

Public Works (1896) Department.

G.O., No. 931

DATED 6th November 1896

[Despatch Abstract.]

"Irrigation Works": Govt of India review of the Revenue and Expenditure recorded under the head — in the accounts of that Govt for 1894-95 Comd^d to the Chief Engineer for Irrigation.

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G.O.	No.	Department	Date.

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Order

Communicated to the

Chief Engineer for Irrigation From The Govt of India.

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To The Chief Eng. & Ordnance:
all Superintendents
The Examining P. W. Agents.

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SUBJECT.

Review of the Revenue and
Expenditure records under the

104
27/10
copy to the
accountant General
placed before
24/11/17
the accounts of the Govt of
India for 1894-95.

BACK PAPERS.

FURTHER PAPERS.

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No. 191 I.

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.

CIVIL WORKS.

Irrigation.

Simla, the 23rd September 1896.

Review of the Revenue and Expenditure recorded under the head
"Irrigation Works" in the Accounts of the Government of India
for 1894-95.

READ—

Note by A. R. BECHER, Esq., Offg. Accountant General, Public Works Department,
upon the Accounts of Revenue and Expenditure of Irrigation Works in India
for 1894-95.

RESOLUTION.—The Irrigation Works in India are divided into Major Works
and Minor Works.

Major Works are sub-divided into—

- (a) Productive Works, the capital of which has been provided from borrowed money.
- (b) Protective Works, the capital of which has been provided from the General Revenue of India.

Minor Works, for the purpose of the Accountant General's note, are sub-divided into—

- (a) Works for which Capital and Revenue Accounts are kept.
- (b) Works for which Capital Accounts are not kept.

2. Capital and Revenue Accounts are kept for all Major Irrigation Works, of which there were 46 during 1894-95 as compared with 44 during the previous year. The two new Major Works are the Jamrao Canal in Sind and the Fatehpur Branch of the Lower Ganges Canal in the North-Western Provinces.

Of these 46 Works, 38 were sanctioned as Productive Public Works and 8 as Protective Works.

Under the head of Minor Works, there were 76 projects for which Capital and Revenue Accounts are kept as compared with 75 in the previous year.

The extra work is the Munniyeru Project on which there was no outlay during 1893-94.

For the remaining Minor Works one account only is kept in which are entered the receipts and charges for each work or group of works.

9-5-96

3. The following statement shows the return derived from the Irrigation system for which Capital and Revenue Accounts are kept. Purely navigation systems are excluded:—

Class of work.	Number of works	Direct and Indirect Capital outlay to end of 1894-95.	Gross Revenue.	Working expenses, including indirect charges.	Net revenue	Irrigated area.	Percentage of net revenue on capital outlay
		Rs.	Rs.	Rs.	Rs.	Acres.	
IRRIGATION.							
I.—Major Works—							
(a) Productive ...	37	9,485,741	2,130,974	855,199	1,275,775	6,059,952	4.32
Add—On account of old Irrigation—							
In Madras ...	...	...	420,381	46,714	373,667	...	...
In Sind ...	...	...	3,705	910	2,795	...	...
Total Productive ...	37	9,485,741	2,555,660	902,813	1,652,847	6,059,952	5.60
(b) Protective ...	8	12,003,427	547,671	28,616	19,055	159,918	0.95
II.—Minor Works—							
Works for which Capital and Revenue Accounts are kept	170	3,003,412	151,361	235,034	378,827	2,194,441	12.61
GRAND TOTAL ...	115	14,492,670	3,216,592	1,166,473	2,050,119	8,454,311	5.94

* Excludes the Hiji Tidal Canal (Bengal).

† Includes outlay on Gokak Canal, 1st Section, which is now classed as a Minor Work and combined with Gokak Storage Works.

‡ Excluding two navigation canals in Bengal (the "Calcutta and Eastern" and the "Orissa Coast" Canals) and four navigation canals in Madras (the Chika Lake, Buckingham, Veda anaiyam, Ganjam-Gopalpur Canals).

§ Includes share due to old irrigation in Madras and in Sind.

4. The net revenue derived from Major Works as a whole was Rx. 39,204 more than that of the previous year.

The increase occurred principally in the Punjab and is due to extension of irrigation on the Western Jumna, Bari Doab and Chenab Canals.

The net revenue derived from Minor Works was Rx. 58,081 less than that of the previous year.

The decrease was chiefly due to a falling off of the net revenue from the Upper Sutlej Inundation Canals in the Punjab and the Cheyaru Anicut system in Madras.

On the Upper Sutlej Canals there was a decrease in net revenue of Rx. 9,490, due principally to the small rabi of the previous year and to heavy remission for the kharif of 1894 on account of damage to crops done by grass-hoppers. There was also an increase of Rx. 5,159 in working expenses due to certain liabilities incurred in the previous year having had to be met in 1894-95 and to Revenue having to bear an increased share of establishment charges.

On the Cheyaru Anicut system the decrease in net revenue was due to the net revenue during the previous year having been unusually large owing to the write back of expenditure on certain works from Revenue to Capital.

The Periyar Project, the Jamrao Canal and the Fatehpur Branch of the Lower Ganges Canal have not yet begun to earn revenue. The Chenab Canal, the

Rushikulya project and others which have been recently opened for irrigation are not yet earning the revenue which may ultimately be expected from them. The capital expenditure on all these works is included in the figures on which the net revenue percentage is calculated so that when these works are in full operation the percentage of net revenue on capital expenditure should be better than that indicated in paragraph 3 above. The total net profit on all Major Works up to the end of 1894-95 amounted to nearly 3.2 millions of Rx.

5. The following statement shows the area irrigated by and the gross revenue derived from the Major and Minor Irrigation Works during the last 5 years:—

YEAR.	MAJOR WORKS.		MINOR WORKS.		TOTAL.	
	Area irrigated.	Gross revenue realized.	Area irrigated.	Gross revenue realized.	Area irrigated.	Gross revenue realized.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.
1890-91 ...	7,172,468	2,312,787	2,101,536	463,147	9,274,054	2,795,914
1891-92 ...	7,160,484	2,395,372	2,123,659	431,279	9,684,143	2,826,651
1892-93 ...	7,043,286	2,552,415	2,272,091	450,754	9,315,377	3,159,964
1893-94 ...	6,949,351	2,417,757	2,116,964	635,372	9,066,345	3,051,129
1894-95 ...	6,259,870	2,602,731	2,194,411	613,861	8,454,311	3,216,592

* Exclusive of figures for certain works in Madras, which were not given in the Revenue Report for 1891-92.

† The increase was due to the inclusion in the accounts for 1892-93 of irrigation revenue of certain works in Madras pertaining to the year 1891-92 vide note* above.

‡ Exclusive of the area irrigated in Native States in the Punjab.

The area irrigated shows a falling off as compared with the previous year, but there was an increase in the gross revenue realized.

The area irrigated in Native States in the Punjab from the portions of the canals constructed from funds contributed by the States amounted to 149,387 acres.

6. The estimated value of the crops irrigated from the Major and Minor Works during 1894-95 amounted to Rx. 23,224,312, being an average of Rx. 2.75 per acre.

7. The average rate of revenue assessed per acre irrigated during 1894-95 was Rx. 0.36 and Rx. 0.22 for Major and Minor Works respectively. The corresponding figures for 1893-94 was Rx. 0.35 and Rx. 0.24 respectively.

For Major Works the rate varies from Rx. 0.56 in Bombay (excluding Sind) to Rx. 0.18 in Bengal and Sind, and for Minor Works from Rx. 0.43 in Baluchistan to Rx. 0.10 in the Punjab.

8. The areas of the principal crops irrigated during 1894-95 in the various Provinces by the works for which Capital and Revenue Accounts are kept are given in the following statement:—

Province.	Rice.	Wheat.	Jowar and chani (or sorghum vulgaris).	Bajra (Pennisetum spicatum).	Sugarcane.	Cotton.	Barley.	Indigo.	Maize.	Pagi (Hemidione coarctata).
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Bombay (excluding Sind) ...	6,181	8,933	19,945	6,722	14,624	265	452	...	1,924	...
Sind ...	417,624	176,124	270,123	210,037	...	59,967	2,329	...	...	...
Punjab ...	140,285	947,572	174,753	21,721	71,421	304,573	21,763	77,431	101,162	...
Bengal ...	452,865	3,930	...	...	48,016	147	10,020	1,971	...	...
Madras ...	2,647,119	...	...	...	...	...	...	...	...	50,079
North-Western Provinces ...	126,826	83,073	12,221	251	215,005	50,378	6,135	301,832	8,895	...

9. The following are the percentages on gross revenue of the cost of revenue management (including collection charges) and of the up-keep of the works for Major Works in the different Provinces:—

Province.	Revenue-management, per cent.	Up-keep, per cent.	Total, per cent.
Madras	8.6	10.4	19.0
North-Western Provinces	14.2	24.3	38.5
Punjab	15.4	29.0	44.4
Bombay	18.7	32.1	50.8
Sind	10.0	31.1	41.1
Bengal	31.1	65.1	96.2

10. The following statement shows the total cost of working per acre irrigated by the Major Works in the different Provinces:—

	1894-95.	
Sind	.07	} Including old maintenance charges.
Madras	.08	
Punjab	.15	} Excluding maintenance of Tidal canal.
Bengal	.28	
North-Western Provinces	.31	
Bombay	.38	

The figures are practically the same as those of the previous year except in the case of the North-Western Provinces where the cost of working per acre irrigated has risen from Rx. 0.17 in 1893-94 to Rx. 0.31 in 1894-95. The total working expenses in this Province were slightly below the total of the previous year; but as the irrigated area was but little more than half that of the previous year, the working expenses per acre irrigated were nearly doubled.

11. The following statement gives for the principal canals in each Province details of the length of channels, of canal discharge, of area irrigated, and of the duty of water:—

Province.	Canals.	Length of completed main and branch canals. (Miles).	Length of completed distributaries. (Miles).	Maximum discharge at head of canal (cubic feet per second).	Average discharge at head (cubic feet per second).		Area irrigated (acres).					Area irrigated per acre per day at head (acres).	
					Kharif.	Rabi.	Kharif.	Rabi.	Total.	Flow.	Lift.	Kharif.	Rabi.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Bengal.	1. Nira	98	121	4.6	385	176	11,343	16,021	27,364	28,318	44	47 (173)	56 (92)
	2. Alhasvad Tank	35	66	—	35	6	1,347	3,012	4,359	4,802	17	34 (171)	50 (92)
	3. Nutha	82	67	—	150	162	7,952	8,520	16,472	10,026	56	50 (171)	16 (92)
	4. Krishna	61	—	83	58	89	3,640	1,081	4,721	4,015	650	47 (173)	21 (92)
	5. Swat River	31	143	673	423	475	22,776	61,906	84,682	91,672	—	62 (174)	132 (133)
Punjab.	6. Western Jumna, including Sura branch.	404	1,670	4,000	3,001	3,737	315,104	127,373	442,477	345,262	7,125	72 (153)	50 (142)
	7. Bari Doab	313	1,072	4,741	3,722	3,070	308,610	226,077	534,687	497,151	26,126	61 (146)	100 (145)
	8. Sirhind	309	1,716	6,606	3,103	3,274	42,241	227,473	269,714	27,002	712	19 (114)	72 (127)
	9. Chenab	301	653	2,642	1,570	3,115	95,223	170,634	265,857	260,77	2,501	50 (122)	81 (125)
	10. Salma	61	112	1,022	1,132	812	45,521	95,161	140,682	141,702	2,572	43 (167)	118 (182)
Bengal.	11. Upper Sutlej, Inundation.	210	137	3,221	3,221	—	73,406	122,259	195,665	101,400	4,845	—	— (164)
	12. Indus Inundation	724	—	5,271	3,135	—	122,521	62,734	185,255	1,6577	18,621	—	— (142)
	13. Muzaffargarh Inundation.	220	473	—	Not recorded	—	130,777	123,241	254,018	1,6140	8,150	Not recorded.	—
	14. Orissa	250	1,021	6,751	1,210	6,6	119,452	4,102	123,554	121,414	1,117	61	6
	15. Sone	267	1,210	5,055	2,755	2,273	259,201	59,773	318,974	315,722	3,512	91	17
Madras.	16. Godavari	303	1,811	13,176	7,006	4,720	614,126	100,477	714,603	740,073	14,100	61	21
	17. Krishna	370	1,616	9,154	4,508	—	574,912	109	575,021	502,037	5,553	114	—
	18. Pennar	22	120	1,004	371	162	64,108	3,311	67,419	67,117	720	174	21
	19. Sangam	9	256	5,361	670	120	70,517	4,081	74,598	73,675	973	105	61
	20. Cauvery	246	1,250	21,462	11,252	370	255,258	101,687	356,945	907,100	49,620	76	207
N.W. Provinces.	21. Upper Ganges	440	2,576	7,752	4,320	3,252	301,471	50,125	351,596	303,677	47,60	70 (141)	15 (125)
	22. Lower Ganges	57	2,172	5,100	4,027	3,112	222,149	8,046	230,195	161,178	65,557	54 (143)	3 (125)
	23. Agra	109	573	1,526	1,421	1,077	77,651	61,515	139,166	125,107	14,558	34 (71)	57 (122)
	24. Eastern Jumna	126	646	1,514	1,122	1,052	103,026	22,214	125,240	110,012	14,315	61 (168)	21 (76)
	25. Desert	102	—	2,767	2,354	—	87,718	15,775	103,493	97,771	4,713	37	—
Sind.	26. Degari	158	—	6,145	5,101	—	156,110	55,311	211,421	181,174	30,050	31	—
	27. Char	208	—	7,070	7,744	—	101,810	64,658	166,468	147,322	4,121	26	—
	28. Fuleli	1,070	—	9,200	6,342	—	250,371	51,201	301,572	225,725	102,552	37	—
TOTAL		8,667	21,727	—	—	—	4,950,256	2,027,115	6,977,371	6,535,517	421,512	—	—

N.B.—The figures in brackets in columns 13 and 14 denote the number of days on which the irrigating duty is calculated.

9. The following are the percentages on gross revenue of the cost of revenue management (including collection charges) and of the up-keep of the works for Major Works in the different Provinces:—

Province.	Revenue-management, per cent.	Up-keep, per cent.	Total, per cent.
Madras	8.6	10.4	19.0
North-Western Provinces	14.2	24.3	38.5
Punjab	15.4	29.0	44.4
Bombay	18.7	32.1	50.8
Sind	10.0	31.1	41.1
Bengal	31.1	65.1	96.2

10. The following statement shows the total cost of working per acre irrigated by the Major Works in the different Provinces:—

	1894-95.	
Sind	07	} Including old maintenance charges.
Madras	08	
Punjab	15	} Excluding maintenance of Tidal canal.
Bengal	28	
North-Western Provinces	31	
Bombay	38	

The figures are practically the same as those of the previous year except in the case of the North-Western Provinces where the cost of working per acre irrigated has risen from Rx. 0.17 in 1893-94 to Rx. 0.31 in 1894-95. The total working expenses in this Province were slightly below the total of the previous year; but as the irrigated area was but little more than half that of the previous year, the working expenses per acre irrigated were nearly doubled.

11. The following statement gives for the principal canals in each Province details of the length of channels, of canal discharge, of area irrigated, and of the duty of water:—

Province.	Canals.	Length of completed main and branch canal. (Miles.)	Length of completed distributaries. (Miles.)	Maximum discharge at head of canal. (Cusecs per second.)	Average discharge at head (Cusecs per second.)		Area irrigated (Acres).					Area irrigated per cusec duty per second of average flow at head (Acres.)	
					Kharif.	Rabi.	Kharif.	Rabi.	Total.	Flow.	Lift.	Kharif.	Rabi.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Bengal.	1. Nira	96	122	4.6	265	278	12,342	16,021	28,363	28,360	44	47 (173)	36 (92)
	2. Nhasrad Tank	28	66	—	35	6.	1,207	3,019	4,226	4,209	17	34 (173)	30 (92)
	3. Mutha	88	67	—	150	162	7,552	2,500	10,052	10,000	56	50 (171)	16 (92)
	4. Krishna	64	—	85	59	82	2,650	1,682	4,332	4,015	656	47 (173)	22 (92)
	5. Swat River	21	143	673	423	471	20,173	62,906	83,079	81,822	—	62 (172)	132 (123)
	6. Western Jumna, including Sirsa branch.	404	1,670	4,000	3,001	2,727	215,104	127,223	342,327	345,362	7,125	72 (173)	50 (142)
Punjab.	7. Bari Doab	313	1,002	4,251	3,222	3,010	205,610	126,077	331,687	49,131	26,146	81 (178)	108 (145)
	8. Sirhind	309	2,716	6,616	2,102	2,254	42,841	237,422	280,263	27,002	712	19 (114)	72 (172)
	9. Chenab	202	653	2,642	1,512	2,115	65,223	170,634	235,857	256,777	2,581	30 (177)	21 (115)
	10. Sdhan	64	212	1,022	1,132	812	4,522	95,161	142,377	147,497	2,572	63 (167)	118 (182)
	11. Upper Sutlej Inundation.	210	137	2,221	2,221	—	71,606	122,956	194,562	101,450	4,245	61	(164)
	12. Indus Inundation	724	—	5,221	3,135	—	122,521	62,724	185,245	1,6577	16,671	61	(147)
Madras.	13. Musaffargah Inundation.	820	423	—	Not recorded	—	120,777	123,242	244,019	2,6,120	8,150	Not recorded.	—
	14. Orissa	250	1,091	6,254	1,210	6.6	119,459	4,102	123,561	121,424	1,117	61	8
	15. Sone	267	1,220	5,253	2,725	2,322	25,361	5,773	31,134	31,122	3,512	91	17
	16. Godavari	523	1,501	11,120	2,006	4,750	62,426	100,677	163,103	740,073	14,100	91	21
	17. Krishna	220	1,614	6,154	4,508	—	514,812	109	514,920	502,027	5,212	114	—
	18. Pennar	22	120	1,004	271	162	64,505	3,351	67,856	67,122	710	174	21
N.W. Provinces.	19. Sangam	9	24	5,261	670	100	70,517	4,181	74,698	73,605	923	105	41
	20. Cauvery	244	1,250	22,462	11,252	279	255,252	101,187	356,439	907,005	4,670	76	262
	21. Upper Ganges	440	2,576	7,252	4,220	3,222	301,422	50,232	351,654	2,3,677	47,60	70 (143)	15 (121)
	22. Lower Ganges	527	2,172	5,100	4,077	3,112	222,140	8,004	230,144	161,176	65,557	54 (143)	3 (125)
	23. Agra	100	572	1,526	1,431	1,027	77,651	61,515	139,166	121,109	14,058	54 (72)	57 (122)
	24. Eastern Jumna	220	646	1,519	1,122	1,052	103,016	22,214	125,230	110,212	14,315	61 (168)	21 (76)
Sindh.	25. Desert	102	—	2,767	2,354	—	8,728	15,775	24,503	9,271	4,222	17	—
	26. Regar	159	—	6,185	5,101	—	156,119	55,311	211,430	181,174	20,156	31	—
	27. Ghar	208	—	7,070	7,244	—	191,910	62,658	254,568	227,321	4,125	26	—
	28. Fuleli	1,010	—	9,500	8,342	—	250,372	51,201	301,573	225,725	102,553	27	—
TOTAL		8,667	20,727	—	—	—	4,950,254	2,027,115	6,977,369	6,535,527	411,512	—	—

M.B.—The figures in brackets in columns 13 and 14 denote the number of days on which the irrigating duty is calculated.

12. The following statement shows the return derived from Navigation Works proper, for which Capital and Revenue Accounts are kept. Works in which navigation is combined with irrigation are included in the statement in paragraph 3:—

Class of works.	Number of works.	Direct and indirect Capital outlay to end of 1894-95.	Gross revenue.	Working expenses, including indirect charges.	Net revenue.	Percentage of net revenue on capital outlay.
		Rx.	Rx.	Rx.	Rx.	
NAVIGATION.						
I—Major works—						
(a) Productive	1	242,818	58,531	4,743	1,110	46
II—Minor works...	6	1,846,241	61,951	48,235	13,716	74
Total	7	2,089,059	67,844	52,978	14,826	71

The percentage of net revenue on capital outlay was 0.71 as compared with 0.56 and 1.04 during 1893-94 and 1892-93 respectively.

13. The following statement gives some details of the navigation operations of the year. Works on which navigation is combined with irrigation are included:—

Provinces.	Length of canal open for navigation.	Ton-mileage.	Estimated value of cargoes.	Estimated value of rafts.	Number of passengers carried.
	Miles.	Millions.	Thousands of Rx.	Thousands of Rx.	
Punjab	432	...	...	236	6,695
Bengal	673	37,914	9,584	55	546,448
Madras	1,252	50,527	4,861	427	467,774
North-Western Provinces	535	8,393	262	107	404
Total	2,892	96,834	14,207	825	1,021,321

The figures show a falling off compared with those of the previous year except in the estimated value of rafts. There was an increase of 10 miles in the length of canal open for navigation in Madras.

14. The direct outlay on works for which only Revenue Accounts are kept and for which neither Capital nor Revenue Accounts are kept including those maintained by the Civil Department was Rx. 671,546 as compared with Rx. 633,398 during the previous year. The direct receipts were Rx. 78,001 against Rx. 67,465.

A large portion of the revenue derived from this class of works is assessed and collected with the Land Revenue and is accounted for under that head in the Civil Accounts. The direct receipts comprise only the sums realized by the Public Works Department which alone are credited in the Public Works Accounts.

The figures in the following statement which relates to these works are extracted from the Irrigation Revenue Reports of the different Provinces.

Certain receipts, e.g., those realized by Civil Officers from irrigation works under their charge, do not appear in the Reports, so that the figures are approximate only. Figures relating to works classed as "Agricultural" are excluded.

Province.	WORKS FOR WHICH CAPITAL ACCOUNTS ARE NOT KEPT.			
	Gross revenue from all sources direct and indirect, as recorded in Irrigation Revenue Reports.	Working expenses including collection charges.	Net Revenue.	Area irrigated.
	Rx.	Rx.	Rx.	Acres.
Bombay excluding Sind	54,742	27,890	26,852	143,907
Sind	251,933	*123,610	128,323	1,139,571
Punjab	44,338	25,857	18,481	304,730
Bengal	17,278	22,993	-5,715	25,905
Madras	844,849	228,551	616,498	3,734,633
Total	1,213,140	428,701	784,439	4,847,749

* Exclusive of indirect charges.

The total area irrigated by these works in 1894-95 amounted to 57.3 per cent. of that irrigated by the Major and Minor Works as shown in paragraph 5.

15. The total area irrigated from all works during 1894-95 amounted to 13½ million acres.

If the value per acre of the irrigated crops be taken at the estimated rate of Rx. 2.75 per acre as given in paragraph 6, the total value of the produce from irrigated lands amounted to 36½ millions of Rx.

16. The following statement gives particulars of works which were under construction:—

Project.	Amount of Estimate (current outlay).	Expenditure to end of 1894-95 (direct outlay).	Ultimate area to be irrigated.	Ultimate estimated revenue.	Estimated percentage of net revenue on direct (capital) outlay.	Remarks.
<i>Productive.</i>	Rx.	Rx.	Acres.	Rx.		
Chenab Canal (complete project of 1891).	2,568,417	1,458,327	1,100,000	535,911	16.1	
Sirsa Branch	289,269	274,614	126,290	32,000	11.0	Construction estimate closed on 31st March 1895.
Periyar Irrigation	847,100	735,603	192,431	72,070	6.6	Revised Estimates sanctioned in Secretary of State's Despatch No. 58 P. W., dated 26th July 1894.
Eastern Nara Irrigation	619,079	609,150	283,428	39,350	6.3	Complete Revised Estimate sanctioned in Secretary of State's Despatch No. 12 P. W., dated 21st March 1895.
Jamrao Canal	696,652	16,414	260,000	54,057	7.7	
Fatehpur Branch, Lower Ganges Canal.	342,000	5,814	116,000	42,050	8.9	
<i>Protective.</i>						
Rushkulya	436,800	368,068	117,250	24,671	4.3	Second Revised Estimate sanctioned in Secretary of State's Despatch No. 34 P. W., dated 19th July 1894.

17. The following statement gives particulars of important irrigation projects, the estimates of which had been sanctioned but upon which work had not been begun up to the end of 1894-95:—

Project.	Amount of estimate (direct outlay).	Ultimate area to be irrigated.	Ultimate estimated revenue.	Estimated percentage of net revenue on direct capital outlay.	Date of sanction.
Productive Works.	Rx.	Acres.	Rx.		
Jhelum canal	1,202,407	473,360	154,875	82	8th November 1868.
Kalingaroyen channel	82,500	23,000	6,650	67	25th January 1891.

18. In reviewing the Revenue Reports of the different Provinces the Government of India have noticed the approval expressed by Local Governments of the manner in which the officers of the Irrigation Department have performed their duties, and the Governor General in Council, in reviewing the Irrigation operations throughout India during 1894-95, desires to express his appreciation of the results exhibited in the Accountant General's note and in this Review.

ORDER.—Ordered, that the foregoing, with a copy of the note by the Accountant General, Public Works Department, be forwarded to the Local Governments and Administrations in the Public Works Department, noted on the margin, for information.

Ordered also, that a copy of the Review and note be forwarded to the Revenue and Agricultural and Finance Departments, and that the papers be published in the Supplement to the *Gazette of India*.

Ordered further, that a copy of the Review and note be forwarded to Her Majesty's Secretary of State for India for information.

M. S. S. S.

Col., R.E.,
Secretary to the Govt. of India.

Document accompanying.

Note by the Accountant General, Public Works Department, dated 21st May 1895.

G. C. Press, Simla.—No. 1041 P. W. D.—25-9-96.—503.

To. The Secy to the Govt of Madras.
P. W. Department.

Accompaniment to P. W. D. Review No. 191 I. of 1896.

Note by A. R. Becher, Esq., Offg. Accountant General, Public Works Department, upon the accounts of Revenue and Expenditure of Irrigation Works in India for 1894-95.

The figures in the accounts submitted herewith agree with the Finance and Revenue accounts of the Government of India, but in this note certain figures are added from the Administrative accounts of the Public Works Department, Irrigation Branch, the Revenue Reports of Irrigation Works and the Annual Statement of the Financial Results of Irrigation Operations in India.

2. The Irrigation works in India are divided into two main classes, viz., Major Works and Minor Works.

Major Works are sub-divided into—

- (a) Productive Works, the Capital of which has been provided from borrowed money; and
- (b) Protective Works, the Capital of which has been provided out of the general revenues of India.

Minor Works are for the purpose of this note sub-divided into—

- (a) Works for which Capital and Revenue accounts are kept; and
- (b) Works for which Capital accounts are not kept.

3. Capital and Revenue accounts are kept for all Major Irrigation Works. There are 46 projects classed as Major Works, of which one, viz., the Hijili Tidal Canal in Bengal, is a purely navigation canal.

Of these, 38 were sanctioned as works expected to be remunerative, i.e., estimated to pay the cost of up-keep and interest on the Capital outlay. They were or are being constructed from funds provided from sources outside the general revenues. The remaining eight projects were sanctioned as works of protection against famine, and the cost of their construction has been or is being paid for out of annual grants made from general revenues under the head of famine insurance.

- North-Western Provinces and Oudh.
- 1. Betwa Canal.
- 2. Swat River Canal.
- 3. Rushikulya Project.
- 4. Nira Canal.
- 5. Mhaswad Tank.
- 6. Chankapur Tank.
- 7. Maladevi Tank.
- 8. † Gokak Canal, 1st section.

† Now classed as a minor work and combined with the Gokak Storage Works.

4. The works classed as Minor Irrigation Works are numerous. Capital and Revenue accounts are kept for 76 separate projects of this class; for the others only one account of receipts and charges for each work or group of works is kept. Of the 76 projects for which Capital and Revenue accounts are kept, 6 are purely navigation canals, viz., 2 in Bengal and 4 in Madras.

5. The general results of all works for which Capital and Revenue accounts are kept are as follows:—

	Major Works. Rx.	Minor Works. Rx.	TOTAL Rx.
Capital outlay.			
During 1894-95	695,032	70,531	765,563
To end of 1894-95	31,731,986	4,849,733	36,581,719
Revenue Account, 1894-95.			
Gross Revenue	2,182,413	536,014	2,718,427
Maintenance and Working	839,558	262,070	1,101,628
Net Revenue	1,293,855	273,944	1,567,799
Interest	1,194,111	...	...
Net profit after paying interest on Capital	99,744	...	...
Percentage of net Revenue of the year on the Capital outlay to end of the year	4.93	5.65	4.29
Against in 1893-94	4.04	6.89	4.42
" 1892-03	4.59	6.48	4.84

6. The net revenue derived from Major Works is Rx. 39,204 better than that of the previous year. The increase occurred principally in the Punjab and is due to the extension of irrigation from the Western Jumna, Bari Doab and the Chenab Canals. The interest charges during 1894-95 have, however, also increased by Rx. 28,557 owing to additional Capital outlay, so that the increase in the net profit is Rx. 10,847.

7. The net profit should be considerably increased when the Fatehpur Branch of the Lower Ganges Canal, the Chenab Canal, the Periyar and Rushikulya Projects and the Jamrao Canal are completed, and the irrigation from them and other projects have been fully developed. So far the works in Bengal and Deccan have failed to pay the interest on the Capital invested in them.

8. The net revenue from Minor Works was less than that of the previous year by Rx. 58,081. The largest items contributing towards this decrease are referred to in paragraph 32 below.

9. The receipts and charges of the year 1894-95 on Revenue account, exclusive of the figures relating to Minor Works for which Capital accounts are not kept, are detailed in the following statement by funds and provinces:—

1894-95.

	Imperial.				Provincial.				Local.				Total.			
	Gross Revenue.	Main-tenance and working.	Net revenue.	Net profit.	Gross revenue.	Main-tenance and working.	Net revenue.	Net profit.	Gross revenue.	Main-tenance and working.	Net revenue.	Net profit.	Gross revenue.	Main-tenance and working.	Net revenue.	Net profit.
MAJOR WORKS.																
Proactive.																
Irrigation.																
Bengal	117,498	...	117,498	246	144,160	141,462	2,698	238,639	...	...	...	...	146,160	141,462	4,698	238,639
N.-W. P. and Oudh	569,038	258,000	311,038	9,342	802,350	284,257	518,093	291,270	...	...	...	...	679,848	254,257	425,591	284,929
Punjab	896,933	145,679	751,254	274,073	...	...	...	...	...	...	...	...	896,933	258,000	638,933	274,073
Madras	134,980	67,801	67,179	232,988	...	...	...	...	...	...	...	...	134,980	67,801	67,179	232,988
Bombay	...	...	...	78,843	...	...	...	...	...	...	...	...	...	...	...	78,843
Stores unappropriated.	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	4
Total	1,422,454	459,480	962,974	576,856	709,510	395,719	313,791	532,909	...	...	...	...	2,130,974	866,189	1,264,785	1,109,765
Navigation.																
Bengal	...	...	...	2,083	5,553	4,743	1,110	7,182	...	...	...	...	5,895	4,743	1,110	9,264
Total Proactive.	1,422,454	459,480	962,974	578,938	714,363	400,462	313,901	540,091	...	...	...	...	2,136,827	869,932	1,266,895	1,119,029
Proactive.																
Irrigation.																
N.-W. P. and Oudh	5,895	9,769	15,664	16,037	...	...	...	...	...	...	...	...	5,895	9,769	15,664	16,037
Punjab	27,503	9,055	18,447	14,023	...	...	...	...	...	...	...	...	27,503	9,055	18,447	14,023
Madras	2,734	1,567	1,167	14,103	...	...	...	...	...	...	...	...	2,734	1,567	1,167	14,103
Bombay	9,455	8,205	1,250	30,921	...	...	...	...	...	...	...	...	9,455	8,205	1,250	30,921
Total Proactive.	45,936	29,616	16,320	75,086	...	...	...	...	...	...	...	...	45,936	29,616	16,320	75,086
TOTAL MAJOR WORKS.																
Navigation.	1,468,050	488,096	979,954	654,021	714,363	400,462	313,901	540,091	...	...	...	...	2,182,413	889,588	1,292,825	1,194,115
MINOR WORKS.																
Irrigation.																
Rajputana	13,477	4,006	9,471	...	...	...	...	...	...	...	...	...	13,477	4,006	9,471	...
Haluchistan	3,118	1,340	1,778	...	...	...	...	...	...	...	...	...	3,118	1,340	1,778	...
Lower Burma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bengal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
N.-W. P. and Oudh	110,132	86,434	23,698	...	...	...	...	...	...	...	...	...	110,132	86,434	23,698	...
Punjab	137,348	57,145	80,203	...	...	...	...	...	...	...	...	...	137,348	57,145	80,203	...
Madras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bombay	263,075	148,925	114,150	...	...	...	...	...	...	...	...	...	263,075	148,925	114,150	...
Total	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Navigation.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bengal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Madras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total MINOR WORKS.	263,075	148,925	114,150	...	...	...	...	...	...	...	...	...	263,075	148,925	114,150	...
GRAND TOTAL	1,731,125	637,021	1,094,104	654,021	987,302	513,007	473,605	640,091	...	...	...	...	2,718,437	1,150,638	1,567,799	1,194,115

10. This table shows that after paying interest on borrowed money expended in the construction of Major Irrigation Works, the highest net profits are, as in the previous two years, obtained from irrigation projects in Madras. Next follow the North-Western Provinces and Oudh, the Punjab, and Bombay. In the Punjab the revenue is gradually increasing, as the new irrigation projects are completed. The Chenab Canal will probably be completed in 1897-98. In Bengal the loss is, as explained in last year's report, due to the permanent settlements rendering enhancement of land revenue impracticable.

Major Works.

11. The following statement shows in detail the financial results of individual Major Irrigation Works during and to the end of 1894-95:—

MAJOR WORKS.	CAPITAL OUTLAY TO SEP OF 1894-95.			REVENUE ACCOUNT FOR 1894-95.					REVENUE ACCOUNT TO SEP OF 1894-95.					
	Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Percentage of net revenue on the Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.
Productive.														
BENGAL.														
Irrigation.														
Orissa Project	2,569,429	67,865	2,637,294	33,235	48,339	-15,097	101,992	-117,079	...	625,685	857,790	-332,105	1,968,744	-3,300,849
Midnapore Canal	826,132	18,415	844,547	29,442	22,456	6,986	33,045	-36,069	83	600,232	477,689	31,643	740,040	-708,397
Sone Project	2,899,403	91,657	2,991,060	83,483	70,674	12,809	103,808	-91,089	48	1,324,431	1,112,016	212,416	1,969,229	-1,766,813
Navigation.														
Hijuli Tidal Canal	5,991,964	167,897	6,159,861	146,160	141,463	4,698	238,925	-234,227	08	2,359,848	2,447,394	-88,046	4,678,013	-4,766,059
Total BENGAL	236,907	5,911	242,818	5,863	4,743	1,110	9,264	-8,154	46	110,206	96,152	14,114	13,844	-169,730
N.-W. PROVINCES AND OUDH.														
Irrigation.														
Ganges Canal	2,763,984	171,646	2,935,630	326,081	109,767	216,314	109,692	106,722	739	7,070,740	3,092,899	3,977,841	3,755,089	252,752
Lower Ganges Canal	3,198,139	234,240	3,432,379	176,375	84,321	91,254	127,348	-36,074	267	3,500,471	1,803,742	1,696,729	2,293,574	-316,845
Agra Canal	867,263	67,672	934,934	63,725	26,728	36,997	31,499	2,498	396	947,238	472,148	475,090	724,325	-219,235
Eastern Jumna Canal	831,536	21,192	852,728	114,467	33,411	81,056	13,269	67,787	2278	3,105,403	974,748	2,130,654	450,696	1,679,959
Fatehpur Branch of the Lower Ganges Canal	5,814	519	6,333	...	...	...	220	-220	...	...	...	...	220	-220
Total N.-W. P. & OUDH	7,166,735	495,368	7,662,103	679,849	254,257	425,591	291,928	140,683	656	14,703,851	6,143,637	8,560,314	7,193,903	1,366,411
PUNJAB.														
Irrigation.														
Western Jumna Canal	1,391,740	66,703	1,458,443	149,636	70,061	79,575	54,008	24,477	639	6,000,511	1,900,271	4,100,240	1,022,473	3,077,767
Ravi Doab Canal	1,694,163	61,135	1,755,298	229,336	64,676	164,660	67,059	96,601	931	4,193,250	1,735,648	2,457,602	1,972,316	496,286
Sirhind	2,286,666	117,715	2,404,381	95,960	59,075	36,905	91,392	-54,487	163	1,186,406	630,686	555,720	1,472,501	-816,891
Lower Sutlej and Feroze Canal	67,287	2,712	69,999	10,169	7,043	3,126	3,691	435	447	60,807	69,514	953	24,902	-23,949
Chenab Canal	1,454,327	31,222	1,485,549	60,237	45,969	14,268	54,916	-40,648	96	151,193	160,766	416	231,944	-79,751
Sidhali	98,853	3,231	102,084	23,695	9,176	14,519	3,876	12,643	1616	167,193	63,699	103,494	32,634	-20,860
Jhelum	1,016	108	1,124	...	...	...	40	-40	...	...	...	...	300	-200
Total PUNJAB	6,999,051	288,936	7,287,987	569,063	256,000	313,063	274,072	38,981	430	11,759,139	4,440,524	7,318,615	4,760,010	2,558,605

Major Works	CAPITAL EXPENDITURE TO END OF 1964-65			REVENUE ACCOUNT FOR 1964-65							REVENUE ACCOUNT TO END OF 1964-65				
	Direct	Indirect	Total	Gross revenue	Maintenance and working	Net revenue	Interest	Net profit	Percentage of net revenue on the capital outlay	Gross revenue	Maintenance and working	Net revenue	Interest	Net profit	
MADRAS															
Irrigation.															
Godavari Delta System	1,091,869	189,796	1,281,665	250,495	64,000	186,495	43,665	142,830	14.65	6,046,274	1,838,836	4,207,438	1,216,050	2,991,089	
Krishna "	1,083,356	79,126	1,162,482	201,588	63,751	137,837	42,550	95,287	12.74	3,491,917	1,119,498	2,372,419	821,804	1,550,615	
Pennar Ancient "	163,744	34,846	198,590	16,652	2,779	13,873	6,617	7,256	7.35	314,180	66,176	258,004	169,516	89,488	
Cauvery Delta "	166,074	12,352	178,426	67,018	6,627	60,391	6,630	53,761	45.06	2,370,467	189,784	2,180,683	173,524	2,007,159	
Sivakamham Ancient System	138,012	10,091	148,103	9,945	2,342	7,603	6,434	1,169	6.21	183,565	59,456	124,109	119,247	4,862	
Saigun Ancient System	309,746	68,679	378,425	18,603	4,751	13,852	12,330	1,522	3.67	104,313	44,393	60,920	127,873	-63,523	
Kaveri Canal	2,169,370	141	2,169,511	11,346	10,908	337	86,770	-86,433	-0.2	125,358	208,345	-79,987	1,082,858	-1,162,845	
Barar Tank	39,695	2,273	41,968	937	471	466	1,648	-1,172	1.23	4,076	3,163	907	14,381	-13,474	
Periyar Project	735,604	19,320	754,924	...	...	...	27,605	-27,605	...	...	...	...	97,328	-97,328	
Total Madras	5,895,553	406,663	6,302,215	598,933	145,679	(a) 453,254	232,988	218,266	7.16	12,644,079	3,495,364	9,148,725	3,822,141	5,326,384	
BOMBAY															
Sind.															
Irrigation.															
Desert Canal	122,604	4,074	126,678	13,284	13,047	237	4,899	-4,662	-1.9	241,337	104,183	137,154	80,354	56,820	
Underwash "	67,900	1,639	69,539	11,348	6,232	6,116	2,126	3,990	6.67	62,210	19,860	42,350	14,372	28,008	
Begari Canal	162,661	4,912	167,573	33,578	6,639	26,939	6,504	20,435	16.09	887,778	210,471	677,307	141,031	206,276	
Eastern Nara Works	6,9,150	21,081	630,234	44,783	17,018	27,765	23,729	4,036	6.41	806,863	343,118	463,745	477,038	-13,521	
Jamruo Canal	16,414	634	17,048	...	...	...	373	-373	...	...	...	...	373	-373	
Total Sind	968,626	32,379	1,001,005	105,033	42,936	(b) 958,069	37,630	23,457	6.00	1,688,177	707,632	980,545	713,115	267,410	
DECCAN AND GUJARAT.															
Irrigation.															
Hathmati Canal	49,093	2,747	51,840	1,108	60	49	1,964	-1,465	-96	10,650	16,395	-5,745	43,375	-49,220	
Lower Panjhra River Works	43,805	3,281	47,086	1,655	68	967	1,765	-768	3.14	26,971	13,593	13,378	41,844	-28,506	
Kadva River Works	69,378	2,866	72,244	1,188	1,653	-465	2,776	-3,240	...	14,886	13,717	1,169	43,009	-41,840	
Total Deccan and Gujarat	1,034,619	49,114	1,083,733	35,947	14,865	41,216	-2,136	1,965	4.33	2,036,614	203,614	1,833,000	889,928	-697,763	
Total Bombay	2,003,148	81,487	2,084,635	138,980	67,801	78,849	2,331	3,89	2.15	977,266	1,172,770	1,603,113	1,603,113	-430,313	
38 TOTAL PRODUCE															
Irrigation				1,440,291	29,485,741	2,130,974	865,199	1,276,776	4.33	43,616,453	17,604,076	26,112,378	22,037,180	4,055,198	
Navigation				6,911	242,816	249,727	4,743	1,110	46	110,266	96,153	14,114	183,844	-108,730	
Total				1,447,202	29,728,557	2,131,701	869,942	1,277,886	4.29	43,726,719	17,600,227	26,126,492	22,241,024	3,946,468	

(a) Excludes revenue due to old irrigation, which is as follows:-

	Gross revenue	Maintenance and working	Net revenue
Godavari Delta System	13,400	850	12,550
Krishna "	7,100	490	6,610
Pennar Ancient "	11,700	3,000	8,700
Cauvery Delta "	38,609	38,609	0
Sivakamham Ancient System	7,900	1,250	6,650
Saigun Ancient System	13,800	2,600	11,200
Barar Tank	200	15	185
Total	420,381	46,714	373,667

(b) Excludes revenue due to old irrigation, which is as follows:-

Begari Canal	3,381	578	2,803
Eastern Nara Works	314	34	280
Total	3,705	612	3,093

Major Works.	CAPITAL OUTLAY TO END OF 1894-95.			REVENUE ACCOUNT FOR 1894-95.					REVENUE ACCOUNT TO END OF 1894-95.				
	Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Percentage of net revenue on the Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1 Protective. N.-W. PROVINCES AND OUDH. Irrigation. Betwa Canal	401,321	21,539	422,859	6,895	9,789	-3,894	16,037	-19,931	...	59,123	92,979	-33,856	183,518
1 PCNJAR. Irrigation. Swat River Canal	350,761	12,934	363,695	27,502	9,055	19,447	14,025	4,422	6.07	189,097	86,203	101,834	183,133
1 MADRAS. Irrigation. Roubilajya Project	368,048	33,020	401,068	(a) 2,734	1,567	1,167	14,103	-12,936	.29	4,400	3,654	836	67,123
5 BOMBAY. DECCAN AND GUJARAT. Irrigation. Godak Canal, 1st Section	40,094	1,173	41,267	(b)	(b)	(b)	1,604	-1,604	...	2,474	2,100	374	20,902
Mharwad Tank	198,506	6,083	204,589	1,273	2,846	-1,574	7,533	-9,507	...	13,166	14,907	-1,741	96,897
Nira Canal	630,163	29,435	659,598	8,119	5,359	2,824	20,993	-18,169	.50	37,391	34,203	3,098	215,738
Chankapur Tank	6,403	318	6,720	...	...	...	255	-255	...	...	...	...	3,990
Mahadevi Tank	3,396	216	3,613	...	...	...	136	-136	...	...	...	...	1,394
TOTAL BOMBAY	778,561	37,224	815,785	9,455	8,206	1,250	30,921	-29,671	.15	53,031	51,800	1,731	339,311
TOTAL PROTECTIVE	1,898,711	104,716	2,003,427	23,616	14,970	75,086	-68,116	...	.85	304,741	234,196	70,545	772,084
GRAND TOTAL	3,018,108	1,650,918	4,669,026	888,558	1,293,855	1,194,111	90,744	4.08	44,031,460	17,834,423	26,197,037	23,013,109	3,183,929

(a) Excludes Rs. 2,000 on account of old irrigation revenue.
(b) This is now claimed as a minor work and combined with Godak Storage Works.

12. Taken collectively by provinces the percentages of net revenue on the Capital outlay upon Major Works for the last three years are as follows:—

	1894-95.	1893-94.	1892-93.
1. Madras	6.75	6.70	6.46
2. Bombay—Sind	6.00	6.54	7.65
3. North-Western Provinces and Oudh	5.22	5.37	5.22
4. Punjab	4.33	3.95	6.24
5. Bombay—Deccan and Gujarat	1.18	1.27	1.19
6. Bengal	.09	.19	.63
Total	4.08	4.04	4.59

13. The percentage in Madras would be considerably higher but that the Karnul Canal, which was made by a company, seldom pays its working expenses and maintenance. The cost of this canal is nearly one-third of the total expenditure on Major Irrigation works in Madras. Omitting this canal the figures for Madras would be:—

	Per cent.
1894-95	9.97
1893-94	10.06
1892-93	9.91

14. The systems which in 1894-95 paid over 4 per cent. are arranged below in the order of the rate paid, and are compared with the results in the two previous years:—

	RATE PAID.		
	1894-95.	1893-94.	1892-93.
1. Cauvery Delta System	45.06	45.76	39.00
2. Eastern Jumna Canal	22.78	24.60	20.14
3. Sidhna Canal	16.16	19.09	14.85
4. Begari Canal	16.09	17.12	17.71
5. Godavari Delta System	14.55	14.04	13.73
6. Kistna	12.74	12.68	12.53
7. Bari Doab Canal	9.31	9.47	10.26
8. Unharwah Project	8.67	8.50	8.81
9. Ganges Canal	7.39	7.23	7.17
10. Penner Anicut	7.35	7.23	7.40
11. Western Jumna Canal	5.39	2.92	4.90
12. Srivaikuntham Anicut System	5.21	5.43	2.59
13. Swat River Canal	5.07	4.42	5.20
14. Krishna Canal	4.83	2.76	4.85
15. Lower Sohag and Para Canal	4.47	.75	...
16. Eastern Nara Works	4.41	5.50	5.92

15. The systems that have, up to the end of 1894-95, paid off the accumulated interest on the Capital expended on them are noted below:—

	Surplus. Rs.
1. Western Jumna Canal, including Sirsa Branch	3,077,767
2. Godavari Delta System	2,991,689
3. Cauvery	2,027,159
4. Eastern Jumna Canal	1,679,959
5. Kistna Delta System	1,650,615
6. Ganges Canal	252,752
7. Bari Doab Canal	495,286
8. Begari	206,276
9. Penner Anicut System	89,489
10. Sidhna Canal	70,860
11. Desert	56,820
12. Unharwah	18,008
13. Srivaikuntham Anicut System	4,862

Assuming that the works are still worth the amount charged in each case to the Capital account, this represents a net profit to the State at the end of 1894-95 on these systems of 12,511,542
The charge to the State on other Major Works is 9,327,613

And this leaves a net profit to date on all Major Works of. 3,183,92

16. The following statement shows the net charge to the State to the end of each year for the last five years on account of further projects, which are expected eventually to pay off the accumulated interest on their Capital cost:—

	Date of Completion.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
		Rx.	Rx.	Rx.	Rx.	Rx.
<i>North-Western Provinces and Oudh.</i>						
Lower Ganges Canal	1878	241,950	257,544	270,214	280,752	316,845
Agra Canal	1874	233,674	233,061	239,162	251,733	249,235
<i>Punjab.</i>						
Sirhind Canal	1887	854,540	800,657	717,678	762,105	816,591
Lower Sohay and Para Canal	1886	13,442	18,617	22,216	24,384	23,949
Chenab Canal	...	77,127	106,942	152,338	193,920	234,568
<i>Madras.</i>						
Sangam Anicut System	1885	50,059	64,784	65,213	65,075	63,523
<i>Bombay—Sind.</i>						
Eastern Nara Works	...	51,227	41,222	27,910	17,357	13,321
TOTAL	...	1,522,019	1,522,717	1,494,731	1,595,326	1,718,032

Note.—The projects which have not yet been opened for irrigation have been excluded from this statement.

In all these projects the debit against them should be decreasing.
 17. The continued steady decrease against the Eastern Nara before completion of the project is satisfactory.
 18. The continued increase against the Lower Ganges Canal is not altogether satisfactory; this canal has been opened 16 years, and has not yet begun to pay the annual interest charges. This unsatisfactory result is chiefly due to the destruction of the Kali Nadi aqueduct and to a succession of wet years from 1884 to 1895. The Government of the North-Western Provinces and Oudh however expects that the ultimate revenue from the canal will amount to 5 per cent. on the Capital outlay. The Sirhind and Lower Sohay and Para Canals have not been opened for 10 years; the irrigation from these projects has not had time to develop fully. When full credit is given for the indirect revenue due to the Lower Sohay and Para Canal, it is expected that the net revenue will more than cover the annual interest charges.
 The decrease in the debit against the Sangam Anicut System is a satisfactory sign.

19. The undernoted works, which were allowed to be constructed from borrowed money prior to the introduction of the rules laying down the conditions which must now be fulfilled before a work may be classed as Productive, are not expected to repay the accumulated interest charges on the Capital invested in them:—

	Capital outlay to end of 1894-95.	Net gain or loss in working each year.				
		1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
<i>Bengal—</i>						
Orissa Project	2,624,294	—12,267	—5,216	—813	—16,011	—15,097
Midnapore Canal	844,547	2,813	1,637	8,445	9,658	6,986
Sone Project	2,690,960	5,707	20,823	30,133	18,470	12,809
Hijili Tidal Canal	242,818	—2,553	—1,377	2,030	269	1,110
<i>Bombay, Deccan and Gujarat—</i>						
Hathmati Canal	51,840	71	387	—40	368	499
Lower Panjhra River Works	46,186	626	572	660	1,230	987
Kadva River Works	72,241	310	1	199	397	—465
Lakh Canal	87,189	—235	—135	—199	—226	—1,167
Mutha Canals	655,649	13,776	16,207	13,480	18,071	15,368
Ehrak Tank	131,039	1,009	1,234	—153	—261	1,682
Krishna Canal	86,489	1,749	2,078	4,164	2,383	4,178
TOTAL	7,486,252	8,096	36,411	57,006	34,348	26,890

In addition to the above, the Karnul Canal in Madras, which was purchased from the Madras Irrigation and Canal Company in 1882, is not likely ever to be a financial success, and the Barur tank also will probably not pay the interest on the capital outlay. Under the rules contained in Public Works Department Code, Volume II, Chapter V, para. 85, clause VIII, the current expenditure on these works is being provided out of the general revenues.

20. The sources from which the revenue of the Major Works was derived during 1894-95 are exhibited in the following statement in comparison with those of the four previous years:—

	Irrigation Revenue			Sale of water.	Water supply of towns.	Plantations.	Other small produce.	Water-power.	Navigation receipts.	Rents of buildings.	Fines.	Miscellaneous.	Total.	Totals of previous years totals			
	Balance of advanced land revenue due to irrigation works.	Water-rate.	Overseas' rates on levied lands.											1894-95.	1895-96.	1896-97.	1897-98.
Bengal	...	106,976	...	99	...	427	408	172	36,668	1,438	46	6,760	152,013	166,500	188,335	159,860	133,914
North-Western Provinces and Oudh	117,499	508,466	29,960	591	122	19,783	...	6,199	1,995	298	1,320	3,521	685,743	701,981	685,771	705,195	651,618
Punjab	30,758	497,635	41,987	2,776	104	4,266	2,213	16,793	7,065	1,076	657	1,275	596,555	535,091	680,914	604,099	583,045
Madras	670,179	9,981	...	...	641	1,836	2,135	...	14,257	374	9	305	599,667	589,586	565,424	525,711	530,037
Bombay	97,475	35,026	...	553	9,941	165	1,897	600	...	104	64	2,620	148,435	137,113	147,610	114,498	127,277
Total for 1894-95	815,910	1,145,084	71,897	4,008	10,708	26,527	6,653	22,764	59,985	3,310	2,086	13,491	2,182,413	2,130,271	2,269,054	2,109,363	2,025,891
1893-94	785,187	1,141,863	61,245	4,243	10,574	23,492	5,851	20,236	59,030	3,302	1,917	13,311	2,130,271				
1892-93	760,020	1,298,306	66,975	4,188	11,764	25,043	6,437	20,679	64,347	3,193	2,589	14,624	2,268,064				
1891-92	706,451	1,174,901	80,336	3,830	10,818	27,965	4,609	21,727	61,367	3,010	2,491	11,869	2,109,303				
1890-91	743,808	1,070,709	80,194	4,220	10,039	22,649	20,635	52,853	2,719	2,653	10,426	2,025,891					

21. The total revenue of 1894-95 was better than that of the previous year by Rx. 52,142, owing to the extension of irrigation from the Western Jumna, Bari Doab and the Chenab Canals in the Punjab and from the Godavari Delta System in Madras, and partly to a good water-supply in the Upper Sind Frontier District. The increase in the Punjab would have been larger had it not been for a falling off in the water-rate collections from the Sirhind Canal. The favourable rainfall on lands traversed by this canal reduced the demand for canal water.

22. The decrease in Bengal was due partly to the large recovery of arrears in 1893-94 having swelled the receipts of that year and partly to abundant and seasonable rainfall having reduced the demand for canal water.

23. The decrease in the North-Western Provinces and Oudh was mainly due to a falling off of the water-rate collections on the Lower Ganges Canal, owing to the small area irrigated in the *rabi* season of the previous year.

24. The following statement shows, for each Major Work for the five years ending 1894-95, the gross revenue, the irrigated area, and the mileage of canals completed at the end of each year:—

MAJOR WORKS	GROSS REVENUE					IRRIGATED AREA IN ACRES					MILEAGE IN OPERATION (INCLUDING DISTRIBUTARIES)				
	1891-92	1892-93	1893-94	1894-95	1895-96	1891-92	1892-93	1893-94	1894-95	1895-96	1891-92	1892-93	1893-94	1894-95	1895-96
Bengal.															
Orissa Project	34,494	37,092	49,738	37,337	33,235	150,989	177,685	103,626	122,661	1,017	1,167	1,221	1,366	1,373	Miles
Midnapore Canal	23,899	24,470	24,000	20,477	20,443	52,002	83,973	86,763	70,116	355	315	355	355	336	Miles
Hijli Tidal Canal	2,804	3,691	5,339	6,919	6,853	...	...	...	...	29	29	29	29	29	Miles
Bose Project	72,917	90,607	106,238	92,567	83,433	291,014	474,723	366,776	317,134	1,563	1,560	1,575	1,476	1,595	Miles
Total Bengal	133,914	159,860	189,335	166,500	152,013	543,315	736,391	656,066	609,811	2,984	3,101	3,180	3,325	3,333	
North-Western Provinces and Oudh.															
Ganges Canal	315,225	330,450	319,385	322,898	326,041	821,652	892,864	658,757	531,637	4,013	4,077	4,159	4,278	4,430	
Lower Ganges Canal	161,293	198,958	201,419	202,071	175,575	642,653	660,463	625,833	231,143	3,194	3,353	3,477	3,657	3,574	
Agri Canal	61,239	69,937	84,188	4,952	63,725	152,118	164,961	107,054	139,166	748	755	755	768	767	
Eastern Jumna Canal	106,413	103,797	102,443	130,691	114,467	237,432	233,437	201,664	125,280	1,116	1,120	1,132	1,132	1,139	
Betwa Canal	7,448	10,063	8,337	7,369	6,895	38,053	30,806	18,904	8,041	638	644	657	687	687	
Total North-Western Provinces and Oudh	651,618	708,195	685,771	701,981	685,745	1,697,777	1,912,851	1,569,208	855,247	9,608	9,849	10,084	10,300	10,467	
Punjab.															
Western Jumna Canal, including Sirsa Branch	162,051	150,923	115,733	103,599	148,636	388,506	335,350	258,298	315,437	1,191	1,286	1,290	1,405	1,855	
Bari Doab Canal	193,390	194,531	242,940	222,543	228,336	635,045	692,785	667,806	634,697	1,410	1,410	1,419	1,416	1,436	
Sirhind Canal	168,426	201,400	212,966	108,624	85,980	600,162	685,610	412,791	279,714	2,764	2,874	3,038	3,038	3,035	
Lower Sohan and Fero Canal	6,391	6,925	8,416	9,721	10,169	38,604	66,908	70,159	70,977	136	139	139	139	139	
Chenab Canal	9,745	10,404	20,450	38,401	60,237	52,390	55,524	157,197	269,357	371	670	712	794	895	
Sidhni	16,024	20,457	21,181	26,718	23,695	122,825	157,514	151,427	141,397	204	180	180	180	180	
Beas River Canal	25,048	20,369	28,918	25,592	27,602	89,875	99,350	104,723	91,892	162	162	162	165	165	
Total Punjab	683,045	604,009	690,914	635,091	694,555	1,626,106	1,863,041	1,720,872	1,706,471	6,241	6,721	6,934	7,331	7,694	
Madras.															
Godavari Delta System	240,099	249,843	258,454	253,863	262,885	680,405	732,344	697,388	758,613	2,243	2,384	2,391	2,391	2,391	
Krishna " "	189,360	195,023	196,371	208,009	208,989	463,071	480,728	471,401	619,976	1,939	1,943	1,943	1,943	1,943	

Pennar Ancient System	25,936	12,086	28,760	28,070	28,352	65,080	35,652	73,051	70,346	70,659	142	142	142	142	142
Canary Delta	311,392	309,595	310,985	323,752	454,199	1,013,344	1,008,089	1,012,049	986,055	999,891	2,094	2,094	2,094	2,094	2,094
Srirangapatnam Ancient System	13,640	16,910	13,800	18,359	17,895	28,896	41,322	29,111	40,570	34,573	90	90	90	90	90
Sangam Ancient System	27,655	14,932	31,000	31,424	32,503	68,224	39,279	74,987	74,960	76,678	259	280	280	280	280
Karnal Canal	11,926	14,272	14,828	12,944	11,305	24,848	73,500	30,766	31,421	33,540	603	603	603	603	603
Raver Tank	740	748	928	1,108	1,187	2,774	2,757	3,584	4,324	4,480	29	29	29	29	29
Rushikulya Project	...	...	...	1,757	4,819	...	...	4,183	8,105	27,389	...	...	...	...	...
Deduct old Irrigation revenue	819,737	815,411	855,124	879,286	1,022,133	2,346,732	2,413,591	2,396,520	2,460,192	2,550,699	7,209	7,506	7,557	7,576	7,600
Total Madras	530,037	625,711	665,424	689,886	699,667	...	...	...	...	...	...	...	...	...	...
Bombay.															
Deerai Canal	17,076	2,592	12,827	4,784	13,284	124,919	60,131	95,156	89,568	103,494	190	190	192	192	192
Unharwah	4,573	1,554	4,736	6,440	11,388	20,680	19,283	23,277	32,634	67,316	67	67	67	67	67
Began Canal	23,844	26,146	36,862	37,946	36,939	144,053	174,718	192,524	267,343	211,430	176	176	176	176	176
Eastern Nara Works	43,579	43,501	48,037	47,536	45,127	228,292	211,951	243,412	223,903	234,785	278	278	278	278	278
Deduct old Irrigation revenue	91,072	73,783	102,482	95,708	106,738	617,954	466,083	651,369	658,489	607,035	706	711	713	713	724
Total Sind	91,072	73,783	102,482	92,003	103,033	...	...	...	...	...	...	...	...	...	...
(Hathmati Canal.	737	1,037	816	970	1,108	3,766	2,716	2,728	8,701	4,199	51	51	51	51	51
Lower Panjura River Works	1,614	1,901	1,617	1,745	1,655	2,390	2,603	2,617	3,000	2,790	45	45	45	45	45
Kadwa River Works	963	844	1,020	1,167	1,188	2,227	2,071	2,825	3,027	2,767	36	36	36	36	36
Lath Canal	125	170	96	117	165	433	608	158	313	310	18	18	18	18	18
Mutha Canals	21,767	24,693	22,406	24,792	23,339	11,201	14,061	6,797	8,259	10,082	155	155	155	155	155
Ekruk Tank	2,492	2,611	2,651	2,380	2,847	2,694	3,137	3,038	2,849	3,293	48	48	48	48	48
Krishna Canal	3,077	3,188	6,735	3,683	6,606	3,950	6,374	3,796	4,742	4,671	61	61	61	61	61
Gokak Canal, 1st section	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nira Canal	3,606	4,449	8,550	7,753	6,183	16,913	28,863	18,216	24,503	28,370	205	216	220	228	228
Mhaswad Tank	1,942	1,923	2,639	2,503	1,272	7,108	8,304	4,997	6,283	4,226	95	95	95	95	95
Total Deccan and Gujarat	36,205	40,716	45,128	45,110	45,402	60,584	68,537	45,202	65,747	60,707	714	737	743	748	767
Total Bombay	127,277	114,408	147,610	137,113	148,435	569,538	534,620	599,571	614,235	667,743	1,420	1,448	1,456	1,461	1,481
Grand Total	2,025,891	2,109,363	2,268,054	2,130,271	2,182,413	7,172,468	7,560,484	7,043,286	6,940,361	6,259,870	27,532	28,625	29,211	29,992	30,676

25. The rate of revenue per acre irrigated during 1894-95 is shown in the following table; the irrigation revenue shown here includes the share of enhanced land revenue due to irrigation as well as the water-rates and owners' rates:—

Province.	Irrigation revenue. (Assessed.)	Irrigated acres.	Rate of revenue per acre.	COMPARED WITH RATE IN	
				1893-94.	1892-93.
	Rs.	Acres.	Rs.	Rs.	Rs.
Bombay, Deccan and Gujarat . .	24,195	60,707	56	51	53
North-Western Provinces and Oudh .	465,132	855,247	54	42	36
Madras	962,355	2,520,599	38	38	35
Punjab	566,357	1,706,471	33	35	32
Bengal	93,741	509,811	18	18	18
Bombay—Sind	109,327	607,035	18	18	19
TOTAL	2,231,107	6,259,870	36	35	32

There is an increase in the North-Western Provinces and Oudh.

26. The charges for maintenance and working for the year 1894-95 are detailed in the following statement and compared with the outlay of the previous four years:—

	Total for previous four years.					
	1893-94.	1891-92.	1892-93.	1893-94.	1891-92.	1892-93.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Bengal	2,862	143,793	148,540	272,468	225,193	217,369
North-Western Provinces and Oudh	17,181	154,114	148,540	270,722	150,024	157,597
Punjab	6,466	274,291	270,722	244,506	150,024	157,597
Madras	6,104	274,291	270,722	244,506	150,024	157,597
Bombay	2,423	274,291	270,722	244,506	150,024	157,597
TOTAL for 1894-95	34,036	838,658	838,658	838,658	838,658	838,658
1893-94	42,263	838,658	838,658	838,658	838,658	838,658
1892-93	60,926	838,658	838,658	838,658	838,658	838,658
1891-92	78,127	838,658	838,658	838,658	838,658	838,658
1890-91	61,926	838,658	838,658	838,658	838,658	838,658

27. The total working expenses during 1894-95 exceeded those of the previous year by Rx. 12,938. The increase is the net result of increases and decreases in different provinces. The differences are explained as follows:—

Bengal.—The decrease of Rx. 7,909 was due to diminished outlay on works and repairs on the Orissa and Sone Canals.

North-Western Provinces and Oudh.—The decrease of Rx. 8,420 was due chiefly to the share of establishment charged to the revenue account being smaller than in the previous year, the increased capital outlay causing a proportionate decrease in the revenue share of these charges, and partly to smaller expenditure on extensions and improvements.

Punjab.—The increase of Rx. 20,549 was due partly to repairs to undersluices at the head of the Western Jumna Canal, and partly to the increased cost of maintenance of the Bari Doab and Chenab Canals. This increase in the working expenses was more than counterbalanced by the increase of revenue which amounted to Rx. 61,464.

Madras.—The decrease of Rx. 5,507 is attributed to the curtailment of the charges for maintenance of the Kistna Delta, Srivaikuntham Anicut, Sangam Anicut and Karnul Canal projects.

Bombay.—The increase of Rx. 14,225 was due chiefly to special repairs to the Desert Canal and to certain bunds in connection with the Eastern Nara project which were damaged by floods. The increase was to a great extent counterbalanced by the increase of revenue.

28. The cost of maintenance and working per acre irrigated in the different provinces during the five years ending 1894-95, and the percentage of the outlay upon maintenance and working on gross revenue, are as follows:—

Cost of maintenance and working per irrigated acre.

Province.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	Remarks.
1. Bombay-Sind	Rx. '00	Rx. '07	Rx. '06	Rx. '06	Rx. '07	Including old maintenance charges.
2. Madras	'08	'09	'08	'08	'08	
3. Punjab	'12	'11	'14	'14	'15	Excluding maintenance of tidal Canal.
4. Bengal	'25	'19	'23	'27	'24	
5. North-Western Provinces and Oudh	'13	'14	'16	'17	'31	
6. Bombay-Deccan and Gujarat	'35	'29	'51	'38	'39	

The provinces are arranged in the order of smallness of charge; the variations are considerable.

Percentage of maintenance and working on gross revenue.

Province.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	Remarks.
1. Madras	Rx. 23.2	Rx. 23.0	Rx. 23.0	Rx. 21.7	Rx. 19.0	Including old revenue and working expenses.
2. North-Western Provinces and Oudh	42.1	39.0	39.5	34.8	33.5	Ditto ditto.
3. Bombay-Sind	32.3	45.7	33.7	32.8	41.1	
4. Punjab	37.3	37.3	31.0	45.7	41.4	
5. Bombay-Deccan and Gujarat	48.6	44.0	51.4	47.2	50.8	
6. Bengal	103.9	89.0	73.9	92.6	90.2	

The variations indicated here are also very marked.

29. The percentages of the cost of revenue management on the revenue collected in the different provinces during the five years ending 1894-95 were as follows:—

N.B.—In the term revenue management are included shares of Direction, Executive and Navigation Establishments and also a share of collection establishment.

Province.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	Remarks.
1. Madras	Rx. 8.8	Rx. 8.8	Rx. 8.9	Rx. 9.0	Rx. 8.8	
2. Bombay-Sind	10.9	11.4	10.4	10.6	10.0	
3. North-Western Provinces and Oudh	14.3	12.8	13.6	14.5	14.2	
4. Punjab	13.0	12.1	13.0	16.9	15.4	
5. Bombay-Deccan and Gujarat	14.1	15.2	17.8	16.1	18.7	
6. Bengal	33.2	28.1	26.0	28.7	31.1	

30. Per acre irrigated, the Sind Canals cost least, but the Madras works are kept up and managed for the smallest share of the gross income. The cost of maintenance and management of the Bengal canals absorbs the greater portion of the gross income.

MINOR WORKS.

Works for which Capital and Revenue Accounts are kept.

31. The following statement shows in detail the financial results of Minor Works for which Capital and Revenue accounts are kept during, and up to the end of, the year 1894-95:—

Number of works.	Minor Works.	CAPITAL OUTLAY TO END OF 1894-95.			REVENUE ACCOUNT FOR 1894-95.				REVENUE ACCOUNT TO END OF 1894-95.		
		Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Percentage of net revenue on Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.
		Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
3	RAJPUTANA— <i>Irrigation—</i> Tanks in Ajmere Sub-Collectorate. Tanks in Peawar Sub-Collectorate. Tanks in Todgarh Sub-Collectorate. TOTAL	152,167 60,606 20,817 233,590	4,461 3,460 407 8,328	156,628 64,066 21,224 241,918	5,939 4,986 2,532 13,477	2,880 610 980 4,000	3,559 4,346 1,566 9,171	2.27 6.78 7.33 3.91	123,620 61,465 45,217 263,338	63,693 61,859 29,144 154,696	69,933 42,606 16,103 118,642
2	BALUCHISTAN— <i>Irrigation—</i> Khudil Khan Reservoir Ehebo Canal. TOTAL	92,331 66,579 159,910	1,224 1,144 2,368	93,555 67,723 161,278	1,560 558 2,118	697 613 1,310	863 —85 778	.92 48	6,054 8,419 15,373	4,805 6,232 11,037	2,149 2,187 4,336
1	LOWER BURMA— <i>Irrawaddy embankments</i>	305,893	8,317	314,210	91,132	22,434	71,698	22.82	1,197,067	311,630	885,429
3	BENGAL— <i>Irrigation—</i> Saron Project <i>Navigation—</i> Calcutta and Eastern Canals Orissa Coast Canal. TOTAL	66,957 629,612 433,252 962,861 1,029,821	2,718 6,240 10,494 16,734 19,452	69,675 635,852 443,746 979,595 1,049,273	—180 41,301 6,594 50,895 60,715	154 28,927 8,707 37,634 37,788	—334 15,374 —2,113 13,261 12,027	... 2.67 ... 1.35 1.23	24,179 2,313,092 68,363 2,372,365 2,396,634	36,159 947,817 74,155 1,022,002 1,059,191	—12,010 1,360,175 —15,822 1,350,353 1,339,343
4	NORTH-WESTERN PROVINCES AND OUDH— <i>Irrigation—</i> Indus Canals Rohilkhand Canals Bijnor Canals Bundelkhand Irrigation works TOTAL	66,196 156,844 11,625 7,436 242,101	1,597 16,057 2,036 804 20,494	67,793 172,901 13,661 8,240 262,595	8,578 12,408 1,876 814 23,676	5,204 10,106 1,030 915 17,255	3,374 2,302 846 —101 6,421	4.98 1.33 6.19 ... 2.44	236,802 322,591 47,657 18,031 625,071	193,092 270,506 18,857 21,909 444,364	103,710 62,075 28,800 —3,878 160,707
5	PUNJAB— <i>Irrigation—</i> Upper Sutlej Inundation Canals. Lower Sutlej Inundation Canals. Indus Inundation Canals. Shahpur Inundation Canals TOTAL*	60,552 10,756 68,791 10,850 156,949	6,969 254 3,973 498 8,694	66,521 11,010 70,764 17,348 165,613	21,421 65,253 18,794 4,664 110,132	14,963 45,291 21,193 4,007 86,434	6,459 19,072 —2,999 ... 23,698	9.71 191.40 14.81	434,677 1,648,572 706,614 62,816 2,853,679	381,401 932,292 703,818 38,529 2,056,029	63,276 717,290 2,796 24,286 797,650

* The transactions of the Madhopur workshops have been excluded from this account under the orders of the Government of India, vide Public Works Department letter No. 231, dated 9th February 1896.

Number of works.	Minor Works.	CAPITAL OUTLAY TO END OF 1894-95.			REVENUE ACCOUNT FOR 1894-95.				REVENUE ACCOUNT TO END OF 1894-95.		
		Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Percentage of net revenue on Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.
		Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
24	MADRAS—										
	Irrigation—										
	Chenbraimbakam tank	63,189	11,235	74,404	2,308	—26	2,334	8.14	67,433	12,533	64,900
	Madras Water-supply and Irrigation Extension project	161,683	23,822	175,505	2,145	651	1,494	1.08	38,723	49,880	—10,166
	Palar Anicut System.	193,632	10,006	203,638	14,481	6,608	7,873	3.87	292,804	169,119	123,685
	Lower Coleroon Anicut System	65,920	1,456	67,376	29,601	4,310	25,291	44.07	991,725	152,168	839,557
	Pelandurai Anicut System	41,238	4,155	45,393	2,930	1,035	1,895	4.17	20,491	45,231	—24,740
	Other (16) works	176,471	4,623	181,094	39,917	12,017	27,900	15.41	881,133	408,557	472,576
		681,919	65,297	737,216	91,686	24,601	67,184	9.11	2,292,309	836,497	1,455,812
	Navigation—										
	Buckingham Canal	800,561	47,430	847,991	10,943	10,154	789	0.09	276,471	287,687	—11,216
	Other (3) works	17,334	1,318	18,652	113	447	—334	...	875	4,724	—3,853
		817,895	48,748	866,643	11,056	10,601	455	0.05	277,346	292,415	—15,069
	Total	1,499,814	104,045	1,603,859	102,741	35,102	67,639	4.22	2,569,655	1,128,912	1,440,743
	BOMBAY—										
	Irrigation—										
	Bukkur Canal	133,121	6,003	139,124	22,321	8,748	13,572	9.76	192,104	115,160	76,944
	Ghar	41,554	2,614	44,168	60,193	14,425	45,768	104.47	1,522,698	434,271	1,088,427
	Marak Great Canal	19,300	795	20,165	6,405	2,269	4,136	20.97	118,180	46,787	71,403
	Saifrazwah	11,858	612	12,470	3,078	725	2,353	18.87	39,896	30,710	9,186
	Fuleli	127,562	4,610	132,172	36,347	19,169	16,178	12.24	841,566	560,862	280,704
	Other works	8,022	674	8,696	243	850	—607	...	31,304	27,312	4,992
		312,375	15,277	327,652	128,076	45,687	82,389	23.04	2,748,757	1,216,102	1,532,655
	TOTAL SIND										
	Khari Cut	16,987	1,104	18,091	909	611	357	1.97	7,398	6,382	1,016
	Jamda Canals	99,055	4,990	104,045	1,124	971	153	1.6	13,409	28,757	—15,348
	Parul tank	21,230	706	21,936	190	136	54	25	732	441	291
	Pravara River Works—										
	Ojhar Canal	30,963	2,062	33,025	774	2,877	—2,103	...	8,654	12,370	—3,716
	Bhadi tank	35,268	2,703	37,971	477	1,224	—747	...	8,515	7,382	1,133
	Matoba	14,815	1,327	16,142	941	420	521	...	10,565	3,791	6,774
	Shirapah tank	21,143	1,227	22,370	258	319	—61	2.75	3,362	3,971	—609
	Wadavadi	21,311	1,431	22,742	85	169	—84	...	2,849	2,775	74
	Ashiti	75,219	7,891	83,110	439	305	134	0.5	4,418	8,033	—3,615
	Upper Man River Works	40,712	2,214	42,926	604	424	180	0.42	6,888	6,843	—45
	Yerla River Irrigation Works	64,320	4,344	68,664	759	2,375	—1,617	...	9,677	12,837	—3,160
	Maini tank	36,767	2,224	38,991	399	343	56	0.1	8,999	8,901	98
	Madag	16,125	635	16,760	302	169	133	0.80	4,614	6,332	—1,718
	Gokak Canal, 1st Section, and Storage Works	75,158	2,763	77,921	1,075	566	509	...	10,263	3,146	7,117
	Other works	75,130	9,091	84,221	1,911	975	936	1.11	21,342	19,038	2,304
	TOTAL DECCAN AND GUJARAT	619,639	41,766	661,405	10,917	12,021	—1,077	...	123,439	130,802	—7,363
	TOTAL BOMBAY	990,914	60,013	1,050,927	130,023	67,711	62,312	7.74	2,872,196	1,345,904	1,526,292
	GRAND TOTAL	2,837,933	186,259	3,024,192	474,093	213,935	260,224	8.66	10,143,212	5,180,355	4,962,857
	NAVIGATION	1,730,530	65,182	1,795,712	61,051	48,236	13,716	7.4	2,649,701	1,314,417	1,335,284
	TOTAL	4,617,992	231,741	4,849,733	536,014	262,070	273,944	5.65	12,792,913	6,500,772	6,292,141

(a) Excludes the Capital outlay on the Buckingham Canal, which has not yet been ascertained.
 (b) Excludes Rs. 74,474, share due to the Government.
 (c) Excludes Rs. 38,146, do.
 (d) Excludes Rs. 81,807, expenditure incurred from the grant under 35 - Construction of Protective Irrigation Works which is shown under Major Works.

32. The net revenue derived in 1894-95 from the works constructed for irrigation purposes (excluding navigation) taken collectively amounted to 8.66 per cent. on the Capital outlay to end of the year against 10.70 in the previous year. The decrease was chiefly due to a falling off of the net revenue from the Upper Sutlej Inundation Canals in the Punjab and the Cheyaru Anicut System in Madras. On the Upper Sutlej Inundation Canals, while there was a fall in gross revenue by Rx. 9,490, there was an increase of Rx. 5,159 in working expenses over those of the previous year, thus showing a decrease of Rx. 14,649 in the net revenue. The falling off of the gross revenue was due to the small *rabi* of 1893-94 consequent on the low state of the river in August 1893; to heavy remissions for the *khari* of 1894 on account of damage done by grass-hoppers; to suspensions of the demand for the same crops in villages in the Lahore district and to abnormal credits in the previous year. The increase in the working expenses was due to certain liabilities incurred in the previous year having had to be met in 1894-95 and to Revenue having to bear an increased share of establishment charges. The decrease in the net revenue from the Cheyaru Anicut System was Rx. 9,171: this was due to the net revenue during 1893-94 having been unusually large owing to the expenditure on certain works on the project amounting to Rx. 9,807 having been written back from Revenue to Capital.

33. The revenue from the navigation canals exceeded the working expenses by Rx. 13,716 against the corresponding figure of Rx. 11,295 in the previous year. The increase is the net result of an increase of revenue from the Calcutta and Eastern Canals in Bengal and of a reduced expenditure on the Buckingham Canal in Madras.

34. There was a net revenue of Rx. 769 on the Buckingham Canal against a loss of Rx. 1,620 in working the canal during 1893-94.

35. The revenue derived from Minor Works for which Capital and Revenue accounts are kept during 1894-95 is detailed in the following statement, and compared with the revenue of the previous four years:—

	Irrigation Revenue.				Sale of water.	Water supply of towns.	Plantations.	Other small produce.	Water power.	Navigation receipts.	Rents of buildings.	Fines.	Miscellaneous.	Total.	Totals of previous four years.			
	Land revenue due to works, irrigation.		Owner's rates.															
	Rs.	Rs.	Rs.	Rs.														
Rajputana	12,002	1,167	...	...	...	...	8	...	...	...	12	29	269	13,477	14,193	9,199	8,497	12,474
Baluchistan	...	2,109	...	...	...	...	...	...	8	...	2	...	...	2,118	4,891	9,953	1,641	1,621
Lower Burma	94,003	...	...	...	...	8	...	...	...	...	121	...	...	94,132	95,697	90,212	77,506	70,176
Bengal	...	-224	...	...	...	1	178	...	...	49,432	331	...	907	60,715	62,339	54,659	60,311	62,705
North-Western Provinces and Oudh	8,623	10,688	996	313	...	668	...	...	2,245	1	...	76	161	23,676	26,065	27,291	26,203	25,671
Punjab	43,107	23,602	...	10	...	711	13,605	...	...	1	61	115	36,050	110,132	121,500	105,300	105,794	102,359
Madras	80,231	...	...	...	1,344	139	609	...	...	10,892	18	...	9	102,741	107,282	145,939	25,760	73,863
Bombay	123,696	12,272	...	7	...	360	1,197	402	...	...	61	2	906	139,023	135,839	127,170	140,135	114,195
Total for 1894-95	391,297	49,693	996	330	1,344	1,786	-11,773	2,745	60,326	590	222	38,492	636,014	660,800	663,722	452,037	493,123	493,123
1893-94	404,077	61,246	1,220	180	1,221	2,395	-13,585	4,363	60,620	606	203	36,260	660,503	660,503	660,503	452,037	493,123	493,123
1892-93	423,815	37,113	1,387	177	1,198	2,333	4,295	2,816	61,061	659	259	27,809	653,722	653,722	653,722	452,037	493,123	493,123
18 1-92	80,953	34,738	1,271	249	1,440	2,032	7,225	3,333	67,216	816	285	31,880	452,037	452,037	452,037	452,037	493,123	493,123
1890-91	313,766	37,823	1,317	249	1,101	-507	3,613	2,279	67,050	369	335	35,658	493,123	493,123	493,123	452,037	493,123	493,123

36. The best return on the Capital expended is shown by the Punjab. Bengal shows the worst result. Bombay and the North-Western Provinces are steady, and Madras has also done well.

In Baluchistan where the revenue is collected in kind, that of 1894-95 was affected by a considerable fall in the prices of grains and bhoosa.

37. The decrease in the revenue during 1894-95, as compared with that of the previous year, occurred chiefly in the Punjab and was due partly to the revenue during 1893-94 having been swollen by arrear collections on the Indus canals and partly to a falling off of the revenue from the Upper Sutlej canals for the reasons explained in paragraph 32 of this note. The assessments for the year 1894-95 on certain canals were not recovered in full before the close of the year.

38. The working expenses of the year 1894-95 and of the previous four years are shown in the following statement:—

	Totals of Expenditure for Year.					Extensions and Improvements.	Maintenance and repairs.	Establishment.	Tools and plant.	Profit and loss.	Surplus.	Total Direct charges.	Indirect charges.	Total.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.
	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
Rajputana	301	1,863	1,732	-39	...	...	...	...	...	...	...	3,657	149	4,006	4,671	9,885	10,671	5,961	2,277
Baluchistan	...	1,060	245	...	...	...	...	...	...	...	...	1,306	35	1,340	2,232	1,736	3,130	2,277	2,277
Lower Burma	10,906	6,051	6,435	-121	...	...	...	...	...	...	-319	21,933	431	22,434	19,032	29,626	46,178	20,393	20,393
Bengal	196	21,846	12,233	1,795	...	...	...	...	...	...	...	36,075	1,713	37,798	39,117	34,586	43,501	43,964	43,964
North-Western Provinces and Oudh	847	5,144	9,578	357	...	...	...	...	...	...	...	16,926	1,329	17,255	15,652	17,554	17,413	17,413	17,413
Punjab	5,460	50,936	26,095	310	...	...	...	...	...	...	-10	82,791	3,643	86,434	73,858	68,727	68,795	86,123	86,123
Madras	2,197	50,543	10,895	422	...	...	...	...	...	...	...	34,057	1,045	35,102	28,219	47,905	58,167	44,952	44,952
Bombay	8,056	20,705	26,701	310	...	...	...	...	...	...	...	55,772	1,939	57,711	47,071	46,732	63,946	61,865	61,865
Total for 1894-95	27,963	127,143	93,919	3,034	...	...	...	...	...	...	-929	251,736	10,334	262,070	229,781	256,751	312,141	283,158	283,158
1893-94	11,012	122,093	83,492	3,196	...	...	...	...	...	...	12	219,795	8,986	229,781	...	...	...	...	...
1892-93	32,296	121,153	89,934	3,145	...	...	...	...	...	...	-15	246,593	10,168	256,751	...	...	...	...	...
1891-92	54,031	153,207	91,219	2,663	...	...	...	...	...	...	279	301,429	10,712	312,141	...	...	...	...	...
1890-91	29,274	151,240	87,584	4,390	10	...	...	...	...	...	-85	273,113	10,045	283,158	...	...	...	...	...

39. The total increase of Rx. 33,289, as compared with 1893-94, occurred chiefly in the following provinces:—

Lower Burma.—The increase is due to large outlay on the earthwork in the Henzada Division of the Irrawaddy embankments.

Punjab.—The increase occurred on the Upper and Lower Sutlej Inundation canals. On the Upper Sutlej canals the increase has already been explained in paragraph 32. The increase on the Lower Sutlej canals is mainly due to a number of charges against the Zar-i-nagha fund account which were incurred in the previous year having been adjusted in 1894-95, and to an increase in the sanctions against this account.

Madras.—The increase is nominal. It is due to an expenditure of Rx. 9,807 on the Cheyaru Anicut System having been written back from Revenue to Capital in the accounts for 1893-94.

Bombay.—The increase is mainly due to the construction of certain new works in connection with the Sukkar and Fuleli canals chargeable to Revenue account. The cost of maintenance and repairs of the Sukkar canal was also larger than in the previous year.

40. The following table gives the percentages of expenditure on revenue in each province during the five years ending 1894-95:—

Works for which Capital Accounts are not kept.

	IMPERIAL.		PROVINCIAL.		LOCAL.		TOTAL.	
	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Rajputana	...	83	...	...	...	...	...	83
Baluchistan	16	...	...	...	...	...	16	...
Upper Burma	29	54,410	...	...	8,203	5,607	8,232	60,017
Lower Burma	...	...	10,055	43,612	...	674	10,055	44,286
Bengal	...	...	36,596	91,758	1,449	878	38,044	92,636
North-Western Provinces and Oudh	...	...	...	9,081	...	...	...	9,081
Punjab	23	12,648	6,518	12,173	2,226	168	8,767	24,979
Madras	...	...	5,301	262,749	...	1,048	5,301	263,797
Bombay	7,586	176,667	...	...	...	...	7,586	176,667
Total for 1894-95	7,654	243,908	58,470	419,373	11,877	8,365	79,001	671,546
1893-94	8,007	208,368	53,185	418,536	5,973	6,404	67,465	633,398
1892-93	6,354	240,450	47,712	413,769	8,686	10,509	62,752	694,718
1891-92	6,711	215,147	47,658	487,639	8,421	8,918	62,790	711,704
1890-91	6,840	158,076	46,102	423,563	6,192	7,834	58,134	567,473

44. The foregoing table shows that the direct receipts realized from this class of Minor Works have been increasing steadily. A large portion of the revenue derived from this class of works is assessed and collected with the Land Revenue and is accounted for under the head I.—Land Revenue in the Civil accounts. It is only in the Irrigation revenue reports of the Public Works Department that credit for such indirect receipts is taken.

45. The increase in the expenditure from Imperial funds during 1894-95, as compared with that of the previous year, occurred chiefly in Bombay, but partly in Upper Burma and Punjab. The increase in Bombay is to a great extent due to repairs to bunds in Sind which were damaged by floods. In Upper Burma the increase is due to additional expenditure on the completion of certain works. The increase in the Punjab is due to the construction of certain urgent works in connection with the Muzaffargurh canals and the new Sahiwal canal.

46. Under this head appear at present the whole of the irrigation works in Upper Burma. Orders have been issued by the Government of India for the preparation of Capital and Revenue Accounts of all important works. Only one project estimate for the Kyauksi Tank has been sanctioned by the Government of India, in Public Works Department letter No. 411., dated 11th February 1895. The estimates of the Mandalay canal are now under consideration by the Government of India.

SIMLA;

The 21st May 1896.

A. R. BECHER,

Offg. Accountant General, P. W. Dept.

Document accompanying.

Abstract Account of Revenue and Expenditure
on Irrigation Works during 1894-95.

No. 161., dated 21st May 1896.

Submitted to the Government of India, Public Works Department.

Works for which Capital Accounts are not kept.

	Imperial.		Provincial.		Local.		Totals.	
	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Rajputana	...	83	...	...	...	...	...	83
Baluchistan	16	...	...	...	...	...	16	...
Upper Burma	29	54,410	...	...	8,203	5,607	8,232	60,017
Lower Burma	...	...	10,055	43,612	...	674	10,055	44,286
Bengal	...	...	36,596	91,758	1,448	878	38,044	92,636
North-Western Provinces and Oudh	...	...	...	9,081	...	...	...	9,081
Punjab	23	12,648	6,518	12,173	2,226	158	8,767	24,979
Madras	...	...	5,301	262,749	...	1,048	5,301	263,797
Bombay	7,586	176,667	...	...	...	...	7,586	176,667
Total for 1894-95	7,651	243,808	58,470	419,373	11,877	8,365	78,001	671,546
1893-94	8,007	208,368	53,485	418,536	5,973	6,494	67,465	633,398
1892-93	6,364	240,450	47,712	443,759	8,686	10,509	62,752	694,718
1891-92	6,711	215,147	47,658	487,639	8,421	8,918	62,790	711,704
1890-91	5,840	156,076	46,102	423,563	6,192	7,834	58,134	667,473

44. The foregoing table shows that the direct receipts realized from this class of Minor Works have been increasing steadily. A large portion of the revenue derived from this class of works is assessed and collected with the Land Revenue and is accounted for under the head I.—Land Revenue in the Civil accounts. It is only in the Irrigation revenue reports of the Public Works Department that credit for such indirect receipts is taken.

45. The increase in the expenditure from Imperial funds during 1894-95, as compared with that of the previous year, occurred chiefly in Bombay, but partly in Upper Burma and Punjab. The increase in Bombay is to a great extent due to repairs to bunds in Sind which were damaged by floods. In Upper Burma the increase is due to additional expenditure on the completion of certain works. The increase in the Punjab is due to the construction of certain urgent works in connection with the Muzaffargurh canals and the new Sahiwal canal.

46. Under this head appear at present the whole of the irrigation works in Upper Burma. Orders have been issued by the Government of India for the preparation of Capital and Revenue Accounts of all important works. Only one project estimate for the Kyaukse Tank has been sanctioned by the Government of India, in Public Works Department letter No. 411., dated 11th February 1895. The estimates of the Mandalay canal are now under consideration by the Government of India.

SIMLA;
The 21st May 1896.

A. R. BECHER,
Offg. Accountant General, P. W. Dept.

Document accompanying.

Abstract Account of Revenue and Expenditure
on Irrigation Works during 1894-95.

No. 161., dated 21st May 1896.

Submitted to the Government of India, Public Works Department.

No. 194 I.

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.

CIVIL WORKS.

Irrigation.

Simla, the 6th August 1895.

Review of the Revenue and Expenditure recorded under the head
"Irrigation Works" in the accounts of the Government of
India for 1893-94.

READ—

Note by R. G. MACDONALD, Esq., Accountant General, Public Works Department,
upon the Accounts of Revenue and Expenditure of Irrigation Works in India
for 1893-94.

RESOLUTION.—The Irrigation Works in India are divided into Major
Works and Minor Works.

Major Works are sub-divided into—

- (a) Productive Works, the Capital of which has been provided from borrowed money.
- (b) Protective Works, the Capital of which has been provided from the General Revenues of India.

Minor Works, for the purpose of the Accountant General's note, are sub-divided into—

- (a) Works for which Capital and Revenue Accounts are kept.
- (b) Works for which Capital Accounts are not kept.

2. Capital and Revenue Accounts are kept for all the 44 projects which are classified as Major Irrigation Works. Of these, 36 were sanctioned as Productive Public Works and the remaining 8 as Protective Works.

Under the head of Minor Works, there are 75 projects for which Capital and Revenue Accounts are kept, and for the remaining works under this category one account only is kept in which are entered the receipts and charges for each work or group of works.

Sum 1 = 93 1/2
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3. The following statement shows the return derived from the Irrigation systems for which Capital and Revenue Accounts are kept. Purely navigation systems are excluded:—

Class of work.	Number of works	Direct and indirect Capital outlay to end of 1893-94.	Gross Revenue.	Working expenses, including indirect charges.	Net revenue.	Irrigated area.	Percentage of net revenue on Capital outlay.
		Rx.	Rx.	Rx.	Rx.	Acres.	
IRRIGATION.							
I.—Major Works—							
(a) Productive ...	35	28,855,437	2,079,378	840,195	1,239,183	6,781,777	4.29
Add—On account of old irrigation—							
In Madras ...			289,700	37,775	251,925		
In Sind ...			3,705	910	2,795		
Total Productive ...	35	28,855,437	2,372,783	878,880	1,493,903	6,781,777	5.18
(b) Protective ...	8	11,943,920	44,974	129,775	15,199	167,604	0.78
II.—Minor Works—							
Works for which Capital and Revenue Accounts are kept	69	2,956,984	163,372	198,608	437,764	2,116,964	14.61
GRAND TOTAL ...	112	33,796,341	3,054,129	1,107,263	1,946,866	9,066,345	5.76

* Excludes the Hiji Tidal Canal (Bengal).

† Includes outlay on Gokak Canal, 1st Section, which is now classed as a Minor Work and combined with Gokak Storage Works.

‡ Excluding two navigation canals in Bengal (the "Calcutta and Eastern," and the "Orissa Coast" Canals), and four navigation canals in Madras (the Chilka Lake, Buckingham, Vedaranniyam, Ganjam-Gopa'pur Canals), and § Includes share due to old irrigation in Madras and in Sind.

4. The net revenue derived from the Major Works as a whole was Rx. 132,709 less than that of the previous year. The decrease occurred principally in the Punjab and in Bengal. In the Punjab it was due to the rainfall which enabled crops to be brought to maturity without the aid of canal water, and in Bengal the net revenue is not fairly comparable with that of the previous year which was abnormally swollen by the recovery of arrears of water-rates due from former years.

The net revenue derived from Minor Irrigation Works is shown in the accounts as being Rx. 25,054 better than that of 1892-93. The accounts for 1892-93, however, included a sum of Rx. 78,047 on account of irrigation revenue for 1891-92 from certain works in Madras which was reported by the Board of Revenue too late to be included in the accounts of that year. Excluding this special item from the accounts of 1892-93, the net revenue realised during the year under review was Rx. 103,101 better than that of the previous year.

The increase occurred in Rajputana, Lower Burma, Punjab, Madras and Bombay, and is due to the larger area irrigated during the year, to enhancement of rates in the Lahore District in the Punjab and to the recovery of certain arrears in Baluchistan.

The Capital expenditure on the Periyar Project, a productive work in Madras, is included in the figures on which the net revenue percentage is calculated. This work has not yet begun to earn revenue, and the Chenab Canal, the Sirsa Branch of the Western Jumna Canal, the Rushikulya Project and other canals which have been recently opened for irrigation are not yet earning a revenue at all approaching that which may ultimately be expected. The financial results of the canals in full operation are therefore more satisfactory than is indicated by the figures in paragraph 3.

The total net profit on all Major Works up to the end of 1893-94 amounted to nearly 3.1 millions of Rx.

5. The following statement shows the area irrigated by, and the gross revenue derived from, the Major and Minor Irrigation Works during the last five years:—

Year.	MAJOR WORKS.		MINOR WORKS.		TOTAL.	
	Area irrigated.	Gross revenue realized.	Area irrigated.	Gross revenue realized.	Area irrigated.	Gross revenue.
	Acres.	Rx.	Acres.	Rx.	Acres.	Rx.
1889-90 ...	7,047,553	2,137,441	1,829,312	577,972	8,876,865	2,515,413
1890-91 ...	7,172,468	2,312,787	2,101,586	483,127	9,274,054	2,795,914
1891-92 ...	7,560,484	2,395,372	2,123,659	*431,279	9,684,143	2,826,651
1892-93 ...	7,043,286	2,552,415	2,272,091	†607,549	†9,315,377	3,159,964
1893-94 ...	6,949,381	2,417,757	2,116,964	‡636,372	†9,066,345	3,054,129

* Exclusive of figures for certain works in Madras, which were not given in the Revenue Report for 1891-92.

† The increase was due to the inclusion in the accounts for 1892-93 of irrigation revenue of certain works in Madras pertaining to the year 1891-92—vide note * above.

‡ Exclusive of the area irrigated in Native States in the Punjab.

The area irrigated and the gross revenue realized are both less than during the previous year. The former is slightly below and the latter is higher than the average of the preceding five years.

The area irrigated in Native States in the Punjab from the portions of the canals constructed from funds contributed by these States amounted to 153,163 acres in 1893-94.

6. The estimated value of the crops irrigated from the Major and Minor Works during 1893-94 amounted to Rx. 24,958,361, being an average of Rx. 2.75 per acre.

7. The average rate of revenue assessed per acre irrigated during 1893-94 was Rx. 0.35 and Rx. 0.24 for Major and Minor Works, respectively.

The corresponding figures for the previous year were Rx. 0.32 and Rx. 0.21.

For Major Works, the rate varies from Rx. 0.61 in Bombay (exclusive of Sind) to Rx. 0.18 in Bengal and Sind, and for Minor Works from Rx. 0.78 in Baluchistan to Rx. 0.14 in the Punjab.

8. The areas of the principal crops irrigated by the works for which Capital and Revenue Accounts are kept in the various Provinces during 1893-94 are given in the following statement:—

Province.	Rice.	Wheat.	Jowar and chauri (Sorghum vulgare).	Rajra (Panicum polystachyon).	Sugar cane.	Cotton.	Barley.	Indigo.	Maize.	Ragi (Eleusine coracina).
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Bombay (excluding Sind)	5,217	10,856	12,020	4,378	13,065	123	645	...	2,031	...
Sind	443,395	125,737	225,081	222,138	...	67,351	1,158	...	...	...
Punjab	136,282	9,07,074	138,519	2,556	60,315	24,452	40,702	79,594	132,183	...
Bengal	452,702	14,518	...	...	55,326	...	12,001	...	...	...
Madras	2,615,323	...	...	...	...	...	...	...	...	...
North-Western Provinces	118,875	558,126	11,223	...	207,537	63,776	5,433	264,652	18,427	...

9. The following are the percentages on gross revenue of the cost of revenue management (including collection charges), and, of the up-keep of the works for Major Works in the different Provinces:—

Province.	Revenue management, per cent.	Up keep, per cent.	Total, per cent.
Madras	...	...	...
North-Western Provinces	9.0	12.7	21.7
Punjab	14.5	24.3	38.8
Bombay	16.9	28.8	45.7
Sind	16.1	31.1	47.2
Bengal	10.6	22.2	32.8
	28.7	63.9	92.6*

* Excluding Tidal Canal.

10. The following statement shows the total cost of working per acre irrigated by the Major Works in the different Provinces:—

	1893-94.	
	Rx.	
Sind	06	} Including old maintenance charges.
Madras	08	
Punjab	14	
North-Western Provinces	17	
Bengal	27	} Excluding maintenance of Tidal Canal.
Bombay, excluding Sind	38	

The figures do not vary much from those of the previous year, except in the case of Bombay (excluding Sind), where the cost of working per acre irrigated has fallen from Rx. 0.51 in 1892-93 to Rx. 0.38 in 1893-94, the charges

for 1892-93 having been exceptionally high owing to special repairs necessitated by heavy floods.

11. The following statement gives, for the principal canals in each Province, details of the lengths of channels, of canal discharge, of area irrigated and of the duty of water:—

Province.	CANALS.	Length of completed main and branch canal (miles).	Length of completed distributaries (miles).	Maximum discharge at head of canal (cubic feet per second).	AVERAGE DISCHARGE AT HEAD (CUBIC FEET PER SECOND).		AREA IRRIGATED (ACRES).					AREA IRRIGATED PER CUBIC FOOT PER SECOND OF AVERAGE DISCHARGE AT HEAD (ACRES).	
					Kharif.	Rabi.	Kharif.	Rabi.	Total.	Flood.	Lift.	Kharif.	Rabi.
Bombay.	1. Nira	...	...	...	...	...	...	...	...	...	...	...	...
	2. Nhasvad Tank	...	...	...	...	...	...	...	...	...	...	...	...
	3. Mutha	...	...	...	...	...	...	...	...	...	...	...	...
	4. Krishna	...	...	...	...	...	...	...	...	...	...	...	...
Punjab.	5. Swat river	...	...	...	...	...	...	...	...	...	...	...	...
	6. Western Jumna, including Sirsa Branch.	...	...	...	...	...	...	...	...	...	...	...	...
	7. Bari Doab	...	...	...	...	...	...	...	...	...	...	...	...
	8. Sirhind	...	...	...	...	...	...	...	...	...	...	...	...
	9. Chenab	...	...	...	...	...	...	...	...	...	...	...	...
	10. Sidhni	...	...	...	...	...	...	...	...	...	...	...	...
	11. Upper Sutlej Inundation	...	...	...	...	...	...	...	...	...	...	...	...
	12. Indus Inundation	...	...	...	...	...	...	...	...	...	...	...	...
	13. Muzaffargarh Inundation	...	...	...	...	...	...	...	...	...	...	...	...
	14. Orissa	...	...	...	...	...	...	...	...	...	...	...	...
	15. Sone	...	...	...	...	...	...	...	...	...	...	...	...
Madras.	16. Godavari	...	...	...	...	...	...	...	...	...	...	...	...
	17. Krishna	...	...	...	...	...	...	...	...	...	...	...	...
	18. Pennar	...	...	...	...	...	...	...	...	...	...	...	...
	19. Sangam	...	...	...	...	...	...	...	...	...	...	...	...
	20. Cauvery	...	...	...	...	...	...	...	...	...	...	...	...
N.W. Provinces.	21. Upper Ganga	...	...	...	...	...	...	...	...	...	...	...	...
	22. Lower Ganga	...	...	...	...	...	...	...	...	...	...	...	...
	23. Agra	...	...	...	...	...	...	...	...	...	...	...	...
	24. Eastern Jumna	...	...	...	...	...	...	...	...	...	...	...	...
Sind.	25. Desert	...	...	...	...	...	...	...	...	...	...	...	...
	26. Begar	...	...	...	...	...	...	...	...	...	...	...	...
	27. Ghar	...	...	...	...	...	...	...	...	...	...	...	...
	28. Fuleli	...	...	...	...	...	...	...	...	...	...	...	...
Total		8,621	20,326	...	...	...	4,061,897	8,674,533	7,614,420	6,906,734	687,234	...	...

N.B.—The figures in brackets in columns 13 and 14 denote the number of days on which the irrigating duty is calculated.

12. The following statement shows the return derived from navigation works proper, for which Capital and Revenue Accounts are kept. Works in the statement in paragraph 3:—

Class of works.	Number of works.	Direct and indirect Capital outlay to end of 1893-94.	Gross revenue.	Working expenses, including indirect charges.	Net revenue.	Percentage of net revenue on Capital outlay.
NAVIGATION.		Rx.	Rx.	Rx.	Rx.	
I.—Major Works—						
(a) Productive ...	1	231,923	5,919	5,650	269	11
II.—Minor Works ...	6	1,824,631	62,657	51,372	11,285	62
TOTAL ...	7	2,056,554	68,576	57,022	11,554	56

The percentage of net revenue on Capital outlay was 0.56 as compared with 1.04 in 1892-93 and 0.34 in 1891-92.

13. The following statement gives some details of the navigation operations of the year. Works on which navigation is combined with irrigation are included:—

Provinces.	Length of Canal open for navigation.	Ton-mileage.	Estimated value of cargoes.	Estimated value of rafts.	Number of passengers carried.
1	2	3	4	5	6
	Miles.	Millions.	Thousands of Rx.	Thousands of Rx.	
Punjab ...	432	...	...	141	6,313
Bengal ...	673	45.285	9,099	49	699,131
Madras ...	1,242	45.374	4,910	424	486,315
North-Western Provinces	535	6.347	232	27	89
TOTAL ...	2,882	97.006	14,241	641	1,191,848

The figures show a falling off as compared with the previous year, except in the number of passengers carried.

14. Besides the irrigation works for which Capital and Revenue Accounts are kept, there are numerous small works for which only Revenue Accounts are kept, or for which no Revenue Accounts are kept.

The direct outlay on such works, including those maintained by the Civil Department, was Rx. 633,398 against Rx. 694,718 during 1892-93, while the direct receipts were Rx. 67,465 against Rx. 62,752.

These direct receipts comprise only the sums realized by the Public Works Department, which alone are credited in the Public Works Accounts. The whole of the revenue due to irrigation is assessed and collected with the land revenue and is therefore credited as an indirect receipt.

The following statement gives some further information relating to these works, the figures being extracted from the Irrigation Revenue Reports of the different Provinces.

Certain receipts, e.g., those realized by Civil Officers from irrigation works under their charge, do not appear in the Irrigation Revenue Reports, so that the figures in the statement are *approximate* only, but are sufficient to show the great importance of the works in question. Figures relating to works classed as "Agricultural" are excluded:—

Province.	WORKS FOR WHICH CAPITAL ACCOUNTS ARE NOT KEPT.			
	Gross revenue from all sources, direct and indirect, as recorded in Irrigation Revenue Reports.	Working expenses, including collection charges.	Net revenue.	Area irrigated.
	Rx.	Rx.	Rx.	Acres.
Bombay, excluding Sind ...	54,633	26,057	26,576	147,393
Sind ...	219,344	*104,591	114,753	977,208
Punjab ...	40,903	22,628	18,355	313,035
Bengal ...	20,732	20,538	194	14,810
Madras ...	927,778	220,642	687,156	3,573,871
TOTAL ...	1,243,450	396,456	846,994	5,026,377

*Exclusive of indirect charges.

The total area irrigated by these works amounted to 55.4 per cent. of that irrigated by the Major and Minor Works as shown in paragraph 5.

15. The total area irrigated during 1893-94 from all works amounted to 14½ million acres.

If the value per acre of the irrigated crops be taken at the estimated rate of Rx. 2.75 per acre given in paragraph 6, the total value of the produce from irrigated lands amounted to nearly 39½ millions of Rx.

16. The following are particulars of works which are still under construction:—

Project.	Amount of estimate (direct outlay).	Expenditure to end of 1893-94 (direct outlay).	Ultimate area to be irrigated.	Ultimate estimated revenue.	Estimated percentage of net revenue on direct Capital outlay.	REMARKS.
PRODUCTIVE.	Rx.	Rx.	Acres.	Rx.		
Chenab Canal (complete project of 1891).	2,568,417	1,287,475	1,100,000	535,911	16.1	
Sirsa Branch ...	289,269	222,034	126,290	32,000	11.0	
Periyar Irrigation ...	847,100	639,525	192,431	72,070	6.6	Revised Estimate sanctioned in Secretary of State's Despatch No. 38 P. W., dated 26th July 1894.
PROTECTIVE.						
Rushikulya ...	436,800	337,095	117,250	24,671	4.3	Second Revised Estimate sanctioned in Secretary of State's Despatch No. 34 P. W., dated 19th July 1894.

17. The following statement gives particulars of important irrigation projects, the estimates of which had been sanctioned but upon which work had not been begun up to the end of 1893-94 :—

Project.	Amount of estimate direct outlay.	Ultimate area to be irrigated.	Ultimate estimated revenue.	Estimated percentage of net revenue on direct Capital outlay.	Date of sanction.
	Rx.	Acres.	Rx.		
<i>Productive Works.</i>					
Jhelum Canal	1,202,407	423,360	154,875	8.2	8th November 1888.
Kalingaroyen channel	82,500	23,000	6,650	6.7	29th January 1891.
Lower Ganges Canal, Cawnpore Branch Extension (title since changed to Fatehpur Branch).	342,000	116,000	42,050	8.9	16th March 1893.

18. In reviewing the Revenue Reports of the different Provinces, the Government of India have observed with satisfaction the approval expressed by the Local Governments of the manner in which the officers of the Irrigation Department in general have performed their duties, and the Governor General in Council desires to record his appreciation of the results exhibited by the figures in the Accountant General's note and in this Review of the Irrigation Operations throughout India during 1893-94.

ORDER.—Ordered, that the foregoing, with a copy of the note by the Accountant General, Public Works Department, be forwarded to the Local Governments and Administrations in the Public Works Department, noted on the margin, for information.

Ordered also, that a copy of the Review and note be forwarded to the Revenue and Agricultural and Finance Departments, and that the papers be published in the Supplement to the *Gazette of India*.

Ordered further, that a copy of the Review and note be forwarded to Her Majesty's Secretary of State for India for information.

JOHN W. OTTLEY, Lieut.-Col., R.E.,
Deputy Secretary to the Govt. of India.

No. 705 of 35th August 1895
Communicated to the
Chief Engineer for Irrigation
(Sd) R R E D D.

Document accompanying.

Note by the Accountant General, Public Works Department, dated 25th March 1895.

G. C. Press Simla.—No. 616 P. W. D.—7.8.95—500.

20
The Chief Engr for Irrigation
all Suptg. Engineers
The Exr. P. W. Accts.

Note by R. G. Macdonald, Esq., Accountant General, Public Works Department, upon the accounts of Revenue and Expenditure of Irrigation Works in India for 1893-94.

The figures in the accounts submitted herewith agree with the Finance and Revenue accounts of the Government of India, but in this note certain figures are added from the Administrative accounts of the Public Works Department, Irrigation Branch, the Revenue Reports of Irrigation Works and the Annual Statement of the Financial Results of Irrigation Operations in India.

2. The irrigation works in India are divided into two main classes, *viz.*, Major Works and Minor Works.

Major Works are sub-divided into—

- (a) Productive Works, the Capital of which has been provided from borrowed money; and
- (b) Protective Works, the Capital of which has been provided out of the general revenues of India.

Minor Works are for the purpose of this note sub-divided into—

- (a) Works for which Capital and Revenue accounts are kept; and
- (b) Works for which Capital accounts are not kept.

3. Capital and Revenue accounts are kept for all Major Irrigation Works. There are 44 projects classed as Major Works—*vide* statement given in paragraph 12 below.

Of these, 36 were sanctioned as works expected to be remunerative, *i.e.*, estimated to pay the cost of up-keep and interest on the Capital outlay. They were or are being constructed from funds provided from sources outside the general revenues. The remaining eight projects* were sanctioned as works of protection against famine, and the cost of their construction has been or is being paid for out of annual grants made from the general revenues under the head of famine insurance.

- * North-Western Provinces and Oudh.
- 1. Betwa Canal.
- Punjab.
- 2. Swat River Canal.
- Madras.
- 3. Kushikulya Project.
- Bombay, Deccan and Gujarat.
- 4. Nira Canal.
- 5. Mhaswad Tank.
- 6. Chankapur Tank.
- 7. Maladevi Tank.
- 8. Gokak Canal, 1st section.

* Now classed as a minor work and combined with the Gokak Storage Works.

4. The works classed as Minor Irrigation Works are numerous. Capital and Revenue accounts are kept for 75 separate projects of this class; for the others only one account of receipts and charges for each work or group of works is kept. It has lately been decided that Capital and Revenue accounts shall be kept of all new Minor Irrigation Works, the estimated Capital outlay on which is more than Rx. 5,000 inclusive of Establishment and Tools and Plant charges, provided there is good reason to anticipate that the revenue derived therefrom will more than cover the working expenses.

5. The general results of works for which Capital and Revenue accounts are kept are as follows :—

	Major Works. Rx.	Minor Works. Rx.	Total Rx.
<i>Capital outlay.</i>			
During 1893-94	780,660	25,512	806,172
To end of 1893-94	31,031,250	4,821,615	35,852,865
<i>Revenue Account, 1893-94.</i>			
Gross Revenue	2,130,271	580,806	2,691,077
Maintenance and Working	875,620	228,781	1,104,401
Net Revenue	1,254,651	352,025	1,586,676
Interest	1,165,554	...	...
Net profit after paying interest on Capital	89,097	...	...
Percentage of net Revenue of the year on the Capital outlay to end of the year	4.04	6.89	4.12
Against in 1892-93	4.59	6.48	4.54
" 1891-92	4.29	3.02	4.11

The sudden decrease in the percentage of net revenue derived from Major Irrigation Works is due to a falling off in revenue as explained in the succeeding paragraph. The improvement in the return from Minor Irrigation Works is due chiefly to the development of irrigation in Madras.

6. As compared with 1892-93 the net revenue from Major Irrigation Works shows a falling off in 1893-94 of Rs. 132,709. The decrease occurred chiefly in the Punjab and in Bengal. In the Punjab it was due to heavy rainfall and to a large amount of water and owners' rates on the Western Jumna Canal remaining unrealized at the end of the year. In Bengal the decrease was nominal, as the revenue of the previous year had been abnormally swollen by the recovery of arrears of water-rates.

7. The net revenue from Minor Irrigation Works is shown at Rs. 332,025, against Rs. 306,971 in the previous year. The figures of 1892-93 included a sum of Rs. 78,047 on account of irrigation revenue for 1891-92 from certain works in Madras which was communicated by the Board of Revenue too late for inclusion in the accounts of 1891-92, *vide* para. 7 of my note on the accounts for 1892-93. Excluding this special item the figures compare as follows:—

1892-93	Rx.
1893-94	229,924
	332,025
Increase	103,101

The increase in revenue is explained in paragraph 43 below.

8. The capital spent on the Periyar project, which has not yet commenced to earn revenue, is included in the figure upon which the revenue percentage in paragraph 5 above is calculated. The Chenab Canal, the Sirsa Branch of the Western Jumna Canal, the Rushikulya project and other canals which have been recently opened for irrigation are not as yet bringing in a revenue in any way approaching the estimated ultimate return. Making due allowance for all this, the results must be looked upon as very satisfactory.

9. The receipts and charges of the year 1893-94 on Revenue account, exclusive of the figures relating to Minor Works for which Capital accounts are not kept, are detailed in the following statement by funds and provinces.

1893-94.

	Imperial.						Provincial.						Local.						Total.					
	Gross revenue.	Main-tenance and working.	Net revenue.	Interest.	Net Profit.	Gross revenue.	Main-tenance and working.	Net revenue.	Interest.	Net Profit.	Gross revenue.	Main-tenance and working.	Net revenue.	Interest.	Net Profit.	Gross revenue.	Main-tenance and working.	Net revenue.	Interest.	Net Profit.				
MAJOR WORKS.																								
<i>Protective.</i>																								
<i>Irrigation.</i>																								
Bengal	...	...	117,498	165	165	160,581	149,464	12,117	230,965	224,849	160,681	149,464	12,117	230,965	224,849	160,681	149,464	12,117	230,965	224,849				
N.-W. P. and Oudh	...	...	117,498	9,342	126,840	577,114	301,716	315,399	291,777	23,622	694,612	261,716	432,897	242,435	150,462	694,612	261,716	432,897	242,435	150,462				
Punjab	...	...	509,499	234,985	274,514	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Madras	...	...	567,829	220,585	209,683	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Bombay	...	...	126,857	83,437	7,284	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Stores unappropriated.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Total	1,341,683	430,016	911,667	654,651	357,016	737,695	410,179	327,610	628,742	201,226	2,079,378	840,195	1,239,183	1,083,393	166,790	2,079,378	840,195	1,239,183	1,083,393	166,790				
<i>Navigation.</i>																								
Bengal	...	...	...	1,885	1,885	6,919	6,650	269	7,193	6,914	6,919	6,650	269	7,193	6,914	6,919	6,650	269	7,193	6,914				
Total	1,341,683	430,016	911,667	660,536	358,131	743,614	415,829	327,785	635,925	208,140	2,085,297	845,845	1,239,432	1,092,461	146,501	2,085,297	845,845	1,239,432	1,092,461	146,501				
<i>Productive.</i>																								
<i>Irrigation.</i>																								
N.-W. P. and Oudh	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Punjab	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Madras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Bombay	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Total	44,974	29,776	15,199	73,097	57,898	...	...	...	...	...	44,974	29,776	15,199	73,097	57,898	...	...	...	...	...				
TOTAL MAJOR WORKS	1,380,657	450,791	926,866	629,633	297,233	743,614	415,829	327,785	635,925	208,140	2,130,271	875,630	1,234,651	1,165,658	69,003	2,130,271	875,630	1,234,651	1,165,658	69,003				
MINOR WORKS.																								
<i>Irrigation.</i>																								
Rajputana	14,193	4,571	9,622	...	9,622	...	...	...	...	...	14,193	4,571	9,622	...	9,622	...	...	...	...	...				
Baluchistan	4,591	2,232	2,359	...	2,359	...	...	...	...	...	4,591	2,232	2,359	...	2,359	...	...	...	...	...				
Lower Burma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Bengal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
N.-W. P. and Oudh	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Punjab	124,500	73,858	50,642	...	50,642	...	...	...	...	...	124,500	73,858	50,642	...	50,642	...	...	...	...	...				
Madras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Bombay	132,775	46,460	86,309	...	86,309	...	...	...	...	...	132,775	46,460	86,309	...	86,309	...	...	...	...	...				
Total	270,339	127,127	149,232	...	149,232	221,790	60,262	171,508	...	171,608	408,149	177,469	320,740	...	320,740	...	...	...	...	...				
<i>Navigation.</i>																								
Bengal	...	...	...	...	...	61,711	38,527	13,184	...	13,184	61,711	38,527	13,184	...	13,184	...	...	...	...	...				
Madras	...	...	...	...	...	10,946	12,845	1,899	...	1,899	10,946	12,845	1,899	...	1,899	...	...	...	...	...				
Total	...	...	...	...	...	62,657	61,372	11,285	...	11,285	62,657	61,372	11,285	...	11,285	...	...	...	...	...				
TOTAL MINOR WORKS	270,339	127,127	149,232	...	149,232	284,147	101,654	182,793	...	182,793	560,806	228,761	332,025	...	332,025	...	...	...	...	...				
GRAND TOTAL	1,663,016	586,919	1,076,097	629,633	416,465	1,029,061	517,483	510,578	635,925	25,317	2,691,077	1,104,401	1,580,676	1,165,558	421,118	2,691,077	1,104,401	1,580,676	1,165,558	421,118				

10. This table shows that after paying interest on borrowed money expended in the construction of Major Irrigation Works, the highest net profits are, in the previous two years, obtained from the irrigation projects in Madras. Next follow the North-Western Provinces and Oudh, the Punjab, and Bombay.

11. One prominent feature in the table is the loss arising from the canals in Bengal; another is the small amount of net profit derived from the irrigation works in the Punjab and the large sum derived from those in Madras.

In Bengal the loss is due to the permanent settlement on account of which the land revenue cannot be enhanced. No credit is given to canals on account of this item.

In the Punjab the revenue is gradually increasing, owing to several irrigation works having been completed, but the falling off in 1893-94 is due to the causes explained in paragraph 6, *ante*.

In Madras the large profit is attributable chiefly to the growth of revenue from the Godavari, Kistna and Cauvery Deltas and certain other projects which have either been completed or are approaching completion.

Major Works.

12. The following statement shows in detail the financial results of individual Major Irrigation Works during and to the end of 1893-94:—

Major Works.	CAPITAL OUTLAY TO END OF 1893-94				REVENUE ACCOUNT FOR 1893-94						REVENUE ACCOUNT TO END OF 1893-94				
	Direct.	Indirect.	Total.		Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net Profit.	Percentage of net revenue on the Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net Profit.
	Rz.	Rz.	Rz.	Rz.	Rz.	Rz.	Rz.	Rz.	Rz.	Rz.	Rz.	Rz.	Rz.	Rz.	Rz.
PRODUCTIVE															
Bengal.															
<i>Irrigation.</i>															
Orissa Project	2,532,070	67,089	2,599,759		37,637	63,658	—16,011	100,693	—116,604	...	492,451	802,458	—317,007	1,860,762	—2,183,709
Midnapore Canal	826,132	18,416	844,547		30,477	20,819	9,658	33,040	—23,382	1.14	479,790	436,133	24,657	706,905	—682,339
Sone Project	2,695,615	91,479	2,686,994		92,567	74,097	18,470	103,487	—85,017	68	1,240,947	1,41,341	109,606	1,865,330	—1,865,723
<i>Navigation.</i>															
Hidgelas Tidal Canal	6,954,317	166,983	6,121,300		160,581	148,464	12,117	237,120	—225,003	20	2,213,188	2,305,932	—92,744	4,439,087	—4,631,831
Total Bengal	226,274	6,649	231,923		6,919	6,650	269	9,088	—8,799	11	104,414	91,410	13,004	174,681	—161,677
N.-W. PROVINCES AND OUDH.															
<i>Irrigation.</i>															
Ganges Canal	2,725,611	169,376	2,895,187		322,893	113,453	209,440	108,771	100,669	7.23	6,744,669	2,083,132	8,761,527	3,615,497	140,030
Lower Ganges Canal	8,172,266	233,289	8,405,555		202,071	86,316	116,755	126,292	—10,637	3.39	3,401,893	1,619,421	1,685,474	2,186,236	—260,752
Agra Canal	657,677	67,652	925,329		49,952	27,288	21,664	34,235	—13,871	2.34	883,613	443,420	439,093	689,826	—251,733
Eastern Jumna Canal	325,926	20,701	346,627		120,691	84,653	36,038	13,137	72,901	24.60	2,090,935	941,307	2,049,628	437,426	1,612,203
Total N.-W. P. and Oudh	7,084,480	491,218	7,575,698		694,612	261,715	432,897	282,436	150,462	6.71	14,024,072	6,880,280	8,134,722	6,908,976	1,225,747
PUNJAB.															
<i>Irrigation.</i>															
Western Jumna Canal	1,091,120	66,138	1,146,258		93,283	64,658	43,725	43,400	325	3.81	6,446,667	1,821,459	4,025,108	949,216	3,075,893
" Sira Branch	222,034	9,383	231,417		6,309	8,752	—3,443	7,094	—11,411	...	6,309	8,752	—3,443	19,169	—22,602
Bari Doab Canal	1,668,806	63,470	1,722,276		222,543	69,383	163,160	65,331	97,829	9.47	3,961,014	1,670,972	2,290,042	1,946,257	394,845
Sirhind Canal	2,282,904	117,629	2,400,533		106,623	62,043	46,482	90,909	—44,427	1.94	1,090,616	471,611	619,005	1,381,110	—762,105
Lower Sohar and Para Canal	67,261	2,718	69,979		9,731	9,193	623	2,691	—2,168	7.6	60,338	62,611	—2,173	22,211	—24,384
Chenab Canal	1,287,476	29,676	1,317,051		38,401	33,073	5,328	46,908	—41,681	40	90,944	104,796	—13,852	180,068	—193,920
Sidhni "	94,962	3,200	98,162		26,716	7,979	18,739	3,770	14,969	19.09	141,408	64,523	86,975	28,768	58,217
Jhelum "	1,074	106	1,174		...	...	...	38	—38	...	...	...	...	160	—160
Total Punjab	6,705,630	281,114	6,986,644		609,499	234,985	274,614	261,046	13,468	9.93	11,190,086	4,184,524	7,005,562	4,485,939	2,619,623

Major Works.	CAPITAL EXPENDITURE TO END OF 1939-40				REVENUE ACCOUNT FOR 1939-40				REVENUE ACCOUNT TO END OF 1939-40					
	Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net Profit.	Percentage of net profit on the Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net Profit.
	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
MADRAS.														
Irrigation.														
Godavari Delta System	1,091,356	169,510	1,260,866	241,402	61,598	179,804	43,649	136,255	14.04	6,795,758	1,774,534	4,021,254	1,172,386	2,619,608
Kistna "	1,042,608	76,933	1,119,541	201,969	69,872	132,097	40,941	101,076	12.68	9,290,028	1,065,768	8,224,260	779,284	1,441,978
Pennar Anicut "	163,617	24,853	188,470	16,370	2,745	13,625	6,539	7,087	7.23	207,523	62,306	145,217	162,089	82,163
Chauvry Delta "	163,421	12,335	175,756	67,252	5,913	81,339	6,630	74,709	43.76	2,283,449	163,157	2,120,292	166,894	1,953,398
Srirangam Anicut System	135,640	10,081	145,721	10,460	2,341	7,919	3,415	4,504	6.43	173,571	67,075	106,496	113,811	2,652
Sangam Anicut Project	306,696	68,803	375,499	17,624	5,232	12,392	12,164	138	3.28	59,610	39,672	19,938	115,043	—65,076
Karnul Canal	2,169,170	133	2,169,303	12,044	14,244	—1,340	66,714	—68,054	...	114,053	194,377	—80,324	990,188	—1,076,613
Harur Tank	39,694	2,226	41,920	908	476	432	1,687	—1,255	1.03	8,068	2,697	5,371	12,763	—12,363
Periyar Project	689,623	17,043	706,666	...	...	...	22,957	—22,957	...	...	...	...	69,823	—69,823
Total Madras	6,753,831	401,697	7,155,528	687,829	151,661	6,436,168	226,585	209,593	7.09	12,047,145	3,349,674	8,697,471	3,569,154	6,108,917
BOMBAY.														
SIND.														
Irrigation.														
Desert Canal	122,358	4,067	126,425	4,784	9,026	—4,243	4,804	—9,106	...	228,053	91,197	136,856	76,434	61,483
Unbarwah "	48,424	1,293	49,717	6,440	1,216	4,225	1,671	2,554	8.60	40,822	13,648	27,174	12,106	14,978
Begari Canal	162,661	4,843	167,503	31,585	6,932	24,653	6,503	22,150	17.12	654,200	233,833	420,367	134,328	(C) 193,840
Eastern Nara Works	677,170	20,357	697,527	47,194	14,305	32,889	22,336	10,553	6.60	762,070	326,101	435,969	433,340	—17,367
Total Sind	910,613	30,659	941,072	92,643	30,478	6,61,625	35,404	26,121	6.64	1,585,145	664,718	920,427	675,454	214,943
DECCAN AND GUJARAT.														
Irrigation.														
Hahmat Canal	40,093	2,747	42,840	970	692	878	1,064	—1,506	7.71	9,419	13,786	—4,367	41,411	—17,753
Lower Panjura River Works	43,863	2,340	46,203	1,725	495	1,230	1,753	—523	2.67	23,815	12,924	10,891	40,129	—27,739
Lahli Canal	35,194	1,544	36,738	117	313	—226	1,108	—1,634	...	3,131	11,759	—8,628	35,511	(d) —44,169
Kadva River Works	69,376	2,866	72,242	1,187	700	887	2,771	—2,374	5.5	13,608	12,084	1,524	40,234	—38,600
Matha Canals	624,243	23,226	647,469	24,792	6,721	18,071	24,720	—6,668	2.79	303,363	120,869	172,494	489,139	—816,645
Krishna Canal	81,829	4,505	86,334	3,683	1,300	2,383	3,263	—880	2.70	66,840	42,837	24,003	117,627	—71,790
Elkruk Tank	122,812	11,227	134,039	2,380	2,611	—261	4,912	—5,173	...	25,124	38,611	—13,487	117,627	—130,914
Total Deccan and Gujarat	1,026,400	48,795	1,075,195	34,854	13,892	21,962	40,799	—18,837	2.04	425,913	254,760	171,153	848,780	—677,617
TOTAL BOMBAY	1,936,913	79,354	2,016,267	126,857	43,370	83,487	76,203	7,284	4.14	2,011,058	919,468	1,091,580	1,524,264	—432,674
Irrigation	27,435,071	1,420,366	28,855,437	2,079,378	840,195	1,239,183	1,083,369	165,794	4.29	41,485,479	16,648,878	24,836,601	20,947,419	3,869,182
Navigation	220,274	6,649	231,923	6,919	6,650	269	9,008	—8,739	1.1	104,414	91,410	13,004	174,581	—161,577
Total	27,655,345	1,426,016	29,081,360	2,086,297	846,845	1,239,452	1,092,457	146,995	4.26	41,589,893	16,740,288	24,849,605	21,122,000	3,727,605

(a) Excludes revenue due to old irrigation, which is as follows:—

	Gross revenue.		Maintenance and working.		Net revenue.	
	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
Godavari Delta System	12,400	850	11,550			
Krishna "	7,100	497	6,603			
Pennar Anicut "	11,700	9,000	2,700			
Chennai Delta "	236,500	29,670	206,830			
Srirangam Anicut System	7,000	1,350	5,650			
Sangam Anicut Project	13,900	2,600	11,300			
Harar Tank	200	15	185			
Total	289,700	37,775	251,925			

(b) Excludes revenue due to old irrigation, which is as follows:—

	Gross revenue.		Maintenance and working.		Net revenue.	
	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
Begari Canal	3,361	576	2,785			
Eastern Nara Works	344	34	310			
Total	3,705	910	2,795			

(c) Exclusive of Rs. 4,386 which was erroneously credited to the canal in previous years in excess of the irrigation share of land revenue.

(d) Includes Rs. 146 on account of revenue from Galpir land from 1882-83 to 1892-93 which is now treated as land revenue and added to the figures in the administrative accounts to end of 1892-93.

13. Taken collectively by provinces the percentages of net revenue on the Capital outlay upon Major Works for the last three years are as follows:—

	1893-94	1892-93	1891-92
1. Madras	6.70	6.46	6.19
2. Bombay—Sind	6.54	7.65	4.53
3. North-Western Provinces and Oudh	5.37	5.22	5.53
4. Punjab	3.95	6.24	5.65
5. Bombay—Deccan and Gujarat	1.27	1.19	1.16
6. Bengal	.19	.63	.25
Total	4.04	4.59	4.28

Madras is unfairly weighted with the Karnul Canal which was made by a company and which does not even yet pay its working expenses and maintenance. Without the Karnul Canal the figures for Madras would be:—

	Per cent.
1893-94	10.06
1892-93	9.91
1891-92	9.59

14. The systems which in 1893-94 paid over 4 per cent. are arranged below in the order of the rate paid, and are compared with the results in the two previous years:—

	Rate Paid.		
	1893-94	1892-93	1891-92
1. Cauvery Delta System	45.76	39.00	36.70
2. Eastern Jumna Canal	24.60	20.14	21.84
3. Sidhna Canal	19.09	14.95	11.10
4. Begari Canal	17.12	17.71	10.25
5. Godavari Delta System	14.04	13.73	13.39
6. Kistna	12.68	12.53	12.33
7. Bari Doab Canal	9.47	10.26	7.16
8. Unharwah Project	8.50	8.91	1.78
9. Penner Anicut	7.23	7.40	...
10. Ganges Canal	7.23	7.17	7.61
11. Eastern Nara Works	5.50	5.92	5.68
12. Srivaikuntham Anicut System	5.43	5.59	5.74
13. Swat River Canal	4.42	5.20	2.81

15. The systems that have, up to the end of 1893-94, paid off the accumulated interest on the Capital expended on them are noted below:—

	Surplus.
	R.
1. Western Jumna Canal	3,075,892
2. Godavari Delta System	2,848,869
3. Cauvery	1,953,398
4. Eastern Jumna Canal	1,612,202
5. Kistna Delta System	1,444,978
6. Bari Doab Canal	388,685
7. Begari	185,840
8. Ganges Canal	146,030
9. Penner Anicut System	82,163
10. Desert Canal	61,482
11. Sidhna	58,217
12. Unharwah	14,978
13. Srivaikuntham Anicut System	2,682

Assuming that the works are still worth the amount charged in each case to the Capital account, this represents a net profit to the State at the end of 1893-94 on these systems of 11,875,415
 The charge to the State on other Major Works is 8,791,231
 And this leaves a net profit to date on all Major Works of 3,084,184

Major Works.	CAPITAL OUTLAY TO END OF 1893-94.			REVENUE ACCOUNT FOR 1893-94.						REVENUE ACCOUNT TO END OF 1893-94.					
	Direct.	Indirect.	TOTAL.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net Profit.	Percentage of net revenue on the Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net Profit.	Net Profit.
1	R.	R.	R.	R.	R.	R.	R.	R.	R.	R.	R.	R.	R.	R.	R.
PROTECTIVE.															
N.-W. PROVINCES AND OUDH.															
Irrigation.															
Petwa Canal	400,506	21,438	421,944	7,369	10,751	—3,382	15,079	—19,361	...	53,223	83,190	—20,967	167,481	—197,443	
PUNJAB.															
Irrigation.															
Swat River Canal	350,496	12,922	363,418	25,592	9,521	16,071	13,978	2,093	4.42	160,595	77,308	83,287	169,108	—85,721	
MADRAS.															
Irrigation.															
Rushikulya Project.	337,095	30,330	367,425	1,757	1,093	665	12,683	—12,018	.18	1,757	2,057	—330	53,019	—63,349	
BOMBAY.															
DECCAN AND GUJARAT.															
Irrigation.															
Gokak Canal, 1st Section	40,694	1,173	41,867	(b)	(b)	(b)	1,604	—1,604	...	2,474	2,100	374	19,298	—18,934	
Alharwad Tank	198,152	6,073	204,225	2,503	2,200	297	7,912	—7,615	.15	11,895	12,063	—167	88,953	—89,130	
Nira Canal	619,476	15,833	635,309	7,753	6,205	1,548	20,550	—19,002	.29	29,308	29,934	274	194,745	—194,471	
Chankapir Tank	6,395	310	6,701	...	...	...	255	—255	...	...	...	...	3,135	—3,135	
Maladvi Tank	3,390	216	3,606	...	...	...	136	—136	...	...	...	...	1,258	—1,258	
Total Bombay	767,603	23,610	791,213	10,256	8,411	1,845	30,457	—29,612	.23	43,577	42,090	491	307,359	—306,008	
TOTAL PROTECTIVE	1,555,600	88,320	1,643,920	44,074	29,775	15,199	73,097	—57,898	.79	29,157	29,581	63,570	690,907	—613,421	
GRAND TOTAL	29,616,045	1,514,335	31,130,380	876,620	1,254,651	1,165,554	80,007	4,004	41.819,050	10,945,869	21,003,181	21,818,207	3,084,184		

(b) This is now classed as a minor work and combined with Gokak Storage Works.

16. The following statement shows the net charge to the State to the end of each year for the last five years on account of further projects, which are expected eventually to pay off the accumulated interest on their Capital cost:—

	Date of Completion.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.
		Rx.	Rx.	Rx.	Rx.	Rx.
<i>North-Western Provinces and Oudh.</i>						
Lower Ganges Canal	1878	184,877	241,950	257,544	270,214	280,752
Agra Canal	1874	236,294	233,674	233,051	239,162	251,733
<i>Punjab.</i>						
Sirhind Canal	1887	871,825	854,540	800,557	717,678	762,105
Lower Sohag and Para Canal	1886	9,196	19,442	18,617	22,216	24,384
Chenab Canal	...	59,192	77,127	106,942	152,338	193,920
<i>Madras.</i>						
Sangam Anicut Project	1885	45,797	50,030	64,784	65,213	65,075
Barur Tank	1887	6,566	8,045	9,868	11,207	12,362
<i>Bombay—Sind.</i>						
Eastern Nara Works	...	62,227	51,227	41,222	27,910	17,357
TOTAL	...	1,475,974	1,530,064	1,532,543	1,503,938	1,607,698

Several of these projects are increasing the debit against them when they ought to be decreasing it.

17. The continued steady decrease of accumulation of interest against the Eastern Nara before completion of the project is satisfactory.

The continued increase against the Lower Ganges and Agra Canals is not altogether satisfactory; these canals have been opened 17 and 21 years respectively, and have not yet begun to pay the annual interest charges. The Sirhind, Lower Sohag and Para Canals and the Barur Tank have not been opened for 10 years; further increases may, therefore, be expected as the irrigation from these projects has not had time to develop fully. There is a slight decrease in the debit against the Sangam Anicut project; it has been opened for irrigation 10 years only.

Compared with two previous years the net revenue obtained from the Lower Sohag and Para Canal shows a steady increase, and when full credit is given for the indirect revenue due to its construction, it is expected that the net revenue will more than cover the annual interest charges.

18. The Chenab Canal shows a return of 40 per cent. on the whole of its Capital outlay, although irrigation is only very partially developed, and water-rates have been levied on a small portion only of the area actually cultivated, and then only at half rates. It is reported that the return realized on this canal has been greatly in advance of the forecasts of 1891, while the area irrigated in 1893-94 was nearly double that originally anticipated. This indicates that the returns from the canal will rapidly increase when full rates are realized from the total area irrigated, and that the accumulated interest charges should soon disappear.

19. The total loss to the State on account of works entered in the above table has increased by Rx. 101,750 during 1893-94. But if the figures of the Chenab Canal are excluded, the loss would amount to Rx. 60,168 only, which may be attributed principally to a falling off in the collections from the Sirhind Canal in consequence of seasonable rainfall.

20. The undernoted works, which were allowed to be constructed from borrowed money prior to the introduction of the rules laying down the conditions which must now be fulfilled before a work may be classed as Productive, are not expected to repay the accumulated interest charges on the Capital invested in them:—

	Capital outlay to end of 1893-94.	NET GAIN OR LOSS IN WORKING EACH YEAR.				
		1889-90.	1890-91.	1891-92.	1892-93.	1893-94.
	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
<i>Bengal—</i>						
Orissa Project	2,589,759	—15,279	—12,267	—5,216	—613	—16,011
Midnapore Canal	844,547	6,563	2,813	1,837	8,445	9,659
Sone Project	2,686,944	15,104	2,707	20,823	30,133	19,470
Hidgellee Tidal Canal	231,923	1,523	—2,553	—1,377	2,030	269
<i>Bombay, Deccan and Gujarat—</i>						
Hathmati Canal	51,840	—126	71	387	—40	369
Lower Panjhra River Works	46,133	787	626	572	600	1,230
Kadva River Works	72,242	566	310	1	199	397
Lakh Canal	37,138	—226	—235	—135	—199	—226
Mutha Canal	647,469	11,919	13,776	16,207	13,440	18,071
Ekruk Tank	134,039	351	1,099	1,234	—153	—261
Krishna Canal	86,334	1,239	1,749	2,078	4,164	2,353
TOTAL	7,429,418	22,719	8,096	36,411	57,906	34,348

The Karnul Canal in Madras, which was purchased from the Madras Irrigation and Canal Company in 1882, does not appear likely to be ever a financial success.

21. The sources from which the revenue of the Major Works was derived during 1893-94 are exhibited in the following statement in comparison with those of the four previous years:—

	Irrigation Revenue.			Sale of water.	Water-supply of towns.	Plantations.	Other canal produce.	Water-power.	Mortgage receipts.	Rents of buildings.	Fines.	Miscellaneous.	Totals of previous four years.			
	Share of enhanced land revenue due to irrigation works.	Water-rates.	Quarry rates on irrigated lands.										1892-93.	1891-92.	1890-91.	1889-90.
Bengal	...	120,990	...	78	...	247	229	99	37,714	1,450	...	5,666	188,335	159,860	133,914	150,449
North-Western Provinces and Oudh	117,408	623,916	32,334	624	100	16,578	...	8,083	1,704	259	1,359	3,146	685,771	705,195	651,618	555,843
Punjab	21,809	450,078	28,911	3,242	105	4,810	2,364	14,495	6,803	1,088	650	1,740	690,914	604,099	593,045	490,680
Madras	659,464	11,267	...	...	665	1,656	2,196	...	13,809	363	5	256	565,424	635,711	530,037	613,347
Bombay	86,326	36,916	...	399	9,744	201	1,062	600	...	67	1	2,397	147,610	114,499	127,277	130,519
Total for 1893-94	785,187	1,141,863	61,245	4,243	10,574	23,492	5,831	20,256	69,090	3,302	1,917	13,311	2,263,054	2,109,303	2,025,691	1,852,830
1893-93	790,020	1,299,208	66,073	4,188	11,764	25,043	6,437	20,679	64,347	3,193	2,593	14,624	2,269,054	2,109,303	2,025,691	1,852,830
1891-92	706,451	1,174,901	80,336	3,830	10,818	27,965	4,608	21,727	61,857	3,010	2,491	11,869	2,109,303	2,025,691	2,025,691	1,852,830
1890-91	743,806	1,070,709	80,194	4,220	10,069	22,849	4,968	20,635	62,883	2,719	2,653	10,436	2,025,691	2,025,691	2,025,691	1,852,830
1889-90	724,612	935,438	69,113	4,193	10,091	25,468	4,700	18,721	65,655	2,859	2,210	9,783	1,852,830	1,852,830	1,852,830	1,852,830

22. The income is less by Rx. 137,763 than that of 1892-93; but considerably better than that of the two previous years.

The share of land revenue and the water-rates are increasing with the extension of the canals and other works; but the sale of water, the water-supply of towns, and the supply of water-power are not showing the improvement which might be expected.

23. The increment in Bengal, in the Punjab, and in Bombay was checked in the year under review; but the North-Western Provinces and Madras show steady upward progress.

24. The increase in the North-Western Provinces was chiefly due to an extension of irrigation from the Eastern Jumna Canal. The increase in Madras is ascribed mainly to expansion of irrigation in the Kistna Delta and to the recent revision of the rates of assessment on the Cauvery Delta System.

25. In Bombay the decrease is attributable chiefly to failure of water in the Desert Canal in consequence of which remissions had to be granted and to damage done to crops by hail-storms and locusts. The receipts from the Begari Canal were also reduced.

26. The following statement shows, for each Major Work for the five years ending 1893-94, the gross revenue and the irrigated area, and the mileage of canals completed at the end of each year:—

Major Works.	Gross Revenue.				Irrigated Area in Acres.						Miles of Operation (Including Irrigation).			
	1900-01.	1901-02.	1902-03.	1903-04.	1904-05.	1905-06.	1906-07.	1907-08.	1908-09.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.
Bengal.														
Orissa Project	30,412	37,093	49,738	57,637	180,209	177,685	160,952	103,528	1,021	1,017	1,167	1,221	1,306	1,306
Midnapore Canal	27,743	28,470	28,100	80,477	68,810	63,973	91,217	65,703	345	355	345	355	355	355
Hiddelee Tidal Canal	4,195	6,391	6,339	92,667	303,293	471,723	410,761	308,776	29	29	1,560	1,676	1,575	1,575
Sone Project	88,008	72,917	105,258	92,667	303,293	471,723	410,761	308,776	1,561	1,663	1,560	1,676	1,575	1,575
Total Bengal	150,418	137,914	189,335	106,500	660,719	736,381	662,930	656,083	2,909	2,904	3,101	3,160	3,325	3,325
North-Western Provinces and Oudh.														
Ganges Canal	253,720	316,225	330,430	323,808	807,574	821,652	722,478	656,757	4,006	4,013	4,077	4,159	4,278	4,278
Lower Ganges Canal	153,986	161,293	198,958	201,419	490,804	642,632	584,009	625,633	3,049	3,194	3,353	3,477	3,557	3,557
Agre Canal	61,234	69,937	61,178	44,963	174,254	162,118	107,054	163,290	750	744	785	759	700	700
Eastern Jumna Canal	85,626	106,413	105,797	120,691	243,817	237,422	227,430	201,064	1,112	1,115	1,130	1,132	1,132	1,132
Betwa Canal	7,576	7,448	10,083	7,309	24,252	33,963	22,422	18,804	613	638	644	637	617	617
Total North-Western Provinces and Oudh	556,843	661,818	685,771	701,981	1,753,821	1,807,777	1,663,393	1,568,298	9,470	9,608	9,849	10,084	10,300	10,300
Punjab.														
Western Jumna Canal	117,441	162,081	150,033	98,283	419,968	388,606	327,317	243,436	1,191	1,191	1,202	1,300	1,606	1,606
Sirsa Branch	182,068	193,320	194,631	272,643	623,409	635,045	592,785	640,037	1,411	1,410	1,410	1,413	1,416	1,416
Barind Canal	133,864	168,426	201,490	108,524	440,981	601,162	645,610	675,897	2,768	2,761	2,874	3,038	3,038	3,038
Lower Ganges and Para Canal	8,398	6,391	6,926	9,721	63,223	88,604	66,908	71,179	136	136	139	139	139	139
Chenab Canal	7,710	9,785	10,404	38,401	39,318	62,390	167,197	270,403	302	374	670	712	794	794
Fidhrai	22,406	18,024	20,457	26,718	109,063	122,528	167,814	161,427	149	204	180	140	140	140
Sart River Canal	24,696	25,068	20,369	25,693	91,196	89,876	99,350	110,819	148	163	163	163	165	165
Total Punjab	496,660	683,046	604,099	635,091	1,735,166	1,826,106	1,720,873	1,780,691	6,106	6,241	6,721	6,934	7,831	7,831
Madras.														
Godavari Delta System	234,808	240,089	249,943	253,863	672,259	680,495	732,364	721,740	2,224	2,313	2,384	2,394	2,394	2,394
Kistna "	170,138	186,360	196,023	208,009	433,976	463,071	480,728	612,678	1,062	1,939	1,913	1,943	1,943	1,943

Penner Ancient System	28,438	25,935	12,096	28,760	28,070	68,171	65,080	85,652	73,051	70,846	142	143	142	142
Canary Delta	18,668	311,383	309,595	310,966	323,763	1,010,698	1,018,344	1,076,069	1,012,049	996,058	1,678	2,084	2,084	2,084
Srinikuntham Ancient System	18,356	13,640	18,910	13,900	18,359	39,745	28,496	41,322	29,111	40,570	90	90	90	90
Sankam Ancient System	25,723	27,655	14,832	31,000	31,424	64,926	64,224	39,219	39,219	74,960	262	280	280	280
Karnal Canal	7,600	11,936	14,272	14,828	12,944	21,861	24,818	73,500	30,786	31,424	603	603	603	603
Harur Tank	466	740	748	926	1,108	1,713	2,774	2,757	4,182	4,324	29	29	29	29
Rushikulya Project	...	...	...	...	1,767	...	...	...	...	6,196	...	41	83	84
Deduct old Irrigation revenue.	802,147	819,717	815,411	855,124	879,286	2,311,357	2,346,733	2,413,591	2,390,620	2,460,192	6,978	7,606	7,657	7,675
Total Madras	613,347	631,037	626,711	665,421	689,386	...	...	...	...	...	...	...	...	...
Bombay.														
Desert Canal	19,763	17,076	2,692	12,827	4,754	127,579	124,919	60,131	95,156	69,588	190	190	192	192
Unharwah	4,668	4,673	1,651	4,736	6,410	33,440	20,690	19,283	23,277	32,034	67	67	67	67
Regari Canal	20,389	23,441	26,118	36,782	37,948	143,479	144,163	174,718	192,624	207,383	176	176	176	176
Eastern Nara Works	49,561	45,679	43,501	43,037	47,634	255,213	228,292	211,951	243,312	228,903	273	278	278	278
Deduct old Irrigation revenue.	103,371	91,072	78,783	102,482	93,708	630,111	617,454	466,083	554,369	559,488	706	711	713	713
Total Sind	103,371	91,072	73,753	102,482	92,703	630,111	517,954	466,083	554,369	558,498	700	711	713	713
Hathmati Canal.														
Lower Panjhra River Works.	620	737	1,037	516	970	2,319	3,766	2,716	2,728	3,701	45	61	61	61
Kakra River Works	1,083	903	814	1,090	1,187	3,091	2,227	2,971	2,825	3,027	36	39	39	39
Math Canal	205	135	170	96	117	13,334	11,201	14,061	13,8	343	10	29	29	29
Mutha Canal	20,691	21,757	24,603	22,405	24,792	2,654	2,594	3,137	3,038	6,259	155	155	155	155
Ekrak Tank	1,674	2,442	2,611	2,551	2,384	2,654	2,594	3,137	3,038	3,449	44	44	44	44
Krishna Canal	2,068	3,077	3,194	6,733	3,083	3,732	3,950	5,974	3,790	4,742	61	61	61	61
Gulak Canal, 1st section	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nira Canal	2,751	3,608	4,419	8,551	7,753	21,090	10,913	24,843	18,240	24,503	108	215	220	225
Alhaswad Tank	1,817	1,942	1,922	2,634	2,503	6,791	7,100	8,344	4,997	5,283	95	95	95	95
Total Deccan and Gujarat	33,146	36,215	40,715	43,124	45,110	66,379	60,884	68,537	43,302	55,747	689	737	743	749
Total Bombay	136,519	127,277	111,498	147,610	137,113	686,400	668,638	634,650	609,571	614,235	1,395	1,449	1,456	1,461
GRAND TOTAL	1,632,896	2,025,601	2,109,363	2,269,621	2,131,271	7,047,653	7,172,469	7,560,494	7,043,286	6,949,381	25,917	28,635	29,211	29,902

(a) Irrigation area irrigated by old works.

27. The rate of revenue per acre irrigated during 1893-94 is shown in the following table, and the irrigation revenue shown here includes the share of enhanced land revenue due to irrigation as well as the water-rates and owners' rates:—

Province.	Irrigation revenue. (Assessed.)	Irrigated acreage.	Rate of revenue per acre.	COMPARISON WITH RATE IN	
				1891-92.	1891-92.
	Rx.	Acres.	Rx.	Rx.	Rx.
Bombay, Deccan and Gujarat	33,937	55,747	61	58	48
North-Western Provinces and Oudh	664,700	1,568,298	42	30	34
Madras	925,501	2,460,102	38	35	33
Punjab	809,768	1,760,591	35	32	31
Bengal	102,022	550,065	18	18	19
Bombay-Sind	93,597	558,498	18	19	16
TOTAL	2,434,525	6,949,381	35	32	31

There is an increase everywhere except in Bengal and Sind.

28. The charges for maintenance and working for the year 1893-94 are detailed in the following statement and compared with the outlay of the previous four years:—

	TOTALS OF PARTIES FOUR YEARS.									
	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.
Bengal	4,684	62,764	66,849	10,470	844	9,412	21,434	28,618	34,010	64,010
North-Western Provinces and Oudh	19,368	94,423	136,212	3,793	2,865	9,412	21,434	28,618	34,010	64,010
Punjab	10,836	101,745	113,174	2,865	9,412	21,434	28,618	34,010	64,010	64,010
Madras	6,041	64,010	76,124	9,412	844	9,412	21,434	28,618	34,010	64,010
Bombay	1,334	28,618	34,010	844	9,412	21,434	28,618	34,010	64,010	64,010
TOTAL for 1893-94	42,263	340,150	412,702	27,414	23,023	24,902	22,486	22,416	22,416	22,416
1892-93	60,926	343,465	401,654	23,023	23,023	24,902	22,486	22,416	22,416	22,416
1891-92	63,127	330,657	370,115	24,902	23,023	24,902	22,486	22,416	22,416	22,416
1890-91	61,926	327,449	378,602	22,486	22,486	22,486	22,486	22,486	22,486	22,486
1889-90	65,656	312,498	357,836	22,416	22,416	22,416	22,416	22,416	22,416	22,416

29. The total working expenses amounted to Rs. 5,074 less than those of the previous year, the decrease being the net result of increases and decreases in different provinces. The principal increases and decreases were:—

Bengal	Rx.
Madras	+5,574
Bombay	—5,779
	—5,957

30. Bengal, which shows with the Punjab and Bombay, vide paragraph 23 above, a falling off in revenue, exhibits an increase in working expenses and in the North-Western Provinces the increase of Rs. 1,741 is far more than counterbalanced by the increase of revenue, which was Rs. 16,210.

31. In Bengal the increased charges were due to the repairs of damages caused by the high floods of 1892 and 1893 in the Orissa and Midnapore Canal districts.

32. In Madras the decrease was chiefly due to a special payment of Rs. 3,660 having been made in 1892-93 to the Telegraph Department on account of the telegraph line along the Karnul Canal which has been dismantled.

33. In Bombay the decrease was due to the charges for maintenance and up-keep of the Desert, Begari, and Mutha Canals having been smaller than in the previous year.

34. The cost of maintenance and working per acre irrigated in the different provinces during the past five years, and the percentage of the outlay upon maintenance and working on gross revenue, are as follows:—

Cost of maintenance and working per irrigated acre.

Province.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	Remarks.
1. Bombay-Sind	Rx. 106	Rx. 108	Rx. 107	Rx. 106	Rx. 106	Including old maintenance charges.
2. Madras	09	08	08	08	08	
3. Punjab	12	08	08	08	08	
4. North-Western Provinces and Oudh	15	12	11	14	14	Excluding maintenance of Tidal Canal.
5. Bengal	15	15	14	16	17	
6. Bombay-Deccan and Gujarat	25	23	19	22	27	
	32	35	29	61	38	

The provinces are arranged in the order of smallness of charge; the variations are considerable.

Percentage of maintenance and working on gross revenue.

Province.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	Remarks.
1. Madras	Rx. 23.2	Rx. 23.8	Rx. 23.0	Rx. 23.0	Rx. 21.7	Including old revenue and working expenses.
2. Bombay-Sind	29.7	32.8	46.7	33.7	32.8	
3. North-Western Provinces and Oudh	47.1	42.1	38.0	39.5	3.88	
4. Punjab	42.6	37.3	37.3	38.0	45.7	
5. Bombay-Deccan and Gujarat	54.3	48.8	44.1	51.4	47.2	
6. Bengal	94.5	106.9	69.9	78.9	92.6	

The variations indicated here are also great.

35. The percentages of the cost of revenue management on the revenue collected in the different provinces during the five years ending 1893-94, were as follows:—

N.B.—In the term revenue management is included shares of Direction, Executive and Navigation Establishments and also a share of collection establishment.

Province.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	Remarks.
1. Madras	Rx. 8.8	Rx. 8.8	Rx. 8.8	Rx. 8.9	Rx. 9.0	
2. Bombay-Sind	10.1	10.9	11.4	10.4	10.6	
3. North-Western Provinces and Oudh	13.5	14.3	12.8	13.6	14.5	
4. Bombay-Deccan and Gujarat	14.5	14.1	15.3	17.8	16.1	
5. Punjab	15.1	13.0	12.1	13.0	16.9	
6. Bengal	28.5	33.2	28.1	26.0	28.7	

It is interesting to observe how the provinces change places in the above three tables. Per acre irrigated the Sind Canals cost least, but the Madras works are kept up and managed for the smallest share of the gross income. The Punjab compares favourably with the North-Western Provinces by the first test, but not by the second and third.

MINOR WORKS.

Works for which Capital and Revenue Accounts are kept.

36. The following statement shews in detail the financial results of Minor Works for which Capital and Revenue accounts are kept during, and up to the end of, the year 1893-94:—

Number of works.	Minor Works.	CAPITAL OUTLAY TO END OF 1893-94.			REVENUE ACCOUNT FOR 1893-94.				REVENUE ACCOUNT TO END OF 1893-94.		
		Direct.	Indirect.	Total.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of net revenue on Capital outlay.	Gross Revenue.	Working Expenses.	Net Revenue.
		Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
2	BALUCHISTAN— Irrigation— Khundil Khan Reservoir Shehn Canal	89,540 65,298	1,191 1,142	89,740 66,439	3,350 1,541	1,372 800	1,978 681	2.20 1.02	5,395 7,861	4,109 5,639	1,286 2,273
	TOTAL	154,845	2,333	158,178	4,891	2,232	2,659	1.70	13,256	9,009	3,558
3	RAJPUTANA— Irrigation— Tanks in Ajmere Sub-Collectorate Tanks in Barwar " in Todgarh "	147,006 60,604 20,617	4,285 3,460 407	151,291 64,068 21,224	6,384 5,131 2,678	3,356 688 529	3,028 4,443 2,149	2.00 6.93 10.12	117,657 19,479 42,695	61,313 51,219 28,153	56,374 38,260 14,537
	TOTAL	228,429	8,152	236,581	14,193	4,671	9,622	4.06	219,861	140,690	109,171
1	LOWER BURMA— Irrawaddy embankments	305,893	8,317	314,210	95,697	18,039	77,665	24.72	1,102,935	289,205	813,730
3	BENGAL— Irrigation— Barun Project Navigation— Calcutta and Eastern Canals Orissa Coast Canal	68,957 629,604 428,658	2,718 6,240 10,431	69,675 635,744 439,089	628 42,054 9,657	620 39,713 9,814	8 13,341 —157	—0.1 2.49 ...	24,359 2,269,691 51,769	36,035 918,690 65,478	—11,676 1,350,801 —13,709
	TOTAL	958,062	16,671	974,733	61,711	38,627	13,184	1.35	2,321,480	984,398	1,337,092
4	NORTH-WESTERN PROVINCES AND OUDH— Irrigation— Dun Canals Rohilkhand Canals Hijnor Canals Bundelkhand Irrigation works	65,209 166,132 11,607 7,426	1,572 16,055 2,118 804	66,781 172,187 13,625 8,240	9,404 13,578 2,111 972	4,263 9,654 930 805	5,141 3,924 1,181 167	7.70 2.28 8.67 2.03	228,223 310,173 45,781 17,216	127,887 260,400 17,627 20,993	100,336 49,773 27,934 —3,777
	TOTAL	240,284	20,549	260,833	26,065	15,652	10,413	3.99	601,394	427,107	174,286
5	PUNJAB— Irrigation— Upper Sutlej Inundation Canals Lower Sutlej Inundation Canals Indus Inundation Canals Shekhar Inundation Canals Madhopur Work-shops	69,364 10,756 68,790 18,806 42,415	6,049 254 1,973 473 ...	65,413 11,010 70,763 16,279 42,415	30,911 60,899 26,537 6,163 ...	9,804 22,337 21,102 4,380 ...	21,107 22,337 5,435 1,773 ...	32.27 202.79 7.68 10.89 ...	413,256 1,584,319 687,820 58,152 3,658	366,438 887,001 692,625 33,531 44,945	46,819 697,318 5,196 24,621 —41,287
	TOTAL	197,131	8,749	205,880	184,500	73,858	60,642	24.60	2,747,205	2,014,540	732,665

* This is not an irrigation project. It has no connection with the other works named here, and the question of its inclusion from this account is under discussion.

29. The total working expenses amounted to Rs. 5,074 less than those of the previous year, the decrease being the net result of increases and decreases in different provinces. The principal increases and decreases were:—

Bengal	Rx.
Madras	+5,574
Bombay	—5,778
	—5,957

30. Bengal, which shows with the Punjab and Bombay, vide paragraph 23 above, a falling off in revenue, exhibits a decrease in working expenses and maintenance. The Punjab, Madras, and Bombay show considerable reductions, and in the North-Western Provinces the case of Rs. 1,741 is far more than counterbalanced by the increase of revenue, which was Rs. 16,210.

31. In Bengal the increased charges were due to the repairs of damages caused by the high floods of 1892 and 1893 in the Orissa and Midnapore Canal districts.

32. In Madras the decrease was chiefly due to a special payment of Rs. 3,660 having been made in 1892-93 to the Telegraph Department on account of the telegraph line along the Karnul Canal which has been dismantled.

33. In Bombay the decrease was due to the charges for maintenance and up-keep of the Desert, Begari, and Mutha Canals having been smaller than in the previous year.

34. The cost of maintenance and working per acre irrigated in the different provinces during the past five years, and the percentage of the outlay upon maintenance and working on gross revenue, are as follows:—

Cost of maintenance and working per irrigated acre.

Provinces.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	Remarks.
	Rx.	Rx.	Rx.	Rx.	Rx.	
1. Bombay—Sind	06	06	07	06	06	Including old maintenance charges.
2. Madras	04	08	08	09	08	
3. Punjab	12	12	11	14	14	
4. North-Western Provinces and Oudh	15	15	14	16	17	Excluding maintenance of Tidal Canal.
5. Bengal	25	25	19	22	27	
6. Bombay—Deccan and Gujarat	32	35	29	31	38	

The provinces are arranged in the order of smallness of charge; the variations are considerable.

Percentage of maintenance and working on gross revenue.

Provinces.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	Remarks.
	Rx.	Rx.	Rx.	Rx.	Rx.	
1. Madras	22.2	23.8	23.0	23.0	21.7	Including old revenue and working expenses.
2. Bombay—Sind	29.7	32.8	46.7	33.7	32.8	
3. North-Western Provinces and Oudh	47.1	42.1	38.0	39.6	3.88	
4. Punjab	42.6	37.3	37.3	36.0	45.7	
5. Bombay—Deccan and Gujarat	54.3	48.6	48.1	51.4	47.2	
6. Bengal	94.5	106.9	69.9	78.9	92.6	

The variations indicated here are also great.

35. The percentages of the cost of revenue management on the revenue collected in the different provinces during the five years ending 1893-94, were as follows:—

N.B.—In the term revenue management is included shares of Direction, Executive and Navigation Establishments and also a share of collection establishment.

Provinces.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	Remarks.
	Rx.	Rx.	Rx.	Rx.	Rx.	
1. Madras	8.8	8.8	8.8	8.9	9.0	
2. Bombay—Sind	10.1	10.9	11.4	10.4	10.6	
3. North-Western Provinces and Oudh	13.5	14.3	12.8	13.6	14.5	
4. Bombay—Deccan and Gujarat	14.5	14.1	15.2	17.8	16.1	
5. Punjab	15.1	13.0	12.1	13.0	16.9	
6. Bengal	28.5	33.2	28.1	26.0	28.7	

It is interesting to observe how the provinces change places in the above three tables. Per acre irrigated the Sind Canals cost least, but the Madras works are kept up and managed for the smallest share of the gross income. The Punjab compares favourably with the North-Western Provinces by the first test, but not by the second and third.

MINOR WORKS.

Works for which Capital and Revenue Accounts are kept.

36. The following statement shows in detail the financial results of Minor Works for which Capital and Revenue accounts are kept during, and up to the end of, the year 1893-94:—

Number of works.	Minor Works.	CAPITAL OUTLAY TO END OF 1893-94.			REVENUE ACCOUNT FOR 1893-94.				REVENUE ACCOUNT TO END OF 1893-94.		
		Direct.	Indirect.	Total.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of net revenue on Capital outlay.	Gross Revenue.	Working Expenses.	Net Revenue.
		Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
2	BALUCHI-TAN— Irrigation— Khushil Khan Reservoir Shehn Canal	89,549 65,298	1,191 1,142	89,740 66,438	3,350 1,541	1,372 860	1,978 681	2.20 1.02	5,395 7,861	4,109 5,529	1,286 2,272
	TOTAL	153,845	2,333	156,178	4,891	2,232	2,659	1.70	13,256	9,638	3,558
3	RAJPUTANA— Irrigation— Tanks in Ajmere Sub-Collectorate Tanks in Bawar " in Todgarh "	147,006 60,608 21,817	4,285 3,430 407	151,291 64,038 21,224	6,394 6,131 2,678	3,356 686 629	3,028 4,445 2,149	2.00 6.93 10.12	117,857 19,479 42,695	61,313 51,219 29,153	56,374 38,260 14,537
	TOTAL	228,429	8,152	236,581	14,193	4,671	9,622	4.06	249,941	140,690	109,171
1	LOWER BURMA— Irrigation— Irrawaddy embankments	305,893	8,317	314,210	95,697	18,032	77,665	24.72	1,102,935	259,205	813,730
3	BENGAL— Irrigation— Barun Project Navigation— Calcutta and Eastern Canals Orissa Coast Canal	66,957 629,504 429,558	2,718 6,240 10,431	69,675 635,744 439,989	628 42,054 9,657	620 29,713 9,814	8 13,311 —157	—0.1 2.49 —	24,359 2,289,891 51,769	36,035 918,890 65,478	—11,676 1,350,801 —13,709
	TOTAL	1,025,019	19,369	1,044,388	62,339	39,147	13,192	1.26	2,345,819	1,020,403	1,325,416
4	NORTH-WESTERN PROVINCES AND OUDH— Irrigation— Dun Canals Kohlikhand Canals Hijir Canals Bundelkhand Irrigation works	65,209 186,132 11,507 7,428	1,572 16,055 2,118 804	66,781 172,187 13,625 8,240	9,404 13,578 2,111 972	4,263 9,654 930 806	5,141 3,924 1,181 167	7.70 2.28 8.67 2.03	228,223 310,173 45,781 17,216	127,887 260,400 17,827 20,993	100,336 49,773 27,954 —3,777
	TOTAL	240,284	20,549	260,833	26,065	15,652	10,413	3.99	601,394	427,107	174,286
5	PUNJAB— Irrigation— Upper Sutlej Inundation Canals Lower Sutlej Inundation Canals Indus Inundation Canals Shahpur Inundation Canals Madhopur Works	59,364 10,756 68,790 18,806 42,415	6,049 254 1,973 473 ...	65,413 11,010 70,763 16,279 42,415	30,911 60,899 26,637 6,153 ...	9,804 22,337 21,102 4,380 ...	21,107 22,337 5,435 1,773 ...	32.27 202.79 7.68 10.89 ...	413,256 1,584,319 687,820 68,152 3,658	366,438 887,001 692,625 33,531 44,915	46,818 697,318 5,196 34,621 —41,287
	TOTAL	197,131	8,749	205,880	124,500	73,858	50,642	24.60	2,747,205	2,014,540	732,665

* This is not an irrigation project. It has no connection with the other works named here, and the question of its inclusion from this account is under discussion.

Number of works.	Minor Works.	CAPITAL OUTLAY TO END OF 1893-94.			REVENUE ACCOUNT FOR 1893-94.				REVENUE ACCOUNT TO END OF 1893-94.		
		Direct.	Indirect.	Total.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of net revenue on Capital outlay.	Gross Revenue.	Working Expenses.	Net Revenue.
	MADRAS—	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
	Irrigation—										
	Chennurambakam tank	62,443	11,216	73,659	4,063	—168	4,231	5.74	65,123	12,559	52,564
	Madras Water-supply and Irrigation Extension project	151,553	23,822	175,375	2,184	359	1,795	1.02	36,278	49,338	—12,060
	Palar Ancient System	191,421	9,837	201,258	15,157	5,282	9,875	4.90	278,323	162,511	115,812
	Lower Caleroon	55,000	1,440	56,440	31,113	4,194	26,919	47.69	962,121	147,652	814,469
	Pelandorai Ancient System	40,998	4,148	45,146	2,697	2,039	558	1.23	17,561	44,106	—26,635
	Other (14) works	155,763	4,095	159,858	41,222	3,637	37,585	23.51	841,216	396,540	444,676
	Navigation—	657,208	54,558	711,766	96,336	15,373	80,963	11.37	2,200,624	611,998	1,588,626
	Buckingham Canal	784,359	46,887	831,246	10,829	12,449	—1,620	...	2,55,528	277,533	—12,005
	Other (3) works	17,334	1,318	18,652	117	398	—279	...	762	4,251	—3,519
	TOTAL	1,459,901	102,763	1,562,664	107,292	24,218	79,064	5.06	2,466,914	1,093,810	1,373,104
	BOMBAY—										
	Irrigation—										
	Sukkur Canal	132,574	5,997	138,571	16,923	4,091	12,732	9.17	169,763	106,411	63,352
	Ghar	41,554	2,544	44,098	63,452	15,615	47,807	108.41	1,462,208	419,817	1,042,359
	Marak Great Canal	19,360	795	20,155	6,302	1,472	4,830	23.97	111,693	44,513	67,177
	Sarfarazwah	11,856	612	12,468	2,849	1,166	1,433	11.69	36,617	29,034	6,633
	Fuldi	123,194	4,536	127,730	34,097	10,540	17,557	13.75	806,218	341,693	264,525
	Other works	8,923	673	9,596	251	718	—467	...	33,962	26,962	7,000
	TOTAL BOMBAY	337,761	18,157	355,918	123,574	39,832	83,942	23.79	2,620,651	1,169,415	1,451,266
	Khari Cut	16,987	1,198	18,185	768	470	318	1.75	6,429	4,771	1,658
	Jamda Canals	98,953	4,995	103,938	1,036	692	344	1.14	12,253	27,796	—15,543
	Paraul tank	21,154	703	21,857	135	97	38	1.17	543	305	238
	Pravara River Works—										
	Ojhar Canal	30,959	2,061	33,019	318	691	—363	...	7,840	9,404	—1,614
	Dhatodi tank	35,268	2,702	37,970	658	415	243	1.64	8,039	6,154	1,885
	Matoba	18,815	1,258	20,073	1,035	257	778	3.83	9,274	3,365	5,909
	Shiruphal tank	20,929	1,227	22,156	350	383	—33	...	3,124	3,651	—527
	Rhadelvadi	21,311	1,412	22,723	416	212	204	1.90	2,604	2,606	198
	Ashti	75,218	7,891	83,109	430	544	—114	...	3,979	8,237	—4,253
	Upper Man River Works	40,742	2,214	42,956	674	512	162	1.38	6,253	6,420	—1,135
	Yerla River Irrigation Works	63,576	4,286	67,861	660	695	65	1.10	8,919	11,462	—2,543
	Maini tank	36,767	2,224	38,991	707	763	—76	...	8,640	8,521	119
	Malag	16,125	635	16,760	212	92	120	1.71	4,316	6,363	—1,047
	Gohak Canal, 1st Section, and Storage Works	75,006	1,376	76,382	3,064	605	2,459	3.22	8,557	2,350	6,207
	Other Works	75,124	7,839	82,963	1,782	899	883	1.06	22,431	19,059	3,372
	TOTAL DECCAN AND GUJARAT	646,932	42,011	688,943	12,285	7,439	4,846	7.0	112,432	118,774	—6,342
	TOTAL BOMBAY	984,693	57,168	1,041,861	135,839	47,071	88,768	8.33	2,733,173	1,288,159	1,444,954
	GRAND TOTAL	2,834,440	162,644	2,997,084	408,149	177,449	230,700	10.70	9,672,840	5,017,460	4,655,380
	IRRIGATION	1,759,765	64,876	1,824,631	62,857	51,372	11,265	1.62	2,557,550	1,266,182	1,291,368
	NAVIGATION	469,195	227,420	696,615	560,808	229,781	332,025	6.89	12,260,556	6,253,612	5,976,914
	TOTAL	4,694,195	227,420	4,921,615	560,808	229,781	332,025	6.89	12,260,556	6,253,612	5,976,914

(a) Exclusive of the Capital outlay on the Vedarnam Canal, which has not yet been ascertained.
 (b) Exclusive of Rs. 77,800, share due to old irrigation.
 (c) Do. Rs. 30,125 do.
 (d) Exclusive of Rs. 61,307, expenditure incurred from the rest under 36—Construction of Protective Irrigation Works which is shown under Minor Works.

37. The net revenue derived in 1893-94 from the works constructed for irrigation purposes (excluding navigation) taken collectively amounted to 10.70 per cent. on the Capital outlay to end of the year against 9.82 in the previous year. Excluding the special credit of Rx. 78,047 from the figures of 1892-93 under Madras alluded to in paragraph 33 of the previous year's note, the percentage of net revenue in 1892-93 was 7.16. The improvement in the financial result attained in 1893-94 is, therefore, very satisfactory.

38. The revenue from the navigation canals exceeded the working expenses by Rx. 11,285 against the corresponding figure of Rx. 19,063 in the previous year. The low return is due to a falling off in revenue from the Calcutta and Eastern Canals in Bengal. This decrease is ascribed to a number of reasons, but principally to the very large increase in the number of steamers and flats plying via the Nadia rivers and the Sunderbunds. Another reason for the decline in traffic is the deterioration of certain parts of the canal route, which renders it necessary to close the route yearly for a greater length of time. Further, independently of the decrease in traffic, flats are being largely used instead of native boats and thus a considerable loss has resulted in tolls. While there was a fall in gross revenue from these (Calcutta and Eastern) canals, there was an increase of Rx. 3,495 in working expenses over the previous year.

39. The loss in working the Buckingham Canal during 1893-94 was Rx. 1,620 against Rx. 1,659 in 1892-93 and Rx. 7,460 in 1891-92. The total Capital outlay on this canal to the end of 1893-94 has amounted to Rx. 831,246 and the net loss to Rx. 12,005 against Rx. 10,385 at the end of 1892-93, excluding of course interest which does not appear in the accounts, as the canal was constructed from revenue and not from borrowed money. Part of this canal was opened in 1877-78.

40. The revenue derived from Minor Works for which Capital and Revenue accounts are kept during 1893-94 is detailed in the following statement, and compared with the revenue of the previous four years:—

	Totals of previous years			Totals of various items											Total
	1892-93	1891-92	1890-91	1899-00	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
Rajputana	12,576	1,084	1,084	12,576	12,576	12,576	12,576	12,576	12,576	12,576	12,576	12,576	12,576	12,576	12,576
Baluchistan	...	4,548	4,548	787	787	787	787	787	787	787	787	787	787	787	787
Lower Burma	95,547	...	...	65,801	65,801	65,801	65,801	65,801	65,801	65,801	65,801	65,801	65,801	65,801	65,801
Bengal	...	(23)	...	66,399	66,399	66,399	66,399	66,399	66,399	66,399	66,399	66,399	66,399	66,399	66,399
North-Western Provinces and Oudh	8,029	12,913	12,913	24,496	24,496	24,496	24,496	24,496	24,496	24,496	24,496	24,496	24,496	24,496	24,496
Punjab	75,978	31,218	31,218	102,207	102,207	102,207	102,207	102,207	102,207	102,207	102,207	102,207	102,207	102,207	102,207
Madras	94,405	...	...	26,543	26,543	26,543	26,543	26,543	26,543	26,543	26,543	26,543	26,543	26,543	26,543
Bombay	118,553	12,625	12,625	135,210	135,210	135,210	135,210	135,210	135,210	135,210	135,210	135,210	135,210	135,210	135,210
Total for 1893-94	604,077	63,246	1,220	603,722	603,722	603,722	603,722	603,722	603,722	603,722	603,722	603,722	603,722	603,722	603,722
1892-93	423,815	37,113	1,387	601,722	601,722	601,722	601,722	601,722	601,722	601,722	601,722	601,722	601,722	601,722	601,722
1891-92	300,653	34,738	1,271	432,037	432,037	432,037	432,037	432,037	432,037	432,037	432,037	432,037	432,037	432,037	432,037
1890-01	343,786	37,333	1,317	403,123	403,123	403,123	403,123	403,123	403,123	403,123	403,123	403,123	403,123	403,123	403,123
1889-00	288,953	32,223	1,180	424,199	424,199	424,199	424,199	424,199	424,199	424,199	424,199	424,199	424,199	424,199	424,199

41. The Punjab is the province which shows the best result. Bengal appears to show the worst result.

Bombay and the North-Western Provinces are steady, and Madras has done well except for the Buckingham Canal.

Lower Burma, Rajputana, and Baluchistan all show marked improvement.

42. It will be observed that there has been a great increase in water-rates. This was chiefly in the Punjab and Bombay. In the Punjab a large portion of the increase is due to the water-rates levied on the Fazlwah and Dori Canals, and the value of the Government share of produce on other canals hitherto credited under the sub-head "Other canal produce," were written back in the year under review to the proper head "Water-rates." This explains also the minus entry under the former head (Other canal produce).

There has been an increase under water-power which gives a satisfactory indication of a direction in which revenue might perhaps be developed.

The navigation receipts as have been noticed above are not increasing.

43. The following are the explanations of the principal increases by provinces:—

Rajputana.—The increase is due to certain arrears having been realized in 1893-94.

Lower Burma.—The improvement is due to larger area cultivated in 1893-94.

Punjab.—The increase is due chiefly to an improvement in revenue earned by the Upper Sutlej Canals owing to the good harvests of Rabi of 1892-93 and Kharif of 1893 and to the enhancement of rates in the Lahore District.

Madras.—Owing to the inclusion in the figures of 1892-93 under Madras of the Irrigation revenue of 1891-92 (Rx. 82,154), the comparison between the figures of the two years is vitiated. Excluding this special credit the figures compare as follows:—

	Rx.
1892-93	63,795
1893-94	107,292
Increase	43,497

The increase is due chiefly to the larger area irrigated during the year.

Bombay.—The increased revenue was realized chiefly from the canals in Sind.

44. The working expenses of the year 1893-94 and of the previous four years are shown in the following statement:—

	Totals of various parts table				Total	Indirect charges.	Total direct charges.	Burdens.	Profit and loss.	Tools and plant.	Establishment.	Maintenance and repairs.	Extensions and improvements.
	1892-93.	1891-92.	1890-91.	1889-90.									
Rajputana	Rx. 9,835	Rx. 10,871	Rx. 5,961	Rx. 5,811	Rx. 4,671	Rx. 138	Rx. 4,433	Rx. . .	Rx. . .	Rx. -203	Rx. 1,607	Rx. 2,749	Rx. 190
Baluchistan	1,736	3,180	2,377	239	2,232	60	2,172	..	..	11	429	1,732	..
Lower Burma	29,026	40,178	20,303	18,416	18,032	361	17,671	28	..	16	5,951	5,546	6,130
Bengal	34,586	43,601	43,964	39,817	39,147	1,743	37,404	..	..	2,218	12,452	23,729	6
North-Western Provinces and Oudh	17,654	17,419	17,843	16,549	15,652	1,331	14,421	..	..	25	8,873	4,821	702
Punjab	68,737	68,785	66,123	70,856	73,859	3,040	70,819	-16	..	396	21,270	44,294	4,678
Madras	47,906	58,467	44,932	31,080	26,218	763	27,456	..	..	419	9,891	21,448	-4,302
Bombay	46,732	63,046	61,865	69,730	47,071	1,645	45,426	..	..	324	22,919	18,774	3,409
Total for 1893-94	236,751	312,141	283,158	241,616	229,781	8,986	219,795	13	..	3,196	83,452	122,083	11,012
1892-93					254,751	10,168	246,583	-15	..	3,185	89,034	121,183	32,296
1891-92					312,141	10,712	301,429	279	..	2,663	91,249	153,207	54,031
1890-91					283,158	10,045	273,113	-85	10	4,300	87,684	151,940	29,374
1889-90					241,616	8,504	233,022	-17	16	3,708	77,460	134,674	17,084

The reduction in the outlay upon extensions and improvements is, no doubt, due to the new rule introduced as paragraph 36, Chapter V, P. W. D. Code, Vol. II.

45. The total decrease of Rx. 27,970, as compared with 1892-93, occurred chiefly in the undernoted provinces:—

Rajputana.—The decrease is due to the closing of famine relief works and to the withdrawal of the extra establishment entertained on this account.

Lower Burma.—The decrease is due to unusually large outlay having been incurred in the earlier year for raising, strengthening, and retiring several miles of the Irrawaddy embankments threatened by river encroachments.

Madras.—The decrease is due to expenditure in 1893-94 on projects in the North and South Arcot districts being less than in 1892-93 and partly to a write-back during the year of expenditure on the Cheyar Anicut from "Revenue" to "Capital."

46. The following table gives the percentages of expenditure on revenue in each province during the past five years:—

Provinces.	1898-99.			1899-00.			1900-01.			1901-02.			1902-03.		
	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.
Rajputana	12,736	6,411	45.6	12,474	5,961	47.8	8,497	10,671	125.7	9,199	9,895	107.46	14,103	4,671	33.21
Baluchistan	787	239	30.4	1,621	2,277	140.5	1,641	3,180	193.8	3,933	1,736	43.92	4,691	2,232	45.63
Lower Burma	65,801	18,416	28.0	70,176	20,393	29.1	77,706	46,178	69.4	90,212	29,650	32.84	95,697	16,032	16.84
Bengal	68,899	38,817	66.5	62,763	43,964	70.0	60,311	43,601	72.1	64,658	34,680	63.28	62,339	39,147	71.79
North-Western Provinces and Oudh	24,486	16,549	67.5	23,671	17,613	69.7	26,203	17,413	66.5	27,291	17,554	64.32	26,065	15,652	60.05
Punjab	102,207	70,656	69.3	102,389	86,123	84.1	105,794	68,785	65.0	105,300	68,727	65.27	121,500	73,668	60.32
Madras	20,513	31,009	151.1	23,862	41,032	171.9	23,700	68,467	297.0	145,939	47,905	32.83	107,292	28,218	26.30
Bombay	135,210	69,780	51.2	114,195	42.9	116,135	63,946	43.8	127,170	46,732	36.76	135,839	47,071	34.65	
Total	420,109	241,516	57.4	283,169	67.4	453,037	312,141	69.1	563,722	256,761	45.60	660,806	229,781	40.80	

The percentage of expenditure on revenue for the whole of India during the year shows a slight decrease as compared with 1892-93. The figures for the respective provinces as a rule show uneven results.

In Rajputana and Lower Burma the results are most irregular, while in Baluchistan the percentages for the last two years have not largely fluctuated.

In Bengal the percentages vary.

In the North-Western Provinces there is a tendency towards reduction.

In Madras a comparison is hardly possible as explained in paragraphs 37 and 43, *ante*.

In Bombay the decrease has been steady and marked.

47. The rates per irrigated acre in the different provinces during the year 1893-94 were as follows :

	Irrigation revenue (Assessed).	Irrigated acreage.	Rate of revenue per acre.	Compared with rates in	
				1893-93.	1891-92.
	Rs.	Acre.	Rs.	Rs.	Rs.
Baluchistan	4,891	6,251	.78	.38	.21
Bengal	1,100	1,568	.70	.31	.19
Bombay	10,301	25,253	.41	.23	.19
Deccan and Gujarat	181,290	807,479	.22		
Rajputana	12,510	34,244	.37	.35	.72
Madras	171,473	471,676	.36	.34	.16
North-Western Provinces and Oudh	19,359	76,899	.25	.11	.18
Punjab	97,977	693,694	.14	.07	.09
Total	498,931	2,116,964	.24	.21	.15
Lower Burma	(a) 95,697				
Total	594,628				

(a) Represents actual collections.

Note.—No average is quoted against Lower Burma as the works concerned are only river embankments.

Works for which Capital Accounts are not kept.

48. The receipts and expenditure on account of these works during 1893-94, as recorded in the Finance and Revenue accounts, are shown in the following statement, in comparison with the transactions of the previous four years :—

Works for which Capital Accounts are not kept.

	IMPERIAL.		PROVINCIAL.		LOCAL.		TOTAL.	
	Receipts.	Expenditure.	Receipts.	Expenditure.	Receipts.	Expenditure.	Receipts.	Expenditure.
	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
Rajputana	...	54	...	...	...	...	...	54
Baluchistan	8	...	...	...	...	...	8	...
Upper Burma	23	40,108	...	...	3,183	3,193	3,206	52,301
Lower Burma	...	...	6,695	46,504	...	881	6,695	47,385
Bengal	...	...	34,674	103,250	1,419	1,026	36,093	104,282
North-Western Provinces and Oudh	...	...	...	7,040	...	...	...	7,040
Punjab	27	8,371	6,301	12,423	1,371	614	7,699	21,408
Madras	...	...	5,815	240,313	...	730	5,815	250,093
Bombay	7,949	150,835	...	...	...	...	7,949	150,835
Total for 1893-94	8,007	208,368	53,485	418,536	5,973	6,494	67,465	633,398
1892-93	6,354	240,450	47,712	443,759	8,686	10,509	62,752	604,718
1891-92	6,711	215,147	47,658	487,639	8,421	8,918	62,790	711,704
1890-91	5,840	156,076	46,102	423,563	6,192	7,834	59,134	597,478
1889-90	5,697	149,714	42,979	401,243	3,917	4,617	52,793	555,574

49. The foregoing table shows that while the total revenue realized from this class of Minor Works has slightly increased, there has been an appreciable decrease in expenditure, the decrease being contributed by all funds.

Under Imperial the outlay in 1892-93 was large owing to the construction of famine relief works in Upper Burma.

Under Provincial the decrease in 1893-94 is chiefly due to a change introduced in Madras under which expenditure on Minor Irrigation Works (Revenue Department), which has hitherto been adjusted finally in the accounts of the Public Works Department, is dealt with by the Civil Department with effect from 1st April 1893. The decrease in the Punjab is due to the completion of works on the Nowshera and Michni Canals.

Under Local the decrease occurred chiefly in Upper Burma and Madras. In Upper Burma it is due to smaller grants being made available for expenditure in 1893-94. In Madras it is due to outlay on the Thoortha and Ramasauger Channels, hitherto met from "Cess funds," having been carried out from Provincial grants.

50. Under this head appear at present the irrigation works in Upper Burma. Orders have been issued by the Government of India for the preparation of Capital and Revenue Accounts of all important works. Only one project estimate for the Kyauksi Tank has been sanctioned by the Government of India, in Public Works Department letter No. 411., dated 11th February 1895.

CALCUTTA;
The 25th March 1895. }

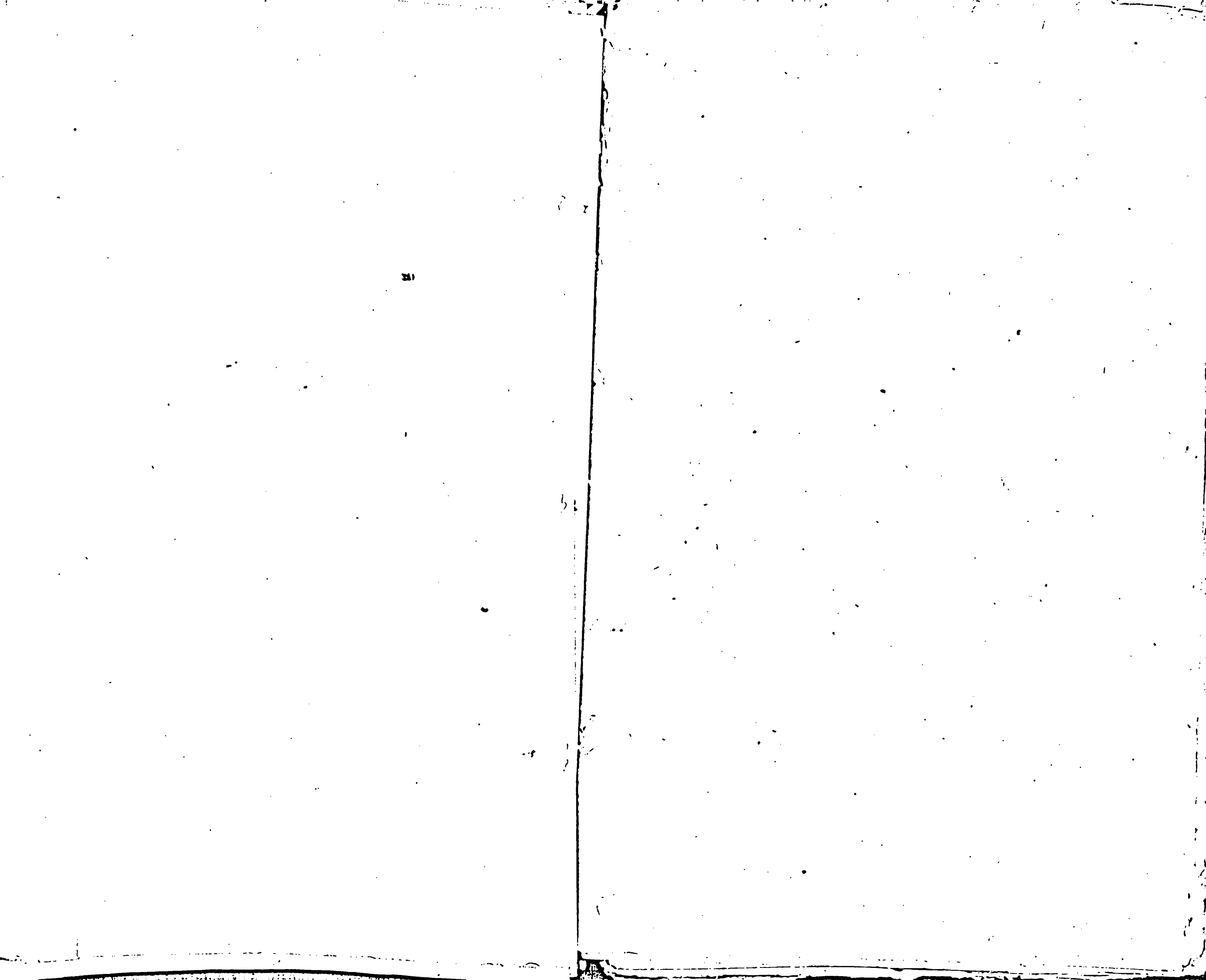
R. G. MACDONALD,
Accountant General, P. W. Dept.

Documents accompanying.

Abstract Account of Revenue and Expenditure
on Irrigation Works during 1893-94.

No. 11 I., dated 25th March 1895.

Submitted to the Government of India, Public Works Department.



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M. A.
Proo. of the Maobras
Read the following

No. 191 I.

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
CIVIL WORKS.
Irrigation.

Simla, the 23rd September 1896.

Review of the Revenue and Expenditure recorded under the head
"Irrigation Works" in the Accounts of the Government of India
for 1894-95.

READ—

Note by A. R. BECHER, Esq., Offg. Accountant General, Public Works Department,
upon the Accounts of Revenue and Expenditure of Irrigation Works in India
for 1894-95.

RESOLUTION.—The Irrigation Works in India are divided into Major Works
and Minor Works.

Major Works are sub-divided into—

- (a) Productive Works, the capital of which has been provided from borrowed money.
- (b) Protective Works, the capital of which has been provided from the General Revenue of India.

Minor Works, for the purpose of the Accountant General's note, are sub-divided into—

- (a) Works for which Capital and Revenue Accounts are kept.
- (b) Works for which Capital Accounts are not kept.

2. Capital and Revenue Accounts are kept for all Major Irrigation Works, of which there were 46 during 1894-95 as compared with 44 during the previous year. The two new Major Works are the Jamrao Canal in Sind and the Fatehpur Branch of the Lower Ganges Canal in the North-Western Provinces.

Of these 46 Works, 38 were sanctioned as Productive Public Works and 8 as Protective Works.

Under the head of Minor Works, there were 76 projects for which Capital and Revenue Accounts are kept as compared with 75 in the previous year.

The extra work is the Munniyeru Project on which there was no outlay during 1893-94.

For the remaining Minor Works one account only is kept in which are entered the receipts and charges for each work or group of works.

3. The following statement shows the return derived from the Irrigation system for which Capital and Revenue Accounts are kept. Purely navigation systems are excluded:—

Class of work.	Number of works	Direct and indirect Capital outlay to end of 1894-95.	Gross Revenue.	Working expenses, including indirect charges.	Net revenue	Irrigated area.	Percentage of net revenue on Capital outlay.
		Rx.	Rx.	Rx.	Rx.	Acres.	
IRRIGATION.							
I.—Major Works—							
(a) Productive ...	37	29,485,741	2,130,974	855,199	1,275,775	6,099,952	4.32
Add—On account of old Irrigation—							
In Madras ...	...	...	420,381	46,714	373,667	...	...
In Sind ...	...	...	3,705	910	2,795	...	...
Total Productive ...	37	29,485,741	2,555,060	902,823	1,652,237	6,099,952	5.60
(b) Protective ...	8	2,003,427	547,671	28,616	19,055	159,918	0.95
II.—Minor Works—							
Works for which Capital and Revenue Accounts are kept	170	3,003,492	613,861	235,034	378,827	2,194,441	12.61
GRAND TOTAL ...	115	14,492,660	3,216,592	1,166,473	2,050,119	8,454,311	5.94

* Excludes the Haldi Tidal Canal (Bengal).

† Includes outlay on Gukak Canal, 1st Section, which is now classed as a Minor Work and combined with Gukak Storage Works.

‡ Excluding two navigation canals in Bengal (the "Calcutta and Eastern" and the "Orissa Coast" Canals) and four navigation canals in Madras (the Chilka Lake, Buckingham, Veda ann-yam, Ganjam-Gopalpur Canals).

§ Includes share due to old irrigation in Madras and in Sind.

4. The net revenue derived from Major Works as a whole was Rx. 39,204 more than that of the previous year.

The increase occurred principally in the Punjab and is due to extension of irrigation on the Western Jumna, Bari Doab and Chenab Canals.

The net revenue derived from Minor Works was Rx. 58,081 less than that of the previous year.

The decrease was chiefly due to a falling off of the net revenue from the Upper Sutlej Inundation Canals in the Punjab and the Cheyaru Anicut system in Madras.

On the Upper Sutlej Canals there was a decrease in net revenue of Rx. 9,490, due principally to the small rabi of the previous year and to heavy remission for the kharif of 1894 on account of damage to crops done by grass-hoppers. There was also an increase of Rx. 5,159 in working expenses due to certain liabilities incurred in the previous year having had to be met in 1894-95 and to Revenue having to bear an increased share of establishment charges.

On the Cheyaru Anicut system the decrease in net revenue was due to the net revenue during the previous year having been unusually large owing to the write back of expenditure on certain works from Revenue to Capital.

The Periyar Project, the Jainrao Canal and the Fatehpur Branch of the Lower Ganges Canal have not yet begun to earn revenue. The Chenab Canal, the

Rushikulya project and others which have been recently opened for irrigation are not yet earning the revenue which may ultimately be expected from them. The capital expenditure on all these works is included in the figures on which the net revenue percentage is calculated so that when these works are in full operation the percentage of net revenue on capital expenditure should be better than that indicated in paragraph 3 above. The total net profit on all Major Works up to the end of 1894-95 amounted to nearly 3.2 millions of Rx.

5. The following statement shows the area irrigated by and the gross revenue derived from the Major and Minor Irrigation Works during the last 5 years:—

YEAR.	MAJOR WORKS.		MINOR WORKS.		TOTAL.	
	Area irrigated.	Gross revenue realized.	Area irrigated.	Gross revenue realized.	Area irrigated.	Gross revenue realized.
	Acres.	Rx.	Acres.	Rx.	Acres.	Rx.
1890-91 ...	7,172,468	2,312,787	2,101,586	453,147	9,274,054	2,795,914
1891-92 ...	7,560,484	2,395,372	2,123,659	431,279	9,684,143	2,826,651
1892-93 ...	7,043,286	2,552,415	2,272,091	160,754	9,315,377	3,159,964
1893-94 ...	6,949,381	2,417,757	2,116,964	635,372	9,066,345	3,054,129
1894-95 ...	6,259,870	2,602,731	2,194,411	613,861	8,454,311	3,216,592

* Exclusive of figures for certain works in Madras, which were not given in the Revenue Report for 1891-92.

† The increase was due to the inclusion in the accounts for 1892-93 of irrigation revenue of certain works in Madras pertaining to the year 1891-92 vide note* above.

‡ Exclusive of the area irrigated in Native States in the Punjab.

The area irrigated shows a falling off as compared with the previous year, but there was an increase in the gross revenue realized.

The area irrigated in Native States in the Punjab from the portions of the canals constructed from funds contributed by the States amounted to 149,387 acres.

6. The estimated value of the crops irrigated from the Major and Minor Works during 1894-95 amounted to Rx. 23,224,312, being an average of Rx. 2.75 per acre.

7. The average rate of revenue assessed per acre irrigated during 1894-95 was Rx. 0.36 and Rx. 0.22 for Major and Minor Works respectively. The corresponding figures for 1893-94 was Rx. 0.35 and Rx. 0.24 respectively.

For Major Works the rate varies from Rx. 0.56 in Bombay (excluding Sind) to Rx. 0.18 in Bengal and Sind, and for Minor Works from Rx. 0.43 in Baluchistan to Rx. 0.10 in the Punjab.

8. The areas of the principal crops irrigated during 1894-95 in the various Provinces by the works for which Capital and Revenue Accounts are kept are given in the following statement:—

Province.	Rice.	Wheat.	Jowar and chauri (sorghum vulgare).	Rajra (Pennisetum spicatum).	Sugarcane.	Cotton.	Barley.	Indigo.	Maize.	Pagi (Pennisetum polyanthum).
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Bombay (excluding Sind) ...	6,137	8,833	19,955	6,722	14,624	265	452	...	1,924	...
Sind ...	417,624	116,129	220,428	210,037	...	59,767	2,329	...	...	...
Punjab ...	140,285	942,572	174,753	23,724	71,425	304,573	25,763	77,431	101,462	...
Bengal ...	452,565	3,930	...	...	46,016	147	10,020	1,971	...	...
Madras ...	2,647,119	...	...	...	...	...	...	...	...	59,079
North-Western Provinces ...	126,816	81,673	12,221	251	218,006	50,378	6,385	308,532	8,895	...

9. The following are the percentages on gross revenue of the cost of revenue management (including collection charges) and of the up-keep of the works for Major Works in the different Provinces:—

Province.	Revenue management, per cent.	Up-keep, per cent.	Total, per cent.
Madras ...	8.6	10.4	19.0
North-Western Provinces ...	14.2	24.3	38.5
Punjab ...	15.4	29.0	44.4
Bombay ...	18.7	32.1	50.8
Sind ...	10.0	31.1	41.1
Bengal ...	31.1	65.1	96.2

10. The following statement shows the total cost of working per acre irrigated by the Major Works in the different Provinces:—

	1894-95.	
Sind ...	.07	} Including old maintenance charges.
Madras ...	.08	
Punjab ...	.15	} Excluding maintenance of Tidal canal.
Bengal ...	.28	
North-Western Provinces ...	.31	
Bombay ...	.38	

The figures are practically the same as those of the previous year except in the case of the North-Western Provinces where the cost of working per acre irrigated has risen from Rx. 0.17 in 1893-94 to Rx. 0.31 in 1894-95. The total working expenses in this Province were slightly below the total of the previous year; but as the irrigated area was but little more than half that of the previous year, the working expenses per acre irrigated were nearly doubled.

11. The following statement gives for the principal canals in each Province details of the length of channels, of canal discharge, of area irrigated, and of the duty of water:—

Province.	Canals.	Length of completed main and branch canal. (Miles).	Length of completed distributaries. (Miles).	Maximum discharge at head of canal (cubic feet per second).	Average discharge at head (cubic feet per second).		Area irrigated (acres).					Area irrigated per cubic foot of average discharge at head (acres).	
					Kharif.	Rabi.	Kharif.	Rabi.	Total.	Flow.	Lift.	Kharif.	Rabi.
Bombay.	1. Nira ...	90	133	456	365	386	12,340	16,021	28,361	28,361	44	47 (173)	38 (92)
	2. Mhaswad Tank ...	18	66	—	35	60	1,207	3,019	4,226	4,200	17	34 (173)	50 (93)
	3. Mutha ...	88	67	—	150	162	7,562	2,300	10,062	10,006	56	50 (173)	16 (92)
	4. Krishna ...	64	—	88	58	80	2,630	1,082	4,612	4,615	656	47 (173)	22 (92)
	5. Swat River ...	31	143	673	423	475	20,470	62,016	82,486	91,822	—	60 (174)	132 (133)
	6. Western Jumna, including Surma Branch.	604	1,630	4,000	3,001	2,727	215,104	127,313	342,417	345,362	7,125	72 (173)	50 (141)
	7. Bari Doab ...	353	1,063	4,081	3,123	3,019	208,610	126,057	334,667	499,551	36,146	63 (170)	100 (145)
	8. Sirhind ...	319	2,716	6,610	2,192	2,324	41,241	237,473	278,714	272,002	712	19 (114)	72 (177)
	9. Chenab ...	302	683	2,400	1,050	2,115	98,723	170,634	269,357	266,077	2,380	50 (177)	81 (152)
	10. Sidhwal ...	63	112	1,028	1,131	812	45,520	95,463	140,983	141,795	2,592	43 (167)	118 (162)
	11. Upper Sutlej Irrigation.	210	137	2,231	2,131	—	73,416	122,889	196,305	191,400	4,745	61	(164)
	12. Indus Irrigation ...	728	—	5,275	3,125	—	122,521	60,734	183,255	176,577	16,678	62	(147)
	13. Muzaffargarh Irrigation.	820	413	—	Not recorded	—	120,757	173,143	293,900	290,180	8,550	Not recorded.	—
Bihar.	14. Orissa ...	280	1,091	6,258	1,010	656	118,452	4,102	122,554	121,414	1,117	62	6
	15. Soane ...	367	1,220	5,053	2,715	2,323	252,261	52,773	317,134	313,622	3,512	93	17
	16. Godavari ...	503	1,801	12,170	7,000	4,750	654,126	100,412	754,538	740,013	14,400	93	21
Madras.	17. Krishna ...	320	1,614	9,154	4,503	—	514,812	109	514,921	507,037	5,253	114	—
	18. Pennar ...	22	120	1,004	371	162	64,102	2,351	67,553	67,130	720	174	21
	19. Sangam ...	9	284	5,261	670	100	70,517	4,081	74,598	73,615	683	105	41
N.W. Provinces.	20. Cauvery ...	244	1,120	25,460	11,222	370	855,258	101,087	956,345	907,206	49,620	76	267
	21. Upper Ganges ...	440	2,526	7,752	4,220	3,282	301,492	50,138	351,630	303,677	47,960	70 (143)	15 (131)
	22. Lower Ganges ...	557	2,172	5,100	4,007	3,112	222,149	8,094	230,243	162,578	68,567	54 (143)	3 (138)
	23. Agri ...	109	573	1,516	1,431	1,077	77,851	61,515	139,366	125,106	14,058	54 (72)	57 (122)
Sind.	24. Eastern Jumna ...	120	646	1,515	1,132	1,052	103,046	22,214	125,260	110,912	14,318	61 (168)	21 (76)
	25. Desert ...	192	—	2,767	2,354	—	87,718	13,776	101,494	95,771	4,723	37	—
	26. Begari ...	158	—	6,185	5,101	—	156,110	55,311	211,421	181,374	30,056	31	—
	27. Ghar ...	208	—	7,020	7,244	—	191,819	60,818	252,637	257,352	4,125	26	—
	28. Falell ...	1,010	—	9,800	6,342	—	250,375	51,201	301,576	228,718	102,852	37	—
	Total ...	8,667	20,727	—	—	—	4,950,254	1,027,115	6,077,369	6,525,557	441,812	—	—

N.B.—The figures in brackets in columns 13 and 14 denote the number of days on which the irrigating duty is calculated.

12. The following statement shows the return derived from Navigation Works proper, for which Capital and Revenue Accounts are kept. Works in which navigation is combined with irrigation are included in the statement in paragraph 3:—

Class of works.	Number of works.	Direct and indirect Capital outlay to end of 1894-95-1	Gross revenue.	Working expenses, including indirect charges.	Net revenue.	Percentage of net revenue on capital outlay.
NAVIGATION.		Rx.	Rx.	Rx.	Rx.	
I—Major works—						
(a) Productive ...	1	242,818	5,853	4,743	1,110	46
II—Minor works...	6	1,846,241	61,951	48,235	13,716	74
Total ...	7	2,089,059	67,804	52,978	14,826	71

The percentage of net revenue on capital outlay was 0.71 as compared with 0.56 and 1.04 during 1893-94 and 1892-93 respectively.

13. The following statement gives some details of the navigation operations of the year. Works on which navigation is combined with irrigation are included:—

Provinces.	Length of canal open for navigation.	Ton-mileage.	Estimated value of cargoes.	Estimated value of rafts.	Number of passengers carried.
1	2	3	4	5	6
	Miles.	Millions.	Thousands of Rx.	Thousands of Rx.	
Punjab ...	432	...	...	236	6,695
Bengal ...	673	37,914	9,084	55	546,449
Madras ...	1,252	50,527	4,861	427	467,774
North-Western Provinces ...	535	8,393	262	107	404
Total ...	2,892	96,834	14,207	825	1,021,321

The figures show a falling off compared with those of the previous year except in the estimated value of rafts. There was an increase of 10 miles in the length of canal open for navigation in Madras.

14. The direct outlay on works for which only Revenue Accounts are kept and for which neither Capital nor Revenue Accounts are kept including those maintained by the Civil Department was Rx. 671,546 as compared with Rx. 633,398 during the previous year. The direct receipts were Rx. 78,001 against Rx. 67,465.

A large portion of the revenue derived from this class of works is assessed and collected with the Land Revenue and is accounted for under that head in the Civil Accounts. The direct receipts comprise only the sums realized by the Public Works Department which alone are credited in the Public Works Accounts.

The figures in the following statement which relates to these works are extracted from the Irrigation Revenue Reports of the different Provinces.

Certain receipts, e.g., those realized by Civil Officers from irrigation works under their charge, do not appear in the Reports, so that the figures are approximate only. Figures relating to works classed as "Agricultural" are excluded.

Province.	WORKS FOR WHICH CAPITAL ACCOUNTS ARE NOT KEPT.			
	Gross revenue from all sources, direct and indirect, as recorded in Irrigation Revenue Reports.	Working expenses including collection charges.	Net Revenue.	Area irrigated.
	Rx.	Rx.	Rx.	Acres.
Bombay excluding Sind ...	54,742	27,890	26,852	143,907
Sind ...	251,933	*123,610	128,323	1,138,571
Punjab ...	44,339	25,657	18,481	304,730
Bengal ...	17,278	22,993	—5,715	25,908
Madras ...	844,849	228,351	616,498	3,234,633
Total ...	1,213,140	428,701	784,439	4,847,749

* Exclusive of indirect charges.

The total area irrigated by these works in 1894-95 amounted to 57.3 per cent. of that irrigated by the Major and Minor Works as shown in paragraph 5.

15. The total area irrigated from all works during 1894-95 amounted to 13½ million acres.

If the value per acre of the irrigated crops be taken at the estimated rate of Rx. 2.75 per acre as given in paragraph 6, the total value of the produce from irrigated lands amounted to 36½ millions of Rx.

16. The following statement gives particulars of works which were under construction:—

Project.	Amount of Estimate (direct outlay).	Expenditure to end of 1894-95 (direct outlay).	Ultimate area to be irrigated.	Ultimate estimated revenue.	Estimated percentage of net revenue on direct Capital outlay.	Remarks.
<i>Productive.</i>	Rx.	Rx.	Acres.	Rx.		
Chenab Canal (complete project of 1891).	2,568,417	1,458,327	1,100,000	535,911	16.1	
Sirsa Branch ...	289,269	274,614	126,290	32,000	11.0	Construction estimate closed on 31st March 1895.
Periyar Irrigation ...	847,100	735,603	192,431	72,070	6.6	Revised Estimates sanctioned in Secretary of State's Despatch No. 39 P. W., dated 26th July 1894.
Eastern Nara Irrigation ...	619,079	609,150	283,428	39,350	6.3	Complete Revised Estimate sanctioned in Secretary of State's Despatch No. 12 P. W., dated 21st March 1895.
Jamrao Canal ...	696,652	16,414	260,000	54,057	7.7	
Fatehpur Branch, Lower Ganges Canal.	342,000	5,814	116,000	42,050	8.9	
<i>Protective.</i>						
Rushikulya ...	436,800	368,068	117,250	24,671	4.3	Second Revised Estimate sanctioned in Secretary of State's Despatch No. 34 P. W., dated 19th July 1894.

17. The following statement gives particulars of important irrigation projects, the estimates of which had been sanctioned but upon which work had not been begun up to the end of 1894-95:—

Project.	Amount of estimate (direct outlay).	Ultimate area to be irrigated.	Ultimate estimated revenue.	Estimated percentage of net revenue on direct capital outlay.	Date of sanction.
PRODUCTIVE WORKS.	Rx.	Acres.	Rx.		
Jhelum canal	1,202,407	423,360	154,875	82	8th November 1888.
Kalingaroyen channel	82,500	23,000	6,650	67	25th January 1891.

18. In reviewing the Revenue Reports of the different Provinces the Government of India have noticed the approval expressed by Local Governments of the manner in which the officers of the Irrigation Department have performed their duties, and the Governor General in Council, in reviewing the Irrigation operations throughout India during 1894-95, desires to express his appreciation of the results exhibited in the Accountant General's note and in this Review.

ORDER.—Ordered, that the foregoing, with a copy of the note by the Accountant General, Public Works Department, be forwarded to the Local Governments and Administrations in the Public Works Department, noted on the margin, for information.

Ordered also, that a copy of the Review and note be forwarded to the Revenue and Agricultural and Finance Departments, and that the papers be published in the Supplement to the *Gazette of India*.

Ordered further, that a copy of the Review and note be forwarded to Her Majesty's Secretary of State for India for information.

W. S. S. BISSET, Col., R.E.,
Secretary to the Govt. of India.

Document accompanying.

Note by the Accountant General, Public Works Department, dated 21st May 1896.

Communicated to the
Chief Engineer for Irrigation
(30) W.S.

G. C. Press, Simla.—No. 1041 P. W. D.—25-9-96.—503.

The Chief Engineer
all S. E.
M. S. P. W. D.

Accompaniment to P. W. D. Review No. 191 I. of 1896.

Note by A. R. Becher, Esq., Offg. Accountant General, Public Works Department, upon the accounts of Revenue and Expenditure of Irrigation Works in India for 1894-95.

The figures in the accounts submitted herewith agree with the Finance and Revenue accounts of the Government of India, but in this note certain figures are added from the Administrative accounts of the Public Works Department, Irrigation Branch, the Revenue Reports of Irrigation Works and the Annual Statement of the Financial Results of Irrigation Operations in India.

2. The Irrigation works in India are divided into two main classes, viz., Major Works and Minor Works.

Major Works are sub-divided into—

- (a) Productive Works, the Capital of which has been provided from borrowed money; and
- (b) Protective Works, the Capital of which has been provided out of the general revenues of India.

Minor Works are for the purpose of this note sub-divided into—

- (a) Works for which Capital and Revenue accounts are kept; and
- (b) Works for which Capital accounts are not kept.

3. Capital and Revenue accounts are kept for all Major Irrigation Works. There are 46 projects classed as Major Works, of which one, viz., the Hijili Tidal Canal in Bengal, is a purely navigation canal.

Of these, 38 were sanctioned as works expected to be remunerative, i.e., estimated to pay the cost of up-keep and interest on the Capital outlay. They were or are being constructed from funds provided from sources outside the general revenues. The remaining eight projects were sanctioned as works of protection against famine, and the cost of their construction has been or is being paid for out of annual grants made from general revenues under the head of famine insurance.

- North-Western Provinces and Oudh.
- 1. Betwa Canal.
- 2. Gomti River Canal.
- 3. Roshikulya Project.
- 4. Nira Canal.
- 5. Mhaswad Tank.
- 6. Chankapur Tank.
- 7. Maladevi Tank.
- 8. † Gokak Canal, 1st section.

† Now classed as a minor work and combined with the Gokak Storage Works.

4. The works classed as Minor Irrigation Works are numerous. Capital and Revenue accounts are kept for 76 separate projects of this class; for the others only one account of receipts and charges for each work or group of works is kept. Of the 76 projects for which Capital and Revenue accounts are kept, 6 are purely navigation canals, viz., 2 in Bengal and 4 in Madras.

5. The general results of all works for which Capital and Revenue accounts are kept are as follows:—

	Major Works.	Minor Works.	Total.
Capital outlay.	Rx.	Rx.	Rx.
During 1894-95	695,032	70,531	765,563
To end of 1894-95	31,731,986	4,849,733	36,581,719
Revenue Account, 1894-95.			
Gross Revenue	2,182,413	536,014	2,718,427
Maintenance and Working	889,558	262,070	1,150,628
Net Revenue	1,293,855	273,944	1,567,799
Interest	1,194,111	...	...
Net profit after paying interest on Capital	99,744	...	...
Percentage of net Revenue of the year on the Capital outlay to end of the year	4.08	5.65	4.29
Against in 1893-94	4.04	6.89	4.42
" 1892-93	4.59	6.48	4.54

6. The net revenue derived from Major Works is Rx. 39,204 better than that of the previous year. The increase occurred principally in the Punjab and is due to the extension of irrigation from the Western Jumna, Bari Doab and the Chenab Canals. The interest charges during 1894-95 have, however, also increased by Rx. 28,557 owing to additional Capital outlay, so that the increase in the net profit is Rx. 10,647.

7. The net profit should be considerably increased when the Fatehpur Branch of the Lower Ganges Canal, the Chenab Canal, the Periyar and Rushikulya Projects and the Jamrao Canal are completed, and the irrigation from them and other projects have been fully developed. So far the works in Bengal and Deccan have failed to pay the interest on the Capital invested in them.

8. The net revenue from Minor Works was less than that of the previous year by Rx. 58,081. The largest items contributing towards this decrease are referred to in paragraph 32 below.

9. The receipts and charges of the year 1894-95 on Revenue account, exclusive of the figures relating to Minor Works for which Capital accounts are not kept, are detailed in the following statement by funds and provinces:—

1894-95.

	Imperial.					Provincial.					Local.					Total.				
	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.
MAJOR WORKS.																				
Productive.																				
Irrigation.																				
Bengal.	117,498	...	117,498	296	296	141,160	141,462	4,698	238,639	233,941	146,160	141,462	4,699	238,926	234,227	146,160	141,462	4,699	238,926	234,227
N.-W. P. and Oudh.	569,053	255,000	313,153	27,407	285,550	662,350	264,257	398,093	291,370	13,823	679,848	254,257	425,591	284,923	140,663	679,848	254,257	425,591	284,923	140,663
Punjab.	596,933	145,679	451,254	232,988	218,266	...	...	...	...	...	596,933	145,679	451,254	232,988	218,266	596,933	145,679	451,254	232,988	218,266
Madras.	138,980	57,801	81,179	78,848	2,331	...	...	...	...	...	138,980	57,801	81,179	78,848	2,331	138,980	57,801	81,179	78,848	2,331
Bombay.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stores unappropriated.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	1,422,464	459,490	962,974	576,836	386,138	708,510	396,719	312,791	532,909	220,118	2,130,974	855,199	1,275,775	1,109,765	169,010	2,130,974	855,199	1,275,775	1,109,765	169,010
Navigation.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bengal.	...	...	...	2,082	2,082	5,553	4,743	1,110	7,182	6,072	...	...	...	...	...	5,553	4,743	1,110	9,264	8,154
Total Productive.	1,422,464	459,490	962,974	578,918	388,220	714,063	400,462	313,901	540,091	226,190	2,136,527	859,942	1,276,585	1,119,029	167,856	2,136,527	859,942	1,276,585	1,119,029	167,856
Protective.																				
Irrigation.																				
N.-W. P. and Oudh.	5,895	9,769	15,664	16,037	19,931	...	...	...	...	...	5,895	9,769	15,664	16,037	19,931	5,895	9,769	15,664	16,037	19,931
Punjab.	27,503	9,055	18,447	14,023	4,423	...	...	...	...	...	27,503	9,055	18,447	14,023	4,423	27,503	9,055	18,447	14,023	4,423
Madras.	2,784	1,517	1,267	14,103	12,836	...	...	...	...	...	2,784	1,517	1,267	14,103	12,836	2,784	1,517	1,267	14,103	12,836
Bombay.	9,456	8,205	1,250	30,921	29,671	...	...	...	...	...	9,456	8,205	1,250	30,921	29,671	9,456	8,205	1,250	30,921	29,671
Total Protective.	45,886	29,616	16,970	75,086	58,116	...	...	...	...	...	45,886	29,616	16,970	75,086	58,116	45,886	29,616	16,970	75,086	58,116
TOTAL MAJOR WORKS.	1,468,350	489,096	979,954	654,021	446,246	714,363	400,492	315,901	540,091	226,190	2,182,413	884,808	1,293,605	1,194,115	226,966	2,182,413	884,808	1,293,605	1,194,115	226,966
MINOR WORKS.																				
Irrigation.																				
Rajputana.	13,477	4,006	9,471	...	9,471	...	...	...	...	...	13,477	4,006	9,471	...	9,471	13,477	4,006	9,471	...	9,471
Haluchistan.	2,118	1,340	778	...	778	...	...	...	...	...	2,118	1,340	778	...	778	2,118	1,340	778	...	778
Lower Burma.	...	...	...	...	...	94,132	22,434	71,698	...	71,698	94,132	22,434	71,698	...	71,698	94,132	22,434	71,698	...	71,698
Bengal.	...	...	...	...	...	...	154	...	...	...	...	...	...	...	...	...	...	...	...	...
N.-W. P. and Oudh.	...	...	...	...	...	...	17,255	6,421	...	6,421	...	...	...	...	...	...	...	...	...	...
Punjab.	110,132	86,434	23,698	...	23,698	91,685	24,501	67,184	...	67,184	110,132	86,434	23,698	...	23,698	91,685	24,501	67,184	...	67,184
Madras.	137,348	57,145	80,203	...	80,203	1,675	666	1,109	...	1,109	137,348	57,145	80,203	...	80,203	137,348	57,145	80,203	...	80,203
Bombay.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	263,075	148,926	114,150	...	114,150	210,988	64,910	146,078	...	146,078	263,075	148,926	114,150	...	114,150	263,075	148,926	114,150	...	114,150
Navigation.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bengal.	...	...	...	...	...	60,896	37,834	13,261	...	13,261	...	...	...	...	...	60,896	37,834	13,261	...	13,261
Madras.	...	...	...	...	...	11,066	10,001	466	...	466	...	...	...	...	...	11,066	10,001	466	...	466
Total MINOR WORKS.	263,075	148,926	114,150	...	114,150	272,939	113,145	169,794	...	169,794	263,075	148,926	114,150	...	114,150	272,939	113,145	169,794	...	169,794
GRAND TOTAL.	1,731,425	637,022	1,094,403	654,021	446,246	987,302	513,637	473,695	540,091	226,190	2,445,488	1,000,000	1,445,488	1,334,309	227,156	2,445,488	1,000,000	1,445,488	1,334,309	227,156

10. This table shows that after paying interest on borrowed money expended in the construction of Major Irrigation Works, the highest net profits are, as in the previous two years, obtained from irrigation projects in Madras. Next follow the North-Western Provinces and Oudh, the Punjab, and Bombay. In the Punjab the revenue is gradually increasing, as the new irrigation projects are completed. The Chenab Canal will probably be completed in 1897-98. In Bengal the loss is, as explained in last year's report, due to the permanent settlements rendering enhancement of land revenue impracticable.

Major Works.

11. The following statement shows in detail the financial results of individual Major Irrigation Works during and to the end of 1894-95 :—

Major Works.	CAPITAL OUTLAY TO END OF 1894-95.			REVENUE ACCOUNT FOR 1894-95.										REVENUE ACCOUNT TO END OF 1894-95.			
	Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Percentage of net profit on the Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.			
Productive.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.			
BENGAL.																	
Irrigation.																	
Orissa Project	2,565,429	57,865	2,623,294	33,235	48,339	-15,097	101,992	-117,079	...	625,685	857,790	-322,105	1,969,744	-2,300,849			
Madras Project	826,152	18,415	844,567	29,442	22,456	6,986	33,015	-36,069	...	609,232	477,649	31,643	740,040	-704,397			
Sone Project	2,599,403	91,657	2,691,060	83,483	70,674	12,809	103,898	-91,089	...	1,824,431	1,112,016	212,416	1,969,229	-1,760,813			
Navigation.																	
Hijli Tidal Canal	6,901,964	167,897	7,069,861	146,180	141,463	4,698	234,925	-234,227	...	2,359,348	2,447,394	-88,046	4,678,013	-4,766,059			
TOTAL BENGAL	236,207	5,911	242,118	6,863	4,743	1,110	9,264	-8,154	...	111,216	96,152	14,114	1,934,44	-169,730			
N.-W. PROVINCES AND OUDH.																	
Irrigation.																	
Ganges Canal	2,753,984	171,646	2,925,630	326,081	109,767	216,314	109,592	106,722	7.39	7,070,740	3,092,899	3,977,841	3,755,089	259,752			
Lower Ganges Canal	3,193,139	234,240	3,427,379	173,373	84,921	91,254	137,348	-36,084	2.67	3,350,471	1,603,742	1,746,729	2,203,574	-316,845			
Agra Canal	867,283	67,872	935,155	63,725	26,729	36,997	34,499	2,498	3.96	947,236	472,148	475,090	724,325	-219,235			
Eastern Jumna Canal	334,636	21,192	355,828	114,467	33,411	81,056	13,209	67,847	22.78	8,103,403	974,748	2,130,654	450,685	1,679,969			
Fatehpur Branch of the Lower Ganges Canal	6,814	619	7,433	...	...	...	220	-220	...	...	...	...	220	-220			
TOTAL N.-W. P. & OUDH	7,160,735	495,368	7,656,103	679,846	254,257	425,591	281,929	140,663	5.56	14,703,851	6,143,637	8,560,314	7,193,903	1,366,411			
PUNJAB.																	
Irrigation.																	
Western Jumna Canal	1,391,740	66,703	1,458,443	149,636	70,061	79,576	64,098	24,477	5.39	6,000,511	1,900,271	4,100,240	1,022,473	3,077,767			
Ravi Doab Canal	1,694,183	64,135	1,758,318	224,336	61,676	162,660	67,069	96,601	9.31	4,193,280	1,735,648	2,457,602	1,972,316	485,286			
Sirhind	2,296,666	117,713	2,414,379	95,980	59,075	36,905	91,302	-54,487	1.63	1,186,596	630,686	555,910	1,472,501	-916,591			
Lower Sirhind and Ravi Canal	67,287	2,712	70,000	10,169	7,043	3,126	2,691	435	4.47	80,407	69,614	10,793	24,902	-23,919			
Chenab Canal	1,458,327	34,222	1,492,549	60,237	45,869	14,368	64,916	-40,648	...	161,182	160,766	416	234,984	-234,984			
Sidhwa	98,853	3,241	102,094	23,695	9,176	14,519	3,876	12,643	16.16	167,193	63,699	103,494	32,634	70,860			
Jhelum	1,016	108	1,124	...	...	...	40	-40	...	...	...	...	...	-200			
TOTAL PUNJAB	6,998,061	288,936	7,286,997	669,053	256,000	313,053	274,072	38,981	4.30	11,759,139	4,440,524	7,318,616	4,760,010	2,558,605			

Major Works.	CAPITAL OUTLAY TO SEP OF 1944-45			REVENUE ACCOUNT FOR 1944-45										REVENUE ACCOUNT TO SEP OF 1944-45			
	Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Percentage of net revenue on the Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.			
MADRAS.																	
Irrigation.																	
Godavari Delta System	1,091,889	189,798	1,281,687	250,486	64,000	186,486	43,665	142,820	14.55	6,046,274	1,898,536	4,207,738	1,216,030	2,991,699			
Kistna "	1,083,365	79,125	1,162,490	201,498	63,731	148,157	42,650	105,637	13.74	3,491,917	1,119,498	2,372,419	821,804	1,560,615			
Ponner Anicut "	163,744	24,846	188,590	16,652	2,779	13,873	6,647	7,226	7.35	314,180	66,176	250,005	169,516	89,489			
Cauvery Delta "	166,074	12,332	178,406	57,018	6,627	80,391	6,630	73,761	45.08	2,370,467	169,784	2,200,683	173,624	2,027,069			
Srirangam Anicut System	136,012	10,091	146,103	9,846	2,382	7,464	5,483	2,180	6.21	183,566	59,436	124,130	119,247	4,882			
Sangam Anicut System	309,796	68,679	378,475	18,603	4,721	13,882	12,330	1,552	3.67	104,243	44,393	63,850	127,373	63,523			
Karnul Canal	2,160,370	141	2,160,511	11,346	10,908	337	86,770	-86,433	-0.3	126,358	306,945	-79,587	1,082,958	-1,162,945			
Barur Tank	39,694	2,273	41,967	987	471	616	1,698	-1,072	1.23	4,076	3,163	907	14,341	-13,434			
Periyar Project	736,604	19,350	755,954	...	...	...	27,605	-27,605	...	...	...	...	97,328	-97,328			
TOTAL MADRAS	5,895,552	406,663	6,302,215	696,933	145,679	(a) 451,254	232,983	218,266	7.16	12,644,079	3,493,354	9,148,725	3,822,141	5,326,584			
BOMBAY.																	
SIND.																	
Irrigation.																	
Deer Creek	122,604	4,074	126,678	19,284	13,017	237	4,899	-4,662	.19	241,337	104,193	137,144	80,334	56,830			
Unbarwah	67,900	1,439	69,339	11,348	6,233	6,115	2,126	3,030	8.67	62,210	19,880	42,330	14,322	28,008			
Begari Canal	163,561	4,912	168,473	33,578	6,639	26,939	6,303	20,636	16.09	687,778	210,471	477,307	141,031	346,276			
Eastern Nara Works	64,150	21,081	85,231	44,783	17,018	27,765	23,729	4,036	6.41	806,853	343,118	463,735	477,036	-13,321			
Jamroo Canal	16,414	634	17,048	...	...	...	373	-373	...	...	...	...	373	-373			
TOTAL Sind	968,625	32,373	1,001,002	103,033	42,936	(b) 80,097	37,630	23,467	6.00	1,688,177	707,652	980,525	713,115	267,410			
DACCAN AND GUJARAT.																	
Irrigation.																	
Hathmati Canal	49,093	2,747	51,840	1,108	60	449	1,804	-1,445	-96	10,650	16,396	-6,446	43,375	-49,220			
Lower Pasijhra River Works	43,903	2,281	46,184	1,635	61	987	1,753	-768	2.14	20,971	13,693	7,278	41,844	-28,566			
Kodra River Works	69,376	2,865	72,241	1,188	1,653	-465	2,776	-3,240	...	14,886	13,717	1,169	43,009	-41,840			

(a) Excludes revenue due to old irrigation, which is as follows:—

	Gross revenue.	Maintenance and working.	Net revenue.
	Rx.	Rx.	Rx.
Godavari Delta System	12,400	850	11,550
Krishna "	7,100	490	6,610
Poona "	11,700	3,000	8,700
Cauvery Delta "	367,181	38,609	328,572
Srirangam Anicut System	7,900	1,250	6,650
Sangam Anicut System	13,900	2,500	11,400
Barur Tank	200	15	185
Total	420,381	46,714	373,667

(b) Excludes revenue due to old irrigation, which is as follows:—

Regari Canal	3,361	876	2,485
Eastern Nara Works	344	34	310
Total	3,705	910	2,795

12. Taken collectively by provinces the percentages of net revenue on the Capital outlay upon Major Works for the last three years are as follows:—

	1894-95.	1893-94.	1892-93.
1. Madras	6.75	6.70	6.46
2. Bombay—Sind	6.00	6.54	7.65
3. North-Western Provinces and Oudh	5.22	5.37	5.22
4. Punjab	4.33	3.95	6.24
5. Bombay—Deccan and Gujarat	1.18	1.27	1.19
6. Bengal	.09	.19	.63
Total	4.08	4.04	4.59

13. The percentage in Madras would be considerably higher but that the Karnul Canal, which was made by a company, seldom pays its working expenses and maintenance. The cost of this canal is nearly one-third of the total expenditure on Major Irrigation works in Madras. Omitting this canal the figures for Madras would be:—

	1894-95	Per cent.
1893-94		9.97
1892-93		10.06
		9.91

14. The systems which in 1894-95 paid over 4 per cent. are arranged below in the order of the rate paid, and are compared with the results in the two previous years:—

	RATE PAID.		
	1894-95.	1893-94.	1892-93.
1. Cauvery Delta System	45.06	45.76	39.00
2. Eastern Jumna Canal	22.78	24.60	20.14
3. Sidhna Canal	16.16	19.09	14.95
4. Begari Canal	16.09	17.12	17.71
5. Godavari Delta System	14.55	14.04	13.73
6. Kistna	12.74	12.68	12.53
7. Bari Doab Canal	9.31	9.47	10.26
8. Unharwah Project	8.67	8.50	8.81
9. Ganges Canal	7.39	7.23	7.17
10. Penner Anicut	7.36	7.23	7.40
11. Western Jumna Canal	6.39	2.92	4.90
12. Srivaikuntham Anicut System	5.21	5.43	2.59
13. Swat River Canal	5.07	4.42	5.20
14. Krishna Canal	4.83	2.76	4.85
15. Lower Sohag and Para Canal	4.47	.75	...
16. Eastern Nara Works	4.41	5.50	5.92

15. The systems that have, up to the end of 1894-95, paid off the accumulated interest on the Capital expended on them are noted below:—

	Surplus.
	Rx.
1. Western Jumna Canal, including Sirsa Branch	3,077,767
2. Godavari Delta System	2,991,689
3. Cauvery	2,027,159
4. Eastern Jumna Canal	1,679,959
5. Kistna Delta System	1,550,615
6. Ganges Canal	252,752
7. Bari Doab Canal	435,286
8. Begari	206,276
9. Penner Anicut System	89,489
10. Sidhna Canal	70,860
11. Desert	56,820
12. Unharwah	18,008
13. Srivaikuntham Anicut System	4,562

Assuming that the works are still worth the amount charged in each case to the Capital account, this represents a net profit to the State at the end of 1894-95 on these systems of

The charge to the State on other Major Works is . . . 12,511,542

And this leaves a net profit to date on all Major Works of . . . 9,327,613

Number of works.	CAPITAL OUTLAY TO END OF 1894-95.			REVENUE ACCOUNT FOR 1894-95.							REVENUE ACCOUNT TO END OF 1894-95.				
	Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Percentage of net revenue on the Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	
															Rs.
1	401,321	21,539	422,859	6,895	9,789	—3,894	16,037	—19,931	...	59,123	92,979	—33,856	183,518	—217,374	
1	350,761	12,934	363,695	27,502	9,055	18,447	14,025	4,422	6.07	188,097	86,263	101,834	183,133	—81,299	
1	368,068	33,020	401,088	(a) 2,734	1,567	1,167	14,103	—12,936	—29	4,490	3,654	836	87,123	—66,256	
5	40,094	1,173	41,267	(b)	(b)	(b)	1,604	—1,604	...	2,474	2,100	374	20,902	—20,523	
5	198,508	6,062	204,569	1,273	2,846	—1,574	7,533	—9,507	...	13,166	14,907	—1,741	96,837	—98,628	
5	530,163	29,435	559,598	8,113	5,359	2,824	20,993	—18,169	—60	37,391	34,293	3,098	215,738	—212,640	
5	6,403	318	6,720	...	...	...	255	—255	...	...	...	...	3,390	—3,390	
5	3,396	216	3,612	...	...	...	136	—136	...	...	...	...	1,394	—1,394	
5	778,561	37,224	815,785	9,455	8,205	1,250	30,921	—29,671	—15	63,031	61,800	1,231	335,311	—336,580	
8	1,898,711	104,716	2,003,427	45,566	28,616	16,970	76,086	—58,116	—86	304,741	234,196	70,545	772,084	—701,639	
8	30,181,068	1,550,918	31,731,986	2,182,413	888,558	1,293,855	1,194,111	99,744	4.08	44,031,460	17,834,423	26,197,037	23,013,109	—23,183,929	

(a) Excludes Rs. 2,000 on account of old irrigation revenue.

(b) This is now cleared as a minor work and combined with Gobak Storage Works.

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(a) Includes Rs. 2,000 in payment of old irrigation revenue.
(b) This is now cleared as a minor work and combined with Gokak Storage Works.

16. The following statement shows the net charge to the State to the end of each year for the last five years on account of further projects, which are expected eventually to pay off the accumulated interest on their Capital cost:—

	Date of Completion.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
		Rs.	Rs.	Rs.	Rs.	Rs.
<i>North-Western Provinces and Oudh.</i>						
Lower Ganges Canal	1878	241,950	257,544	270,214	290,752	316,845
Agra Canal	1874	233,674	233,061	239,162	251,733	249,235
<i>Punjab.</i>						
Sirhind Canal	1887	854,540	800,557	717,678	762,105	816,591
Lower Sohag and Para Canal	1886	13,442	18,617	22,216	24,394	23,949
Chenab Canal	...	77,127	106,942	152,338	193,020	234,568
<i>Madras.</i>						
Sangam Anicut System	1885	50,059	61,784	65,213	65,075	63,523
<i>Bombay—Sind.</i>						
Eastern Nara Works	...	51,227	41,222	27,910	17,357	13,321
TOTAL	...	1,522,019	1,522,717	1,494,731	1,595,326	1,718,032

NOTE.—The projects which have not yet been opened for irrigation have been excluded from this statement.

In all these projects the debit against them should be decreasing.

17. The continued steady decrease against the Eastern Nara before completion of the project is satisfactory.

18. The continued increase against the Lower Ganges Canal is not altogether satisfactory; this canal has been opened 16 years, and has not yet begun to pay the annual interest charges. This unsatisfactory result is chiefly due to the destruction of the Kali Nadi aqueduct and to a succession of wet years from 1884 to 1895. The Government of the North-Western Provinces and Oudh however expects that the ultimate revenue from the canal will amount to 5 per cent. on the Capital outlay. The Sirhind and Lower Sohag and Para Canals have not been opened for 10 years; the irrigation from these projects has not had time to develop fully. When full credit is given for the indirect revenue due to the Lower Sohag and Para Canal, it is expected that the net revenue will more than cover the annual interest charges.

The decrease in the debit against the Sangam Anicut System is a satisfactory sign.

19. The undernoted works, which were allowed to be constructed from borrowed money prior to the introduction of the rules laying down the conditions which must now be fulfilled before a work may be classed as Productive, are not expected to repay the accumulated interest charges on the Capital invested in them:—

	Capital outlay to end of 1894-95.	Net gain or loss in working each year.				
		1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
<i>Bengal—</i>						
Orissa Project	2,624,294	—12,267	—5,216	—813	—16,011	—15,097
Midnapore Canal	844,547	2,813	1,837	8,445	9,658	6,986
Sone Project	2,690,960	5,707	20,823	30,133	18,470	12,809
Hijili Tidal Canal	242,818	—2,553	—1,377	2,030	269	1,110
<i>Bombay, Deccan and Gujarat—</i>						
Hathmati Canal	51,840	71	387	—40	368	499
Lower Panjhra River Works	46,186	626	572	660	1,230	987
Kadva River Works	72,241	310	1	199	397	—405
Lakh Canal	37,189	—235	—135	—199	—226	—1,167
Mutha Canals	655,849	13,776	16,207	13,480	18,071	15,368
Ehruk Tank	134,039	1,009	1,234	—153	—261	1,682
Krishna Canal	86,489	1,749	2,078	4,164	2,383	4,178
TOTAL	7,456,253	8,096	36,411	57,906	34,348	26,800

In addition to the above, the Karnul Canal in Madras, which was purchased from the Madras Irrigation and Canal Company in 1882, is not likely ever to be a financial success, and the Barur tank also will probably not pay the interest on the capital outlay. Under the rules contained in Public Works Department Code, Volume II, Chapter V, para. 35, clause VIII, the current expenditure on these works is being provided out of the general revenues.

20. The sources from which the revenue of the Major Works was derived during 1894-95 are exhibited in the following statement in comparison with those of the four previous years:—

	Irrigation Revenue			Sale of water.	Water supply of lower.	Phalians.	Other canal produce.	Water power.	Navigation receipts.	Rents of buildings.	Fees.	Miscellaneous.	Total.	Totals of previous years			
	Share of enhanced land revenue due to irrigation works.	Water sales.	Owners' rates on left-aid lands.											1893-94.	1894-95.	1895-96.	1896-97.
Bengal	...	104,976	...	98	...	427	408	172	36,668	1,438	48	6,760	152,013	Rx.	Rx.	Rx.	Rx.
North-Western Provinces and Oudh	117,498	505,466	29,860	691	122	19,783	...	5,199	1,995	293	1,320	9,621	655,743	166,500	188,335	701,981	133,914
Punjab	30,758	487,635	41,927	2,776	104	4,266	2,213	16,793	7,065	1,076	637	1,275	596,565	685,771	680,914	705,195	651,618
Madras	570,179	9,981	...	...	541	1,896	2,135	...	14,257	374	9	305	599,667	535,091	601,039	601,039	583,045
Bombay	97,475	35,026	...	553	9,941	165	1,897	600	...	104	54	2,620	148,435	539,586	665,424	625,711	630,037
Total for 1894-95	915,910	1,145,084	71,897	4,008	10,708	26,527	6,653	22,764	69,985	3,310	2,086	13,451	2,182,413	2,130,271	2,268,054	2,109,363	2,025,891
1893-94	785,187	1,141,863	61,245	4,243	10,674	23,492	5,851	20,256	59,030	3,302	1,917	13,311	2,130,271				
1892-93	760,020	1,298,206	66,973	4,198	11,764	23,043	6,437	20,679	54,347	3,193	2,688	14,624	2,268,054				
1891-92	706,451	1,174,901	80,336	3,830	10,818	27,963	4,608	21,727	61,567	3,010	2,491	11,869	2,109,363				
1890-91	743,808	1,070,709	80,194	4,230	10,039	22,619	20,635	52,853	2,719	2,653	10,426	2,025,891					

21. The total revenue of 1894-95 was better than that of the previous year by Rx. 52,142, owing to the extension of irrigation from the Western Jumna, Bari Doab and the Chenab Canals in the Punjab and from the Godavari Delta System in Madras, and partly to a good water-supply in the Upper Sind Frontier District. The increase in the Punjab would have been larger had it not been for a falling off in the water-rate collections from the Sirhind Canal. The favourable rainfall on lands traversed by this canal reduced the demand for canal water.

22. The decrease in Bengal was due partly to the large recovery of arrears in 1893-94 having swelled the receipts of that year and partly to abundant and seasonable rainfall having reduced the demand for canal water.

23. The decrease in the North-Western Provinces and Oudh was mainly due to a falling off of the water-rate collections on the Lower Ganges Canal, owing to the small area irrigated in the *rabi* season of the previous year.

24. The following statement shows, for each Major Work for the five years ending 1894-95, the gross revenue, the irrigated area, and the mileage of canals completed at the end of each year:—

Ponner Ancient System	25,935	12,066	28,760	29,070	28,352	65,080	35,652	73,051
Convery Delta "	311,392	309,595	310,985	323,753	454,189	1,013,344	1,008,069	1,012,049
Shirvaikantham Ancient System	13,640	18,910	13,800	18,359	17,895	28,896	41,322	29,111
Gangam Ancient System	27,656	14,932	31,000	31,424	32,503	68,221	39,209	74,967
Karnul Canal	11,926	14,272	14,824	12,944	11,305	24,849	73,500	30,766
Harur Tank	740	748	926	1,108	1,187	2,774	2,757	3,584
Rushikulya Project	...	...	...	1,767	4,619	...	...	4,183
Deduct old Irrigation revenue	819,737	815,411	855,124	879,286	1,022,133	2,346,732	2,413,591	2,396,520
Total Madras	530,037	525,711	565,424	589,584	599,667	...	...	...
Bombay.								
Desert Canal	17,076	2,592	12,927	4,784	13,294	124,919	60,131	96,156
Uchharab	4,573	1,654	4,736	6,440	11,388	20,890	19,283	23,277
Begari Canal	23,844	26,146	36,943	37,946	36,939	144,063	174,718	192,624
Eastern Nara Works	45,579	43,501	48,037	47,539	45,127	228,293	211,951	243,412
Deduct old Irrigation revenue.	91,072	73,793	102,482	96,708	106,738	617,951	466,083	554,369
Total Sind	91,072	73,793	102,482	92,003	103,033	...	...	...
Hathmati Canal.	737	1,037	616	970	1,108	3,766	2,716	2,727
Lower Panjhra River Works.	1,614	1,901	1,617	1,725	1,655	2,390	2,603	2,677
Kedwah River Works	963	844	1,020	1,187	1,188	2,227	2,971	2,971
Lakh Canal	125	170	96	117	165	433	508	508
Muthe Canal	21,757	21,693	22,416	24,792	23,339	11,201	14,061	14,061
Elrak Tank	2,492	2,611	2,561	2,380	2,887	2,598	5,137	5,137
Krishna Canal.	9,077	9,198	8,735	9,883	6,006	3,950	5,374	5,374
Gotak Canal, 1st section	...	...	...	...	...	...	...	...
Nira Canal.	3,608	4,449	6,550	7,763	8,163	16,913	24,863	24,863
Mhaswad Tank	1,943	1,923	2,638	2,503	1,272	7,106	8,304	8,304
Total Deccan and Gujarat	36,205	40,715	45,128	45,110	45,402	60,584	69,537	69,537
Total Bombay	127,277	114,498	147,610	137,113	148,435	666,538	634,625	634,625
Grand Total	2,025,891	2,109,363	2,268,054	2,130,271	2,182,413	7,172,469	7,560,756	7,560,756

25. The rate of revenue per acre irrigated during 1894-95 is shown in the following table; the irrigation revenue shown here includes the share of enhanced land revenue due to irrigation as well as the water-rates and owners' rates:—

Province.	Irrigation revenue. (Assessed.)	Irrigated soreage.	Rate of revenue per acre.	COMPARED WITH RATE IN	
				1893-94.	1892-93.
	Rx.	Acres.	Rx.	Rx.	Rx.
Bombay, Deccan and Gujarat . .	84,195	60,707	·56	·61	·58
North-Western Provinces and Oudh .	465,132	855,247	·54	·42	·36
Madras	962,355	2,520,599	·38	·38	·35
Punjab	566,357	1,706,471	·33	·35	·32
Bengal	93,741	509,811	·18	·18	·16
Bombay—Sind	109,327	607,035	·18	·18	·19
TOTAL	2,231,107	6,259,870	·36	·35	·32

There is an increase in the North-Western Provinces and Oudh.

26. The charges for maintenance and working for the year 1894-95 are detailed in the following statement and compared with the outlay of the previous four years:—

	Total for 1894-95	1893-94	1892-93	1891-92	1890-91	Totals of previous four years.					
						1893-94.	1892-93.	1891-92.	1890-91.	Rx.	Rx.
Bengal	34,036	42,293	60,926	68,127	61,926	154,114	148,540	143,793	143,213	272,466	274,291
North-Western Provinces and Oudh	34,021	34,015	34,015	34,015	34,015	264,046	265,055	245,163	217,309	244,506	217,309
Punjab	34,021	34,015	34,015	34,015	34,015	146,203	146,203	146,203	146,203	146,203	146,203
Madras	34,021	34,015	34,015	34,015	34,015	146,203	146,203	146,203	146,203	146,203	146,203
Bombay	34,021	34,015	34,015	34,015	34,015	146,203	146,203	146,203	146,203	146,203	146,203
Total for 1894-95	34,036	42,293	60,926	68,127	61,926	888,658	888,658	888,658	888,658	888,658	888,658
1893-94	34,021	34,015	34,015	34,015	34,015	888,658	888,658	888,658	888,658	888,658	888,658
1892-93	34,021	34,015	34,015	34,015	34,015	888,658	888,658	888,658	888,658	888,658	888,658
1891-92	34,021	34,015	34,015	34,015	34,015	888,658	888,658	888,658	888,658	888,658	888,658
1890-91	34,021	34,015	34,015	34,015	34,015	888,658	888,658	888,658	888,658	888,658	888,658
Extensions and improvements.	34,021	34,015	34,015	34,015	34,015	34,021	34,015	34,015	34,015	34,021	34,015
Maintenance and repairs.	34,021	34,015	34,015	34,015	34,015	34,021	34,015	34,015	34,015	34,021	34,015
Establishment.	34,021	34,015	34,015	34,015	34,015	34,021	34,015	34,015	34,015	34,021	34,015
Tools and Plant.	34,021	34,015	34,015	34,015	34,015	34,021	34,015	34,015	34,015	34,021	34,015
Profit and loss.	34,021	34,015	34,015	34,015	34,015	34,021	34,015	34,015	34,015	34,021	34,015
Surplus.	34,021	34,015	34,015	34,015	34,015	34,021	34,015	34,015	34,015	34,021	34,015
Total Direct charges.	34,021	34,015	34,015	34,015	34,015	34,021	34,015	34,015	34,015	34,021	34,015
Indirect charges.	34,021	34,015	34,015	34,015	34,015	34,021	34,015	34,015	34,015	34,021	34,015
Total.	34,021	34,015	34,015	34,015	34,015	34,021	34,015	34,015	34,015	34,021	34,015

25. The rate of revenue per acre irrigated during 1894-95 is shown in the following table; the irrigation revenue shown here includes the share of enhanced land revenue due to irrigation as well as the water-rates and owners' rates:—

Province.	Irrigation revenue. (Assessed.)	Irrigated acreage.	Rate of revenue per acre.	COMPARED WITH RATE IN	
				1893-94.	1892-93.
	Rx.	Acrea.	Rx.	Rx.	Rx.
Bombay, Deccan and Gujarat	34,195	60,707	56	61	68
North-Western Provinces and Oudh	466,132	855,247	54	42	36
Madras	962,355	2,520,509	38	38	35
Punjab	666,367	1,706,471	33	35	32
Bengal	93,741	609,811	18	18	18
Bombay—Sind	109,327	607,035	18	18	19
TOTAL	2,231,107	6,269,870	36	36	32

There is an increase in the North-Western Provinces and Oudh.

26. The charges for maintenance and working for the year 1894-95 are detailed in the following statement and compared with the outlay of the previous four years:—

and working on gross revenue, etc. etc.
Cost of maintenance and working per irrigated acre.

Provinces.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	REMARKS.
1. Bombay—Sind	Rx. 06	Rx. 07	Rx. 06	Rx. 06	Rx. 07	Including old maintenance charges.
2. Madras	08	07	08	08	09	
3. Punjab	12	09	08	08	09	Excluding maintenance of tidal Canal.
4. Bengal	11	11	14	14	15	
5. North-Western Provinces and Oudh	25	19	22	27	24	
6. Bombay—Deccan and Gujarat	15	14	16	17	31	
	35	29	31	39	33	

The provinces are arranged in the order of smallness of charge; the variations are considerable.

Percentage of maintenance and working on gross revenue.

Provinces.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	REMARKS.
1. Madras	Rx. 23.9	Rx. 23.0	Rx. 23.0	Rx. 21.7	Rx. 19.0	Including old revenue and working expenses.
2. North-Western Provinces and Oudh	42.1	38.0	39.5	34.8	33.5	
3. Bombay—Sind	32.3	46.7	33.7	32.8	41.1	Ditto ditto.
4. Punjab	37.3	37.3	38.0	45.7	41.4	
5. Bombay—Deccan and Gujarat	48.6	49.0	51.4	47.2	50.8	
6. Bengal	106.9	89.9	75.9	92.0	96.2	

The variations indicated here are also very marked.

29. The percentages of the cost of revenue management on the revenue collected in the different provinces during the five years ending 1894-95 were as follows:—

Provinces.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	REMARKS.
1. Madras	Rx. 8.8	Rx. 8.8	Rx. 8.9	Rx. 9.0	Rx. 8.6	In the term revenue management are included shares of Direction, Executive and Navigation Establishments and also a share of collection establishments.
2. Bombay—Sind	10.9	11.4	10.4	10.6	10.0	
3. North-Western Provinces and Oudh	14.3	12.8	13.6	14.5	14.2	
4. Punjab	13.0	12.1	13.0	16.9	15.4	
5. Bombay—Deccan and Gujarat	14.1	15.2	17.8	16.1	19.7	
6. Bengal	33.2	28.1	26.0	29.7	31.1	

TOTAL OF PREVIOUS FOUR YEARS.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.						
	Rx.	Rx.	Rx.	Rx.	Rx.						
	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.						
	Rx.	Rx.	Rx.	Rx.	Rx.						
TOTAL	140,203	143,793	148,540	154,114	140,203	838,658	875,620	880,694	840,994	830,451	
Indirect charges.	9,299	18,097	16,417	7,120	3,175	63,108	63,001	61,726	48,110	48,858	
Total Direct charges.	136,906	125,696	132,123	147,000	137,028	835,450	822,619	829,968	792,884	790,593	
2. BALUCHISTAN—											
Irrigation—											
Khundil Khan Reservoir	92,331	1,224	93,555	1,560	607	603	92	6,954	...	...	
Shebo Canal.	66,579	1,144	67,723	658	613	—85	...	8,419	...	...	
TOTAL	158,910	2,368	161,278	2,218	1,340	778	49	15,373	11,037	...	
1. LOWER BURMA—											
Irrawaddy embankments	305,803	8,317	314,210	91,152	22,434	71,098	22,62	1,107,067	311,639	696,429	
3. BENGAL—											
Irrigation—											
Satun Project	60,957	2,718	69,675	—180	154	—334	...	24,179	36,189	—12,010	
Navigation—											
Calcutta and Eastern Canals	629,612	6,240	635,852	41,301	28,927	15,374	2,87	2,313,992	947,817	1,366,175	
Orissa Coast Canal.	433,252	10,404	443,746	6,594	8,707	—2,113	...	68,363	74,185	—16,822	
TOTAL	1,029,821	19,452	1,049,273	50,715	37,788	12,027	1.23	2,390,634	1,058,191	1,338,343	
4. NORTH-WESTERN PROVINCES AND OUDH—											
Irrigation—											
Dun Canals	66,196	1,597	67,793	8,578	5,204	3,374	4.98	236,802	133,092	103,710	
Rohilkhand Canals	166,844	16,057	172,901	12,408	10,106	2,302	1.33	322,691	270,506	62,076	
Bijnor Canals	11,625	2,036	13,661	1,876	1,030	816	6.19	47,657	18,857	28,800	
Bundelkhand Irrigation works	7,436	604	8,240	814	915	—101	...	18,031	21,009	—3,878	
TOTAL	242,101	20,494	262,595	23,676	17,255	6,421	2.44	625,071	444,364	180,707	
5. PUNJAB—											
Irrigation—											
Upper Sutlej Inundation Canals	60,552	5,969	66,521	21,421	14,963	6,458	9.71	434,677	381,401	63,276	
Lower Sutlej Inundation Canals	10,766	254	11,010	65,253	45,281	10,072	181.40	1,649,572	932,292	717,290	
Indus Inundation Canals	68,791	1,973	70,764	18,794	21,193	—2,399	...	700,614	703,818	2,796	
Shahpur Inundation Canals	16,850	498	17,348	4,664	4,997	—333	...	62,816	38,529	24,289	
TOTAL*	156,949	8,694	165,644	110,132	86,434	23,698	14.91	2,853,679	2,056,029	797,650	

* The transactions of the Madhopur workshops have been excluded from this account under the orders of the Government of India, vide Public Works Department letter No. 23 J., dated 21st February 1896.

Number of works.	Minor Works.	CAPITAL OUTLAY TO END OF 1894-95.			REVENUE ACCOUNT FOR 1894-95.				REVENUE ACCOUNT TO END OF 1894-95.		
		Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Percentage of net revenue on Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.
24	MADRAS—	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
	Irrigation—										
	Chembrambakam tank	63,169	11,235	74,404	2,304	—20	2,334	9.11	67,433	12,533	54,900
	Madras Water-supply and Irrigation Extension project	151,583	23,822	175,405	2,415	551	1,864	1.06	38,723	49,899	—10,166
	Palur Anicut System.	193,632	10,000	203,632	14,481	6,608	7,873	3.87	292,804	169,119	123,685
	Lower Coleroon Anicut System.	55,926	1,456	57,382	29,604	4,316	25,288	44.07	991,725	152,168	839,557
	Pelandurai Anicut System.	41,238	4,155	45,393	2,930	1,035	1,895	4.17	20,491	45,231	—24,740
	Other (15) works	176,471	4,623	181,094	39,917	12,017	27,900	15.41	891,133	408,537	472,576
		681,019	65,297	737,216	91,685	21,501	67,184	9.11	2,292,309	836,497	1,455,812
	Navigation—										
	Buckingham Canal	600,561	47,430	647,991	10,943	10,154	789	.09	276,471	297,687	—11,216
	Other (3) works	17,334	1,318	18,652	113	447	—334	...	875	4,728	—3,853
		617,895	48,748	666,643	11,056	10,601	455	-.05	277,346	292,415	—15,069
	TOTAL	1,499,814	104,045	1,603,859	102,741	35,102	67,639	4.22	2,569,655	1,128,912	1,440,743
	BOMBAY—										
	Irrigation—										
	Bukkur Canal	133,121	6,003	139,124	22,321	8,740	13,572	9.76	192,101	115,160	76,944
	Ghar	41,554	2,544	44,098	60,493	14,425	46,068	104.47	1,522,698	434,271	1,088,427
	Marak Great Canal	19,340	795	20,135	6,435	2,269	4,166	20.97	118,190	46,797	71,393
	Sarfarazwah "	11,856	612	12,468	3,078	725	2,353	19.87	39,895	30,710	9,185
	Fulhi "	127,662	4,619	132,281	35,347	10,169	16,178	12.21	841,568	560,862	280,704
	Other works	8,922	674	9,596	342	350	—8	...	31,304	27,312	4,992
	TOTAL SIND	342,375	15,277	357,652	128,076	45,687	82,389	23.01	2,718,757	1,215,102	1,503,655
	DECCAN AND GUJARAT.										
	Kbari Cut	16,997	1,198	18,195	969	611	357	1.97	7,398	5,392	2,016
	Jamda Canals	89,055	4,900	93,955	1,120	971	155	15	13,409	29,737	—15,319
	Paraul tank	21,236	706	21,942	190	136	54	25	732	411	291
	Pravara River Works—										
	Ojhar Canal	30,963	2,062	33,025	774	2,877	—2,103	...	8,654	12,370	—3,716
	Bhatodi tank	35,268	2,703	37,971	477	1,229	—751	...	8,515	7,382	1,133
	Matuba "	14,815	1,327	16,142	981	426	555	2.75	10,553	3,791	6,464
	Shirapahel tank	21,143	1,227	22,370	258	319	—61	...	3,382	3,971	—589
	Bhadalvadi "	21,311	1,431	22,742	85	169	—84	...	2,649	2,775	—114
	Ashti "	75,319	7,891	83,210	439	395	44	-.05	4,413	8,633	—4,213
	Upper Man " River Works	40,742	2,214	42,956	604	424	180	42	5,898	6,843	—955
	Yarla River Irrigation Works	64,320	4,304	68,624	758	2,375	—1,617	...	9,677	12,637	—4,160
	Maini tank	36,767	2,224	38,991	399	383	16	-.04	8,909	8,901	95
	Madag "	16,125	635	16,760	302	169	133	60	4,618	5,332	—914
	Gokak Canal, 1st Section, and Storage Works	76,459	2,763	79,222	1,075	566	1,109	1.42	10,263	3,146	7,117
	Other works	75,130	9,091	84,221	1,911	975	936	1.11	21,342	19,038	2,304
	TOTAL DECCAN AND GUJARAT	649,539	41,768	691,307	10,947	12,024	—1,077	...	123,439	130,802	—7,363
	TOTAL BOMBAY	990,914	60,043	1,050,957	139,023	67,711	81,312	7.74	2,872,196	1,345,904	1,526,292
76	GRAND TOTAL	2,837,233	168,259	3,005,492	474,063	213,835	260,228	8.66	10,143,212	5,186,355	4,956,857
	IRIGATION	1,780,769	65,482	1,846,251	61,951	48,235	13,716	74	2,619,701	1,314,417	1,305,284
	NAVIGATION	4,617,992	231,741	4,849,733	536,014	262,070	273,944	5.65	12,792,013	6,500,772	6,291,241

(a) Exclusive of the Capital outlay on the Vedaranyam Canal, which has not yet been ascertained.
 (b) Includes Rs. 78,674, share due to old irrigation.
 (c) Includes Rs. 39,178, share due to old irrigation.
 (d) Exclusive of Rs. 51,287, expenditure incurred from the grant under 36—Construction of Protective Irrigation Works which is shown under Major Works.

32. The net revenue derived in 1894-95 from the works constructed for irrigation purposes (excluding navigation) taken collectively amounted to 8.66 per cent. on the Capital outlay to end of the year against 10.70 in the previous year. The decrease was chiefly due to a falling off of the net revenue from the Upper Sutlej Inundation Canals in the Punjab and the Cheyaru Anicut System in Madras. On the Upper Sutlej Inundation Canals, while there was a fall in gross revenue by Rx. 9,490, there was an increase of Rx. 5,159 in working expenses over those of the previous year, thus showing a decrease of Rx. 14,649 in the net revenue. The falling off of the gross revenue was due to the small *rabi* of 1893-94 consequent on the low state of the river in August 1893; to heavy remissions for the *kharif* of 1894 on account of damage done by grass-hoppers; to suspensions of the demand for the same crops in villages in the Lahore district and to abnormal credits in the previous year. The increase in the working expenses was due to certain liabilities incurred in the previous year having had to be met in 1894-95 and to Revenue having to bear an increased share of establishment charges. The decrease in the net revenue from the Cheyaru Anicut System was Rx. 9,171: this was due to the net revenue during 1893-94 having been unusually large owing to the expenditure on certain works on the project amounting to Rx. 9,807 having been written back from Revenue to Capital.

33. The revenue from the navigation canals exceeded the working expenses by Rx. 13,716 against the corresponding figure of Rx. 11,285 in the previous year. The increase is the net result of an increase of revenue from the Calcutta and Eastern Canals in Bengal and of a reduced expenditure on the Buckingham Canal in Madras.

34. There was a net revenue of Rx. 769 on the Buckingham Canal against a loss of Rx. 1,620 in working the canal during 1893-94.

35. The revenue derived from Minor Works for which Capital and Revenue accounts are kept during 1894-95 is detailed in the following statement, and compared with the revenue of the previous four years:—

	Isolation Revenue.			Sale of water.	Water supply of towns.	Plantations.	Other canal produce.	Water power.	Navigation receipts.	Rents of buildings.	Fines.	Miscellaneous.	Total.	TOTALS OF PREVIOUS FOUR YEARS.			
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	1893-94.	1893-95.	1894-95.	1895-96.
Rajputana	12,002	1,167	...	...	...	...	8	...	...	12	29	269	13,477	14,193	9,199	8,497	12,474
Baluchistan	...	2,108	...	...	...	...	...	8	...	2	...	...	2,113	4,901	3,853	1,611	1,621
Lower Burma	94,008	...	...	...	...	8	...	...	...	121	...	...	94,132	95,497	90,212	77,706	70,176
Bengal	...	-224	...	...	...	1	179	...	49,432	331	...	997	50,715	52,339	54,558	60,311	62,765
North-Western Provinces and Oudh	8,629	10,688	996	313	...	669	...	2,245	1	...	76	161	23,676	26,065	27,291	26,203	25,671
Punjab	63,107	23,692	...	10	...	711	13,605	...	1	61	115	36,030	110,132	121,500	105,300	105,794	102,359
Madras	80,231	...	...	...	1,344	139	609	...	10,892	19	...	9	102,741	107,282	115,939	25,760	73,863
Bombay	123,696	12,373	...	7	...	360	1,137	492	...	61	2	906	139,023	135,839	127,170	146,135	144,195
Total for 1894-95	391,287	49,693	996	330	1,311	1,756	-11,773	2,745	60,326	596	222	38,482	536,014	560,806	563,722	452,037	493,123
1893-94	404,077	61,246	1,220	180	1,221	2,395	-13,585	4,363	60,650	606	203	36,260	560,806				
1892-93	423,816	37,113	1,387	177	1,198	2,333	4,295	2,816	61,061	559	259	27,809	563,722				
1891-92	507,613	84,738	1,271	249	1,440	2,932	7,225	3,393	67,216	815	285	31,880	452,037				
1890-91	343,786	37,833	1,317	249	1,101	-507	3,813	2,279	67,050	369	335	35,698	493,123				

36. The best return on the Capital expended is shown by the Punjab. Bengal shows the worst result. Bombay and the North-Western Provinces are steady, and Madras has also done well.

In Baluchistan where the revenue is collected in kind, that of 1894-95 was affected by a considerable fall in the prices of grains and bhoosa.

37. The decrease in the revenue during 1894-95, as compared with that of the previous year, occurred chiefly in the Punjab and was due partly to the revenue during 1893-94 having been swollen by arrear collections on the Indus canals and partly to a falling off of the revenue from the Upper Sutlej canals for the reasons explained in paragraph 32 of this note. The assessments for the year 1894-95 on certain canals were not recovered in full before the close of the year.

38. The working expenses of the year 1894-95 and of the previous four years are shown in the following statement:—

	Totals of Services for Years.													
	1894-95	1893-94	1892-93	1891-92	1900-91.	Total	Indirect charges.	Total Direct charges.	Surplus.	Profit and loss.	Tolls and plant.	Establishment.	Maintenance and repairs.	Extensions and improvements.
	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
Rajputana	301	1,863	1,732	— 39	...	...	...	3,657	149	4,006	4,671	9,855	10,671	5,961
Baluchistan	...	1,060	245	...	...	...	...	1,306	35	1,340	2,232	1,736	3,180	2,277
Lower Burma	10,906	6,051	6,435	— 121	...	...	— 318	21,853	491	22,454	19,032	29,626	46,179	20,393
Bengal	196	21,846	12,238	1,795	...	...	...	36,075	1,713	37,789	39,147	34,686	43,601	43,964
North-Western Provinces and Oudh	847	5,144	9,578	357	...	...	...	16,926	1,329	17,255	16,652	17,554	17,413	17,643
Punjab	5,460	50,936	26,095	310	...	...	— 10	89,791	3,643	86,434	73,858	68,727	68,785	86,123
Madras	2,107	20,343	10,895	422	...	...	...	34,057	1,045	35,102	29,218	47,906	58,467	44,932
Bombay	8,056	20,705	26,701	310	...	...	...	65,772	1,939	67,711	47,071	46,732	63,946	61,865
Total for 1894-95	27,963	127,144	93,019	3,034	...	...	— 329	251,730	10,334	262,070	228,791	256,751	312,141	283,168
1893-94	11,012	122,703	83,482	3,196	...	...	12	219,705	8,986	228,781	...	...	...	...
1892-93	32,206	121,183	90,824	3,185	...	...	— 15	246,693	10,169	256,751	...	...	...	...
1891-92	51,031	153,207	91,219	2,663	...	...	279	301,429	10,712	312,141	...	...	...	...
1900-91	29,274	151,940	87,684	4,390	10	...	— 85	273,113	10,045	283,158	...	...	...	...

39. The total increase of Rx. 33,289, as compared with 1893-94, occurred chiefly in the following provinces:—

Lower Burma.—The increase is due to large outlay on the earthwork in the Henzada Division of the Irrawaddy embankments.

Punjab.—The increase occurred on the Upper and Lower Sutlej Inundation canals. On the Upper Sutlej canals the increase has already been explained in paragraph 32. The increase on the Lower Sutlej canals is mainly due to a number of charges against the Zar-i-nagha fund account which were incurred in the previous year having been adjusted in 1894-95, and to an increase in the sanctions against this account.

Madras.—The increase is nominal. It is due to an expenditure of Rx. 9,807 on the Cheyaru Anicut System having been written back from Revenue to Capital in the accounts for 1893-94.

Bombay.—The increase is mainly due to the construction of certain new works in connection with the Sukkar and Fuleli canals chargeable to Revenue account. The cost of maintenance and repairs of the Sukkar canal was also larger than in the previous year.

40. The following table gives the percentages of expenditure on revenue in each province during the five years ending 1894-95:—

26

Province.	1890-91.			1891-92.			1892-93.			1893-94.			1894-95.		
	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.
Rajputana	12,474	6,961	47.8	8,487	10,671	125.7	9,199	9,885	107.46	14,193	4,571	32.21	13,477	4,006	29.73
Baluchistan	1,621	2,277	140.6	1,641	3,180	193.8	3,953	1,736	43.92	4,891	2,232	45.63	2,118	1,340	63.27
Lower Burma	70,176	20,393	29.1	77,706	46,178	59.4	90,212	29,626	32.84	93,607	19,032	18.84	91,132	22,431	23.83
Bengal	62,765	43,964	70.0	60,311	43,501	72.1	64,659	34,586	53.33	62,339	39,117	71.79	60,715	37,789	74.61
North-Western Provinces and Oudh	25,671	17,643	68.7	26,203	17,113	65.6	27,291	17,554	64.32	26,065	15,652	60.05	23,676	17,255	72.84
Punjab	102,359	86,123	84.1	89,791	69,785	65.0	105,300	69,727	65.27	121,500	73,958	59.32	110,132	86,431	78.49
Madras	73,862	41,932	60.8	25,760	58,167	227.0	145,930	47,905	32.83	107,282	28,218	26.30	102,711	35,102	34.16
Bombay	141,195	61,865	42.9	63,940	43.8	127,170	46,732	36.75	135,839	47,071	34.65	139,023	57,711	41.51	
Total	493,123	283,158	57.4	452,037	312,141	69.1	563,722	256,751	45.66	660,808	228,781	40.80	636,014	262,070	48.89

41. The percentage of expenditure on revenue for the whole of India during the year shows a slight increase as compared with 1893-94. The figures for the respective provinces as a rule show uneven results.

42. The rates per irrigated acre in the different provinces during the year 1894-95 were as follows:—

	Irrigation revenue. (Assessed.)	Irrigated acres.	Rate of revenue per acre.	COMPARISON WITH RATES IN	
				1893-94.	1894-95.
	Rs.	Acres.	Rs.	Rs.	Rs.
Baluchistan	2,118	4,896	.43	.78	.88
Bengal	...	...	...	.70	.31
Bombay { Deccan and Gujarat	10,143	21,687	.41	.41	.23
{ Sind	186,007	842,749	.22	.22	.23
Rajputana	12,533	33,920	.37	.37	.35
Madras	170,898	463,064	.37	.36	.54
North-Western Provinces and Oudh	19,827	74,214	.27	.25	.11
Punjab	80,310	750,911	.10	.14	.07
Total	481,826	2,194,441	.22	.24	.21
Lower Burma	(a) 94,003				
Total	575,829				

(a) Represents actual collections.

Note.—No acreage is quoted against Lower Burma as the works concerned are only river embankments.

Works for which Capital Accounts are not kept.

43. The receipts and expenditure on account of these works during 1894-95, as recorded in the Finance and Revenue accounts, are shown in the following statement, in comparison with the transactions of the previous four years:—

Works for which Capital Accounts are not kept.

	IMPERIAL.		FACEDONAL.		LOCAL.		TOTAL.	
	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.
	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
Rajputana	...	83	...	...	...	...	...	83
Baluchistan	16	...	...	...	...	...	16	...
Upper Burma	29	54,410	...	...	8,203	5,507	8,232	60,017
Lower Burma	...	...	10,055	43,612	...	674	10,055	44,286
Bengal	...	...	36,596	91,758	1,448	878	38,044	92,636
North-Western Provinces and Oudh	...	...	...	9,081	...	...	...	9,081
Punjab	23	12,648	6,518	12,173	2,226	158	8,767	24,979
Madras	...	...	5,301	262,749	...	1,048	5,301	263,797
Bombay	7,596	176,667	...	...	...	...	7,596	176,667
Total for 1894-95	7,651	243,908	58,470	419,373	11,877	8,365	78,001	671,546
1893-94	8,007	208,368	53,455	418,536	5,973	6,494	67,465	633,398
1892-93	6,354	240,450	47,712	443,769	8,686	10,509	62,752	694,718
1891-92	6,711	215,147	47,658	487,639	8,421	8,918	62,790	711,704
1890-91	5,840	156,076	46,102	423,563	6,192	7,834	58,134	587,473

44. The foregoing table shows that the direct receipts realized from this class of Minor Works have been increasing steadily. A large portion of the revenue derived from this class of works is assessed and collected with the Land Revenue and is accounted for under the head I.—Land Revenue in the Civil accounts. It is only in the Irrigation revenue reports of the Public Works Department that credit for such indirect receipts is taken.

45. The increase in the expenditure from Imperial funds during 1894-95, as compared with that of the previous year, occurred chiefly in Bombay, but partly in Upper Burma and Punjab. The increase in Bombay is to a great extent due to repairs to bunds in Sind which were damaged by floods. In Upper Burma the increase is due to additional expenditure on the completion of certain works. The increase in the Punjab is due to the construction of certain urgent works in connection with the Muzaffargurh canals and the new Sahiwal canal.

46. Under this head appear at present the whole of the irrigation works in Upper Burma. Orders have been issued by the Government of India for the preparation of Capital and Revenue Accounts of all important works. Only one project estimate for the Kyaukse Tank has been sanctioned by the Government of India, in Public Works Department letter No. 411, dated 11th February 1895. The estimates of the Mandalay canal are now under consideration by the Government of India.

SIMLA;

The 21st May 1896.

A. R. BECHER,

Offg. Accountant General, P. W. Dept.

Document accompanying.

Abstract Account of Revenue and Expenditure
on Irrigation Works during 1894-95.

No. 161., dated 21st May 1896.

Submitted to the Government of India, Public Works Department.

*Mr. Department
Proc. of the Madras Govt
Read the following*

No. 191 I.

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
CIVIL WORKS.
Irrigation.

Simla, the 23rd September 1896.

Review of the Revenue and Expenditure recorded under the head
"Irrigation Works" in the Accounts of the Government of India
for 1894-95.

READ—

Note by A. R. BECHER, Esq., Offg. Accountant General, Public Works Department,
upon the Accounts of Revenue and Expenditure of Irrigation Works in India
for 1894-95.

RESOLUTION.—The Irrigation Works in India are divided into Major Works
and Minor Works.

Major Works are sub-divided into—

- (a) Productive Works, the capital of which has been provided from borrowed money.
- (b) Protective Works, the capital of which has been provided from the General Revenue of India.

Minor Works, for the purpose of the Accountant General's note, are sub-divided into—

- (a) Works for which Capital and Revenue Accounts are kept.
- (b) Works for which Capital Accounts are not kept.

2. Capital and Revenue Accounts are kept for all Major Irrigation Works, of which there were 46 during 1894-95 as compared with 44 during the previous year. The two new Major Works are the Jamrao Canal in Sind and the Fatchpur Branch of the Lower Ganges Canal in the North-Western Provinces.

Of these 46 Works, 38 were sanctioned as Productive Public Works and 8 as Protective Works.

Under the head of Minor Works, there were 76 projects for which Capital and Revenue Accounts are kept as compared with 75 in the previous year.

The extra work is the Munniyeru Project on which there was no outlay during 1893-94.

For the remaining Minor Works one account only is kept in which are entered the receipts and charges for each work or group of works.

3. The following statement shows the return derived from the Irrigation system for which Capital and Revenue Accounts are kept. Purely navigation systems are excluded:—

Class of work.	Number of works.	Direct and Indirect Capital outlay to end of 1894-95.	Gross Revenue.	Working expenses, including indirect charges.	Net revenue.	Irrigated area.	Percentage of net revenue on Capital outlay.
		Rx.	Rx.	Rx.	Rx.	Acres.	
IRRIGATION.							
I.—Major Works—							
(a) Productive ...	37	29,485,741	2,130,974	855,199	1,275,775	6,099,952	4.32
Add—On account of old Irrigation—							
In Madras ...	...	—	420,381	46,714	373,667	...	...
In Sind ...	...	—	3,705	910	2,795	...	...
Total Productive ...	37	29,485,741	2,555,060	902,823	1,652,237	6,099,952	5.60
(b) Protective ...	8	12,003,427	1,47,671	28,616	19,055	159,918	0.95
II.—Minor Works—							
Works for which Capital and Revenue Accounts are kept	170	3,003,492	1,613,861	235,034	378,827	2,194,441	12.61
GRAND TOTAL ...	115	14,492,660	3,216,592	1,166,473	2,050,119	8,454,311	5.94

* Excludes the Hijli Tidal Canal (Bengal).

† Includes outlay on Gokak Canal, 1st Section, which is now classed as a Minor Work and combined with Gokak Storage Works.

‡ Excluding two navigation canals in Bengal (the "Calcutta and Eastern" and the "Orissa Coast" Canals) and four navigation canals in Madras (the Chikka Lake, Buckingham, Veda aniyam, Ganjam-Gopalpur Canals).

§ Includes share due to old irrigation in Madras and in Sind.

4. The net revenue derived from Major Works as a whole was Rx. 39,204 more than that of the previous year.

The increase occurred principally in the Punjab and is due to extension of irrigation on the Western Jumna, Bari Doab and Chenab Canals.

The net revenue derived from Minor Works was Rx. 58,081 less than that of the previous year.

The decrease was chiefly due to a falling off of the net revenue from the Upper Sutlej Inundation Canals in the Punjab and the Cheyaru Anicut system in Madras.

On the Upper Sutlej Canals there was a decrease in net revenue of Rx. 9,490, due principally to the small rabi of the previous year and to heavy remission for the kharif of 1894 on account of damage to crops done by grass-hoppers. There was also an increase of Rx. 5,159 in working expenses due to certain liabilities incurred in the previous year having had to be met in 1894-95 and to Revenue having to bear an increased share of establishment charges.

On the Cheyaru Anicut system the decrease in net revenue was due to the net revenue during the previous year having been unusually large owing to the write back of expenditure on certain works from Revenue to Capital.

The Periyar Project, the Jamrao Canal and the Fatihpur Branch of the Lower Ganges Canal have not yet begun to earn revenue. The Chenab Canal, the

Rushikulya project and others which have been recently opened for irrigation are not yet earning the revenue which may ultimately be expected from them. The capital expenditure on all these works is included in the figures on which the net revenue percentage is calculated so that when these works are in full operation the percentage of net revenue on capital expenditure should be better than that indicated in paragraph 3 above. The total net profit on all Major Works up to the end of 1894-95 amounted to nearly 3.2 millions of Rx.

5. The following statement shows the area irrigated by and the gross revenue derived from the Major and Minor Irrigation Works during the last 5 years:—

YEAR.	MAJOR WORKS.		MINOR WORKS.		TOTAL.	
	Area irrigated.	Gross revenue realized.	Area irrigated.	Gross revenue realized.	Area irrigated.	Gross revenue realized.
	Acres.	Rx.	Acres.	Rx.	Acres.	Rx.
1890-91 ...	7,172,468	2,312,787	2,101,586	463,147	9,274,054	2,795,914
1891-92 ...	7,560,484	2,395,372	2,123,659	431,279	9,684,143	2,826,651
1892-93 ...	7,043,286	2,552,415	2,272,091	1,607,549	9,315,377	3,159,964
1893-94 ...	6,919,381	2,417,757	2,116,964	636,372	9,036,345	3,054,129
1894-95 ...	6,259,870	2,602,731	2,194,411	617,861	8,454,311	3,216,592

* Exclusive of figures for certain works in Madras, which were not given in the Revenue Report for 1891-92.

† The increase was due to the inclusion in the accounts for 1892-93 of irrigation revenue of certain works in Madras pertaining to the year 1891-92 vide ante* above.

‡ Exclusive of the area irrigated in Native States in the Punjab.

The area irrigated shows a falling off as compared with the previous year, but there was an increase in the gross revenue realized.

The area irrigated in Native States in the Punjab from the portions of the canals constructed from funds contributed by the States amounted to 149,387 acres.

6. The estimated value of the crops irrigated from the Major and Minor Works during 1894-95 amounted to Rx. 23,224,312, being an average of Rx. 2.75 per acre.

7. The average rate of revenue assessed per acre irrigated during 1894-95 was Rx. 0.36 and Rx. 0.22 for Major and Minor Works respectively. The corresponding figures for 1893-94 was Rx. 0.35 and Rx. 0.24 respectively.

For Major Works the rate varies from Rx. 0.56 in Bombay (excluding Sind) to Rx. 0.18 in Bengal and Sind, and for Minor Works from Rx. 0.43 in Baluchistan to Rx. 0.10 in the Punjab.

8. The areas of the principal crops irrigated during 1894-95 in the various Provinces by the works for which Capital and Revenue Accounts are kept are given in the following statement:—

Province.	Rice.	Wheat.	Jowar and chauri (sorghum vulgare).	Bajra (Pennisetum indicum).	Sugarcane.	Cotton.	Barley.	Indigo.	Maize.	Other (Kharif and Rabi crops).
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Bombay (excluding Sind) ...	6,137	8,833	19,915	6,722	14,624	265	452	...	1,924	...
Sind ...	417,674	116,124	270,428	210,037	...	50,067	9,320	...	...	...
Punjab ...	140,285	942,522	174,253	21,724	71,425	304,473	21,763	77,431	101,462	...
Bengal ...	452,865	3,930	...	...	48,016	147	10,020	1,971	...	...
Madras ...	2,647,119	...	...	...	...	...	...	...	...	...
North-Western Provinces ...	126,826	83,073	12,221	251	218,006	50,378	6,385	308,832	8,835	...

9. The following are the percentages on gross revenue of the cost of revenue management (including collection charges) and of the up-keep of the works for Major Works in the different Provinces:—

Province.	Revenue management, per cent.	Up-keep, per cent.	Total, per cent.
Madras	8.6	10.4	19.0
North-Western Provinces	14.2	24.3	38.5
Punjab	15.4	29.0	44.4
Bombay	18.7	32.1	50.8
Sind	10.0	31.1	41.1
Bengal	31.1	65.1	96.2

10. The following statement shows the total cost of working per acre irrigated by the Major Works in the different Provinces:—

	1894-95.	
Sind	07	Including old maintenance charges.
Madras	08	
Punjab	15	Excluding maintenance of Tidal canal.
Bengal	28	
North-Western Provinces	31	
Bombay	38	

The figures are practically the same as those of the previous year except in the case of the North-Western Provinces where the cost of working per acre irrigated has risen from Rx. 0.17 in 1893-94 to Rx. 0.31 in 1894-95. The total year; but as the irrigated area was but little more than half that of the previous year, the working expenses per acre irrigated were nearly doubled.

11. The following statement gives for the principal canals in each Province details of the length of channels, of canal discharge, of area irrigated, and of the duty of water:—

Province.	Canals.	Length of completed main and branch canal. (Miles).	Length of completed distributaries (Miles).	Maximum discharge at head of canal (cubic feet per second).	AVERAGE DISCHARGE AT HEAD (CUBIC FEET PER SECOND).		AREA IRRIGATED (ACRES).					AREA IRRIGATED PER CUBIC FOOT PER SECOND OF AVERAGE DISCHARGE AT HEAD (ACRES).	
					Kharif.	Rabi.	Kharif.	Rabi.	Total.	Flow.	Lift.	Kharif.	Rabi.
BOMBAY.	1. Nira	90	131	456	265	256	12,347	16,021	28,368	28,368	44	67 (173)	36 (92)
	2. Mhaswad Tank	25	66	—	35	60	1,207	2,019	3,226	4,809	17	34 (173)	50 (92)
	3. Mutha	84	67	—	150	182	7,562	2,520	10,082	10,082	50	50 (173)	16 (92)
	4. Krishna	64	—	85	58	89	2,659	1,982	4,641	4,641	656	67 (173)	22 (92)
	5. Swat River	21	143	673	473	475	29,175	62,816	91,991	91,991	—	69 (174)	132 (133)
	6. Western Jumna, including Sirsa Branch.	404	1,630	6,000	3,001	8,737	212,104	117,353	329,457	345,262	7,115	72 (173)	50 (143)
	7. Bari Doab	353	1,081	4,081	3,152	3,019	205,610	126,077	331,687	497,551	38,146	63 (176)	108 (143)
	8. Sirhind	319	2,716	6,616	2,191	3,274	67,341	227,473	294,814	272,003	712	10 (114)	72 (173)
	9. Chenab	202	683	2,640	1,950	2,115	98,723	170,634	269,357	266,277	2,380	50 (177)	81 (155)
	10. Sidhaal	68	112	1,026	1,122	812	65,520	95,565	161,085	141,791	2,592	42 (167)	118 (161)
BENGAL.	11. Upper Sutlej Inundation.	219	127	3,931	3,231	—	73,416	122,889	196,305	191,460	4,745	61 (164)	—
	12. Indus Inundation	726	—	5,375	3,135	—	123,521	69,734	193,255	176,577	16,679	63 (147)	—
	13. Muzaffargarh Inundation.	800	413	—	Not recorded.	—	120,757	173,742	294,499	208,180	8,550	Not recorded.	—
	14. Orissa	280	1,091	6,558	1,910	616	118,459	4,102	122,561	121,614	1,117	62	6
BRIHAT.	15. Sone	367	1,219	5,055	2,775	2,352	257,261	57,773	315,034	313,232	3,519	63	17
	16. Godavari	503	1,891	14,176	7,006	4,770	654,126	100,617	754,743	740,073	14,490	93	21
	17. Krishna	320	1,614	9,174	4,508	—	514,812	108	514,920	300,027	5,453	114	—
	18. Pennar	22	120	1,004	371	182	64,105	2,351	66,456	67,130	720	174	21
MADRAS.	19. Sangam	9	174	5,361	670	100	70,517	4,781	75,298	73,615	952	105	41
	20. Cauvery	844	1,259	27,460	11,252	379	255,258	101,287	356,545	307,106	47,620	76	207
	21. Upper Ganga	440	2,576	7,782	4,370	3,282	301,407	50,128	351,535	302,677	47,860	70 (143)	15 (131)
	22. Lower Ganga	517	2,172	5,100	4,067	3,112	222,149	8,094	230,243	162,576	68,667	56 (143)	3 (135)
N.W. PROVINCES.	23. Agra	109	573	1,516	1,431	1,072	77,651	61,515	139,166	125,103	14,058	56 (76)	57 (122)
	24. Eastern Jumna	229	646	1,515	1,122	1,052	103,046	22,214	125,260	110,912	14,318	91 (162)	21 (76)
	25. Desert	102	—	2,767	2,354	—	87,718	15,779	103,497	96,771	4,722	37	—
	26. Begari	158	—	6,185	5,101	—	156,119	55,211	211,330	181,374	30,956	31	—
SIND.	27. Chaf	298	—	7,070	7,244	—	191,818	60,658	252,476	257,322	4,125	26	—
	28. Paili	1,019	—	9,800	8,342	—	250,371	51,201	301,572	225,716	102,853	37	—
TOTAL		8,667	20,777	—	—	—	4,950,254	2,027,115	6,977,369	6,535,517	461,812	—	—

M.B.—The figures in brackets in columns 13 and 14 denote the number of days on which the irrigating duty is calculated.

12. The following statement shows the return derived from Navigation Works proper, for which Capital and Revenue Accounts are kept. Works in which navigation is combined with irrigation are included in the statement in paragraph 3:—

Class of works.	Number of works.	Direct and indirect Capital outlay to end of 1894-95-1	Gross revenue.	Working expenses, including indirect charges.	Net revenue.	Percentage of net revenue on capital outlay.
		Rx.	Rx.	Rx.	Rx.	
NAVIGATION.						
I—Major works—						
(a) Productive ...	1	242,818	5,853	4,743	1,110	46
II—Minor works...	6	1,846,241	61,951	48,235	13,716	74
Total ...	7	2,089,059	67,804	52,978	14,836	71

The percentage of net revenue on capital outlay was 0.71 as compared with 0.56 and 1.04 during 1893-94 and 1892-93 respectively.

13. The following statement gives some details of the navigation operations of the year. Works on which navigation is combined with irrigation are included:—

Provinces.	Length of canal open for navigation.	Ton-mileage.	Estimated value of cargoes.	Estimated value of rafts.	Number of passengers carried.
	Miles.	Millions.	Thousands of Rx.	Thousands of Rx.	
Punjab ...	432	...	...	236	6,695
Bengal ...	673	37,914	9,084	55	545,449
Madras ...	1,252	50,527	4,861	427	467,774
North-Western Provinces ...	535	8,393	262	107	404
Total ...	2,892	96,834	14,207	825	1,021,321

The figures show a falling off compared with those of the previous year except in the estimated value of rafts. There was an increase of 10 miles in the length of canal open for navigation in Madras.

14. The direct outlay on works for which only Revenue Accounts are kept and for which neither Capital nor Revenue Accounts are kept including those maintained by the Civil Department was Rx. 671,546 as compared with Rx. 633,398 during the previous year. The direct receipts were Rx. 78,001 against Rx. 67,465.

A large portion of the revenue derived from this class of works is assessed and collected with the Land Revenue and is accounted for under that head in the Civil Accounts. The direct receipts comprise only the sums realized by the Public Works Department which alone are credited in the Public Works Accounts.

The figures in the following statement which relates to these works are extracted from the Irrigation Revenue Reports of the different Provinces.

Certain receipts, e.g., those realized by Civil Officers from irrigation works under their charge, do not appear in the Reports, so that the figures are approximate only. Figures relating to works classed as "Agricultural" are excluded.

Province.	WORKS FOR WHICH CAPITAL ACCOUNTS ARE NOT KEPT.			
	Gross revenue from all sources direct and indirect, as recorded in Irrigation Revenue Reports.	Working expenses including collection charges.	Net Revenue	Area irrigated.
	Rx.	Rx.	Rx.	Acres.
Bombay excluding Sind ...	51,742	27,890	26,852	143,907
Sind ...	251,233	123,610	128,323	1,138,571
Punjab ...	44,338	25,657	18,481	304,730
Bengal ...	17,278	22,993	-5,715	25,908
Madras ...	844,849	228,351	616,498	3,234,633
Total ...	1,213,140	428,701	784,439	4,847,749

* Exclusive of indirect charges.

The total area irrigated by these works in 1894-95 amounted to 57.3 per cent. of that irrigated by the Major and Minor Works as shown in paragraph 5.

15. The total area irrigated from all works during 1894-95 amounted to 13½ million acres.

If the value per acre of the irrigated crops be taken at the estimated rate of Rx. 2.75 per acre as given in paragraph 6, the total value of the produce from irrigated lands amounted to 36½ millions of Rx.

16. The following statement gives particulars of works which were under construction:—

Project.	Amount of estimate (direct outlay).	Expenditure to end of 1894-95 (direct outlay).	Ultimate area to be irrigated.	Ultimate estimated revenue.	Estimated percentage of net revenue on direct capital outlay.	Remarks.
	Rx.	Rx.	Acres.	Rx.		
Productive.						
Chenab Canal (complete project of 1891). ...	2,568,417	1,458,327	1,100,000	535,911	16.1	Construction estimate closed on 31st March 1895. Revised Estimates sanctioned in Secretary of State's Despatch No. 18 P. W., dated 26th July 1894.
Sirsa Branch ...	289,269	274,614	126,290	32,000	11.0	
Periyar Irrigation ...	847,100	735,603	192,431	72,070	6.6	
Eastern Nara Irrigation ...	619,079	609,150	283,428	39,350	6.3	Complete Revised Estimate sanctioned in Secretary of State's Despatch No. 12 P. W., dated 21st March 1895.
Jamrao Canal ...	696,652	16,414	260,000	51,057	7.7	
Fatehpur Branch, Lower Ganges Canal.	342,000	5,814	116,000	42,050	8.9	
Protective.						
Rushikulya ...	436,800	368,068	117,250	24,671	4.3	Second Revised Estimate sanctioned in Secretary of State's Despatch No. 34 P. W., dated 19th July 1894.

17. The following statement gives particulars of important irrigation projects, the estimates of which had been sanctioned but upon which work had not been begun up to the end of 1894-95:—

Project.	Amount of estimate (direct outlay).	Ultimate area to be irrigated.	Ultimate estimated revenue.	Estimated percentage of net revenue on direct capital outlay.	Date of sanction.
PRODUCTIVE WORKS.	Rx.	Acres.	Rx.		
Jhelum canal	1,202,407	4,3360	154,875	82	8th November 1888.
Kalingaroyen channel	82,500	23,000	6,650	67	25th January 1891.

18. In reviewing the Revenue Reports of the different Provinces the Government of India have noticed the approval expressed by Local Governments of the manner in which the officers of the Irrigation Department have performed their duties, and the Governor General in Council, in reviewing the Irrigation operations throughout India during 1894-95, desires to express his appreciation of the results exhibited in the Accountant General's note and in this Review.

ORDER.—Ordered, that the foregoing, with a copy of the note by the Accountant General, Public Works Department, be forwarded to the Local Governments and Administrations in the Public Works Department, noted on the margin, for information.

The Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh, and the Punjab.
The Chief Commissioners of the Central Provinces, Burma, Assam, and Coorg.
The Resident at Hyderabad.
The Agents to the Governor General for Central India, Rajputana, and Baluchistan.
The Accountant General, Public Works Department.

Ordered also, that a copy of the Review and note be forwarded to the Revenue and Agricultural and Finance Departments, and that the papers be published in the Supplement to the *Gazette of India*.

Ordered further, that a copy of the Review and note be forwarded to Her Majesty's Secretary of State for India for information.

W. S. S. BISSET, Col., R.E.,
Secretary to the Govt. of India.

Document accompanying.

Note by the Accountant General, Public Works Department, dated 21st May 1895.

*Communicated to the
Chief Engineer for Irrigation*

(So) W. S. S.

The Chief Engineer for Irrigation

G. C. Press, Simla.—No. 1041 P. W. D.—25-9-95.—502

Accompaniment to P. W. D. Review No. 191 I. of 1896.

Note by A. R. Becher, Esq., Offg. Accountant General, Public Works Department, upon the accounts of Revenue and Expenditure of Irrigation Works in India for 1894-95.

The figures in the accounts submitted herewith agree with the Finance and Revenue accounts of the Government of India, but in this note certain figures are added from the Administrative accounts of the Public Works Department, Irrigation Branch, the Revenue Reports of Irrigation Works and the Annual Statement of the Financial Results of Irrigation Operations in India.

2. The Irrigation works in India are divided into two main classes, viz., Major Works and Minor Works.

Major Works are sub-divided into—

- Productive Works, the Capital of which has been provided from borrowed money; and
- Protective Works, the Capital of which has been provided out of the general revenues of India.

Minor Works are for the purpose of this note sub-divided into—

- Works for which Capital and Revenue accounts are kept; and
- Works for which Capital accounts are not kept.

3. Capital and Revenue accounts are kept for all Major Irrigation Works. There are 46 projects classed as Major Works, of which one, viz., the Hijili Tidal Canal in Bengal, is a purely navigation canal.

Of these, 38 were sanctioned as works expected to be remunerative, i.e., estimated to pay the cost of up-keep and interest on the Capital outlay. They were or are being constructed from funds provided from sources outside the general revenues. The remaining eight projects* were sanctioned as works of protection against famine, and the cost of their construction has been or is being paid for out of annual grants made from general revenues under the head of famine insurance.

- * North-Western Provinces and Oudh.
1. Betwa Canal.
 2. Swat River Canal.
 3. Rushikulya Project.
 4. Nira Canal.
 5. Mhaswad Tank.
 6. Chankapur Tank.
 7. Maladevi Tank.
 8. † Gokak Canal, 1st section.

† Now classed as a minor work and combined with the Gokak Storage Works.

4. The works classed as Minor Irrigation Works are numerous. Capital and Revenue accounts are kept for 76 separate projects of this class; for the others only one account of receipts and charges for each work or group of works is kept. Of the 76 projects for which Capital and Revenue accounts are kept, 6 are purely navigation canals, viz., 2 in Bengal and 4 in Madras.

5. The general results of all works for which Capital and Revenue accounts are kept are as follows:—

	Major Works. Rx.	Minor Works. Rx.	TOTAL. Rx.
Capital outlay.			
During 1894-95	695,032	70,531	765,563
To end of 1894-95	31,731,956	4,849,733	36,581,719
Revenue Account, 1894-95.			
Gross Revenue	2,182,413	536,014	2,718,427
Maintenance and Working	889,559	262,070	1,150,629
Net Revenue	1,293,855	273,944	1,567,799
Interest	1,194,111	...	...
Net profit after paying interest on Capital	99,744	...	...
Percentage of net Revenue of the year on the Capital outlay to end of the year	4.08	5.65	4.29
Against in 1893-94	4.04	6.89	4.42
" 1892-93	4.59	6.48	4.84

6. The net revenue derived from Major Works is Rx. 39,204 better than that of the previous year. The increase occurred principally in the Punjab and is due to the extension of irrigation from the Western Jumna, Bari Doab and the Chenab Canals. The interest charges during 1894-95 have, however, also increased by Rx. 28,557 owing to additional Capital outlay, so that the increase in the net profit is Rx. 10,647.

7. The net profit should be considerably increased when the Fatehpur Branch of the Lower Ganges Canal, the Chenab Canal, the Periyar and Rushikulya Projects and the Jamrao Canal are completed, and the irrigation from them and other projects have been fully developed. So far the works in Bengal and Deccan have failed to pay the interest on the Capital invested in them.

8. The net revenue from Minor Works was less than that of the previous year by Rx. 58,081. The largest items contributing towards this decrease are referred to in paragraph 32 below.

9. The receipts and charges of the year 1894-95 on Revenue account, exclusive of the figures relating to Minor Works for which Capital accounts are not kept, are detailed in the following statement by funds and provinces:—

1894-95.

	Major Works						Minor Works						Total					
	Grass Revenue	Maintenance and working	Net revenue	Interest	Net profit	Local	Grass Revenue	Maintenance and working	Net revenue	Interest	Net profit	Local	Grass Revenue	Maintenance and working	Net revenue	Interest	Net profit	Total
	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
MAJOR WORKS.																		
Productive.																		
Irrigation.																		
Bengal	117,498	117,498	117,498	296	296	146,160	146,160	146,160	4,698	4,698	150,858	150,858	146,160	146,160	150,858	4,698	4,698	150,858
N.W. P. and Oudh	569,053	569,053	569,053	274,072	274,072	843,125	843,125	843,125	306,093	306,093	1,149,218	1,149,218	843,125	843,125	1,149,218	306,093	306,093	1,149,218
Punjab	569,053	569,053	569,053	274,072	274,072	843,125	843,125	843,125	306,093	306,093	1,149,218	1,149,218	843,125	843,125	1,149,218	306,093	306,093	1,149,218
Madras	139,980	139,980	139,980	78,845	78,845	218,825	218,825	218,825	...	...	218,825	218,825	139,980	139,980	218,825	78,845	78,845	218,825
Bombay	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stores appropriated	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	1,422,464	1,422,464	1,422,464	576,836	576,836	2,000,000	2,000,000	2,000,000	312,791	312,791	2,312,791	2,312,791	1,422,464	1,422,464	2,312,791	312,791	312,791	2,312,791
Navigation.																		
Bengal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	1,422,464	1,422,464	1,422,464	576,836	576,836	2,000,000	2,000,000	2,000,000	312,791	312,791	2,312,791	2,312,791	1,422,464	1,422,464	2,312,791	312,791	312,791	2,312,791
MINOR WORKS.																		
Productive.																		
Irrigation.																		
Bajpura	13,477	13,477	13,477	...	...	13,477	13,477	13,477	...	...	13,477	13,477	13,477	13,477	13,477	...	...	13,477
Baluchistan	9,118	9,118	9,118	...	...	9,118	9,118	9,118	...	...	9,118	9,118	9,118	9,118	9,118	...	...	9,118
Lower Burma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bengal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
N.W. P. and Oudh	110,132	110,132	110,132	...	...	110,132	110,132	110,132	...	...	110,132	110,132	110,132	110,132	110,132	...	...	110,132
Punjab	137,348	137,348	137,348	...	...	137,348	137,348	137,348	...	...	137,348	137,348	137,348	137,348	137,348	...	...	137,348
Madras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bombay	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	263,075	263,075	263,075	114,160	114,160	377,235	377,235	377,235	61,910	61,910	439,145	439,145	263,075	263,075	439,145	61,910	61,910	439,145
Navigation.																		
Bengal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Madras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	263,075	263,075	263,075	114,160	114,160	377,235	377,235	377,235	61,910	61,910	439,145	439,145	263,075	263,075	439,145	61,910	61,910	439,145
TOTAL MAJOR WORKS	1,422,464	1,422,464	1,422,464	576,836	576,836	2,000,000	2,000,000	2,000,000	312,791	312,791	2,312,791	2,312,791	1,422,464	1,422,464	2,312,791	312,791	312,791	2,312,791
TOTAL MINOR WORKS	263,075	263,075	263,075	114,160	114,160	377,235	377,235	377,235	61,910	61,910	439,145	439,145	263,075	263,075	439,145	61,910	61,910	439,145
GRAND TOTAL	1,731,125	1,731,125	1,731,125	690,996	690,996	2,377,235	2,377,235	2,377,235	374,701	374,701	2,751,936	2,751,936	1,731,125	1,731,125	2,751,936	374,701	374,701	2,751,936

10. This table shows that after paying interest on borrowed money expended in the construction of Major Irrigation Works, the highest net profits are, as in the previous two years, obtained from irrigation projects in Madras. Next follow the North-Western Provinces and Oudh, the Punjab, and Bombay. In the Punjab the revenue is gradually increasing, as the new irrigation projects are completed. The Chenab Canal will probably be completed in 1897-98. In Bengal the loss is, as explained in last year's report, due to the permanent settlements rendering enhancement of land revenue impracticable.

Major Works.

11. The following statement shows in detail the financial results of individual Major Irrigation Works during and to the end of 1894-95 :-

Major Works.	CAPITAL OUTLAY TO END OF 1894-95.			REVENUE ACCOUNT FOR 1894-95.						REVENUE ACCOUNT TO END OF 1894-95.					
	Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Percentage of net revenue on the Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	
Productive.															
BENGAL.															
<i>Irrigation.</i>															
Orissa Project	2,563,429	57,865	2,621,294	33,235	48,332	-15,097	101,952	-117,079	...	623,685	857,790	-332,105	1,968,744	-2,300,819	
Midnapore Canal	826,132	18,415	844,547	29,442	22,416	6,996	83,045	-26,059	83	609,232	477,549	31,643	740,040	-708,387	
Sone Project	2,599,403	91,657	2,690,960	83,483	70,674	12,809	103,868	-91,089	43	1,324,431	1,112,015	212,416	1,969,229	-1,766,813	
<i>Navigation.</i>															
Hijli Tidal Canal	6,991,964	167,837	7,159,801	146,160	141,462	4,698	234,925	-234,227	08	2,359,348	2,447,391	-88,046	4,678,013	-4,766,059	
TOTAL BENGAL	236,207	5,911	242,118	6,863	4,743	1,110	9,264	-8,154	46	110,256	96,152	14,114	13,844	-169,730	
N.-W. PROVINCES AND OUDH.															
<i>Irrigation.</i>															
Ganges Canal	2,763,994	171,645	2,935,639	326,081	109,767	216,314	109,592	106,722	7-39	7,070,740	8,092,899	3,977,841	3,725,089	253,752	
Lower Ganges Canal	3,195,139	231,240	3,426,379	175,376	84,321	91,214	137,548	-36,084	2-67	3,350,471	1,603,742	1,976,729	2,293,574	-316,845	
Agra Canal	867,262	67,672	934,934	63,725	26,729	36,997	54,459	2,498	3-96	947,233	472,143	475,090	724,325	-219,233	
Eastern Jumna Canal	334,336	21,192	355,728	114,467	35,441	81,026	13,269	67,767	22-78	3,103,402	974,748	2,130,654	450,685	1,579,959	
Fatehpur Branch of the Lower Ganges Canal	5,814	519	6,333	...	...	...	220	-220	...	...	...	...	220	-220	
TOTAL N.-W. P. & OUDH	7,158,735	495,368	7,652,103	679,848	254,257	425,591	281,928	140,663	5-36	14,703,851	6,143,637	8,560,314	7,193,903	1,366,411	
PUNJAB.															
<i>Irrigation.</i>															
Western Jumna Canal	1,391,740	66,703	1,458,443	149,636	70,061	79,575	54,098	24,477	6-39	6,000,511	1,900,271	4,100,240	1,022,473	3,077,767	
" " Sirsa Branch	1,694,163	64,135	1,758,298	229,336	64,676	163,660	67,069	96,601	9-31	4,193,250	1,735,649	2,457,602	1,972,316	48,286	
" " Bahawalpur	2,256,665	117,715	2,404,380	95,660	59,015	36,605	91,392	-54,487	1-53	1,186,496	630,596	655,910	1,472,501	-816,591	
Lower Sohra and Para Canal	67,247	2,712	69,959	10,189	7,043	3,126	3,691	435	4-47	60,607	59,514	933	24,902	-23,919	
Chenab Canal	1,454,327	34,222	1,492,549	60,237	45,949	14,288	64,916	-40,649	-9-6	151,182	150,766	416	234,984	-234,568	
Bidhar "	98,853	3,231	102,084	25,693	9,176	16,519	3,876	12,643	16-16	167,193	63,699	103,494	32,634	70,859	
Jhelum "	1,016	108	1,124	...	...	...	40	-40	...	...	...	...	400	-200	
TOTAL PUNJAB	6,999,061	289,936	7,288,997	669,053	256,000	313,053	274,072	38,981	4-30	11,759,139	4,440,324	7,318,815	4,780,010	2,538,805	

Major Works.	CAPITAL OUTLAY TO END OF 1944-45				REVENUE ACCOUNT FOR 1944-45.						REVENUE ACCOUNT TO END OF 1944-45.			
	Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Percentage of net revenue as the original outlay.	Gross revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.
MADRAS.														
<i>Irrigation.</i>														
Godavari Delta System	1,091,869	189,798	1,281,667	250,438	64,000	186,438	43,665	142,820	14.55	6,040,274	1,839,535	4,200,739	1,216,050	2,984,689
Krishna "	1,083,365	79,125	1,162,490	201,888	63,731	148,157	42,520	105,637	12.74	2,491,917	1,119,408	2,372,519	821,804	1,550,715
Pennar Ancient "	163,744	24,846	188,590	16,652	2,779	13,873	6,417	7,456	7.35	314,130	65,175	248,955	169,816	89,139
Chaverry Delta "	166,074	12,352	178,426	87,018	6,627	80,391	6,630	73,761	45.06	2,370,467	169,784	2,200,683	173,624	2,027,059
Siva-kun'dam Ancient System	136,012	10,091	146,103	9,956	2,382	7,574	6,453	1,121	6.21	183,566	59,456	124,110	119,247	4,862
Sangam Ancient System	309,796	69,679	379,475	18,603	4,721	13,882	12,330	1,552	8.67	104,343	44,393	60,050	127,373	63,623
Kannal Canal	2,189,370	141	2,189,511	11,316	10,968	37	86,770	-86,433	-0.2	123,558	208,345	-79,987	1,082,958	-1,162,945
Kannal Tank	39,694	2,273	41,967	997	471	516	1,688	-1,072	1.23	4,076	3,163	907	14,311	-13,404
Krishna Project	735,604	19,320	754,924	...	...	...	27,605	-27,605	...	...	...	...	97,828	-97,828
TOTAL MADRAS	5,895,552	408,663	6,304,215	596,933	145,679	(5) 451,254	232,983	218,266	7.16	12,644,079	3,495,354	9,148,725	3,822,141	5,326,584
BOMBAY.														
<i>Sind.</i>														
<i>Irrigation.</i>														
Deert Canal	122,604	4,074	126,678	13,284	13,017	237	4,899	-4,662	-1.9	241,337	104,183	137,154	80,334	56,820
Unbarwah "	87,900	1,549	89,449	11,344	6,232	6,156	2,126	3,030	6.67	62,210	19,840	42,370	14,322	28,048
Begari Canal	162,681	4,942	167,623	38,678	6,679	26,039	6,503	20,436	16.09	647,778	210,471	247,307	141,031	206,276
Eastern Nara Works	6,9150	21,081	27,996	44,783	17,018	27,765	23,729	4,036	4.41	804,862	343,118	461,744	477,016	-13,321
Jamrao Canal	16,414	634	17,048	...	...	...	373	-373	...	...	...	...	373	-373
Total Sind	908,625	32,373	1,001,002	103,033	42,936	(1) 960,027	37,630	23,497	6.00	1,689,177	707,652	981,525	713,115	267,410
GUJARAT AND GUJARAT.														
<i>Irrigation.</i>														
Matbmati Canal	49,093	2,747	51,840	1,108	60	49	1,964	-1,465	-9.6	10,850	16,395	-5,545	43,375	-49,290
Lower Panjhra River Works	43,903	2,281	46,184	1,655	66	987	1,765	-768	2.14	24,971	13,693	11,278	41,844	-24,566
Kedra River Works	69,376	2,866	72,242	1,164	1,653	-463	2,775	-3,240	...	14,986	13,717	1,169	43,009	-41,840
Total Deccan and Gujarat	1,034,619	49,114	1,083,733	35,947	14,865	21,082	41,218	-2,136	1.95	461,869	262,614	199,255	889,936	-697,753
TOTAL BOMBAY	2,003,149	81,497	2,084,646	139,980	67,801	81,179	79,843	2,331	3.89	2,150,036	977,268	1,172,770	1,643,113	-430,343
38 TOTAL PRODUCE	29,045,450	1,440,291	30,485,741	2,130,974	865,199	1,276,775	1,100,761	166,014	4.32	43,618,453	17,504,075	26,114,378	22,057,160	4,056,198
Navigation	236,907	5,911	242,818	6,853	4,743	1,110	9,264	-8,154	-4.6	110,266	96,163	14,114	183,844	-169,730
Total	29,282,357	1,446,202	30,728,559	2,137,827	869,942	1,277,885	1,110,025	157,860	4.29	43,728,719	17,600,237	26,128,482	22,241,024	3,885,468

(e) Excludes revenue due to old irrigation, which is as follows:-

	Gross revenue.	Maintenance and working.	Net revenue.
Godavari Delta System	12,400	850	11,550
Krishna "	7,100	480	6,620
Pennar Ancient "	11,700	3,000	8,700
Chaverry Delta "	387,181	38,609	348,572
Siva-kun'dam Ancient System	1,250	1,250	0
Sangam Ancient System	13,900	2,500	11,400
Kannal Canal	200	16	184
Total	420,381	46,714	373,667

(b) Excludes revenue due to old irrigation, which is as follows:-

Begari Canal	3,361	676	2,685
Eastern Nara Works	344	94	250
Total	3,705	770	2,935

Number of Works.	Major Works.	CAPITAL OUTLAY TO END OF 1894-95.			REVENUE ACCOUNT FOR 1894-95.						REVENUE ACCOUNT TO END OF 1894-95.					
		Direct.	Indirect.	Total.	Group revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Percentage paid on the Capital outlay.	Group revenue.	Maintenance and working.	Net revenue.	Interest.	Net profit.	Rx.
1	Protective. N.W. PROVINCES AND ODH. Irrigation. Betwa Canal	401,321	21,598	422,859	5,895	9,789	—3,594	16,037	—19,931	...	59,123	92,979	—33,856	183,518	—217,374	Rx.
1	PUNJAB. Irrigation. Swat River Canal	350,761	12,934	363,695	27,502	9,035	19,417	14,035	4,422	5.07	189,097	86,263	101,834	183,133	—81,209	Rx.
1	MADRAS. Irrigation. Bashikulja Project	368,068	33,020	401,088	(a) 2,734	1,567	1,167	14,103	—12,936	.29	4,490	3,654	836	67,123	—66,286	Rx.
5	BOVBAY. DECCAN AND GUJARAT. Irrigation. Godak Canal, 1st Section	40,084	1,173	41,257	(b)	(b)	(b)	1,604	—1,604	...	2,474	2,100	374	20,902	—20,528	Rx.
	Mhaswad Tank	198,608	6,082	204,690	1,273	2,846	—1,574	7,533	—9,507	...	13,166	14,907	—1,741	96,897	—98,629	Rx.
	Nira Canal	530,163	29,435	559,598	8,113	5,359	2,824	20,993	—18,169	.60	37,391	34,293	3,098	215,738	—212,640	Rx.
	Chankapur Tank	6,402	318	6,720	...	...	...	255	—255	...	...	...	...	3,390	—3,390	Rx.
	Mahadevi Tank	3,396	216	3,612	...	...	...	136	—136	...	...	...	...	1,394	—1,394	Rx.
	TOTAL BOMBAY	778,561	37,224	815,785	9,455	8,205	1,250	30,921	—29,671	.15	53,031	61,300	1,731	335,311	—336,580	Rx.
8	TOTAL PROTECTIVE	1,608,711	104,716	2,003,427	45,686	28,616	16,970	75,086	—68,116	.85	304,741	234,196	70,545	772,084	—701,539	Rx.
46	GRAND TOTAL	30,181,068	1,650,918	31,731,986	2,182,413	886,558	1,293,855	1,194,111	99,744	4.08	44,031,460	17,834,423	26,197,037	23,013,109	3,183,929	Rx.

(a) Excludes Rs. 3,000 on account of old irrigation revenue.
(b) This is now claimed as a minor work and combined with Godak Storage Works.

12. Taken collectively by provinces the percentages of net revenue on the Capital outlay upon Major Works for the last three years are as follows:—

	1894-95.	1893-94.	1892-93.
1. Madras	6.75	6.70	6.46
2. Bombay—Sind	6.00	6.54	7.65
3. North-Western Provinces and Oudh	5.22	5.37	5.22
4. Punjab	4.33	3.95	6.24
5. Bombay—Deccan and Gujarat	1.18	1.27	1.19
6. Bengal	.09	.19	.63
Total	4.08	4.04	4.59

13. The percentage in Madras would be considerably higher but that the Karnul Canal, which was made by a company, seldom pays its working expenses and maintenance. The cost of this canal is nearly one-third of the total expenditure on Major Irrigation works in Madras. Omitting this canal the figures for Madras would be:—

	Per cent.
1894-95	9.97
1893-94	10.06
1892-93	9.91

14. The systems which in 1894-95 paid over 4 per cent. are arranged below in the order of the rate paid, and are compared with the results in the two previous years:—

	RATE PAID.		
	1894-95.	1893-94.	1892-93.
1. Cauvery Delta System	45.06	45.76	39.00
2. Eastern Jumna Canal	22.78	24.60	20.14
3. Sidhna Canal	16.16	19.09	14.95
4. Begari Canal	16.09	17.12	17.71
5. Godavari Delta System	14.55	14.04	13.73
6. Kistna	12.74	12.68	12.53
7. Bari Doab Canal	9.31	9.47	10.26
8. Unharwah Project	8.67	8.60	8.81
9. Ganges Canal	7.39	7.23	7.17
10. Penner Anicut	7.35	7.23	7.40
11. Western Jumna Canal	5.39	2.92	4.90
12. Srivaikuntham Anicut System	5.21	5.43	2.69
13. Swat River Canal	5.07	4.42	5.20
14. Krishna Canal	4.83	2.76	4.85
15. Lower Sohag and Para Canal	4.47	.75	...
16. Eastern Nara Works	4.41	5.60	5.92

15. The systems that have, up to the end of 1894-95, paid off the accumulated interest on the Capital expended on them are noted below:—

	Surplus. Rx.
1. Western Jumna Canal, including Sirsa Branch	3,077,767
2. Godavari Delta System	2,991,689
3. Cauvery	2,027,159
4. Eastern Jumna Canal	1,679,959
5. Kistna Delta System	1,660,615
6. Ganges Canal	252,752
7. Bari Doab Canal	495,286
8. Begari	206,276
9. Penner Anicut System	89,489
10. Sidhna Canal	70,860
11. Desert	58,820
12. Unharwah	18,008
13. Srivaikuntham Anicut System	4,662

Assuming that the works are still worth the amount charged in each case to the Capital account, this represents a net profit to the State at the end of 1894-95 on these systems of 12,511,542
The charge to the State on other Major Works is 9,327,613

And this leaves a net profit to date on all Major Works of 3,183,92

16. The following statement shows the net charge to the State to the end of each year for the last five years on account of further projects, which are expected eventually to pay off the accumulated interest on their Capital cost:—

	Date of Completion	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
		Rx.	Rx.	Rx.	Rx.	Rx.
<i>North-Western Provinces and Oudh.</i>						
Lower Ganges Canal	1878	241,950	257,544	270,214	290,752	316,545
Agia Canal	1874	233,674	233,051	239,162	251,733	249,235
<i>Punjab.</i>						
Sirhind Canal	1887	854,540	800,557	717,078	762,105	816,591
Lower Sohag and Para Canal	1896	13,442	18,617	22,216	24,334	23,949
Chenab Canal	...	77,127	106,943	152,338	193,920	234,568
<i>Madras.</i>						
Sangam Anicut System	1885	50,059	64,784	65,213	65,073	63,523
<i>Bombay—Sind.</i>						
Eastern Nara Works	...	51,227	41,222	27,910	17,357	13,321
TOTAL	...	1,522,019	1,522,717	1,494,731	1,595,328	1,718,032

NOTE.—The projects which have not yet been opened for irrigation have been excluded from this statement.

In all these projects the debit against them should be decreasing.

17. The continued steady decrease against the Eastern Nara before completion of the project is satisfactory.

18. The continued increase against the Lower Ganges Canal is not altogether satisfactory; this canal has been opened 16 years, and has not yet begun to pay the annual interest charges. This unsatisfactory result is chiefly due to the destruction of the Kali Nadi aqueduct and to a succession of wet years from 1894 to 1895. The Government of the North-Western Provinces and Oudh however expects that the ultimate revenue from the canal will amount to 5 per cent. on the Capital outlay. The Sirhind and Lower Sohag and Para Canals have not been opened for 10 years; the irrigation from these projects has not had time to develop fully. When full credit is given for the indirect revenue due to the Lower Sohag and Para Canal, it is expected that the net revenue will more than cover the annual interest charges.

The decrease in the debit against the Sangam Anicut System is a satisfactory sign.

19. The undernoted works, which were allowed to be constructed from borrowed money prior to the introduction of the rules laying down the conditions which must now be fulfilled before a work may be classed as Productive, are not expected to repay the accumulated interest charges on the Capital invested in them:—

	Capital outlay to end of 1894-95.	Net gain or loss if working each year.				
		1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
<i>Bengal—</i>						
Orissa Project	2,624,294	—12,267	—5,216	—813	—16,011	—15,097
Midnapore Canal	844,547	2,813	1,837	8,445	9,658	6,986
Sone Project	2,690,960	5,707	20,823	30,133	18,470	12,809
Hijili Tidal Canal	242,818	—2,553	—1,377	2,030	269	1,110
<i>Bombay, Deccan and Gujarat—</i>						
Hathmati Canal	51,840	71	387	—40	309	499
Lower Panjhra River Works	46,186	626	572	660	1,230	987
Kadva River Works	72,241	310	1	199	397	—465
Lakh Canal	37,189	—235	—135	—199	—226	—1,167
Mutha Canals	655,649	13,776	16,207	13,490	18,071	15,368
Ekrak Tank	134,039	1,009	1,234	—153	—201	1,682
Krishna Canal	86,489	1,749	2,078	4,164	2,383	4,178
TOTAL	7,486,252	8,096	36,411	57,906	34,348	26,850

In addition to the above, the Karnul Canal in Madras, which was purchased from the Madras Irrigation and Canal Company in 1882, is not likely ever to be a financial success, and the Barur tank also will probably not pay the interest on the capital outlay. Under the rules contained in Public Works Department Code, Volume II, Chapter V, para. 35, clause VIII, the current expenditure on these works is being provided out of the general revenues.

20. The sources from which the revenue of the Major Works was derived during 1894-95 are exhibited in the following statement in comparison with those of the four previous years:—

	Irrigation Revenue			Sale of water.	Water supply of towns.	Fisheries.	Other canal produce.	Water power.	Navigation receipts.	Rebate of buildings.	Flood.	Miscellaneous.	Total.	Totals of previous years value.			
	Share of enhanced land revenue due to irrigation works.	Water rates.	Quarry rates on first-class lands.											1894-95.	1895-96.	1896-97.	1897-98.
Bengal	...	106,976	...	98	...	427	408	172	36,669	1,438	46	5,760	152,013	166,500	189,335	159,860	133,914
North-Western Provinces and Oudh	117,408	605,466	29,900	891	122	19,783	...	6,109	1,995	298	1,390	3,521	685,743	701,981	685,771	705,195	651,618
Punjab	30,758	487,635	41,927	2,776	104	4,266	2,213	16,793	7,065	1,076	657	1,275	606,555	635,001	680,914	601,099	583,045
Madras	570,179	9,981	...	...	611	1,896	2,135	...	14,257	374	9	306	699,667	689,596	665,424	625,711	630,037
Bombay	97,476	35,026	...	553	9,941	165	1,897	600	...	104	54	2,620	148,435	137,113	147,610	114,498	127,277
Total for 1894-95	815,910	1,145,084	71,897	4,008	10,708	26,827	6,653	22,764	69,955	3,310	2,086	13,481	2,162,413	2,130,271	2,258,054	2,109,363	2,025,891
1895-96	786,187	1,141,863	61,245	4,243	10,574	23,492	6,951	20,256	69,030	3,302	1,917	13,311	2,130,271				
1896-97	760,020	1,298,206	66,973	4,186	11,784	21,043	6,437	20,679	64,347	3,193	2,589	14,624	2,269,034				
1897-98	708,451	1,174,201	80,336	3,830	10,818	27,065	4,608	21,727	61,557	3,010	2,491	11,869	2,109,363				
1898-99	743,808	1,070,708	60,194	4,220	10,039	22,649	4,060	20,635	52,653	2,719	2,653	10,426	2,025,891				

21. The total revenue of 1894-95 was better than that of the previous year by Rs. 52,142, owing to the extension of irrigation from the Western Jumna, Bari Doab and the Chenab Canals in the Punjab and from the Godavari Delta System in Madras, and partly to a good water-supply in the Upper Sind Frontier District. The increase in the Punjab would have been larger had it not been for a falling off in the water-rate collections from the Sirhind Canal. The favourable rainfall on lands traversed by this canal reduced the demand for canal water.

22. The decrease in Bengal was due partly to the large recovery of arrears in 1893-94 having swelled the receipts of that year and partly to abundant and seasonable rainfall having reduced the demand for canal water.

23. The decrease in the North-Western Provinces and Oudh was mainly due to a falling off of the water-rate collections on the Lower Ganges Canal, owing to the small area irrigated in the *rabi* season of the previous year.

24. The following statement shows, for each Major Work for the five years ending 1894-95, the gross revenue, the irrigated area, and the mileage of canals completed at the end of each year :—

MAJOR WORKS.	GROSS REVENUE.					IRRIGATED AREA IN ACRES.					MILEAGE IN OPERATION (INCLUDING DISTRIBUTARIES).				
	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.
Bengal.															
Orissa Project	34,494	37,092	40,738	33,235	326,091	326,091	326,091	326,091	326,091	326,091	Miles.	Miles.	Miles.	Miles.	Miles.
Midnapore Canal	23,699	28,470	30,477	17,657	176,653	176,653	176,653	176,653	176,653	176,653	1,221	1,221	1,221	1,221	1,221
Hijli Tidal Canal	2,804	3,601	6,339	5,919	63,723	63,723	63,723	63,723	63,723	63,723	355	355	355	355	355
Sone Project	72,917	90,607	106,258	83,483	114,487	114,487	114,487	114,487	114,487	114,487	29	29	29	29	29
Total Bengal	139,914	159,860	168,335	152,013	639,952	639,952	639,952	639,952	639,952	639,952	1,576	1,576	1,576	1,576	1,576
North-Western Provinces and Oudh.															
Ganges Canal	315,225	330,430	319,385	322,638	326,091	326,091	326,091	326,091	326,091	326,091	4,013	4,013	4,013	4,013	4,013
Lower Ganges Canal	161,293	194,958	201,419	202,071	176,653	176,653	176,653	176,653	176,653	176,653	3,194	3,194	3,194	3,194	3,194
Agra Canal	61,239	69,937	64,136	41,953	63,723	63,723	63,723	63,723	63,723	63,723	748	748	748	748	748
Eastern Jumna Canal	106,413	103,797	102,443	120,691	114,487	114,487	114,487	114,487	114,487	114,487	1,112	1,112	1,112	1,112	1,112
Betwa Canal	7,449	10,063	8,337	7,369	6,895	6,895	6,895	6,895	6,895	6,895	638	638	638	638	638
Total North-Western Provinces and Oudh	651,618	706,195	685,771	701,081	685,743	685,743	685,743	685,743	685,743	685,743	9,608	9,608	9,608	9,608	9,608
Punjab.															
Western Jumna Canal, including Sindh Branch	162,061	150,923	115,733	103,692	149,636	149,636	149,636	149,636	149,636	149,636	1,191	1,191	1,191	1,191	1,191
Bari Doab Canal	193,330	194,631	212,840	222,613	229,316	229,316	229,316	229,316	229,316	229,316	1,410	1,410	1,410	1,410	1,410
Rirhind Canal	108,426	212,066	212,066	108,624	95,080	95,080	95,080	95,080	95,080	95,080	2,761	2,761	2,761	2,761	2,761
Lower Sohan and Parn Canal	6,301	8,416	9,721	10,169	34,404	34,404	34,404	34,404	34,404	34,404	136	136	136	136	136
Chenab Canal	10,401	20,820	38,401	60,237	52,300	52,300	52,300	52,300	52,300	52,300	374	374	374	374	374
Bidhni	16,024	21,161	26,718	25,696	122,625	122,625	122,625	122,625	122,625	122,625	204	204	204	204	204
Beas River Canal	25,049	28,918	25,692	27,602	89,876	89,876	89,876	89,876	89,876	89,876	163	163	163	163	163
Total Punjab	683,045	680,914	535,091	590,555	1,920,106	1,920,106	1,920,106	1,920,106	1,920,106	1,920,106	6,211	6,211	6,211	6,211	6,211
Madras.															
Godavari Delta System	240,989	219,243	253,454	253,863	262,865	262,865	262,865	262,865	262,865	262,865	739,513	739,513	739,513	739,513	739,513
Kistna	148,360	196,371	208,009	208,009	208,988	208,988	208,988	208,988	208,988	208,988	519,876	519,876	519,876	519,876	519,876

Penner Ancient System	25,935	12,086	28,760	28,070	28,352	65,080	35,652	73,051	70,346	70,559	142	142	142	142	142
Canary Delta	311,382	309,695	310,985	323,752	454,199	1,013,344	1,008,059	1,012,049	986,055	980,991	2,094	2,094	2,094	2,094	2,094
Brinkantham Ancient System	13,640	18,910	13,800	18,369	17,895	28,896	41,322	29,111	40,570	38,573	90	90	90	90	90
Angam Ancient System	27,655	14,838	31,000	31,424	32,603	68,224	89,209	73,987	74,960	78,678	259	290	290	293	293
Karnal Canal	11,926	14,272	14,828	15,944	11,305	24,848	73,500	30,786	31,424	33,540	603	603	603	603	603
Rear Tank	740	748	926	1,108	1,187	2,774	2,757	3,484	4,824	4,480	29	29	29	32	32
Bushikulya Project	...	...	...	1,767	4,819	...	...	4,183	8,195	27,889	...	82	84	84	109
Deduct old Irrigation revenue	819,737	815,411	855,124	879,286	1,022,133	2,346,732	2,413,591	2,398,520	2,480,192	2,505,599	7,299	7,557	7,576	7,606	7,600
Total Madras	530,037	525,711	565,424	589,586	598,667	...	...	...	...	...	...	...	...	...	...
Bombay.															
Desert Canal	17,076	2,582	12,827	4,784	13,294	124,919	60,131	96,156	89,568	103,494	190	192	192	192	192
Unharwah	4,573	1,554	4,786	5,440	11,388	30,690	19,283	23,277	32,634	27,316	67	67	67	67	96
Begari Canal	23,844	26,146	36,892	37,946	36,939	144,053	174,718	192,524	207,383	211,430	176	176	176	176	158
Eastern Nara Works	45,579	43,601	49,037	47,538	45,127	228,292	211,951	243,412	223,903	234,796	273	278	278	278	278
Deduct old Irrigation revenue.	91,072	73,783	102,482	95,706	106,739	617,954	466,083	554,369	658,498	607,035	706	713	713	713	724
Total Sind	91,072	73,783	102,482	92,003	103,033	...	...	...	...	...	...	...	...	...	...
Hathmati Canal	737	1,037	516	970	1,108	3,766	2,716	2,729	3,701	4,199	51	51	51	51	51
Lower Panjara River Works.	1,514	1,901	1,617	1,725	1,655	2,390	2,003	2,617	3,000	2,790	45	45	45	45	45
Kadwa River Works	963	844	1,020	1,187	1,188	2,227	2,971	2,925	3,027	2,767	36	36	36	36	39
Lahb Canal	125	170	96	117	165	433	608	168	343	810	18	18	18	18	29
Mutha Canals	21,757	24,693	22,406	24,792	23,339	11,201	14,061	6,797	8,259	10,082	155	155	155	155	155
Ekrak Tank	2,652	2,611	2,551	2,390	2,887	2,598	3,137	3,098	2,899	3,292	49	49	49	49	48
Krishna Canal	3,189	3,189	6,755	3,683	6,606	3,950	6,374	3,796	4,742	4,671	61	61	61	61	61
Gothak Canal, 1st section	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nira Canal.	3,608	4,419	8,550	7,753	8,183	16,913	28,463	18,246	24,503	28,370	205	215	220	228	228
Mhaswad Tank	1,943	1,922	2,638	2,503	1,272	7,106	8,304	4,997	5,293	4,226	95	95	95	95	95
Total Deccan and Gujarat	36,206	40,715	45,128	45,110	45,402	50,584	68,537	45,202	55,747	60,707	714	737	743	748	757
Total Bombay	127,277	114,498	147,610	137,113	148,436	686,538	534,620	599,571	614,235	667,743	1,420	1,448	1,456	1,461	1,481
Grand Total	2,025,871	2,109,363	2,268,054	2,130,271	2,182,413	7,172,468	7,560,484	7,043,286	8,949,381	8,259,870	27,532	28,625	29,211	29,992	30,575

25. The rate of revenue per acre irrigated during 1894-95 is shown in the following table; the irrigation revenue shown here includes the share of enhanced land revenue due to irrigation as well as the water-rates and owners' rates:—

Province.	Irrigation revenue. (Assessed.)	Irrigated acreage.	Rate of revenue per acre.	COMPARED WITH RATE IN	
				1893-94.	1892-93.
	Rx.	Acre.	Rx.	Rx.	Rx.
Bombay, Deccan and Gujarat	84,195	60,707	58	61	58
North-Western Provinces and Oudh	465,132	855,247	54	42	38
Madras	962,355	2,520,599	38	39	35
Punjab	566,367	1,706,471	33	35	32
Bengal	93,741	509,811	18	18	18
Bombay—Sind	109,327	607,035	18	18	19
Total	2,231,107	6,259,870	36	35	32

There is an increase in the North-Western Provinces and Oudh.

26. The charges for maintenance and working for the year 1894-95 are detailed in the following statement and compared with the outlay of the previous four years:—

	Totals of previous four years.				
	1892-93.	1891-92.	1890-91.	1889-90.	
	Rx.	Rx.	Rx.	Rx.	
Total	140,205	143,793	143,218	27,291	217,369
Indirect charges	9,209	207,974	225,193	150,024	157,597
Total Direct charges	136,906	148,540	148,540	158,531	157,597
Surplus	...	...	...	...	...
Profit and loss	...	...	...	...	...
Teils and plant	9,709	27,414	27,414	27,414	27,414
Establishment	66,422	131,025	116,598	75,114	26,508
Maintenance and repairs	57,913	94,160	122,408	51,659	34,021
Extremities and improvements	2,862	17,181	6,466	8,104	2,423
Total for 1894-95	34,036	42,263	60,926	78,127	61,926
1893-94	340,150	412,792	401,554	370,115	378,602
1892-93	343,465	339,657	339,657	339,657	339,657
1891-92	339,657	339,657	339,657	339,657	339,657
1890-91	327,448	327,448	327,448	327,448	327,448

27. The total working expenses during 1894-95 exceeded those of the previous year by Rx. 12,938. The increase is the net result of increases and decreases in different provinces. The differences are explained as follows:—

Bengal.—The decrease of Rx. 7,909 was due to diminished outlay on works and repairs on the Orissa and Sone Canals.

North-Western Provinces and Oudh.—The decrease of Rx. 8,420 was due chiefly to the share of establishment charged to the revenue account being smaller than in the previous year, the increased capital outlay causing a proportionate decrease in the revenue share of these charges, and partly to smaller expenditure on extensions and improvements.

Punjab.—The increase of Rx. 20,519 was due partly to repairs to undersluices at the head of the Western Jumna Canal, and partly to the increased cost of maintenance of the Bari Doab and Chenab Canals. This increase in the working expenses was more than counterbalanced by the increase of revenue which amounted to Rx. 61,164.

Madras.—The decrease of Rx. 5,507 is attributed to the curtailment of the charges for maintenance of the Kistna Delta, Srivaikuntham Anicut, Sangam Anicut and Karnul Canal projects.

Bombay.—The increase of Rx. 14,225 was due chiefly to special repairs to the Desert Canal and to certain bunds in connection with the Eastern Nara project which were damaged by floods. The increase was to a great extent counterbalanced by the increase of revenue.

28. The cost of maintenance and working per acre irrigated in the different provinces during the five years ending 1894-95, and the percentage of the outlay upon maintenance and working on gross revenue, are as follows:—

Cost of maintenance and working per irrigated acre.

Provinces.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	Remarks.
1. Bombay—Sind	Rx. 06	Rx. 07	Rx. 08	Rx. 08	Rx. 07	Including old maintenance charges.
2. Madras	06	07	08	08	07	
3. Punjab	08	08	08	08	07	Excluding maintenance of tidal Canal.
4. Bengal	12	11	14	14	15	
5. North-Western Provinces and Oudh	23	19	22	27	23	
6. Bombay—Deccan and Gujarat	15	14	16	17	31	
	35	29	31	39	39	

The provinces are arranged in the order of smallness of charge; the variations are considerable.

Percentage of maintenance and working on gross revenue.

Provinces.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	Remarks.
1. Madras	Rx. 23.8	Rx. 23.0	Rx. 23.0	Rx. 21.7	Rx. 19.0	Including old revenue and working expenses.
2. North-Western Provinces and Oudh	42.1	38.0	39.5	39.8	39.5	
3. Bombay—Sind	33.3	44.7	39.8	32.8	41.1	Ditto ditto.
4. Punjab	37.3	37.3	34.0	45.7	41.4	
5. Bombay—Deccan and Gujarat	48.6	49.0	51.4	47.2	50.8	
6. Bengal	108.9	89.9	78.9	92.6	98.2	

The variations indicated here are also very marked.

29. The percentages of the cost of revenue management on the revenue collected in the different provinces during the five years ending 1894-95 were as follows:—

N.B.—In the term revenue management are included shares of Direction, Executive and Navigation Establishments and also a share of collection establishment.

Provinces.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	Remarks.
1. Madras	Rx. 8.8	Rx. 8.8	Rx. 8.8	Rx. 9.0	Rx. 8.6	
2. Bombay—Sind	10.9	11.4	10.4	10.6	10.0	
3. North-Western Provinces and Oudh	14.3	12.8	13.6	14.6	14.2	
4. Punjab	13.0	12.1	13.0	16.9	15.4	
5. Bombay—Deccan and Gujarat	14.1	15.2	17.8	16.1	19.7	
6. Bengal	33.2	28.1	26.0	29.7	31.1	

30. Per acre irrigated, the Sind Canals cost least, but the Madras works are kept up and managed for the smallest share of the gross income. The cost of maintenance and management of the Bengal canals absorbs the greater portion of the gross income.

MINOR WORKS.

Works for which Capital and Revenue Accounts are kept.

31. The following statement shows in detail the financial results of Minor Works for which Capital and Revenue accounts are kept during, and up to the end of, the year 1894-95:—

Number of works.	MINOR WORKS.	CAPITAL OUTLAY TO END OF 1894-95.			REVENUE ACCOUNT FOR 1894-95.				REVENUE ACCOUNT TO END OF 1894-95.		
		Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Percentage of net revenue on Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.
		Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
3	RAJPUTANA— Irrigation— Tanks in Ajmere Sub-Collectorate. Tanks in Beawar Sub-Collectorate. Tanks in Todgarh Sub-Collectorate.	152,167 60,606 20,817	4,461 3,460 407	156,628 64,066 21,224	6,939 4,986 2,552	2,380 640 986	3,559 4,346 1,566	2.27 6.78 7.38	123,026 94,465 45,247	63,693 61,859 29,144	59,033 42,608 16,103
	TOTAL	233,590	8,328	241,918	13,477	4,006	9,471	3.91	263,338	144,606	118,642
2	BALUCHISTAN— Irrigation— Khudil Khan Reservoir. Shabo Canal.	92,331 66,579	1,224 1,144	93,555 67,723	1,560 558	697 643	863 —85	.02 ...	6,954 8,419	4,805 6,232	2,149 2,187
	TOTAL	158,910	2,368	161,278	2,118	1,340	778	.49	15,373	11,037	4,336
1	LOWER BURMA— Irrawaddy embankments	305,893	8,317	314,210	94,152	22,434	71,698	22.82	1,107,067	311,639	895,428
3	BENGAL— Irrigation— Saron Project. Navigation— Calcutta and Eastern Canals. Orissa Coast Canal.	66,957 529,612 433,252	2,718 6,240 10,494	69,675 535,852 443,746	—180 44,301 6,594	154 28,927 8,707	—334 15,374 —2,113	...	24,179 2,313,892 58,363	36,189 947,817 74,185	—12,010 1,366,175 —15,622
	TOTAL	1,029,921	10,452	1,040,373	50,715	37,788	12,927	1.23	2,396,534	1,058,191	1,338,343
4	NORTH-WESTERN PROVINCES AND OUDH— Irrigation— Indus Canals. Rohilkhand Canals. Bijnor Canals. Bundelkhand Irrigation works.	66,196 166,844 11,625 7,436	1,597 16,057 2,036 804	67,793 172,901 13,661 8,240	8,578 12,408 1,976 814	5,204 10,106 1,030 915	3,374 2,302 816 —101	4.08 1.93 6.19 ...	236,802 322,581 47,657 18,031	133,092 270,506 18,857 21,909	103,710 52,075 28,800 —3,878
	TOTAL	212,101	20,494	232,595	23,676	17,236	6,441	2.44	625,071	444,364	180,707
5	PUNJAB— Irrigation— Upper Sutlej Inundation Canals. Lower Sutlej Inundation Canals. Indus Inundation Canals. Shahpur Inundation Canals.	60,552 10,756 68,791 16,850	5,909 254 1,973 498	66,521 11,010 70,764 17,348	21,421 65,253 18,794 4,664	14,963 45,281 21,193 4,907	6,459 19,972 —2,399 —333	9.71 181.40 ...	434,677 1,649,572 706,614 62,916	381,401 932,282 703,818 38,528	53,276 717,290 2,796 24,288
	TOTAL*	156,949	8,694	165,643	110,132	86,434	23,698	14.31	2,853,679	2,036,029	797,650

* The transactions of the Madras workshops have been excluded from this account under the orders of the Government of India, vide Public Works Department No. 33 I., dated 9th February 1896.

Number of works.	Minor Works.	CAPITAL OUTLAY TO END OF 1894-95.			REVENUE ACCOUNT FOR 1894-95.				REVENUE ACCOUNT TO END OF 1894-95.		
		Direct.	Indirect.	Total.	Gross revenue.	Maintenance and working.	Net revenue.	Percentage of net revenue on Capital outlay.	Gross revenue.	Maintenance and working.	Net revenue.
		Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
24	MADRAS—										
	Irrigation—										
	Chembambakam tank	63,169	11,235	74,404	2,308	—28	2,334	8.14	67,433	12,533	54,900
	Madras Water-supply and Irrigation Extension project	151,553	23,822	175,405	2,445	551	1,894	1.09	39,723	49,899	—10,166
	Palur Anicut System.	193,632	10,006	203,538	14,431	6,608	7,823	3.87	292,804	169,119	123,685
	Lower Coleroon Anicut System	55,026	1,450	56,476	29,604	4,316	25,288	44.07	991,725	152,168	839,557
	Pelandora Anicut System	41,234	4,155	45,389	2,930	1,035	1,895	4.17	20,491	45,231	—24,740
	Other (15) works	176,471	4,623	181,094	39,917	12,017	27,900	15.41	841,133	404,557	436,576
		681,919	65,297	747,216	91,845	24,601	67,244	9.11	2,292,309	836,497	1,455,812
	Navigation—										
	Buckingham Canal	800,561	47,430	847,991	10,943	10,154	789	0.09	276,471	257,687	—11,216
	Other (3) works	17,334	1,319	18,653	113	447	—334	...	875	4,728	—3,853
		817,895	48,749	866,644	11,056	10,601	455	0.05	277,346	262,415	—15,069
	TOTAL	1,499,814	104,045	1,603,859	102,741	35,102	67,639	4.22	2,569,655	1,128,912	1,440,743
7	BOMBAY—										
	Irrigation—										
	Sukkur Canal	133,121	6,003	139,124	22,321	8,749	13,572	9.76	192,104	115,160	76,944
	Ghar	41,551	2,544	44,095	60,193	14,425	45,768	104.47	1,522,698	434,271	1,088,427
	Marak Grant Canal	19,360	795	20,155	6,495	2,269	4,226	20.97	118,190	46,787	71,403
	Sarfarazwah	11,856	612	12,468	3,078	725	2,353	18.87	39,895	30,710	9,185
	Fuleli	127,662	4,649	132,311	35,347	19,169	16,178	12.21	841,566	560,862	280,704
	Other works	8,922	674	9,596	312	350	—18	...	31,304	27,312	4,992
	TOTAL SIND	342,375	15,277	357,652	128,076	45,687	82,389	23.04	2,719,757	1,215,102	1,504,655
27	DECCAN AND GUJARAT.										
	Khari Cut	18,997	1,198	20,195	969	611	358	1.07	7,304	5,382	1,922
	Jamda Canals	99,055	4,990	104,045	1,126	971	155	1.16	13,409	29,757	—16,348
	Parul tank	21,236	706	21,942	190	136	54	2.6	732	411	321
	Pravara River Works—										
	Ojhar Canal	30,963	2,062	33,025	774	2,877	—2,103	...	8,654	12,370	—3,716
	Bhatoli tank	35,266	2,703	37,971	477	1,224	—747	...	8,515	7,382	1,133
	Matoba	18,815	1,327	20,142	981	426	555	2.75	10,553	3,791	6,762
	Shirsaphal tank	21,143	1,227	22,370	258	319	—61	...	3,382	3,971	—589
	Bhadralodi	21,311	1,431	22,742	85	169	—84	...	2,849	2,775	114
	Ashli	75,219	7,801	83,110	439	395	44	0.05	4,418	8,633	—4,215
	Upper Man River Works	40,742	2,214	42,956	604	424	180	4.2	6,898	6,843	—55
	Yerla River Irrigation Works	61,320	4,304	65,624	758	2,375	—1,617	...	9,677	12,637	—2,960
	Maini tank	36,767	2,221	38,988	399	383	16	0.04	8,999	8,904	95
	Madag	16,125	635	16,760	302	169	133	0.60	4,618	5,532	—914
	Gokak Canal, 1st Section, and Storage Works	75,458	2,763	78,221	1,675	566	1,109	1.42	10,263	3,146	7,117
	Other works	75,130	9,091	84,221	1,011	975	26	1.11	24,212	19,034	5,178
	TOTAL DECCAN AND GUJARAT	618,539	41,766	660,305	10,917	12,024	—1,077	...	123,439	130,802	—7,363
	TOTAL BOMBAY	990,914	60,043	1,050,957	139,023	67,711	61,312	7.74	2,872,196	1,345,904	1,526,292
28	GRAND TOTAL	2,437,233	160,259	2,597,492	474,063	213,835	260,228	8.66	10,113,212	5,186,355	4,926,857
	NAVIGATION	1,780,759	65,482	1,846,241	474,063	213,835	260,228	8.66	2,619,701	1,314,417	1,305,284
	TOTAL	4,617,992	231,741	4,849,733	636,011	262,070	273,944	6.65	12,792,913	6,500,772	6,292,141

(a) Exclusive of the Capital outlay on the Velamam Canal, which has not yet been ascertained.
 (b) Exclusive of Rs. 79,474, share due to old irrigation.
 (c) Do. Rs. 30,126 do.
 (d) Exclusive of Rs. 41,767, expenditure incurred from the grant under 36—Construction of Protective Irrigation Works which is shown under Major Works.

32. The net revenue derived in 1894-95 from the works constructed for irrigation purposes (excluding navigation) taken collectively amounted to 8.66 per cent. on the Capital outlay to end of the year against 10.70 in the previous year. The decrease was chiefly due to a falling off of the net revenue from the Upper Sutlej Inundation Canals in the Punjab and the Cheyaru Anicut System in Madras. On the Upper Sutlej Inundation Canals, while there was a fall in gross revenue by Rx. 9,490, there was an increase of Rx. 5,159 in working expenses over those of the previous year, thus showing a decrease of Rx. 14,649 in the net revenue. The falling off of the gross revenue was due to the small *rabi* of 1893-94 consequent on the low state of the river in August 1893; to heavy remissions for the *kharif* of 1894 on account of damage done by grass-hoppers; to suspensions of the demand for the same crops in villages in the Lahore district and to abnormal credits in the previous year. The increase in the working expenses was due to certain liabilities incurred in the previous year having had to be met in 1894-95 and to Revenue having to bear an increased share of establishment charges. The decrease in the net revenue from the Cheyaru Anicut System was Rx. 9,171: this was due to the net revenue during 1893-94 having been unusually large owing to the expenditure on certain works on the project amounting to Rx. 9,807 having been written back from Revenue to Capital.

33. The revenue from the navigation canals exceeded the working expenses by Rx. 13,716 against the corresponding figure of Rx. 11,285 in the previous year. The increase is the net result of an increase of revenue from the Calcutta and Eastern Canals in Bengal and of a reduced expenditure on the Buckingham Canal in Madras.

34. There was a net revenue of Rx. 769 on the Buckingham Canal against a loss of Rx. 1,620 in working the canal during 1893-94.

35. The revenue derived from Minor Works for which Capital and Revenue accounts are kept during 1894-95 is detailed in the following statement, and compared with the revenue of the previous four years:—

	Irrigation Expenses.			Cost of water.	Water supply of towns.	Plantations.	Other canal produce.	Water power.	Navigation receipts.	Rents of buildings.	Fees.	Miscellaneous.	Total.	Totals of previous four years.			
	Rs.	Rz.	Water-rates.	Owner's rates.	Rs.	Rz.	Rs.	Rz.	Rs.	Rz.	Rs.	Rz.	Rs.	1893-94.	1894-95.	1895-96.	1900-01.
Rajputana	12,002	1,187	...	...	...	...	8	...	...	12	29	269	13,477	14,193	9,199	8,497	12,474
Baluchistan	...	2,108	...	...	...	...	...	8	...	2	...	...	2,119	4,891	3,353	1,641	1,621
Lower Burma	94,003	...	...	...	...	8	...	...	...	121	...	...	94,132	95,697	90,212	77,706	70,176
Bengal	...	— 224	...	...	...	1	178	...	49,432	331	...	997	50,715	52,339	51,558	60,311	62,765
North-Western Provinces and Oudh	9,628	10,688	996	313	...	663	...	2,245	1	...	76	161	23,476	26,065	27,291	26,203	25,671
Punjab	63,107	23,692	...	10	...	711	— 13,605	...	1	51	115	36,050	110,132	124,500	105,300	105,794	102,359
Madras	87,831	...	...	...	1,344	138	509	...	10,892	18	...	9	102,741	107,282	145,939	25,760	73,862
Bombay	123,696	12,273	...	7	...	360	1,137	492	...	61	2	996	139,023	135,839	127,170	146,135	144,195
Total for 1894-95	391,267	49,693	996	330	1,314	1,786	— 11,773	2,745	60,326	596	222	38,492	636,014	660,806	663,722	452,037	493,123
1893-94	404,077	63,246	1,220	180	1,221	2,395	— 13,685	4,363	60,620	606	203	36,260	600,806				
1892-93	423,816	37,113	1,337	177	1,198	2,333	4,295	2,816	61,961	559	259	27,809	563,722				
18. 1-92	307,653	34,738	1,271	249	1,440	2,932	7,225	3,333	67,216	815	285	31,890	452,037				
1890-91	343,786	37,833	1,317	249	1,101	— 507	3,613	2,279	67,050	569	335	35,698	493,123				

36. The best return on the Capital expended is shown by the Punjab. Bengal shows the worst result. Bombay and the North-Western Provinces are steady, and Madras has also done well.

In Baluchistan where the revenue is collected in kind, that of 1894-95 was affected by a considerable fall in the prices of grains and bhoosa.

37. The decrease in the revenue during 1894-95, as compared with that of the previous year, occurred chiefly in the Punjab and was due partly to the revenue during 1893-94 having been swollen by arrear collections on the Indus canals and partly to a falling off of the revenue from the Upper Sutlej canals for the reasons explained in paragraph 32 of this note. The assessments for the year 1894-95 on certain canals were not recovered in full before the close of the year.

38. The working expenses of the year 1894-95 and of the previous four years are shown in the following statement:—

	Totals of previous years.				Excesses and improvements.	Maintenance and repairs.	Establishment.	Tools and plant.	Profit and loss.	Surplus.	Total Direct charges.	Indirect charges.	Total.	Totals of previous years.			
	1894-95.	1895-96.	1896-97.	1897-98.										1894-95.	1895-96.	1896-97.	1897-98.
Rajputana	301	1,863	1,732	— 39	...	...	...	...	...	...	3,857	149	4,006	4,671	9,835	10,671	6,961
Baluchistan	...	1,060	245	...	...	...	...	...	...	...	1,305	35	1,340	2,232	1,736	3,180	2,277
Lower Burma	10,906	6,061	6,435	— 121	...	...	...	...	...	— 318	21,963	481	22,434	19,032	29,626	46,176	20,393
Bengal	196	21,846	12,238	1,795	...	...	...	...	...	...	36,075	1,713	37,788	39,147	34,686	43,601	43,964
North-Western Provinces and Oudh	847	6,144	9,578	357	...	...	...	...	...	...	15,928	1,329	17,255	16,652	17,554	17,413	17,643
Punjab	5,400	60,936	26,095	310	...	...	...	...	...	— 10	82,791	3,643	86,434	73,858	68,727	68,785	86,123
Madras	2,197	20,543	10,895	422	...	...	...	...	...	...	34,067	1,045	35,102	28,218	47,906	58,467	44,932
Bombay	8,056	20,705	26,701	310	...	...	...	...	...	...	55,773	1,939	57,711	47,071	46,732	63,946	61,865
Total for 1894-95	27,963	127,149	93,919	8,034	...	...	...	...	...	— 323	251,736	10,334	262,070	225,781	256,751	312,141	293,168
1893-94	11,012	122,093	83,492	3,196	...	...	...	...	...	12	219,795	8,996	228,791				
1892-93	32,206	121,163	89,934	3,185	...	...	...	...	...	— 16	246,593	10,169	256,751				
1891-92	54,031	153,207	91,219	2,603	...	...	...	...	...	279	301,459	10,712	312,141				
1890-91	29,274	151,240	87,654	4,390	10	...	...	...	...	— 85	273,113	10,045	283,158				

39. The total increase of Rx. 33,289, as compared with 1893-94, occurred chiefly in the following provinces:—

Lower Burma.—The increase is due to large outlay on the earthwork in the Henzada Division of the Irrawaddy embankments.

Punjab.—The increase occurred on the Upper and Lower Sutlej Inundation canals. On the Upper Sutlej canals the increase has already been explained in paragraph 32. The increase on the Lower Sutlej canals is mainly due to a number of charges against the Zar-i-nagha fund account which were incurred in the previous year having been adjusted in 1894-95, and to an increase in the sanctions against this account.

Madras.—The increase is nominal. It is due to an expenditure of Rx. 9,807 on the Cheyaru Anicut System having been written back from Revenue to Capital in the accounts for 1893-94.

Bombay.—The increase is mainly due to the construction of certain new works in connection with the Sukkar and Fuleli canals chargeable to Revenue account. The cost of maintenance and repairs of the Sukkar canal was also larger than in the previous year.

40. The following table gives the percentages of expenditure on revenue in each province during the five years ending 1894-95:—

Province.	1890-91.			1891-92.			1892-93.			1893-94.			1894-95.		
	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.	Revenue.	Expenditure.	Percentage.
Rajputana	Rs. 12,474	Rs. 5,961	Rs. 47.8	Rs. 9,497	Rs. 10,671	Rs. 125.7	Rs. 9,199	Rs. 9,885	Rs. 107.46	Rs. 14,193	Rs. 4,571	Rs. 32.21	Rs. 13,477	Rs. 4,006	Rs. 29.72
Baluchistan	1,621	2,277	140.5	1,641	3,180	193.8	3,953	1,736	43.92	4,891	2,232	45.63	2,118	1,340	63.27
Lower Burma	70,176	20,393	29.1	77,706	46,178	59.4	90,212	29,626	32.84	95,697	18,033	18.84	94,132	22,434	23.83
Bengal	62,765	43,964	70.0	60,311	43,501	72.1	64,638	34,636	53.28	62,339	39,147	62.79	60,716	37,788	62.11
North-Western Provinces and Oudh	25,671	17,643	68.7	26,203	17,413	66.5	27,291	17,554	64.32	26,065	15,652	60.06	23,676	17,255	72.89
Punjab	102,359	86,123	84.1	105,794	66,785	63.0	105,300	68,727	65.27	124,600	73,858	59.32	110,132	86,434	78.48
Madras	73,652	44,932	60.8	25,780	58,467	227.0	145,939	47,905	32.83	107,282	29,218	26.30	102,741	35,102	34.16
Bombay	144,195	61,865	42.9	146,135	63,946	43.8	127,170	46,732	36.75	136,839	47,071	34.45	139,023	67,711	48.61
TOTAL	493,123	283,159	57.4	452,037	312,141	69.1	563,722	256,751	45.56	660,806	228,781	40.80	636,014	262,070	41.20

41. The percentage of expenditure on revenue for the whole of India during the year shows a slight increase as compared with 1893-94. The figures for the respective provinces as a rule show uneven results.

42. The rates per irrigated acre in the different provinces during the year 1894-95 were as follows:—

	Irrigation revenue. (Assessed.)	Irrigated acres.	Rate of revenue per acre.	Compared with rate in	
				1893-94.	1894-95.
Baluchistan	Rs. 2,118	Acres. 4,896	Rs. .43	Rs. .78	Rs. .39
Bengal	...	...	...	.70	.31
Bombay { Deccan and Gujarat	10,143	24,687	.41	.41	.23
{ Sind	186,007	842,749	.22	.22	.35
Rajputana	12,633	33,020	.37	.37	.54
Madras	170,898	463,064	.37	.36	.11
North-Western Provinces and Oudh	19,827	74,214	.27	.25	.07
Punjab	80,310	750,911	.10	.14	.07
Total	481,826	2,194,441	.22	.24	.21
Lower Burma	(a) 94,003				
Total	575,829				

(a) Represents actual collections.
Note.—No acreage is quoted against Lower Burma as the works concerned are only river embankments.

Works for which Capital Accounts are not kept.

43. The receipts and expenditure on account of these works during 1894-95, as recorded in the Finance and Revenue accounts, are shown in the following statement, in comparison with the transactions of the previous four years:—

Works for which Capital Accounts are not kept.

	IMPERIAL.		PROVINCIAL.		LOCAL.		TOTAL.	
	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.	Direct Receipts.	Expenditure.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Rajputana	...	83	...	...	...	...	...	83
Beluchistan	16	...	...	...	...	...	16	...
Upper Burma	29	54,410	...	...	8,203	5,607	8,232	60,017
Lower Burma	...	...	10,055	43,612	...	674	10,055	44,286
Bengal	...	...	36,596	91,758	1,448	878	38,044	92,636
North-Western Provinces and Oudh	...	...	...	9,081	...	...	...	9,081
Punjab	23	12,649	6,518	12,173	2,226	158	8,767	24,979
Madras	...	...	5,301	262,749	...	1,048	5,301	263,797
Bombay	7,586	176,667	...	...	...	...	7,586	176,667
Total for 1894-95	7,654	243,808	59,470	419,373	11,877	8,365	78,001	671,546
1893-94	8,007	208,369	53,485	418,536	5,973	6,494	67,465	633,398
1892-93	6,334	240,450	47,712	443,759	8,086	10,509	62,752	694,718
1891-92	6,711	215,147	47,658	487,639	8,421	8,918	62,790	711,704
1890-91	5,840	156,076	46,102	423,563	6,102	7,834	58,134	587,473

44. The foregoing table shows that the direct receipts realized from this class of Minor Works have been increasing steadily. A large portion of the revenue derived from this class of works is assessed and collected with the Land Revenue and is accounted for under the head I.—Land Revenue in the Civil accounts. It is only in the Irrigation revenue reports of the Public Works Department that credit for such indirect receipts is taken.

45. The increase in the expenditure from Imperial funds during 1894-95, as compared with that of the previous year, occurred chiefly in Bombay, but partly in Upper Burma and Punjab. The increase in Bombay is to a great extent due to repairs to bunds in Sind which were damaged by floods. In Upper Burma the increase is due to additional expenditure on the completion of certain works. The increase in the Punjab is due to the construction of certain urgent works in connection with the Muzaffargurh canals and the new Sahiwal canal.

46. Under this head appear at present the whole of the irrigation works in Upper Burma. Orders have been issued by the Government of India for the preparation of Capital and Revenue Accounts of all important works. Only one project estimate for the Kyaukse Tank has been sanctioned by the Government of India, in Public Works Department letter No. 411., dated 11th February 1895. The estimates of the Mandalay canal are now under consideration by the Government of India.

SIMLA;
The 21st May 1896.

A. R. BECHER,
Offg. Accountant General, P. W. Dept.

Document accompanying.

Abstract Account of Revenue and Expenditure
on Irrigation Works during 1894-95.

No. 161., dated 21st May 1896.

Submitted to the Government of India, Public Works Department.