

Irrigation Revenue Report

on the

Bombay Presidency

1893-94

S

7232.231-y

C4

48885

IRRIGATION REVENUE REPORT

OF THE

BOMBAY PRESIDENCY

EXCLUDING SIND,

1893-94.

PARTS I & II.

CONTENTS.

PART I.

	PAGES.
General Remarks... ..	i—xiv
Statements:—	
I—A.—Statement of Canals in the Bombay Presidency, excluding Sind .	xv
II—A.—Statement of reservoir projects in the Bombay Presidency, excluding Sind	xvi & xvii
I—B.—Capital Account of Irrigation Works in the Bombay Presidency, excluding Sind, for and to end of 1893-94	xviii & xix
I—C.—Statement showing the financial results of Irrigation Works in the Bombay Presidency, excluding Sind, for the year ending 31st March 1894. Realizations under main heads of revenue and working expenses	xx & xxi
II—C.—Statement showing the financial results of Irrigation Works in the Bombay Presidency, excluding Sind, for the year 1893-94, based on actual receipts. Principal results of operations for the year ended 31st March 1894	xxii
III—C.—Demands and realizations during the year 1893-94 in the Bombay Presidency, excluding Sind... ..	xxiii
IV—C.—Statement showing the financial results of Irrigation Works in the Bombay Presidency, excluding Sind, for the year 1893-94, based on the assessment of the year. Principal results and operations for the year ended 31st March 1894	xxiv
I—E.—Statement of areas irrigated by Irrigation Works in the Bombay Presidency, excluding Sind, during the year 1893-94	xxvi & xxvii
II—E.—Statement showing incidence of working expenses and assessed water revenue on Canals in the Bombay Presidency, excluding Sind, during the year 1893-94	xxviii & xxix
III—E.—Statement of quantity and value of crops irrigated in the Bombay Presidency, excluding Sind, during the year 1893-94	xxx—xxxiii
IV—E.—Comparative statement of irrigation and rainfall for the years 1892-93 and 1893-94 in the Bombay Presidency, excluding Sind	xxxiv & xxxv
F.—Statement showing the operation of Irrigation Works in the Bombay Presidency, excluding Sind, for the year 1893-94	xxxvi
I—F.—Statement showing water-rates per acre in force during 1893-94 on Irrigation Works in the Bombay Presidency, excluding Sind	xxxvii
G.—Statement showing areas and water-rate assessments during 1893-94 according to the system of classification adopted in fixing the scale of water-rates	xxxviii
H.—Statement showing operations of the year 1893-94	xxxix
Detailed reports:—	
(1) Nira Canal	1—5
(2) Mhasvad Tank	5—7
(5) Háthmati Canal	8 & 9
(6) Lower Pánjhra River Works	9—13
(7) Kádva River Works	13—18
(8) Pravara River Works—Lákh Canal	18—20
(9) Mutha Canals	20—23
(10) Ekrúk Tank	24 & 25
(11) Krishna Canal	26 & 27
(12) Khári Cut	27 & 28
(13) Hartála Tank	28—30
(14) Mhasva Tank	30—33
(15) Jámda Canals	33—36
(16) Parsul Tank	36—39
(17) Pravara River Works—Ojhar Canal	39—41
(18) Bhatodi Tank	41—43
(19) Mátoba Tank	43—44
(20) Kásurdi Tank	44
(21) Shirsuphal Tank	44 & 45

CONTENTS.

	PAGES.
(22) Bhádalvádi Tank	45 & 46
(23) Koregaon Tank	46 & 47
(24) Ashti Tank	47—49
(25) Revári Canal	49 & 50
(26) Upper Mán River Works	50—52
(27) Yerla River Irrigation Works	52—54
(28) Chikhli Canal	54 & 55
(29) Maini Tank Canal	55—57
(30) Muchkundi Tank	57 & 58
(31) Nilgund Tank	58
(32) Gadikeri Tank	58
(33) Dámbal Tank	58 & 59
(34) Medleri Tank	59
(35) Madag Tank	60
(36) Asundi Tank	60 & 61
(37) Mávinkop Tank	61
(39) Gokák Canal, First Section, and Storage Works	61—63
PART II.	
General Remarks	64 & 65
Works in Ahmedabad District	65 & 66
Do. Surat and Broach	66
Do. Násik	67—69
Do. Khándesh Irrigation	69 & 70
Do. Ahmednagar	70
Do. Poona	70 & 71
Do. Belgaum	71
Do. Dhárwár	71
Do. Bijápur	72
Do. Ratnágiri	72
Agricultural Works	72 & 73
Maps.	

IRRIGATION REVENUE REPORT, BOMBAY PRESIDENCY (EXCLUDING SIND),

1893-94.

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, 36 in number:—

Collectorate.	Number.	Names of Works,	Storage Works completed or proposed.
MAJOR WORKS.			
<i>Protective Works.</i>			
Poona ...	1	Nira Canal ...	Storage lake at Bhatghar nearly completed.
Sholápur ...	2	Mhasvad Tank ...	Completed, except a part of the waste weir which still requires raising.
<i>Productive Works.</i>			
Ahmedabad ...	5	Háthmati Canal ...	Storage works under consideration.
Khándesh ...	6	Lower Pánjhra River Works.	Storage Tank at Mukti complete.
Násik ...	7	{ Kadva River Works } { Pákhed Canal. } { Ojhar Támmbhat Canal. } { Wadáli Canal. }	{ Wághad Tank completed with the exception of the waste weir.
Ahmednagar ...	8	Pravara River Works—Lákh Canal.	Máládevi Tank proposed for this work, but sanction withdrawn pending enquiry into modified proposals for the dam, and alternative proposals for a tank at Samrad, revised survey of which is completed and the plans, &c., advanced.
Poona ...	9	Mutha Canals ...	Lake Fife at Khadakvásla complete.
Sholápur ...	10	Ekrúk Tank ...	Complete.
Sátára ...	11	Krishna Canal ...	Site for a storage reservoir is under consideration.
MINOR WORKS AND NAVIGATION.			
Ahmebabad ...	12	Khari Cut ...	The Bokh project under consideration.
Khándesh ...	13	Hartála Tank ...	Complete.
	14	Mhasva do. ...	Do.
	15	Jámnda Canals ...	Reservoir at Chankápur sanctioned and commenced, but work suspended for want of funds.
Ahmednagar ...	16	Parsni Tank ...	Complete.
	17	Pravara River Works—Ojhar Canal.	<i>Vide</i> remark against (8) Lákh Canal.
	18	Bhátodi Tank ...	Complete.

Collectorate.	Number.	Names of Works.	Storage Works completed or proposed.
MINOR WORKS AND NAVIGATION—continued.			
Poona ...	19	Mátoba Tank... ..	Complete.
		20 Kásurdi do.	Do.
		21 Shirsuphal Tank	Do.
		22 Bhádalvádi do.	Do.
Sholápur ...	23	Koregaon do.	Do.
		24 Ashti do.	Do.
Sátára ...	25	Revári Canal... ..	Storage Tank at Sonkeh proposed.
		26 Upper Mán River Works	Pingli Tank complete.
		27 Yerla River Irrigation Works.	Nehr Tank complete.
		28 Chikhli Canal	No storage works yet proposed but being considered.
		29 Maini Tank	Complete.
Bijápur ...	30	Muchkundi Tank	Do.
		31 Nilgund do.	Do.
Belgaum ...	32	Gadikeri do.	Do.
Dhárwár ...	33	Dámbal do.	Do.
		34 Medleri do.	Do.
		35 Madag do.	Do.
		36 Asundi do.	Do.
		37 Mávinkop do.	Do.
<i>Provincial.</i>			
Belgaum ...	39	Gokák Canal, 1st Section ...	Storage works at Dhupdal completed for the present.

No. 3, and 4, for Shankápur and Máládevi Tanks, are not included, as the works were not in operation; the former has been suspended and the latter has not yet been approved. No. 38—Gokák Canal, 2nd Section, is in abeyance.

2. The total capital outlay during and up to the end of the year was as follows:—

Main Heads.	To end of 1892-93.	During 1893-94.	To end of 1893-94.
<i>A.—Direct Charges.</i>			
	Rs.	Rs.	Rs.
I.—Works	1,92,86,842	3,66,883	1,96,53,725
II.—Establishment	44,16,041	49,033	44,65,074
III.—Tools and Plant	5,00,307	658	5,00,965
IV.—Suspense ... ..	.....	.....	.....
Profit and Loss ... ..	.....	.....	.....
Total A ...	2,42,03,190	4,16,574	2,46,19,764
<i>Deduct</i> —Receipts on Capital Account	35,061	48	35,109
Net Total, A.—Direct Charges ...	2,41,68,129	4,16,526	2,45,84,655
<i>B.—Indirect Charges.</i>			
Capitalization	3,59,695	2,681	3,62,376
Loss by Exchange ... ..	.....	.....	.....
Leave and Pension Allowances ...	7,88,896	6,863	7,95,759
Total, B.—Indirect Charges ...	11,48,591	9,544	11,58,135
Grand Total A and B ...	2,53,16,720	4,26,070	2,57,42,790

3. The following abstract shows the details of the above :—

	Number of Works.	EXPENDITURE, 1893-94.			Total Expenditure, Direct and Indirect, to end of 1893-94.	Amount of sanctioned Estimates.	
		Direct.	Indirect.	Total.			
<i>Major Works.</i>							
		Rs.	Rs.	Rs.	Rs.	Rs.	
Protective Works	{ In operation ...	2	1,21,169	4,155	1,25,324	73,95,337	82,32,709
	{ In abeyance ...	2	233	6	239	1,03,123	17,42,810
	Total ...	4	1,21,402	4,161	1,25,563	74,98,465	99,75,519
Productive Works	In operation ...	7	1,28,503	3,757	1,32,265	1,07,51,943	1,08,45,341
Minor Works	{ In operation ...	26	31,944	1,616	33,560	61,25,617	63,91,169
	{ In abeyance ...	1	...	...	...	1,90,284	1,91,995
	Total ...	27	31,944	1,616	33,560	63,15,901	65,83,164
Provincial Minor Works...	In operation...	1	1,34,672	10	1,34,682	*11,73,481	12,27,869
Grand Total	...	39	4,16,526	9,544	4,26,070	2,57,42,790	2,86,31,693

* Including expenditure charged to "85. Construction of Protective Irrigation Works."

The number of works in operation is 36, the same as in the previous year. The Chankápur and Máládevi Tanks and the Gokák Canal 2nd Section are still in abeyance. A report on the subject of accepting Provincial responsibility for resuming work on the Chankápur Tank has been received and is under the consideration of Government. The question of storage works for the development of irrigation under the Láksh and Ojhar Canals is still under the consideration of the local officers, and their report on the subject is awaited.

The greater portion of the Capital outlay during the year was on the Nira, Mutha and Gokák Canals.

On the Nira Canal the work done was chiefly at Bhátghar. The masonry of the dam was all completed. Hand-railing on the coping at the top of the dam and the lifting gear for the large under-sluices were fixed; 15 of Reinold's patent automatic gates were erected and hung with counter weights before water was stored, and their working was tested. There was some work carried out at Vir and distributaries Nos. 59 and 35 A were practically completed. On the Mutha Canals the works which were commenced and had made good progress by the end of March consisted of 5 new settling tanks, converting the 4 old settling tanks into filter beds, converting 3 old filters into pure water tanks, roofing in the pure water tanks, and alterations in the pumping machinery. On the Gokák Canal the expenditure was for land compensation and other miscellaneous work.

The irrigable area under command of the Nira Canal at the close of the previous year was 171,868 acres and the first 15 miles of the large distributary No. 59 had been opened. During the year under review the remaining length of the distributary, viz. 8 miles and 1,986 feet, was brought into operation, adding 11,994 acres to the command, making a total of 183,862 acres.

4. 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 1892-93	27,05,169	80,79,823	1,07,84,992	Net Revenue realized to end of 1892-93	-13,631	14,90,560	14,76,929
Do. during 1893-94	2,89,535	4,07,988	6,96,523	Do. during 1893-94	18,449	2,19,618	2,38,067
					4,815	17,10,178	17,14,993
				Balance net Interest charges to end of 1893-94	29,88,889	67,77,633	97,66,522
Total to end of 1893-94	29,93,704	84,87,811	1,14,81,515	Total	29,93,704	84,87,811	1,14,81,515

5. The gross revenue realised from all sources during the year, after deducting refund of revenue (Rs. 3,521), was Rs. 5,73,746, of which Rs. 5,60,767 were direct, and Rs. 12,979 indirect, receipts. The net revenue actually realised was Rs. 2,86,328.

The gross revenue shows an increase of Rs. 28,204, and the net revenue an increase of Rs. 48,564.

6. The gross area under command was 827,627 acres, against 916,753 acres in the previous year. The difference is due to the alteration in the figures for the Nira Canal, those now given being more correct. The net irrigable area was 5,83,897 acres, as compared with 5,71,903 acres in the past year, showing an increase of 11,994 acres, the whole of which was on the Nira Canal.

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

	Areas Irrigated.	REVENUE REALIZED.			Working Expenses.	Net Revenue.	
		Direct Receipts.	Share of Land Revenue.	Total.			
	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	
<i>Class I.—Works for which Capital and Revenue Accounts are kept.</i>							
Major Works ...	{ Protective Works	29,786	1,02,556	...	1,02,556	84,107	18,449
	{ Productive Works	25,961	3,40,972	7,571	3,48,543	1,28,925	2,19,618
	Total ...	55,747	4,43,528	7,571	4,51,099	2,13,032	2,38,067
Minor Works ...	21,016	86,593	5,408	92,001	68,334	23,667	
Provincial Minor Works ...	4,237	30,646	...	30,646	6,062	24,584	
Total Class I ...	81,000	5,60,767	12,979	5,73,746	2,87,418	2,86,328	

The area shown as irrigated includes an area of 1,050 acres on which a consolidated land and water assessment is levied, and which is derived from works on which expenditure on improvements only has been incurred.

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

Years.	Area irrigated.	REVENUE.		Working Expenses.
		Assessment.	Realization.	
	Acres.	Rs.	Rs.	Rs.
1882-83 ...	28,735	2,48,714	2,06,174	1,66,870
1883-84 ...	32,962	2,44,247	2,78,130	1,70,089
1884-85 ...	39,655	2,47,702	2,60,080	1,92,612
1885-86 ...	59,450	2,83,232	2,79,877	2,10,686
1886-87 ...	42,628	3,03,475	3,34,468	2,39,417
1887-88 ...	46,187	3,49,512	3,43,445	2,41,385
1888-89 ...	79,195	4,14,153	3,71,545	2,34,312
1889-90 ...	85,550	4,49,838	4,22,859	2,47,126
1890-91 ...	74,852	4,44,281	4,60,813	2,39,615
1891-92 ...	96,025	5,76,586	5,12,072	2,85,893
1892-93 ...	65,487	4,79,012	5,45,542	3,07,778
1893-94 ...	79,950	5,91,487	5,73,746	2,87,418

There was an increase of 14,463 acres in the total area irrigated as compared with the previous year, but the area was still considerably less than that of 1891-92, though the assessment is larger.

The increase of 14,463 was distributed over the several classes of works as follows :—

				Acres.
Protective works	...	...	...	6,543
Productive "	...	...	...	4,002
Minor "	...	...	...	3,529
Do. Provincial	...	...	...	389
Total				14,463

Under Protective Works the increase is chiefly on the Nira Canal, that under Productive Works being made up of small increases on several works, the Mutha Canals bringing the largest contribution. Under Minor Works the Khári Cut accounts for an increase of 944 acres and the Ojhar Canal 1,143 acres, the balance being distributed over several other works. None of the Major Works (except the Ekrúk Tank) show any decrease. Under Minor Works the Jámda Canals show a noticeable decrease.

The increase is generally due to scanty and unseasonable rain-fall. That on the Nira Canal was the result of extension of Kharif irrigation in the villages beyond Bárámati and particularly under distributary No. 59 and extra rabi owing to rain having fallen in September and early part of October, very little in November and none in December 1893. While that on the Mutha Canals was due to increase in the area of perennial crops being permissible owing to large supply available in the tank due to late heavy rains in 1892.

Taking the totals of the two seasons there was a decrease on the Ekrúk Tank and the Jámda Canals. The decrease on the Ekrúk Tank was due to the fact that water applications were not received from some of the miles of the perennial canal while the improvement work was being carried out. On the Jámda Canals the decrease in kharif was due to timely rain-fall, and in rabi to extensive cotton sowings in the previous kharif season, which left small areas for rabi crops.

9. The following table contrasts the distribution of rain-fall in each month for the last five years :—

	I.—Works having an unfailing Supply.					II.—Works dependent on Local Rain-fall.				
	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
<i>Kharif.</i>										
June	2.49	5.54	2.57	5.83	9.85	2.04	4.29	2.58	8.04	6.92
July	4.21	3.32	7.11	6.36	2.05	6.24	2.79	3.88	3.91	3.01
August	1.47	3.08	3.03	6.51	4.58	2.31	3.73	3.15	6.56	3.36
September	9.52	5.00	2.93	9.13	2.43	10.27	4.80	2.78	7.87	4.04
Total	17.69	16.94	15.64	27.83	18.91	20.86	15.61	12.59	26.38	17.33
<i>Rabi.</i>										
October	6.70	3.09	3.25	5.14	2.24	7.03	2.45	3.81	8.77	4.13
November	0.06	2.70	0.26	0.34	1.16	0.12	3.10	0.13	0.63	0.96
December ... ..	...	1.17	...	0.02	...	...	1.94	...	...	...
January ... ..	...	...	...	...	...	...	0.01	...	...	...
Total	6.76	6.96	3.51	5.50	3.40	7.15	7.50	4.04	9.40	5.09
Total Kharif and Rabi.	24.45	23.90	19.15	33.33	22.31	28.01	23.11	16.43	35.78	22.42

The rain-fall in the year under report was considerably lighter than that of the previous year in the case of almost all works.

The average in the two seasons, taking all the works together, was 22.74 inches as compared with 33.66 inches in 1892-93.

10. The total area irrigated was distributed as follows :—

		Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.
1892-93	...	36,912	28,575	65,487
1893-94	...	45,300	34,650	79,950

There is an increase under both kharif and rabi. The differences in areas as compared with those of the previous year have been explained in the review of the annual statement of irrigation and rain-fall.

11. The area irrigated was in excess of the area applied for, the figures being 79,950 and 70,761 acres respectively. The difference between area applied for and area irrigated. difference, as remarked in previous years, is chiefly due to the fact that the cultivators generally apply for less than they actually irrigate, probably from ignorance of what the areas of their holdings are.

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

		Rs.
Balance of demands unrealized at the commencement of the year.		31,456
Demand of the year—		
Rabi, 1892-93	Rs. 78,695	
Kharif, 1893-94	" 3,38,513	
Miscellaneous receipts	" 1,49,100	
		5,66,308
	Total	5,97,764
Remissions		199
	Net Total	5,97,565
Amount unrealized at the close of the year		33,277
Actual receipts of the year		5,64,288
<i>Add—</i>		
Share of land revenue		12,979
		5,77,267
<i>Deduct—</i>		
Refunds of revenue		3,521
Revenue realized as per paragraphs 5, 7 and 8		5,73,746

The remissions and refunds together amount to Rs. 3,720.

The total amount, Rs. 33,277, unrealized at the close of the year, shows a small increase; this total is made up of the following:—

		Rs.
Mutha Canals	11,532	
Krishna Canal	7,924	
Khári Cut	4,878	
Kadva River Works...	2,095	
Ekrúk Tank	1,397	
Ojhar Canal	1,247	
Jámda Canals	1,035	
Other Works	3,169	
	Total	33,277

The outstanding balance on the Mutha Canal, which is the highest, includes (Rs. 9,089) assessment for March 1894 on account of water-supply to towns, and this can only be recovered in the current year. Omitting this item the balance represents the unrealized amount on account of irrigation and is too small to call for any explanation. It is reported, however, that measures have been taken for its recovery.

With reference to the heavy balance on the Kadva River Works, it is reported that the rayats from whom the balances were due were absent from their homes till the close of the year, and that the greater portion has since been recovered.

The outstandings on the remaining works in the Central Division are said to be due to late submission of the demand statements to the Revenue authorities in a few cases and to non-payment of the money by the rayats in others. Arrangements for the recovery of the balances are being made by the officers concerned and it is hoped that endeavours will be made in future for the early submission of the demand statements.

The causes of the outstandings on the Khári Cut and the Krishna Canal have not been explained.

13. The total working expenses for the year amounted to Rs. 2,87,418 against Rs. 3,07,778 in the previous year, showing a decrease of Rs. 20,360 distributed as follows:—

	1892-93.	1893-94.	Difference.
	Rs.	Rs.	Rs.
Major Works—			
Protective Works	73,860	84,107	+10,247
Productive Works	1,58,293	1,28,925	—29,368
Total ...	2,32,153	2,13,032	—19,121
Minor Works and Navigation	69,921	68,334	—1,587
Provincial Minor Works	5,704	6,052	+348
Grand Total ...	3,07,778	2,87,418	—20,360

Under Major Works, Protective Works show an increase of Rs. 10,247, while Productive Works show a decrease of Rs. 29,368. The working expenses under Minor Works Imperial show a small decrease of Rs. 1,587. The increase under Protective Works is made up of increases on the Nira Canal and Mhasvad Tank. Under Productive Works the Mutha Canals account for a decrease of Rs. 22,037 which must be considered satisfactory.

The working expenses of the Nira Canal include a sum of Rs. 2,790 expended on special repairs, consisting of strengthening the banks by puddled earth cores where they were found to be unsafe or leaky due to the nature of the soil of which they were made. The heavy charges for Tools and Plant are due to the purchase of a pulsometer and portable boiler required for clearing the super-passages of silt. The total working expenses amounted to Rs. 62,047. With 96 miles of main canal in operation this gives a rate of Rs. 646·32 per mile and includes the maintenance of 132 miles of distributaries. The expenditure per acre irrigated was 2·53, a rate which is less than last year, when it was Rs. 3·22 per acre. The increase on the Mhasvad Tank is stated to be due to an Assistant Engineer and a Sub-Engineer being placed in charge of the special repairs to the dam.

Though the Productive Works as a whole show a decrease of Rs. 29,368, there was some increase in the working expenses of the Lakh Canal due to a heavier charge for closing breaches and the special clearance along the 1st mile of the canal. The increase on the Háthmati Canal has not been explained.

As expected last year the working expenses of the Mutha Canals during the year under review show considerable improvement. The total expenditure on this account was Rs. 67,211 against Rs. 89,248 in the previous year, including all charges. Out of Rs. 67,211, Rs. 42,334 are debitable to maintenance of irrigation and Rs. 24,877 to maintenance of water-supply, as compared with Rs. 52,245 and Rs. 37,003 in the previous year. The latter amount, *i.e.* Rs. 24,877, includes expenditure on pumping by water power, working the new steam pumps for trials, and for working them for a few hours once every month to keep them in good working order. There was no necessity to use steam power during the year as the discharge in the canal was sufficient to work the water wheel at all times.

The working expenses of the Ekrúk Tank include Rs. 7,777 on account of improvements which were reported last year as being under construction. The works have been completed and the canal has been brought to its original section and the embankment raised throughout for a length of 2½ miles. The charges on account of maintenance and repairs are less than in the previous year.

The total of the Minor Works in the Central Division shows a decrease of Rs. 6,947, but on some of the works the charges were in excess of those of the previous year due to causes explained below:—

Mhasva Tank.—Due to construction of a new building at Utrud for stores and to give shelter to the kárkún and other canal establishment.

Ojhar Canal.—The increase in maintenance and repairs due to additional expense on repairs to breaches and special clearance of the first three miles of the canal and on the consequent establishment and direction percentages.

Kásurdi Tank.—Due to more silt clearance and to proportionate share of Tools and Plant charged to the work.

In the Southern Division the noticeable increases are Rs. 979 on the Upper Man River Works and Rs. 4,881 on the Maini Tank. The increase in the former case is due chiefly to special repairs costing Rs. 661 executed to the Gondwli bungalow; that in the latter, to the debit to the Revenue Account of the heavy outlay (Rs. 3,550) on the special works, *viz.*, improvements to the flood channel, diversion of Malharpur-Pandharpur road, and canal chaukis.

The increase on the Gokák Canal 1st Section and storage works was due to the share of collection charges in the Civil Department having risen from Rs. 867 to Rs. 1,522 on account of increased realizations which compare as under with the previous year:—

				Realizations.
				Rs.
1892-93	...	...	...	... 17,461
1893-94	...	...	...	... 30,646

The percentage of working expenses on gross assessed revenue was 48·59 against 64·2 in the previous year, and the rate per acre was 3·59 against 4·69 in the previous year.

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

					1891-92.	1892-93.	1893-94.
					Rs.	Rs.	Rs.
Works	...	...	...	...	11,951	6,070	13,641
Repairs	....	...	...	...	1,37,598	1,39,710	1,21,787
Establishment	...	...	...	...	98,285	1,19,234	1,04,596
Tools and Plant	...	...	...	...	3,956	3,913	9,482
Total in the Public Works Department					2,51,790	2,68,927	2,49,506
Collection charges	...	...	...	...	20,242	22,026	23,271
Indirect charges	...	...	...	...	13,861	16,825	14,641
Total					2,85,693	3,07,778	2,87,418

The above shows a considerable decrease under repair and establishment charges, as compared with the previous year. The establishment charges, divided between 'Direction and Accounts' and 'Executive,' compare as follows with those for the previous year:—

					1892-93.	1893-94.	Difference.
					Rs.	Rs.	Rs.
Direction and Accounts	...	...	...	...	27,939	22,528	—5,411
Executive	...	...	...	...	91,295	82,068	—9,227
Total					1,19,234	1,04,596	—14,638

The charges under Direction and Accounts show a decrease when compared with the figures of the previous year, but they are still largely in excess of those for 1891-92, which as observed last year, is due to the alteration of mode of distribution sanctioned in Government Resolution No. 139A.-I.—1077, dated 13th July 1893.

Of the excess of Rs. 5,569 under Tools and Plant, Rs. 4,105 was on the Nira Canal and Rs. 1,076 on the Mutha Canals. The former, as stated above, is due to the purchase of a pulsometer and portable boiler, the latter has not been explained.

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

Names of Works.	Average incidence of Water-rate per Acre.	COST OF MEASUREMENT.		WORKING EXPENSES TOTAL IN THE PUBLIC WORKS DEPARTMENT.	
		Total Cost.	Per Acre.	Per mile of Main Canal.	Per Acre Irrigated.
		Rs.	Rs. a. p.	Rs.	Rs.
<i>Canals.</i>					
Nira Canal	3.42	2,080	0 1 4	572	2.24
Háthmati Canal	2.46	134	0 0 7	259	1.46
Kádva River Works	3.46	223	0 1 2	287	2.29
Pravara River Works—Lákh Canal.	3.14	29	0 1 4	138	9.29
Mutha Canals	16.83	1,168	0 2 3	645	6.88
Krishna Canal	8.87	1,230	0 4 2	299	2.22
Jámda Canals	4.17	48	0 1 2	208	5.10
Pravara River Works—Ojhar Canal.	2.69	202	0 1 9	330	2.80
Yerla River Works	3.57	527	0 4 4	187	2.68
Upper Mán River Works	4.75	474	0 5 1	262	3.09
Rewári Canal	4.64	217	0 2 7	286	1.06
Chikhli „	5.49	113	0 4 10	120	2.04
<i>Tanks.</i>					
Mhasvad Tank	4.07	1,292	0 3 10	696	3.65
Ekrúk Tank	4.97	490	0 2 8	503	8.36
Bhatodi Tank	3.21	19	0 1 10	789	2.20
Mátoba Tank	9.45	58	0 0 9	115	1.71
Shirsuphal Tank	3.76	51	0 0 10	277	3.80
Bhádalvádi Tank	5.69	43	0 0 10	185	2.36
Maini Tank	4.81	532	0 6 3	779	5.30
Muchkundi Tank... ..	5.00	...	...	67	31.00
Madag Tank	2.73	...	...	88	1.14

The high cost of measurement in the case of the Mhasvad Tank and the Lákh Canal was remarked upon last year. During the year under report it was comparatively less and the Executive Engineer, Sholápur, expresses a hope to still further reduce the rate next year for the Mhasvad Tank.

Compared with the last year the cost of measurement was high in the case of all the works in the Sátára District; the increased cost is due to the fact that in 1892-93, some of the establishment previously charged to Works was charged to Revenue Establishment only during the second half of the year; whereas in the year under review they were charged for the whole of the year. The free assistance of village Mahárs, also, was discontinued and paid labour was employed. The basis on which the cost is calculated appears to be erroneous and should be enquired into.

In the case of the Muchkundi Tank, the area being small no separate measurers were entertained and the work was measured by the gauge kárkún.

On the Madag Canal measurement of the crops was made with the assistance of the canal establishment, hence no separate expenditure was incurred.

16. The indirect receipts, as shown in Statements I—C, IV—C and II—E, were Rs. 12,979. If Rs. 5,647 plus Rs. 41,328 on account of supply to the Poona City=Rs. 46,975, being the difference between the value of water issued from the Mutha Canals at normal rates and the value of water supplied at special reduced rates or gratuitously, be taken credit for in the revenue returns of the work as a book credit and be added to the above amount, the earnings of the year will be Rs. 6,38,462.

The orders of the Government of India regarding the omission of the entry on account of the savings to the Military and other Government departments due to supply of water from the Mutha Canals having come into force from 1st April 1893, the statement of savings attached to the reports of the previous years has not been submitted.

Orders of Government for the transfer of the tanks and wells to the Executive Engineer, Poona District, and to the Military Department were issued,—*vide* Government Resolution No. 17 W.I.—171, dated the 29th January 1894, Public Works Department, and Government Resolution No. 937, dated the 9th June 1894, Military Department, and the requisite instructions have been given to the Executive Engineer, Poona Irrigation.

Only two tanks in the Poona Cantonment, *i. e.*, the Kerald's Tank opposite St. Paul's Church and the tank opposite St. Mary's Church, were transferred to the Executive Engineer, Poona District, in March 1894, and the cost of their maintenance, Rs. 72-0-11, was adjusted in transfer to that district in the same month.

No tanks and wells were transferred to the Military Department in 1893-94 and the balance of the expenditure incurred on them after deducting the above adjustment, *viz.* Rs. 162-8-7, was charged off to Maintenance and Repair grant for Poona Water-supply as usual. The transfer was effected in August 1894 and there has been no outlay incurred this year on their repairs.

The subject of the charge made to the City Municipality of Poona for water having been considered by this Government, the Government of India were addressed in this Government letter No. 76 W.I.—791, dated 17th May 1892. The Government of India have now accepted the proposals of this Government. The following terms have accordingly been offered to the Municipality:—

(a.)—That Government will be prepared to increase the present canal supply from 7½ to 18 lakhs gallons, provided that the Municipality agree to use canal water only.

(b.)—That the rate at present charged for the daily supply of 7½ lakhs gallons be extended to the whole quantity, subject to a minimum payment of Rs. 20,000 per annum, in lieu of the present annual minimum payment of Rs. 10,000.

(c.)—Government will not accept responsibility for any loss or injury in consequence of damage to works or machinery belonging to, or connected with, the canal, or its supply reservoir, or for any causes (including scarcity of supply) beyond their control.

(d.)—The agreement to be for thirty years.

17. The net assessed revenue of the year, after deducting working expenses, including indirect and all other charges, and neglecting the items, amounting to Rs. 46,975, referred to in the preceding paragraph, was Rs. 3,04,069 as compared with Rs. 1,71,264 in 1892-93.

The details of the assessment were as follows :—

	DIRECT REVENUE.			Indirect Revenue.	Total.
	Water Rates.	Other Receipts.	Total.		
	Rs.	Rs.	Rs.	Rs.	Rs.
<i>Major Works.</i>					
Protective Works	1,05,195	2,416	1,07,611	...	1,07,611
Productive Works	2,26,606	1,21,252	3,47,858	7,571	3,55,429
Total	3,31,801	1,23,668	4,55,469	7,571	4,63,040
Minor Works	85,978	10,476	96,454	5,408	1,01,062
Provincial Minor Works	11,629	14,956	26,585	...	26,585
Grand Total	4,29,408	1,49,100	5,78,508	12,979	5,91,487

18. The water-rates in force during the year are shown in Statement I—F. and were the same as in the previous year, except in the case of the Gokák Canal on which revised rates were sanctioned in Government Resolution No. 69 A. I—556, dated 30th March 1893, for five years from 1st April 1893.

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

	1892-93.	1893-94.
Protective Works... ..	3.44	3.53
Productive Works	7.86	8.73
Minor Works	3.58	4.30
Provincial Minor Works	2.43	2.74
Average of all taken together... ..	4.90	5.37

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

	1892-93.	1893-94.
	Rs.	Rs.
Water-rates	3,20,920	4,29,408
Other Receipts—		
Plantations	3,707	6,198
Water-power	15,840	20,760
Water-supply to towns	1,00,670	97,077
Miscellaneous	25,158	25,065
	1,45,375	1,49,100
Share of land revenue	12,747	12,979
	1,58,122	1,62,079
	4,79,042	5,91,487

The above comparison shows an increase under all heads except water-supply to towns and Miscellaneous.

The assessments of water-rates show an increase under almost all works, the most noticeable being that on the Nira and Mutha Canals. Plantations also show a rise, which would have been more remarkable but for the falling off on the Mutha Canals owing to decrease in sale of wood, there being less timber to cut. There was a noticeable increase under this head on the Jámáda Canals, Rs. 2,809, owing to large sale of full grown trees.

The decrease under water-supply to towns was due to the supply to the City of Poona having been very much less than in the previous year, the stipulated quantity of 750,000 gallons per day, together with the supply from other sources, having proved to be sufficient.

The increase under Water-power is solely on account of the supply to the Gokak Mills.

21. The principal crop acreages irrigated during 1892-93 and 1893-94 were as follows:—

Crop acreages.	1892-93.	1893-94.	Increase or Decrease.
	Acres.	Acres.	Acres.
Gardens and orchards	2,676	3,367	+691
Sugarcane	8,851	13,063	+4,212
Wheat	10,768	10,856	+88
Rice	2,860	5,217	+2,357
Maize	2,179	2,031	-148
Jowári	5,871	11,604	+5,733
Bájri	4,871	4,378	-493
Gram, &c.	5,683	5,830	+147
Ground-nut... ..	11,242	16,390	+5,148
Condiments... ..	2,344	2,935	+591
Fodder	3,956	593	-3,363

of these the chief crops were:—

	Acres.
Sugarcane	13,063
Wheat	10,856
Jowári	11,604
Bájri	4,378
Gram, &c.	5,830
Ground-nut	16,390

With the exception of maize and fodder there is increase under all the other crops. Of the total decrease of 3,363 acres under fodder 1,992 acres was on the Nira Canal due to good harvest of jowári last year.

The increase in the area of sugar-cane irrigation on the Nira Canal is most noticeable. It rose from 1,639 acres last year to 3,436 acres. The Executive Engineer has mooted the question of limiting the area of this crop in the proposals regarding revision of water-rates which are under consideration, the avowedly protective nature of the work being the reason assigned.

The total estimated value of crops irrigated is shown as Rs. 58,59,742 against Rs. 39,47,775 for the previous year and Rs. 54,44,456 for 1891-92.

22. In Statement I—E. the duty of water on each work, as well as the basis to which the duties were calculated, &c., are shown. The results vary very much on different works; but, as observed in previous years, this is to be expected, as the conditions also vary considerably, and in most of the canals it is necessary to maintain a much larger discharge than is necessary for the area under irrigation owing to the bulk of the land irrigated being frequently situated at the tail of the canal at a long distance from the head-works.

Details of the duty obtained on each canal are given in the body of the report and are generally estimated from the daily discharge observations and the

known area of the miscellaneous crops under irrigation during the period; the principal results are as follows:—

				Duty in Acres per Cubic Foot per Second.			
				Maximum.	In month of	Minimum.	In month of
Mátoba Tank	...	...	...	88.20	February	52.62	April.
Shirsuphal Tank	...	...	...	75.19	November.	...	...
Bhádavádi Tank	...	...	...	135.21	June	36.08	April.
				Kharif.		Babi.	
Mutha Canals	...	...	...	55.3		51.4	
Krishna Canal	...	...	...	46		19	
Revári Canal	...	...	...	38		112	
Upper Mán River Works	...	...	...	243		68	
Yerla River Works	...	...	...	71		112	
Chikhli Canal	...	...	...	68		9	
Maini Tank	...	...	...	195		59	
Bhatodi Tank	...	...	...	152.83		97.97	

Special experiments to determine the duty of water per acre were carried out on the undermentioned works during the year, with the following results:—

Name of District and Works.	No. of Plot.	Name of Crop.	Quantity of water for one (1) Acre in cubic feet.
Sholápur—			
Mhasvad Tank	1	Sugar-cane	357,061
	2	Do.	372,164
	3	Do.	370,558
	4	Ground-nut	49,279
	5	Maize	37,748
	6	Jowári	28,703
	7	Wheat, Jod	63,874

Sholápur—

Ashti Tank	...	...	{	Sugar-cane	...	...	294,820
				Ground-nut	...	...	115,519
				Inferior rice	...	...	77,888
Koregaon Tank	...	...	{	Ground-nut	...	...	143,378.5
				Jowári	...	...	68,786
Poona District—							
Nira Canal	...	...		Khapla Wheat	...	...	85,209
Khándesh District—							
Lower Pánjra River Works, village of Nahalod.			{	Peas	...	...	26,238
				Wheat	...	...	20,025
Khándesh District—							
Jámda Canals, Kolgaon village	...	...	{	Gram	...	...	31,044
				Wheat	...	...	28,450
Násik District—							
Ojhar Támbat Canal	...	...		Wheat.	...	...	12,950

There is one observation to be made with regard to the duty of water, which is that ground-nut on the Mhasvad Tank takes only 49,279 cubic feet to mature a crop of one acre, whereas in the same district on the Koregaon Tank it takes 143,378.5 cubic feet. The difference in the quantities at these two places is said to be due to the nature of the soil and the variation in rainfall.

PART II.

WORKS FOR WHICH ONLY REVENUE ACCOUNTS ARE KEPT,
AND AGRICULTURAL WORKS.

23. The following shows a comparison of the figures for the year under report with those for 1892-93 :—

	1892-93.	1893-94.	Increase.	Decrease.
	Acres.	Acres.	Acres.	Acres.
Area irrigated	146,187	147,393	1,206	.....
	Rs.	Rs.	Rs.	Rs.
Revenue receipts	5,44,910	5,46,333	1,423	.....
Expenditure	1,97,976	2,80,571	82,595	.....
Net revenue	3,46,934	2,65,762	.....	81,172

The area irrigated shows an increase of 1,206 acres, and the receipts an increase of Rs. 1,423. Owing to increased expenditure however the net revenue shows a considerable decrease.

24. The following gives some details of expenditure :—

	EXPENDITURE.		COMPARISON.	
	1892-93.	1893-94.	Increase.	Decrease.
	Rs.	Rs.	Rs.	Rs.
Extensions and improvements ...	29,296	50,917	21,621	.....
Maintenance and repairs ...	34,094	57,346	23,252	.....
Establishment	79,133	1,15,825	36,692	.....
Tools and Plant	1,042	2,065	1,023	.....
Total	1,43,565	2,26,153	82,588	.....
Share of collection charges ...	54,411	54,418	7	.....
Total	1,97,976	2,80,571	82,595	.....

The increase under Extensions and Improvements and Maintenance and Repairs shows more extensive operations on second class works. That under establishment is made up of increases in the Ahmedabad, Kaira, Surat, Ahmednagar, Belgaum and Dhárwár districts, that in the Dhárwár District being very considerable.

The increase of establishment charges over those of the previous year in the Belgaum District is partly due to increased expenditure on Works and partly to the actual charge of Salaries and Travelling allowances of the establishment engaged on survey works in 1892-93 and 1893-94. In 1892-93 nothing was charged under Tools and Plant.

In the Dhárwár District the increase on Establishment and Tools and Plant charges is due to less credit on account of percentage transfers on Hubli Water Works. Outlay during the year was about one-half of that of the previous year.

Statement of Canals in the Bombay Presidency, excluding Sind.

Source of Supply of Water.	(1) NIRA CANAL.	(5) HATHMATI CANAL.	(7) KADVA RIVER WORKS.			(8) LAKH CANAL.	(11) KRISHNA CANAL.	(12) KHARI CUT.	(15) JAMDRA CANALS.	(17) OJHAR CANAL.	(25) REVA'RI CANAL.	(28) CHIKHLI CANAL.	(39) GOKA'K CANAL, 1ST SECTION, AND STORAGE WORKS.
	River Nira and Reservoir at Bhatgbar.	Hathmati River.	Kadva River.	Banganga River.	Kadva River.	Pravara River.	River Krishna and Rainfall.	Khari River.	Girna River.	Pravara River.	River Warna and Rainfall.	River Nandni and Rainfall.	River Ghat- prabha and Storage Works.
Minimum discharge } C. ft. per second ...	K. 1,318 R. 34 H.W. 5	K. 26 R. 95 H.W. 16	K. 12-00 R. 3-56 H.W. 1-37	K. 1-98 R. 0-40 H.W. 0-21	K. 11-71 R. 8-36 H.W. 2-18	K. 851 R. 34-32 H.W. 7-47	K. 36-72 R. 207-56 H.W. 35-72	K. 13 R. 61 H.W. 13	April and May 1893 33-98 K. 376-33 R. 15-59 H.W. 60-88	K. 691 R. 41-35 H.W. 30-15	K. 4-40 R. 9-68 H.W. 4-40	K. 2-10 R. 9-79 H.W. 2-10	K. 234 R. 47 H.W. 47
Maximum discharge } of canal. " "	456	191	52-64	6-56	7-03	31-78	90-04	150	April and May 1894 28-22 Left Right Bank, Bank. K. 59-39 28-08 R. 62-52 23-02 H.W. 40-91 15-31	57-01	8-43	9-17	K. 43 R. 27
Average annual rainfall ... Inches.	23-10	K. 26-01 R. 0-63	29-71	20-49	20-49	24-56	25-52	K. 26-53 R. 0-82	26-90	24-56	29-41	23-56	Dhupdal 27-41 Gokal 23-05
Gross area commanded ... Acres.	2,71,447	44,744	28,832	8,055	3,486	29,913	27,407	17,300	37,122 9,166	23,724	3,813	1,871	18,668
Culturable do. ... "	2,27,670	28,840	26,280	7,421	2,729	25,536	25,533	12,000	33,124 7,061	21,155	3,624	1,478	17,627
Area irrigable by complete project ... "	2,27,670	11,336	25,466	6,824	2,433	22,760	25,533	11,500	33,124 7,061	20,088	3,624	1,478	16,663
Do. at present ... "	1,83,862	8,000	9,837	2,367	2,433	11,280	25,533	11,500	23,477 7,061	14,763	3,624	1,478	16,663
Sanctioned Estimate—													
Direct charges ... Rs.	57,34,655	5,89,705	2,38,087	14,541	29,771	3,75,189	8,29,067	1,66,867	10,27,238	3,25,902	56,324	53,803	11,66,740
Indirect charges ... "	3,69,780	30,000	15,761	833	1,540	20,277	48,216	11,823	61,402	22,309	3,124	3,612	60,929
Interest during construction ... "	28,44,872	2,37,687	2,12,554	2,411	32,150	3,65,298	8,15,578	...	.....	.....	.....	.....	1,44,865
Total, Estimate ... Rs.	89,49,307	8,57,392	4,66,402	17,785	63,461	7,60,764	16,92,861	1,78,680	10,88,640	3,48,211	59,448	57,415	13,72,534
Expenditure to end of 1893-94.													
Direct charges ... Rs.	51,94,764	4,90,925	2,21,154	6,739	27,955	3,51,935	8,18,292	1,69,868	9,89,532	3,09,578	56,533	53,803	11,50,995
Indirect charges ... "	1,58,321	27,470	15,372	193	1,399	19,445	45,046	11,980	49,853	20,613	2,847	3,639	25,486
Interest during construction ... "	19,47,450	4,14,113	1,92,008	1,229	29,621	3,55,414	8,47,991	...	.....	.....	.....	.....	1,92,979
Total, Expenditure ... Rs.	73,00,535	9,32,508	4,28,534	8,161	58,975	7,26,794	17,11,329	1,81,848	10,39,385	3,30,191	59,380	57,442	13,69,460
Works as now sanctioned—													
Main Canals, Irrigation ... Miles.	M. 100 ft. 1,219	21	11	8	8-62	23	35½	16	39	19	5½	6½	2½
Branch Canals do. ... "	.....	.....	.....	.....	.....	.....	26-25	7	.....	.....	.....	.....	13
Distributaries ... "	132 2,447	25	21½	.....	.....	11	.....	7	75	25	.....	.....	26-55
Of above—													
Navigable channels ... "	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Works completed at end of 1893-94—													
Main Canals, Irrigation ... Miles.	96	21	11	4½	8-62	23	35½	16	39	19	5	6½	2½
Branch Canals do. ... "	.....	.....	.....	.....	.....	.....	26-25	7	.....	.....	5½	.....	12
Distributaries ... "	M. 132 ft. 2,447	30	14-87	.....	.....	11	.....	7	75	21	.....	.....	26-55
Of above—													
Navigable channels ... "	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

42

Statement of Reservoir Projects in the

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Source of Supply.	Bhāghar Reservoir, Nira Canal.	Mhasvad Tank.	Lower Panjra River Works and Mukri Tank.	Kidra River Works (Waghad Tank).	Mutha Reservoir, Lake Fita.	Ekrak Tank.	Hartala Tank.	Mhasva Tank.	Paraul Tank.	Bhāṭodi Tank.	Matoba Tank.	Kasurdi Tank.								
	Yelvaṇḍi River and Ghās Catchment.	Mān River and Rain-fall.	Local Streams.	Kolvaṇ River.	Mutha River and Rain-fall.	Adhela River and Rain-fall.	Local Streams.	Local Streams.	Paraul River.	Mehekri River.	Nāla, Rain-fall and surplus water from Mutha Right Bank Canal.	Kasurdi Nāla and Rain-fall.								
If supplied by rain-fall. { Area of catchment, Sq. miles	128	480	34.2	39	196.00	150	6.80	19.40	17.23	44.0	10.00	6.00								
{ Average Annual rain-fall — inches	145	26.05	23.04	53.13	33.30	33.48	25.08	20.82	21.47	25.76	16.33	20.73								
Contents of tanks between levels of surface of full supply and sill of canal head since — — — — — } Millions of cubic feet.	5,500	2,033	343.3	606	(1) 2,679.65 (2) 2,233.30	3,310	134.0	158.5	118.70	154	229	14.4								
Area of surface at full supply — — — — — } Acres and decimals.	3,584	401,380	509.00	778	(3) 3,629.78 (1) 3,239.24	4,640	472	421	151	315.12	47.46	37.92								
Gross area commanded — — — — — Acres.		129,045	13,117	(c) —	94,057	17,152	584	4,647	2,693	15,198	10,700	697								
Culturable do. — — — — — "		106,214	12,627	(c) —	49,800	16,041	527	4,075	2,356	13,657	7,123	478								
Area irrigable by complete project — — — — — "		106,214	12,627	(c) —	65,000	16,220	415	4,075	2,356	12,124	7,123	478								
Do. as present — — — — — "		106,214	12,627	(c) —	46,806	15,320	415	2,983	97	12,124	7,123	478								
Wells supplied by tanks — — — — — No.		12	—	—	22	—	—	—	—	—	—	—								
No irrigation direct from the Reservoirs.																				
Sanctioned Estimate—																				
Direct Charges — — — — — Rs.	(a) —	20,24,327	4,44,426	4,67,662	62,14,206	12,28,243	48,990	1,24,813	2,18,968	3,51,767	1,93,000	40,812								
Indirect Charges — — — — — "	(a) —	1,03,947	22,774	16,335	2,40,067	1,06,637	24,160	10,202	8,246	30,611	17,500	4,778								
Interest during construction — — — — — "	(a) —	6,56,222	4,01,237	2,17,233	34,30,296	8,00,650	—	—	—	—	—	—								
Total Estimate — — — — — Rs.	(a) —	27,84,496	8,68,547	7,01,230	96,85,199	21,35,590	73,080	1,46,015	2,27,214	3,78,278	2,10,500	46,590								
Expenditure to end of 1933-34.																				
Direct Charges — — — — — Rs.	(a) —	19,81,519	4,38,533	4,37,913	62,42,432	12,28,117	47,948	1,23,761	2,11,542	3,52,656	1,86,148	40,812								
Indirect Charges — — — — — "	(a) —	60,733	22,709	11,691	2,32,264	1,12,969	25,434	10,175	7,030	27,023	12,679	4,778								
Interest during construction — — — — — "	(a) —	8,39,537	4,01,237	1,78,653	45,91,400	11,75,265	—	—	—	—	—	—								
Total Expenditure — — — — — Rs.	(a) —	29,31,789	8,62,619	6,29,087	1,12,66,096	25,15,651	73,382	1,33,936	2,18,572	3,79,707	2,00,727	46,590								
Works as now sanctioned—																				
Dam (earth or masonry) — — — — — Masonry	Earth.	Earth.	Earth.	Masonry.	Earth.	Earth.	Earth.	Earth.	Masonry	Earth.	Earth.	Earth.								
Total Height — — — — — Feet.	(b) 127 (c) 108	79.79	65	96	97.84	78	51	64	103.27	60	48.41	23.45								
Canals — — — — — Miles.		M. fl. 27-3,969	—	(f) —	88	48	—	—	—	44	—	—								
Distributaries — — — — — "		66	45	(f) —	70	—	5.5	7	—	5	17	1.75								
Works completed at end of 1933-34—																				
Dam (height) completed — — — — — Feet.	(d) —	79.79	66	96	97.64	78	51	64	103.27	60	48.41	23.45								
Canals — — — — — Miles.		M. fl. 27-3,969	—	(f) —	88	48	—	—	—	44	—	—								
Distributaries — — — — — "		(e) 66	46	(f) —	70	—	5.5	7	—	5	17	1.75								

(1) 264.7 is the reduced level
(2) 260.7 is the height to which

A

Bombay Presidency, excluding Sind.

(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	REMARKS.
Shir- dhal Tank.	Bhādal- vādī Tank.	Koregaon Tank.	Ashīl Tank.	Upper Man River Works (Pinelī Tank).	Yerla River Irriga- tion Works (Wehr Tank).	Māni Tank.	Much- kundi Tank.	Gadi- keri Tank.	Dāmbal Tank.	Medleri Tank.	Madag Tank.	Asundi Tank.	Māvinkop Tank.	Gokāk Canal, 1st Section, and Storage Works.					
Minor Tribu- tary of the Bhima River and Rain- fall.	Minor Tribu- tary of the Bhima River and Rain- fall.	Nāla and Rain-fall.	Ashīl Nāla and Rain-fall.	Mān River and Rain- fall.	Yerla River and Rain- fall.	Wanga Nāla and Rain- fall.	Much- kundi Nāla and Rain- fall.	Rain- fall.	Rain- fall.	Medleri Nāla and Rain- fall.	Kumud- wāri River and Rain-fall.	Rain- fall.	Rain-fall.	Ghatprabha River.					
23-00	23-00	4-4	92	20-00	59-5	54-00	26	6-0	43	11	540	23	6-25	1,080					* Exclusive of 29 square miles for Gondoli Tank.
21-07	23-16	34-52	29-56	19-61	28-23	22-92	23-73	28-54	19-93	21-56	29-63	23-23	39-01	55-00					
265	222	51	1,419	195-240	489-77	188-590	680	27-5	113-654	57-600	54-630	105-600	45-73	701-597					
833-79	335-18	102	2,677	349-4	676-9	380-4	1,059	129	442	169	362	418	170-5	2,272-45					
4,500	3,000		17,882	8,443	11,234	4,876	5,670	687	4,594	1,916	2,255	1,800	687	18,668					(e) Information supplied in Statement I—A, the tank being only a feeder.
2,500	2,400	Not known.	16,825	7,623	10,680	4,625	5,417	Not known.	4,525	1,052	1,730	1,800	Not known.	17,627					
2,500	2,400		14,476	7,623	10,680	4,625	3,417	450	4,595	1,916	Project not completed.	1,800	665	16,663					
2,500	2,400		14,476	7,623	10,680	4,625	3,417	337	4,525	1,052	1,730	1,800	492	16,663					† Area actually irrigated in 1893-94, which therefore has been entered instead of last year's figure 477.
—	—	—	—	25	18	13	Nil	None.	Un- certain.	Nil.	Nil	Nil.	Nil	None.					
2,09,460	2,14,382	40,731	7,54,250	4,16,341	6,80,448	3,68,000	1,48,200	8,888	61,162	73,237	2,32,263	67,731	27,889	(a).....					
12,822	14,342	1,318	80,677	28,180	47,260	22,492	20,220	350	3,744	8,468	17,144	12,754	3,928	(a).....					
—	—	—	—	—	—	—	—	—	—	—	—	—	—	(a).....					
2,22,232	2,28,794	42,049	8,34,927	4,44,531	7,27,708	3,90,492	1,68,420	9,238	64,906	81,705	2,49,407	80,485	21,817	(a).....					
2,09,289	2,13,107	37,928	7,52,179	4,07,421	635,746	3,67,671	1,40,217	8,915	60,847	78,354	1,61,248	60,741	27,612	(a).....					(a) Figures given in State- ment I—A.
12,373	14,122	1,266	78,914	22,141	42,857	22,239	18,490	364	3,133	3,093	6,350	1,718	3,235	(a).....					
—	—	—	—	—	—	—	—	—	—	—	—	—	—	(a).....					
2,21,562	2,27,229	39,189	8,31,093	4,29,562	6,78,603	3,89,910	1,58,707	9,279	63,990	81,592	1,67,598	62,459	30,847	(a).....					
Earth.	Earth.	2 dams 1 masonry	Earth.	Earth.	Earth.	Earth.	Masonry	Earth.	Earth.	Earth.	Earth.	Earth.	Earth.	Masonry weir.					
54-32	56-09	71 and 16	157-75	53-50	74	57-33	60	20	42-25	41	100	33-95	30-53	25 high, Ma- ximum above founda- tion 28' earthwork					† 57-75 is correct. 59 in statement of dimension and cost is taken to the nearest foot. ‡ Correct heights as per revised statement of di- mensions and cost. (b) Above lowest founda- tion. (c) Above lowest point in river bed. (d) The main dam com- pleted to full height; the weir brought up to crest level. (f) The tank supplies the Pākhed, Ojhar Tāmbat and Wādādi canals as noted in Statement I—A. (g) Includes 32½ miles of branch canals. § These figures are reported by the Executive Engi- neer, Dharwār Irrigation, to be the correct ones as ascertained by actual measurements.—Vide printed Com. Report approved of in Gov- ernment Resolution No. 156-A.I.—1138, dated 16th July 1894.
—	—	3½	21½	17½	28 48	9½	5½	Nil.	—	—	9	—	—	14½					
12-5	9-75	—	8	6½	4 0	7 46	2½	Irriga- tor's Channel	M. f. ft.	M. f. ft.	—	M. f. ft.	—	26-55					
54-33	55-00	71 and 16	157-75	53-50	74 0	57-33	60	20	42-25	41	100	33-95	30-53	25					
—	—	3½	21½	17½	28 48	9½	5½	Nil.	—	—	9	—	—	2½ miles and Waderhatti branch 12 miles.					
12-5	9-75	—	8	6½	4 0	7 46	2½	Irriga- tor's Channel	M. f. ft.	M. f. ft.	—	M. f. ft.	—	26-55					

of the finished crest of weir.
water is annually impounded at end of mousoon by fixing standards and boards on waste weir crest.

Capital Account of Irrigation Works in Deccan and

Name of Work.	DURING YEAR.									
	Direct Charges.					Indirect Charges.				
	Works.	Establishment.	Tools and Plant.	Total.	Debit Receipts on Capital Account.	Total.	Capitalization.	Leave and Pension Allowances.	Total.	Grand Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
IMPERIAL MAJOR WORKS.										
PROTECTIVE WORKS.										
<i>In operation.</i>										
1. Nira Canal	94,827	18,401	935	1,14,163	3	1,14,166	1,597	2,576	3,973	1,18,133
2. Mhasvad Tank	6,174	811	24	7,009	...	7,009	68	114	1-2	7,191
Total	1,01,001	19,212	959	1,21,172	3	1,21,169	1,465	2,690	4,155	1,25,324
<i>In abeyance.</i>										
3. Chankapur Tank	232	46	...	278	45	233	...	6	6	239
4. Maladevi do. ... ..	...	...	...	...	...	...	...	...	...	...
Total	232	46	...	278	45	233	...	6	6	239
Total, Protective Works	1,01,233	19,258	959	1,21,450	48	1,21,402	1,465	2,696	4,161	1,25,563
PRODUCTIVE WORKS.										
<i>In operation.</i>										
5. Hathmati Canal ... ..	...	...	...	...	...	...	...	...	...	...
6. Lower Panjra River Works	1,127	225	...	1,352	...	1,352	...	31	31	1,383
7. Kadva River Works	1,613	321	...	1,934	...	1,934	...	45	45	1,979
8. Pravara River Works—Lakh Canal	-252	-50	-1	-303	...	-303	...	-7	-7	-310
9. Mutha Canals	97,792	22,509	...	1,20,301	...	1,20,301	415	3,151	3,566	1,23,867
10. Ekrak Tank ... ..	...	...	...	...	...	...	...	...	...	...
11. Krishna Canal	4,353	871	...	5,224	...	5,224	...	122	122	5,346
Total, Productive Works	1,04,633	23,576	-1	1,28,508	...	1,28,508	415	3,342	3,757	1,32,265
Total, Major Works	2,05,866	43,134	958	2,49,958	48	2,49,910	1,880	6,038	7,918	2,57,828
MINOR WORKS AND NAVIGATION.										
<i>In operation.</i>										
12. Khari Cut	12,424	424	...	2,853	...	2,853	...	59	59	2,917
13. Hartala Tank ... ..	...	...	...	...	...	...	...	...	...	...
14. Mhasva do.	-1,536	-384	...	-1,920	...	-1,920	...	-54	-54	-1,974
15. Jandals Canals	1,126	225	100	1,451	...	1,451	-2,543	31	-2,512	-1,061
16. Parsul Tank	4,115	1,141	-433	4,823	...	4,823	...	160	160	4,983
17. Pravara River Works—Ojhar Canal	-40	-8	-2	-50	...	-50	...	-1	-1	-51
18. Bhatodi Tank ... ..	...	...	...	...	...	...	...	...	...	...
19. Matoba do. ... ..	...	...	...	...	...	...	...	...	...	...
20. Kasurdi do. ... ..	...	...	...	...	...	...	...	...	...	...
21. Shirsuphal do.	7,599	1,900	...	9,499	...	9,499	3	266	269	9,768
22. Bhadalvadi do.	1	...	...	1	...	1	...	...	...	1
23. Koregaon do. ... ..	...	...	...	...	...	...	...	...	...	...
24. Ashvi do.	66	...	...	66	...	66	183	...	183	239
25. Revari Canal	10	3	...	13	...	13	...	...	...	13
26. Upper Man River Works ... ..	...	...	...	...	...	...	...	...	...	...
27. Yerla River Irrigation Works	12,649	2,529	35	15,213	...	15,213	...	354	354	15,567
28. Chikhli Canal ... ..	...	...	...	...	...	...	...	...	...	...
29. Maini Tank ... ..	...	...	...	...	...	...	...	...	...	...
30. Muchkundi Tank ... ..	...	...	...	...	...	...	3,158	...	3,158	3,158
31. Nilgund do. ... ..	...	...	...	...	...	...	...	...	...	...
32. Gadikeri do. ... ..	...	...	...	...	...	...	...	...	...	...
33. Dambal do. ... ..	...	...	...	...	...	...	...	...	...	...
34. Medleri do. ... ..	...	...	...	...	...	...	...	...	...	...
35. Madag do. ... ..	...	...	...	...	...	...	...	...	...	...
36. Asundi do. ... ..	...	...	...	...	...	...	...	...	...	...
37. Mavinkop do. ... ..	...	...	...	...	...	...	...	...	...	...
Total	26,414	5,830	-300	31,944	...	31,944	601	815	1,616	33,560
<i>In abeyance.</i>										
38. Gokak Canal, 2nd Section ... ..	...	...	...	...	...	...	...	...	...	...
Total, Minor Works and Navigation	26,414	5,830	-300	31,944	...	31,944	601	815	1,616	33,560
PROVINCIAL.										
MINOR WORKS AND NAVIGATION.										
<i>In operation.</i>										
39. Gokak Canal, 1st Section, and Storage Works	1,34,603	69	...	1,34,672	...	1,34,672	...	10	10	1,34,682
Grand Total	3,66,883	49,033	658	4,16,574	48	4,16,526	2,681	6,663	9,544	4,26,070

* Including expenditure charged to "28. Construction" † Including Rs. 600 from

B.
Gujarāt for and to end of 1893-94.

TO END OF YEAR.

Direct Charges.						Indirect Charges.			Grand Total.
Works.	Establishment.	Tools and Plant.	Total.	Deduct Receipts on Capital Account.	Total.	Capitalization.	Leave and Pension Allowances.	Total.	
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
40,74,000 13,78,825	9,97,517 8,41,332	1,31,203 62,835	5,202,720 19,82,992	7956 1,473	61,94,764 19,81,519	1,397 7,817	1,56,924 52,916	1,58,321 60,733	53,53,085 20,42,252
56,52,825	13,38,849	1,04,038	71,85,712	9,429	71,76,283	9,214	2,09,840	2,19,054	73,95,337
38,786 20,967	17,981 11,600	7,261 1,456	64,028 34,023	175 68	63,853 33,955	..... .....	3,159 2,161	3,159 2,161	67,012 36,116
50,753	29,581	8,717	98,051	248	97,803	.....	5,320	5,320	1,03,128
57,12,578	13,68,430	2,02,755	72,83,763	9,672	72,74,091	9,214	2,15,160	2,24,374	74,98,465
3,83,636 3,61,720 5,37,980 2,64,016 51,80,750 10,07,089 6,74,448	99,517 73,622 1,38,961 68,641 9,56,398 2,12,509 1,42,162	9,060 8,228 16,960 19,479 1,17,453 9,713 1,682	4,92,213 4,38,570 6,93,901 3,52,136 62,54,601 13,29,311 8,18,292	1,288 37 140 201 12,169 1,194 ...	4,90,925 4,38,533 6,93,761 3,51,935 62,42,432 12,28,117 8,18,292	7,640 8,432 4,316 5,824 52,502 69,948 17,222	19,830 14,367 24,339 13,621 1,79,782 42,321 27,824	27,470 22,799 28,655 19,445 2,32,264 1,12,269 45,046	5,18,395 4,61,332 7,22,416 3,71,330 64,74,696 13,40,386 8,63,338
84,09,639	16,91,810	1,77,575	1,02,79,024	15,029	1,02,63,995	1,65,884	3,22,064	4,87,948	1,07,51,943
1,41,22,217	30,60,240	3,80,330	1,75,62,787	24,701	1,75,38,086	1,75,098	5,37,224	7,12,322	1,82,50,408
1,35,618 83,437 1,01,259 7,85,135 1,60,392 2,30,016 2,73,838 1,49,237 31,433 1,68,238 1,56,993 30,044 6,05,274 46,819 3,07,424 5,21,710 39,984 2,66,543 1,11,830 6,933 7,020 49,262 61,831 1,26,598 48,805 21,665	32,293 11,936 26,399 1,91,589 42,377 76,173 70,183 35,982 8,495 38,190 53,493 7,661 1,44,175 9,693 93,456 1,08,793 13,611 98,353 26,360 1,700 1,755 10,769 15,324 31,841 10,881 5,762	2,133 2,579 1,129 12,829 8,844 4,533 9,354 2,937 884 2,861 2,621 218 8122 21 6,782 7,608 208 3,315 2,294 130 140 878 1,155 2,825 1,055 323	1,70,049 47,952 1,28,787 9,89,553 2,11,613 3,09,722 3,53,375 1,88,156 40,812 2,09,289 2,13,107 37,923 7,57,571 56,533 4,07,662 6,38,111 53,803 3,68,211 1,40,484 8,768 8,915 60,909 78,360 1,61,262 60,741 27,750	181 4 6 21 71 144 690 8 5,392 ... 241 2,365 ... 540 267 62 6 14 ... 138	1,69,868 47,948 1,28,781 9,89,532 2,11,542 3,09,573 3,52,685 1,88,148 40,812 2,09,289 2,13,107 37,923 7,52,179 56,533 4,07,421 6,35,746 53,803 3,67,671 1,40,217 8,768 8,915 60,847 78,354 1,61,248 60,741 27,612	6,350 23,052 5,026 11,992 1,078 5,806 13,023 5,579 2,079 5,041 3,882 52,311 1,066 4,787 22,363 917 3,074 14,386 13 1,034 243 2,083	5,630 2,382 5,149 37,861 5,952 14,807 13,999 7,000 1,699 7,232 10,240 1,266 26,603 1,781 17,354 20,489 27,22 19,165 4,104 259 351 2,099 2,795 6,350 1,718 1,152	11,980 25,434 10,175 49,853 7,030 20,613 27,022 12,579 4,778 12,273 14,122 1,266 78,914 2,847 22,141 42,857 3,639 22,239 18,450 259 364 3,133 3,038 6,350 1,718 3,235	1,81,849 73,382 1,38,956 10,36,385 2,18,572 3,30,191 3,79,707 2,00,727 45,500 2,21,562 2,27,229 39,189 8,31,093 59,380 4,29,562 6,78,603 57,442 3,89,910 1,58,707 9,027 9,279 63,980 51,392 1,67,593 62,459 30,847
44,77,391	11,66,249	85,778	57,29,418	10,150	57,19,268	1,86,190	2,20,159	4,06,349	61,25,617
92,036	70,024	14,246	1,76,306	...	1,76,306	740	13,238	13,978	1,90,284
45,69,427	12,33,273	1,00,024	59,05,724	10,150	58,95,574	1,86,930	2,33,397	4,20,327	63,15,901
9,62,081	1,68,561	20,611	11,51,253	258	11,50,995	348	95,138	25,486	*11,76,481
1,96,53,725	44,65,074	5,00,965	2,46,19,764	35,109	2,45,84,655	3,62,376	7,95,759	11,58,135	2,57,42,790

of Protective Irrigation Works,
Local Funds.

A. L. WRIGHT,
For Examiner, Public Works Accounts.

Statement showing the Financial Results of Irrigation Works in
Realizations under Main Heads of

Name of Work.	REVENUE (ACTUAL RECEIPTS).											Revenue	
	Irrigation.			Navigations.	Plantations.	Water power.	Miscellaneous.	Total.	Refunds of Revenue.	Grass Revenue less Refunds.	Estab.		
	Waterpiped directly paid.	Share of land Revenue.	Total.								Director.	Executive.	
	1	2	3	4	5	6	7	8	9	10	11	12	13
IMPERIAL	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
MAJOR WORKS.													
<i>Protective Works.</i>													
1. Nira Canal ...	76,692	...	76,692	...	28	...	1,419	77,739	10	77,829	3,856	13,344	
2. Mhasvad Tank ...	24,027	...	24,027	...	35	...	965	25,027	...	25,027	1,561	7,429	
Total ...	1,00,119	...	1,00,119	...	63	...	2,384	1,02,566	10	1,02,556	5,219	20,764	
<i>Productive Works.</i>													
5. Hathmati Canal ...	8,530	...	8,530	...	256	...	912	9,698	...	9,698	56	116	
6. Lower Pajjara River Works ...	9,970	6,785	16,748	...	195	...	377	17,250	1	17,249	540	884	
7. Koldra River Works ...	10,375	594	10,969	...	110	...	790	11,869	...	11,869	524	1,506	
8. Pravara River Works— Lakh Canal ...	697	147	844	...	21	...	304	1,169	...	1,169	213	692	
9. Mutha Canal ...	1,43,966	49	1,44,008	...	145	6,000	1,01,171	2,51,324	3,404	2,47,920	4,154	11,150	
10. Ekruk Tank ...	14,157	...	14,157	...	335	...	9,310	23,892	...	23,892	1,849	6,088	
11. Krishna Canal ...	35,418	...	35,418	...	...	...	1,419	36,837	1	36,836	182	1,765	
Total ...	2,23,103	7,571	2,30,674	...	992	6,000	1,14,283	3,51,949	3,406	3,48,543	7,250	22,591	
Total, Major Works ...	3,23,922	7,571	3,30,793	...	1,055	6,000	1,16,667	4,54,515	3,416	4,51,699	12,439	43,065	
MINOR WORKS AND NAVIGATION.													
12. Khatri Cut ...	7,329	...	7,329	...	40	...	618	7,887	...	7,887	67	257	
13. Hartala Tank ...	245	...	245	...	542	...	419	1,506	...	1,506	14	189	
14. Mhasva do. ...	347	...	347	...	446	...	678	1,421	...	1,421	141	448	
15. Jinda Canal ...	6,422	...	6,422	...	3,519	...	417	10,358	...	10,358	617	1,548	
16. Parsul Tank ...	1,339	...	1,339	...	...	...	8	1,347	...	1,347	53	357	
17. Pravara River Works— Ojhar Canal ...	2,648	76	2,724	...	6	...	444	3,174	...	3,174	512	1,462	
18. Bhatodi Tank ...	4,560	1,351	6,211	...	48	...	234	6,593	13	6,580	506	797	
19. Matoba do. ...	10,349	...	10,349	...	2	...	...	10,350	...	10,350	156	573	
20. Kasurdi do. ...	333	...	333	...	...	...	159	522	...	522	24	62	
21. Shirsuphal do. ...	3,414	...	3,414	...	...	...	90	3,504	6	3,498	235	803	
22. Ekdalvadi do. ...	4,116	...	4,116	...	...	...	54	4,172	13	4,159	131	413	
23. Koregaon do. ...	1,015	...	1,015	...	...	...	9	1,024	...	1,024	53	287	
24. Ashi do. ...	3,952	...	3,952	...	245	...	104	4,201	...	4,201	561	1,501	
25. Revari Canal ...	5,207	...	5,207	...	...	...	148	5,355	7	5,348	24	794	
26. Upper Man River Works ...	6,618	...	6,618	...	...	...	115	6,736	...	6,736	74	613	
27. Yerla River Irrigation Works ...	5,842	...	5,842	...	...	...	762	6,604	7	6,597	62	691	
28. Chikhli Canal ...	7,025	...	7,025	...	...	...	104	7,129	...	7,129	12	101	
29. Maini Tank ...	6,970	...	6,970	...	...	...	101	7,071	...	7,071	87	537	
30. Muchkandi do. ...	54	...	54	...	206	...	155	417	...	417	3	15	
31. Nilgund do. ...	...	...	...	...	...	...	...	...	...	...	...	...
32. Gadikeri do. ...	...	1,987	1,987	...	...	...	...	1,987	59	1,928	...	...
33. Dasul do. ...	745	666	1,411	...	53	...	294	1,705	...	1,705	7	120	
34. Medleri do. ...	350	...	350	...	...	...	...	350	...	350	9	104	
35. Maday do. ...	1,849	...	1,849	...	...	...	269	2,118	...	2,118	13	117	
36. Asundi do. ...	350	472	822	...	...	...	64	886	...	886	11	303	
37. Mavinkop do. ...	...	856	856	...	...	...	5	861	...	861	...	...
Total, Minor Works and Navigation ...	76,283	5,408	81,791	...	3,079	...	5,236	92,106	165	92,061	2,928	11,682	
PROVINCIAL													
<i>Minor Works and Navigation.</i>													
38. Gokak Canal, First Section and Storage Works ...	10,770	...	10,770	...	64	19,650	132	30,646	...	30,646	78	899	
GRAND TOTAL ...	4,10,375	12,979	4,23,354	...	6,135	25,580	1,22,065	5,77,947	3,521	5,73,746	15,475	52,456	

Note.—(1) The irrigation share of the Land Revenue Assessment relates to the Revenue year 1904-5.

(2) The division of establishment charges between Revenue Management and Maintenance is made in proportion to the above.

C.

Deccan and Gujarát for the year ending 31st March 1894

Revenue and Working Expenses.

WORKING EXPENSES.															
Management.			Maintenance and Repairs.										Indirect Charges.	Grand Total, Working Expenses.	Net Revenue.
Department.		Total Revenue Management.	Establishment.				Works.	Repairs.	Sundries.	Tools and Plant.	Plantations.	Total Cost of Maintenance.			
Navigation.	Civil Officers.		Direction.	Executive.	Medical.	Total.									
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
...	3,805	21,007	1,485	5,136	...	6,621	160	25,117	...	4,601	1,216	37,705	3,335	62,047	15,482
...	1,237	10,018	323	1,764	...	2,087	791	7,243	...	85	314	10,520	1,522	22,060	2,967
...	5,042	31,025	1,808	6,900	...	8,708	941	32,360	...	4,686	1,530	48,225	4,857	84,107	18,449
...	426	568	185	828	...	1,013	...	3,679	218	13	372	5,295	162	6,025	3,673
...	1,489	2,613	87	318	...	405	162	1,169	...	100	239	2,125	214	4,952	12,297
...	547	2,667	232	705	...	937	...	3,530	...	119	217	4,803	427	7,897	3,972
...	50	985	100	325	...	425	...	1,651	...	127	45	2,251	190	3,426	-2,257
...	7,173	22,479	2,108	5,654	...	7,762	...	30,577	...	2,693	470	41,502	3,230	67,211	1,80,709
...	709	8,646	750	2,470	...	3,220	7,777	4,177	...	101	928	16,203	1,562	26,411	-2,609
...	1,943	3,890	151	1,473	...	1,624	...	5,889	403	91	606	8,613	500	13,003	23,833
...	12,337	41,848	3,613	11,773	...	15,386	7,939	50,675	621	3,244	2,927	80,792	6,285	1,28,925	2,19,618
...	17,379	72,873	5,421	18,673	...	24,094	8,880	83,035	621	7,930	4,457	1,29,017	11,142	2,13,032	2,38,067
...	366	960	79	621	...	703	...	2,802	...	45	10	3,560	182	4,702	3,185
...	33	236	1	19	...	19	...	75	...	...	...	94	31	361	845
...	29	618	59	189	...	248	553	284	...	50	154	1,289	117	2,024	-603
...	311	2,776	277	831	...	1,708	-53	4,434	...	100	...	5,639	500	8,915	1,443
...	67	457	11	68	...	79	...	262	...	50	56	447	66	970	377
...	142	2,116	163	675	...	843	...	3,228	...	84	143	4,298	394	6,808	-3,634
...	379	1,442	120	357	...	477	...	1,818	...	103	92	2,490	216	4,148	2,432
...	517	926	95	192	...	287	...	1,143	...	113	5	1,548	97	2,571	7,779
...	17	103	13	33	...	46	...	185	...	113	...	344	18	465	57
...	171	1,252	109	345	...	454	606	1,203	...	113	9	2,385	215	3,852	-354
...	206	750	55	175	...	230	...	913	...	113	7	1,263	108	2,121	2,038
...	51	311	13	70	...	83	...	354	...	20	...	462	49	822	202
...	169	2,031	125	477	...	602	...	2,148	...	52	262	3,064	345	5,440	-1,139
...	257	475	25	213	...	233	...	906	...	12	48	1,204	64	1,743	3,605
...	330	1,017	81	676	...	757	...	2,857	...	115	171	3,900	202	5,119	1,617
...	292	1,068	100	805	...	905	...	3,113	...	119	507	4,644	235	5,947	650
...	105	218	15	117	...	132	...	503	...	12	25	672	34	924	1,208
...	319	973	181	1,125	...	1,306	3,550	1,486	...	52	190	6,584	270	7,827	-756
...	3	21	11	69	...	70	...	233	...	4	47	354	12	387	30
...	199	193	4	16	...	20	...	82	...	...	...	102	3	304	1,624
...	117	244	3	44	...	47	55	190	...	...	...	292	24	560	1,168
...	17	130	6	68	...	74	...	297	...	...	...	371	26	527	-175
...	92	222	14	118	...	132	...	438	...	...	91	661	37	920	1,198
...	65	179	13	103	...	116	50	414	...	...	...	580	32	791	95
...	86	86	...	...	...	...	...	...	...	...	...	...	...	86	775
...	4,370	18,810	1,583	7,398	...	8,931	4,761	29,418	...	1,270	1,817	46,247	3,277	68,334	23,667
...	1,522	2,499	49	561	...	610	...	2,327	...	282	212	3,331	222	6,052	24,594
...	23,271	94,182	7,053	26,632	...	33,685	13,641	1,14,680	621	9,482	6,486	1,73,595	14,641	2,87,418	2,86,328

with the orders contained in Government of India No. 98 A.L., dated 19th August 1884.

A. L. WRIGHT,
For Examiner of Public Works Accounts.

II.—C.

Statement showing the Financial Results of Irrigation Works in Deccan and Gujarat for the year 1893-94, based on actual Receipts.

Principal Results of Operations for the year ended 31st March 1894.

Irrigation Works.	Direct and Indirect Capital Outlay to end of 1893-94.	Gross Receipts, Direct and Indirect, from all sources.	Working Expenses, Direct and Indirect.	Net Revenue (excluding charges for interest.	Percentage of net Revenue on Capital Outlay to end of year.	Interest at 4 per cent. on Direct Capital Outlay at commencement of year and at 2 per cent. on Outlay during year.	SURPLUS REVENUE AFTER PAYING INTEREST ON DIRECT CAPITAL OUTLAY.		EXCESS CHARGES INCLUDING INTEREST ON DIRECT CAPITAL OUTLAY.	
							Amount.	Percentage on total sum at charge.	Amount.	Percentage on total sum at charge.
1	2	3	4	5	6	7	8	9	10	11
IMPERIAL.										
MAJOR WORKS.										
PROTECTIVE WORKS.										
<i>In Operation.</i>										
1. Nira Canal	53,53,085	77,529	62,047	15,482	*99	2,05,607	...	...	1,90,025	2*67
2. Mhasvad Tank	20,42,252	25,027	23,090	2,937	*15	79,121	...	...	76,184	2*67
Total	73,95,337	1,02,556	84,107	18,449	*25	2,84,628	...	...	2,66,179	2*67
<i>In Abeyance.</i>										
3. Chankápur Tank	67,012	.....	.....	...	...	2,549	...	...	2,549	2*04
4. Máládevi do.	36,116	.....	.....	...	...	1,358	...	...	1,358	2*67
Total	1,03,128	.....	.....	.....	...	3,907	...	...	3,907	2*73
Total Protective Works	74,98,465	1,02,556	84,107	18,449	*25	2,88,535	...	...	2,70,086	2*67
PRODUCTIVE WORKS.										
<i>In Operation.</i>										
5. Háthmati Canal	5,18,395	9,698	6,025	3,673	*71	19,637	...	...	15,964	1*63
6. Lower Pánjhra River Works	4,61,332	17,249	4,952	12,297	2*67	17,515	...	...	5,217	*71
7. Kádva River Works	7,32,416	11,869	7,697	3,973	*55	27,712	...	...	23,740	2*19
8. Pravara River Works—Láksh Canal	3,71,330	1,189	3,426	-2,257	*61	14,083	...	...	18,340	2*05
9. Mutha Canals	13,47,696	2,47,920	67,211	1,60,709	2*79	2,47,391	...	...	66,682	*70
10. Ekruk Tank	64,73,696	23,812	24,411	-2,609	*19	49,124	...	...	61,733	1*99
11. Krishna Canal	6,63,333	86,836	19,003	23,833	2*76	32,627	...	...	6,794	*56
Total, Productive Works	1,07,51,943	3,48,543	1,28,925	2,19,618	*704	4,07,988	...	...	1,88,370	1*09
Total, Major Works	1,82,50,408	4,51,099	2,13,022	2,38,067	1*30	6,96,523	...	...	4,58,456	1*67
MINOR WORKS AND NAVIGATION.										
<i>In Operation.</i>										
12. Khári Cut	1,31,848	7,887	4,703	3,185	1*75	6,738	...	...	3,553	1*46
13. Hartala Tank	73,392	1,206	301	645	*115	1,918	...	...	1,073	1*06
14. Mhasva do.	1,38,956	1,421	2,024	-601	*43	5,190	...	...	6,793	2*51
15. Jámda Canals	10,39,355	10,358	6,916	1,443	*14	39,562	...	...	38,169	1*73
16. Parsul Tank	2,18,573	1,947	970	377	*17	8,366	...	...	7,989	2*84
17. Pravara River Works—Ojhar Canal	3,30,191	3,174	6,808	-3,634	*110	22,394	...	...	16,018	2*82
18. Bhátodi Tank	8,79,707	6,580	4,148	2,432	*61	14,107	...	...	11,675	1*72
19. Matoba do.	2,00,727	10,350	2,571	7,779	3*88	7,620	258	0*10	...	...
20. Kásurdi do.	43,599	622	465	37	*18	1,633	...	...	1,576	1*65
21. Shirsuphal do.	2,21,662	3,498	3,852	-345	*16	6,182	...	...	6,536	2*51
22. Bhádalvádi do.	2,27,229	4,159	2,121	2,038	*50	8,624	...	...	6,466	1*92
23. Koregaon do.	39,189	1,024	622	302	*52	1,617	...	...	1,315	2*08
24. Ashti do.	8,31,093	4,301	5,440	-1,139	*11	30,066	...	...	31,225	2*47
25. Revári Canal	69,830	5,348	1,743	3,605	6*07	2,281	1,944	1*25	...	...
26. Upper Mán River Works	4,29,662	6,736	5,119	1,617	*38	16,297	...	...	14,680	2*12
27. Yerla River Irrigation Works	6,78,003	0,697	6,047	650	*10	25,126	...	...	24,476	2*84
28. Chikhli Canal	67,442	2,132	994	1,208	*10	2,152	...	...	944	*83
29. Máni Tank	3,69,610	7,071	7,827	-756	*19	14,707	...	...	15,463	2*29
30. Múchkhendi Tank	1,58,707	417	337	80	*02	5,696	...	...	6,579	2*62
31. Nízgund do.	9,027	.....	.....	.....	.....	351	...	...	351	2*76
32. Gadikeri do.	9,279	1,928	304	1,624	17*50	357	1,967	...	...	...
33. Dámhal do.	63,060	1,728	560	1,168	1*63	2,484	...	...	1,266	1*86
34. Medleri do.	51,362	352	637	-175	*21	3,134	...	...	3,304	2*63
35. Madag do.	1,67,618	2,113	930	1,183	*71	6,450	...	...	5,262	1*51
36. Asundi do.	62,459	618	761	96	*15	2,439	...	...	2,335	2*69
37. Mzvinkop do.	80,647	861	66	775	2*51	1,104	...	...	829	*66
Total	61,23,617	92,001	68,334	23,667	*38	2,28,134	...	...	2,04,407	2*00
<i>In Abeyance.</i>										
38. Gokák Canal, 2nd Section	1,00,294	.....	.....	.....	...	7,052	...	...	7,052	2*36
Total, Minor Works and Navigation	63,15,901	92,001	68,334	23,667	*38	2,35,186	...	...	2,11,519	2*01
PROVINCIAL.										
MINOR WORKS AND NAVIGATION.										
<i>In Operation.</i>										
39. Gokák Canal, 1st Section, and Storage Works	11,76,481	30,646	6,052	24,594	2*09	43,346	...	...	18,752	1*85
GRAND TOTAL	2,67,42,790	6,73,716	2,87,418	2,86,328	1*11	9,76,955	...	...	6,88,721	1*75

*The sum at charge being minus, no percentage can be calculated.

A. L. WRIGHT,
For Examiner, Public Works Accounts.

III.—C.

Demands and Realizations during the year 1893-94 in Deccan and Gujardt.

Irrigation Works.	Balance of demands unrealized at commencement of year.	DEMANDS OF THE YEAR.				Total, including balance at commencement of year.	Deduct—Remissions not including Cash Refunds.	Net Total.	Deduct—Amount unrealized at close of year.	Actual realizations of the year.
		Rabi, 1892-93.	Kharif, 1893-94.	Miscellaneous Receipts.	Total.					
1	2	3	4	5	6	7	8	9	10	11
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
IMPERIAL.										
MAJOR WORKS.										
<i>Protective Works.</i>										
1. Nira Canal	745	17,162	58,254	1,418	76,834	77,579	...	77,579	40	77,539
2. Mhasvad Tank	2,635	4,560	17,158	998	22,716	25,351	...	25,351	324	25,027
Total ...	3,380	21,722	75,412	2,416	99,550	1,02,930	...	1,02,930	364	1,02,566
<i>Productive Works.</i>										
5. Hathmati Canal	102	4,698	4,069	1,168	9,935	10,037	...	10,037	339	9,698
6. Lower Panjhra River Works	192	(b) 3,332	6,901	502	10,735	(a) 10,927	...	10,927	465	10,462
7. Kadva River Works	1,088	5,947	5,411	924	12,282	(a) 13,370	...	13,370	2,095	11,275
8. Pravara River Works—										
Lakh Canal ... ..	...	182	515	333	1,030	(a) 1,030	...	1,030	8	1,022
9. Mutha Canals	15,708	6,349	1,34,014	1,06,912	2,47,305	(a) 2,63,013	199	2,62,814	11,532	2,51,282
10. Ekruk Tank	1,012	2,155	12,038	9,094	24,187	25,199	...	25,199	1,397	23,802
11. Krishna Canal	515	7,909	34,913	1,419	44,246	44,761	...	44,761	7,924	36,837
Total ...	18,617	30,572	1,97,896	1,21,252	3,49,720	3,68,337	199	3,68,138	23,760	3,44,378
Total, Major Works ...	21,997	52,294	2,73,308	1,23,668	4,49,270	4,71,267	199	4,71,068	24,124	4,46,944
MINOR WORKS AND NAVIGATION.										
12. Khari Cut	2,205	213	9,789	558	10,560	12,765	...	12,765	4,878	7,887
13. Hartala Tank ... ..	...	195	50	961	1,206	1,206	...	1,206	...	1,206
14. Mhasva do. ... ..	...	227	120	1,074	1,421	1,421	...	1,421	...	1,421
15. Jambha Canals	21	3,075	4,360	3,937	11,372	11,398	...	11,398	1,035	10,358
16. Parsul Tank ... ..	...	1,086	253	8	1,347	1,347	...	1,347	...	1,347
17. Pravara River Works—										
Ojhar Canal	310	1,409	2,022	604	4,035	(a) 4,345	...	4,345	1,247	3,098
18. Bhatodi Tank	446	1,872	3,076	390	5,338	(a) 5,784	...	5,784	542	5,242
19. Matoba do.	—2	616	9,734	2	10,352	10,350	...	10,350	...	10,350
20. Kasurdi do. ... ..	...	202	131	189	522	522	...	522	...	522
21. Shirsuphal do. ... ..	...	1,255	2,159	90	3,504	3,504	...	3,504	...	3,504
22. Bhadalvadi do. ... ..	...	484	3,634	54	4,172	4,172	...	4,172	...	4,172
23. Koregaon do. ... ..	...	538	477	9	1,024	1,024	...	1,024	...	1,024
24. Ashiti do.	590	1,209	2,697	347	4,253	4,843	...	4,843	542	4,301
25. Revári Canal	27	2,717	2,463	148	5,325	5,355	...	5,355	...	5,355
26. Upper Man River Works ... ..	...	1,585	5,133	118	6,836	6,836	...	6,836	100	6,736
27. Yerla River Irrigation Works	103	3,688	2,076	762	6,526	6,629	...	6,629	25	6,604
28. Chikhli Canal	7	306	1,724	104	2,134	2,141	...	2,141	9	2,132
29. Masini Tank	166	2,068	4,862	101	7,031	7,197	...	7,197	126	7,071
30. Muchkundi do. ... ..	...	...	54	363	417	417	...	417	...	417
31. Nilgund do. ... ..	...	...	...	...	...	...	...	...	...	...
32. Gadikeri do. ... ..	...	...	...	...	...	(a) ...	...	...	...	...
33. Dambal do. ... ..	...	116	629	317	1,062	(a) 1,062	...	1,062	...	1,062
34. Medleri do. ... ..	...	68	282	2	352	352	...	352	...	352
35. Madag do.	435	1,134	796	269	2,199	2,634	...	2,634	516	2,118
36. Asundi do.	188	120	175	64	569	(a) 547	...	547	133	414
37. Mavinkop do. ... ..	...	...	...	5	5	(a) 5	...	5	...	5
Total, Minor Works and Navigation ...	4,496	24,183	56,696	10,476	91,355	95,851	...	95,851	9,153	86,698
PROVINCIAL.										
MINOR WORKS AND NAVIGATION.										
39. Gokak Canal, 1st Section, and Storage Works	4,963	2,218	8,509	14,956	25,683	30,646	...	30,646	...	30,646
GRAND TOTAL ...	31,456	78,695	3,33,513	1,49,100	5,66,308	5,97,764	199	5,97,565	33,277	5,64,288

(a) Exclusive of irrigation share of consolidated assessment.

(b) Inclusive of Rs. 2,121 on account of rabi of 1893-94 shown in Canal Return No. IX.

A. L. WRIGHT,
For Examiner, Public Works Accounts.

IV.—C.

Statement showing the Financial Results of Irrigation Works in Deccan and Gujarat for the year ended 1893-94, based on the Assessment of the year.

Principal Results and Operations for the year ended 31st March 1894.

Irrigation Works.	Capital Outlay (Direct and Indirect) to end of year.	REVENUE ASSESSED DURING THE YEAR.								Grand Total.	Working Expenses Direct and Indirect.	Net Assessed Revenue of the year.	Percent Age on Capital Outlay to end of year.
		Direct Assessed Revenue (a).							Indirect Revenue—(Land Revenue due to operation of Canal) (b).				
1	2	Occupier's Rate.	Owner's Rate.	Plantations.	Water-power.	Naviga-tion.	Miscellaneous.	Total.		10	11	12	13	14
IMPERIAL.	Ra.	Ra.	Ra.	Ra.	Ra.	Ra.	Ra.	Ra.	Ra.	Ra.	Ra.	Ra.	Ra.
MAJOR WORKS.													
<i>Protective Works.</i>													
1. Nira Canal	53,53,063	81,708	---	29	---	---	1,890	55,121	---	55,121	59,047	23,074	43
2. Mansarud Tank	20,42,358	21,409	---	35	---	---	9-3	22,599	---	22,599	22,000	3,420	15
Total	73,95,421	1,03,117	---	63	---	---	2,323	1,07,611	---	1,07,611	81,107	26,504	33
<i>Productive Works.</i>													
3. Hathmati Canal	8,18,808	9,088	---	254	---	---	912	10,256	---	10,256	6,025	4,231	52
4. Lower Panjhra River Works	4,61,331	10,537	---	125	---	---	577	11,659	6,755	17,847	4,852	12,995	73
7. Karda River Works	7,22,416	10,474	---	110	---	---	614	11,598	594	11,992	7,307	4,685	57
8. Pravara River Works—Lakh Canal	3,71,890	1,073	---	21	---	---	312	1,411	147	1,558	3,426	-1,868	50
9. Mutha Canals	64,74,660	1,85,982	---	145	6,000	---	1,09,767	2,45,774	42	2,45,916	67,211	1,78,705	72
10. Estruk Tank	13,40,358	14,364	---	335	---	---	9,619	24,375	---	24,375	26,411	-2,036	75
11. Krishna Canal	6,63,333	42,053	---	---	---	---	1,410	43,502	---	43,502	13,003	30,499	54
Total	1,07,51,943	2,39,616	---	692	6,000	---	1,14,200	9,47,558	7,571	9,55,129	1,25,925	8,29,204	81
Total, Major Works	1,81,47,364	3,31,901	---	1,055	6,000	---	1,15,613	4,55,469	7,571	4,63,040	2,15,032	2,50,008	105
MINOR WORKS AND NAVIGATION.													
12. Khari Cut	1,81,648	9,916	---	40	---	---	515	10,474	---	10,474	4,709	5,765	51
13. Hartala Tank	78,354	256	---	542	---	---	419	1,227	---	1,227	361	866	70
14. Mhavra do.	1,35,954	649	---	445	---	---	629	1,623	---	1,623	2,014	-401	29
15. Jamba Canals	10,39,385	6,859	---	3,519	---	---	415	10,667	---	10,667	6,015	4,652	43
16. Parsul Tank	2,15,572	1,413	---	---	---	---	6	1,420	---	1,420	870	550	39
17. Pravara River Works—Ojhar Canal	3,30,191	6,099	---	6	---	---	596	6,634	76	6,710	6,998	-288	70
18. Bhirodi Tank	3,79,707	5,172	---	45	---	---	542	6,592	1,351	6,613	4,148	2,465	37
19. Mitoba do.	2,00,727	19,700	---	2	---	---	---	10,792	---	10,792	2,571	8,221	41
20. Kasardi do.	45,590	320	---	---	---	---	150	538	---	538	405	133	24
21. Shirsughal do.	2,21,562	9,438	---	---	---	---	90	3,125	---	3,125	3,822	-727	15
22. Badalvadi do.	2,27,220	4,349	---	---	---	---	64	4,403	---	4,403	2,121	2,282	100
23. Goregaon do.	20,159	1,977	---	---	---	---	9	1,016	---	1,016	622	394	39
24. Ashu do.	6,31,064	1,569	---	215	---	---	102	4,207	---	4,207	5,449	-1,242	15
25. Revtri Canal	59,350	6,350	---	---	---	---	145	6,495	---	6,495	1,743	4,752	73
26. Upper Man River Works	4,22,562	7,971	---	---	---	---	115	7,159	---	7,159	5,119	2,040	28
27. Yaria River Irrigation Works	6,75,603	4,358	---	---	---	---	7-2	7,745	---	7,745	6,947	798	10
28. Conkhli Canal	57,442	2,033	---	---	---	---	104	2,137	---	2,137	904	1,233	211
29. Mam Tank	3,96,910	6,534	---	---	---	---	101	6,635	---	6,635	7,227	-1,592	11
30. Machkundi Tank	1,55,707	60	---	209	---	---	1-5	423	---	423	327	96	22
31. Nilgund do.	9,627	---	---	---	---	---	---	---	---	---	---	---	---
32. Gadikeri do.	9,279	---	---	---	---	---	---	---	1,967	1,967	34	1,933	176
33. Dumbal do.	63,950	679	---	23	---	---	204	940	---	1,492	1,601	1,102	172
34. Medleri do.	51,372	410	---	---	---	---	2	412	---	412	627	-215	70
35. Madar do.	1,67,568	1,592	---	---	---	---	290	2,161	---	2,161	920	1,241	57
36. Asundi do.	61,459	391	---	---	---	---	64	355	---	419	701	282	74
37. Mgrukop do.	3,247	---	---	---	---	---	5	6	---	606	601	55	201
Total, Minor Works and Navigation	61,25,617	68,978	---	5,079	---	---	5,397	26,404	5,406	1,01,902	63,334	38,568	38
PROVINCIAL.													
<i>Minor Works and Navigation.</i>													
38. Gokak Canal, First Section, and Storage Works	11,76,451	11,629	---	64	14,750	---	132	26,165	---	26,165	6,072	20,093	174
GRAND TOTAL	3,54,42,378	4,20,698	---	6,199	20,760	---	1,22,142	5,75,506	12,977	5,91,487	2,87,416	3,04,071	119

(1) Excluding remissions shown in canal Return No. V, for Khar and Rabi seasons of 1893-94.
 (2) Irrigation share of the land revenue assessment.

STATEMENT I-E.

Statement of Areas irrigated by Irrigation Works in the Bombay

No.	Name of Canal.	AREA IRRIGATED BY ACRES.							AVERAGE DISCHARGE, CUBIC FEET PER SECOND.				
		Kharif.	Rabi.	Total.	Flow.	Lift.	Double-cropped.		At Head.		Utilized.		
							Area irrigated.	Percentage of Total Area.	Kharif.	Rabi.	Kharif.	Rabi.	
1	2	3	4	5	6	7	8	9	10	11	12	13	
MAJOR WORKS.													
<i>Protective Works.</i>													
1	Nira Canal	13,556	10,947	24,503	24,442	61	...	...	252	296	208	240
2	Mhasrad Tank	3,907	1,376	5,283	5,244	39	625	11.83	102.73	73.70	102.73	73.70	
	Total	17,463	12,323	29,786	29,686	100	625	2.10	...	...	...	...
<i>Productive Works.</i>													
5	Hathmati Canal	1,259	2,442	3,701	3,663	38	...	...	70	75	32	35
6	Lower Panjra River Works	1,558	1,442	3,000	2,995	5	42	1.40	9.23	15.34	9.23	15.34	
7	Kadwa River Works	Waghad Tank	...	...	...	...	...	...	...	...	...	...
		Palkhed Canal	665	1,439	2,104	2,091	13	12	0.57	13.21	24.87	9.64	14.50
8	Pravara River Works—Lakh Canal.	Ojhar Tambat Canal	174	364	538	533	...	5	0.93	2.66	4.4	2.03	3.39
		Wadali Canal	185	200	385	384	1	1	0.26	6.56	6.17	3.94	3.70
9	Mutha Canals	6,634	1,625	8,259	8,193	61	847	10.25	151.99	144.15	Not obtainable; allowed to run into Matoba Tank.		
10	Ekrak Tank	2,247	642	2,889	2,583	36	74	2.56	44.96	54.41	44.96	54.41	
11	Krishna Canal	2,810	1,932	4,742	4,026	716	15	0.32	61.19	102.01	55	71	
	Total	15,608	10,353	25,961	25,071	690	999	3.84	...	...	...	...
	Total, Major Works	33,071	22,676	55,747	54,757	990	1,624	2.91	...	...	...	...
MINOR WORKS AND NAVIGATION.													
12	Khsri Cut	1,760	26	2,786	1,698	85	...	...	11.57	0.75	8.14	2.08
13	Hartala Tank	11	107	118	117	1	5	4.24	0.56	1.26	0.56	1.26	
14	Mhasva do.	18	211	229	228	1	2	0.87	1.54	2.71	1.54	2.71	
15	Jamda Canals	503	1,040	1,538	1,588	...	78	4.91	55.19	66.59	55.19	66.59	
16	Parsul Tank	69	290	359	358	1	44	12.26	1.42	2.24	1.42	2.24	
17	Pravara River Works—Ojhar Canal.	352	1,891	2,243	2,221	22	31	1.35	31.69	40.99	25.70	36.18	
18	Bhatodi Tank	648	965	1,613	1,588	25	56	3.47	4.24	9.85	4.24	9.85	
19	Matoba do.	732	40	1,142	1,142	...	146	1.75	9.06	10.55	9.06	10.55	
20	Kasurdi do.	41	83	124	124	...	23	1.55	...	...	...	...
21	Shirsuphal do.	475	438	913	913	...	151	16.54	8.46	7.27	8.46	7.27	
22	Bhadalvadi do.	487	277	764	764	...	108	14.14	4.95	5.54	4.95	5.54	
23	Koregaon do.	94	258	352	351	1	...	...	0.87	2.81	0.87	2.81
24	Ashta do.	711	487	1,198	1,187	11	161	12.69	10.25	12.62	10.25	12.62	
25	Revatri Canal	213	1,135	1,348	1,343	5	25	1.85	5.65	10.15	5	2	
26	Upper Man River Works	942	518	1,490	1,484	6	161	10.51	3.57	8.07	2	4	
27	Yerla River Irrigation Works.	424	1,534	1,958	1,945	13	63	3.47	5.91	13.09	2	6	
28	Chikhli Canal	291	79	370	368	2	3	0.81	4.25	8.65	3	4	
29	Mainsi Tank	866	493	1,359	1,339	10	63	4.64	4.43	8.37	4	6	
30	Muchkundi Tank	10	2	12	12	...	...	...	...	...	...	...
31	Nigund do.	...	...	...	...	...	...	...	...	...	...	...
32	Gaulkeri do.	337	...	337	...	...	...	...	...	...	...	...
33	Dambal do.	110	17	127	127	...	...	...	1.52	1.76	...	...
34	Medleri do.	75	21	96	80	16	...	...	0.26	0.19	All utilized except leakage in canal.	
35	Madag do.	318	374	692	692	...	...	...	3.74	8.76	...	...
36	Asundi do.	60	25	85	76	9	...	...	0.54	1.21	...	...
37	Mavinkop do.	492	...	492	...	...	...	...	...	...	...	...
	Total	9,215	10,751	19,966	19,745	221	1,115	5.58	...	...	...	...
		926	124	1,050	...	...	...	...	...	...	...	...
PROVINCIAL.													
39	Gokak Canal, 1st Section	3,014	1,223	4,237	4,152	55	...	...	15.16	20.67	...	...
		...	1,105	...	...	...	...	...	...	...	...	...
	GRAND TOTAL	45,300	34,650	79,950	78,654	1,296	2,729	3.42	...	...	...	...
		926	124	1,050	...	...	...	...	...	...	...	...

WRIGHT & Co. Sd/-

E.

Presidency, excluding Sind, during the year 1893-94.

AREA IRRIGATED PER CUBIC FOOT PER SECOND.				BASE TO WHICH THE DUTIES OF WATER ARE CALCULATED.		REMARKS.
Discharged at Head,		Utilized.		Kharif.	Rabi.	
Kharif.	Rabi.	Kharif.	Rabi.			
14	15	16	17	18	19	20
53.79	36.93	65.17	39.10	16th January to 15th October.	16th October to 15th January.	
38.03	18.67	38.03	18.67	16th January to 15th October.	16th October to 15th January.	
...			
17.93	32.56	39.35	69.77	1st June to 30th September...	1st October to 31st December.	
168.80	94.00	168.80	94.00	April to September ...	October to January.	
...	
50.34	57.86	68.98	99.24	} 1st June to 15th October ...	} 16th October to end of February.	
60.84	75.21	85.71	107.37			
53.05	58.33	88.32	98.11	} June to September ...	} October to January.	
3.20	13.31	4.20	15.19			
43.65	11.27	Not obtainable.		16th January to 15th October.	16th October to 15th January.	
49.97	11.79	49.97	11.79	16th January to 15th October.	Do.	
46	19	51	27	15th January to 14th October.	15th October to 14th January.	
...			
...			
152.12	34.66	216.21	12.5	July to October ...	November to February ...	† Besides this, water was used for 242 acres of land assessed on the Chandola Tank which have not been accounted for.
19.64	84.92	19.64	84.92	} April to September ...	} October to January.	
11.69	77.86	11.69	77.86			
8.73	16.22	8.73	16.22	} June to September ...	} October to January.	
48.59	129.46	49.69	129.46			
11.11	46.13	13.70	52.27			
152.83	97.97	152.83	97.97	} 16th January to 15th October	} 16th October to 15th January.	
80.79	37.79	80.79	37.79			
...	...	...	...	} 16th January to 15th October	} 16th October to 15th January.	
56.14	60.25	56.14	60.25			
98.38	50.00	98.38	50.00	} 16th January to 15th October	} 16th October to 15th January.	
108.04	91.81	108.04	91.81			
69.36	38.59	69.36	38.59	} 15th January to 14th October.	} 15th October to 14th January.	
38	112	42	142			
243	68	470	137			
71	112	212	255			
63	9	97	19			
195	59	116	82			
Not known				No experiments made.		
...	
...	
113	(a) 32	Not known.		} 16th January to 15th October.	} 16th October to 15th January.	* Area on which consolidated assessment is levied.
288	(b) 216	Do.				
85	(c) 44	Do.				
111	(d) 124	Do.				
...			
...	
198	112	198	112	16th January to 15th October.	16th October to 15th January.	
...	

† During rabi season 8 months and perennial crops are irrigated. The area of this is included in kharif, but must be added to rabi area to get duty of water.
 (a) In the rabi season 39 acres of perennial crops were irrigated in addition to the 17 acres shown in the statement and this has been taken into calculation.
 (b) Do. 20 " do. do. 31 " do. do.
 (c) Do. 15 " do. do. 374 " do. do.
 (d) Do. 1 " do. do. 149 " do. do.

Statement showing Incidence of Working Expenses and Assessed Water Revenue

No.	Name of Work.	Average Discharge of the year at Canal Head in Cubic Feet per Second.	WATER-RATE ASSESSED.					Gross assessed Revenue from all sources.	Working Expenses, Interest and Insurect.	
			Occupier's.	Owner's.	Total Direct.	Indirect.	Total Direct and Indirect.			
			Rs.		Rs.	Rs.	Rs.	Rs.		
MAJOR WORKS.										
<i>Protective Works.</i>										
1	Nira Canal	255	83,703	...	83,703	...	83,703	65,121	62,047	
2	Mhasvad Tank	95.48	21,492	...	21,492	...	21,492	22,490	22,060	
	Total ...	...	1,05,195	...	1,05,195	...	1,05,195	1,07,611	84,107
<i>Productive Works.</i>										
5	Hathmati Canal	69	9,088	...	9,088	...	9,088	10,256	6,026	
6	Lower Pánjra River Works ...	10.45	10,557	...	10,557	6,788	17,345	17,847	4,952	
7	Kádva River Works	Wághad Tank ... ..	...	...	...	...	...	76	919
		Pákhed Canal	19.02	7,245	...	7,245	594	7,839	6,593	4,660
		Ojhar Támbhat Canal	3.84	1,923	...	1,923	...	1,923	1,935	940
8	Pravara River Works—Lákh Canal	3.17	1,306	...	1,306	...	1,306	1,388	1,178	
	Total ...	...	1,078	...	1,078	147	1,225	1,558	3,426
9	Mutha Canals	148.07	1,38,962	...	1,38,962	42	1,39,004	2,45,916	67,211	
10	Ekrúk Tank	48.54	14,364	...	14,364	...	14,364	24,358	26,411	
11	Krishna Canal	62.30	42,083	...	42,083	...	42,083	43,602	13,003	
	Total ...	...	2,26,606	...	2,26,606	7,571	2,34,177	3,55,429	1,28,925
	Total, Major Works ...	...	3,31,801	...	3,31,801	7,571	3,39,372	4,63,040	2,13,032
MINOR WORKS AND NAVIGATION.										
12	Khátri Cut... ..	6.57	9,916	...	9,916	...	9,916	10,474	4,703	
13	Hartála Tank	0.99	266	...	266	...	266	1,227	361	
14	Mhasva Tank	2.30	549	...	549	...	549	1,623	2,024	
15	Jámda Canals	59.60	6,630	...	6,630	...	6,630	10,567	8,915	
16	Parsul Tank	1.71	1,418	...	1,418	...	1,418	1,426	970	
17	Pravara River Works—Ojhar Canal	34.38	6,030	...	6,030	76	6,106	6,710	6,608	
18	Bhatodi Tank	6.36	5,172	...	5,172	1,351	6,523	6,913	4,148	
19	Matoba do.	8.95	10,790	...	10,790	...	10,790	10,792	2,671	
20	Kásurdi do. ... ..	...	339	...	339	...	339	628	465
21	Shirsuphal do.	7.86	3,436	...	3,436	...	3,436	3,626	3,852	
22	Bhádalvádi do.	5.25	4,349	...	4,349	...	4,349	4,403	2,121	
23	Koregaon do.	1.35	1,007	...	1,007	...	1,007	1,016	622	
24	Ashti do.	10.84	3,860	...	3,860	...	3,860	4,207	5,440	
25	Rovari Canal	5.69	6,260	...	6,260	...	6,260	6,408	1,743	
26	Upper Man River Works ...	3.71	7,071	...	7,071	...	7,071	7,189	5,119	
27	Yerla River Irrigation Works ...	6.55	6,986	...	6,986	...	6,986	7,748	5,947	
28	Chikhli Canal	4.60	2,033	...	2,033	...	2,033	2,137	924	
29	Maini Tank	4.64	6,534	...	6,534	...	6,534	6,635	7,827	
30	Muchkundi do.	Not known.	60	...	60	...	60	423	387	
31	Nilgund do. ... ..	...	...	...	...	...	...	...	...
32	Gadikeri do. ... ..	...	...	...	...	1,987	1,987	1,987	304
33	Dámbal do.	1.51	679	...	679	606	1,345	1,662	560	
34	Medleri	0.24	410	...	410	...	410	412	527	
35	Madug	5.01	1,892	...	1,892	...	1,892	2,161	920	
36	Asundi	0.61	291	...	291	472	763	827	791	
37	Márinkop ... ..	...	...	...	...	856	856	861	86
	Total ...	...	85,078	...	85,078	5,408	91,386	1,01,862	68,334
PROVINCIAL.										
39	Gokák Canal, 1st Section, and Storage Works	17.91	11,629	...	11,629	...	11,629	26,585	6,056	
	GRAND TOTAL ...	...	4,29,408	...	4,29,408	12,979	4,42,387	5,91,487	2,67,411

on Canada in the Dominion Presidency, including Study, during the year 1927-28.

E

XXXX

District	Area	Working Salaries		Officers' Salaries		Total Wages-Salaries	
		Per Cent. of Gross	Per Cent. of Second	Per Cent. of Gross	Per Cent. of Second	Per Cent. of Gross	Per Cent. of Second
.....	2,701	28.74	1.63	87.29	2.46	131.77	2.46
.....	3,000	12.09	1.95	47.1	3.51	1,010	3.73
.....	2,104	27	.....	250	3.44	351	3.73
.....	339	49	1.73	243	3.37	301	3.57
.....	343	250	9.09	167	3.14	37	3.57
.....	8,289	27	9.14	434	10.93	838	10.93
.....	2,889	108	9.14	244	4.97	303	4.97
.....	4,742	30	2.73	208	4.37	673	4.37
.....	22,961	36.29	4.94	.....	9.73	.....	9.02
.....	52,747	46.00	3.32	.....	3.96	.....	3.08
.....	1,786	44.88	2.43	74.68	3.53	1,509.44	3.53
.....	1,178	29	3.06	364	2.23	369	2.23
.....	229	125	8.84	380	2.40	234	2.34
.....	1,384	84	3.61	180	4.17	111	4.17
.....	330	64	2.70	267	3.95	329	3.95
.....	2,243	101	3.04	198	2.69	173	2.73
.....	1,613	60	2.97	652	3.27	373	3.27
.....	1,142	24	2.25	287	9.43	1,206	9.43
.....	124	88	3.73	427	3.73	427	3.73
.....	913	109	4.22	450	3.73	427	3.73
.....	764	43	2.23	404	2.60	328	2.60
.....	332	81	2.37	609	2.82	743	2.82
.....	1,198	120	5.56	301	3.22	329	3.22
.....	1,348	27	1.20	308	4.64	1,100	4.64
.....	1,490	71	3.44	1,380	4.73	1,308	4.73
.....	1,238	77	3.04	909	3.67	1,067	3.67
.....	443	43	2.49	201	3.43	442	3.43
.....	1,329	118	1,687	1,687	4.91	1,408	4.91
.....	12	91	32	.....	2.00	.....	2.00
.....	327	18	.....	.....	.....	.....	.....
.....	127	33.68	4.41	309	3.53	373	3.53
.....	97	.....	.....	.....	.....	.....	.....
.....	96	127.91	3.5	196	4.27	178	4.27
.....	692	42.57	1.33	183	2.73	273	2.73
.....	86	93.64	9.31	1,297	3.42	477	3.42
.....	4,227	22.76	1.43	327.91	2.74	649	2.74
.....	1,0204	67.08	3.42	.....	4.50	.....	4.50
.....	1,0364	.....	.....	.....	.....	.....	.....
.....	1,0364	.....	.....	.....	.....	.....	.....

On total area of 22,961 Acres, 234 acres were not worked. The area of 2,701 Acres was not worked. The area of 1,0364 Acres was not worked. The area of 1,0364 Acres was not worked.

II—E.

Statement of Quantity and Value of Crops irrigated in the Bombay, excluding Sind, during the year 1893-94.

	(1) NIRA CANAL.		(2) MHASVAD TANK.		(3) HÁTHMATI CANAL.		(6) LOWER PÁNTHRA RIVER WORKS.		(7) KÁDVA RIVER WORKS.						(8) PRAVARA RIVER WORKS—LÁKH CANAL.		(9) MUTHA CANALS.		
	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Páikhed Canal.		Ojhar Tánbát Canal.		Wadáli Canal.		Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	
									Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.					Area irrigated.	Estimated Value.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	
Gardens and (Vegetables... ..	121	1,747	96	1,920	...	...	78	1,225	75	2,625	23	805	1	35	7	123	212	8,518	
Orchards ... { Fruit and other trees ...	123	11,535	62	4,030	1	30	583	33,783	21	1,155	4	220	1	55	28	3,464	631	73,184	
Sugarcane	3,436	8,13,282	410	1,02,500	17	2,550	70	5,062	211	31,650	47	7,050	17	2,550	30	4,800	4,644	18,32,015	
Cereals ...	Wheat	2,532	38,354	628	18,840	716	21,480	84	12,218	860	24,080	208	5,824	112	3,136	68	2,380	374	16,621
	Barley	10	134	38	380	341	8,525	...	...	...	...	...	...	...	...	...	...	3	59
	Rice... ..	197	2,765	191	3,820	1,160	51,525	53	902	15	525	1	35	2	70	...	...	162	8,341
	Maize	169	1,612	322	3,220	25	375	38	187	...	...	1	10	...	...	...	...	7	176
	Jowár	6,537	1,36,495	442	6,630	...	...	1	11	...	...	2	16	...	...	85	2,040	511	10,235
	Chino, Rági, Rála, Wara... ..	18	97	67	670	447	11,175	...	...	...	...	2	16	...	...	39	819	19	493
	Báji	3,580	18,313	34	340	...	...	38	550	2	20	...	...	...	...	...	...	14	364
Miscellaneous	7	125	...	...	12	...	...	...	14	140	2	20	3	30	14	364	270	4,858	
Pulses ...	Gram, Udid, Mug	1,914	26,371	198	3,960	857	21,425	28	410	146	2,628	27	486	21	378	30	960	527	10,629
	Túr... ..	11	111	11	220	...	...	4	71	...	...	...	...	...	...	...	...	2	18
	Peas... ..	1	5	...	...	...	...	447	3,694	...	...	...	...	...	...	...	...	2	47
	Ground-nut	5,311	1,55,500	2,526	1,26,300	...	...	546	13,272	529	21,160	141	5,640	193	7,720	...	...	255	6,027
Miscellaneous ... ..	...	...	...	...	...	...	1	10	12	120	6	60	6	60	...	...	5	102	
Fodder Crops ...	Fodder	89	1,627	113	5,650	...	...	2	35	11	198	6	108	1	18	...	...	19	708
	Lucerne, &c. ... ..	...	...	...	...	...	...	1	16	1	60	...	...	...	...	...	...	175	28,652
Fibres ...	Cotton	3	81	...	...	...	...	89	1,217	...	...	...	...	...	...	...	...	1	32
	Tág (Hemp)	15	86	...	...	...	...	1	5	1	15	...	...	...	...	...	...	1	10
Dyes ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drugs and Narcotics ...	Tobacco	40	1,314	9	450	...	...	3	60	8	240	...	...	...	...	11	860	...	...
	Bháng	14	692	4	500	...	...	...	...	...	...	...	...	...	18	1,440	6	120	
Oil-seeds ...	Mustard, Sesam	1	25	1	20	...	...	67	1,609	1	25	...	...	...	...	...	...	1	16
	Linseed, Castor-oil	6	104	1	20	39	1,550	7	51	...	...	...	...	...	...	...	...	...	...
Condiments ...	Chilly and Onions	295	9,087	129	5,760	4	200	62	1,684	43	2,580	40	2,400	6	360	10	599	173	6,398
	Garlic, Turmeric and Methi	24	3,856	1	40	92	3,680	42	1,328	144	5,760	28	1,120	22	860	3	180	3	115
Miscellaneous	49	54	...	...	...	...	...	...	10	50	...	...	...	...	...	...	...	14	275
Land insufficiently irrigated ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...
Total	24,503	12,23,372	5,283	2,84,670	3,701	1,22,525	3,000	77,400	2,104	93,031	538	23,814	385	15,272	343	18,049	8,259	20,30,651	
Area on which consolidated assessment is levied ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

III—E—continued.

	(10) EKRU'K TANK.		(11) KRISHNA CANAL.		(12) KHA'RI CUT.		(13) HARTA'LA TLNK.		(14) MNASVA TANK.		(15) JA'MDA CANALS.		(16) PARSUL TANK.		(17) PRAVABA RIVER WORKS—OJHAR CANAL.		(18) BHATODI TANK.		
	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	
Gardens and { Vegetables... Orchards. { Fruit and other trees	50 50	2,000 5,000	123 56	5,485 3,913	... ...	... ...	1 4	25 220	... 9	... 840	62 38	1,776 3,020	2 8	22 208	17 42	299 5,196	5 31	95 2,925	
Sugarcane	680	2,04,000	1,449	2,53,505	12	2,400	...	...	1	40	198	15,656	2	152	162	25,920	33	5,940	
Cereals	Wheat	309	7,725	268	11,937	25	750	94	2,260	176	2,113	794	14,928	139	1,943	964	33,740	68	3,808
	Barley	3	60	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Rice...	410	12,300	313	12,536	1,749	87,400	3	72	2	37	63	1,146	...	...	19	1,520	17	1,147
	Maize	10	200	6	164	...	...	...	...	...	...	16	209	7	53	...	...	1	9
	Jowar	110	2,200	180	7,647	...	...	...	...	2	25	67	893	...	...	465	11,160	688	20,984
	Chino, Ragi, Rala, Wara... Bajri Miscellaneous	... 2 ...	... 20 ...	1 3	24 56	...	...	...	...	...	...	1 1	10 ...	26 8	319 100	51	1,326	...	...
Pulses...	Gram, Udid, Mug...	129	1,935	7	180	...	...	11	115	30	355	188	2,724	70	702	416	13,312	170	5,440
	Thr...	1	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Peas...	...	...	26	791	...	...	...	...	3	16	20	105	...	...	...	...	...	...
	Ground-nut Miscellaneous	918 ...	27,540 ...	2,105 ...	1,05,250 ...	...	...	1	30	1	19	3	54	...	...	18	900	496	24,800
Fodder Crops...	Fodder	98	1,960	35	1,050	...	...	...	...	1	4	2	21	15	225	2	125	1	25
	Lucerne, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fibres...	Cotton	...	...	...	...	...	...	...	...	...	...	2	16	3	43	...	...	...	...
	Tág (Hemp)	...	...	...	...	...	...	...	...	...	...	16	234	...	...	...	...	...	...
Dyes ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Drugs and Nar- cotics	Tobacco	1	30	5	780	...	...	2	85	...	...	2	82	...	...	22	1,760	14	1,120
	Bháng	...	...	12	1,220	...	...	...	...	...	...	...	...	...	...	35	2,800	47	4,700
Oil-seeds	Mustard, Sesam	...	...	...	...	...	...	1	22	...	...	4	72	10	133	...	...	...	...
	Linseed, Castor-oil	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Condiments	Chilly and Onions	76	2,660	88	5,293	...	...	1	12	4	143	100	3,356	4	69	26	1,577	41	3,835
	Garlic, Turmeric and Methi	16	480	26	4,480	...	...	...	...	...	...	11	101	65	648	4	240	...	...
Miscellaneous	22	...	39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Land insufficiently irrigated	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	2,889	2,68,130	4,742	4,14,211	1,786	90,550	118	2,841	229	3,592	1,588	44,403	359	4,617	2,243	99,875	1,613	74,858	
Area on which consolidated assessment is levied	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

II—E—continued.

	(19) MATOBA TANK.		(20) KASURDI TANK.		(21) SHRESUPHAL TANK.		(22) BHADALVADI TANK.		(23) KORNGAON TANK.		(24) ASHTI TANK.		(25) REVARI CANAL.		(26) UPPER MAIN RIVER WORKS.		(27) YERLA RIVER IRRIGATION WORKS.		(28) CHIKELI CANAL.		
	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	Area irrigated.	Estimated Value.	
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	
Gardens and Orchards ...	2	58	5	53	1	45	...	...	2	80	1	40	5	50	47	1,150	16	340	6	276
Vegetables... Fruit and other trees	6	879	...	...	32	4,829	14	2,095	...	...	14	1,400	68	2,850	2	96	51	1,350	17	1,190
Sugarcane ...	540	2,12,820	3	640	157	56,123	301	1,11,491	50	15,000	80	24,000	97	17,460	108	10,260	17	2,159	36	6,315	
Cereals	Wheat	220	9,237	21	489	221	8,265	89	3,235	6	150	224	5,600	128	3,840	269	3,546	321	6,420	26	866
	Barley	1	19	25	175	9	200
	Rice	43	861	2	46	17	260	80	1,197	13	325	212	5,300	19	475	16	544	2	50	6	220
	Maize	3	67	35	700	71	568	13	156
	Jowar	97	1,549	44	872	91	1,369	164	2,463	170	3,400	110	2,200	540	11,220	235	4,124	396	13,860	9	292
	Chino, Bāgi, Rasla, Wara	1	5	3	65	4	112	1	8	6	60	1	...	75	450	30	600	3	56
Bājri	85	2,029	16	360	175	3,866	9	189	...	...	4	80	...	...	50	450	...	...	...	...
Miscellaneous	36	1,720	11	146	39	537	10	3,842	...	...	19	950	...	...	...	...	...	...	...	...
Pulses	Gram, Udid, Mug	61	1,076	11	175	144	2,273	46	665	2	50	174	475	4	48	106	1,590	148	2,960	12	300
	Tūr	5	47	3	75	1	19
	Peas	1	23	2	35	6	115	73	3,120	281	11,240	651	26,040	439	26,460	925	34,225	205	15,400
	Ground-nut
Miscellaneous	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fodder Crops	1	3	...	...	...	...	13	196	...	...	...	...	...	...	...	...	...	...	...	...
Fodder	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucerne, &c.	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fibres	Cotton	...	...	...	...	2	20	2	24	...	...	...	...	...	...	...	...	...	...	...
	Tāg (Hemp)	2	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dyes	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	
Drugs and Narcotics	Tobacco	3	51	...	...	1	15	1	12	2	80	7	280	...	...	2	60	...	...
	Bhāng	6	116	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Oil-seeds	Mustard, Sesam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Linseed, Castor-oil	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Condiments	Chilly and Onions	38	1,024	6	67	20	571	19	473	6	240	28	1,120	16	800	39	1,082	33	1,550	30	1,980
	Garlic, Turmeric and Methi	4	80	23	1,035	14	910	4	90	10	290	20	3,085
Miscellaneous	1	10	...	...	3	51	...	...	...	...	...	...	5	...	2	...	...	...	...
Land insufficiently irrigated	5	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...
Total	1,142	2,31,564	124	2,952	913	78,392	764	1,26,671	352	23,480	1,198	53,520	1,348	63,693	1,490	50,645	1,958	64,293	370	29,980	
Area on which consolidated assessment is levied	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

* The area is 10 gunthās only.

III-E—concluded.

1105—f

	(29) MAINI TANK.		(30) MUCHKUNDI TANK.		(32) GADIKERI TANK.		(33) DÁMBAL TANK.		(34) MEDLERI TANK.		(35) MADAG TANK.		(36) ASUNDI TANK.		(37) MÁVINKOP TANK.		(39) GOKA'S CANAL 1ST SECTION, AND STORAGE WORKS.		TOTAL.		
	Area irrigated.	Estimat- ed value.	Area irrigated.	Estimat- ed value.	Area irrigat- ed.	Estimat- ed value.	Area irrigat- ed.	Estimat- ed value.	Area irrigat- ed.	Estimat- ed value.	Area irrigat- ed.	Estimat- ed value.	Area irrigat- ed.	Estimat- ed value.	Area irrigat- ed.	Estimat- ed value.	Area irrigated.	Estimated value.	Area irrigated.	Estimated value.	
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	
Gardens and { Vegetables	64	1,200	1	24	...	...	35	500	2	70	77	3,850	31	1,500	...	...	213	10,650	1,381	46,585
Orchards. { Fruits and other trees ...	26	1,312	2	24	...	...	8	600	27	1,430	1	50	1	63	...	...	45	4,500	1,986	1,73,046
Sugarcane	77	15,400	2	100	...	...	35	1,750	2	60	15	700	...	...	...	...	124	24,600	13,063	38,08,150
Cereals ...	Wheat... ..	150	4,345	...	...	...	...	...	...	...	...	...	...	...	...	...	5	150	10,856	2,68,280
	Barley... ..	1	20	...	...	...	...	...	...	...	...	...	...	...	...	...	214	5,350	645	14,922
	Rice	51	930	6	108	21	400	19	390	272	5,450	5	80	106	3,180	5,217	1,98,957
	Maize	28	280	...	6	...	...	...	...	...	...	...	...	...	...	...	1,279	31,975	2,031	39,967
	Jowár	47	940	...	...	...	...	17	360	...	...	...	...	...	...	...	794	23,820	11,604	2,64,704
	Chino, Rági, Rála, Wara	21	325	...	...	...	...	...	...	...	...	...	...	...	...	...	332	6,640	1,069	21,629
Báji	8	165	...	...	...	...	...	...	...	...	...	...	...	...	...	7	140	4,378	33,485	
Miscellaneous... ..	...	...	...	...	...	...	...	...	...	...	2	15	...	...	...	...	...	...	398	35,597
Pulses ...	Gram, Udid, Mug	220	4,390	†...	2	...	...	...	...	...	...	...	...	...	...	...	143	2,145	5,830	1,08,159
	Tár ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	15	39	596
	Peas ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	505	4,772
	Ground-nut	602	36,120	...	...	...	...	...	...	...	...	...	...	...	...	...	157	4,710	16,390	6,51,700
Miscellaneous ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30	352
Fodder Crops. { Fodder	7	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	416	12,063
	Lucerne, &c. ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	177	28,733
Fibres ... { Cotton... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25	500	123	1,889
	Tág (Hemp) ... ..	...	...	...	...	...	...	...	12	330	...	...	...	...	...	...	20	500	72	1,242
Dyes ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.....
Drugs and { Tobacco	6	180	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	139	7,479
	Narcotics. { Bháng... ..	1	80	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	143	11,668
Oil-seeds .. { Mustard, Sesam ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	175	93	2,097
	Linseed, Castor-oil ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	125	58	1,860
Condiments... { Chilly and Onions	23	1,100	...	2	...	...	6	40	...	...	...	...	...	...	...	...	551	22,040	1,917	77,502
	Garlic, Turmeric and Methi .	44	1,130	1	10	...	...	5	40	33	960	318	9,540	48	1,350	...	13	520	1,018	41,928
Miscellaneous	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	196	2,940	344	3,380
Land insufficiently irrigated ... ..	...	...	...	...	...	...	...	...	1	...	7	...	...	...	...	...	...	...	28	.....
Total ..	1,359	68,012	12	276	...	...	127	3,690	96	3,240	692	19,605	85	2,993	...	...	4,237	1,44,875	79,950	58,59,743
Area on which consolidated assessment is levied ... ..	...	...	...	...	337	...	97	...	...	...	...	...	124	...	402	...	...	...	1,050	.....

* The area is only 5 gunthás.

† The area is only 10 gunthás.

XXIII

IV.—E.

Comparative Statement of Irrigation and Rain-fall for the years 1892-93 and 1893-94 in the Bombay Presidency, excluding Sind.

No.	Work supplying Irrigation.	Civil Station.	Total Area in Acres.	Cultivated Area in Acres.	AREA IRRIGATED IN ACRES.						RAIN-FALL.		REMARKS.
					1892-93.			1893-94.			1892-93.	1893-94.	
					Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.	Inches.	Inches.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Inches.	Inches.	
MAJOR WORKS.													
<i>Protective Works.</i>													
1	Nira Canal	Poona	218,413	183,862	11,104	7,142	18,246	13,556	10,947	24,503	132.01	115.83	† A verage of 8 stations.
2	Mhasvad Tank	Satara, Sholapur and Pant Pratinidhi State.	129,045	106,214	3,561	1,436	4,997	3,907	1,376	5,283	34.11	17.30	
	Total ... ..	.....	347,458	290,076	14,665	8,578	23,243	17,463	12,323	29,786	...	...
<i>Productive Works.</i>													
5	Hathmati Canal	Ahmedabad	44,744	8,000	387	2,341	2,728	1,259	2,442	3,701	44.70	50.99	
6	Lower Panjhra River Works	Khândesh	13,117	12,627	1,568	1,049	2,617	1,558	1,442	3,000	25.21	18.23	
7	Kadwa River Works, { Waghad Tank { Palkhed Canal { Ojhar Tambat Canal { Wadali Canal	Nasik ... ..	...	...	...	...	...	...	...	...	...	...
		Do.	25,832	9,837	463	1,496	1,959	665	1,439	2,104	28.89	28.32	
		Do.	8,055	2,367	98	385	483	174	264	538	87.15	23.22	
Do.	3,486	2,433	45	338	383	185	200	385					
8	Pravara River Works—Lakh Canal	Ahmednagar	29,913	11,280	66	92	168	76	267	343	32.03	18.77	
9	Mutha Canals	Poona	94,087	49,800	4,919	1,878	6,797	6,634	1,625	8,259	43.79	26.41	
10	Ekrak Tank	Sholapur	17,152	16,320	2,425	613	3,038	2,247	642	2,889	35.34	24.22	
11	Krishna Canal	Satara	27,407	25,533	1,751	2,045	3,796	2,810	1,932	4,742	36.13	20.09	
	Total ... ..	.....	266,793	137,197	11,722	10,237	21,959	15,608	10,353	25,961	...	...
	Total, Major Works ... ..	.....	614,251	427,273	26,387	14,815	45,202	33,071	22,676	55,747	...	...

AIXXX

MINOR WORKS AND NAVIGATION.												
12	Khári Cut	Ahmedabad ...	17,300	11,500	778	64	842	1,760	26	1,786	51.18	43.48
13	Hartála Tank	Khándesh ...	584	415	1	98	99	11	107	118	46.54	29.85
14	Mhasava do.	Do. ...	4,647	2,983	11	112	123	18	211	229	38.12	19.86
15	Jamda Canals... ..	Do. ...	46,288	30,538	757	1,514	2,271	508	1,080	1,588	44.07	19.52
16	Parsul Tank	Násik ...	*2,693	97	73	265	338	69	290	359	34.91	15.34
17	Pravara River Works—O har Canal	Ahmednagar ...	23,724	14,763	405	695	1,100	352	1,891	2,243	34.54	16.77
18	Bhatodi Tank	Do. ...	15,126	12,124	495	842	1,337	618	965	1,613	42.02	24.39
19	Matoba do.	Poona ...	10,700	7,133	684	201	885	732	410	1,142	37.53	12.65
20	Kásurdi do.	Do. ...	597	478	31	70	101	41	83	124	34.93	14.67
21	Shirsuphal do.	Do. ...	4,500	2,500	374	412	786	475	438	913	29.92	11.93
22	Bhádalvádi do.	Do. ...	3,000	2,400	483	187	670	487	277	764	29.48	10.85
23	Koregaon do.	Sholápur ...	Not known.	...	47	255	302	94	258	352	46.06	18.80
24	Ashti do.	Do. ...	17,882	14,476	677	437	1,114	711	487	1,198	39.15	23.65
25	Revári Canal	Sátára ...	3,813	3,624	91	920	1,011	213	1,135	1,348	31.72	26.73
26	Upper Mán River Works	Do. ...	8,443	7,623	611	428	1,039	942	548	1,490	29.75	17.96
27	Yerla River Irrigation Works	Do. ...	11,234	10,680	565	1,266	1,831	424	1,534	1,958	38.45	25.48
28	Chikhli Canal... ..	Do. ...	1,871	1,478	191	78	269	291	79	370	29.49	21.24
29	Maini Tank	Do. ...	4,876	4,625	685	416	1,101	866	493	1,359	36.13	15.56
30	Muchkundi Tank	Bijápur ...	5,570	3,417	3	...	3	10	2	12	34.21	21.56
31	Nilgund do.	Do. ...	...	...	...	...	...	...	...	...	...	...
32	Gadikeri do.	Belgaum ...	687	Not known.	...	...	...	...	...	...	...	...
33	Dámbal do.	Dhárwár ...	4,595	4,525	261	54	{ 315	{ 110	{ 17	{ 127	{ 18.44	{ 20.37
34	Medleri do.	Do. ...	1,916	1,052	76	19	{ 197	{ 75	{ 21	{ 96	{ 11.56	{ 14.98
35	Madag do.	Do. ...	2,255	1,730	359	382	{ 741	{ 318	{ 374	{ 692	{ 20.05	{ 25.31
36	Asundi do.	Do. ...	1,800	1,800	46	18	{ 64	{ 60	{ 25	{ 85	{ 17.16	{ 23.51
37	Mávinkop do.	Do. ...	687	Not known.	...	...	{ 124	{ 60	{ 124	{ 124	{ No gauge.	{ No gauge.
							{ 441	{ 492	{ ...	{ 492	{ ...	{ ...
	Total ... ..	.....	194,688	139,961	7,704	8,733	{ 16,437	{ 9,215	{ 10,751	{ 19,966	{ ...	{ ...
							{ 1999	{ 1926	{ 124	{ 10,50	{ ...	{ ...
PROVINCIAL.												
39	Gokák Canal, 1st Section	Belgaum ...	18,668	16,663	2,821	1,027	3,848	3,014	1,223	4,237	23.33	24.11
	Grand Total ... ..	.....	827,607	583,897	36,912	28,575	{ 65,487	{ 45,300	{ 34,650	{ 79,950	{ 33.66	{ 22.74
							{ 1999	{ 1926	{ 124	{ 10,50	{ ...	{ ...

* Approximate figures.

† Area on which consolidated assessment is levied.

Average of 35 Stations.

XXXX

Note.—The figures in column 4 are those of gross area under command, and those in column 5 of the net irrigable area at present.

STATEMENT F.

Statement showing the Operation of Irrigation Works in the Deccan and Gujarat for the year 1893-94.

No.	Names of Works.	AMOUNT DUE, 1893-94.		REMISSIONS.		TOTAL.		Grand Total.	REMARKS
		Kharif, 1893-94.	Rabi, 1893-94.	Kharif.	Rabi.	Kharif.	Rabi.		
1	2	3	4	5	6	7	8	9	10
MAJOR WORKS.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
<i>Protective Works.</i>									
1	Nira Canal	58,254	25,449	...	...	58,254	25,449	83,703	
2	Mhasvad Tank	17,158	4,334	...	...	17,158	4,334	21,492	
	Total	75,412	29,783	...	...	75,412	29,783	1,05,195	
<i>Productive Works.</i>									
5	Háthmati Canal	4,141	5,038	72	39	4,069	5,019	9,088	
6	Lower Pánjhra River Works	6,900	3,657	...	...	6,900	3,657	10,557*	
7	Kadva River Works. { Wághad Tánk... Pákhed Canal... Ojhar Tánbat Canal... Wadálí Canal...}	3,690	3,555	...	...	3,690	3,555	7,245	
		924	999	...	...	924	999	1,923	
		798	508	...	...	798	508	1,306	
		515	563	...	...	515	563	1,078	
8	Pravara River Works—Lákh Canal	1,34,044	4,918	...	...	1,34,044	4,918	1,38,962	
9	Mutha Canals	12,038	2,326	...	...	12,038	2,326	14,364	
10	Ekruk Tank	84,918	7,165	...	...	84,918	7,165	42,083	
11	Krishna Canal								
	Total	1,97,968	28,749	72	39	1,97,896	28,710	2,26,606	
Total, Major Works ...		2,75,380	58,532	72	39	2,73,308	58,493	3,31,801	
MINOR WORKS AND NAVIGATION.									
12	Kháti Cut... ..	11,418	128	1,630	...	9,788	128	9,916	
13	Hartáda Tank	50	216	...	...	50	216	266	
14	Mhasva do.	120	429	...	...	120	429	549	
15	Jámda Canals	4,360	2,270	...	...	4,360	2,270	6,630	
16	Parsul Tank	253	1,165	...	...	253	1,165	1,418	
17	Pravara River Works—Ojhar Canal	2,022	4,008	...	...	2,022	4,008	6,030	
18	Bhatodi Tank	3,075	2,097	...	...	3,075	2,097	5,172	
19	Matoba do.	9,734	1,056	...	...	9,734	1,056	10,790	
20	Kásurdi do.	132	207	...	...	132	207	339	
21	Shirsupbal Tank... ..	2,159	1,277	...	...	2,159	1,277	3,436	
22	Bhádalvádi do.	3,633	716	...	...	3,633	716	4,349	
23	Koregaon do.	477	530	...	...	477	530	1,007	
24	Ashti do.	2,697	1,163	...	...	2,697	1,163	3,860	
25	Reyátri Canal	2,480	3,825	17	23	2,463	3,797	6,260	
26	Upper Mán River Works	5,133	1,938	...	...	5,133	1,938	7,071	
27	Yerla River Irrigation Works ...	2,076	4,915	...	5	2,076	4,910	6,986	
28	Chikhli Canal	1,724	309	...	...	1,724	309	2,033	
29	Maini Tank	4,862	1,672	...	...	4,862	1,672	6,534	
30	Múchkundi Tank	54	6	...	...	54	6	60	
31	Nilgund do. ... ..	...	...	...	...	...	...	...
32	Gadikeri do. ... ..	...	...	...	...	...	...	...
33	Dámbal do.	629	50	...	...	629	50	679	
34	Medleri do.	283	127	...	...	283	127	410	
35	Madag do.	798	1,096	...	...	798	1,096	1,892	
36	Asundi do.	175	116	...	...	175	116	291	
37	Mávinkep do. ... ..	...	...	...	...	...	...	...
	Total	59,342	29,316	1,647	33	56,695	29,283	85,978	
PROVINCIAL.									
39	Gokák Canal, 1st Section, and Storage Works	8,509	3,120	...	...	8,509	3,120	11,629	
GRAND TOTAL ...		3,40,231	90,068	1,719	72	3,38,512	90,896	4,29,408	

*Includes water-rates on dry land and enhanced water share of consolidated revenue on Mamul Irrigation.

10

148

Statement showing Water-rates per Acre in force during 1893-94 on Irrigation Works in the Bombay Presidency, excluding Sind.

No.	Names of Works.	WATER-RATES.					Occupier's Rate.	Owner's Rate.	Water advantage.	Remarks.	
		Class I.	Class II.	Class III.	Class IV.	Class V.					
		Perennial.	Eight months.	Four months.	Monsoon dry.	Special hot weather.					
1	2	3	4	5	6	7	8	9	10	11	
MAJOR WORKS.											
<i>Protective Works</i>											
1	Nira Canal	10	4 0 0	2 0 0	0 12 0	5 0 0				Half rates are levied on irrigation from leakage water picked from talas at the expense of the cultivators. ‡ Rice flooding land is charged at Re. 1.	
2	Mhasvad Tank	10	4 0 0	2 0 0	0 12 0	4 0 0					
<i>Productive Works.</i>											
5	Hathmati Canal	10	13 0 0	2 0 0	1 0 0	6 0 0					
6	Lower Pánjhra River Works ...	10	4 0 0	2 0 0	1 0 0	4 0 0					
7	Kádva River Works. { Palkhed Canal ... Ojhar Canal, Támbat Wadéli Canal ...	8	4 0 0	2 0 0	1 0 0	6 0 0					
		8	4 0 0	2 0 0	1 0 0	6 0 0					
		8	4 0 0	2 0 0	1 0 0	6 0 0					
8	Pravara River Works—Lakh Canal	8	4 0 0	2 0 0	0 8 0	4 0 0					
9	Mutha Canals. { First Section, i.e., within the Poona City and the Suburban Municipal and Cantonment limits or within one mile of these limits. Second Section, i.e., for all villages excepting those within the above-mentioned limits within a radius of 8 miles from Poona. Third Section, i.e., for villages beyond those limits. For pán gardens wherever situated throughout the canal	A. 50	5 0 0	2 8 0	1 4 0	6 0 0					
		B. 9									
		C. 6									
		A. 25	5 0 0	2 8 0	1 4 0	6 0 0					
		B. 13									
		C. 12									
		A. 13	4 0 0	2 0 0	1 0 0	6 0 0					
		B. 12									
		C. 10									
10	Ekruk Tank	30	.....	.....	...	...	
11	Krishna Canal	10	4 0 0	2 0 0	0 12 0	6 0 0					
		22	4 0 0	2 0 0	1 0 0	6 0 0					
MINOR WORKS AND NAVIGATION.											
12	Khátri Cut	14	7 0 0	5 0 0	1 0 0	...					
13	Hartála Tank	10	4 0 0	2 0 0	1 0 0	4 0 0					
14	Mhasva Tank	10	4 0 0	2 0 0	1 0 0	4 0 0					
15	Jamda Canals	16	4 0 0	2 0 0	0 8 0	4 0 0					
16	Parsul Tank ... ..	...	.....	4 0 0	1 0 0	6 0 0			
17	Pravara River Works (Ojhar Canal)	8	4 0 0	2 0 0	0 8 0	4 0 0					
18	Bhatodi Tank	12	4 0 0	2 0 0	1 0 0	4 0 0					
19	Matoba Tank	A. 18	4 0 0	2 0 0	1 0 0	6 0 0					
		B. 12									
		C. 10									
		Pán gardens 30	.....	.....	...	...	
20	Kásurdi Tank	A. 16	4 0 0	2 0 0	0 12 0	6 0 0					
	B. 12										
	C. 10										
21	Shirsuphal Tank	10	4 0 0	2 0 0	0 12 0	4 0 0					
22	Bhádálvadi do.	10	4 0 0	2 0 0	0 12 0	4 0 0					
23	Koregaon do.	6	2 0 0	2 0 0	2 0 0	2 0 0					
24	Ashti do.	12	4 0 0	2 0 0	0 12 0	4 0 0					
25	Revatri Canal	18	4 0 0	2 0 0	1 0 0	6 0 0					
26	Upper Mán River Works ...	18	4 0 0	2 0 0	0 12 0	6 0 0					
27	Yerla River Irrigation Works ...	18	4 0 0	2 0 0	1 0 0	6 0 0					
28	Chikhli Canal	18	4 0 0	2 0 0	1 0 0	6 0 0					
29	Maini Tank	18	4 0 0	2 0 0	0 12 0	6 0 0					
30	Muchkundi Tank... ..	8	4 0 0	2 0 0	1 0 0	4 0 0					
31	Nilgund do. ... ..	...	.....	.....	...	...
32	Gadikeri do. ... ..	...	.....	.....	...	...
33	Dámbal do.	10	\$4 0 0	a 2 0 0	0 8 0	4 0 0					
34	Medleri do.		\$6 0 0	b 2 0 0	0 8 0	4 0 0					
			\$4 0 0	a 2 0 0							
			\$6 0 0	b 2 0 0							
35	Madag do.	10	\$4 0 0	a 2 0 0	0 8 0	4 0 0					
36	Sundi do.		\$6 0 0	b 2 0 0	0 8 0	4 0 0					
			\$4 0 0	a 2 0 0							
			\$6 0 0	b 2 0 0							
37	Sizvinkop... ..	...	.....	.....	...	...
PROVINCIAL.											
30	Gokak Canal, 1st Section, and Storage Works	14	(b) 3 8 0	(e) 1 8 0	0 14 0	(g) 6 0 0				§ From 15th June to 15th February. ¶ " " 15th October to 15th June. a " " 15th June to 15th October. b " " 15th October to 15th February. (n) This is a special rate for sweet potatoes which require water for 10 months. (c) & (d) from 15th June to 15th February. (d) " " 15th October to 15th June. (e) " " 15th June to 15th October. (f) " " 15th October to 15th February. (g) " " 15th February to 15th June.	
	(a) 8	(c) 3 0 0	(f) 2 8 0								
		(d) 7 0 0									

Note—(1) For lift irrigation half the ordinary rates are charged.
(2) Double the ordinary rates are charged as penal rates for taking water without permission.
(3) Leakage or percolation rates are the same as ordinary rates.

STATEMENT F.

Statement showing the Operation of Irrigation Works in the Deccan and Gujarat for the year 1893-94.

No.	Names of Works.	AMOUNT DUE, 1893-94.		REMISSIONS.		TOTAL.		Grand Total.	REMARKS
		Kharif, 1893-94.	Rabi, 1893-94.	Kharif.	Rabi.	Kharif.	Rabi.		
1	2	3	4	5	6	7	8	9	10
MAJOR WORKS.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
<i>Protective Works.</i>									
1	Nira Canal	58,254	25,449	...	...	58,254	25,449	83,703	
2	Mhasvad Tank	17,158	4,334	...	...	17,158	4,334	21,492	
	Total ...	75,412	29,783	...	...	75,412	29,783	1,05,195	
<i>Productive Works.</i>									
5	Háthmati Canal	4,141	5,058	72	39	4,069	5,019	9,088	
6	Lower Pánjhra River Works ...	6,900	3,657	...	...	6,900	3,657	10,557	
7	Kadva River Works. {	Wághad Tank...	...	...	...	...	...	...	...
		Palkhed Canal...	3,690	3,555	...	...	3,690	3,555	7,245
		Ojhar Támbat Canal ...	924	999	...	...	924	999	1,923
8	Pravara River Works—Lakh	Wadali Canal...	798	508	...	...	798	508	1,306
		Canal	515	563	...	...	515	563	1,078
9	Mutha Canals	1,34,044	4,918	...	...	1,34,044	4,918	1,38,962	
10	Ekruk Tank	12,038	2,326	...	...	12,038	2,326	14,364	
11	Krishna Canal	34,918	7,165	...	...	34,918	7,165	42,083	
	Total ...	1,97,968	28,749	72	39	1,97,896	28,710	2,26,606	
Total, Major works ...		2,73,380	58,532	72	39	2,73,308	58,493	3,31,801	
MINOR WORKS AND NAVIGATION.									
12	Khári Cut... ..	11,418	128	1,630	...	9,788	128	9,916	
13	Hartala Tank	50	216	...	...	50	216	266	
14	Mhasva do.	120	429	...	...	120	429	549	
15	Jámda Canals	4,360	2,270	...	...	4,360	2,270	6,630	
16	Parsul Tank	263	1,165	...	...	263	1,165	1,418	
17	Pravara River Works—Ojhar Canal	2,022	4,008	...	...	2,022	4,008	6,030	
18	Bhatodi Tank	3,075	2,097	...	...	3,075	2,097	5,172	
19	Matoba do.	9,734	1,056	...	...	9,734	1,056	10,790	
20	Kásurdi do.	132	207	...	...	132	207	339	
21	Shirsuphal Tank... ..	2,159	1,277	...	...	2,159	1,277	3,436	
22	Bhádalsádi do.	3,633	716	...	...	3,633	716	4,349	
23	Koregaon do.	477	530	...	...	477	530	1,007	
24	Ashti do.	2,697	1,163	...	...	2,697	1,163	3,860	
25	Revátri Canal	2,480	8,825	17	23	2,463	3,797	6,260	
26	Upper Man River Works ...	5,133	1,938	...	...	5,133	1,938	7,071	
27	Yerla River Irrigation Works ...	2,076	4,915	...	5	2,076	4,910	6,986	
28	Chikhli Canal	1,724	809	...	...	1,724	809	2,533	
29	Maini Tank	4,862	1,672	...	...	4,862	1,672	6,534	
30	Muchkundi Tank	54	6	...	...	54	6	60	
31	Nilgund do. ... ..	...	...	...	...	...	...	...
32	Cadikeri do. ... ..	...	...	...	...	...	...	...
33	Dámbal do.	629	50	...	...	629	50	679	
34	Medleri do.	283	127	...	...	283	127	410	
35	Madag do.	798	1,096	...	...	798	1,096	1,892	
36	Asundi do.	175	116	...	...	175	116	291	
37	Mávinkop do. ... ..	...	...	...	...	...	...	...
	Total ...	58,542	29,316	1,647	38	56,695	29,283	86,978	
PROVINCIAL.									
39	Gokák Canal, 1st Section, and Storage Works	8,509	3,120	...	...	8,509	3,120	11,629	
GRAND TOTAL ...		3,40,231	90,068	1,719	72	3,38,512	90,896	4,29,408	

* Includes water-rates on dry land and enhanced water share of consolidated revenue on Mámul Irrigation.

10 14

Statement showing Water-rates per Acre in force during 1893-94 on Irrigation Works in the Bombay Presidency, excluding Sind.

Names of Works.		WATER-RATES.					Occupier's Rate.	Owner's Rate.	Water advantages.	Remarks.	
		Class I.	Class II.	Class III.	Class IV.	Class V.					
		Perennial.	Eight months.	Four months.	Monsoon dry.	Special hot weather.					
1	2	3	4	5	6	7	8	9	10	11	
MAJOR WORKS.											
<i>Protective Works.</i>											
1	Nira Canal	10	4 0 0	2 0 0	0 12 0	5 0 0					
2	Mhasvad Tank	10	4 0 0	2 0 0	0 12 0	4 0 0				Half rates are levied on irrigation from leakage water picked from nálas at the expense of the cultivators.	
<i>Productive Works.</i>											
5	Hathmati Canal	10	13 0 0	2 0 0	1 0 0	6 0 0					
6	Lower Pánjhra River Works ...	10	4 0 0	2 0 0	1 0 0	4 0 0					
7	Kádva River { Pálkhed Canal ... Ojhar Tánbat Works, Canal.	8	4 0 0	2 0 0	1 0 0	6 0 0					
8	Pravara River Works—Lákh Canal	8	4 0 0	2 0 0	1 0 0	6 0 0					
9	Mutha Canals. { First Section, i.e., within the Poona City and the Suburban Municipal and Cantonment limits or within one mile of these limits. Second Section, i.e., for all villages excepting those within the above-mentioned limits within a radius of 8 miles from Poona. Third Section, i.e., for villages beyond those limits. For pán gardens wherever situated throughout the canal	A. 50		2 8 0							
		B. 9	5 0 0	.....	1 4 0	6 0 0				
		C. 6		2 0 0							
		A. 25		2 8 0							
		B. 18	5 0 0	1 4 0	6 0 0					
		C. 12		2 0 0							
		A. 18		2 0 0							
		B. 12	4 0 0	1 0 0	6 0 0					
		C. 10		1 8 0							
10	Ekrak Tank	30	.....	.....	.....	.....	
11	Krishna Canal	22	4 0 0	2 0 0	1 0 0	6 0 0					
MINOR WORKS AND NAVIGATION.											
12	Khári Cut	14	7 0 0	5 0 0	1 0 0	.....				
13	Hartála Tank	10	4 0 0	2 0 0	1 0 0	4 0 0					
14	Mhasva Tank	10	4 0 0	2 0 0	1 0 0	4 0 0					
15	Jámda Canals	16	4 0 0	2 0 0	0 8 0	4 0 0					
16	Parsul Tank ... ..	...	.....	4 0 0	1 0 0	6 0 0				
17	Pravara River Works (Ojhar Canal)	8	4 0 0	2 0 0	0 8 0	4 0 0					
18	Bhátodi Tank	12	4 0 0	2 0 0	1 0 0	4 0 0					
19	Matoba Tank	A. 18		2 0 0							
		B. 12	4 0 0	.....	1 0 0	6 0 0				
		C. 10		1 8 0							
20	Kásurdi Tank	Pán gardens 30	.....	.....	.....	.....	
		A. 16		4 0 0	2 0 0	0 12 0	6 0 0				
		B. 12		4 0 0	2 0 0	0 12 0	4 0 0				
21	Shirsuphal Tank	10	4 0 0	2 0 0	0 12 0	4 0 0					
22	Bhádálvádi do.	10	4 0 0	2 0 0	0 12 0	4 0 0					
23	Koregaon do.	6	2 0 0	2 0 0	2 0 0	2 0 0					
24	Ashti do.	12	4 0 0	2 0 0	0 12 0	4 0 0					
25	Revári Canal	18	4 0 0	2 0 0	1 0 0	6 0 0					
26	Upper Mán River Works ...	18	4 0 0	2 0 0	0 12 0	6 0 0					
27	Yarla River Irrigation Works ...	18	4 0 0	2 0 0	1 0 0	6 0 0					
28	Chikhli Canal	18	4 0 0	2 0 0	1 0 0	6 0 0					
29	Maini Tank	18	4 0 0	2 0 0	0 12 0	6 0 0					
30	Múchkundi Tank... ..	8	4 0 0	2 0 0	1 0 0	4 0 0					
31	Nilgund do. ... ..	...	.....	.....	.....	.....
32	Gádkeri do. ... ..	...	.....	.....	.....	.....
33	Dámbal do.	10	{ \$4 0 0 \$6 0 0	a 2 0 0 b 2 0 0	{ 0 8 0 0 8 0	4 0 0 4 0 0					
34	Medleri do.	10	{ \$4 0 0 \$6 0 0	a 2 0 0 b 2 0 0	{ 0 8 0 0 8 0	4 0 0 4 0 0					
35	Madag do.	10	{ \$4 0 0 \$6 0 0	a 2 0 0 b 2 0 0	{ 0 8 0 0 8 0	4 0 0 4 0 0					
36	Asundi do.	10	{ \$4 0 0 \$6 0 0	a 2 0 0 b 2 0 0	{ 0 8 0 0 8 0	4 0 0 4 0 0					
37	Sávkop... ..	...	.....	.....	.....	.....
PROVINCIAL.											
39	Gokak Canal, 1st Section, and Storage Works	{ 14 (a) 8	{ (b) 5 8 0 (c) 3 0 0 (d) 7 0 0	{ (e) 1 8 0 (f) 2 8 0	{ 0 14 0	{ (g) 6 0 0					

As detailed under water-rates.

Nil.

Nil.

§ From 15th June to 15th February.
 ¶ " 15th October to 15th June.
 a " 15th June to 15th October.
 b " 15th October to 15th February.
 (a) This is a special rate for sweet potatoes which require water for 10 months.
 (c) & (b) from 15th June to 15th February.
 (d) " 15th October to 15th June.
 (e) " 15th June to 15th October.
 (f) " 15th October to 15th February.
 (g) " 15th February to 15th June.

Note—(1) For lift irrigation half the ordinary rates are charged.
 (2) Double the ordinary rates are charged as penal rates for taking water without permission.
 (3) Leakage or percolation rates are the same as ordinary rates.

PART I.

MAJOR WORKS.

PROTECTIVE IRRIGATION WORKS.

(1).—NIRĀ CANAL.

At the close of the previous year the irrigable area under command of the canal was 171,863 acres, and the first 15 miles of the large distributary No. 59 had been opened; during the year under review the remaining length of the distributary No. 59, *viz.* 8 miles and 1,986 feet, was brought into operation, adding 11,994 acres to the command, making a total of 183,862 acres.

2. The total area irrigated during the year was 24,503. The following table gives the result of the previous five years and of the present year:—

Years.	Kharif.	Rabi.	Total.	Water-rates assessed.
	Acres.	Acres.	Acres.	Rs.
1888-89	4,203	14,350	18,559	20,671
1889-90	9,819	12,111	21,930	24,688
1890-91	8,920	7,993	16,913	36,226
1891-92	9,595	19,268	28,863	66,390
1892-93	11,104	7,142	18,246	60,036
1893-94	13,556	10,947	24,503	83,703

3. The total area irrigated was 6,257 acres more than in 1892-93 and 4,360 acres less than in 1891-92, the maximum hitherto obtained.

The kharif season showed an increase of 2,452 acres, principally due to the extension of irrigation in the villages beyond Bārāmāti and particularly under distributary No. 59; and in the rabi season the increase, *viz.* 3,805, is due to the rain having fallen in September and early part in October and very little in November and none in December 1893. The increase in kharif season is principally due to sugar-cane 1,797 acres and ground-nut 2,150, bajri 256 only. There was a large decrease, *viz.* 1,992, in fodder crops, which was due to the good harvest of jowāri last year. The increase in rabi is principally in jowār, 4,206 acres.

4. The excess of the measured area over that applied for, as shown in the following table, was 5,761 acres; the reason for the difference is, as stated before, *viz.*, that the cultivators put down in the applications the minimum area on which they can be charged and generally irrigate more:—

Seasons and years.	Applied for.	Irrigated.	Difference.	Percentage of difference on area applied for.	
	Acres.	Acres.	Acres.		
<i>Kharif.</i>					
1892-93	9,921	11,104	1,183	.....
1893-94	11,629	13,556	1,927	.....
<i>Rabi.</i>					
1892-93	5,260	7,142	1,882	.....
1893-94	7,113	10,947	3,834	.....
Total ... {	1892-93 ...	15,181	18,246	3,065	20.19
... {	1893-94 ...	18,742	24,503	5,761	30.74

5. The rain-fall of the year was considerably less than last year and compares with the last two years as follows :—

Years.		Kharif.	Rabi.	Total.
		Inches.	Inches.	Inches.
1891-92	... ..	9·08	4·77	13·85
1892-93	... ..	21·34	10·67	32·01
1893-94	... ..	10·20	5·63	15·83

The following table shows the total rain-fall of the kharif and rabi seasons at the different stations along the canal :—

Stations.	1893-94.			Average for 10 years from 1883 to 1892.	Average for 5 years from 1889 to 1893 inclusive.
	Kharif.	Rabi.	Total.		
	In. c.	In. c.	In. c.	In. c.	In. c.
Pimpra	10 62	4 25	14 87	20 93	20 46
Wadgaon	9 75	4 94	14 69	21 92	20 62
Pandhara	11 01	6 12	17 13	20 75	20 60
Bárámati	10 36	7 10	17 46	20 92	21 16
Sansar	9 13	5 89	15 02	*21 72	22 75
Haturna	12 80	5 35	18 15	+22 10	23 01
Nimbgaon	8 89	4 45	13 34	+20 44	19 86
Bávda	9 01	6 94	15 95	+18 73	||17 34
Total	81 57	45 04	126 61	... ..	... ..
Average	10 20	5 63	15 83	... ..	... ..
Total as per Statement IV.—E. ... ..	... ..	... ..	15 83	... ..	... ..
Virwadi	11 72	8 06	19 78	20 62	21 35
Indápur	11 67	4 49	16 16	\$24 03	21 37

6. The first flood in the Nira river occurred on the 18th June 1893 and water rose to a height of 5·20 feet above the crest of the main weir on 20th June. This was the highest flood of the year. Two more floods occurred during the year, one on 7th July and the other on 5th August 1893 and water rose to the heights of 2·80 and 4·30 feet respectively above the weir crest. Water stopped flowing over the weir on 15th October 1893 ; from this date the supply in the river diminished, and as there was no late rain it was necessary to supplement the natural river discharge by drawing off from the storage at Bhátghar from 3rd November 1893, when the volume impounded in the reservoir was about 3,808 million cubic feet.

7. The monthly average discharge in the canal at head is given below. The first column shows the average struck on the number of days the canal was actually open and the figures correspond with those reported in the monthly statements of irrigation, while the second column gives the true average discharge for the months found by dividing the volume by the full number of days in the month :—

Month.	Average actual discharge taken on number of days open.	Mean discharge taken on full number of days in month.
1893.		
April	172	172
May	166	136
June... ..	138	101
July	272	272
August	414	414
September	449	449
October	270	194
November	348	343
December	317	296
1894.		
January	211	153
February	119	102
March	184	148
Total ...	3,060	2,785
Monthly average ...	255	232

8. The working expenses, including direct and indirect charges, amounted to Rs. 62,047. With 96 miles of main canal in operation this gives a rate of Rs. 646.32 per mile, and it includes the maintenance of 132 miles of distributaries. The expenditure per acre irrigated was less than last year; the rate was Rs. 2.53 against Rs. 3.22 and Rs. 1.49 of the previous two years, respectively.

The working expenses include a sum of Rs. 2,790 on special repairs, which consisted of strengthening the banks by puddled earth cores, where they were found to be unsafe or leaky, due to the nature of the soil of which they were made.

The heavy charges for tools and plant are due to the purchase of a pulso-meter and portable boiler (Rs. 4,541) required for clearing the superpassages of silt.

9. The gross revenue from all sources amounted to Rs. 85,121, consisting of Rs. 83,703 for water rates assessed on the total irrigated area of 24,503 and Rs. 1,418 from other sources. The rate of assessment thus works out at Rs. 3.42 per acre against Rs. 3.29 of the previous year. The net revenue was Rs. 85,121—Rs. 62,047 = Rs. 23,074.

10. The expenditure on plantation was Rs. 1,216 and receipts Rs. 670. The trees were not counted during the year.

11. The cost of measuring the irrigated area was Rs. 2,080, which is 1 anna and 4 pies per acre against 1 anna and 10 pies of last year. The reason for this comparatively high rate is the increase in the area of the high rated perennial and 8 months' crops which require more careful measurements than the 4 months' crops.

12. In Statement I.—E. the duty of water is shown to be 65 acres for kharif and 39 acres for rabi. These figures are of no value because in the case of kharif the canal was run full during the rains in order to test all the banks, and the discharge was very much in excess of that required for irrigation. In the case of rabi, the area of perennial and 8 months' crops is omitted from the area on which the duty is calculated. Taking these figures into account, the more correct duty for the rabi season was 75 acres per cubic foot per second.

The following statement shows the duty of water on some of the most important distributaries :—

Number of distributaries.	Volume of water passed from 16th October 1893 to 28th February 1894, 136 days.	Area irrigated.	Duty in Acres per cubic foot per second running for 136 days.	DETAIL OF CROPS.				Number of days open.
				Perennial.	Eight month.	Rabi.	Total.	
Distributary No. 8...	23,951,404	298	146	161	36	101	298	63
" " 13...	19,126,967	257	156	50	10	197	257	71
" " 22...	65,986,058	1,009	180	291	104	614	1,009	105
" " 28...	13,219,920	301	266	39	130	132	301	75
" " 36...	100,584,432	1,661	176	128	444	1,089	1,661	96
" " 57...	93,939,000	1,020	128	74	461	495	1,020	104

13. The following is the result of an experiment to determine the exact quantity of water used on a crop of *khapla* wheat. Crop experiments. The water was gauged by means of a thin plate notch fixed on the edge of the field :—

Area irrigated.	Number of waterings.	Total quantity of water used.	Average quantity of each watering	Depth of water over whole field for each watering	Depth over field for whole period of irrigation.
Acres.		C. ft.	C. ft.	Inches.	Inches.
1-15	10	97,991	9,799	2-34	23-4

14. The total area under command was 183,862 acres, and of this 7-37 per cent. was irrigated during the kharif and 5-95 per cent. during the rabi season.

15. The following table shows the area irrigated in the year from some of the principal distributaries and percentage of irrigation on the net irrigable area commanded :—

Number of Distributary.	Mileage of Main Canal.	AREA IRRIGATED		Irrigable area under command.	PERCENTAGE OF IRRIGATION TO LAND UNDER COMMAND.	
		Kharif.	Rabi.		Kharif.	Rabi.
		Acres.	Acres.	Acres.		
6	18th mile ...	374	302	3,369	11-10	8-06
8	22nd " ...	267	100	2,400	11-12	4-16
18	34th " ...	482	961	9,703	4-97	9-90
19	34th " ...	213	375	641	33-22	58-50
24	42nd " ...	703	785	14,618	4-81	5-37
28	49th " ...	221	132	583	37-90	22-64
36	64th " ...	966	1,092	9,694	9-96	11-27
46	75th " ...	657	277	9,835	6-68	2-51
57	90th " ...	828	506	15,931	5-19	3-17
59	95th " ...	1,810	1,004	47,971	3-77	2-09

16. The most noticeable feature of the year was the large increase in the area of sugarcane irrigation which rose from 1,639 acres last year to 3,436 acres, an increase of 1,797 acres.

* Date of first watering, 11th November 1893.
Date of last watering, 5th February 1894.

In a short time the area of this crop will have to be limited, so that the required supply may always be available in the rabi season for dry-crops in the event of a failure of rain. This question is being considered in connection with proposal to increase the water-rates. The area of ground-nut was very large this year, viz. 5,311 acres. Unfortunately, when the crop was ripe and ready to be dug up, viz. in February, heavy rain fell, and owing to great scarcity of labour, the crop could not be removed before the nut began to shoot, and the result was that the greater part of the crop was completely lost. This will probably cause a decrease in the area next year owing to want of seed, and to the people not wishing to run the risk of another such failure. One of the greatest difficulties that always has to be met is the scarcity of labour to remove the crop which, the people try to do at the time when the jowári is cut. Ground-nut can, however, be left in the ground after it is fully matured, provided the ground is kept quite dry, the nut is much improved, and the digging can be done when labour is available. There is however the risk of rain falling, as it did this year, in February. Leakage from the canal has made the nála crossings on the road between the Nira Station, Southern Marátha Railway, and Bárámati extremely difficult for carts, and it is proposed to construct crossings at the worst places, as a charge against the canal. This road however will prove a serious impediment to the export of canal produce until it is made throughout a pukka metalled road.

(2).—MHASVAD TANK.

The rainfall for the year under report was 17·30 inches (kharif 11·28 and rabi 6·02) against 34·11 inches of the previous year, (kharif 22·17 and rabi 11·94), and was seasonable.

Rainfall.

The waste weir wall being cut on account of leakage in the dam, the early rain water soon passed over it. The replenishment up to the cut level—1,931·64—was as under. The lowest R. L. of the tank water was 1,927·50 :—

May 1893	...	...	...	...	4·15
June "	...	...	...	...	2·00
July "	...	...	...	...	3·50
				—	
				Total feet	9·65
				—	

The waste weir began to overflow on the 24th July 1893. The average total rainfall gauged at 5 stations on the catchment area of 480 square miles up to 24th July 1893 is 10·36 inches. The supply in the tank at R. L. 1,931·64 or 15·94 feet above the sill of the canal sluice would be sufficient for about 5,000 acres to 31st March 1894 without further rainfall.

2. The area irrigated during the year was 5,283 acres, of which 3,907 were kharif and 1,376 were rabi, against 4,997 acres of the previous year (kharif 3,561 and rabi 1,436). The area applied for was 4,536 acres (kharif 3,385 and rabi 1,151) or 747 acres less. The cause is that the cultivators have taken water for a greater area than applied for. It will be seen from the above figures (actual and applied for) that the cultivators have irrigated 16·47 per cent. more than the applications, the reason being that they are ignorant of the areas of their fields.

3. There has been no free grant of water nor increase in rates. The assessment on account of water-rates amounted to Rs. 21,492 against Rs. 19,997 of the previous year. The gross revenue from all sources being Rs. 22,490 against Rs. 20,613 of the previous year.

4. The following statement gives a comparison with previous years since the opening of the canals :—

Years.	Kharif.	Rabi.	Total.	Water-rate Assessment.	Gross Revenue.	Working Expenses.
	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.
1886-87	617	727	1,344	1,030	1,825	11,812
1887-88	1,717	2,144	3,861	5,897	6,883	15,618
1888-89	2,965	3,139	6,104	12,733	12,875	13,269
1889-90	4,074	2,718	6,792	14,969	16,327	12,285
1890-91	4,081	3,025	7,106	13,541	14,241	12,729
1891-92	3,544	4,760	8,304	25,457	26,104	12,633
1892-93	3,561	1,436	4,997	19,997	20,613	15,121
1893-94	3,907	1,376	5,283	21,492	22,490	22,060

5. There was an increase of 346 acres in kharif over the previous year and decrease of 60 acres in the rabi. The rainfall for the rabi crops for this and the previous year was seasonable; hence the decrease in the rabi area. The land under command is generally inferior, on which only kharif crop can be profitably raised, and this accounts for the increase in the kharif crop of the year. The incidence of water-rate per acre was 4·07 against 4·00 of the previous year.

6. The rainfall over 480 square miles catchment area was gauged at 5 places; the average rainfall from 1st June to 31st October 1893 was 16·26 inches, which gave 18,132 millions of cubic feet of water on this area. The run-off is calculated to be 0·079 from 1st June to 24th July 1893, on which date waste weir began to flow; the run-off from 1st June to 31st October 1893 being 0·131.

7. For evaporation and absorption special experiments were made, the result of which is given below. The usual calculations cannot be made, because the water was run off through the sluices to allow of the strengthening of the dam to be taken in hand.

The canal was closed for 3 days. There was then no water flowing from the tank; during this time the actual loss was $\frac{7}{8}$ of an inch, the area of the tank was then 89,456,208 square feet. This is equivalent to a discharge of 25 feet per second.

During the time the experiment was being made, the weather was unfortunately cloudy and stormy, and 3 cents of rain fell; this would to a considerable extent prevent evaporation. And the total fall in the tank may under ordinary circumstances be taken at 1 inch or 7,500,000 cubic feet for the three days. This gives a loss of nearly 30 cubic feet per second.

8. The working expenses, including direct and indirect charges, amounted to Rs. 22,060; the item "Maintenance and Repairs" amounted to Rs. 8,348, of which Rs. 791 were on account of special repairs to the dam. The length of the canals, branches and distributaries is 94 miles; this represents Rs. 80 per mile. The increase in working expenses as compared with the previous year is due to an Assistant Engineer and a Sub-Engineer being placed in charge of the special repairs to the dam.

9. The area irrigated was measured at a cost of Rs. 1,292, or annas 3 and pies 10 per acre, against annas 4 and pies 6 of the previous year. This rate will be further reduced next year.

10. Special experiments to determine the duty of water were made, and the result was as under:—

Duty of water.

Number of Plot.	Name of Crop.	Quantity of Water for one Acre in Cubic feet.
1	Sugarcane... ..	357,061.45
2	Do.	372,163.93
3	Do.	370,558.07
4	Ground-nut	49,278.55
5	Maize	37,747.69
6	Jowári	28,703.48
7	Wheat, Jod	63,874.11

11. At the end of the year the number of trees above and below 5 feet on this work was 15,028 :—

	Above 5 ft.	Below 5 ft.
Bábul	3,825	3,556
Nimb	1,719	1,655
Mango	392	360
Tamarind	25	27
Chandan	1	5
Nimboni	9	15
Bori	435	430
Guava	7	7
Miscellaneous	1,671	889
	8,084	6,944
Total ...	15,028	

and the expenditure thereon Rs. 314.

12. Leaks appeared suddenly in the rear of the dam on the 20th January 1893 between chainages 7,713 and 7,739 at R. L. 901, and others followed. The discharge from these leaks was $\frac{1}{2}$ cubic foot per hour; the discharge was not great, but on cutting into the dam it was found to be in a most unsatisfactory state; a walking stick could be pushed into the dam some 3 or 4 feet with ease, and on its being withdrawn there was a little rush of water, showing that the interior of the dam was saturated; there was fear of a collapse, and immediate steps were taken to prevent this as far as possible by reducing the water in the tank and removing the top portion of the dam.

After investigation, proposals were made to strengthen the dam by removing the affected portion, putting in drains to prevent water again lodging in the heart of the dam, and re-making the dam.

The following progress was made to the end of March :—

123,431 cubic feet removing bank	Rs. 725
1,100 ,, filling in drains with rubble	66

The work was pushed on vigorously to enable the work to reach a safe height before the rains set in, and by the end of July 1894 the work will reach R. L. 942 or 10'36 feet above the cut in the waste weir channel, where it is proposed to stop till next cold weather to allow the new work to settle before completing the top portion of the dam.

During the excavation a large amount of karal soil was met with, though it was not distinguishable when first opened out; this earth only showed, after it had been exposed for some time, by retaining its moisture after other parts had dried; but this, though it eventually disintegrated, and the surface fell off in powder, was not responsible for the leaks; but a slimy silt largely composed of fine sand, termed "copala" by the work-people, was found as the cause; this, when the bank was opened out, showed quite black though much the same colour as the rest of the dam when dry.

The whole of this portion of the dam was luckily not composed of this silt; but it was in layers and streaks with the good material.

All the bad material removed was thrown at the toe of the dam to form a berm, dry stone drains being run through it to prevent water collecting in it as formerly.

The total cost of this work to the end of June was Rs. 9,329.

PRODUCTIVE PUBLIC WORKS.

(5).—HATHMATI CANAL.

The rain-fall for the year under review was 48·94 inches in the kharif and 2·05 inches in the rabi season against 44·60 inches and 0·10 inches respectively during the previous year, the average of the last five years being as follows:—

Kharif ...	...	...	In.	cts.
Rabi ...	...	...	26	01
			0	63

2. The areas irrigated during the last year and the year under report were as follows:—

	Kharif.	Rabi.	Total.
	Acres.	Acres.	Acres.
1892-93	...	387	2,341
1893-94	...	1,259	2,442
			3,701

3. The assessments were as follows:—

	Kharif.	Rabi.	Total.
	Rs.	Rs.	Rs.
1892-93	...	1,126	4,698
1893-94	...	4,069	5,019
			9,088

4. The following table is instructive as regards the effect of rain-fall on the area of land irrigated; but, that rain-fall increase in the effect of rain-fall on also evident; thus from 1888-89 there was 4·07 inches alone is not the ruling factor, is large kharif irrigated area over 480 acres in 1892-93, a small kharif rain-fall induced a have been another factor at work, causing a steady increase during that period; for in 1890-91, the area irrigated was 2,500 acres and vice versa. At the same time there seems to was also greater in 1891-92, though the kharif fall was greater than in 1888-89, the area though the of cubinough the kharif fall was greater than in 1888-89, the area 2,079 from 1890-91, and again in 1891-92 there was an increase over 1890-91, the rain-fall was practically the same. This tends to show that a steady annual increase in area irrigated up to some unknown limit, may be hoped for. The superabundance of rain in 1892-93, if considered alone, would tend to upset the soundness of this deduction; but that in 1893-94, after a still greater rain-fall, the area irrigated was the same as that in 1890-91 and closely approximated to that of 1891-92, both years of scanty fall. In this there is most decided promise: and it may be assumed with considerable confidence that the cultivators, having found in 1892-93 that their crops did not do well without regular canal irrigation, for that reason took to it again in 1893-94, though the rain-fall in that year was 10 per cent. heavier than the year before. It will be of interest to verify this assumption by future observation. The above remarks refer only to kharif crops. The rabi acreage does not seem to have been materially, if at all, affected by rabi rain-fall; it depends on the supply of water available from the river, which is again dependent for its supply on the monsoon; this supply was insufficient in 1891-92, as reported in paragraph 4, page 7, of the Revenue Report of that year, and, with the exception of that year, the canal has done well during rabi seasons, i. e., the remarkable increase of area, from 1,441 acres to 2,500 acres in 1890-91, was maintained well in 1892-93 and 1893-94, the figures having been 2,341 acres and 2,442 acres respectively:—

Years.	RAINFALL.		AREA.			ASSESSMENTS.		
	Kharif.	Rabi.	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.
	Inches.	Inches.	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.
1888-89	13·00	2·17	1,010	1,457	2,467	3,200	2,018	5,218
1889-90	27·89	0·17	909	1,441	2,350	2,509	2,854	5,363
1890-91	22·11	0·56	1,266	2,500	3,766	3,727	4,947	8,674
1891-92	22·48	0·22	1,367	1,349	2,716	4,074	2,641	6,715
1892-93	44·60	0·10	387	2,341	2,728	1,126	4,698	5,824
1893-94	48·94	2·05	1,259	2,442	3,701	4,069	5,019	9,088

5. Remissions to the extent of Rs. 111 were granted, of which Rs. 63 were free grants.

6. The areas applied for and irrigated were as under :—

		Kharif.	Rabi.
Applied for ...	...	944	1,718
Irrigated ...	...	1,259	2,442

The difference is due to the inability of cultivators to estimate correctly what area they will irrigate and perhaps also to carelessness, as well as to the fact that lands within 200 yards of the canal and benefited by percolation are assessed, no applications for water being, from the nature of the case, necessary for them.

7. The miscellaneous revenue realized during the year amounted to Rs. 1,169 and Rs. 1,146 during the previous year.

8. The areas irrigated were measured by the ordinary establishment employed on the canal (charged to revenue establishment) at a total cost of Rs. 134, or 7 pies per acre irrigated against 9 pies per acre during the previous year.

9. The average water-rate per acre irrigated during the year was Rs. 2.46 as compared with Rs. 2.13 during the previous year. The increase is due to irrigated kharif areas being in excess of those during the previous year.

10. The working expenses of the year as compared with those of the previous year were as follows :—

Year,	Extensions and Improvements.	Maintenance and Repairs.	Establishment, including Indirect Charges.	Tools and Plant.	Total.
		Rs.	Rs.	Rs.	Rs.
1892-93	4,044	1,503	12	5,559
1893-94...	...	4,269	1,743	13	6,025

The rate per acre irrigated was Rs. 1.63 for the year under report against Rs. 2.04 during the previous year, a decrease of nearly 41 per cent. The amount spent on silt clearance was Rs. 562 or Rs. 11 per mile on a length of canal and distributaries, of 51 miles.

11. No reliable data can be given regarding the duty of water. The canal has been gauged for a series of years and the result shows that about 50 per cent. of the water is lost by absorption and evaporation in the first 10 miles where there is practically no irrigation; thus the average discharge gauged at the head during the last kharif season was 70 cubic feet per second. Out of this only 35 cubic feet per second reach the 1st distributary take off, so that the duty during the kharif season is about 36 acres per cubic foot of discharge against 12 acres of the previous year; the increase is due to the larger supply available in the canal, the leakage being in proportion inversely as the canal discharge. In the rabi season the average discharge at the head for the year was 75 cubic feet per second, the area irrigated being 2,442 acres. Allowing the same percentage for loss by absorption, the result is about 65 acres per cubic foot as against 53.20 acres for the previous year.

(6).—LOWER PÁNJHRA RIVER WORKS.

1. These works have been in operation now for 22 years.

2. The irrigation under these works is served from the Pánjhra River supply, which is supplemented by the Mukti Tank storage, when needed, to meet the wants of irrigation. During the year under report the tank was drawn upon for 25 days. In the hot season, at the beginning of the year, the river discharge fell a good deal. The tank sluices had therefore to be kept open from 28th April to 17th May 1893, giving out a discharge varying from

7.25 cubic feet to 13.27 cubic feet per second. After 17th May there was a replenishment in the natural river flow, which made it unnecessary to let out any more tank water. The second draw off from the tank during the year was for 5 days in the rabi season, from 13th to 17th November, both days inclusive. A discharge of 15.69 cubic feet per second was then let out to meet the requirements of irrigation under the tail channels of the Lower Pánjhra system.

3. The available storage in the Mukti Tank at the commencement of the year was 280.79 millions cubic feet, which after serving the demands of perennial and hot weather irrigation, both in káyam bágáyat and in jiráyat lands, went down to 219.15 millions cubic feet before the tank had its first replenishment on 13th June 1893. The contents gradually increased after that date, until they reached 303.57 millions cubic feet on 2nd September. These were the highest contents in the tank during the year, against the full capacity of 342.40 millions cubic feet. The deficiency, however, did not impair the efficiency of the tank. The storage was more than sufficient to meet all irrigation requirements. The tank storage at the close of the year was 228.36 millions cubic feet.

4. The irrigation during the year is tabulated below by seasons, and in comparison with that of the previous year, both in mámul bágáyat and in jiráyat land :—

	Kharif.		Rabi.		Total.	
	1892.	1893.	1892.	1893.	1892.	1893.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Mámul	1,270	1,087	445	675	1,715	1,762
Jiráyat	1,000	1,000	1,049		902	1,238

— The mámul bágáyat is fixed under the settlement. The increase in the reclassification of "thal" land according to the revision survey in the village of Betávad in Sindkheda Táluka. The increase in the jiráyat land is due to the revival of irrigation at Mohadi, a village in Dhulia Táluka, which had for some time given up irrigation, and to the larger cultivation of perennial crops such as sugarcane and plantain. There was a large cultivation of groundnut also during the year, which required canal water.

5. The rain-fall during the year was 18.48 inches against 26.56 inches of the previous year and 23.04 inches, the average of the past 20 years. The year's fall by seasons with corresponding fall of previous year may be tabulated thus :—

Year.	Kharif.	Rabi.	Total.
	Inches.	Inches.	Inches.
1892-93	24.74	0.47	25.21
1893	14.68	3.55	18.23

There was a decrease of 28 per cent. in the year's rain-fall. The deficient monsoon fall led to increase in the irrigation of monsoon crops. Though rabi rain-fall was much greater than that of the previous year, it was late in the season and considerable wheat and pea areas had therefore to use canal water. The irrigation in jiráyat lands is compared in the following table with the irrigation of previous year, classified according to the water-rates levied :—

	Kharif		Rabi.	
	1892	1893.	1892	1893.
	Acres.	Acres.	Acres.	Acres.
1. Perennial	122	133	1	...
2. Eight months	140	273	1	...
3. Four do. ... ..	...	...	602	737
4. Monsoon	15	23	...	...
5. Hot weather	21	12	...	...
Total	298	471	604	737

The increase in irrigation is, as has been already explained, due to (a) revival of Mohadi irrigation, and (b) smaller and untimely rain-fall during the year.

7. The kāyam bāgiyat under the 4 channels of Dhulia, Nimkhedi, Japi and Nahalod was assessed under the survey settlement of 1868-69 at a consolidated rate for land and water plus the enhancement of water-rates for the assured water-supply from the Mukti Tank. In Amalner and Sindkheda Talukas under Mudhi, Mandal and Betivad channels, the assessment was under the revision survey settlement. In Sindkheda Taluka water-rates directly creditable to the Irrigation Department have been fixed, whereas the water share of revenue from Mudhi and Mandal channels in Amalner Taluka is credited in the shape of indirect revenue.

8. The Ināmdār of Kaothal still continues to object to pay for the benefit derived from the Mukti Tank. A method of restricting the supply of water in his channel to that due to the natural flow of the Pānjrā River, has been suggested, but the Ināmdār is unwilling either to accept this or to pay for the Mukti Tank supply. The question as to how his case should be dealt with is still under consideration.

9. Revision survey settlement was introduced during the year at Betivad in Sindkheda Taluka. The channel of this village is the last of the Lower Pānjrā series. The settlement officers have increased the Kāyam "Pātasthal" area of the village by 22 acres, as compared with the old settlement. This result emphasizes what is looked upon as a mistake in the revision survey operations in Mudhi and Mandal villages in Amalner Taluka, which have a better water-supply than Betivad. In Mudhi and Mandal a considerable degradation of bāgiyat land has taken place, and that again without the consent of the holders of the degraded lands. A good deal of the degraded land is watered by the holders, and has to be assessed under the crop rates. The disposal of this question is still pending on a report due from the Survey Department.

10. The assessments of the year amounted to Rs. 17,847 as under:—

	Rs.
A. Water-rates from old irrigation—	
1. Enhanced water-rates	3,691
2. Direct water-rates credited to the Irrigation Department according to revision survey	2,557
3. Irrigation share of land revenue under the settlement	6,788
Total	<u>13,036</u>

against Rs. 12,530 of previous year:—

	Rs.
B. New or dry-crop irrigation—	
4. Water-rates	4,309
5. Miscellaneous	502
Total	<u>4,811</u>

18. Special experiments were made during the year to find out the duty of water in the rabi season. A record was kept of the water actually given to wheat and pea crops in Survey Nos. 29 and 165 respectively, in the village of Nahalod. The results are given below:—

Village	Survey Number	Crops irrigated.	Area irrigated.	Number of Waterings given.	Total quantity of Water given.	Total quantity of Water used per Acre.	Duty of Water in Acres per Cubic foot per second of discharge running during the Rabi Season of 4 months (123 days).	Remarks.
			A. g.		C. ft.	C. ft.		
Nahalod ...	29	Pea...	0 35	2	22,953	26,238	465	
	165 P. 2	Wheat	0 16	3	8,610	20,025	537	

19. The following figures represent the calculated loss by evaporation and absorption from the Mukti Tank, after making deduction for leakage gauged below the dam:—

Kharif season—		
April to June 1933 (73 days)	...	210 feet.
July to September	...	Nil.
Rabi season—		
October to January 1934 (129 days)	...	203 feet.
Hot season—		
February to March 1934 (59 days)	...	127 feet.
Total	...	540 feet.
Average daily loss during the year	...	0.0214 feet.

20. The number of trees on this work at the end of the year was 4,433:—

Anjan ...	40	Madsing ...	127
Awli ...	2	Nimb... ...	191
Babal ...	2,132	Nana... ...	12
Bamboo... ..	46	Siras ...	135
Bibla ...	110	Pipal... ..	8
Bakam ...	9	Sadada ...	31
Dividivi ...	200	Sisum ...	137
Khirmi ...	2	Tamarind ...	140
Jambhal ...	231	Tiwas... ..	79
Koku ...	133	Teak ...	57
Mango ...	252	Umber ...	2
Moho ...	277	Sindi... ..	59
			<u>4,433</u>

And the expenditure thereon to end of the year was—

				Rs.
Capital ...	...	...	...	1,442
Revenue ...	...	...	...	5,368
				<u>6,810</u>

(7).—KADWA RIVER SYSTEM.

1. The Waghad Tank has been for nine years in partial operation. Owing to the waste weir not having been constructed as yet, the full supply level of the water rises some 15 feet short of the designed full supply level. At the close of the monsoon, however, a temporary bank is thrown across the waste weir channel, and some 8' additional storage can be obtained from the rain which usually falls in October.

2. From April 1st to June 2nd, 1893, a period of 62 days, the tank was continuously drawn upon to feed the canals. The expenditure of water from the tank after deducting the loss from evaporation was 65·349 million cubic feet. The flow in the river was 22 million cubic feet. Thus during this period 87 million cubic feet was used in watering 376*acres. The duty calculated on this data is 23 acres per cubic foot per second.

3. It is interesting to trace the course of the 87 million cubic feet during this season of the year. 65 million passed into the Pálkhed canal, showing a loss of 21 millions or 24 per cent. in 14 miles, that is, 4 cubic feet per second, or 28 cubic feet per second per mile.

4. In the canal itself experiment shows that 42 per cent. is lost in evaporation and percolation. The experiment was made in January, and no doubt in April and May the loss would be greater. Deducting however 42 per cent. and $14\frac{1}{2}$ million for the discharge at the tail of the canal, we have 23·78 million actually used in irrigating 243 acres on the Pálkhed canal which gives a duty of 54 acres per cubic foot per second.

5. In the Wadáli canal we have at the head 32·4 millions derived from springs between the Pálkhed and Wadáli weirs. Add to this 5·62 millions, tail discharge of the Pálkhed canal, total 38 millions. Deduct 40 per cent. loss by percolation and evaporation and the remainder, nearly 23 millions, is the quantity of water utilized on 66 acres, and the duty is 15 acres per cubic foot per second. This result is not so good as on the Pálkhed canal, but it is not based on such reliable data, as the area actually irrigated in the Thals is not accurately known, and the tail discharge of the Wadáli canal does not seem to have been gauged at the proper place. Again so much care in arranging a distribution system was not taken and was not necessary on the Wadáli canal as on the Pálkhed canal.

6. Similarly the Ojhar Tambat canal gives a duty of 23 acres per cubic foot per second.

7. As the final result it would seem that the tail flow of the Pálkhed canal 5·62 millions might have been saved from the tank, but practically this quantity is very small compared with the 87 millions supply, and on the whole the water may be considered to have been very economically and well managed.

8. There was a slight replenishment of about 5 millions cubic feet to the tank in the middle of May, but the water level continued to fall until May 27th, on which date the storage in the tank was 150 millions cubic feet. On June 19th, after 10·39 inches of rain had fallen from the beginning of the monsoon, the temporary dam was topped and the tank began to overflow, and the waste weir water continued to run until the 30th of September, when the temporary bank was begun. The water begins to flow in the waste weir channel at R. L. 110, at which level the storage is 197·64 millions cubic feet. The temporary dam brought the water level up to R. L. 114 on October 15th, giving a storage at the beginning of the new season of 262·35 millions cubic feet.

9. By January 1st, 1894, the natural supply had fallen so low that it was necessary to open the tank sluices to a discharge of 5 cubic feet per second, which was increased to 10 cubic feet per second on February 17th, and thus maintained until the close of the year.

10. Having worked out the duty of the water for the hot weather it may be thought interesting to do the same for the rabi season.

From October 15th to February 28th we	Million cubic feet.
have supplied by the river	... 197·14
Do. do.	... tank 32·78
	Total Supply ... 229·92

* From Irrigation operation Statement 322 Acres.
Permanent Bagayat (approximate) 54 "

total 230 millions cubic feet irrigating *2,049 acres, allowing 163 acres for perennial bágayat. This gives a duty of 104 acres per cubic foot per second.

11. The quantity of water flowing in at the head up the Páلكhed Canal is 260 millions cubic feet, the 30 millions in excess of the supply at the tank being due to springs.

12. From 260 millions deduct flow at the tail, 35 million, and loss by leakage and evaporation 42 per cent., 109 millions, and the net quantity of water utilized, is 116 million cubic feet, irrigating 1,884 acres, the duty being thus 190 acres per cubic foot.

The duty for the Wadáli Canal is not worth considering.

13. The rain-fall in the tank basin was 63·33 inches against the average of 52·13 inches. Over the irrigated area the total of Rain-fall. 25·77 inches (the average of fall at Páلكhed and Niphád) is but slightly in excess of the average 25·25 inches for the last 20 years. The distribution according to seasons is :—

Locality of gauge.		Kharif.	Rabi.	Total.
Páلكhed	... ..	27·66	0·66	28·32
Niphád	... ..	21·56	1·66	23·22

The season was characterised by a deficiency in the late rains. At Páلكhed the rain practically ceased on the 17th of September, though at Niphád showers continued to occur till October 7th.

14. During the year water applications for 2,689 acres were received and the area actually irrigated was 3,027, the discrepancy being due to the approximate character of the areas as given in the water applications.

15. The following table shows the areas and assessments by seasons of irrigated land exclusive of permanent bágayat :—

1893-94.

Canals.	AREAS.			ASSESSMENT.		
	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.
	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.
Páلكhed Canal	665	1,439	2,104	3,690	3,555	7,245
Wadáli Canal	185	200	385	798	508	1,306
Ojhar Támbat Canal	174	364	538	924	999	1,923
Total	1,024	2,003	3,027	5,412	5,062	10,474

16. The following table shows the average of the previous four years.

Canals.	AREAS.			ASSESSMENT.		
	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.
	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.
Páلكhed Canal	880	1,201	2,081	4,329	3,064	7,397
Wadáli Canal	157	243	400	563	604	1,163
Ojhar Támbat Canal	133	164	297	570	413	983
Total	1,170	1,608	2,778	5,462	4,081	9,543

*These figures are the actual crops on the ground which are in excess of those given in Irrigation Operation Statement and returns owing to sugar being perennial and groundnuts classed as kharif.

17. The following statement shows the areas of the principal crops for the year under review compared with the average of the preceding five years:—

Name of Crops.	For the year 1893-94.	Average of the five preceding years.	Increase.	Decrease.
	Acres.	Acres.	Acres.	Acres.
Wheat	1,180	864	316	...
Groundnut	863	690	173	...
Gram	194	187	7	...
Sugar-cane	275	279	...	4

18. The total area irrigated shows an increase of 7 per cent. on the previous year and 9 per cent. on the average of the previous four years.

19. The most noticeable features of the year are that whereas on the Ojhar Támbat Canal, which is less effectually protected by the Storage Tank, the absence of rain at sowing time led to a decrease of 63 acres in wheat; on the other hand, the Pálkhed people put their faith in the tank and increased their wheat area by 54 acres. Again, owing to the deficiency of late rain, a large proportion of crops which are usually classed as rabi had to be watered in the kharif season. This is notably the case with groundnuts. The increase of 17 acres in sugar-cane on the Ojhar Támbat Canal, being the result of an extension, is a satisfactory feature.

20. The measuring of the crops was carried out at a cost of Rs. 223 for 3,027 acres, which gives a rate of 1 anna 2 pies per acre.

21. The duty of water in the canals has been worked out in the remarks relating to the storage tank. When calculated according to the ordinary method (as is done in the usual statement attached) it varies from 69 to 88 for the kharif season and from 98 to 107 for the rabi season.

22. A special observation of the quantity of water required to irrigate a field of wheat was made and some details will be found in the statement at the end. The result arrived at was 12,950 cubic feet, for 1 acre. This wheat is said only to have required two waterings owing to its being in rich black soil. The first watering occupied 3½ hours and required 8,414 cubic feet, and the second 2½ hours and 4,532 cubic feet. This is much less than is given in Jackson's Hydraulics.

23. Observations were made in October and in January to ascertain the loss from leakage and evaporation. The results are—

Canals.	Average loss in cubic feet per second per mile.		Percentage of head discharge lost.	
	Kharif.	Rabi.	Kharif.	Rabi.
Pálkhed Canal	·24	·53	27	42
Wadáli Canal	·34	·10	40	40
Ojhar Támbat Canal	·22	·17	29	30

Observations in May would be valuable, but no particular orders were given to take them in that month.

24. There were 9 closures in all during the year for silt and weeds clearance. Of these 5 were on the Pálkhed Canal and 4 on the Wadáli Canal, aggregating 24 and 19 days respectively.

Canal closures.

ively; no formal closure of the Ojhar Tambat Canal occurred during the year, but the canal runs dry when the Palkhed Canal is closed.

Arboriculture. 25. The total number of trees standing on the canals at the close of the year was 12,009; of these the principal were as under:—

Names of Trees.			Number of Trees.
Babul	...	...	9,454
Mango	...	...	853
Nimb	...	...	436
Moho	...	...	634

26. The expenditure during the year was Rs. 220 from the Revenue Account.

Works of Maintenance and Improvement.

27. The following are the more important works carried out.

28. *Palkhed Canal*.—A masonry aqueduct in place of weir was built over a nala at $3\frac{1}{2}$ miles and the alignment of the canal has been much improved at this place with a saving of 600 feet in length of canal.

29. *Ojhar Tambat Canal*.—Mile stones, furlong stones and bench marks have been fixed at a cost of Rs. 79.

30. The total assessment and the amount realized during the year are Revenue Accounts. accounted for as under:—

		Rs.	a.	p.
Assessment during the year	...	11,308	6	11
Unrealized rabi assessment for 1922-93	...	5,947	0	0
Unrealized balance from previous years	...	1,042	10	0
Miscellaneous receipts...	...	45	2	0
		<u>18,433</u>	<u>2</u>	<u>11</u>
<i>Deduct—</i>				
Total realizations during the year	...	11,274	11	6
		<u>7,158</u>	<u>7</u>	<u>5</u>

The above figures include direct receipts, as noted below, except Rs. 594 for enhancement of land assessment—

		Rs.	a.	p.
(1) Sale of water	...	9	0	0
(2) Receipts from plantation	...	110	0	0
(3) Do. from other canal produce	...	197	0	0
(4) Alluvial Galper land above Palkhed Canal weir (Right of occupancy for 10 years' lease from 1923-94 to 1922-03)	...	540	0	0
Amount of 1923-54	...	41	4	0
		<u>581</u>	<u>0</u>	<u>0</u>
(5) Rent of Buildings	...	27	0	0
		<u>924</u>	<u>0</u>	<u>0</u>

31. The total maintenance charges on the three canals and the Waghad Tank during the year amounted to Rs. 7,897, and they are divided as follows:—

		Rs.
I.—Maintenance and repairs	...	3,747
II.—Establishment	...	3,057
III.—Tools and plant	...	119
IV.—Share of collection charges	...	547
V.—Indirect charges...	...	427
		<u>7,897</u>

32. It may be noted that at present we are only able to store 262·35 millions cubic feet in the tank, whereas the full capacity of the tank when the waste weir is built will be 605·55 millions. It is believed that immediately on the completion of the waste weir an additional revenue of Rs. 5,000 would be realized, and there is no fear of the tank not filling to its full capacity. Therefore, it seems advisable to build the waste weir as soon as possible.

Statement showing Water required to mature 1 Acre of Wheat Crop on Ojhar Támbat Canal, Násik District, in 1893-94.

(Vide para. 22 above.)

Village.	Survey Number.	Name of Crop.	Average.	Waterings.	Time for Watering.	Depth of Water in inches over 2 feet Weir Board.	Discharges per second over the Weir.	Total cubic feet for each Watering.	Total Cubic feet for crop for all Waterings.	Remarks.
Datana	71	Wheat.	1	30th November 1893 ...	H. m. s. 3 39 54	2·40	·638	8,418		
Do.	...	...	...	25th December 1893 ...	2 35 25	2·00	·486	4,532		
									12,950	

(8).—PRAVARA RIVER WORKS—LÁKH CANAL.

The area irrigated was 76 acres of khárif and 267 acres of rabi, or a total of 343 acres. The total shows an increase of 185 acres on the area of the last year, but in 1892-93 the rain-fall was exceptionally favourable. The area irrigated has been approximately stationary since the canal was opened, varying, however, year by year with the rain-fall.

2. The following statement compares the area applied for and irrigated during the year:—

Year.	KHARIF.		RABI.		Total.		DIFFERENCE LESS IRRIGATED.				
	Applied for.	Irrigated.	Applied for.	Irrigated.	Applied for.	Irrigated.	Kharif.	Rabi.	Total.		
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.		
1893-94	163	76	418	267	581	343	87	151	238

The area applied for but not irrigated is 69 per cent. of the area irrigated.

3. During the year the water-rate assessments amounted to Rs. 1,078, detailed as below:—

					Rs.
Khárif	...	...	...	...	515
Rabi	...	...	...	...	563
Total					1,078

The total amount of the assessment in the last year was Rs. 532; there is, therefore, an increase of Rs. 546, or 103 per cent., over the preceding year; but it was below the average of the last five years by Rs. 203, and it was only Rs. 77 more than the average of the last 19 years, that is to say, since the canal was opened.

4. The area irrigated per mile of main canal was kharif 3·30 and rabi 11·61 acres, and of main canal and branches was kharif 2·24 acres and rabi 7·85 acres. It is this small duty per mile of canal which accounts for the high cost of maintenance and repairs compared with the revenue.

Area irrigated per mile of main canal and of main canal and branches.

Comparison of area irrigated and revenue.

5. The following table compares the areas irrigated and revenue during the past three years with those of the year under report :—

Year.	Area irrigated.	Revenue from Water-rates.	Remarks.
	Acres.	Rs.	From 1st April to 31st March.
1890-91	433	1,250	Rainfall ... 15·82
1891-92	508	1,509	Do. ... 17·02
1892-93	158	532	Do. ... 32·41
1893-94	343	1,078	Do. ... 27·17

6. The incidence of water-rate per acre was Rs. 3·14 against 3·37 in the previous year.

7. There was no expenditure from Capital Account. There was a net credit of Rs. 252 on account of transfer of material.

8. The working expenses of the year were as follows :—

				Rs.
Maintenance and repairs	...	...	...	1,699
Share of establishment	...	...	...	1,360
Tools and plant	...	...	...	127
Share of collection charges	...	...	...	50
Indirect charges	...	...	...	190
Total	...	...	...	3,426

The working expenses of the last year amounted to Rs. 2,956. The increase in maintenance and repairs is due to a heavier charge for closing breaches and the special clearance having been made along 1st mile. The rate of working expenses this year per mile of main canal open is Rs. 149, and per acre irrigated is Rs. 9·99. It is hoped that the clearance effected to first mile may improve the supply to villages at tail of canal which are supposed not to have confidence in the sufficiency of the supply. The deficiency, however, can only exist in the hot season, and does not account for the small area under irrigation for rabi.

9. The duty per cubic foot per second of water admitted into the canal was 3·26 acres in the kharif and 13·81 acres in the rabi season. That of water actually utilized was 4·20 acres in the kharif and 15·19 acres in the rabi season.

10. The water-rates are the same as those in force since 1889-90, when the old rates were re-established. The rates are to be revised from the year 1894-95.

11. The total cost of measuring 343 acres during the year was Rs. 29, or one anna and 4 pies per acre against Rs. 31, or 3 annas and 1 pie per acre last year.

12. The rain-fall as gauged at Malunja was kharif 16·47, rabi 2·30, total 18·77 inches, or 1·80 inches less than the average of the last five years. The rain-fall in May 1893 and in February and March 1894 not included in the above figures was 8·40 inches.

13. The supply of water in the Pravara river was sufficient during the year under report to meet the requirements of the irrigators. The discharge of the river at Brahmangaon above the weir was 17·46 cubic feet per second on 1st April 1893 against 0·40 cubic feet per second on the same date in the previous year; that on 31st March 1894 was 19·34 cubic feet per second against 17·74 cubic feet per second on the

same date in the previous year. In December 1893 a temporary earthen bund, 2 feet high, was thrown on the weir as usual to increase the back water during the hot weather of 1894-95. The supply during the monsoon is practically unlimited.

14. A project for a storage reservoir at Samrad was being matured, and until this or some other storage is provided no great improvement in the revenue appears probable.

Storage reservoir.

Plantations.

15. At the end of the year the number of trees on this canal was 17,483. The number of principal kinds were:—

Bábul	12,857	Divi Divi	20
Nimbhara	24	Moho	8
Nimb	1,344	Jambhul	726
Bor	501	Siris	10
Sandal	19	Mango	641
Bakan	59	Bamboo	282
Tamarind	38	Miscellaneous	932
Mellingtonia	27		

The total number last year was 17,971. There is a decrease of 488 trees, and it is due to white ants, &c.

(9).—MUTHA CANALS.

On the 8th April 1893 the water at Lake Fife was 19.63 feet above the sills of the canal sluices; the minimum level was reached on the 7th June when the depth was 10.42 feet.

The water began to rise on the 18th June and the lake filled to overflowing on the 20th of that month when the highest flood of the season occurred. This flood rose to a height of 3.75 feet above the finished crest of the weir, or 1.35 feet lower than the maximum recorded flood (1891).

The standards and planks were fixed on the weir by the end of September, and on the 15th October the water stood at 3 feet above the finished crest of the weir. A storm occurred early in October which necessitated some of the planks being removed and the water reduced so as to avoid a flow over the planks and putting a greater head against them than was necessary. After this storm the inflow into the lake was only sufficient to raise the water to 3 feet above the crest, or about 9 inches less than the previous year. The flow into the lake decreased much more rapidly than was expected owing to the October rains being exceptionally light and was the cause of the full 4 feet above weir crest not being stored. The quantity was sufficient for irrigation, and by strict economy in the distribution of water a greater area of perennial irrigation than in the previous year has been secured. The draw-off from the storage commenced from the 15th October, *i. e.* nearly 6 weeks earlier than the previous year. On the 31st March 1894 the level of the water was 18 feet above sills of the sluices, *i. e.* 1' 9" lower than on the same date in 1893.

Assessments of Revenue.

2. During the year under review the assessments amounted to Rs. 2,45,916 as detailed below:—

	Rs.
Water-rates	1,38,962
Sales of water	2,140
Water-supply of towns	93,509
Plantations	145
Water-power	6,000
Receipts from other canal produce	1,377
Rents of buildings	109
Miscellaneous	3,632
Irrigation share on account of enhanced revenue from percolation from the Mutha Canals in the villages of Warza Shwina and Kondve Dhawdi, taluka Haveli, as per Canal Return No. VIII...	42

2,45,916

3. The area irrigated during the year was 8,259 acres, of which 6,634 were kharif and 1,625 rabi crops. The total shows an increase of 1,462 on the area irrigated in the previous year. The area of kharif was 1,715 acres greater and the area of rabi 253 acres less than the previous year. The increase in kharif is chiefly in perennial crops, the area of sugar-cane alone being 1,181 acres greater than last year. This accounts for the large increase in assessments. The decrease in the rabi area is due to the storage at Lake Fife being little more than sufficient for the standing perennial crops, and the area of rabi had to be restricted accordingly.

4. The revenue derived from water-supply of towns amounted to Rs. 93,509, showing a decrease of Rs. 3,669 on that of the previous year. This is due to the supply to the city of Poona having been very much less than the previous year, the stipulated quantity of 7,50,000 gallons a day, together with the supply from other sources, having proved to be sufficient. Omitting this item, the increase in the revenue from water rates in the Cantonment shows an excess of over Rs. 2,000 compared with the previous year.

5. During the year the improvements to the Poona water-supply works were commenced and had made good progress by the end of March. The works consist of (1) 5 new settling tanks, each containing a little over 1 day's supply; (2) converting the 4 old settling tanks into filter beds; (3) converting the 3 old filters into pure water tanks; (4) roofing in the pure water tanks; and (5) alterations in the pumping machinery. Provision has been made for measuring the rate of filtration and maintaining the rate at what is known to be best for the most perfect filtration of the water.

6. Owing to the alterations in the works, it has not been possible to measure the quantity of water supplied. The figures showing the actual consumption can only be obtained when the new works and alterations in the pumping machinery are completed.

7. The working expenses of the year amounted in all to Rs. 67,211, of which Rs. 42,334 are debitable to the maintenance of irrigation and Rs. 24,877 to the maintenance, &c., of the water-supply; the latter amount includes expenditure incurred in pumping done by water-power, working the new steam pumps for trials and for working them for a few hours once every month to keep them in good working order. There was no necessity to use steam-power during the year as the discharge in the canal was sufficient to work the water-wheel at all times. The cost of the maintenance of the canal and irrigation was Rs. 42,334 as compared with Rs. 52,245 in the previous year, and represents a rate for maintenance, administration, &c., of Rs. 481·07 per mile of main canal opened and Rs. 5·12 per acre irrigated. The above figures are inclusive of all establishment charges. The actual cost of maintenance of the Poona Water-supply for works alone amounted to Rs. 11,822 as compared with Rs. 16,332 in the previous year. The figures for the Mutha Canals under the same heading were Rs. 19,225 as compared with Rs. 22,170 in the previous year.

8. Deducting the total working expenses, Rs. 67,211, and Rs. 3,436, the amount of remissions and refunds, from the total earnings, Rs. 2,45,916, the net profits from the work amount to Rs. 1,75,269, or Rs. 2·71 per cent. on Rs. 64,74,696, the total entire capital outlay to the end of the year.

9. The areas irrigated were ascertained by actual measurements, the greater part of which were taken by measurers specially entertained for the purpose and the remainder by an Inspector when time could be spared from his ordinary work, and from 9 to 12 per cent. of the area was checked by the subordinate in charge. The cost of measurements amounted to Rs. 1,167-10-0, or at the rate of 2 annas and 3 pies per acre against 2 annas and 6 pies in the previous year. The cost of measurement must always be higher on the Mutha Canals than other works, because the crop being chiefly sugar-cane assessed at a high rate, the greatest care and accuracy is necessary in taking the measurements.

10. The rain-fall of the year along the canal varied considerably. The maximum was 30·66 inches at Hadapsar and the minimum 12·65 inches at Kedgaon as under :—

				Kharif.	Rabi.	Total.
Hadapsar ...	...	...	...	28·73	1·93	30·66
Kedgaon ...	...	...	...	11·11	1·54	12·65

11. The characteristics of the rain-fall last year were that the kharif was plentiful, with a heavy fall early in the season, and the rabi very scanty, there being very few of the usual eastern storms in October.

12. A statement is appended giving the particulars of the water issued gratis or at reduced rates to various institutions in accordance with the orders issued by Government from time to time. From it it will be seen that local institutions have received water during the year at Rs. 5,647 less than the normal rates.

13. The following is the comparison of areas as applied for and those actually irrigated :—

	AREA APPLIED FOR.			AREA IRRIGATED.			MORE.		LESS.	
	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Kharif.	Rabi.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Mutha Right Bank Canal ...	4,962	2,541	7,503	5,900	1,415	7,315	938	...	...	1,186
Mutha Left Bank Canal ...	796	150	946	734	210	944	...	60	62	...
	5,758	2,691	8,449	6,634	1,625	8,259	938	60	62	1,186

The area applied for is sometimes more than the actual, owing to the people estimating the areas in bighas instead of acres. In the kharif season the area irrigated was more than applied for, as it was found possible to allow the larger area to be irrigated owing to a plentiful supply being available.

14. Remissions amounting to Rs. 65 have been granted during the year : of this Rs. 32 are on account of penal assessments reduced to single rates and Rs. 28 on account of erroneous assessment. Rs. 5 were written off as bad debt.

15. Refunds amounting to Rs. 3,371 were sanctioned during the year, of which Rs. 68 are on account of erroneous assessments, Rs. 15 short supply of water, and Rs. 855, rebate given to the Indian Paper Mills Company for the year 1893-94 for 52 days, that is, 26 days being short of 60 horse-power and 26 days canal closure; also Rs. 2,433 rebate to the Indian Paper Mills Company for the year 1892-93 for 148 days, that is, 132 days being short of 60 horse-power and 16 days canal closure.

16. The plantations and canal fences were maintained as usual; but the trees were not counted as the establishment was fully employed on other duties.

17. Gaugings to ascertain evaporation and leakage were taken for broken periods in the months of April, May, June, December, January, February and March, or a total number of days 198. During this period the loss amounted to 448,625,760 cubic feet, or a little less than $\frac{1}{4}$ of the total capacity of the lake above outlet level. Special Gaugings were taken in April 1893 to ascertain the loss by leakage in the Right Bank Canal in the first 10 miles. The discharge was measured at the head-works through the canal sluices, at some of the aqueducts, and in the rock cutting close to the pumping station below the 10th mile. The result of these observations was that the loss amounted to $\frac{1}{4}$ a cubic foot per second per mile.

After the monsoon, a careful examination of the land below the canal in the first 10 miles was made with the view of detecting and locating the leakage direct from the canal. It was found that in the first $5\frac{1}{2}$ miles leakage was not traceable, but between $5\frac{1}{2}$ and 7 miles it was considerable. A great deal of it was however noticed to be due to drainage from sugar-cane fields, and only in

one place, *viz.* in the 7th mile, where the canal is carried round a rocky spur by means of a masonry wall, was the leakage found direct from the canal. By means of channels and their plate gauges it was found that the quantity leaking from this wall alone amounted to $1\frac{1}{4}$ cubic feet per second, sufficient for nearly 100 acres of sugar-cane. A portion of this leakage was used for a small area of sugar-cane, but most of it went to waste. The principal points where leakage was noticed in the wall were marked, and during the canal closures the inside joints were pointed with cement; the leakage was so far stopped that the sugar-cane crop formerly irrigated by it had to be served from the canal direct. In a few cases leakage was found through the banks near masonry walls and these will gradually be stopped by puddling; the leakage through canal cuttings and banks it is impossible to check, and it is now proposed to bund up all the nilas fed by leakage from the canal and use the water for irrigation. This has already been done in some of the larger nālās.

18. In Statement I. E. the duty is shown to be 43·65 acres per cubic foot per second for the kharif and 11·27 for the rabi. In the case of the kharif season it is impossible to obtain a correct average, because some of the previous year's perennial and 8 months' crops are irrigated between 15th June and end of March. New sugarcane is planted during the same period—between March and June, hot weather crops are grown, and from June to October the canal is run full, in order to fill the Maṭoba Tank, and the discharge is much in excess of the requirements for irrigation. In the case of the rabi season the perennial and 8 months' crops are irrigated in addition to the ordinary rabi crops and a more accurate result can be obtained than in the kharif season. The average discharge during the rabi season was 144·15 cubic feet per second and the area under irrigation was 5,789 acres, giving a duty of 51·4 acres to the cubic foot per second. Correct results can also be obtained for the period between 15th January and the 15th June, when practically the whole area is for perennial crops fourth-fifths of which is sugar-cane. The average discharge of the two canals at the head for this period in 1893 was 141·15 cubic feet per second, for an area of 5,494 acres, giving a duty of 38·9 acres. During the period between 15th January and 15th June 1894, the discharge was 108·25 cubic feet per second and the area under irrigation was 5,994, giving a duty of 55·3 acres per cubic foot per second. As nearly the whole area was sugar-cane while the period referred to was when the consumption of water was at a maximum, the increase in duty to over 50 acres is very satisfactory. This result, it is hoped, cannot only be maintained but be improved upon next year.

POONA WATER-SUPPLY.

Statement showing Water-supplies given gratuitously or at reduced rates during 1893-94.

To whom supplied.	Quantity supplied.	Amount paid.	Value at 6 annas per 1,000 gallons.	Difference between a and b.	Remarks.
1	2	3	4	5	6
		Rs. a. p.	Rs. a. p.	Rs. a. p.	
The Civil Surgeon, Sassoon Hospital...	626,320	117 3 8	234 7 4	117 3 8	
Do. do.	626,520	117 7 3	234 14 6	117 7 3	
Superintendent, Byramji Jijibhoy Medical School ...	466,288	87 6 8	174 13 4	87 6 8	
The Superintendent, Lunatic Asylum Secretary, Cantonment Committee:—	277,873	52 1 3	104 2 6	52 1 3	
„ (New Modikhana) ...	1,201,460	225 4 1	450 8 2	225 4 1	
„ (Beef Market) ...	1,338,328	250 15 0	501 14 0	250 15 0	
„ (Malcolm Tank) ...	1,338,328	250 15 0	501 14 0	250 15 0	
„ (Mutton Market) ...	1,338,328	250 15 0	501 14 0	250 15 0	
„ (Asurkhana) ...	1,460,000	273 12 0	547 8 0	273 12 0	
„ (Butler Mohla) ...	1,460,000	273 12 0	547 8 0	273 12 0	
Convent School ...	2,74,580	51 7 6	102 15 0	51 7 6	
Jamsetji Fountain ...	1,095,000	.....	410 10 0	410 10 0	
Hounds in Booty Street ...	4,380,000	.....	1,642 8 0	1,642 8 0	
Bazar Reservoir ...	1,460,000	.....	547 8 0	547 8 0	
Malcolm Tank ...	2,920,000	.....	1,095 0 0	1,095 0 0	
				5,646 13 5	

10. The rain-fall of the year along the canal varied considerably. The maximum was 30.66 inches at Hadapsar and the minimum 12.65 inches at Kedgaon as under:—

				Kharif.	Rabi.	Total.
Hadapsar ...	...	...	...	28.73	1.93	30.66
Kedgaon ...	...	...	...	11.11	1.54	12.65

11. The characteristics of the rain-fall last year were that the kharif was plentiful, with a heavy fall early in the season, and the rabi very scanty, there being very few of the usual eastern storms in October.

12. A statement is appended giving the particulars of the water issued gratis or at reduced rates to various institutions in accordance with the orders issued by Government from time to time. From it it will be seen that local institutions have received water during the year at Rs. 5,647 less than the normal rates.

13. The following is the comparison of areas as applied for and those actually irrigated:—

	AREA APPLIED FOR.			AREA IRRIGATED.			MORE.		LESS.	
	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Kharif.	Rabi.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Mutha Right Bank Canal ...	4,962	2,541	7,503	5,900	1,415	7,315	938	...	...	1,116
Mutha Left Bank Canal ...	796	150	946	734	210	944	...	60	62	...
	5,758	2,691	8,449	6,634	1,625	8,259	938	60	62	1,126

The area applied for is sometimes more than the actual, owing to the people estimating the areas in bighas instead of acres. In the kharif season the area irrigated was more than applied for, as it was found possible to allow the larger area to be irrigated owing to a plentiful supply being available.

14. Remissions amounting to Rs. 65 have been granted during the year: of this Rs. 32 are on account of penal assessments reduced to single rates and Rs. 28 on account of previous assessment. Rs. 5 were written off as bad debt.

15. Refunds amounting to Rs. 3,371 were sanctioned during the year, of which Rs. 68 are on account of erroneous assessments, Rs. 15 short supply of water, and Rs. 855, rebate given to the Indian Paper Mills Company for the year 1893-94 for 52 days, that is, 26 days being short of 60 horse-power and 26 days canal closure; also Rs. 2,433 rebate to the Indian Paper Mills Company for the year 1892-93 for 148 days, that is, 132 days being short of 60 horse-power and 16 days canal closure.

16. The plantations and canal fences were maintained as usual; but the trees were not counted as the establishment was fully employed on other duties.

17. Gaugings to ascertain evaporation and leakage were taken for broken periods in the months of April, May, June, December, January, February and March, or a total number of days 198. During this period the loss amounted to 448,625,760 cubic feet, or a little less than $\frac{1}{4}$ of the total capacity of the lake above outlet level. Special Gaugings were taken in April 1893 to ascertain the loss by leakage in the Right Bank Canal in the first 10 miles. The discharge was measured at the head-works through the canal sluices, at some of the conduits, and in the rock cutting close to the pumping station below the 10th mile. The result of these observations was that the loss amounted to $\frac{1}{4}$ a cubic foot per second per mile.

After the monsoon, a careful examination of the land below the canal in the first 10 miles was made with the view of detecting and locating the leakage direct from the canal. It was found that in the first $5\frac{1}{2}$ miles leakage was not traceable, but between $5\frac{1}{2}$ and 7 miles it was considerable. A great deal of it was however noticed to be due to drainage from sugar-cane fields, and only in

one place, viz. in the 7th mile, where the canal is carried round a rocky spur by means of a masonry wall, was the leakage found direct from the canal. By means of channels and their plate gauges it was found that the quantity leaking from this wall alone amounted to $1\frac{1}{2}$ cubic feet per second, sufficient for nearly 100 acres of sugar-cane. A portion of this leakage was used for a small area of sugar-cane, but most of it went to waste. The principal points where leakage was noticed in the wall were marked, and during the canal closures the inside joints were pointed with cement: the leakage was so far stopped that the sugar-cane crop formerly irrigated by it had to be served from the canal direct. In a few cases leakage was found through the banks near masonry walls and these will gradually be stopped by puddling: the leakage through canal cuttings and banks it is impossible to check, and it is now proposed to bund up all the nilas fed by leakage from the canal and use the water for irrigation. This has already been done in some of the larger nilas.

18. In Statement I. E. the duty is shown to be 41·65 acres per cubic foot per second for the kharif and 11·27 for the rabi. In the case of the kharif season it is impossible to obtain a correct average, because some of the previous year's perennial and 8 months' crops are irrigated between 15th June and end of March. New sugarcane is planted during the same period—between March and June, hot weather crops are grown, and from June to October the canal is run full, in order to fill the Matoba Tank, and the discharge is much in excess of the requirements for irrigation. In the case of the rabi season the perennial and 8 months' crops are irrigated in addition to the ordinary rabi crops and a more accurate result can be obtained than in the kharif season. The average discharge during the rabi season was 144·15 cubic feet per second and the area under irrigation was 5,789 acres, giving a duty of 51·4 acres to the cubic foot per second. Correct results can also be obtained for the period between 15th January and the 15th June, when practically the whole area is for perennial crops fourth-fifths of which is sugar-cane. The average discharge of the two canals at the head for this period in 1893 was 141·15 cubic feet per second, for an area of 5,494 acres, giving a duty of 38·9 acres. During the period between 15th January and 15th June 1894, the discharge was 108·25 cubic feet per second and the area under irrigation was 5,994, giving a duty of 55·3 acres per cubic foot per second. As nearly the whole area was sugar-cane while the period referred to was when the consumption of water was at a maximum, the increase in duty to over 50 acres is very satisfactory. This result, it is hoped, cannot only be maintained but be improved upon next year.

POONA WATER-SUPPLY.

Statement showing Water-supplies given gratuitously or at reduced rates during 1893-94.

To whom supplied.	Quantity supplied.	Amount paid.	Value at 8 annas per 1,000 gallons.	Difference between 4 and 8.	Remarks.
1	2	3	4	5	6
		Rs. a. p.	Rs. a. p.	Rs. a. p.	
The Civil Surgeon, Sassoon Hospital...	626 320	117 3 8	234 7 4	117 3 8	
Do. do.	626 320	117 7 3	234 14 6	117 7 3	
Superintendent, Byramji Jijibhoy Medical School	466 288	87 6 8	174 13 4	87 6 8	
The Superintendent, Lunatic Asylum, Secretary, Cantonment Committee:—	277 873	52 1 3	104 2 6	52 1 3	
.. (New Modikhana) ...	1,201 460	225 4 1	450 8 2	225 4 1	
.. (Beef Market) ...	1,338 328	250 15 0	501 14 0	250 15 0	
.. (Malcolm Tank) ...	1,338 328	250 15 0	501 14 0	250 15 0	
.. (Mutton Market) ...	1,338 328	250 15 0	501 14 0	250 15 0	
.. (Asurkhana) ...	1,460 000	273 12 0	547 8 0	273 12 0	
.. (Butler Moida) ...	1,460 000	273 12 0	547 8 0	273 12 0	
Convent School ...	2,74,580	51 7 6	102 15 0	51 7 6	
Jamsetji Fountain ...	1,095 000	.....	470 10 0	470 10 0	
Hounds in Booty Street ...	4,580 000	.....	1,562 8 0	1,642 8 0	
Bazar Reservoir ...	1,460 000	.....	547 8 0	547 8 0	
Malcolm Tank ...	2,920 000	.....	1,095 0 0	1,095 0 0	
				5,646 13 5	

(10).—EKRU K TANK.

The rain-fall for the year under report was 24.22 inches (kharif 15.16 and rabi 9.06) against 35.34 inches of the previous year (kharif 25.62 and rabi 9.72) and was seasonable.

2. The area irrigated during the year was 2,889 acres, of which 2,247 were kharif and 642 rabi, against 3,038 acres of the previous year (kharif 2,425 and rabi 613). The area applied for was 2,537 acres (kharif 1,931 and rabi 606), or 352 acres less than actually irrigated; the cause is that the cultivators are unable to estimate the area they propose to irrigate.

3. The assessment on account of water-rate amounted to Rs. 14,364 against Rs. 14,760 of the previous year. The gross revenue from all sources was Rs. 24,357 against Rs. 23,830 of the previous year. The details of revenue other than water-rate are as under:—

	Rs.
Plantations	334
Other canal produce	4,001
Sholapur Municipality for water supplied for drinking purposes	3,568
G. I. P. Railway Company for water-supply for engines.	1,152
Spinning and weaving mills, Sholapur, for do.	562
Sholapur Distillery, &c., for do.	76
Miscellaneous	300
Total ...	9,933

4. The following statement gives comparison with previous years.

Year.	Kharif.	Rabi.	Total.	Water-rate assessed.	Gross Revenue.	Working Expenses.
	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.
1887-88... ..	1,357	757	2,114	6,651	13,784	15,953
1888-89... ..	1,620	1,356	2,976	7,652	15,209	14,666
1889-90... ..	1,335	1,199	2,534	9,441	18,532	13,231
1890-91... ..	1,835	763	2,598	10,188	23,516	13,824
1891-92... ..	1,935	1,202	3,137	13,125	27,470	13,770
1892-93... ..	2,425	613	3,038	14,760	23,830	27,043
1893-94... ..	2,247	642	2,889	14,364	24,357	26,411

5. This gives a decrease of 178 acres in kharif and an increase of 29 acres in rabi, the former is due to a less area of fodder and rice cultivation caused by improvement work of the perennial canal during early part of the year and the latter is due to development of irrigation at the tail of the canal which was brought into operation during the latter part of the year. The incidence of water-rate per acre irrigated was 4.97 against 4.86 of the previous year.

6. The rain-fall over 159 square miles catchment area was gauged at one place only and amounted to 29.22 from 1st June to 31st October 1893 representing 10,794 millions of cubic feet of water which fell on the catchment area. The run-off into the tank was 0.196. The waste weir began to flow on 13th October 1893 and the run-off to that date was 0.19. The greatest depth of water flowing over the waste weir was 2.60 feet on the 14th October 1893.

7. The area irrigated by each canal and water rates, &c., on each canal. rate assessment thereon were as follows;—

Name of Canal.	Average discharge during the year.	AREA IRRIGATED.						REDUCED LEVEL OF WATER ON 5TH JUNE.		REMARKS.
		Kharif.		Rabi.		Total.		R. L. on 5th June. 1893.	Height of Water over sill in feet.	
		Acres.	Amount.	Acres.	Amount.	Acres.	Amount.			
Left Bank Low Level Canal.	35·67	1,648	Rs. 8,520	533	Rs. 1,955	2,181	Rs. 10,475	188·97	33·22	The waste weir began to flow on 13th October 1893.
Left Bank High Level Canal.	3·95	291	2,198	11	33	302	2,231		8·39	
Right Bank High Level Canal.	8·92	308	1,520	98	338	406	1,658		8·45	
Total ...		2,247	12,038	642	2,326	2,889	14,364			

8. The working expenses, including indirect charges, amounted to Rs. 26,411 Working Expenses. The item "Maintenance and Repairs" amounted to Rs. 5,105 and "Improvement" to Rs. 7,777, representing Rs. 106 per mile of canal.

Measuring charges. 9. The area irrigated was measured at a cost of Rs. 490, or annas 2 and pies 8 per acre.

Evaporation and absorption. 10. The following calculations show the loss of water due to evaporation and absorption:—

Total quantity of water in tank ...	...	4,115,186,461
Total quantity of water discharged through canals ...	...	1,503,230,515
Actual quantity on 31st March 1894 ...	...	2,195,539,613
		<u>3,698,770,128</u>
Quantity lost by evaporation and absorption ...		416,416,333

11. At the end of the year the number of trees above and below 5 feet on this work was 134,573:—

	Above 5 feet.	Below 5 feet.
Bábul ...	55,588	74,861
Nimb ...	1,213	132
Mango ...	642	170
Jámbul ...	79	33
Tamarind ...	110	151
Siras ...	136	24
Chandan ...	40	43
Nimboni ...	94	18
Sindi ...	32	305
Bori ...	36	5
Bamboo ...	178	9
Moho ...	8	2
Guava ...	16	6
Miscellaneous ...	561	81
Total ...	<u>58,733</u>	<u>75,840</u>
	1,34,573	

and the expenditure on them was Rs. 928.

12. The perennial canal was improved during the year by removing silt from bed and sides; the banks were raised and dry stone pitching works towards the tail renewed. The tail portion of the canal having thus been brought into operation, will allow of lands being irrigated where water has not hitherto been available. The quantity of work done and its cost has been given in the Administration Report of the year.

The right bank canal is in a very bad state; there is no bank on the upper side and rain-water enters the canal and brings a large quantity of silt into it, which renders the cost of annual repair very high. The revenue from this canal is insufficient to keep it in good repair.

(11).—KRISHNA CANAL.

The capital account of this canal was closed at the end of March 1892. The sanctioned works, which were not finished when the construction estimate was closed, were completed during the year under report with the exception of the stop-gate on Nála No. 21, which could not be completed owing to difficulty in closing the canal on account of the sugar-cane. Rs. 4,353 on "Works" were spent on the capital account of this canal during the year.

2. The rain-fall as gauged at Retre Budruk in the 15th mile of the canal is shown in the following table :—

Year,				Kharif.	Rabi.	Total.
				In. cts.	In. cts.	In. cts.
1893-94	...	...	...	14 50	5 59	20 09
1892-93	...	...	...	26 68	9 45	36 13
	<i>Average.</i>					
1889-92	...	...	...	19 14	8 76	27 90

3. The area irrigated, the assessments, working expenses and average water rate as compared with the averages of the previous four years, were as follows :—

Year,	Kharif.		Rabi.		Total.		Average Water-rate,	Working Expenses.	
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Rs.	Rs.	
1893-94	...	2,810	34,918	1,932	7,165	4,742	42,083	8.87	13,004
	<i>Average.</i>								
1889-92	...	2,103	26,875	2,110	7,663	4,213	34,538	8.28	14,320
Increase	...	707	8,043	...	...	529	7,545	.59	...
Decrease	178	498	...	...	...	1,316

As compared with the average of the previous four years, there is an increase of 707 acres in the kharif season due to deficient rain-fall and a decrease of 178 acres in the rabi, due to favourable rainfall. The net result is an increase in assessment of Rs. 7,545 over the average. This increase is due partly to insufficient rain-fall during the year, and partly to the cultivators taking greater advantage of the canal, having learnt by experience the profit to be derived from irrigation.

4. The principal crops irrigated were sugar-cane 1,449 (1,149), rice 313 (181), wheat 268 (177), groundnut 2,105 (1,931) and jowári 180 (345).

The figures in brackets represent their average during the preceding four years.

5. The area irrigated was 18 per cent. of the irrigable area and the measured area was 5 per cent. more than that applied for.

6. The revenue from all other sources amounted to Rs. 1,419 (Rs. 1,113 from plantations alone), bringing the gross revenue of the year to Rs. 43,281.

7. The working expenses, including direct and indirect charges, amounted to Rs. 13,004, showing a decrease of Rs. 2,702 on the figures of the previous year. This represents a cost of Rs. 211 per mile of canal and distributaries open and Rs. 2.75 per acre irrigated. The percentage of working expenses to gross revenue was 30.

8. After deducting working expenses from the gross revenue there was a net profit of Rs. 30,277, equal to a rate of 4 per cent. on outlay of Rs. 8,18,292 for direct charges.

9. The average water-rate and cost of measurement as compared with the previous three years were as under :—

Years.	Total Area irrigated.	Average incidence of water-rate per Acre.	COST OF MEASUREMENT AND REVENUE ESTABLISHMENT.	
			Total Cost.	Per Acre.
	Acres	Rs.	Rs.	Rs. a. p.
1890-91	3,950	8.28	400	0 1 7
1891-92	5,374	7.31	549	0 1 7
1892-93	3,796	9.63	896	0 3 9
1893-94	4,742	8.87	1,230	0 4 2

During 1890-92 only measurement charges were included under this head, but a portion of the general canal establishment is now charged to it and moreover paid measurer's khalásis have been employed instead of utilizing, as before, the free services of village Mahárs. In 1892-93 these extra charges were debited for the second half of the year only, whereas in 1893-94 they were debited for the whole of the year. These are the causes of the largely increased charge in recent years.

To make a true comparison with previous years it is necessary to exclude the revenue portion of the ordinary establishment from this head. Making this deduction, the cost of crop measurement alone is reduced to Rs. 651 and Re. 0-2-9 per acre for 1892-93 and to Rs. 773 and Re. 0-2-7 per acre for 1893-94.

10. The average duty of water obtained was for kharif 46 acres per cubic foot per second and that for rabi, 19.

11. The number of trees of all classes on the canal at the beginning of the year was 24,488, and in addition 208 new saplings were planted. The number of trees cut and sold during the year was 1,080, the balance at its end was thus 23,616. The net revenue from plantation was Rs. 1,113.

The principal varieties are Bábhul 21,210, mango 681, nim 661, bamboo 453, and jámbhul 275. The canal plantations are greatly in need of thinning.

MINOR WORKS AND NAVIGATION.

(12).—KHA'RI CUT.

The rain-fall during the year was 41.07 inches in the kharif and 2.41 inches in the rabi season against 50.59 and 0.59 inches respectively during the previous year, the average of the last five years being as follows :—

	In. cts.
Kharif	26.53
Rabi	0.82

2. Although the rain-fall during the year was 7.70 inches below that of the preceding year, yet it was very seasonable and sufficient for the purpose of irrigation. The water of the Chandola Tank, the main storage reservoir for irrigation, was kept up to the full supply level throughout the kharif and rabi seasons; and the irrigated area and revenue were consequently much in excess of the figures of last year as shown below :—

	Kharif.	Rabi.	Total.
1892-93	778	64	842
1893-94	1,760	26	1,786

3. The assessments excluding remissions and free grants (the former being rupees *nil* and the latter Rs. 1,629) were as under :—

	Kharif.	Rabi.	Total.
	Rs.	Rs.	Rs.
1892-93	4,161	213	4,374
1893-94	9,789	128	9,917

The receipts this year were thus the highest on record, with the exception of those in 1887-88. No remissions had to be granted during the year as the water-supply was abundant both for kharif and rabi irrigation.

4. The working expenses of the year amounted to Rs. 4,702 against Rs. 4,249 in the previous year, the rate per acre being only Rs. 2·63 against Rs. 5·04 of that year.

5. The area under irrigation was measured by establishment specially maintained for the purpose at a total cost of Rs. 166 or 1½ anna per acre.

6. The average water-rate during the year was Rs. 5·55 per acre as compared with Rs. 5·19 during the previous year.

7. The supply drawn from the Khári river during the kharif season at the head of the Khári Cut was at the rate of 11·57 cubic feet per second and the area irrigated was 1,760 acres plus the area assessed on the Chandola Tank, viz. 242 acres, making a total of 2,002 acres; these figures give a duty of 173 acres per cubic foot of discharge at head.

8. The discharge at head works during the rabi season was 0·75 cubic feet per second and the area irrigated was 26 acres, giving a duty of nearly 35 acres per cubic foot.

(13).—HARTA'LA TANK.

1. This tank has been in operation for 21 years.

2. At the commencement of the year, it was more than half full. The lowest level of water during the year was 4·40 feet below the full supply level on 11th June 1893. The water level began to rise after that date in the monsoon and the waste weir began to overflow on 28th August 1893. The tank remained full till the middle of October, when subsidence commenced, and by the end of the year the level of water was 3·60 feet below the crest of the waste weir. The contents of the tank were thus more than sufficient to meet the requirements of the area irrigated.

3. The rain-fall during the kharif and rabi seasons of the year was 29·85 inches as under :—

	Inches.
Kharif... ..	26·98
Rabi	2·87
Total ...	29·85

against 46·54 inches of the previous year and 25·55 inches, the average fall during the past 20 years.

4. The area irrigated during the year amounted to 118 acres against 99 acres in the previous year, and was distributed by seasons as under :—

	Acres.
Kharif	11
Rabi	107
Total ...	118

The increase as compared with the irrigation of previous year was 10 acres in kharif and 9 acres in the rabi season. In the kharif season water was taken for 4 acres of perennial crops, such as plantains and guavas, and 5 acres of monsoon dry crops which were sown late in the season.

5. The area irrigated was only 28·43 per cent. of the irrigable area of 415 acres under command. The remaining area under command is reported to have been under cotton cultivation, which pays a fairly good profit at comparatively small cost and trouble.

6. The crop assessment amounted to—

							Rs.	a.	p.
Kharif	...	...	...	...	...	...	49	10	0
Rabi	...	...	...	...	...	...	216	6	0
Total	...						266	0	0

and the revenue assessed from other sources amounted to—

							Rs.	a.	p.
Protective rate on irrigable land under command	...						411	2	0
Sale of bábul trees	...	...	...	...	...	...	542	0	0
Sale of grass, fishery, &c.	...	...	...	...	...	...	8	0	0
Total	...						961	2	0

The gross assessed revenue was thus Rs. 1,227-2-0 against Rs. 637-7-0 of the previous year. The increase is partly due to larger area irrigated, and partly to a considerable sale of bábul trees.

7. The demand for firewood for cotton factories and presses is day by day growing in the eastern portion of Khándesh where cotton is largely grown, and a start was made during the year under report to sell full-grown bábul trees round the margin of the tank. Measures are being taken to keep up and develop bábul plantation round the tank margin.

8. The incidence of water-rate per acre during the year under report was Rs. 2-4-1 against Rs. 1-15-8 of the previous year. The increase is accounted for by the larger area irrigated of high rated crops.

9. There was no remission of water-rates during the year.

10. The realizations amounted to Rs. 1,205-13-0, made up of—

							Rs.	a.	p.
Water rates	...	...	...	...	...	...	244	11	0
Miscellaneous	...	...	...	...	...	...	961	2	0
Total	...						1,205	13	0

11. There are no outstandings. The rabi assessments of Rs. 216-6-0 of the year, which were sent for realization after the close of the year, remain to be realized.

12. The working expenses amounted to—

							Rs.
In the Public Works Department	...	...	...	...	...	...	328
In the Civil Department	...	...	...	...	...	...	33
Total	...						361

against Rs. 725 of the previous year. The assessments of the year were Rs. 1,227-2-0, as explained in paragraph 6 above. Deducting from them the working expenses of the year, the net amount earned by the tank was Rs. 866, which represents a percentage return of Rs. 1-80 on the direct capital outlay of the work, which is Rs. 47,948. This favourable result is due, to a great extent, to the considerable sale of bábul trees. It is expected that there will be some revenue every year in future from this source, as the bábul plantation round the tank margin is being developed as far as practicable.

13. The cost of measurements of the area irrigated was Rs. 2-5-4, which gives a rate of 4 pies per acre.

14. The area irrigated was 23 acres short of the area applied for, as will be seen from the following comparison :—

					Applied for.	Irrigated.
Kharif	...	...	...	...	17	11
Rabi	...	...	...	...	124	107
					141	118

The difference is due to over-estimate of areas in the water applications.

15. There have been no special observations to ascertain the duty of water used. In the kharif season the average discharge from the tank was 0·56 cubic feet per second, and in the rabi season 1·26 cubic feet per second gauged at the tank outlet. The duty given by these discharges on the respective seasons for a discharge of one cubic foot per second was as below :—

							Acres.
Kharif	...	...	...	...	...	...	19·64
Rabi...	...	...	...	...	...	...	84·92

16. The loss by evaporation and absorption was as follows :—

Kharif Season.

						Ft.
April to June 1893—69 days	...	...	...	...	...	2·00
July to September	...	...	...	...	...	Nil.

Rabi Season.

						Ft.
October 1893 to January 1894—109 days...	...	...	...	...	...	2·23

Hot season.

						Ft.
February and March—59 days	...	...	...	...	...	1·31
						5·54
Average daily loss	...	...	...	...	...	0·0234

(14).—MHASWA TANK.

1. This tank has been in operation for 17 years.

2. The water-supply in the tank was sufficient throughout the year to meet the requirements of irrigation, the extent of which has been larger this year than in previous years since 1889-90. At the commencement of the year the depth of water was 18·61 feet above the outlet sill. It gradually went down and reached the lowest depth of 16 feet on 27th May 1893. On the following day, viz. 28th May 1893, the tank had its first replenishment. From this date the level of water began to rise, and the tank filled to overflowing on 26th August 1893. After serving the demands of rabi irrigation and perennial crops, the depth of water in the tank at the close of the year was 16·38 feet above outlet sill, representing available contents of 73·23 million cubic feet.

3. The rain-fall in the year from 1st April 1893 to 31st March 1894 amounted to 23·39 inches against 40·79 inches in the previous year and 30·23 inches, the average of the past 16 years. By seasons the year's rain-fall was—

					Inches.
Kharif	...	...	...	...	18·75
Rabi	...	...	...	...	1·11
					19·86

The kharif or monsoon rain-fall was evenly distributed throughout the season ; but the rabi rain-fall, though fairly good, was not sufficiently timely to make the crops independent of the canal water.

4. The following table contrasts the year's irrigation with that of the past four years :—

	Years.	Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.
1889-90	...	16	189	205
1890-91	...	13	175	188
1891-92	...	17	104	121
1892-93	...	11	112	123
1893-94	...	18	211	229

It will be seen that a large rabi area was irrigated from the tank water, and the year's total irrigation has been 86 per cent. in excess of the previous year. The crops grown were:—

In Kharif Season.

	Acres.
Guava	1
Plantain	8
Sugarcane	1
Chillies and onions	4
Fodder	1
Groundnut	1
Rice, Dodki	2
Total ...	18

and in Rabi Season.

	Acres.
Wheat	176
Gram	30
Peas	3
Jowári	2
Total ...	211

The jowári crop was sown late, and thus required water in the rabi season to come to maturity.

5. The value of the above crops is estimated at Rs. 3,592 by the Mahálkari of Párola.

6. The assessed revenue of the year amounts to—

	Rs. a. p.
Water-rates	549 8 0
Miscellaneous	1,073 15 3
Total Rs. ...	1,623 7 3

more than double the revenue in the previous year. This is partly due to the increase in the area irrigated, but mostly to the revenue earned from the sales of bábul trees, of the right of fishing, and of the lease of unsubmerged part of the tank bed for melon cultivation. The proceeds from the latter two sources were unusually large owing to the factions amongst the Kolis of Párola, one party trying to beat down the other in securing the leases put to auction. The right of fishing was sold for Rs. 201, and the lease for cultivation of tank bed in the hot weather for Rs. 172.

7. The average rate of assessment for water-rates was Rs. 2-6-4 per acre.

8. There have been no remissions during the year.

9. The realized revenue amounted to—

	Rs. a. p.
Water-rates	347 4 0
Other sources	1,073 15 3
Total Rs. ...	1,421 3 3

nearly double the amount realized in the previous year, owing to the large amount realized from other sources as explained in the concluding portion of paragraph 6 above.

10. There are no outstandings except the rabi assessments of Rs. 429, which were sent for realization after the close of the year.

11. There were no refunds during the year.

12. The working expenses amount to—

	Rs.
In the Public Works Department ...	1,995
Collection charges in the Civil Department ...	29
	<hr/>
Total Rs. ...	2,024

This is nearly 47 per cent. in excess of the previous year, which was Rs. 1,388 in all. The excess is due to the construction of a new building at Utrud to keep stores in, and to give shelter to the karkun and to the other canal establishment. The old building situated near the tank, removed from human habitations, and which was twice attacked by thieves who were on one occasion successful in carrying away Government and private cash of the subordinate in charge, needed special repairs during the year. It was found that with the estimated cost of these special repairs and the material of the old building a new building could be erected near the village of Utrud. This has accordingly been done at a cost of Rs. 553. Excluding this cost, and the consequent establishment and indirect charges, the revenue outlay during the year will be found to be Rs. 940, which is less than the assessments of the year as given in paragraph 6 above by Rs. 683.

13. The cost of measurements of crops irrigated was Rs. 13-11-4, which gives a rate of pies 11 per acre irrigated.

14. The area actually irrigated compares as below with the area applied for:—

Area.				Kharif.	Rabi.	Total.
				Acres.	Acres.	Acres.
Applied for...	...	...	...	16	200	216
Assessed	...	...	...	18	211	229
			Difference	2	11	13

The excess in the rabi areas is due to under-estimates of areas in water applications.

15. The assessments of the year on account of water-rates were made as shown in the following table:—

Crops.				Area Irrigated.	Sanctioned scale of Water-rates.	Assessment.
				Acres.	Rs.	Rs.
I—Perennial	...	...	...	10	10	95
II—Eight months	...	...	...	5	4	20
III—Four months...	...	...	...	210	2	429
IV—Monsoon	...	...	...	3	1	3
V—Hot weather	...	...	...	1	4	3
				229		550

The slight difference apparent from checking the assessment on areas irrigated according to the rates given is due to round figures of areas being entered omitting or taking one for fractions. The area irrigated in the rabi season was nearly double the area of last year as the rainfall in the season, though fairly good, was not opportune, and as the cultivators had retained larger areas for rabi sowings.

16. The duty of water used for irrigation is as follows:—

Kharif—11.69 acres per cubic foot per second.

Rabi—77.86 acres per cubic foot per second.

No special observations were made for ascertaining duty.

17. The loss by evaporation and absorption was as under:—

<i>Kharif Season.</i>			
			Feet.
April and May, 1893—57 days	...	...	2.44
June to September 1893	...	...	Nil.
<i>Rabi Season.</i>			
October 1893 to January 1894—115 days	...	...	3.22
<i>Hot Season.</i>			
February to March 1893—59 days	...	...	1.98
Total			7.64
Average daily loss	...	...	0.033

(15).—JAMDA CANALS.

1. The canals have been in operation for 27 years.
2. The following table contains a contrast of the year's supply of water in the Girna river above the Jamda weir, with the supply in the previous year:—

Minimum river discharge in different seasons.	1892-93.	1893-94.
	C. ft. per second.	C. ft. per second.
Minimum river discharge in the hot-weather at commencement of year (April, May and June)	0.58	33.98
Do. in Kharif season	100.95	376.33
Do. in Rabi season	165.46	158.59
Do. towards the close of the year (February and March).	63.04	60.88

The favourable and comparatively large water-supply in the beginning of the year encouraged perennial irrigation, and was availed of to a considerable extent for this class of crops. The extent of perennial irrigation during the year was 236 acres, against 52 acres of the previous year, and 37 acres during 1891-92. As regards perennial irrigation the year under report was the 4th best on record since the opening of the canals. The rabi supply though less was sufficient to meet all demands. The supply towards the close of the year, being almost the same as in the previous year, has helped somewhat to secure the confidence of the irrigators, and the extent of perennial irrigation in 1894-95 also will be considerable.

3. The favourable nature of the river supply during 1892-93 and 1893-94 is explained by the following rain-fall recorded in the catchment of the river, in comparison with the record of 1891-92;—

Stations.	1891-92.	1892-93.	1893-94.	Remarks.
Kalvan	20.74	28.95	38.06	Mámlatdárs' gauge.
Aliabad	37.54	46.17	44.01	Departmental gauge.
Satána	16.11	23.03	24.89	Mámlatdárs' gauge.
Málegaon	14.90	36.76	21.28	Do.
Nándgaon	22.46	36.57	21.20	Do.
Average	22.35	34.29	29.88	

The shortness of rain-fall during 1893-94 in the lower reaches of the river, as it nears the canals, accounts for shortness of the river supply in the rabi and following hot seasons, as compared with the figures of 1892-93.

4. The following table contrasts the record of the year's rain-fall in the canal district with the record of the previous year:—

Stations.	Kharif.		Rabi.	
	1892.	1893.	1892.	1893.
<i>At Canal head.</i>				
Jamda Bungalow	42.91	18.62	1.16	0.90
<i>About middle of Canals.</i>				
Kolgaon Chowki	45.07	19.24	2.33	0.10
<i>At tails of Canals.</i>				
Bhadgaon Kacheri	39.20	23.35	3.38	1.12

The rain-fall in the canal district was much less during the year, as compared with that of 1892, but was sufficient to meet the wants of all ordinary cultivation in both the kharif and rabi seasons.

5. The areas irrigated during the year were:—

				Acres.
Kharif	...	...	...	508
Rabi	...	...	...	1,080
			Total	1,588
Against—				
Kharif	...	...	...	757
Rabi	...	...	...	1,514
			Total	2,271

of the previous year. The falling off is due to large cultivation of cotton, and small areas being left for rabi sowings. About 148 acres of monsoon dry-crops had to depend upon canal water to come to maturity. This was however only $\frac{1}{4}$ th of the area of similar crops watered last year.

6. The assessments of the year amounted to:—

				Rs.
Water rates	...	...	...	6,630
Other sources	...	...	...	3,937
			Total	10,567

and are in excess of any previous year on record. This result is partly due to the increase in the perennial crop irrigation, and partly to the large sale of full grown Bábul trees on the canals. The Bábul plantations on the canals are now 27 years old. About 1,150 full grown Bábul trees were marked during the year, and sold by public auction. The price realised was about Rs. 3 per tree, the purchaser cutting the trees and removing the wood at his own cost. Good prices were realised as there is a rising demand for Bábul wood fuel for cotton presses and ginning factories in the neighbourhood. It is proposed to continue these sales of full grown Bábul trees in future years, all cuttings being replaced by new Bábul sowings. It is considered that this will be a good source of income on the canals in succeeding years.

7. There were no remissions during the year.

8. The realizations amounted to—

				Rs.
Water rates ...	...	...	...	6,422
Other sources	...	...	...	3,936
			Total ...	10,358

which were more than double the amount realized last year. Rs. 1,035 out of the demands on account of water-rates sent during the year to the Collector of Khándesh, remained unrealised. The reason of the large outstanding is not known, but the Collector's attention has been called to it, and it is expected that it will all be realized in the next year.

9. The water-rate assessment per acre was Rs. 4-2-10, against Rs. 1-13-5 of previous year. The increase is due to the large high-rated perennial crop area irrigated during the year. It obtained the requisite canal water in the hot weather owing to the favourable supply in the river, and had thus to pay full perennial rates instead of half rates, as was the case in the previous year.

10. The working expenses amounted to Rs. 8,915, against Rs. 12,369 of the previous year, which showed a considerable reduction in the charges. After deducting the working expenses from the year's assessments, there was a net revenue of Rs. 1,652 on the canals, a very unusual result for the Jamda Canals.

11. The cost of measurement per acre irrigated, separately on the two canals, was as given below :—

Canal.	Area irri- gated.	Area measure- ments.	Cost of measure- ments.	Rate perAcre irrigated.
	Acres.	Acres.	Rs. a. p.	Rs. a. p.
Left Bank	1,169	569	43 15 6	0 1 3
Right Bank	419	80	3 9 0	0 0 9

40·8 per cent. of the area irrigated had to be measured, the remaining 59·2 per cent. of the area was in lands subdivided for irrigation purposes or in whole fields.

12. The areas assessed compare with those applied for as follows :—

	Kharif.	Rabi.	Total.
Applied for ...	514	1,024	1,538
Assessed ...	508	1,080	1,588
Difference ...	6	56	50

The difference is very small and calls for no remark.

13. In the following table the areas irrigated are classified according to seasons and rates :—

No.	Classification.	Area irrigated.	Assessment in Rs. at pre- sent scale of Water-rates.
		Acres.	Rs.
1	Perennial	236	3 778
2	Eight months	149	603
3	Four months	1,031	2,069
4	Monsoon dry	148	87
5	Hot weather	24	93
	Total	1,588	6,630

Some of the eight months' crops having been watered beyond the season, had to pay the four months' rate in addition, and some of the monsoon crops having been watered in the rabi season had to pay rabi rate. This accounts for the slight variations which appear on checking the amount of assessments from the areas of crops shown in the above table.

14. Special observations were made in the village of Kolgaon during the rabi season to determine the duty of water and the quantities required for the maturing of gram and wheat crops, with the following results :—

Survey Number.	Crop.	Number of waterings.	Area.		Quantity of Water used.	Duty (123 days).
			A.	g.		
96 Pot No. 3	Gram	3	2	15	68,744	378
96 Pot No. 2	Wheat	4	2	6	58,608	389

15. The number of trees on the canals at the end of the year was 15,974 :—

Ain	...	...	27	Mango	...	...	3,178
Anjan	...	...	39	Moho	...	...	834
Bábul	...	...	9,843	Madsing	...	...	17
Bábul Ramkoti	...	...	27	Nimb	...	...	1,043
Bamboo	...	...	188	Nimbora	...	...	80
Bibla	...	...	27	Nana	...	...	6
Bakul	...	...	8	Siras	...	...	38
Bakam	...	...	18	Sisum	...	...	123
Beheda	...	...	17	Sandal	...	...	3
Casuarina	...	...	23	Tamarind	...	...	98
Divi-divi	...	...	81	Tiwas	...	...	75
Jambhul	...	...	72	Teak	...	...	25
Kohu	...	...	84				
Total							15,974

and the expenditure thereon to the end of the year was :—

				Rs.
Capital	...	...	...	15,092
Revenue	...	...	...	632
Total Rs.				15,724

(16).—PARSUL TANK.

1. This tank has been in operation for five years.

2. The tank works are almost complete. Some work in connection with the improvements to Saundana channel and its extension to deliver water to Nándgaon lands remains to be done. This is expected to be finished by the end of 1894-95. The total capital outlay to end of the year, in comparison with the sanctioned estimate, is given in Statement II—A, attached to this report.

3. The works of Umrana bandhára and Right Bank Channel were completed during the year, and water was given by the new channel for rabi irrigation.

4. In addition to the sum of Rs. 330 realized last year by the sale of land taken up for the tank, but now restored for cultivation, the following sums were realized during the year :—

Village.	Survey No.	Area.	Compensation originally paid.	Proceeds now realized by sale.
		A. g.	Rs.	Rs.
Umrána	213	11 28	162	122
	219	8 39	406½	406½
Total ...			568½	528½

The short realization in the case of Survey No. 213 was due to the removal of the top soil for tank embankment. Survey No. 219 was taken back by the former holder after repaying the whole of the amount of compensation he had received.

5. The quantity of water stored in the tank sufficed to meet the demands of irrigation. At the commencement of the year the available storage was 67·13 million cubic feet, which gradually went down after meeting the demands of hot weather irrigation to 51·19 million cubic feet, on 29th May 1893. The tank began to fill from 30th May 1893, and overflowed on 25th June 1893. At the close of the year, the available tank contents were 45·31 million cubic feet.

6. The rain-fall from 1st April 1893 to 31st March 1894 (gauged at Umrána) amounted to 17·63 inches, against 35·76 inches of the previous year and 21·82 inches, which is the average of the past 11 years. The falls by seasons from the time the tank came into operation to end of the year under report, that is, for 5 years, are compared in the following table:—

Year.	Kharif.	Rabi.	Total.
	Inches.	Inches.	Inches.
1889-90	8·56	4·43	12·99
1890-91	12·75	3·47	16·22
1891-92	12·67	0·91	13·58
1892-93	33·27	1·64	34·91
1893-94	13·69	1·65	15·34

The year's rain-fall was less than half the fall of the previous year. It was however copious in the beginning of the monsoon, that is, in June. The falls in the three subsequent monsoon months were low, and created a demand for tank water for such areas as were sown late. The rabi rain-fall, though equal to last year's, was not timely.

7. The area irrigated during the year was 359 acres distributed as under:—

Kharif	...	...	...	Acres,	69
Rabi	...	...	...	...	290
				Total	359

against 338 acres of 1892-93.

8. The area irrigated in each village was as follows:—

			Kharif,	Rabi,
			Acres.	Acres.
Umrána	...	...	44	177
Saundana	...	...	25	111
Nándgaon	...	...	...	2
Total			69	290

and consisted of the following crops :—

				Acres.
Plantains	...	...	...	7
Sugar-cane	...	...	...	2
Guava	...	...	...	1
Fodder	...	...	...	15
Chillies	...	...	...	1
Onions	...	...	...	3
Methi	...	...	...	65
Wheat	...	...	...	139
Gram	...	...	...	70
Bajri	...	...	...	26
Sesame	...	...	...	10
Cotton	...	...	...	3
Maize	...	...	...	7
Sweet potatoes	...	...	...	2
Miscellaneous	...	...	...	8
Total				359

9. The water-rate assessment of the year amounted to Rs. 1,417-14-0 and the assessment from other sources to Rs. 8-5-0. The total assessed revenue of the year was thus Rs. 1,426-3-0.

10. The realizations during the year were as follows :—

			Rs.	a.	p.
Water-rates	...	...	1,338	11	0
Other sources	...	...	8	5	0
Total Rs.			1,347	0	0

11. There were no outstandings. The rabi demands of Rs. 1,165-3-0 were sent for realization after the close of the year, and will be realized in 1894-95.

12. The working expenses amounted to Rs. 970 against Rs. 1,071 of the previous year, inclusive of the collection charges in the Civil Department.

13. The net revenue earned by the tank after deducting working expenses from the year's assessment was Rs. 456.

14. The scale of water-rates per acre was as given below :—

Kharif	...	...	Rs. 1
Rabi	...	...	" 4
Hot weather	...	...	" 6

This scale was sanctioned for three years ending with the year under report, Orders have been received during the year to continue the same scale for another year pending the consideration of a scheme for permanent "thals" or káyam bágáit under the tank. The scheme has been drawn up, and is under consideration.

15. The year's assessments by seasons were as follows :—

			Area.	Assessment.
			Acres.	Rs.
Kharif	...	...	40	40
Rabi	...	...	294	1,182
Hot weather	...	...	25	196
Total			359	1,418

Under rabi are included eight months' crops, such as chillies and onions, and also late monsoon crops which were watered beyond the season, and had to pay the rabi rate. The hot weather crops include a few perennial crops which have paid the hot weather and the other seasons' rates also. It will be seen from the above that the tank is mainly a rabi irrigation work.

16. The measurements of crops were made by the canal establishment, and thus there was no separate charge on that account.

17. The area applied for compared as below with actual irrigation :—

			Kharif.	Rabi.
			Acres.	Acres.
Applied for	...	...	... 44	144
Assessed	...	...	... 69	290
Difference	...	...	... 25	146

This was due partly to under-estimates in water applications, and partly to the káyam bágáit land of Soundana having been irrigated in the kharif and rabi seasons without applications. The question of the claim of Soundana irrigators to water the lands fixed as bágáit under the last settlement has been reported upon, and is believed to be under consideration. Pending its decision, the existing practice of assessing the lands under crop rates in addition to the consolidated rate, is being adhered to.

18. The calculated loss by evaporation and absorption was as under:—

<i>Kharif Season.</i>			Feet.
April and May 1893—59 days	...	...	2.53
July to September 1893—27 days	...	...	0.37
<i>Rabi Season.</i>			
October 1893 to January 1894—121 days	...	...	3.29
<i>Hot Season.</i>			
February and March—59 days	...	...	4.00
		Total	10.18
		Average daily loss	0.038

(17).—OJHAR CANAL.

The area irrigated was 352 acres of kharif and 1,891 acres of rabi, or a total of 2,243 acres. The total shows an increase of 1,143 acres on the area of last year, this increase being due to deficient rain-fall in September, October and November, the 3 months when rain-fall is generally most certain in this part of the country. Although there was an increase over last year, it was equal to the average of the preceding five years.

2. The following statement compares the area applied for and irrigated during the year :—

Year.	Kharif.		Rabi.		Total.		Difference less irrigated.		
	Applied for.	Irrigated.	Applied for.	Irrigated.	Applied for.	Irrigated.	Kharif.	Rabi.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1893-94	418	352	2,912	1,891	3,330	2,243	66	1,021	1,087

The area applied for but not irrigated is 48 per cent. of the area irrigated. As it has not been the custom to return to the applicants one copy of sanctioned application, they appear not to have understood that they should only apply when they intend to use the water.

3. The total water-rate assessment of the year amounted to Rs. 6,030, being Rs. 2,022 for kharif and Rs. 4,008 for rabi, which, as compared with the year before, shows an increase of Rs. 2,559, or 74 per cent. Compared, however, with the average of the preceding five years there was a falling off of Rs. 236. The following figures give the average revenue for each period of five years since the canal was opened :—

	Rs.
1874-75 to 1878-79	1,718
1879-80 to 1883-84	3,905
1884-85 to 1888-89	3,773
1889-90 to 1893-94	6,208

The revenue is likely to increase steadily.

Area irrigated per mile of main canal and of main canal and branches.

4. The area irrigated per mile of main canal was kharif 18·53 acres and rabi 99·53 acres, and of main canal and branches was kharif 8·80 acres and rabi 47·27 acres.

Comparison of area irrigated and revenue.

5. The following table compares the areas irrigated and revenue during the past three years with those of the year under report:—

Years.		Area irrigated.	Revenue from Water-rates.	REMARKS.
		Acres.	Rs.	From 1st April to 31st March.
1890-91	... ..	3,162	6,115	Rain-fall 25·24
1891-92	... ..	2,621	6,490	Do. 15·44
1892-93	.. . .	1,100	3,471	Do. 37·72
1893-94	... ..	2,243	6,030	Do. 25·09

Water-rate per acre. 6. The incidence of water-rate per acre was 2·69 against 3·16 in the previous year.

Capital Account. 7. The Capital Account is closed. There was a net credit of Rs. 40 on account of transfer of material.

Working expenses, 8. The working expenses of the year amounted to Rs. 6,808, as follows:—

Maintenance and repairs	... ..	Rs. 3,371
Share of establishment	... ..	2,817
Tools and Plant	... ..	84
Share of collection charges	... ..	142
Indirect charges	... ..	394
		6,808

The working expenses of the last year amounted to Rs. 5,892. The rate of working expenses this year per mile of main canal open is Rs. 358, and per acre irrigated is Rs. 3·04.

The increase on maintenance and repairs is Rs. 863, due to additional expense on repairs to breaches and special clearance to first 3 miles of the canal. There is also an increase on establishment charges, which is mainly due to direction charges.

9. The duty per cubic foot per second of water admitted to the canal was 11·11 acres in the kharif and 46·13 acres in the rabi season; that of the water actually utilized was 13·70 and 52·27 acres, respectively, in the two seasons. These very low duties are due to the small areas irrigated per mile of canal and the long lengths of many of the field channels.

10. The water-rates are the same as those in force since 1889-90 when the old rates were re-established. The rates are to be revised from the year 1894-95.

11. The cost of measuring 1,839 acres, excluding 404 acres sub-divided, was Rs. 202, or 1 anna and 9 pies per acre against Rs. 154 or 3 annas per acre in 1892-93.

12. The rain-fall, as gauged at Ashvi, was kharif 15·61, rabi 1·13, total 16·77 inches, or 5·13 inches less than the average of the last five years. The above figures exclude rain-fall in April and May 1893, during which 8·32 inches fell, most of which fell in May 1893.

13. The discharge of the river Pravara was sufficient to meet the requirements of the cultivators. On 1st April 1894 the discharge of the river at Jorwa above the weir was 39.40 cubic feet per second against 36.26 cubic feet per second on the same date in the previous year; that on 31st March 1894 was 40.47 cubic feet per second against 37.62 cubic feet per second on the same date in the previous year. In January 1894 a temporary earthen bund, 2 feet high, was thrown on the weir as usual to increase the backwater during the hot weather of 1894-95.

14. A project for a storage reservoir at Sámrad was being matured during the year, and on its construction must depend the extension of perennial crops. There is not now any deficiency of water for kharif and rabi crops.

15. At the end of the year the number of trees on this canal was 11,805. The number of principal kinds were :—

Bábul	...	..	8,893	Bakan	...	...	32
Mango	...	...	900	Jámbul	...	...	187
Do. grafts	...	...	50	Sandal	...	...	57
Orange	...	...	25	Nimb	...	...	1,435
Bore	...	...	116	Bámboo	...	...	35
Moho	...	...	5	Kyene	...	...	3
Siris	...	...	13	Miscellaneous trees	...	...	54

The total number last year was 12,629. 401 trees died on account of white ants and dry rot, &c. 453 bábul trees were cut down for preparing charcoal. The difference of 30 trees is due to a more careful count made of bábul trees sown broad-cast.

(18)—BHATODI TANK.

The area irrigated was 648 acres of kharif and 965 acres of rabi, or a total of 1,613 acres. The total shows an increase of 276 acres over the area of the previous year, which was one of abnormally heavy rain-fall. There has been very slight variation in the average area irrigated since 1883-84. The average for the previous 10 years has been 1,300 acres. The average area irrigated between 1878-79 and 1882-83 was 761 acres and between 1873-74 and 1877-78 was only 339 acres; there has therefore been a steady increase in area irrigated.

Comparison of area applied for and irrigated.

2. The following statement compares the area applied for and irrigated during the year :—

Year.	KHARIF.		RABI.		TOTAL.		DIFFERENCE.		
	Applied for.	Irrigated.	Applied for.	Irrigated.	Applied for.	Irrigated.	Kharif.	Rabi.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1893-94 ...	610	648	900	965	1,510	1,613	+38	+65	+103

The difference between the area applied for and that irrigated is due to the cultivators being unable to estimate correctly the area they propose to irrigate.

Water-rate assessment.

3. During the year the water-rate assessments amounted to Rs. 5,173, detailed as below :—

					Rs.
Kharif	...	...	...	...	3,076
Rabi	...	...	...	...	2,097

The total amount of the assessment last year was Rs. 4,038; there is, therefore, an increase of Rs. 1,135, or 28 per cent. The increase of revenue is partly due to double rates being charged under the canal rules to cultivators who took water without first submitting applications, but double rates were only charged when the fault clearly rested with the cultivators.

4. Rs. 13-3-2 were refunded to the irrigators. The amount had remained Refund of revenue. to be paid during the last year.

Comparison of area irrigated and revenue.

5. The following table compares the areas irrigated and revenue during the past three years with those of the year under report:—

Year.		Area irrigated.	Revenue from Water-rates.	Remarks.
		Acres.	Rs.	From 1st April to 31st March.
1890-91	... ..	1,251	4,143	Rainfall 22·26.
1891-92	... ..	1,576	4,818	Do. 20·30.
1892-93	... ..	1,337	4,038	Do. 46·63.
1893-94	... ..	1,613	5,173	Do. 31·50.

As the rain-fall was very favourable the improvement in the revenue is most satisfactory, as it shows an increasing demand for canal water irrespective of rain-fall.

6. The incidence of water-rate per acre was Rs. 3·21 against 3·02 in the previous year. The increase is due to the increase in Water-rate per acre. the area of perennial crops.

7. There was no expenditure during the year from Capital Account, Capital Account. which is closed.

8. The working expenses of the year amounted Working expenses. to Rs. 4,148, detailed as below:—

				Rs.
Maintenance and repairs	...	...	...	1,910
Share of establishment	...	...	...	1,540
Tools and plant	...	...	...	103
Share of collection charges	...	...	...	379
Indirect charges	...	...	..	216
			Total	4,148

The working expenses of the last year amounted to Rs. 4,433. The rate of working expenses this year per mile of main canal open is Rs. 922 and per acre irrigated is Rs. 2·57.

9. The duty per cubic foot per second of water actually utilized was 152·83 Duty of water. acres in the kharif and 97·97 acres in the rabi season. These results are very satisfactory.

10. The water-rates are the same as those in force since 1889-90 when the Water-rates. old rates were re-established. The rates are to be revised from the year 1894-95.

11. The cost of measurement amounts to Rs. 19, or Re. 0-1-10 against Cost of measurement. Rs. 17 or Re. 0-2-2 per acre irrigated last year. Out of the irrigated area of 1,613 acres, 1,450 acres had merely to be inspected and checked with the registers of Pôt numbers and 163 acres had to be actually measured.

12. The rain-fall, as gauged at Bhatodi, was kharif 18·78, rabi 5·61, total Rain-fall. 24·39 inches, or 1·24 inches less than the average of the last five years. The rain-fall in April and May 1893 and in February and March 1894, not included in the above figures, was 7·11 inches.

13. On 1st April 1893 the water in the tank stood at 21·87 feet above Water-supply. sill of outlet sluice, i. e., at R. L. 91·87 against R. L. 75·65 on the same date in the previous year. The tank received its first replenishment on 28th May 1893, i. e., the R. L. of

surface of water rose from R. L. 88.95 to 89.20. The highest level of water in the tank was 93.60 on 16th October 1893, *i. e.*, 1.10 feet above the crest of waste weir. The R. L. of surface of water on 31st March 1894 was 88.15.

Plantations. 14. At the end of the year the number of trees on the canal was 7,662. The number of principal kinds were :—

Mango	...	980	Jambhul	...	139
Do. grafts	...	17	Nimb	...	317
Tamarind	...	45	Sandal	...	161
Bore	...	147	Siris	...	49
Orange	...	29	Bábul	...	5,189
Miscellaneous	...			...	589

The total number last year was 6,461.

15. Rs. 542-5-0 remained to be realized at end of the year. Explanation of the non-recovery of the amount given by the Mám-latdár of Nagar Táluka is as under :—

Unrealized balance.

- (1). Representation of the people of Pimpalgaon Landga that they did not take water.
- (2). Delay in giving copy of Return No. III. of Sandwe village for recovery owing to mistake in the return.
- (3). Notices being not issued by the village authorities at the proper time.

The Mám-latdár states that arrangements have been made for the early recovery of the amount. The Pimpalgaon cultivators were charged under Section 48 of Act VII of 1879.

(19).—MATOBA TANK.

The water in this tank stood at 25 feet above sill of outlet on 1st April 1893. The draw-off for irrigation reduced the level until the end of May, when it stood at 21.35 feet above outlet sill. The tank was filled to overflowing on the 25th June and on the 31st March 1894 the level was 17.50 above sill of outlet, or nearly 8 feet lower than the same date in the previous year.

2. The area irrigated from this tank during the year was 1,142 acres, of which 732 were kharif and 410 rabi. The total shows an increase of 257 acres as compared with the previous year, but is less than the area in 1891-92.

The area of sugar-cane was very nearly up to the maximum, and the falling off as compared with 1892 is solely in the dry-crops which do not require water if the rain-fall is favourable.

The assessments of water-rates amounted to Rs. 10,790, and the miscellaneous revenue to Rs. 2, making a total of Rs. 10,792 against Rs. 6,359 in the previous year. The incidence of water-rates was Rs. 9.45 per acre irrigated against Rs. 7.06 in the previous year.

3. The area irrigated was ascertained by actual measurements, most of which were taken by measurers specially entertained for the purpose and the remainder by an Inspector in the intervals of his regular work. The total cost of measurements was Rs. 57-15-0, or 9 pies per acre as compared with 1 anna and 3 pies in the previous year.

4. The working expenses amounted to Rs. 2,571, which represented a rate per mile of canal in operation of Rs. 151.23, or 2.25 per acre irrigated.

5. The highest duty of water during the month in which no rain fell, was obtained in February 1894, when the area irrigated was 576 acres and the average discharge 6.53 cubic feet per second, giving a duty of 88.20 acres per cubic foot per second. The lowest duty in the dry season was in April 1893 when the area irrigated was 542 acres and the average discharge 10.30 cubic feet per second, giving a duty of 52.62 cubic feet per second.

6. The following is the comparison of areas irrigated and applied for :—

AREAS APPLIED FOR.			AREA IRRIGATED.			MORE.		LESS.	
Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Kharif.	Rabi.
950	720	1,670	732	410	1,142	...	...	218	310

The decrease is due to the cultivators over-estimating the areas of their fields.

(20).—KÁSURDI TANK.

There was 13.15 feet water above sill of outlet in this tank on 1st April 1893. From the 28th May water began to rise and the tank filled to overflowing on the 10th June 1893. The water was drawn off for irrigation, and on the 1st March 1894 stood at 9 feet above sill of outlet.

2. The area irrigated was 41 acres of kharif and 83 of rabi crops, or 124 acres in all; the total shows an increase of 23 acres as compared with the previous year, or 23 per cent., due to sufficient water in the tank. During the hot season, when there was no water in the tank, the bed was utilized for the cultivation of melons, and Rs. 155 were obtained as rent.

3. The assessments amounted to Rs. 528, of which Rs. 339 were on account of water-rates and Rs. 189 for miscellaneous revenue.

4. The cost of measurements amounted to Rs. 5-9-0, or at the rate of 8 pies per acre as compared with 1 anna and five pies in the previous year.

5. The working expenses amounted to Rs. 465, which represent 3.75 per acre irrigated. The excess in working expenses was due to more silt clearance done this year and to the proportionate share of tools and plant having been charged to it.

6. The following table shows comparison of area applied for and irrigated :—

AREA APPLIED FOR.			AREA IRRIGATED.			MORE.		LESS.	
Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Kharif.	Rabi.
57	106	163	41	83	124	...	...	16	23

(21).—SHIRSUPHAL TANK.

On the 1st April 1893 the water in the tank stood at 25.78 feet above sill of outlet, *i. e.*, 11.13 feet higher than on the same date in the previous year. The only replenishment received this year was in May and June when the water rose to 27.65 above outlet sill. With the exception of a small storm in October which caused a rise of 18" there was no replenishment from the eastern storms on which the tanks in this part of the district in a great measure depend for their supply. At the close of the year the water level stood at 14.80 feet above outlet sill, or 11 feet lower than the last year.

2. The areas irrigated were 475 acres of kharif and 438 acres of rabi crops, or a total of 913 acres against 786 acres in the previous year. The increase is due to the scanty rain-fall.

3. The assessments amounted to Rs. 3,526, of which Rs. 3,436 were on account of water-rates and Rs. 90 for miscellaneous revenue.

4. The areas irrigated were measured by measurers specially entertained for the purpose and partly by an Inspector when time could be spared from his ordinary work, and the measurements were checked as usual by the subordinate in charge. The cost was Rs. 51-7-0, or 10 pies per acre against 1 anna and 2 pies in the previous year.

5. The working expenses amounted to Rs. 3,852, which represents a rate for maintenance per mile of canal in operation of Rs. 308.16 and Rs. 4.22 per acre irrigated.

6. The highest duty of water in the month during which no rain fell was obtained in November, when the area irrigated was 485 acres, and the average discharge 6.45 cubic feet per second, giving a duty of 75.19 acres per cubic foot per second.

The duty was ascertained from the daily discharge observations and the known area of land under irrigation at the time. Special observations were not made with regard to any particular crop or locality. No useful information of the kind can be obtained for the rainy season, the canal being single-banked.

7. The following is the comparison of areas irrigated and applied for :—

AREA APPLIED FOR.			AREA IRRIGATED.			MORE.		LESS.	
Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Kharif.	Rabi.
702	426	1,128	475	438	913	...	12	227	...

The decrease is due to the cultivators over-estimating the areas of their fields.

8. Refund of Rs. 6 was sanctioned, due to erroneous assessment during the year.

9. To ascertain the loss by evaporation and leakage from the tank during the year, gaugings were taken for broken periods during the months of April to March inclusive, or a total number of days 322. During this period the loss amounted to 101,585,966 cubic feet, or rather more than one-third of the total capacity of the tank above outlet level.

(22).—BHÁDALWÁDI TANK.

At the beginning of the year the water level stood at 31.25 feet above the outlet sill, or 1.5 feet higher than on the same date in the previous year. The only replenishment received during the year was at the end of May. The October rain failed completely to add anything to the storage, and the result was that the water fell to 4 feet above outlet sill on the 19th March, *i. e.*, the tank was practically empty.

2. The areas irrigated were 487 acres of kharif and 277 acres of rabi, making a total of 764 acres against 670 acres in the previous year. The increase was due to scanty rain-fall.

3. The assessment of water-rates amounted to Rs. 4,349 and the miscellaneous revenue to Rs. 54, making a total of Rs. 4,403 against Rs. 3,386 in the previous year. The areas irrigated were measured partly by a measurer specially entertained for the purpose and partly by an Inspector when time could be spared from his ordinary work. The total cost of measurements was Rs. 43-4-0, or 10 pies per acre against 1 anna in the previous year.

4. The working expenses amounted to Rs. 2,121, which represents a rate of Rs. 217.54 per mile of canal in operation and Rs. 2.78 per acre irrigated.

5. The highest duty of water obtained during the year was in June, when the area irrigated was 311 acres and the average discharge was 2.30 cubic feet per second, giving a duty of 135.21 acres per cubic foot per second. The

lowest duty in the year was in April, when the area was 323 acres and the average discharge 8.95 cubic feet per second, giving a duty of 36.03 acres per cubic foot per second. The duty was ascertained from the daily discharge observations and the known area of land under irrigation at the time. Special observations were not made with regard to any particular crop or locality.

6. The following is the comparison of areas irrigated and applied for :—

AREA APPLIED FOR.			AREA IRRIGATED.			MORE.		LESS.	
Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Kharif.	Rabi.
687	236	923	487	277	764	...	41	200	...

The difference is due to the cultivators over-estimating the areas of their fields.

7. Refund of Rs. 10 was sanctioned on account of assessment reduced from penal to single rates.

8. To ascertain the loss by evaporation and leakage from the tank during the year, gaugings were taken for broken periods during April 1893 to March 1894, or a total number of days 286. During this period loss amounted to 106,621,441 cubic feet, or rather less than one-half of the total capacity of the tank above outlet level. The tank became empty on 19th March 1894.

(23).—KOREGAON TANK.

Rain-fall. The rain-fall for the year under report was 18.80 inches (kharif 14.50 and rabi 4.30) against 46.06 (kharif 38.60 and rabi 7.46) of the previous year.

2. The area irrigated during the year was 352 acres against 302 of the previous year; of this 94 acres were kharif and 258 rabi crops. There was no difference between the area applied for and that actually irrigated.

3. The assessment on account of water-rate amounted to Rs. 1,006 against Rs. 769 of the previous year; the gross revenue from assessed revenue. all sources amounted to Rs. 1,015 against Rs. 779.

4. The following statement gives comparison with five previous years :—

Years.	Kharif.	Rabi.	Total.	Water-rate.	Gross Revenue.	Working Expenses.
	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.
1888-89 ...	151	79	230	714	1,289	757
1889-90 ...	13	323	336	743	746	895
1890-91 ...	121	99	220	530	599	773
1891-92 ...	66	363	429	1,061	1,073	886
1892-93 ...	47	255	302	769	779	1,087
1893-94 ...	94	258	352	1,006	1,015	822

5. The increase in the kharif is owing to the sufficient storage of water in the tank at the commencement of the season. The revenue from sources other than water-rates was Rs. 9 on account of sale of land let out for grazing purposes.

6. The working expenses, including indirect charges, amounted to Rs. 822, of which Rs. 354 were for "maintenance and repairs": this gives Rs. 94 per mile, the length of the canal being 3 $\frac{1}{4}$ miles.

7. The irrigated area was measured at a cost of Rs. 118 or annas 5 and pies 4 per acre. The heavy charge is due to the smallness of area irrigated when compared with the establishment it is necessary to keep up. Some changes in the system of measurement and supervision are being introduced, by which the charges will be reduced next year.

8. The rain-fall over the catchment area, which is 4.4 miles, amounted to 18.50 against 44.96 of the previous year. This gives 189 millions of water that came in the tank, the run-off being .396 of the total average rain-fall.

9. The following figures give the storage of water and loss by evaporation and absorption during the year :—

Quantity of water in Tank	...	...	C. feet. 148,915,840
Do. discharged through canals and waste weir	...	...	60,524,828
Quantity in the Tank on 31st March 1894	...	...	66,706,200
			<hr/> 127,231,028
Quantity lost by evaporation and absorption	...	...	21,684,812

10. Special experiments were also made on this tank to determine the duty of water, and the result was as under :—

Name of Crop.	Acres.	Quantity of water per Acre in Cubic feet.
Ground-nut...	147	1,433,785
Jowári	149	68,786

11. At the end of the year the number of trees above and below 5 feet on this work was 3,310.

	Above 5 feet.	Below 5 feet.
Bábul ...	2,130	910
Nimb ...	5	5
Mango ...	1	...
Jámbul ...	2	1
Tamarind ...	13	...
Bori ...	25	20
Miscellaneous ...	116	82
	<hr/> 2,292	<hr/> 1,018
Total ...	3,310	

There was no expenditure incurred on tree plantation during the year.

(24).—ASHTI TANK.

The rain-fall for the year under report was 23.65 (kharif 15.05 and rabi 8.60) against 39.15 (kharif 29.35 and rabi 9.80) of the previous year, and was seasonable.

2. The area irrigated was 1,193 acres against 1,114, of which 711 were kharif and 487 rabi. The area irrigated was nearly the same as applied for; there was no difference, because the land under command has been divided into small irrigation numbers, and the cultivators know the area of land to be irrigated.

3. The assessment on account of water-rate was Rs. 3,860 against Rs. 4,176 of the previous year. The gross revenue Assessed revenue. from all sources amounted to Rs. 4,207 against Rs. 4,687 of the previous year.

4. The following statement gives a comparison Comparison with irrigation and revenue of previous year. with the last five years:—

Years,	Kharif.	Rabi,	Total.	Water-rate.	Gross Revenue.	Working Expenses.
	Acres.	Acres.	Acres.	Rs.	Rs.	Rs.
1888-89 ...	980	1,437	2,417	4,598	4,990	7,981
1889-90 ...	829	618	1,447	4,523	5,068	5,774
1890-91 ...	576	548	1,124	3,284	4,294	5,151
1891-92 ...	559	1,143	1,702	4,610	6,200	5,333
1892-93 ...	677	437	1,114	4,176	4,687	7,528
1893-94 ...	711	487	1,198	3,860	4,207	5,440

5. There was an increase of 34 acres in kharif and 50 acres in rabi; the former was due to eight months' crops and the latter to unfavourable rain-fall for jowári crop. The revenue other than water-rate was Rs. 347; it was on account of sale of land let out for cultivation and grazing, and sale of Bábul trees. The incidence of water-rate was 3.22 against 3.75 of the previous year.

6. The working expenses, including indirect charges, were Rs. 5,440, of which Rs. 2,410 were for "Maintenance and Repairs," Working Expenses. representing Rs. 81 per mile of canal against Rs. 70 of the previous year.

7. No measuring charges were incurred as the lands under command Measuring charges. have been sub-divided into small numbers and their areas are fixed.

8. The rain-fall over the 92 square miles catchment area was gauged in two Tank-supply. places, and the average was 21.47 against 35.59 of the previous year. This gives 4,589 millions of cubic feet of water, which came into the tank. The run-off into the tank was .183 of the total average fall.

9. The following shows the storage of water and Evaporation and absorption. loss by evaporation and absorption during the year:—

	C. feet.
Total quantity of water in the tank	1,766,906,008.10
Quantity of water discharged through canals and waste weir	377,966,217.60
Quantity in tank on 31st March 1894	755,728,238.00
	1,133,694,455.60
Quantity lost by evaporation and absorption	633,211,552.50

10. Special experiments were made to determine the duty of water and the result was as under:—

Name of Crop,	Acres.	Quantity of Water required per Acre in Cubic feet,
Sugar-cane	107	2,94,820
Ground nut	181	1,15,519
Inferior rice	135	77,888

11. At the end of the year the number of trees above and below 5 feet on this work was 49,880:—

	Above 5 feet.	Below 5 feet.
Bábul	31,936	13,595
Nimb	1,875	220
Mango	460	190
Jambul	198	45
Tamarind	70	3
Siras	19	...
Sindi	140	200
Orange	70	...
Bori	72	9
Bamboo	135	...
Guava	16	...
Miscellaneous	609	18
	35,600	14,280
Total	49,880	

And the expenditure on them was Rs. 262.

(25).—REVÁRI CANAL.

The Capital Account of this canal was closed on 31st March 1893—*vide* Government Resolution No. 125 A. I.—1015, dated 3rd July 1893, and Government Resolution No. 195 A. I.—1411, dated 12th September 1893. The only expenditure was that of Rs. 9-12-0, on "Works", paid on account of arrears of the previous year.

2. The rain-fall, as gauged at Revári, near the head-works, is shown in the following table:—

Year.	Kharif.	Rabi.	Total.
	In. cents.	In. cents.	In. cents.
1893-94	21 95	4 78	26 73
1892-93	22 78	8 94	31 72
Average, 1889-92 ...	20 35	8 55	28 90

3. The area irrigated, the assessments, working expenses and average water-rate, as compared with the averages of the previous four years, were:—

Years,	Kharif.		Rabi.		Total.		Average Water-rate.	Working Expenses.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.		
1893-94	213	2,463	1,135	3,797	1,348	6,260	4-64	1,750
Average, 1889-92	179	1,916	846	2,763	1,025	4,679	4-64	2,018
Increase	34	547	289	1,034	323	1,581	...	...
Decrease ... ..	...	...	...	...	...	...	...	268

As compared with the average of the previous four years, there is an increase of 34 acres in the kharif and 289 acres in the rabi seasons. The latter large increase is due to a lesser rain-fall, while the river supply was sufficient for irrigation. The water-supply in the river was, however, less than that of the last year. It began to diminish by the end of October and gradually fell till the end of March 1894.

Remissions of Rs. 17 and Rs. 28 were granted in the kharif and rabi seasons respectively—*vide* Government Resolution No. 3610, dated 23rd August 1865. Revenue from other sources was Rs. 148, bringing the gross revenue to Rs. 6,408.

4. The principal crops irrigated were :—Sugarcane 97 (80), wheat 128 (139), jowári 340 (252), groundnuts 651 (470).

The figures in brackets represent their averages during the preceding four years.

5. The area irrigated was 37 per cent. of that irrigable and 12 per cent. in excess of that applied for.

6. The working expenses, including direct and indirect charges, amounted to Rs. 1,750 against Rs. 1,721 in the previous year, and are 27 per cent. on the gross revenue. The rate per mile of canal was Rs. 350, and the rate per acre irrigated was Rs. 1.29.

7. The operations of the year show a net profit of Rs. 4,658, or 8.24 per cent. on the direct capital outlay of Rs. 56,533. It must, however, be remembered that this is an old native work improved, and that the whole cost of construction is not included in the capital outlay.

8. The average water-rate and cost of measurement, as compared with the previous years, were as under :—

Years.	Area irrigated.	Average incidence of Water-rate per Acre.	COST OF MEASUREMENT AND REVENUE ESTABLISHMENT.	
			Total Cost.	Per Acre.
	Acres.	Rs.	Rs.	Rs. a. p.
1890-91	1,027	4.8	191	0 2 11
1891-92	837	5.76	160	0 3 0
1892-93	1,011	4.15	181	0 2 9
1893-94	1,348	4.64	217	0 2 7

The explanation of the increase in total cost is the same as that given under Krishna Canal. Excluding the charge for revenue establishment, the cost of crop measurement alone is reduced to Rs. 139 and to Re. 0-2-2 per acre for 1892-93 and to Rs. 140 and Re. 0-1-8 per acre for 1893-94.

9. The average duty of water obtained was for the kharif season 38 acres per cubic foot per second, and that for the rabi, 112.

10. The number of trees of all classes on the canal at the beginning of the year was 1,792 and that at its end was 1,828.

The principal varieties are bábul 1,188, bamboo 159, jámbhul 151, and mango 101. The net revenue from plantation was Rs. 133.

(26).—UPPER MAN RIVER WORKS.

The Capital Account of this project was closed on 31st March 1892—*vide* Government Resolution No. 125 A. I.—1015, dated 3rd July 1893, and Government Resolution No. 195 A. I.—1411, dated 12th September 1893. No expenditure was incurred on it during the year under report.

2. The rain-fall, as gauged at Gondowli, the centre of the irrigated area, is shown in the following table :—

Years.	Kharif.	Rabi.	Total.
	In. cents.	In. cents.	In. cents.
1893-94 ...	12 53	5 43	17 96
1892-93 ...	19 01	10 74	29 75
Average, 1889-92 ...	12 27	9 04	21 31

3. The area irrigated, the assessments, working expenses, and average water-rate, as compared with the averages of the previous four years, were as follows :—

Years.	Kharif.		Rabi.		Total.		Average Water-rate.	Working Expenses.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Rs.	Rs.
1893-94 ...	942	5,133	548	1,938	1,490	7,071	4.75	5,119
Average, 1889-92 .	792	3,157	516	1,741	1,308	4,898	3.69	4,451
Increase ...	150	1,976	32	197	182	2,173	1.06	668
Decrease ...	...	...	...	...	...	...	...	...

As compared with the average of the previous four years there is an increase of 150 acres in the kharif season, due to the tank having filled and one of 32 acres in the rabi season. The year's assessment is Rs. 2,173 more than that of the average. This increase is due to the supply in the Pingli Tank having been ample for all requirements, the depth of water on 31st March 1894 being 20.10 feet above sill level.

4. The principal crops irrigated were :—

Sugarcane.	Wheat.	Groundnut.	Jowari.
108 (52)	269 (221)	439 (213)	235 (231)

The figures in the brackets represent their averages during the preceding four years.

5. The area irrigated was 19 per cent. of the irrigable area and 6 per cent. in excess of that applied for.

6. The revenue from all other sources amounted to Rs. 118, bringing the gross revenue of the year to Rs. 7,190.

7. The working expenses, including direct and indirect charges, amounted to Rs. 5,119. The rate per mile of canal was Rs. 213 and per acre irrigated Rs. 344. The expenses amount to Rs. 71 per cent. on the gross revenue. The Bidal channel, which was constructed as a feeder to Pingli Tank, is not working satisfactorily; silt is deposited in it on account of numerous sharp curves in its course, and the velocity being checked, the water is headed back at the sluices near Pingli Tank. The increase in working expenses over the average of the previous four years is on account of the special repairs to Gondowli bungalow, on which latter Rs. 661 were spent in the year.

8. After deducting working expenses from the gross revenue there was a net profit of Rs. 2,071, equal to a rate of 0.5 per cent. on the outlay of Rs. 4,07,421 for direct charges.

9. The average water-rate and cost of measurement as compared with the previous four years were as under :—

Years.	Total Area irrigated.	Average incidence of Water-rate per Acre.	COST OF MEASUREMENT AND REVENUE ESTABLISHMENT.	
			Total Cost.	• Per Acre.
	Rs.	Rs.	Rs.	Rs. a. p.
1890-91	1,370	4.27	123	0 1 5
1891-92	1,391	3.09	109	0 1 3
1892-93	1,039	2.90	303	0 4 8
1893-94	1,490	4.75	474	0 5 1

The reason for the higher cost of measurement is the same as that given in the report for the Krishna Canal. Excluding the charge for revenue establishment, the cost of crop measurement alone is reduced to Rs. 183 and Re. 0-2-10 per acre for 1892-93 and to Rs. 254 and Re. 0-2-9 per acre for 1893-94.

10. The average duty of water obtained was, for kharif 243 acres per cubic foot per second and for rabi, 68.

11. The following table shows the principal levels of the Pingli Tank :—

Date.	Above M. S. L.	Remarks.
31st March 1893	2,364.80	
20th May 1893	2,360.08	Lowest pre-monsoon level.
27th October 1893	2,371.09	Highest monsoon level.
31st October 1893	2,370.84	Level at end of monsoon.
31st March 1894	2,362.19	

The outlet sluice sill is at M. S. L. 2,342.09 and F. S. L. is at M. S. L. 2,371.09. There were no waste-weir floods over 2 feet deep during the year.

12. The number of trees of all classes on the canal at the beginning of the year was 5,345 and at its end 5,245.

The principal varieties are :—

(1). Bábul	...	...	...	4,531
(2). Mangoes	...	...	...	39
(3). Jámbhul	...	...	...	32

The net revenue from plantation was Rs. 94.

(27).—YERLA RIVER IRRIGATION WORKS.

The works of re-constructing a portion of Nehr Tank Dam, Nehr Tank Service Road, and a chauki for a chaukidár on the Nehr Tank were in progress. The expenditure incurred during the year was Rs. 12,649 on "Works."

2. The rain-fall, as gauged at Khatgun near the head of the irrigated area, is shown in the following table :—

Years.	Kharif.	Rabi.	Total.	Remarks.
	In. cents.	In. cents.	In. cents.	
1893-94	18 98	6 50	25 48	
1892-93	27 09	11 36	38 45	
Average, 1893-92 ...	19 86	9 61	29 47	

3. The area irrigated, the assessments, working expenses and average water-rate, as compared with the averages of the previous four years, were as under :—

Year.	Kharif.		Rabi.		Total.		Average Water-rate.	Working Expenses.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.		
1893-94	424	2,076	1,534	4,910	1,958	6,986	3-57	5,954
Average, 1889-92 ..	787	4,549	1,167	3,586	1,954	8,135	4-16	6,222
Increase ... ..	...	...	367	1,324	4	...	...	...
Decrease	363	2,473	...	...	...	1,149	0-59	268

On account of the state of the Nehr Dam it was necessary to restrict the level of the water in the tank and consequently many applications for water for perennial and hot weather crops were refused; this and the fairly favourable rain-fall of the year caused a decrease in both area and assessment for the kharif season of 363 acres and Rs. 2,473 respectively, compared with the average results of the previous four years. On the other hand the rabi season shows an increase of 367 acres and Rs. 1,324 over the average results, due to smaller rain-fall and also to the fact that the cultivators were assured in this season of an ample supply of water in the tank.

Although there is an increase (Rs. 611) in revenue over that of the previous year, there is a falling off of Rs. 1,149 compared with the average of the past four years. This decrease is due to the fact that the cultivators have lost confidence in the Nehr Tank and this cannot be restored until the reconstruction of the dam is finished satisfactorily.

Remissions to the extent of Rs. 5 were granted—*vide* Government Resolution No. 107 W. I.—327 of 22nd August 1877. The revenue from other sources was Rs. 762 and the gross revenue Rs. 7,748.

4. The principal crops irrigated were, groundnut 925 (724), jowári 396 (432), and wheat 321 (259).

The figures in brackets represent the averages during the preceding four years.

5. The area irrigated was 18 per cent. of that irrigable and 11 per cent. in excess of that for which applications were received.

6. The working expenses, including direct and indirect charges, amounted to Rs. 5,954, which represents a cost of Rs. 186 per mile of canal open and Rs. 3-04 per acre irrigated. The expenses amounted to Rs. 77 per cent. on the gross revenue.

7. The gross assessed revenue was Rs. 7,748 and the total working expenses amounted to Rs. 5,954. These have both decreased owing to the lesser acreage irrigated. The operations for the year show, therefore, a net profit of Rs. 1,794, or 0-28 per cent. on the direct capital outlay of Rs. 6,35,746.

8. The average water-rate and cost of the measurement, as compared with the previous three years, were :—

Years.	Total Area irrigated.	Average incidence of Water-rate per Acre.	COST OF MEASUREMENT AND REVENUE ESTABLISHMENT.	
			Total Cost.	Per Acre.
			Rs.	Rs. a. p.
1890-91	1,814	4-6	276	0 2 5
1891-92	2,247	4-21	303	0 2 2
1892-93	1,831	3-48	466	0 4 1
1893-94	1,958	3-57	527	0 4 4

The reason for the higher cost of measurement is the same as that given in the report for the Krishna Canal. Excluding the charge for the revenue establishment, the cost of crop measurements alone is reduced to Rs. 301 and Re. 0-2-7 per acre for 1892-93 and to Rs. 212 and Re. 0-1-9 per acre for 1893-94.

9. The average duty of water obtained was for kharif 71 acres per cubic foot per second, and for rabi, 112.

10. The following table shows the principal levels of Nehr Tank :—

Date.	M. S. L.	Remarks.
31st March 1893	2634.80	
13th May 1893	2634.44	Lowest pre-monsoon level.
13th October 1893	2658.20	Highest monsoon level.
31st October 1893	2656.62	Level at end of monsoon.
31st March 1894	2650.98	

The outlet sluice sill is at M. S. L. 2,634.02 and F. S. L. is at M. S. L. 2,666.02. No floods passed on the waste weir, the level of the tank being restricted by the opening of the outlet sluices and by a 50 feet cut in the waste weir having its bed at M. S. L. 2,656.02.

From 13th March 1894 the water was run off to empty the tank by the end of May 1894 for the purpose of replacing the broken sluice rods by new ones of larger section.

11. The number of trees of all classes on the canal at the beginning of the year was 22,306 and that at its end was 22,167.

The principal varieties are mangoes 285, bábul 18,526, jámbhul 100 and teak 90. The net revenue from plantation was Rs. 653.

(28).—CHIKHLI CANAL.

The Capital Account of this canal was closed on 31st March 1883—*vide* Government Resolution No. 125 A. I.—1015, dated 3rd July 1893, and Government Resolution No. 195 A. I.—1411, dated 12th September 1893. No expenditure was incurred on it during the year.

2. The rain-fall, as gauged at Chikhli near the head of the irrigated area, is shown in the following table :—

Year.	Kharif.	Rabi.	Total.
	In. cents.	In. cents.	In. cents.
1893-94	15 64	5 60	21 24
1892-93	18 12	11 37	29 49
Average, 1889-92	17 12	8 67	25 79

3. The area irrigated, the assessments, working expenses and average water-rate, as compared with the averages of the previous four years, were as follows:—

Year.	Kharif.		Rabi.		Total.		Average Water-rate.	Working Expenses.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.		
1893-94	291	1,724	79	309	370	2,033	5.49	924
Average, 1889-92 ..	300	1,293	71	268	371	1,561	4.24	999
Increase ... ..	...	431	8	41	...	472	1.25	...
Decrease	9	...	...	...	1	...	...	75

This year there is an increase over the average in kharif revenue of Rs. 431 and a decrease of 9 acres in acreage. In rabi there is an increase of Rs. 41 in revenue and 8 acres in area. The net increase in the water-rate assessment is Rs. 472 over the average of previous four years. This is due to a better class of crops being irrigated in the kharif season for which the assessment is higher.

4. The principal crops irrigated were, groundnut 205 (139), wheat 26 (30), and sugarcane 36 (17).

The figures in brackets represent averages during the preceding four years.

5. The area irrigated was 25 per cent. of the irrigable area and 7 per cent. less than that for which applications were received.

6. Revenue from other sources was Rs. 104 and the gross revenue amounted to Rs. 2,057.

7. The working expenses, including direct and indirect charges, were Rs. 924. The expenses amounted to Rs. 45 (63) per cent. on the gross revenue, and to Rs. 142 per mile of canal open and Rs. 2.49 per acre irrigated.

8. The operations of the year show a net profit of Rs. 1,133 or 2 per cent. on the direct capital outlay of Rs. 53,803.

9. The average water-rate and cost of measurement as compared with previous years were:—

Years.	Total area irrigated.	Average incidence of Water-rate per Acre.	Cost of measurement and Revenue Establishment.	
			Total Cost.	Per Acre.
	Acres.		Rs.	Rs. a. p.
1890-91	322	4.53	35	0 1 5
1891-92	375	4.10	No charge this year.	
1892-93	269	4.65	62	0 3 8
1893-94	370	5.49	113	0 4 10

The reason for the higher cost of measurement is the same as given in the report for the Krishna Canal. Excluding the charge for Revenue Establishment, the cost of crop measurement alone is reduced to Rs. 20 and Re. 0-1-2 per acre for 1892-93 and to Rs. 36 and Re. 0-1-7 per acre for 1893-94.

10. The average duty of water obtained was for the kharif season 68 acres per cubic foot per second and that for the rabi, 9.

11. The number of all classes of trees on the canal at the beginning of the year was 2,715 and at its end was 2,685.

The principal varieties are babul 2,519 and mango 72. The net revenue from plantation was Rs. 24.

(29).—MAINI TANK CANAL.

The Capital Account of this canal was closed on 31st March 1892, *vide* Government Resolution No. 125 A. I.—1015, dated 3rd July 1893, and Government Resolution No. 95 A. I.—1411, dated 12th September 1893. No expenditure was incurred on it during the year.

2. The rain-fall as gauged at Maini at the head of the irrigated area is shown in the following table:—

Year.	Kharif.	Rabi.	Total.
	In. cents.	In. cents.	In. cents.
1893-94	11 54	4 02	15 56
1892-93	23 45	12 68	36 13
Average 1889-92	15 40	10 56	25 96

3. The area irrigated, the assessments, working expenses and average water-rate as compared with the averages of the previous four years were as follows :—

Year.	Kharif.		Rabi.		Total.		Average Water-rate.	Working Expenses.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Rs.	Rs.
1893-94	866	4,662	493	1,672	1,359	6,534	4.81	7,827
Average, 1889-92...	1,118	5,352	454	1,711	1,572	7,063	4.48	7,868
Increase ... ..	...	...	39	...	...	...	0.33	...
Decrease	252	490	...	39	213	529	...	41

The kharif area irrigated during the year is less by 252 acres and the rabi is greater by 39 acres than the average irrigated during the previous four years. The assessment during the year is less than that of the average of the past four years by Rs. 529. This decrease is due to the insufficient rain-fall and consequent small tank replenishment during the year under report. Owing to the large accumulation of silt, now 14 feet higher than the outlet sill, the water in the tank is insufficient to meet the demands in the hot season and, unless the contents of the tank are increased, the growth of irrigation cannot proceed.

4. The principal crops irrigated were :—groundnut 602 (522), wheat 150 (151), and sugar-cane 77 (82).

The figures in brackets represent averages during the preceding four years.

5. The area irrigated was 29 per cent. of the irrigable area under command of the canal and 6 per cent. in excess of that applied for.

6. The revenue from other sources amounted to Rs. 101 and the gross revenue to Rs. 6,633.

7. The working expenses, including direct and indirect charges, amounted to Rs. 7,827 or Rs. 481 per mile for canal open, Rs. 5.76 per acre irrigated and about 118 per cent. of the gross revenue.

8. The operations of the year show a loss of Rs. 1,194, which is due to the special works of "Improvements to the flood channel," "Diversion of Malhar-peith-Pandharpur road," and "Chaukies on Maini Tank Canal" having been carried out during the year from the Revenue Account. Deducting the expenditure of Rs. 3,550 on these works, the ordinary maintenance and repair charges were the same as in 1892-93.

9. The average water rate and cost of measurement as compared with previous years were as under :—

Years.	Total Area irrigated.	Average incidence of Water-rate per Acre.	COST OF MEASUREMENT AND REVENUE ESTABLISHMENT.	
			Total Cost.	Per Acre.
	Acres.		Rs.	Rs. a. p.
1890-91	1,726	4.50	238	0 2 2
1891-92	1,687	4.74	237	0 2 3
1892-93	1,101	4.46	419	0 6 1
1893-94	1,359	4.81	532	0 6 3

The reason for the higher cost of measurement is the same as that given in the report for Krishna Canal. Excluding the charge for revenue establishment, the cost of purely crop measurement alone is reduced to Rs. 311 and Re. 0-4-6 per acre for 1892-93 and to Rs. 334 and Re. 0-3-11 per acre for 1893-94.

10. The average duty of water obtained for the kharif season was 195 acres per cubic foot per second and for the rabi season, 59.

11. The following table shows the principal levels of the Maini Tank :—

Date.	Above M. S. L.	Remarks.
31st March 1893	2,298·01	
11th May 1893	2,295·96	Lowest pre-monsoon level.
13th October 1893	2,300·72	Highest monsoon level.
31st do. do.	2,299·59	Level at end of monsoon.
31st March 1894	2,289·94	

The outlet sluice sill is at 2,269·32 above M. S. L. and F. S. L. at 2,300·52 above M. S. L. .

The average depth of silt above the outlet sluice is 14 feet. There were no waste weir floods over 2 feet deep during the year.

12. The number of trees of all classes on the canal at beginning of the year was 9,714 and that at its end was 9,681.

The principal varieties are bábul 4,059, karanj 3,105, mango 635, nimb 537, jambhul 286, and sandal 200. The net revenue from plantation was Rs. 78.

(30).—MUCHKUNDI TANK.

The rain-fall of the year, compared with that of the previous year, was :—

	1892-93.	1893-94.
	Inches.	Inches.
Kharif	22·81	10·68
Rabi	11·40	10·88
Total	34·21	21·56

The average for the past eight years was 23·73.

2. The area irrigated during the year, as compared with the preceding years, was :—

	Kharif.	Rabi.	Total.
	Acres.	Acres.	Acres.
1891-92	6	199	205
1892-93	3	...	3
1893-94	10	2	12

showing an increase on the preceding year. In the year 1892-93, on account of very seasonable rain-fall, a small area was irrigated. The increase of the area of irrigation for 1893-94, as compared with the figures for 1892-93, is due to the smaller rain-fall.

3. The assessed crop revenue during the year under report was only Rs. 60, and the revenue from other sources (sale of grass and trees in the tank bed) realized Rs 364, bringing the gross revenue of the year to Rs. 424, as compared with Rs. 40 for the preceding year. The working expenses during the year amounted to Rs. 387.

4. On the 1st April 1893, the water in the tank stood at 13·08 above the sill of sluice, or 14·46 feet higher than at the corresponding period of the previous year, the large replenishment of the previous year not having been fully

58 (31).—NILGUND TANK ; (32).—GADIKERI TANK ; (33).—DA'MBAL TANK.

utilized. The tank continued to fall till the 4th June when it received its first appreciable replenishment.

The principal replenishment occurred from October 11th to October 16th.

The replenishment from 11th to 16th October amounted to 148·381 millions of cubic feet, the highest replenishment occurring on the 12th as shown by the gauge on the 13th and which amounted to 51·385 millions cubic feet. Further replenishments occurred on the 14th November and 15th November, bringing the water level up to R. L. 1803·49 or 17·55 feet above the sill of sluice. This is the greatest height to which the tank has yet filled. The contents above sill of sluice then amounted to 375 millions cubic feet as compared with 367 millions of the previous year.

(31).—NILGUND TANK.

No expenditure was incurred on this work during the year under report.

The present state of this tank has been described in the printed Irrigation Revenue Report for the year 1892-93. The cutting down of waste weir of the tank with a view to lowering the full supply level thereof having not had the desired effect, it has been decided, under the sanction of Government, to leave the sluices open in future. The result of this measure will be watched and reported hereafter.

(32).—GADIKERI TANK.

The management of the tank is under the control of the Revenue Department.

2. The area irrigated by the tank was 337 acres and the irrigation share of the consolidated revenue collected in the Civil Department amounted to Rs. 1,987.

(33).—DÁMBAL TANK.

The rain-fall of the year (during kharif 13·72 and rabi 6·65) was 20·37 inches against that of the previous year 18·44, and the average of the previous 10 years 20·45.

2. At the commencement of the year the water level in the tank stood at R. L. 140·61, *i. e.* 15·61 feet above the outlet sluices and 6·61 feet above the bed of the tank; it then continuously fell until 3rd June when replenishments commenced and the tank overflowed at R. L. 145·30 for the first time on the 10th June, and again on the 16th November. The water level then gradually fell and at the close of the year was 15 feet above the outlet sill and 6 feet above the tank bed.

3. The area irrigated, the assessments, working expenses and average water-rate as compared with the two previous years were :—

Years.	Kharif.		Rabi.		Total.		Average Water-rate.	Working Expenses.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.		
1891-92	17	17	146	308	163	325	1·99	612
1892-93	261	272	54	115	315	387	1·23	571
1893-94	110	629	17	50	127	679	5·35	560

It will be seen from the above table that there was a decrease of 198 acres irrigated as compared with the previous year due to timely rainfall.

4. Although there was a decrease in area irrigated, yet the revenue increased by Rs. 292 as compared with that of the previous year, owing to the sufficiency of the water in the tank which induced the cultivators to irrigate the higher rated crops.

5. In addition to the above, 97 acres were irrigated under consolidated rates.

6. The water-rate assessment amounted to Rs. 679 under new irrigation or crop rates, and Rs. 666 under old irrigation paying consolidated rates, making a total of Rs. 1,345 and giving an incidence of Rs. 5.35 and Rs. 6.86 per acre for new and old irrigation respectively.

7. In addition to the above revenue Rs. 62 were realized on account of sale of grass, trees, &c., in this department and Rs. 255 in the Revenue Department on account of plantation and other canal produce, making a total under this head of Rs. 317.

8. The total direct and indirect working expenses amounted to Rs. 560, which includes Rs. 55 on account of land compensation. Deducting this sum from Rs. 1,662, the amount of total revenue leaves a net profit of Rs. 1,102, equal to 1.81 per cent. on the direct capital outlay of Rs. 60,844.

9. The average water duty per cubic foot per second was during the kharif season 113 acres and during the rabi season 32 acres.

(34).—MEDLERI TANK.

The rainfall of the year (during kharif and rabi seasons) was 14.98 inches as compared with 11.56 of the previous year, or with 21.69, the average of previous 10 years.

2. The water in the tank was on the 1st April at R. L. 172.10, *i. e.* 7.10 above the outlet sill; replenishment commenced on 16th May, but the water did not overflow (R. L. 180.00) until 18th November 1893. At the close of the year it was at R. L. 173.57, *i. e.* 8.57 feet above outlet, or 1.41 higher than on the corresponding date of the previous year.

3. The area irrigated, water-rate assessments, working expenses and average water-rate as compared with the two previous years were:—

Years.	Kharif.		Rabi.		Total.		Average. Water-rate.	Working Expenses.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.		
1891-92	50	312	53	178	103	490	4.76	619
1892-93	76	269	19	68	95	337	3.55	600
1893-94	75	283	21	127	96	410	4.27	527

The above total shows an increase of 1 acre as compared with the previous year.

4. The amount of water-rates was Rs. 410 against Rs. 337 of the previous year, being an increase of Rs. 73, showing that higher rated crops were cultivated. In addition to the above Rs. 2 were collected on account of sale of grass, &c.

5. The working expenses (direct and indirect) amounted to Rs. 527 against Rs. 600 during the previous year, being Rs. 115 in excess of the total revenue derived from the tank.

6. The average duty of water per cubic foot per second was 238 and 216 acres during kharif and rabi seasons respectively.

(35).—MADAG TANK.

The rain-fall of the year during kharif and rabi seasons was 25·31 inches against 20·05 inches of the previous year and an average of 29·01 for the previous 10 years.

2. The area irrigated, the water assessments, the working expenses and water-rate as compared with the two previous years were:—

Years.	Kharif.		Rabi.		Total.		Average Water-rate.	Working Expenses.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.		
1891-92	652	1,746	377	1,011	1,029	2,757	2·68	1,203
1892-93	359	1,081	382	1,134	741	2,215	2·99	1,050
1893-94	318	796	374	1,096	692	1,892	2·73	920

The above total shows a decrease of 49 acres on that of the previous year.

3. The water-rates assessments amounted to Rs. 1,892 against Rs. 2,215 of the previous year, or a decrease of Rs. 323, principally due to a sufficient and timely rainfall in the kharif season; the rayats were able to cultivate monsoon crops without the assistance of the canal water.

Including Rs. 269 on account of canal produce the total revenue for the year amounted to Rs. 2,161.

4. The total number of trees on the canals is 3,056, consisting chiefly of mango, bábul, nimb, sandal and tamarind.

5. The working expenses, direct and indirect, amounted to Rs. 920; the operations of the year thus show a net profit of Rs. 1,241, equal to about 77 per cent. on the direct capital outlay of Rs. 1,61,248.

6. The average water duty per cubic foot per second was during the kharif season 85 acres and during the rabi season 44 acres.

(36).—ASUNDI TANK.

The rain-fall gauged at this tank site during the kharif and rabi seasons was 23·51 inches against 17·16 inches registered during the previous year. The average rain-fall for the previous 10 years is 24·79 inches.

2. The tank became dry on 4th December 1892 and remained so until 19th April 1893 when replenishments commenced, and the highest level attained R. L. 106·28, *i. e.* 9·28 feet above outlet sill and 0·72 feet below crest of weir was reached on 16th November 1893. The water level on the 31st March 1894 was 5·58 above sill of outlet.

3. The area irrigated, water-rate assessments, working expenses and average water-rate as compared with the two previous years were:—

Years.	Kharif.		Rabi.		Total.		Average Water-rate.	Working Expenses.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.		
1891-92.	63	184	69	215	132	399	3·02	672
1892-93.	46	196	18	120	64	316	4·19	1,162
1893-94.	60	175	25	116	85	291	3·42	791

The above table shows an increase of 21 acres over the previous year.

4. The area irrigated under the consolidated assessment was 124 acres in addition to that detailed in the above table, giving a revenue of Rs. 472.

5. The water-rate assessment under crop rate was Rs. 291 and that under old irrigation on consolidated rates, Rs 472, together amounting to Rs. 763; adding to this Rs. 64 on account of sale of grass, trees, &c., by this department, the total revenue received from this tank during the year was Rs. 827.

6. The average water-rate per acre under new irrigation was 3.42 and that for old Rs. 3-8-0.

7. The total working expenses, including Rs. 138 and Rs. 50 respectively spent on special repairs and making drainage channel, &c. (unfinished works from the previous year), amounted to Rs. 791, leaving a small net profit on the operations of the year amounting to Rs. 36.

8. The average water duty per cubic foot per second was during kharif season 111-acres and during rabi season 124 acres.

(37).—MAVINKOP TANK.

This tank is under the control of the Revenue authorities. The area irrigated, all kharif, was 492 acres and the net consolidated revenue was Rs. 1,265; an additional area of 50 acres with assessment of Rs. 126 was brought under irrigation during the year under report.

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

The expenditure up to date has been Rs. 11,76,481 against the estimated amount of Rs. 12,27,669. The expenditure during the year was principally on account of land compensation, the estimated provision for which has been considerably exceeded as was anticipated in the last year's report, and a revised estimate for this item of expenditure was since sanctioned.

2. The area irrigated during hot weather was 43 acres against 204 acres of the previous year. No applications for perennial crops were refused.

3. The monsoon rain was very early and the level of water in the tank began to rise from 10th May 1893.

4. The rain-fall gauged at the head of the canal compared with the previous year was as follows:—

Year.	Rain-fall.
1892-93	31.68
1893-94	31.76

5. The areas irrigated compare as follow with those of previous year:—

Year.	Kharif.	Rabi.	Total.
	Acres.	Acres.	Acres.
1892-93	2,821	1,027	3,848
1893-94	3,014	1,223	4,237

The increase is probably due to the benefits from irrigation being better appreciated.

The area applied for was:—

1892-93 ... ..	...	...	...	Acres, 3,985
1893-94 ... ..	...	...	...	3,957

6. The assessments were:—

Year.	Kharif.	Rabi.	Total.
1892-93	7,139	2,218	9,357
1893-94	8,509	3,120	11,629

The increase in the assessment of kharif was due to the larger area irrigated.

7. The area actually irrigated (4,237 acres) amounted to 25 per cent. of the entire amount under command (16,663 acres) of the canal so far as now constructed.

8. In addition to the water-rates, Rs. 196 were realized for canal produce.

9. The continuous supply of 47 cubic feet per second was given to the mills and the revenue derived from it was Rs. 14,760. The increase of Rs. 4,920 over the amount of the previous year is due to the payment in advance of the instalment becoming due on 30th June 1894.

10. The total assessed revenue from all sources was:—

	Rs.
Water-rates	11,629
Miscellaneous canal produce	196
Mill's revenue	14,760
Total	26,585

11. The working expenses were:—

	Rs.
1892-93	5,718
1893-94	6,052
	+ 334

The increase is due to the share of collection charges in the Civil Department. These charges compare as under with the previous year:—

	Rs.
1892-93	867
1893-94	1,522
	655
<i>Deduct</i> —Savings on other items	321
Difference as above	334

12. The area irrigated was measured by a special establishment consisting of one measurer and the required number of khalasis. The measurer, in addition to his own measuring duties, inspects the canal and checks the work of the pátkaris and therefore, only $\frac{2}{3}$ of his salary is charged to the measuring establishment.

13. The following table gives the details of the working expenses:—

Name of Work.	Average incidence of Water-rate per Acre.	COST OF MEASUREMENT.		WORKING EXPENSES TOTAL IN THE PUBLIC WORKS DEPARTMENT.	
		Total Cost.	Per Acre.	Per mile of Main Canal.	Per Acre irrigated.
Gokák Canal, 1st Section, and Storage Works	2.74	Rs. 772	Rs. a. p. 0 2 10	Rs. 1,641	1.01

14. The average discharge of canal was, for—

Kharif	...	...	15.16	cubic feet per second.
Rabi...	...	...	20.67	do.

and the duty of water obtained was, for—

Kharif	...	...	198	acres per cubic foot per second.
Rabi	...	...	112	do. do.

15. The maximum flood occurred on 21st June 1893 and rose 2.20 feet above the level of the present weir crest.

16. The under-sluices were opened on 2nd July 1893 and closed on 23rd October 1893.

17. A project for extension of Gokák Canal, 1st Section, up to ridge point beyond Málápur Nálla has been submitted and is awaiting sanction.

18. The average water-rate per acre irrigated compares as under with the previous year, and the slight increase is due to the increased water-rates brought into force during the year :—

1892-93	...	...	...	...	2.43
1893-94	...	...	...	...	2.74

19. Around the edge of the water of the storage tank water was taken for 56 acres against 66 of the previous year.

20. The existing trees were maintained and are in number 7,089 :—

Above 6 feet	...	...	...	3,224
Within 6 feet and above 2 feet	...	...	...	3,865

21. The rainfall of the year though not abundant was favourable and timely, and although the water-rates have been enhanced the canal revenue shows progress. There was a falling off in perennial crops which was to be expected, but it is hoped that improvement will take place in the next year.

PART II.

WORKS IN OPERATION FOR WHICH ONLY REVENUE ACCOUNTS ARE KEPT.

1. The following table shows the areas irrigated in the different districts in the Deccan and Gujarát and the consolidated revenue assessed during the year:—

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 ...	66	10,825	21,867	29,195	51,062	In charge of the Khándesh irrigation District.
Kaira ...	2	7,992	27,916	11,361	39,277	
Surat ...	290	12,365	49,391	1,17,154	1,66,545	
Broach ...	28	888	2,818	4,684	7,502	
Khándesh ...	82	9,131	58,725	12,610	71,335	
Násik ...	80	10,514	80,517	11,759	92,276	
	191	17,817	80,804	26,002	1,06,806	
Ahmednagar ...	2	147	353	132	485	
Poona ...	3	515	2,857	1,015	3,872	
Sátára ...	1	100	623	415	1,038	
Belgaum ...	67	9,910	32,832	8,202	41,034	
Dhárwar ...	471	64,641	1,71,074	42,765	2,13,839	
Bijápur ...	15	1,443	5,897	1,467	7,364	
Ratnágiri ...	3	1,105	4,988	374	5,362	
Total ...	1,301	1,47,393	5,40,662	2,67,135	*8,07,797		*Net consolidated assessment for Revenue year 1893-94.

2. The following table shows the actual expenditure and receipts for the year 1893-94 on all the irrigation works in the Deccan and Gujarát for which only Revenue Accounts are kept:—

Collectorate.	EXPENDITURE.							ACTUAL RECEIPTS.						Returns of Revenue.	Gross Receipts less Refunds.
	Direct Charges.					Indirect Charge.	Grand Total.	Direct Receipts.			Indirect Receipts.	Grand Total Direct and Indirect Receipts.			
	Extensions and Improvements.	Maintenance and Repairs.	Establishment.		Tools and Plant.			Total Direct Charges.	Share of Collection Char. ges.†	Water Rates from Irrigation.			Miscellaneous.			Total Direct Receipts.	Share of Consolidated 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 ...	3,604	4,552	802	5,568	123	21,919	2,197	26,608	...	...	...	21,867	21,867	...	21,867
Kaira ...	4,833	2,419	...	...	...	2,732	2,732	...	6	1,478	1,481	27,916	29,397	...	29,397
Surat ...	6,963	8,085	1,039	4,160	299	26,558	4,971	30,911	...	827	827	49,391	49,718	...	49,718
Broach ...	1,963	3,059	...	...	...	292	292	...	...	...	...	2,818	2,818	...	2,818
Násik ...	4,344	697	997	20,181	163	26,272	6,044	34,360	74	4	78	80,804	80,882	...	80,882
Khándesh ...	8,072	2,885	3,928	34,544	946	58,963	1,512	72,997	899	463	1,302	80,517	81,879	...	81,879
Ahmednagar ...	7,774	1,076	...	6,417	...	6,497	36	6,832	...	1	1	353	354	...	354
Poona ...	42	4	9	60	...	115	34	469	681	...	681	2,857	3,538	...	3,538
Sátára ...	...	...	...	...	...	82	62	...	...	...	...	623	623	...	623
Belgaum ...	3,080	7,466	533	4,549	203	15,741	3,288	19,064	...	3	3	32,832	32,835	...	32,835
Dhárwar ...	9,758	26,416	1,852	30,657	316	68,999	17,265	86,254	641	908	1,039	1,71,074	1,72,713	...	1,72,713
Bijápur ...	514	928	74	299	22	1,827	696	2,423	68	81	99	5,897	5,996	...	5,996
Ratnágiri ...	...	159	8	32	3	201	469	701	...	...	...	4,988	4,988	...	4,988
Total ...	60,917	57,846	9,250	1,06,575	2,065	2,26,153	54,418	2,80,571	2,369	3,302	5,071	5,40,662	5,46,333	...	5,46,333

* Expenditure and revenue on account of the works in charge of the Khándesh Irrigation District.

† Represents charges in the Civil Department not adjusted in the Finance Accounts.

3. The total amount of revenue realized from and the working expenses of this class of works during the past three years were as follows :—

	1891-92.	1892-93.	1893-94.
	Rs.	Rs.	Rs.
Revenue realized	5,27,967	5,44,910	5,46,333
Working Expenses	1,69,648	1,97,976	2,80,571
Net Revenue	3,58,319	3,46,934	2,65,762
Percentage of Working Expenses to Revenue	32.13	36.33	51.25

4. The expenditure from contributions and Patphala funds on all irrigation works for which only revenue accounts are kept for the year 1893-94 is as shown in the table below :—

Collectorate.	EXPENDITURE.			REMARKS.
	Contributions.	Patphala Fund.	Total.	
	Rs.	Rs.	Rs.	
Ahmedabad	1,112	...	1,112	
Kaira ... ..	...	...	...
Surat	2,691	...	2,691	
Broach	1,295	...	1,295	
Násik	1,076	1,189	2,265	
Khándesh	24	333	357	
Ahmednagar ... ..	...	...	...
Poona ... ..	...	...	...
Sátára ... ..	...	...	...
Belgaum	692	...	692	
Dhárwár	2,558	...	2,558	
Bijápur ... ..	...	...	...
Ratnágiri ... ..	...	...	...
Total	9,448	1,522	10,970*	

* "Accounted for in the Finance Accounts under "Works for which neither Capital nor Revenue Accounts are kept."

AHMEDABAD DISTRICT.

5. The only new work carried out during the year under report was the improvement and extension of the Naika Channel estimated to cost Rs. 16,274 and sanctioned in Government Resolution No. 24 A.—335 of 20th February 1891, on which an expenditure of Rs. 4,576 was incurred.

6. The receipts for the year 1893-94 amounted to Rs. 48,816, and were derived from the following sources :—

	Acres.	Assessment.
		Rs.
I.—Irrigation above the Kalambandi villages	1,103	5,738
II.—Irrigation from tanks fed by the river Khári	249	1,942
III.—Irrigation from Khári Sluices proper	8,284	41,055
IV.—Irrigation below the Kalambandi villages	20	81
Total	9,656	48,816

The area irrigated was 172 acres more than that during the preceding year. The slight increase in area irrigated above the Kalambandi Villages and from Khári Sluices proper was due to increase in the number of lifts used to raise water from the river for winter crops.

7. The mean rate of assessment was Rs. 5.20 on lands for which water was taken by lift above the Kalambandi villages; Rs. 7.80 for lands irrigated by the tanks fed from the river Khári; and Rs. 4.05 for lands irrigated below the Kalambandi villages from the Khári river. On lands under the Khári Sluices proper, i.e. Kalambandi villages, the rates are consolidated, the average share per acre for land and water being as under :—

	Land share.			Water share.			Total.		
	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
Government Land	1	14	6	5	1	6	7	0	0
Alienated Land	2	1	6	5	5	9	7	7	3
Inámi Land, Consolidated Assessment, Jiráyat Land ... ..	.....			.....			7	1	4
	.....			2	8	0	2	8	0

8. The working expenses during the year, exclusive of charges of revenue collection, amounted to Rs. 1,258.

9. The old works in this district were fully described in the last report, and there is nothing to add thereto.

10. During the year 12 tanks were repaired at a total cost of Rs. 9,394, of which Rs. 5,202 were spent on repairs, and Rs. 4,192 on improvements, including Rs. 1,112 contributed by the villagers concerned.

SURAT AND BROACH DISTRICT.

11. During the year under report 38 tanks were repaired at a total cost of Rs. 23,917, of which Rs. 13,620 were spent on repairs, and Rs. 10,297 on improvements. Of the above a sum of Rs. 2,310 was contributed by the villagers interested in the irrigation of lands under the different tanks, and Rs. 750 by the District Local Boards in aid of water-supply privileges.

12. Of the above 38 tanks, 5 belong to the Broach District, the total cost of repairs and improvements carried out to which amounted to Rs. 6,338.

13. A sum of Rs. 85 was expended in surveying tanks for preparation of estimates for repairs and improvements.

14. The total area irrigated and the consolidated revenue assessed on irrigation tanks in the Surat and Broach Districts, as reported in Canal Return No. VIII, by the Collectors is as under :—

District.				Area.	Net consolidated Assessment.	Irrigation share.	Land share.
				Acres.	Rs.	Rs.	Rs.
Surat ... ..	...	...	...	12,365	1,66,545	49,391	1,17,154
Broach ... ..	...	...	...	935	7,502	2,818	4,684

15. The management of irrigation tanks rests with the Revenue Department, and hence no separate establishment is entertained on this account. The receipts are also realized by the Revenue authorities.

X7232 2317

C4

1899

NÁSİK DISTRICT.

16. There are in the Nasik District, 191 bandhárás yielding a revenue (irrigation share alone) of Rs. 80,804 and irrigating 17,318 acres of permanent bágáyat.

17. The expenditure on works for the last ten years has been as follows :—

Year.	Amount.
	Rs.
1884-85	6,062
1885-86	14,097
1886-87	6,487
1887-88	6,567
1888-89	7,847
1889-90	5,185
1890-91	2,707
1891-92	5,335
1892-93	3,812
1893-94	5,680
	63,779
Average	6,378

18. The cost of the actual establishment engaged on the works for the year under review is Rs. 3,118, making the total expenditure, including all establishment, Rs. 10,590 on works, or 13·10 per cent. of the revenue, but the establishment charges as they appear in the accounts are regulated by the rules in force under which, this being an Imperial Irrigation District, the balance of charges after the fixed percentages have been calculated are debited to II class revenue works.

19. The general features of these works have been described in previous Revenue Reports. They are physically very similar to those of Khándesh Second Class Irrigation, but important differences, regarding the way in which the original settlement was effected, appear to exist. For instance, the jiráyat is mixed up on the ground with the bágáyat. A field of 10 acres, as an example, the whole of which is under command of the channel, might have only 3 acres classed as bágáyat, and the remaining 7 acres as jiráyat. The 3 acres of bágáyat are not demarcated on the ground in any way and the classification does not appear to depend on the nature of the soil. It is supposed that when the settlement of such fields was made, the owner declared his inability to irrigate more than a certain part of his field, and he was assessed accordingly. The consequence of this having been permitted is that instead of the almost perfect system of the old Khandesh Province, where crops are cultivated in blocks at a great saving of labour and of water, we have in Násik patches of different crops scattered about all over the irrigable lands; and what is worse, there exists possibly a large proportion of unauthorized irrigation, as the man who originally said he could not irrigate more than 3 acres in his field of ten, will not refrain from irrigating the whole ten, when he wants to do so. How far such irrigation entirely escapes assessment, is not known, but the canal returns at all events show no revenue derived therefrom. Enquiries directed to a different object, viz. that of ascertaining the actual irrigating capacity of certain streams, have brought this matter to light in this Department, and now that the attention of the Revenue authorities has been drawn to it, no doubt it will receive attention. It is referred to here as a striking instance of the difference in practice in affairs relating to old irrigation works and the importance of a thorough understanding of such local differences before any wise legislation can be framed for dealing with the vexed questions regarding maintenance and the rights and duties of the villagers and the village officers on the second class works.

20. The work carried out during the year comprises repairs and improvements to 14 bandhárás and channels, and the construction of a new bandhára

not yet completed at Borala, táluca Chándor. None of these works are in themselves important enough to require detailed description here. The expenditure on them was as follows:—

No.	Names of Works.	AMOUNT.		REMARKS.
		Estimated.	Expended.	
	REPAIRS.	Rs.	Rs.	
	TA'LUKA NA'SIK.			
1	Repairs to bandhára village nála at Madsangwi.	172	171	Completed.
	TA'LUKA NIPHA'D.			
2	Repairing breaches in channels from Ractpir bandhára.	88	35	Completed.
3	Repairs to Páchora (Wani) bandhára ...	98	98	Do.
		7	7	
	TA'LUKA DINDORI.			
4	Repairs to bandhára New Hegdia at Tisgaon.	42	41	Completed.
5	Maintenance and repairs, old Wadali Canal.	95	94	Do.
6	Surveys for bandhára repairs in the Godávari Basin, Násik Collectorate.	222	157	Do.
	Total, Repairs ...	674	603	
	IMPROVEMENTS.			
	TA'LUKA NA'SIK.			
1	Hirawádi bandhára	152	147	Completed.
2	Bhagur Road bandhára at Adgaon ...	348	325	Do.
		86	86	
3	Khándekar's bandhára at Adgaon ...	341	341	Do.
		113	113	
4	Wadácha bandhára and channel at Adgaon.	347	332	Do.
		115	115	
5	Improvements to bandhára, village nála at Madsangwi.	60	60	Do.
	TA'LUKA NIPHA'D.			
6	Páchora (Wani) bandhára ...	460	456	Completed.
		33	33	
	TA'LUKA DINDORI.			
7	New Hegdia bandhára at Tisgaon ...	381	375	Completed.
		40	40	
	TA'LUKA CHA'NDOL.			
8	Constructing a new Gulkhádi nála bandhára at Borala.	1,731	1,219	In progress.
		225	225	
	TA'LUKA SINNAE.			
9	Datli bandhára and irrigation channel ...	1,000	999	In progress.
		120	120	
10	Surveys for bandhára extension and improvements in the Godávari basin, Násik Collectorate.	102	90	Completed.
	Total Improvements ...	5,654	5,076	
	Total, Repairs and Improvements ...	6,328	5,679	

21. Out of Rs. 6,328 the estimated cost of repairs and improvements in progress during the year, it is interesting to note that Rs. 739 or 12 per cent. were contributed by the villagers themselves.

22. The following statement shows the areas assessed as irrigated and the consolidated revenue assessed on second class revenue works during the year:—

1893-94.

Taluka.	Area irrigated.	REVENUE.		
		Irrigation Share.	Land Share.	Total.
	Acres.	Rs.	Rs.	Rs.
<i>Nasik Collectorate.</i>				
Násik Taluka	2,757	8,585	4,258	12,843
Sinnar do.	4,457	21,988	6,470	28,458
Dindori do.	3,054	15,622	4,607	20,229
Niphád do.	4,562	21,056	7,177	28,233
Chándor do.	2,812	13,126	3,413	16,539
Yeola do.	176	427	77	504
	17,818	80,804	26,002	1,06,806

KHÁNDESH IRRIGATION DISTRICT.

23. The following table gives a summary of the area irrigated and the revenue derived from old irrigation works:—

Description.	Khándesh.	Násik.	Total.
	Acres.	Acres.	Acres.
Area irrigated at consolidated rates	9,131	10,514	19,645
Area irrigated at separate water-rates ... ..	.....	383	383
Total	9,131	10,897	20,028
	Rs.	Rs.	Rs.
Consolidated revenue	71,335	92,276	1,63,611
Irrigation share of consolidated revenue	58,725	80,517	1,39,242
Separate water-rates ... ..	.....	899	899
Total	58,725	81,416	1,40,141

The above figures are exclusive of the areas under the old channels which are now included in the Lower Pánjhra River system.

24. The year's operations in maintenance and improvements of these works have been given in detail in the Administration Report for the year.

The expenditure during the year amounted to Rs. 58,983 as under:—

			Rs.
Improvements ... ..	...	...	15,846
Repairs ... ..	...	...	3,711
Establishment ... ..	...	...	38,480
Tools and plant ... ..	...	...	946
Total			58,983

against Rs. 50,850 in the previous year. The increase has been chiefly under the head of 'Improvements' which were carried out in the interest of preservation of revenue.

25. Besides the above expenditure from Imperial funds the sum of Rs. 1,522 was spent on the works from the Pátphála fund in the execution of small improvement works asked for by the contributors to the fund.

26. The net revenue earned from the old irrigation works, after deducting the working expenses of Rs. 58,963 shown in paragraph 2 above, amounted to Rs. 81,158.

27. The unrealized balance of revenue from the works improved by the State amounted to Rs. 715. The attention of the Revenue Department has been called to this large outstanding and it is expected that the same will be realized during 1894-95.

28. The following table compares the year's establishment charges on these works as given in para. 2 above, with those of the previous year :—

Details.	1892-93.	1893-94.
Construction	34,944	31,544
Direction and accounts	2,749	3,936
Total	37,693	38,480

In the construction establishment, there has been a small decrease, notwithstanding a larger outlay on the improvements and repairs carried out during the year. This shows that efforts are being made to keep down the charges on establishment in this district. The improvements and repairs of these 2nd class works of ancient construction require considerable professional skill, and so their survey and designs must be entrusted to trained subordinates working under the orders of the Executive Engineer. Further reduction of these establishment charges to any large extent is not, therefore, feasible. The establishment debitable to 2nd class works in this district represents the charge for the whole establishment in the district after debiting to the new works such share of it as is debitable to them according to the rules laid down in Government Resolution No. 172 A-I.—454 of 15th September 1879.

AHMEDNAGAR DISTRICT.

29. The only two works of this class are situated in the Akola Táluka :—

1. Sávargaon Bandhára.
2. Gardani do.

30. The following table shows the area irrigated and the consolidated revenue assessed during the year :—

Name of Bandhára.	Area irrigated.	REVENUE.		
		Irrigation share.	Land Share.	Total.
		Acres.	Rs.	Rs.
Sávargaon	76	200	61	261
Gardani	71	153	71	224
Total	147	353	132	485

POONA DISTRICT.

31. The following are the works in this collectorate for which only Revenue Accounts are kept :—

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Dam at Kasur. 2. Dam at Wadaz. 3. Dam at Agur. | <ol style="list-style-type: none"> 4. Dam at Narayengaon. 5. Dam at Patas. 6. Tank at Wadhana. |
|---|---|

The description of these works was given in the Revenue Report, 1881-82.

32. No expenditure was incurred on these works for maintenance and repairs during the year 1893-94, except Rs. 4 for survey of Narayengaon Bandhára.

33. Rs. 42 in all or Rs. 14 on each were expended during this year for gauging the heights of water in Wadhana, Supa and new Patus Tanks.

BELGAUM DISTRICT.

34. The following tanks were repaired and improved during the year, the work having been put in hand during the previous year :—

Number.	Name of Tank.	Village.	EXPENDITURE TO COMPLETION.		Total.
			Repairs.	Improvements.	
			Rs.	Rs.	Rs.
1	Dodkeri ...	Ambadgati ...	3,894	1,101	4,995
7	Herekeri ...	Bechinkeri ...	4,086	390	4,476
11	Hoskeri ...	Deversigihalli ...	1,479	868	2,347
13	Wadankeri ...	Do. ...	1,634	1,143	2,777
10	Komarkeri ...	Basurkod ...	2,099	357	2,456

Plans and estimates have been prepared and approved for repairs to the Tank No. 18 on the list at Margankop. When the contribution is received from the villagers, the work will be put in hand.

DHARWAR DISTRICT.

35. The total number of tanks of this class in the Dhárwár District is 3,320 of which 471 irrigate over 50 acres.

36. During the year under report 46 of the larger tanks irrigating over 50 acres were repaired and improved at a cost of Rs. 30,458 towards which a sum of Rs. 2,558 was contributed by the rayats interested. 91 of the smaller tanks irrigating less than 50 acres were also repaired during the year at a cost of Rs. 8,068.

37. The following table shows the area irrigated under the larger tanks, *i. e.*, those irrigating over 50 acres and the revenue derived therefrom :—

Number of Tanks.	Area irrigated.	REVENUE.		
		Irrigation Share.	Land share.	Total.
	Acres.	Rs.	Rs.	Rs.
471	64,641	1,71,074	42,765	2,13,839

In addition to the above the following direct receipts have been realized during the year :—

		Rs.
From direct water-rates ...	...	641
Miscellaneous sources ...	...	1,024
	Total ...	1,665

No portion of the revenue from land irrigated under the smaller tanks has been credited to the Public Works Department.

BIJAPUR DISTRICT.

38. There were 17 old irrigation works in the district, as briefly described at pages 69 and 70 of the printed Irrigation Revenue Report of the Bombay Presidency, excluding Sind, for 1891-92.

During the year under report, a revised list of tanks has been approved of and published, according to which, there are now only 15 works in charge of this Department, No. 14, Hippargi well and No. 17 Inchigeri Tank (old list), having for certain reasons been omitted therefrom.

39. To some of the tanks, improvements and repairs as detailed below were executed during the year under report :—

Names of Tanks.	Repairs.	Improvements.
Nandikeshwar tank	54	...
Banshankeri Hond at Tolachgud ...	5	...
Hirekeri and Ganjikeri Tanks at Párvati ...	37	...
Dhodkeri and Sankeri Tanks at Timsagar ...	81	...
Saraswati Nála Tank at Tolachgud ...	94	...
Special repairs to Ganjikeri Tank ...	415	...
Kendur Tank	52	...
Tank at Kumatgi	40	...
Do. Mamdapur (large)	80	...
Do. do. (small)	70	...
Iron sluice to the Hirekeri (Párvati) Tank...	...	208
Dhodkeri Tank at Timsagar ... ..	...	181
Sankeri do. do. ... ..	...	125
Total ...	928	514

RATNÁGIRI DISTRICT.

40. Annual ordinary repairs aggregating Rs. 160 to two, *viz.*, the Warad and Pat, out of the 4 irrigation tanks in this district were carried out during the year.

41. The complete statistical list of tanks in this district referred to in last year's report is expected to be ready for publication in 1894-95.

AGRICULTURAL WORKS.

42. The following table shows the financial results of the several drainage channels constructed in the Broach Collectorate :—

Names of Channels.	Expenditure during the year.	Total cost up to date.	Receipts from sale of occupancy rights.	Balance against Capital.	Area assessed under Settlement.	Land taken up for cultivation.	Assessment of land taken up for cultivation.	Irrigation share.	Percentage of Revenue on Capital.
	Rs.	Rs.	Rs.	Rs.	Acres.	Acres.	Rs.	Rs.	Rs.
<i>Jambusar Táluka.</i>									
Kora-Madafar Channel including Jantram Branch...	...	16,003	2,376	13,627	2,750	1,467	5,258	...	30.60
Amaapur-Nadiád Channel ...	...	14,302	2,104	12,198	980	748	3,093	...	25.35
<i>Vágra Táluka.</i>									
Samadpur-Kadodra-Panidra Channel ...	...	7,172	3,800	3,272	495	477	1,006	...	30.74
Fakhajan-Ambel Channel ...	7,385	7,424*	699	6,725	1,235	160	404	...	6.00
	7,385	44,901	8,979	35,922	5,460	2,862	9,761	...	27.26
<i>Anklesvar Táluka.</i>									
Adol-Hajat-Piludra Channel ...	3,144	12,289	...	...	164	...	...	...	...

* Includes Rs. 89 expended in 1892-93.

43. The amounts realized from sales of occupancy right during the year 1993-94 were as follows :—

	Rs.
1. Kora-Madafar Channel including Jantram Branch	... 13
2. Amanpur-Nadiad Channel	... 5
3. Pakhajan-Ambhel Channel	.. 699
	<hr/>
Total	... 717
	<hr/>

44. *The Adol-Hajat-Piludra Channel* was completed during the year at a cost of Rs. 12,289. No land drained by this channel has yet been taken, but it is hoped that some of it will be tilled during next year.

45. *The Pakhajan-Ambhel Channel* was taken in hand in this year and though only partially carried out at a cost of Rs. 7,424, it has already given an out-turn of 6 per cent. on the outlay. When the channel is completed the return is expected greatly to exceed this percentage.

46. The revenue amounts to 27.25 on the capital.

47. Current repairs costing Rs. 41 were executed during the year to the dam at Borvi in the Kolaba Collectorate, which is classed in the category of Agricultural Works for which neither Capital nor Revenue Accounts are kept.

*Revenue Report of Irrigation Works in
the Bombay Presidency, excluding
Sind, for 1893-94—Review of the.*

No. 3 W. I.—82 of 1895.

Public Works Department.

Bombay Castle,
14th January 1895.

Memorandum from the Superintending Engineer, Southern Division, No. 3603, dated 15th September 1894.

Forwards the Irrigation Revenue Report, Parts I. and II., of works in the Southern Division for 1893-94, with the usual statements.

Letter from the Superintending Engineer, Northern Division, No. 4338, dated 21st September 1894.

Forwards similar report for works in the Northern Division.

Letter from the Chief Engineer, Central Division, No. 5186, dated 5th October 1894.

Forwards Part I. of the Irrigation Revenue Report of works in the Central Division for 1893-94.

Memorandum from the Superintending Engineer, Southern Division, No. 3808, dated 5th October 1894.

Requests that certain corrections may be made in the statements II. E. and H. accompanying the Revenue Report.

Memorandum from the Superintending Engineer, Southern Division, No. 3890, dated 11th October 1894.

Reports certain figures for insertion in statements I. A. and II. A.

Letter from the Examiner of Public Works Accounts, No. B.-3—1221, dated 11th October 1894.

Forwards statements and tables required in connection with the Irrigation Revenue Report of works in the Deccan and Gujara't for 1893-94.

Letter from the Chief Engineer, Central Division, No. 5290, dated 12th October 1894.

Forwards Part II. of the Irrigation Revenue Report for 1893-94.

Memorandum from the Chief Engineer, Central Division, No. 5420, dated 17th October 1894.

Memorandum from the Chief Engineer, Central Division, No. 5714, dated 3rd November 1894.

Forwards statements I. A. and H. and the Revenue Reports of the Ojhar and Lakh Canals and the Bhatodi Tank for 1893-94.

Memorandum from the Chief Engineer, Central Division, No. 5871, dated 10th November 1894.

RESOLUTION.—The salient features of the year's operations are detailed in the general remarks embodied in the report.

2. The number of works in operation, for which Capital and Revenue Accounts are kept, is the same as in the previous year, viz., 36.

3. The Capital expenditure amounted to Rs. 4,26,070, distributed as follows:—

		Rs.	
Imperial	{	Major Works	{ Protective Works... 1,25,563
			{ Productive Works... 1,32,265
		Minor Works	... 33,560
Provincial—		Minor Works	... 1,34,682
			Rs. 4,26,070

The expenditure was almost equally distributed between Protective, Productive and Provincial Minor Works, being mainly incurred on the Nira, Mutha and Gokák Canals. On the Nira Canal, the work done was chiefly at Bhatghar. Some work was also carried out at Vir, and distributaries Nos. 59 and 35 A. were practically completed, adding 11,994 acres to the area under command, which now amounts to 183,862 acres. On the Mutha Canals, the expenditure was in connection with settling tanks and filter beds at Poona, while that on the Gokák Canal was for land compensation. The entire Capital outlay at the end of the year under all heads was Rs. 2,57,42,790, of which Rs. 1,82,50,408 was on Major Works.

4. The Interest charges on Productive and Protective Works to the end of the year were Rs. 1,14,81,515, and deducting Interest charges. the total net revenue realised, *viz.*, Rs. 17,14,993, the deficit at the end of 1893-94 amounted to Rs. 97,66,522.

5. The total length of main canals completed was nearly 602 miles, and of distributaries 601 miles. Some doubt has been raised as to the correctness of the figures for the Lákhal Canal, but in the absence of satisfactory explanation the figures in the previous reports have been adopted. The enquiry already started by the Chief Engineer, Central Division, should be pursued, and correct figures entered in the next report. For the Háthmati Canal also it is observed in statement I. A. that the length of distributaries completed is reported as 30 miles against the sanctioned length of 25 miles. This discrepancy requires explanation.

6. The irrigable area under command shows a decrease due merely to the alteration in the figures for the Nira Canal. It is stated that the figures now entered are correct, but it is not explained how the higher figures, hitherto shown, came to be entered. It is further stated that in statement I. A., the figures entered as the gross area under command are those for the whole project, including distributaries Nos. 60 and 61, if completed. Again in statement IV. E. the figures are said to refer to the areas commanded up to and inclusive of distributary No. 59, which is now complete. Further in statement I.A. under the Nira Canal, the "culturable area commanded" has been altered from 274,447 acres in the previous year's report to 227,670. It is also explained that in previous reports the "area irrigable by complete project" has been held to be the same as the "irrigable area commanded by complete project." These alterations and explanations afford ground for suspicion that the terms, as used in statements I. A., II. A. and IV. E. are not uniformly interpreted, and the orders of the Government of India should be requested for the guidance of the officers concerned. The reports explaining the discrepancies between the figures of gross and irrigable areas, as shown in the Annual Statement of Irrigation and Rainfall, and the Revenue Report, noticed in para. 10 of Government Resolution No. 110 W. I.—1302, dated 15th August 1894, will, when received, be dealt with separately. The net irrigable area was 583,897 acres, and thus shows an increase of 11,994 acres, which is solely on the Nira Canal, as remarked in para. 3 above.

7. The total area irrigated was 79,950 areas, as compared with 65,487 acres in the previous year. The increase of 14,463 acres is due to scanty and unseasonable rainfall. The average rainfall was 22.74 inches, as compared with 33.66 inches in 1892-93.

In reviewing the report for 1891-92 the Government of India remarked that the increase in the irrigated area was much smaller than might have been expected, and they further called for an explanation of the reasons why greater progress has not been achieved in extending the irrigated areas. A reply has now been sent, *vide* letter No. 134 W. I.—1688, dated 31st October 1894.

8. The principal crops irrigated were ground-nut (16,390 acres), sugarcane (13,063 acres), jowári (11,604 acres), and wheat (10,856 acres). All these crops, except wheat, show considerable increases over the areas of the previous year. The only other crop, which shows a noticeable increase, is rice, of which the area rose from 2,860 to 5,217 acres. The area of sugarcane on the Nira Canal rose from 1,639 to 3,436 acres. The considerable decrease under fodder (3,363 acres) was the result of a good harvest of jowári on the Nira Canal last year.

9. The assessed revenue amounted to Rs. 5,91,487 against Rs. 4,79,042 of the previous year. The assessments show an increase under all heads, except water-supply to towns, which is satisfactory. The decrease under water-supply to towns was due to the supply to the city of Poona being very much less than in the previous year. The average water-rate per acre was 5.37, as compared with 4.90 of the previous year.

10. The gross revenue realized from all sources, after deducting refunds (Rs. 3,521), was Rs. 5,73,746 against Rs. 5,45,542 of the previous year. The net revenue realized was Rs. 2,86,328, as compared with Rs. 2,37,764. The outstandings amounted to Rs. 33,277. The Mutha Canals show the largest balance, but the cause has been satisfactorily explained. The attention of the Superintending Engineers, Northern Division and Southern Division, should be drawn to the absence of any explanation of the large balances on the Khari Cut and the Krishna Canal, and they should be requested to invariably account for heavy outstandings on works in their divisions.

11. The working expenses during the year amounted to Rs. 2,87,418; as compared with Rs. 3,07,778 of the previous year, showing a decrease of Rs. 20,360, which is satisfactory. The variations in figures for the several works are commented upon in para. 13 of the general remarks, and need not be alluded to here.

In February 1894, the Government of India referred for the consideration of this Government certain remarks by the Accountant General, Public Works Department, on the high average cost of maintenance and management per 1,000 acres irrigated, and the high average percentages of gross revenue spent in working expenses in the case of works in the Deccan and Gujarát. After a careful consideration of the points raised it has been explained to the Government of India that the peculiar circumstances of these works account for the high percentages referred to. The enquiries made in connection with the remarks of the Accountant General have elicited the fact that the principles on which charges for share of subordinate establishment employed on revenue management should be based are not everywhere understood, and it is believed that the high maintenance charges are in some cases partly due to this cause. Orders are being issued separately, directing the general adoption of a correct system, and it is hoped that the result will be some reduction in the charges. His Excellency the Governor in Council must, however, impress upon the Chief and Superintending Engineers the supreme importance of every endeavour being made to reduce these charges to a minimum.

12. The net revenue of the year, after deducting working expenses

Net revenue. was—

(a) on the basis of assessments ... Rs. 3,04,069,

(b) on the basis of realizations ... ,, 2,86,328,

as compared with Rs. 1,71,264 and Rs. 2,37,764. There is an increase under both heads, which is satisfactory.

13. The financial results show an improvement under all heads, except
 Financial results. Protective works.

14. Under Protective works both the Nira Canal and Mhaswad Tank show a falling off under net revenue of Rs. 11,272 and Rs. 8,296, respectively, the total for both being Rs. 18,449, against Rs. 38,017 of the previous year. In the case of the Nira Canal this result is due to less receipts and more working expenses. In the case of the Mhaswad Tank it is due almost wholly to heavy working expenses. The causes of the increased working expenses have been explained in the general remarks.

15. The Productive works show a profit of Rs. 2,19,618 against Rs. 1,81,115 of the previous year. The largest contribution towards the increase is from the Mutha Canals, but the Lower Panjhra River works and the Hâthmati Canal also show increases of Rs. 5,695 and Rs. 4,078, respectively. Only the Krishna Canal shows a considerable decrease, which is solely due to less receipts.

16. The Imperial Minor Works show a profit of Rs. 23,667, against Rs. 6,875, which is an improvement. The question of handing over some of these works to the Revenue Department is receiving attention, and will be decided as early as practicable. The Provincial Minor Work (Gokâk Canal) shows a net revenue (excluding interest charges) of Rs. 24,594 against Rs. 11,757 of 1892-93.

17. Under Works for which only Revenue Accounts are kept, the area irrigated shows an increase of 1,206 acres, and gross revenue an increase of Rs. 1,423. The increased expenditure on Extensions and Improvements and Maintenance and Repairs is an indication of the attention paid to the old works which used to be described as deteriorating. The proceedings of the Committees appointed to report on tanks in the Northern and Southern Divisions are now before Government, and orders will be issued in due course. The question of increase in Establishment charges under old works was noticed last year, and it has been explained that the charges generally represent the balance left after charging fixed percentage rates on expenditure on first class works. The Chief Engineer, Central Division, has invited prominent attention to the system of debiting the Establishment charges to the second class works in the Ahmednagar and Nâsik districts. He contends that it is erroneous to debit the balance of the total Establishment charges to this class of works when no such heavy establishment is either required for, or actually employed on them. In this connection it is sufficient at present to remark that the anomaly referred to is the result of the present classification of those districts, and the matter is under consideration.

18. In reviewing the report for 1892-93 the Government of India remarked, in para. 10 of their Resolution No. 56 I., dated 21st February 1894, that no information regarding crops was supplied for Minor Works for which only Revenue Accounts are kept. Accordingly opinion was called for as to the feasibility of furnishing this information. From the reports received, it now appears that the task of collecting the required information, though by no means impossible, could only be accomplished with great additional labour, and would be certain to delay the submission of the reports. The Government of India should therefore be informed that in these circumstances this Government does not recommend the incorporation of such information in the Revenue Reports.

19. Copies of the report and of this Resolution should, as usual, be forwarded to the Government of India and the Secretary of State.

G. O. W. DUNN,
Under Secretary to Government.

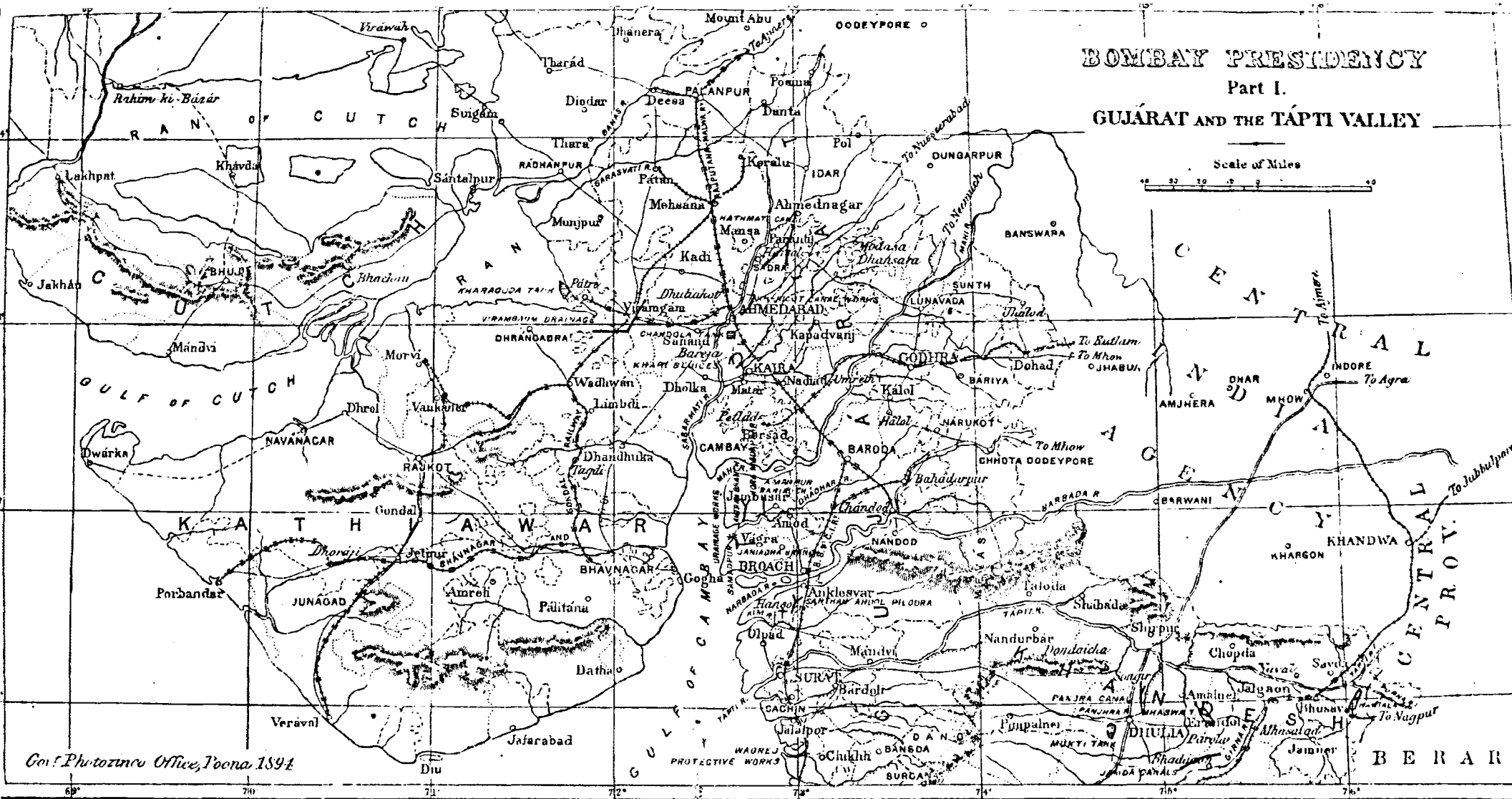
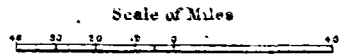
To

The Revenue Department Secretariat.
The Financial Department, Secretariat.
The Commissioner N. D.
The Commissioner C. D.
The Commissioner S. D.
The Survey Commissioner and Director of Land Records
and Agriculture.
The Superintending Engineer C. D.
The Superintending Engineer N. D.
The Superintending Engineer S. D.
The Superintending Engineer, Indus Right Bank Division.
The Superintending Engineer, Indus Left Bank Division.
The Examiner of Public Works Accounts.
The Government of India.
The Secretary of State for India. } By letter.
The Editors' Table.

} With copies of
report.

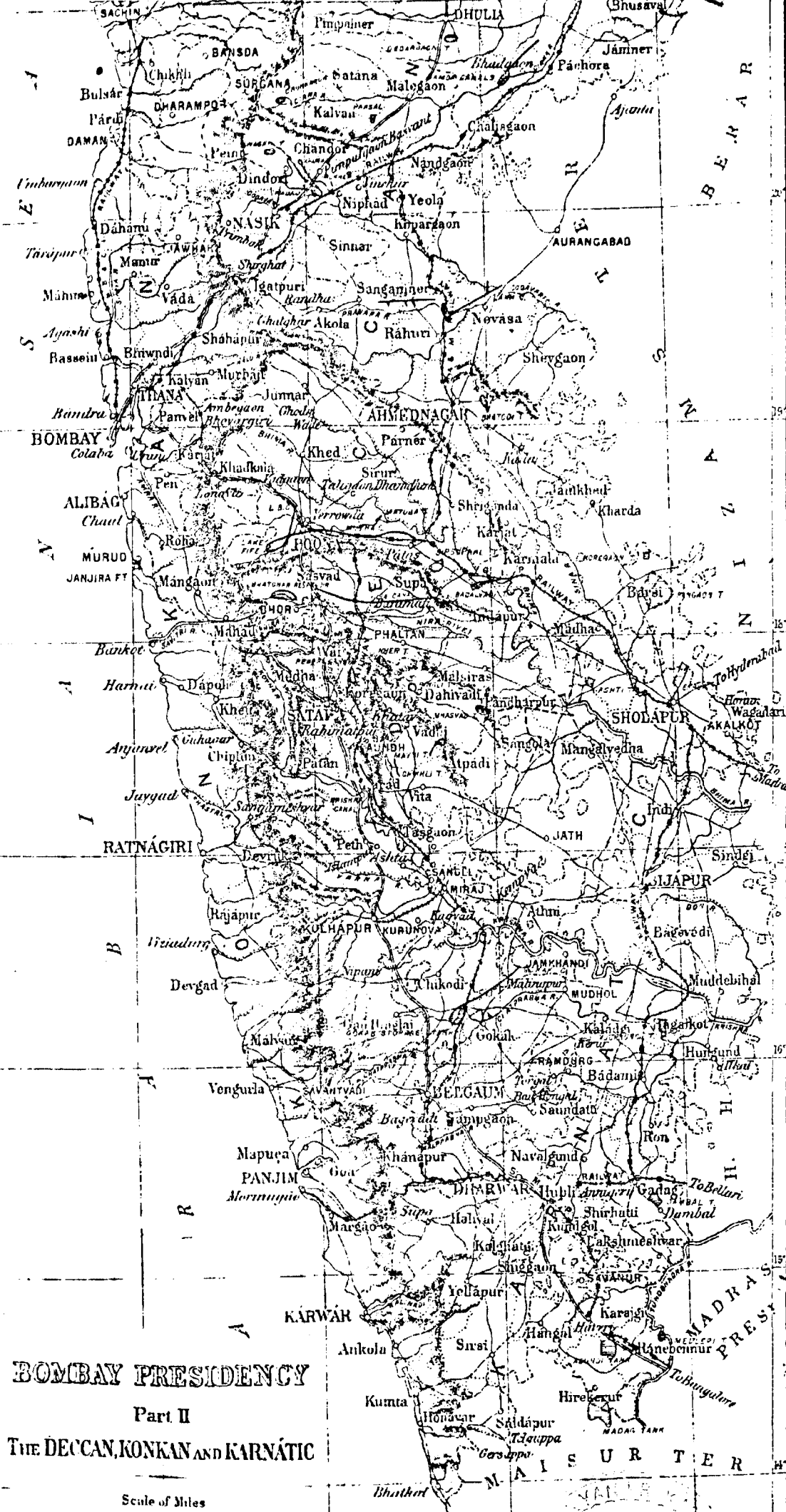
Exd. B. E. F.

BOMBAY PRESIDENCY Part I. GUJARAT AND THE TAPTI VALLEY



Govt. Photodup. Office, Poona 1894

- Jambusar Taluka { 1. Amanpur Mariad Channel
- 2. Kora Madaphor Channel.
- * Vayra 3. Sainadpur Kadadra Puriad Channel
- + Ankleshvar 4. Sartham Arad Piloora Channel



BOMBAY PRESIDENCY
 Part II
THE DECCAN, KONKAN AND KARNÁTIC

