

Revenue (1897) Department.

MISCELLANEOUS SERIES.

G.O., No. 2315

DATED 7th May.

[Despatch Abstract.]

Comm^d to the Secy of Rev. P.W.D. comm^d
to the offic^s concerned Govt of India review
of the Admtⁿ Report of Irrigation Works in
the Madras Pres^t for 1895-96.

BACK PAPERS.

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Revenue (1897) Department.

CURRENT No. 3717

From

The P. M. S.

Order in No. 2315 of 7th May 97.

Communicated to the

Board of Revenue

17.5.11

No. 347 D.

Dated 8th April 1897

Received 5.5.97

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SUBJECT.

Communicating Govt. of India review of the Admin. Report of Irrigation Works in the Madras Presy for 1895-96.

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	272		10-7-96

FURTHER PAPERS.

G.O.	No.	Department.	Date.

IRRIGATION.

Government { 1897 } of Madras.
PUBLIC WORKS.



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G.O., No. 347 I., 8th April 1897.

APRIL.

Irrigation Works in the Madras Presidency

Government of India review of the Administration report of — for 1895-96,
communicated to the officers concerned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper:—

Proceedings of the Government of India, Public Works Department (Civil Works—Irrigation), dated Calcutta, 22nd March 1897, No. 103 I.

Read—

Administration report of Irrigation Works in the Madras Presidency for 1895-96.

Observations.—In the Madras Presidency there are ten major works, of which nine are classed as productive and one, the Rushikulya project, as protective. All the major works except the Periyár project were in operation, and the construction estimates of seven of them have been closed.

There are 26 minor works for which Capital and Revenue accounts are kept, and of these, 22 are irrigation systems and 4 are tidal canals intended for purely navigation purposes. With the exception of the Munnyeru, Dondapad and Sagileru projects and the Ganjám-Gopalpur tidal canal, all these minor works are in operation. With the exception of the Buckingham canal, the Poiney and the Lower Coleroon anicut systems, the construction estimates have been closed.

2. The transactions of the year under review may be summed up as follows:—

The capital outlay incurred during the year was on major works Rs. 16,42,877, and on minor works for which Capital and Revenue accounts are kept Rs. 6,30,241, or a total of Rs. 22,73,118.

The total capital charges to the end of the year amounted on major works to Rs. 6,86,75,910, and on minor works for which Capital and Revenue accounts are kept to Rs. 1,66,68,830.

The major works irrigated 2,406,090 acres and the minor works 534,227 acres; the return of net revenue on capital outlay being 7·84 per cent. on the former class of works and 10·04 per cent. on the latter.

3. The capital outlay incurred on the major and minor works during and up to the end of 1895-96 was as follows:—

	Number of works.	During the year 1895-96.						Total direct and indirect charges to end of 1895-96.
		Works.	Establishment.	Tools and plant.	Total direct charges.	Indirect charges.	Total direct and indirect charges.	
1	2	3	4	5	6	7	8	9
<i>Major Works.</i>		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Protective Irrigation Works (Account head, 35)	1	1,92,432	38,392	— 4,347	2,26,477	27,727	2,54,204	42,65,038
Irrigation works not charged to Revenue (Account head, 49)	9	10,69,393	2,38,789	34,526	13,42,708	45,965	13,88,673	6,44,10,822
<i>Minor Works and Navigation.</i>								
Works for which Capital and Revenue Accounts are kept (Account head, 43)	(a) 24	4,88,422	1,05,908	10,172	6,04,502	25,739	6,30,241	1,66,68,830
Total	34	17,50,247	3,83,089	40,351	21,73,687	99,431	22,73,118	8,53,44,740

(a) Exclusive of the Ganjám Minor Works system and the Védaranniyam canal for which complete Capital accounts up to end of 1895-96 have not yet been prepared.

4. Under major works, the capital outlay was incurred chiefly on the Kistna, Periyár and Rushikulya systems.

The capital outlay on the Kistna delta system amounted to Rs. 5,56,299, including indirect charges, and was incurred on various improvements to head works, canals, distributaries and drains.

The capital outlay on the Periyár system amounted to Rs. 7,51,403, including indirect charges. The main dam was completed with the exception of the tower on the right flank. The water-shed tunnel and left bank escape were also finished. In the Madura division 108 miles of main and branch canals were completed up to the end of the year. The Periyár works were formally opened on the 10th October 1895 by His Excellency Lord Wenlock, late Governor of Madras.

The capital outlay on the Rushikulya system amounted to Rs. 2,54,204, including indirect charges. The Russellkonda reservoir and its feeder, the Gulleri channel, and most of the distributaries were completed.

Under minor works, the capital outlay was incurred chiefly on the Munnyeru and Sagileru projects and on the Buckingham canal.

On the Munnyeru project, the capital outlay was Rs. 1,22,132, including indirect charges. The anicut and undersluices were completed. The main channel, the head sluice and several other masonry works were in progress.

On the Sagileru project, the capital outlay was Rs. 1,31,226, including indirect charges. The anicut, head and scouring sluices, the supply channel and several masonry works were in progress.

On the Buckingham canal, the capital outlay was Rs. 2,03,687, including indirect charges. Seven locks were completed; six locks and some improvements and diversions were in progress.

5. On major works, the length of completed main and branch canals was 2,127 miles, and of distributaries 5,691 miles.

The length of navigable channels of both major and minor works was 1,294 miles.

6. The following statement shows the revenue receipts and working expenses of each work in operation for which Capital and Revenue accounts are kept:—

Serial number.	Systems.	Gross Revenue Receipts, 1895-96.					Working expenses.			Deduct receipts less maintenance charges on account of old irrigation.	Net revenue attributable to outlay of Government capital.	Percentage of return.
		Capital outlay.	Irrigation revenue.	Miscellaneous receipts.	Total.	Direct.	Indirect.	Total.				
									1			
MAJOR WORKS.												
1	Giddavari ..	1,28,30,331	25,06,077	1,09,978	27,06,055	6,26,631	29,481	6,56,112	20,49,943	1,15,500	19,34,443	15.08
2	Kietna ..	1,21,81,403	22,38,791	64,279	22,98,070	6,93,303	28,489	7,21,794	15,71,278	68,100	15,03,178	12.36
3	Pennér ..	18,80,733	2,44,906	709	2,45,615	54,884	4,936	59,818	2,25,797	87,000	1,38,797	7.34
4	Sangam ..	38,10,415	3,30,586	443	3,31,029	80,860	8,928	84,788	2,46,241	1,14,000	1,32,241	8.47
5	Karnool ..	2,17,00,550	1,31,112	8,619	1,39,731	1,06,380	3,930	1,09,310	80,421	..	30,421	0.14
6	Harér ..	4,23,461	11,052	89	11,091	3,670	171	3,813	7,216	1,850	5,368	1.27
7	Cauvery ..	18,11,489	45,48,417	2,624	45,48,417	4,14,676	30,664	4,44,240	40,94,177	81,06,700	9,27,417	61.19
8	Sriwathur ..	14,93,798	1,68,543	1,110	1,69,653	37,931	1,972	39,903	1,19,750	66,500	53,250	3.64
9	Rasikulya ..	42,65,088	63,567	533	64,100	31,043	676	31,718	32,382	25,816	6,566	0.15
Total, Major Works, 1895-96 ..		6,03,75,208	1,03,60,627	1,78,234	1,05,38,761	20,48,378	1,13,146	21,61,524	88,77,237	36,43,526	47,33,711	7.84
Total, for 1894-95 ..		5,94,83,794	1,00,27,139	1,94,183	1,02,21,822	18,28,484	1,11,109	19,39,593	82,81,729	37,57,522	45,24,207	7.61
MINOR WORKS.												
I.—Irrigation.												
1	Ganjām minor rivers ..	..	1,28,166	..	1,28,166	2,921	33	2,954	1,25,212	95,219	29,963	..
2	Cumbam tank ..	..	41,433	..	41,433	1,470	24	1,494	30,939	30,001	938	15.95
3	Thadapalli channel ..	..	1,05,482	..	1,05,482	5,005	92	5,097	1,00,474	76,063	24,411	21.87
4	Arunkota do. ..	..	27,773	6	27,779	1,913	38	1,981	25,798	18,943	6,855	6.65
5	Kalingaroyan do. ..	..	1,05,514	157	1,05,671	5,118	103	5,221	1,00,450	84,963	15,487	25.69
6	Palar anicut ..	..	2,82,834	2,062	2,84,896	55,749	1,194	56,943	2,27,453	1,21,100	1,06,353	5.17
7	Poiroy do. ..	..	86,863	226	87,089	25,440	736	26,176	60,413	40,514	19,899	5.58
8	Chevaru anicut ..	..	94,133	258	94,391	30,508	736	31,239	63,152	44,391	18,761	4.68
9	Chenirambakam tank ..	..	86,791	140	86,931	4,407	90	4,497	32,434	9,100	23,334	3.13
10	Madras water-supply ..	..	20,982	10,103	31,085	6,284	266	6,550	24,535	6,200	18,335	1.04
11	Vallura anicut ..	..	9,448	21	9,469	699	13	712	8,767	5,259	3,508	5.48
12	Tirukkoyilur anicut ..	..	95,103	378	95,481	20,018	482	20,500	74,081	59,914	15,067	5.92
13	Mehmatpur do. ..	..	14,843	47	14,890	4,730	120	4,850	10,040	2,089	7,951	11.19
14	Vridhachalam do. ..	..	23,707	130	23,837	6,379	148	6,527	17,810	8,400	9,410	17.91
15	Shattinope do. ..	..	1,25,644	215	1,25,859	16,164	288	16,452	1,09,192	20,999	88,193	64.10
16	Pelandurai do. ..	..	32,929	105	33,034	5,390	118	5,508	26,926	3,860	24,076	5.30
17	Lower Coleroon anicut ..	..	4,42,878	994	4,43,872	33,200	489	33,749	4,00,623	1,49,424	2,50,199	42.47
18	Nandiyar channel ..	..	16,550	..	16,550	622	6	628	11,922	16,345	1,423	..
19	Naradur anicut ..	..	1,79,300	197	1,79,497	19,643	424	19,967	1,59,530	1,10,412	49,118	11.78
Total, I.—Irrigation ..		72,59,983	18,67,658	15,128	18,82,786	2,46,245	6,400	2,51,645	16,81,141	9,02,216	7,28,925	10.04

(a) Inclusive of the revenue of the previous year, viz., Rs. 2,46,713, derived from the system in the Trichinopoly district and brought into the accounts in 1895-96.

Serial number.	Systems.	Gross Revenue Receipts, 1895-96.			Working expenses.			Deduct receipts less maintenance charges on account of old irrigation.	Net revenue attributable to outlay of Government capital.	Percentage of return.	
		Capital outlay.	Irrigation revenue.	Miscellaneous receipts.	Total.	Direct.	Indirect.				Total.
1		2	3	4	5	6	7	8	9	12	
MINOR WORKS—cont.											
<i>II.—Navigation.</i>											
1	Chilka Lake canal	Rs. 81,027	Rs. ..	Rs. 1,08,374	Rs. 371	Rs. 10	Rs. 381	Rs. 381	Rs. 381	.. 0.14	
2	Buckingham do.	86,83,601	..	1,136	92,537	3,486	96,023	12,351	12,351	..	
3	Vedranthiyam canal	..	..	1,136	4,227	124	4,351	3,215	3,215	..	
4	Ganjām-Gopalpur canal	..	..	..	15	..	15	15	15	..	
	Total, II.—Navigation	88,70,121	..	1,09,510	97,150	3,620	1,00,770	8,740	8,740	..	
	Total, Minor Works, 1895-96	1,61,30,104	18,67,658	1,94,688	3,43,395	9,020	3,52,415	16,39,881	7,37,665	4.57	
	Total for 1894-95	1,57,72,920	17,08,877	1,20,022	3,55,924	10,850	3,66,724	14,71,126	6,76,386	4.29	

7. The gross revenue derived from the major works was Rs. 3,17,439 more than in the previous year. There was an increase of Rs. 2,21,931 in the working expenses, so that the net actual revenue was Rs. 95,508 better than in 1894-95. The net revenue from major works attributable to the outlay of Government capital was Rs. 47,33,711, which represents a return of 7.84 per cent. on the capital outlay as compared with 7.61 during the previous year.

The interest charges on major works in operation amounted to Rs. 22,28,009 during the year, and to Rs. 4,01,47,363 up to the end of the year. The surplus revenue after deducting the interest charges, was Rs. 25,05,702 during the year, and amounted to Rs. 5,60,81,961 up to the end of the year.

8. The net revenue from minor irrigation works attributable to the outlay of Government capital was Rs. 7,28,925, representing a return of 10.04 per cent. on the capital outlay as compared with 9.45 per cent. during the previous year.

Of the four minor navigation works, the Buckingham canal alone paid its working expenses, the net revenue of Rs. 12,351 derived from it representing a return of 0.14 per cent. on the capital outlay. The net deficit on the other three works was Rs. 3,611, or Rs. 275 more than in the previous year.

9. The total irrigation revenue derived from major works amounted to Rs. 1,03,60,527, in which is included a sum of Rs. 2,46,713 on account of a portion of the revenue of the previous year on the Cauvery delta system which was brought into the accounts of the Public Works Department in 1895-96. Of the total revenue, Rs. 99,09,632 represented the share of land revenue due to irrigation, and Rs. 4,50,895 was the irrigation share of enhanced land revenue.

10. The following statement shows the irrigation receipts and the areas under first and second crops charged as irrigated:—

System.	Revenue derived from irrigated lands.		Area charged as irrigated.		Rate per acre.	
	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.
1	2	3	4	5	6	7
Major Works.						
	RS.	RS.	ACS.	ACS.	RS.	RS.
Gódavari	25,96,077	25,04,022	683,126	759,513	3.8	3.3
Kistna	22,38,791	20,36,154	481,375	619,976	4.6	3.9
Penner	2,84,906	2,83,118	70,128	70,559	4.0	4.0
Sangam	3,30,586	3,24,490	77,347	76,678	4.2	4.2
Kurnool	1,31,112	1,04,560	32,903	33,540	4.0	3.1
Barur	11,052	11,842	4,229	4,480	2.6	2.6
Cauvery	45,45,893	45,38,420	987,103	984,891	4.6	4.6
Srivaikuntam	1,58,543	1,77,383	33,962	38,573	4.6	4.6
Rushikulya	63,567	47,160	35,917	27,389	1.7	1.7
Total, Irrigation Works not charged against Revenue	1,03,60,527	1,00,27,139	2,406,090	2,520,599	4.3	3.9
Minor Works.						
I.—Irrigation	..	..	..	..	..	..
Total	18,67,658	17,08,877	534,227	463,064	3.5	3.7
Grand Total	1,22,28,185	1,17,36,016	2,940,317	2,983,663	4.2	3.9

(a) Inclusive of the revenue of the previous year, viz., Rs. 2,46,713, derived from the system in the Trichinopoly district.

Under major works the area irrigated was 114,509 acres less, and the revenue derived was Rs. 3,33,388 more than in the previous year. The decrease in area occurred chiefly under the Gódavari and Kistna delta systems and is attributed to the relinquishment of irrigation in consequence of enhancement of water-rate on these systems.

11. The following table gives details of the average water-rate per acre for first and second crops under major works, excluding areas irrigated free of charge:—

	First crop.						Second crop.
	Government lands.		Zemindari lands.		Inam lands.		
	Wet crop.	Dry crop.	Wet crop.	Dry crop.	Wet crop.	Dry crop.	
	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Gódavari delta	4.80	2.51	5.09	3.47	5.00	2.95	3.08
Kistna do.	4.94	4.25	5.00	3.09	5.11	4.68	4.67
Pennér anicut	4.52	2.93	..	..	4.00	3.21	3.71
Bangam „	4.53	3.20	..	..	4.00	3.20	2.87
Kurnool-Cuddapah canal	3.70	1.75	..	..	3.82	1.81	2.81
Barúr tank.. .. .	3.75	3.25	..	..	3.95	4.00	1.19
Cauvery delta	4.92	3.06	..	..	4.98	3.16	3.74
Srivaikuntam anicut	6.23	3.35	3.92	4.90	4.23	3.60	3.22
Rushikulya project	1.93	2.26	2.09	1.00	2.08	2.14	1.59

12. The area irrigated under first crop on major works was 2,159,135 acres, and under second crop 243,944 acres, making a total of 2,40,3079 acres. These figures are less than those shown in the statement in paragraph 9, as the latter includes the area of "waste charged."

Of the total area, 97.25 per cent. was irrigated by flow and 2.75 per cent. by lift.

13. The following statement shows the details of the working expenses including the old maintenance charges, for each of the major works and for the minor works in the aggregate:—

Systems.	1895-96.					1894-95.
	New works and repairs.	Establishment.	Tools and plant.	Indirect charges.	Total.	Total.
Major Works.						
	RS.	RS.	RS.	RS.	RS.	RS.
Gódavari	2,49,046	3,34,130	43,455	29,481	6,56,112	6,48,501
Kistna	3,22,574	3,11,571	59,158	28,489	7,21,792	6,42,215
Penner	25,014	29,870	..	4,934	59,818	57,787
Sangam	43,394	37,466	..	3,928	84,788	72,209
Kurnool	72,423	31,883	1,074	3,930	1,09,310	1,09,680
Barur	2,075	1,595	..	173	3,843	4,862
Cauvery	80,564	3,32,696	1,416	39,564	4,54,240	4,52,354
Srivaikuntam	19,868	18,063	..	1,972	39,903	38,319
Rushikulya	20,781	6,708	3,554	675	31,718	15,666
Total, Major Works	8,36,739	11,03,982	1,08,657	1,13,146	21,61,524	19,39,593
Per acre irrigated	..	..	..	..	0.89	0.79
Minor Works and Irrigation	2,27,616	1,10,803	4,976	9,020	3,52,415	3,66,774
Grand Total	10,63,355	12,14,785	1,13,633	1,22,166	25,13,939	23,06,367

The large increase in the working expenses of the Kistna delta system is attributed to expenditure incurred on closing breaches caused by a cyclonic storm in September 1895.

The cost of maintaining the major works was 20.5 per cent. of the gross revenue derived from them against 19.0 per cent. in the previous year.

14. The charge for establishment in column 3 of the statement in the last paragraph is made up as follows:—

		Major Works.	Minor Works and Navigation.	Total.
Revenue management .. { Direction and execution Collection charges		Rs. 6,08,569	Rs. 12,477	Rs. 6,21,046
		3,12,930	47,485	3,60,415
	Total	9,21,499	59,962	9,81,461
Maintenance of works		1,82,483	50,841	2,33,324
Grand Total		11,03,982	1,10,803	12,14,785

The cost of revenue management on the major works was 8·7 per cent. of the gross revenue realized from them.

15. The estimated value of the crops irrigated by the major works and the minor works in operation for which Capital and Revenue accounts are kept was 615½ lakhs of rupees.

Ninety per cent. of the area irrigated by these works was under rice crop.

16. The following table gives details regarding navigation on the four principal canals:—

	Length of navigable canals.	Receipts.	Expenditure.	Value of goods.	Ton mileage.	Passengers.
	MILES.	RS.	RS.	RS.		NO.
Gódavari delta canals	493	87,043	77,270	2,24,77,993	7,535,231	241,150
Kistana delta canals	307	36,722	71,638	1,62,75,148	15,234,834	123,212
Kurnool-Cuddapah canal	190	1,302	10,791	8,51,563	148,638	33
Buckingham canal	262	1,08,382	62,059	2,57,97,068	28,375,467	101,262
Total for 1895-96	1,252	2,33,449	2,21,758	6,49,01,772	51,294,170	465,657
Total for 1894-95	1,252	2,50,355	2,19,169	5,31,20,783	50,678,811	467,806

17. The following table gives details regarding works for which neither Capital nor Revenue accounts are kept:—

	Area, first and second crops.	Irrigation revenue.	Rate per acre.	Outlay, direct and indirect, and collection charges.	Rate per acre.
	ACS.	RS.	RS.	RS.	RS.
I. Works under Public Works Department for which a continuous record of expenditure is kept individually	176,902	6,99,938	..	..	..
II. Other works under Public Works Department	1,405,833	40,81,061	..	..	..
III. Works under the Revenue Department	1,809,430	43,83,416	..	..	..
Total, 1895-96	3,392,165	91,64,415	2·70	(a) 16,12,627	0·48
Total, 1894-95	* 3,175,140	* 83,21,763	2·62	17,59,321	0·54

(a) Inclusive of Rs. 3,71,507, the outlay incurred by Civil Officers and not included in the accounts of the Examiner of Public Works Accounts.

* Revised figures furnished by the Local Government.

The total area irrigated was made up of 2,538,935 acres of first crop and 853,230 acres of second crop, and the irrigation revenue was Rs. 8,42,652 more than in the previous year.

18. The following statement shows the outlay on agricultural works, i.e., river conservancy and embankments:—

	RS.	RS.
Original works	1,11,292	
Repairs	3,13,998	
	4,25,290	
Establishment		90,819
Tools and plant		6,108
Total	5,22,217	

The receipts realized from the plantations along river embankments amounted to Rs. 23,903 against Rs. 26,979 in the previous year.

19. Six investigating parties were employed on the Tank Restoration Scheme, the expenditure on which during and up to the end of the year was as follows:—

		Expenditure during 1895-96.					Expenditure to end of 1895-96.
		Works.	Repairs.	Establishment.	Tools and plant.	Total.	
Investigation		RS. 1,23,941	RS. 5,53,097	RS. 30,073	RS. 686	RS. 31,659	RS. 12,57,129
Execution		1,23,941	5,53,097	98,108	6,351	5,33,415	46,57,800
Total		1,23,941	5,53,097	1,29,081	7,037	5,65,274	59,14,937

Up to the end of the year 33,176 square miles had been completely investigated, and estimates for 4,662 works to the amount of Rs. 48,44,054 had been sanctioned.

20. The following figures relate to the discharge of some of the principal canals which do not draw the greater part of their supply from storage works and the areas irrigated from them:—

	Area actually irrigated, first crop.	Maximum discharge as designed.	Maximum discharge during the year.	Average discharge at head.	Acres irrigated per cubic foot per second of average discharge.
	ACS.	CUBIC FEET PER SECOND.	CUBIC FEET PER SECOND.	CUBIC FEET PER SECOND.	FIRST CROP.
Gódavari	580,302	8,516 *	13,176	6,155	94·28
Kistna	500,196	8,126	Not known.	4,000	125·05
Penner	64,898	2,306	1,547	300	216·33
Sangam	70,928	4,800	4,550	550	128·96
Kurnool	25,806	1,468	945	513	50·30
Cauvery	858,349	Not known.	23,920	13,558	61·94

* Previous to the construction of the extra vents built in 1887-88 to the Dowlaishweram head sluice.

21. During the year the investigations required for the preparation of the completion estimates for the Cauvery delta system were commenced and the re-investigation of the Annamalanka project in the Gódavari Western division was also undertaken. Plans and estimates for certain projects in the Kistna Northern division were under preparation.

22. The report was received by the Government of India on the 28th December, and is accompanied, in addition to the usual appendices, maps and diagrams, by a descriptive note of the Sangam anicut system illustrated by photo prints.

14. The charge for establishment in column 3 of the statement in the last paragraph is made up as follows:—

		Major Works.	Minor Works and Navigation.	Total.
Revenue management .. { Direction and execution Collection charges	Rs.	Rs.	Rs.	
	6,08,569	12,477	6,21,046	
	3,12,930	47,485	3,60,415	
Total ..		9,21,499	59,962	9,81,461
Maintenance of works		1,82,483	50,841	2,33,324
Grand Total ..		11,03,982	1,10,803	12,14,785

The cost of revenue management on the major works was 8·7 per cent. of the gross revenue realized from them.

15. The estimated value of the crops irrigated by the major works and the minor works in operation for which Capital and Revenue accounts are kept was 615½ lakhs of rupees.

Ninety per cent. of the area irrigated by these works was under rice crop.

16. The following table gives details regarding navigation on the four principal canals:—

	Length of navigable canals.	Receipts.	Expenditure.	Value of goods.	Ton mileage.	Passengers.
	MILES.	RS.	RS.	RS.		NO.
Gódavari delta canals	493	87,043	77,270	2,24,77,993	7,535,231	241,150
Kistana delta canals	307	36,722	71,638	1,62,75,148	15,234,834	123,212
Kurnool-Cuddapah canal	190	1,302	10,791	8,51,563	148,638	33
Buckingham canal	262	1,08,382	62,059	2,57,97,068	28,375,467	101,262
Total for 1895-96 ..	1,252	2,33,449	2,21,758	6,49,01,772	51,294,170	465,657
Total for 1894-95 ..	1,252	2,50,355	2,19,169	5,31,20,783	50,678,811	467,806

17. The following table gives details regarding works for which neither Capital nor Revenue accounts are kept:—

	Area, first and second crops.	Irrigation revenue.	Rate per acre.	Outlay, direct and indirect, and collection charges.	Rate per acre.
	ACS.	RS.	RS.	RS.	RS.
I. Works under Public Works Department for which a continuous record of expenditure is kept individually ..	176,902	6,99,938	..	..	..
II. Other works under Public Works Department ..	1,405,833	40,81,061	..	..	..
III. Works under the Revenue Department ..	1,809,430	43,83,416	..	..	..
Total, 1895-96 ..	3,392,165	91,64,415	2·70	(a) 16,12,627	0·48
Total, 1894-95 ..	* 3,175,140	* 83,21,763	2·62	17,59,321	0·54

(a) Inclusive of Rs. 3,71,507, the outlay incurred by Civil Officers and not included in the accounts of the Examiner of Public Works Accounts.

* Revised figures furnished by the Local Government.

The total area irrigated was made up of 2,538,935 acres of first crop and 853,230 acres of second crop, and the irrigation revenue was Rs. 8,42,652 more than in the previous year.

18. The following statement shows the outlay on agricultural works, i.e., river conservancy and embankments:—

	RS.	RS.
Original works	1,11,292	
Repairs	3,13,998	
	4,25,290	
Establishment		90,819
Tools and plant		6,108
Total ..	5,22,217	

The receipts realized from the plantations along river embankments amounted to Rs. 23,903 against Rs. 26,979 in the previous year.

19. Six investigating parties were employed on the Tank Restoration Scheme, the expenditure on which during and up to the end of the year was as follows:—

	Expenditure during 1895-96.					Expenditure to end of 1895-96.
	Works.	Repairs.	Establishment.	Tools and plant.	Total.	
Investigation	RS.	RS.	RS.	RS.	RS.	RS.
Execution	1,23,941	5,53,097	30,073	686	81,659	12,57,129
Total ..	1,23,941	5,53,097	98,108	6,351	5,33,115	46,57,808

Up to the end of the year 33,176 square miles had been completely investigated, and estimates for 4,662 works to the amount of Rs. 48,44,054 had been sanctioned.

20. The following figures relate to the discharge of some of the principal canals which do not draw the greater part of their supply from storage works and the areas irrigated from them:—

	Area actually irrigated, first crop.	Maximum discharge as designed.	Maximum discharge during the year.	Average discharge at head.	Acres irrigated per cubic foot per second of average discharge.
	ACS.	CUBIC FEET PER SECOND.	CUBIC FEET PER SECOND.	CUBIC FEET PER SECOND.	FIRST CROP.
Gódavari	580,302	8,516 *	13,176	6,155	94·28
Kistna	500,196	8,126	Not known.	4,000	125·05
Penner	64,898	2,306	1,547	300	216·33
Sangam	70,928	4,800	4,550	550	128·96
Kurnool	25,806	1,468	945	513	50·30
Cauvery	858,349	Not known.	23,920	13,558	61·94

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21. During the year the investigations required for the preparation of the completion estimates for the Cauvery delta system were commenced and the re-investigation of the Annamalanka project in the Gódavari Western division was also undertaken. Plans and estimates for certain projects in the Kistna Northern division were under preparation.

22. The report was received by the Government of India on the 28th December, and is accompanied, in addition to the usual appendices, maps and diagrams, by a descriptive note of the Sangam anicut system illustrated by photo prints.

ORDER.—Ordered, that copies of this review and of the report be forwarded to the Revenue and Agricultural Department, for information.

The Governments of Bombay, Bengal, the North-Western Provinces and Oudh, and the Punjab.
The Chief Commissioners of the Central Provinces and Burma.
The Agents to the Governor-General in Rajputana and Baluchistan.

Ordered also, that copies of this review be forwarded to the Government of Madras and to the Local Governments and Administrations in the Public Works Department noted in the margin for information.

Ordered further, that this review be published in the *Gazette of India*, and that copies of the review be forwarded to Her Majesty's Secretary of State for India.

(Signed) M. W. BISSET, Colonel, R.E.,
Secretary to the Government of India.

To the Secretary to the Government of Madras,
Public Works Department.

ORDER—No. 347 I., dated 8th April 1897.

Communicated to the officers concerned, for information.

(True Extract:)

for Mr. M. W. Bisset
Under Secretary to Government,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" the " T.R.S.
" all Superintending Engineers.
" the Consulting Engineer for Railways.
" the Examiner, Public Works Accounts.
" the Public Department.
" the Revenue Department.

Exd. T. K. Narayana Aiyangar.

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