859</u>

The total assessed revenue of the year was distributed as follows :—

	Rs.
(1) Water rates ... ..	32,986
(2) Sales of water ... ..	300
(3) Plantations ... ..	490
(4) Other canal produce ... ..	629
(5) Water power ... ..	12,984
(6) Rents of buildings ... ..	18
(7) Miscellaneous ... ..	1,034
Total ... ..	<u>48,391</u>

The working expenses, including direct and indirect charges, amounted to Rs. 15,194 and were equivalent to Rs. 2.22 per acre irrigated against Rs. 1.53 of the previous year. The increase is due to a great extent to the reduction in the area irrigated and also to the additional expenditure incurred on raising the temporary weir which gave way three times.

The result of the year's operations was a net profit of Rs. 33,197 as compared with Rs. 39,987 of the previous year.

## PART II.

COMPRISING WORKS FOR WHICH ONLY REVENUE ACCOUNTS  
ARE KEPT AND THOSE FOR WHICH NEITHER CAPITAL  
NOR REVENUE ACCOUNTS ARE KEPT.

## GENERAL REMARKS.

170. The following table gives a general comparison of the figures for works for which only Revenue Accounts are kept for the year under report, with those for 1909-10 :—

		1909-10.	1910-11.	Increase.	Decrease.
		Acres.	Acres.	Acres.	Acres.
Area irrigated	... ..	155,713	152,580	...	3,133
		Rs.	Rs.	Rs.	Rs.
Revenue receipts	... ..	5,11,834	5,53,790	41,956	...
Expenditure	... ..	4,28,584	4,47,155	18,571	...
Net revenue	... ..	83,250	1,06,635	23,385	...

171. The details of expenditure on this class of works for the two years compare as below :—

		Expenditure.		Comparison.	
		1909-10.	1910-11.	Increase.	Decrease.
		Rs.	Rs.	Rs.	Rs.
Extensions and Improvements	..	38,500	45,543	7,043	...
Maintenance and Repairs	...	2,16,350	2,20,788	4,438	...
Establishment	...	1,17,058	1,21,258	4,205	...
Tools and Plant	...	5,822	4,275	...	1,547
	Total ...	3,77,725	3,91,864	15,686	1,547
Share of collection charges	...	50,859	55,291	4,432	...
	Total ...	4,28,584	4,47,155	20,118	1,547

172. The following table shows the areas irrigated in the different Districts in the Deccan and Gujarát, and the consolidated revenue assessed during the year 1910-1911 in respect of Irrigation Works for which Only Revenue Accounts are kept :—

Collectorates.	Number of Works.	Area irrigated.	Revenue.			Remarks.
			Irrigation share.	Land share.	Total.	
1	2	3	4	5	6	7
		Acres.	Rs.	Rs.	Rs.	
Ahmedabad (a)	71	9,147	17,627	26,476	44,103	(a) Works in charge of Gujarát Irrigation District.
Kaira (a)	8	9,697	32,606	20,839	53,445	
Panch Maháls (a)	1	174	949	223	1,172	
Surat	302	13,829	31,741	1,35,566	1,67,307	
Broach	27	807	2,669	3,766	6,435	
West Khándesh	84	9,800	57,577	14,389	71,966	(b) Works in charge of West Khándesh District.
Násik (b)	80	11,992	94,995	14,316	1,09,311	
East Khándesh	3	585	3,327	1,395	4,722	(c) Works in charge of Násik and Ahmednagar Irrigation District.
Násik (c)	212	19,548	82,576	28,720	1,11,296	
Ahmednagar	2	145	352	134	486	
Pona	3	514	2,867	1,015	3,872	
Satára	1	105	660	442	1,102	
Belgaum	67	9,916	33,053	8,266	41,319	
Dharwár	472	63,804	1,76,833	44,208	2,21,041	
Bijapur	15	1,318	5,741	831	6,572	
Retnagiri	4	1,201	3,144	2,678	5,822	
Kánara	...	.....	.....	.....	.....	
Total	1,362	1,52,580	5,46,707	3,03,264	8,49,971	



173. The actual expenditure and receipts for the year 1910-1911 on all the Irrigation Works in the Deccan and Gujarát for which Only Revenue Accounts are kept were as follows :—

Collectorate.	Expenditure.								Actual Receipts.							
	Direct Charges.								Direct Receipts.			Indirect Receipts.		Grand Total Direct and Indirect Receipts.	Less Retaind of Revenue.	Gross Receipts less Retains.
	Extens-ions and Improvements.	Mainten-ance and Repairs.	Establish-ment.		Tools and Plant.	Total.	Share of Collec-tion Charges.	Grand Total.	Water Rates from Irriga-tion.	Miscel-laneous.	Total Direct Receipts.	Share of Consolli-dated Revenue.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Ahmedabad ...	12,515	56,480	5,821	81,603	1,477	1,51,274	1,763	1,57,768	626	3,575	4,101	17,627	55,258	...	55,258	
Kaira ...	15,874	12,512					8,636					32,608				
Fanch Maháls ...	12,987	...	1,006	2,953	301	21,476	95	24,917	...	2	2	949	84,412	...	84,412	
Surat ...	...	16,598					3,174					31,741				
Broach ...	...	618	267	2,669	...	...	...	...	...	...	...	2,669	...	...	84,412	
West Khándesh ...	490	11,081	600	2,023	144	14,398	5,758	20,156	...	...	...	57,577	57,577	...	57,577	
Násik ...	...	...	...	...	...	...	9,500	9,500	...	...	...	94,995	94,995	...	94,995	
East Khándesh ...	...	393	22	116	6	537	333	870	...	...	...	3,327	3,327	...	3,327	
Násik ...	1,818	27,949	1,704	29,063	208	60,742	8,323	69,065	657	17	674	69,576	69,250	...	69,250	
Ahmednagar ...	...	...	...	...	...	...	35	35	...	...	...	352	352	...	352	
Poona ...	...	81	4	54	1	140	373	513	871	...	871	2,667	3,723	40	3,683	
Sátára ...	...	...	...	...	...	...	66	66	...	...	...	660	660	...	660	
Belgaum ...	...	21,423	548	2,594	899	25,363	2,305	26,668	...	154	154	33,033	33,207	...	33,207	
Dhárwár ...	1,850	73,519	4,304	35,455	1,768 (a)—31	1,16,774	17,775	1,34,549	630	611	1,241	1,76,833	1,78,074	36	1,78,038	
Bijápúr ...	...	...	...	...	...	...	574	574	...	116	116	5,741	5,857	...	5,857	
Ratnágiri ...	...	129	7	29	2	160	314	474	...	...	...	3,144	3,144	...	3,144	
Kánara ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Total ...	45,543	2,20,788	14,376	1,06,882	4,275	2,91,664	55,291	4,47,155	2,684	4,475	7,159	5,46,707	5,53,886	76	5,53,790	

(a) Suspense account.

174. The total amount of revenue realized and the expenditure incurred Comparison with previous on this class of works during the past three years are years. given below :—

	1908-09.	1909-10.	1910-11.
	Rs.	Rs.	Rs.
Revenue realized ...	4,95,850	5,11,834	5,53,730
Expenditure ...	5,01,327	4,28,584	4,47,155
Net Revenue ...	—5,477	83,250	1,06,635
Percentage of Expenditure to Revenue ...	101·10	83·7	80·7

## EXTRACTS FROM DETAILED REPORTS BY DISTRICT OFFICERS.

## WORKS FOR WHICH ONLY REVENUE ACCOUNTS ARE KEPT.

## GUJARAT IRRIGATION AND SURAT AND BROACH DISTRICTS.

The Khari Irrigation Sluices were maintained at a cost of Rs. 2,400. Rs. 2,011 were spent on improvements to the old pagi channel, clearance of weeds from the bed of the Khari river and maintenance and repairs of the Gobhláj tank and Bherai reservoir.

The remissions granted amounting to Rs. 6,094 were on account of the abatement sanctioned in the land revenue.

The following table compares the areas irrigated and the assessment levied with the average of the previous ten years :—

	Average of ten years ending 1909-10.		1910-11.	
	Area.	*Revenue after deducting remissions.	Area.	*Revenue after deducting remissions.
I.—Irrigation above the Kalambandi villages ...	Acres. 809	Rs. 4,044	Acres. 785	Rs. 3,622
II.—Irrigation from tanks fed by the river Khári ...	198	847	198	598
III.—Irrigation below the Kalambandi villages ...	589	3,065	641	2,948
IV.—Irrigation from the Khári sluices proper (i.e., Kalambandi villages)...	7,061	30,764	6,879	40,843
Total ...	8,657	38,720	8,503	48,011

\* NOTE.—The revenue is consolidated and exclusive of the Inamdar's shares.

The assessment rates under the Khari sluices proper, i. e., of the "Kalambandi" villages, being consolidated, the average rates per acre for land and water respectively were as under :—

	Land share.	Irrigation share.	Total consolidated.
	Rs. a. p.	Rs. a. p.	Rs. a. p.
Government land ...	3 5 0	6 9 11	9 14 11
Alienated land ...	0 7 4	1 9 0	2 0 4

During the year, 129 small old tanks (63 in Ahmedabad, inclusive of 18 Tálukdari, 25 in Kaira, 11 in Panch Maháls and 30 in the Surat and Broach Districts) were either repaired or improved at a total cost of Rs. 1,52,116, while Rs. 4,790 were spent on surveys and preparation of plans and estimates for a number of similar tanks in the Ahmedabad, Kaira and Panch Maháls Districts. The area

Second class tanks.

irrigated and the revenue derived from the old irrigation tanks are as under:—

District.			Area irrigated.	Net consolidated assessment.	Irrigation share.	Land share.
			Acres.	Rs.	Rs.	Rs.
Ahmedabad	...	...	9,147	44,103	17,627	26,476
Kaira	...	...	3,754	10,254	2,480	7,774
Panch Maháls	...	...	174	1,172	949	223
Surat	...	...	13,829	1,67,307	31,741	1,35,566
Broach	...	...	807	6,435	2,669	3,766
Total			27,711	2,29,271	55,466	1,73,805

### POONA IRRIGATION DISTRICT.

For the works in the Poona Collectorate, for which only Revenue Accounts are kept, the following table gives the area irrigated and the consolidated revenue assessed during the year 1910-11:—

Collecto- rate.	Names of works.	Area irrigated.	Revenue.		
			Irrigation share.	Land share.	Total.
Poona.		A. g.	Rs. a. p.	Rs. a. p.	Rs. a. p.
	Dam at Kasur	25 28	127 6 0	.....	127 6 0
	Do. Vadaj	189 0	517 10 0	.....	517 10 0
	Do. Agar	53 18	432 0 0	89 0 0	521 0 0
	Do. Narayangaon	427 17	2,403 2 0	917 1 0	3,320 3 0
	Tank at Patas	...	.....	.....	.....
Vadhana Tank and channel.	35 0	22 4 0	8 10 0	30 14 0	
Total		730 23	3,502 6 0	1,014 11 0	4,517 1 0

A description of these works is given in the Revenue Report for the year 1881-82.

During the year 1910-11, a sum of Rs. 186 was expended on repairs to the Bandhara at Náráyangaon.

### AHMEDNAGAR DISTRICT.

There are two Second Class works in the Akola Táluka, namely, the Sawargaon and Gardani Bandharas. No expenditure was incurred on them during the year.

The area irrigated and the irrigation share of the revenue were 145 acres and Rs. 352 against 145 acres and Rs. 346 of the previous year.

### NASIK AND AHMEDNAGAR IRRIGATION DISTRICT.

The area irrigated and the consolidated revenue assessment on lands irrigated by the bandharas for which only Revenue Accounts are kept were as follows:—

Area irrigated.	Irrigation share.	Land share.	Net consolidated assessment.
Acres. 31,540	Rs. 1,77,571	Rs. 43,936	Rs. 2,20,607

Remissions amounting to Rs. 12,584 were granted during the year by the Revenue Department.

The outlay incurred on these works during the year was Rs. 29,782.

### EAST KHA'NDESH DISTRICT.

The area irrigated and the revenue derived from each of the old 2nd class Irrigation works for which only Revenue Accounts are kept are as given below :—

No.	Name of work.	Area irrigated.	Revenue.		
			Irrigation share.	Land share.	Total.
		Acres.	Rs.	Rs.	Rs.
1	Patonda channel ...	132	796	316	1,112
2	Toli do. ...	78	557	167	724
3	Amalner do. ...	375	1,974	912	2,886
	Total ...	585	3,327	1,395	4,722

The gross revenue, excluding land share, was Rs. 3,327 as compared with Rs. 2,364 of the previous year. The difference of Rs. 963 is due to the remission of assessment on the Amalner Channel made by the Revenue Department.

The outlay incurred on these works during the year was Rs. 515 as detailed below against Rs. 1,316 of the previous year :—

Improvements ...	...	...	...	Rs. ...
Repairs ...	...	...	...	393
Establishment ...	...	...	...	116
Tools and Plant ...	...	...	...	6
			Total ...	<u>515</u>

### WEST KHA'NDESH DISTRICT.

The area irrigated and the revenue derived from the old irrigation works in the West Khândesh District for which only Revenue Accounts are kept were as under :—

West Khândesh District ...	...	Area.	Revenue.
		9,800	73,156

The gross revenue, including miscellaneous receipts but excluding land share, was Rs. 58,767 against Rs. 54,655 of the previous year. The figures are exclusive of old irrigation on Lower Panjhra River Works.

The outlay incurred on the works during the year under report are as under :—

Improvements ...	...	...	...	Rs. 490
Repairs ...	...	...	...	11,103
Establishment ...	...	...	...	2,026
Tools and Plant ...	...	...	...	174
			Total ...	<u>13,793</u>

Remissions amounting to Rs. 6,600 granted during the year pertain to the year 1909-10.

## BELGAUM DISTRICT.

The total number of second class tanks irrigating over 50 acres each in this district is 67 with an irrigated area of 9,916 acres paying a consolidated assessment of Rs. 41,319, of which the irrigation share is Rs. 33,053.

A sum of Rs. 21,422 was spent during the year on repairs to second class tanks. The details are as given below:—

	Rs.
(a) Repairs to 21 tanks each irrigating 50 acres and above ...	7,413
(b) Repairs to 26 tanks, each irrigating below 50 acres ...	8,258
(c) Compensation for land taken up for 29 tanks ...	4,231
(d) Survey of 13 tanks ... ..	1,520
Total ...	<u>21,422</u>

## DHARWAR IRRIGATION DISTRICT.

The expenditure during the year on repairs to 170 tanks in the Dhárwár and Kánara Collectorates which were either completed or in progress was Rs. 71,243, inclusive of Rs. 6,880 spent on surveys and preparation of projects for repairs. In addition to this, a sum of Rs. 2,276 was spent on water distribution and maintenance of the Dharma and Naregal Canals. The total expenditure was, therefore, Rs. 73,519.

The area under command of the large second class tanks in the Dhárwár Collectorate (excluding those less than 50 acres) assessed at consolidated rates is 66,989 acres, but during the year 63,804 acres were irrigated against 62,013 acres in the previous year. The consolidated assessment was Rs. 2,23,170, and deductions amounted to Rs. 2,129 (probably all due to excess assessment). The net consolidated assessment was, therefore, Rs. 2,21,041 and the irrigation share Rs. 1,76,833. The cultivated area under the second class tanks in the Dhárwár Collectorate has been increasing during the last 4 or 5 years and the area irrigated during the year under report is the highest since 1894-95.

In addition to the above, the following sums represent revenue realised from miscellaneous sources:—

	Rs.	a.	p.		
By Revenue Department	{	(1) Water rates ...	629	10	4
		<i>Other Canal Produce.</i>			
By Public Works Department	{	(2) Sale of grass ...	291	9	4
		(3) Sale of trees ...	287	8	0
		(4) Rent of buildings ...	32	8	0
Total ...		<u>1,241</u>	<u>3</u>	<u>8</u>	

## BIJAPUR DISTRICT.

There are altogether 16 second class works maintained by the Public Works Department. The lands irrigated by these works are assessed at consolidated rates. The total area irrigated during the year was 1,316 acres assessed at Rs. 6,587, of which Rs. 15 were remitted. Thus, the net assessment levied amounted to Rs. 6,572, of which Rs. 5,741 was irrigation share and Rs. 831 land share.

### RATNA'GIRI DISTRICT.

There are four irrigation works in the Ratnágiri Collectorate, which irrigated 1,106 acres during the year. The consolidated assessment and irrigation share were Rs. 5,822 and 3,144 respectively.

Ordinary repairs to two of the tanks were executed during the year at a total cost of Rs. 129.

### SA'TARA DISTRICT.

There is only one second class work in this district, *viz.*, the Boregaon Dam, which served 105 acres, with a consolidated assessment of Rs. 1,102, of which the irrigation share was Rs. 660.

### WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.

### SURAT AND BROACH DISTRICT.

There was no change during the year in the financial results of the several drainage channels.

### POONA IRRIGATION DISTRICT.

#### *Storage Work dependent on Local Rain.*

#### KHAMGAON TANK.

This partially completed tank was dry till 19th June 1910, when water was supplied to it from the Mutha Right Bank Canal. The maximum depth of water in the tank was 16.60 feet on 12th November. Water was issued for 45 acres of rabi crops and the tank was dry again on 11th February 1911. The gross revenue from the tank was Rs. 94.

### SHOLA'PUR DISTRICT.

#### WADSHIVNE TANK.

The water in the tank at the commencement of the year was 10.86 feet above the outlet sill. The level fell to 6.75 feet above the sill on 25th August. There was insufficient replenishment and the tank did not fill, the highest level attained being 9.63 feet above the sill, representing a volume of 61.42 M. Cft. of water.

The mean rainfall gauged at two stations on the catchment of 15.50 square miles from 1st June to 31st October was 20.79 inches and the total replenishment received was 55.43 M. Cft., the run-off being only 7 per cent.

The area irrigated during the year was 476 acres against 837 acres of the previous year. The decrease is due to insufficient storage.

The following table compares the area irrigated and the water assessment during the year with those of the preceding year and the previous triennium :—

Years.	Kharif.	Rabi.	Total.	Water rate assessment.
	Acres.	Acres.	Acres.	Rs.
Triennium ending 1908-09 ...	44	408	452	1,528
Year 1909-1910 ...	164	673	837	2,763
Year 1910-1911 ...	255	221	476	1,762

The gross assessed revenue from all sources was Rs. 1,870 against Rs. 2,920 of the year previous.

## WEST KHA'NDESH DISTRICT.

## TALWÁDA TANK.

*Tank dependent on Local Rain.*

This tank was constructed during the famine of 1899-1900. It has never filled. At the end of the monsoon, with a rainfall of 25·66 inches, the tank contained 48·86 M. Cft., against the full supply capacity of 117·22 million cubic feet.

The available supply of water was delivered to the rabi crops in the vicinity of the tank and 37 acres were irrigated. The revenue was the nominal figure of Rs. 37. The cost of maintenance was Rs. 219, including Rs. 72 spent on making the channel from the tank outlet to the land irrigated.

## KOLA'BA DISTRICT.

Ordinary repairs to the masonry dam at Borvi were carried out at a cost of Rs. 32.

*Revenue Report of Irrigation Works in  
the Bombay Presidency, excluding Sind,  
for 1910-1911—Review of*

NO. W. I.—2848 OF 1912.

Public Works Department.

Bombay Castle,  
22nd March 1912.

Letter from the Superintending Engineer, Central Division, No. 6177, dated 22nd September 1911.

Forwards Parts I and II of the Irrigation Revenue Report for his Division, for 1910-1911, with the exception of Part II dealing with the Second Class Works in the Poona Irrigation District, and makes remarks. States that the General Remarks and the popular Descriptive Account will follow.

Letter from the Superintending Engineer, Southern Division, No. 3329, dated 23rd September 1911.

Forwards the Irrigation Revenue Report for his Division, for 1910-1911, and states that the popular Descriptive Account of the year's working of all Irrigation Works in his Division will follow.

Letter from the Superintending Engineer, Northern Division, No. 6075, dated 29th September 1911.

Forwards Parts I and II of the Irrigation Revenue Report for his Division, for 1910-1911, together with the Descriptive Account required by Government Circular Memorandum No. W. I.—2931, dated 16th November 1906.

Memorandum from the Superintending Engineer, Central Division, No. 6470, dated 4th October 1911.

Submits Part II of the Report dealing with Second Class Works in Poona Collectorate for 1910-1911.

Read—

Memorandum from the Superintending Engineer, Central Division, No. 6558, dated 7th October 1911.

Memorandum from the Superintending Engineer, Central Division, No. 6886, dated 19th October 1911.

Letter from the Superintending Engineer, Northern Division, No. 7035, dated 7th November 1911.

With reference to Government Memorandum No. 830-I., dated 13th October 1911, forwards a list of works in operation in the Gujarat Irrigation District, during 1910-1911, for which Capital and Revenue Accounts are kept, and makes remarks.

Letter from the Superintending Engineer, Central Division, No. 8236, dated 6th December 1911.

With reference to paragraph 1 of his No. 6177, dated 22nd September 1911, submits his General Remarks and a popular Descriptive Account in connection with the Irrigation Revenue Report of his Division, for 1910-1911.

Read—

Memorandum from the Superintending Engineer, Central Division, No. 172, dated 6th January 1912.

Letter from the Superintending Engineer, Southern Division, No. D.—118, dated 17th January 1912.

With reference to paragraph 5 of his No. 3329, dated 23rd September 1911, submits the popular Descriptive Account of the working of Irrigation Works in his Division, for 1910-1911.

**RESOLUTION.**—The number of works in operation shown in Part I, includes two new works, *viz.*, the Godaveri Canal and the Saiat Tank. The capital expenditure, Direct and Indirect, incurred during the year amounted to Rs. 25,96,855 of which the major portion, *viz.*, nearly 20½ lakhs was spent on the Godaveri Canal Works, nearly 3½ lakhs on the Pravara River Works, and the balance principally on the Chankapur and Saiat Tanks and the Dharma and Hathmati and Khari Cut Canals. The entire Capital outlay to end of the year under review amounted to Rs. 3,99,70,384. It is satisfactory to note that the rapid rate of progress recorded in preceding years on the Godaveri Canal Project has been steadily



maintained, as the Storage works and Head works have approached completion and the canals are well advanced. Considerable progress has also been made with the excavation work in connection with the foundation of the Bhandardara Dam of the Pravara River Project. Government also note with pleasure that irrigation commenced on 27 miles of the Godaveri Right Bank Canal, water having been issued for rabi irrigation of 2,552 acres.

2. The area irrigated was 123,356 acres against 145,155 of the previous year, showing a decrease of 21,799, which was due to favourable rainfall. As compared with the average of the previous 10 years, the area under irrigation, however, shows an increase of 2,801.

3. The gross assessed revenue of the year amounted to Rs. 10,95,369 against Rs. 11,22,916 of the previous year, and Rs. 9,04,152—the average of the previous 10 years. The decrease occurs principally under water-rates and is mainly due to less area irrigated than in the previous year. The works, however, have been carefully managed and for the season, the results are good.

4. The net revenue of the year was :—

	Rs.
(i) on the basis of assessment ... ..	6,56,845
(ii) on the basis of realization .. ..	8,12,723

as compared with Rs. 7,06,870 and Rs. 8,39,119 respectively during the previous year.

5. The unrealized balance, which stood at Rs. 4,08,534 at the end of 1909-1910, fell to Rs. 2,70,014 during the year under review, and of this amount, Rs. 1,50,905\* are reported to

have since been recovered in the Central Division. It is satisfactory to note that the unrealized balance is much reduced.

6. The working expenses show an increase of Rs. 22,478 which is chiefly due to an increase in expenditure on Productive works in the Northern and Central Divisions, and to the Godaveri Canal and Saiat Tank having come into operation for the first time. The principal works, which show a noticeable increase in the rate of working expenses per acre irrigated, are as follows :—

Name of works,	Rate per acre irrigated of working expenses in Public Works Department excluding Indirect charges.		
	1909-10.	1910-11.	Increase.
Kadva River Works ... ..	2.86	6.68	3.82
Jamda Canal ... ..	3.75	6.55	2.80
Chikli Canal ... ..	3.73	5.03	1.30

The increase is stated to be due to less area irrigated on these works owing to good rainfall.

7. The Irrigation Officers and all Officers connected with the 'distribution of water are thanked for their management of the works.

8. Copies of the report and of this review should be forwarded to the Government of India. Copies should also be sent to the Secretary of State for India. Copies of the Descriptive Account should be communicated to the Press.

R. T. HARRISON,  
Under Secretary to Government.

To

The Revenue Department, Secretariat.  
 The Financial Department, Secretariat.  
 The Commissioner in Sind.  
 The Commissioner, N. D.  
 The Commissioner, C. D.  
 The Commissioner, S. D.  
 The Director of Agriculture.  
 The Settlement Commissioner and Director of Land Records.  
 The Chief Engineer in Sind.  
 All Superintending Engineers of Divisions.  
 The Accountant General, Bombay.  
 All Executive Engineers having charge of Irrigation Works.  
 The Government of India.  
 The Under Secretary of State for India. } By letter.

Class A.

Exd. C. S. P.

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No. \_\_\_\_\_ of 1912.

Copy forwarded for information and guidance to