Public Works (1896) Department.

G.O., No. 39/40 P.

Dated 16-1-96

[Despatch Abstract.]

Administration Report of the P.W.D. Irrigation Branch: Reviewing the — for 1894-95 and directing that Copies of the report and of the Proc: thereon be forwarded to the Govt of India.

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Forwarded.

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BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

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G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

No. 39 I., 16TH JANUARY 1896.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

Administration Report of the Public Works Department, Irrigation Branch, Madras Presidency, for 1894–95.

No. 2 I.

Submitted to Government with the remark that the report could not have been submitted earlier owing to the unusual delay in the receipt of the revenue information, the last instalment of which was received from the Board of Revenue only on the 21st December 1895, with its Proceedings, No. 405, Revenue Settlement, Land Records and Agriculture. As already reported in Proceedings of Madras Government, No. 820 I., dated 7th October 1895, the delay in the submission of the revenue accounts is due to the revision of the settlement in the Trichinopoly district.

2. A copy of the Administrative accounts for 1894–95 was available only on the 13th December 1895. In these accounts, the revenue results of the Cauvery delta system (Trichinopoly district) intimated by the Board of Revenue in its Proceedings marginally noted have not been included, as the accounts, both finance and administrative, were closed by the Examiner of Public Works Accounts on the 2nd idem under telegraphic orders from the Accountant-General, Public Works Department. The revenue shown in the margin will be adjusted in the accounts of the current year as directed by the Government of India in its letter No. 82 A.I., dated 29th November 1895, to the Accountant-General, Public Works Department (*vide* Proceedings of Madras Government No. 1103 I., dated 19th December 1895).

No. 392, dated 11th December 1895.

Cauvery Delta System—
(Trichinopoly District.)

	Rs.
Total irrigation revenue	2,45,843
Enhanced share of Land Revenue ...	870
Total ...	2,46,713
Deduct—portion due to old irrigation.	1,96,579
Net revenue ...	50,134

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
7th Jan. 1896. Chief Engineer for Irrigation.

ORDER—No. 39 I., dated 16th January 1896.

The Government regrets the unavoidable delay in the submission of the administration report of the Public Works Department, Irrigation Branch, for 1894–95. The report submitted by the Chief Engineer for Irrigation is approved.

2. It deals with 10. "Major Works" and 26. "Minor Works" for which Capital and Revenue Accounts are kept, and numerous other Irrigation and Agricultural works individually small, for which such accounts are not kept. Nine of the major works are classed as productive and one, the Rushikulya project, as protective. With the exception of the Periyár project, which is under construction, the other major works are all in operation, and the construction estimates of seven of these have been closed.

3. During the year, the Ganjám minor rivers system and the Nandyar channel in the Trichinopoly district were brought into the category of "Minor Works"; twenty-two of which are irrigation systems and four are tidal canals intended for purely navigation purposes. With the exception of the Munneyeru, Dondapad, Sagileru and Nandyar channel projects and the Ganjám-Gopalpur tidal canal, the whole of the above are in operation, and of these the construction estimates have been closed except in the following six cases: the Buckingham canal, the Cumbum tank, the Pálár, Poiney, Cheyar and Lower Coleroon anicut systems.

4. The Capital outlay incurred on the Major and Minor works during and up to the end of 1894-95 was as follows:—

—	Number of works.	During the year 1894-95.							Total direct and indirect charges to end of 1894-95.
		Works.	Establishment.	Tools and plant.	Suspense account.	Total direct charges.	Indirect charges.	Total direct and indirect charges.	
1	2	3	4	5	6	7	8	9	10
Major Works.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Protective Irrigation works (account head, 35) ..	1	2,45,747	52,613	11,366	..	3,09,726	26,702	3,36,428	40,10,884
Irrigation works not charged to Revenue (account head, 49)	9	10,67,083	2,39,215	1,11,723	— 807	14,17,214	49,659	14,66,873	6,30,22,149
Minor Works and Navigation.									
Works for which Capital and Revenue Accounts are kept (account head, 43) ..	(a) 23	3,24,597	72,866	11,659	..	4,09,122	12,824	4,21,946	1,60,38,589

(a) Exclusive of the Ganjám minor rivers system, the Nandyar channel and the Védáranniyam canal, for which complete capital accounts up to end of 1894-95 have not yet been prepared.

5. Under Major works, the capital outlay was incurred chiefly on the Kistna delta system, the Periyár and Rushikulya projects.

The capital outlay on the Kistna delta system was Rs. 4,29,197, including indirect charges, and was incurred on various improvements to head works, canals, distributaries and drains. The Sitanagaram head sluice being badly cracked, the foundation for a new subsidiary sluice in rear was put in hand.

The capital outlay on the Periyár project was Rs. 9,82,563, including indirect charges. The progress of work in the head works division was somewhat impeded by an outbreak of cholera in the beginning of the year. The dam was raised from an average height of 68 feet to an average of 115 feet above the bed of the river or 47 feet during the season, representing an addition of 1,552,656 cubic feet of material to the dam. The boring of the water-shed tunnel was completed and masonry work at the mouth of the tunnel was put in hand. In the Madura division 36 miles of canals and 70¾ miles of distributaries were completed up to the end of the year under review.

The capital outlay on the Rushikulya project was Rs. 3,36,428, including indirect charges. The progress of work was satisfactory. The Russellkonda reservoir dam and head sluice were completed. Water was let down the whole length of the Rushikulya canal in August 1894.

Under Minor works, the principal outlay was incurred on the Sagileru project and the Buckingham canal.

On the Sagileru project the capital outlay was Rs. 84,085, including indirect charges. The anicut, head and scouring sluices and supply channel were in progress and materials were collected for a few masonry works.

On the Buckingham canal the capital outlay was Rs. 1,67,452, including indirect charges. Seven locks were completed and some improvements and diversions were in progress.

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.	System.	Capital outlay.	Gross revenue receipts, 1894-95. Irrigation revenue.	Miscellaneous receipts.	Total.	Working expenses. Direct.	Indirect.	Total.	Net actual revenue.	Deduct receipts less maintenance charges on account of old irrigation.	Net revenue attributable to outlay of Government capital.	Percentage of return.
1	2	3	4	5	6	7	8	9	10	11	12	13
	MAJOR WORKS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1	Gódávari	1,28,16,644	25,04,022	1,24,831	26,28,853	6,13,457	35,044	6,48,501	19,80,352	1,15,500	18,64,852	14·55
2	Kistna	1,16,25,104	20,36,164	53,729	20,89,893	5,18,715	23,500	5,42,215	15,47,678	66,100	14,81,568	12·74
3	Pennér	18,86,304	2,83,118	397	2,83,515	54,605	3,182	57,787	2,25,728	87,000	1,38,728	7·35
4	Sangam	37,84,748	3,24,490	536	3,25,026	68,432	3,777	72,209	2,52,817	1,14,000	1,38,817	3·67
5	Kurnool	2,16,95,111	1,04,560	8,506	1,13,066	1,06,306	3,374	1,09,680	3,376	..	3,376	0·02
6	Barur	4,19,713	11,842	26	11,868	4,661	201	4,862	7,006	1,850	5,156	1·23
7	Cauvery	17,84,258	(a) 45,38,420	3,569	45,41,989	4,12,688	39,666	4,52,354	40,89,635	32,85,722	8,03,913	45·06
8	Srivaikuntam	14,61,028	1,77,383	1,566	1,78,949	34,330	1,989	36,319	1,42,630	66,500	76,130	5·21
10	Rushikulya	40,10,884	47,160	1,023	48,183	15,290	376	15,666	32,517	20,850	11,667	0·29
	Total, Major Works, 1894-95 ..	5,34,33,794	1,00,27,139	1,94,183	1,02,21,322	18,28,484	1,11,109	19,39,593	82,81,729	37,57,522	45,24,207	7·61
	Total for 1893-94 ..	5,86,63,056	86,05,260	1,87,599	87,92,859	18,00,984	1,04,291	19,05,275	68,87,584	25,19,250	43,68,334	7·45
	MINOR WORKS.											
	I. Irrigation.											
15	Cumbum tank	55,375	42,677	.. 80	42,677	3,763	82	3,845	38,832	29,975	8,857	15·99
16	Thadapalli channel	93,552	1,06,469		1,06,549	8,334	55	3,389	1,03,160	76,369	26,791	28·64
17	Arkenkota do.	1,02,984	28,465	.. ..	28,465	1,654	30	1,684	26,781	19,498	7,283	7·07
18	Kalingarayan channel	60,278	1,06,514	.. ..	1,06,514	2,574	25	2,599	1,03,915	84,786	19,129	31·73
19	Pálár anicut	20,35,378	2,68,734	659	2,69,811	66,967	3,017	69,984	1,99,827	1,21,100	78,727	3·87
20	Poiney do.	2,31,898	90,133	129	90,322	29,460	738	30,198	60,024	46,639	14,085	6·07
21	Cheyáru anicut	3,85,049	81,715	50	81,844	20,889	499	21,388	60,456	44,349	16,107	4·18
22	Chembrambakam tank	7,44,038	39,030	13,462	39,080	6,592	136	6,638	32,442	9,100	23,342	3·14
23	Madras water-supply	17,54,045	21,988	4	9,263	9,915	398	10,313	25,137	6,200	18,937	1·08
24	Vallúru anicut	63,805	9,259	491	1,199	1,199	26	1,225	8,038	5,282	2,756	4·32
25	Tirukkóyilúr anicut	2,54,451	97,070	20	97,564	15,766	368	16,134	81,430	58,551	22,879	8·99
26	Mohnatúr do.	71,047	12,878	55	12,398	3,595	76	3,671	8,727	2,084	6,643	9·35
27	Vriddhachalam anicut	49,737	28,364	315	25,419	5,055	111	5,166	20,253	8,463	11,790	23·70
28	Shatatope anicut	1,36,047	1,53,931	273	13,786	13,786	226	14,012	1,07,743	20,027	87,716	64·47
29	Pelandorai do.	4,53,931	4,39,722	1,619	10,264	10,264	234	10,498	21,798	2,850	18,948	4·17
30	Lower Coleroon anicut	6,75,926	1,86,896	192	42,465	42,465	709	43,164	3,98,177	1,45,302	2,52,875	44·07
32	Maradur anicut	41,135			16,517	16,517	341	16,858	1,69,230	1,14,264	54,966	133·62
	Total, I. Irrigation ..	71,06,486	17,08,877	18,469	17,27,336	2,53,695	7,071	2,60,766	14,66,570	7,94,739	6,71,831	9·45

(a) Exclusive of the revenue of the year derived from the system in the Trichinopoly district and inclusive of Rs. 6,50,297, the revenue of the previous year brought into the accounts in 1894-95.

Serial number.	System.	Capital outlay.	Gross revenue receipts, 1894-95.			Working expenses.			Net actual revenue.	Deduct receipts less maintenance charges on account of old irrigation.	Net revenue attributable to outlay of Government capital.	Percentage of return.
			Irrigation revenue.	Miscellaneous receipts.	Total.	Direct.	Indirect.	Total.				
1	2	3	4	5	6	7	8	9	10	11	12	13
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
	MINOR WORKS—*cont.*											
	II. Navigation.											
33	Chilka lake canal	31,027	..	..	..	609	16	625	— 625	..	..	..
34	Buckingham canal	84,79,914	..	1,09,427	1,09,427	97,883	3,653	1,01,536	— 7,891	..	— 7,891	0·09
35	Védáraniyam canal	..	..	1,136	1,136	3,722	110	3,832	— 2,696	..	— 2,696	..
36	Ganjám-Gopálpur canal ..	1,55,493	..	..	..	15	..	15	— 15	..	— 15	..
	Total, II. Navigation ..	86,66,434	..	1,10,563	1,10,563	1,02,229	3,779	1,06,008	4,555	..	4,555	0·05
	Total, Minor Works, 1894-95 ..	1,57,72,920	17,08,877	1,29,022	18,37,899	3,55,924	10,850	3,65,774	14,71,125	7,94,739	6,76,386	4·22
	Total for 1893-94 ..	1,54,98,379	17,39,681	1,27,874	18,67,555	2,89,912	8,018	2,97,930	15,69,625	7,78,988	7,90,637	5·10

7. The net revenue derived from Major works as booked by the Examiner of Public Works Accounts was higher by Rs. 1,55,873 than it was in 1893–94, and the percentage on capital outlay has risen from 7·45 to 7·61. The gross revenue and working expenses were respectively Rs. 14,28,463 and Rs. 34,318 more than in the previous year. The increase in net revenue occurred on all systems, except the Cauvery delta and the Srívaikuntam anicut systems. The decrease in the former case is attributable to the irrigation revenue, due to the system in the Trichinopoly district having been intimated too late for inclusion in the accounts of the year. The falling off in the latter case was due to unfavourable season.

8. The net revenue realized from the capital outlay on Minor *Irrigation* works was Rs. 6,71,831, representing a return of 9·45 per cent. on the capital outlay compared with 11·57 per cent. during the previous year.

Of the four Minor *Navigation* works the gross revenue derived from the Buckingham canal exceeded the working expenses by Rs. 7,891, while the income realized from each of the other works was insufficient to cover the working expenses, the net loss of Rs. 3,336 being Rs. 546 more than in the previous year.

9. The total irrigation receipts from the Major works amounted to Rs. 1,02,73,852, of which Rs. 97,89,488, inclusive of a sum of Rs. 6,50,297 of the old irrigation revenue of the previous year of the Cauvery delta system brought into the accounts of 1894–95, represented the share of land revenue on account of water supplied from the canals, and Rs. 4,84,364 was the irrigation share of enhanced land revenue. Of the total irrigation revenue, Rs. 2,46,713 will be adjusted in the accounts of the current year.

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

Systems.	Revenue derived from irrigated lands.		Area charged as irrigated.		Rate per acre.	
	1894–95.	1893–94.	1894–95.	1893–94.	1894–95.	1893–94.
1	2	3	4	5	6	7
	Rs.	Rs.	Acs.	Acs.	Rs.	Rs.
Major Works.						
Gódávari	25,04,022	24,17,675	759,513	721,740	3·3	3·3
Kistna	20,36,154	20,29,290	519,976	512,578	3·9	4·0
Pennér	2,83,118	2,80,141	70,559	70,346	4·0	4·0
Sangam	3,24,490	3,13,561	76,678	74,960	4·2	4·2
Kurnool	1,04,550	1,18,621	33,540	31,424	3·1	3·8
Barur	11,842	11,045	4,480	4,324	2·6	2·5
Cauvery	(a) 47,85,133	38,85,598	989,891	996,055	4·8	3·9
Srivaikuntam	1,77,383	1,82,055	38,573	40,570	4·6	4·5
Rushikulya	47,160	17,571	27,389	8,195	1·7	2·1
Total, Irrigation Works not charged to Revenue	1,02,73,852	92,55,557	2,520,599	2,460,192	4·1	3·8
Minor Works. (Irrigation.)						
Total ..	17,08,877	17,39,681	463,064	471,676	3·7	3·7
Grand Total ..	1,19,82,729	1,09,95,238	2,983,663	2,931,868	4·0	3·7

(a) Inclusive of Rs. 6,50,297 of the old irrigation revenue of the Cauvery delta system of the previous year brought into the accounts of 1894–95.

Under Major works the area charged as irrigated and the revenue derived therefrom were greater by 60,407 acres and Rs. 10,18,295, respectively, than in 1893–94. Of the increase in revenue, Rs. 6,50,297 appertains to the revenue of the previous year. The largest increase appears under the Cauvery delta system, viz., Rs. 2,49,238,

representing chiefly the annual increment of the settlement assessment falling due in the year. Under the Gódávari delta system there was an increase of over Rupees 85,000, and under the Rushikulya project, an increase of nearly Rs. 30,000 from extended irrigation.

The area and revenue under Minor works were less by 8,612 acres and Rupees 30,804, respectively, than in the previous year.

11. The following statement gives details of the average water-rate per acre for first and second crops under Major works, excluding the 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.
Gódávari delta	4·01	2·11	4·06	2·45	4·01	2·56	2·53
Kistna	4·08	3·28	3·88	2·68	4·08	3·35	2·88
Pennér anicut	4·52	3·16	..	..	4·07	3·25	2·57
Sangam	4·59	3·74	..	..	3·87	3·27	2·91
Kurnool-Cuddapah canal	4·10	1·87	..	..	3·90	2·33	2·92
Barur tank	3·76	3·80	4·00	..	4·00	3·67	1·26
Cauvery delta	4·69	3·00	..	..	3·96	3·11	3·71
Srivaikuntam anicut	6·25	3·42	3·93	3·06	4·00	3·50	3·28
Rushikulya project	1·94	2·27	2·11	..	2·07	1·98	1·11

12. The area irrigated under first crop on Major works was 2,235,404 acres and under second crop 227,957 acres, making a total of 2,463,361 acres. These figures are less than those shown in column 4 of the table in paragraph 10, as the latter includes the extent of "waste charged."

Of the total area of 2,463,361 acres, 2,390,653 acres were irrigated by flow and 72,708 acres by lift, or about 97·05 per cent. and 2·95 per cent., respectively.

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

Systems.	1894–95.					1893–94.
	New works and repairs.	Establishment.	Tools and plant.	Indirect charges.	Total.	Total.
Major Works.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Gódávari	2,41,922	3,25,953	45,582	35,044	6,48,501	6,24,380
Kistna	2,17,534	2,63,948	37,233	23,500	5,42,215	5,93,819
Pennér	24,787	29,818	..	3,182	57,787	57,443
Sangam	33,129	35,121	182	3,777	72,209	77,223
Kurnool	75,902	29,326	1,078	3,374	1,09,680	1,42,842
Barur	2,831	1,830	..	201	4,862	4,912
Cauvery	85,918	3,26,662	108	39,666	4,52,354	3,55,830
Srivaikuntam	15,221	19,109	..	1,989	36,319	37,907
Rushikulya	11,239	4,003	48	376	15,666	10,919
Total, Major Works ..	7,08,483	10,35,770	84,231	1,11,109	19,39,593	19,05,275
Per acre irrigated by Major works ..	..	..	..	..	0·79	0·77
Minor Works and Navigation	2,39,785	1,11,791	4,348	10,850	3,66,774	2,97,930
Grand Total ..	9,48,268	11,47,561	88,579	1,21,959	23,06,367	22,03,205

The cost of maintaining the Major works during the year was 19·00 per cent. of the gross revenue and 23·4 per cent. of the net revenue derived from them against 21·6 per cent. and 27·6 per cent., respectively, 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.
	Rs.	Rs.	Rs.
Revenue management { Direction and execution.	5,89,307	12,986	6,02,293
Revenue management { Collection charges ..	2,90,123	44,919	3,35,042
Total ..	8,79,430	57,905	9,37,335
Maintenance of works	1,56,340	53,886	2,10,226
Grand Total ..	10,35,770	1,11,791	11,47,561

The cost of revenue management on Major works was 8·6 per cent. of the gross revenue realized from them.

15. The report shows that there are now in actual operation 3,494 miles of canals, of which 990 miles are for irrigation and navigation, 2,200 miles for irrigation only and 304 miles for navigation only. From the irrigation canals, 6,753 miles of distributary channels are taken off. The total ultimate irrigable area under the canals is 3,023,784 acres and the area irrigated during the year was 2,886,483 acres, the crops grown being valued at Rs. 6,69,00,784, or Rs. 1,03,69,697 less than in the previous year. The estimated outturn of the year compares with the corresponding figures of the previous year as shown below :—

	1894–95.	1893–94.
	Rs.	Rs.
Paddy	6,31,32,502	7,34,26,754
Ragi	4,07,319	5,78,860
Other crops	33,60,963	32,64,867
Total ...	6,69,00,784	7,72,70,481

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

—	Length of navigable canals.	Receipts.	Expenditure.	Value of goods.	Ton mileage.	Passengers.
	Miles.	Rs.	Rs.	Rs.		
Gódávari delta canals	493	1,03,892	81,261	2,30,52,554	11,967,929	256,612
Kistna delta canals	307	37,222	64,921	1,19,75,805	12,583,540	117,337
Kurnool-Cuddapah canal	190	1,457	10,102	2,39,050	151,365	32
Buckingham canal	262	1,07,784	62,885	1,78,53,374	25,975,977	93,825
Total for 1894–95 ..	1,252	2,50,355	2,19,169	5,31,20,783	50,678,811	467,806
Total for 1893–94 ..	1,242	2,41,542	2,27,655	5,40,74,418	[illegible] 974	486,368

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

Class.	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	230,949	8,02,518	..	..	..
II. Other works under Public Works Department ..	1,328,053	37,52,115	..	..	..
III. Works under the Revenue Department	1,675,631	38,84,222	..	..	..
Total, 1894–95 ..	3,234,633	84,38,855	2·61	(a) 17,59,321	0·54
Total, 1893–94 ..	3,573,871	90,69,303	2·54	17,46,915	0·49

(a) Inclusive of Rs. 3,96,461, the outlay incurred by Civil officers and not included in the accounts of the Examiner of Public Works Accounts.

The total area irrigated was made up of 2,467,109 acres of first crop and 767,524 acres of second crop, and the irrigation revenue was Rs. 6,30,448 less than in the previous year. The decrease occurred chiefly under works in the Cuddapah, Anantapur, Chingleput, North Arcot, Madura and Tinnevelly districts owing to deficient rainfall.

18. The following statement shows the outlay on agricultural works :—

	Rs.	Rs.
Original works	83,869	
Repairs	2,13,265	
		2,97,134
Establishment		64,423
Tools and plant		4,032
Total ...		3,65,589

The receipts realized from the plantations along the river embankments amounted to Rs. 26,979 against Rs. 43,777 in the previous year.

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

—	Expenditure during 1894–95.					Expenditure to end of 1894–95.
	Works.	Repairs.	Establishment.	Tools and plant.	Total.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Execution	2,41,375	1,19,652	82,355	5,392	4,48,774	41,24,193
Investigation	216	..	55,341	579	56,136	12,25,470
Total ..	2,41,591	1,19,652	1,37,696	5,971	5,04,910	53,49,663

Up to the end of the year 31,377 square miles had been completely investigated and estimates for 4,315 works to the amount of Rs. 45,66,193 had been sanctioned.

20. The following figures relate to the discharge of some of the principal canals which are not supplied mostly 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.
	Acres.	Cubic ft. per second.	Cubic ft. per second.	Cubic ft. per second.	First crop.
Gódávari	654,126	(a) 8,516	13,176	7,006	93·36
Kistna	514,812	8,126	9,184	4,508	114·20
Pennér	64,508	2,306	1,004	371	173·87
Pangam	70,517	4,800	5,361	670	105·25
Kurnool	25,832	1,468	935	563	45·88
Cauvery	855,258	Not known.	28,460	11,252	76·01

(a) Previous to the construction of the extra vents built in 1887–88 to the Dowlaishweram head sluice.

21. During the year the investigation of the Mellavagu, Atmakúr and Manchikalla projects in the Kistna Northern division were put in hand.

22. From Local Irrigation Cess fund an outlay of Rs. 10,484 was incurred on improving and repairing the Cauvery channels in the Salem district, and on improving the Ponnéri No. 1 branch channel in the Trichinopoly district.

23. A sum of Rs. 7,671 was also spent on irrigation works in the estates under the Court of Wards.

24. The descriptive note on the Kistna delta system illustrated by photo. prints forms an interesting appendix to the report under review. For the first time the annual diagrams of the principal rivers connected with Major works have also been appended to the report.

25. Ordered that forty copies of the Administration Report and of these Proceedings be forwarded to the Government of India.

[Here enter No. 40 I., dated 16th January 1896.]

(True Extract.)

Under Secy. to Govt., P.W.D.,
Irrigation Branch.

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

Exd. Shaik Kerim.
Spare Copies

IRRIGATION.

Govt. of {1896} Madras.

PUBLIC WORKS.

Dated January, 16th.

Read. *Encl.*

G.O. No. 39 I., 16th Jan. 1896.

JANUARY.

Administration Report of the Public Works Department, Irrigation Branch

Reviewing the — for 1894–95 and directing that copies of the report and of the Proceedings thereon be forwarded to the Government of India.

Serial number	System	Capital outlay	Gross revenue receipts 1894-95			Working Expenses			Net actual revenue	Deduct receipts less maintenance charges on account of old irrigation	Net revenue attributable to outlay of Government Capital	Percentage of return
			Irrigation revenue	Miscellaneous receipts	Total	Direct	Indirect	Total				
1	2	3	4	5	6	7	8	9	10	11	12	13
		Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	
	Major works											
1	Godavari	128.16.644	2.50.4022	1.24.831	26.28.853	6.13.457	35044	6.48.501	1980.352	1.15.500	18.64.852	14·55
2	Kistna	116.25.104	20.36.154	53.729	20.89.883	5.18.715	23.500	5.42.215	15.47.668	66.100	14.81.568	12·74
3	Penner	18.86.304	2.83.118	397	2.83.515	54605	3182	57.787	2.25.728	87000	1.38.728	7·35
4	Sangam	37.84.748	3.24.490	536	3.25.026	68.432	3777	72.209	2.52.817	1.14.000	1.38.817	3·67
5	Kurnool	216.95.111	1.04.550	8.506	1.13.056	1.06.306	3374	109680	3376	.	3.376	0·02
6	Barur	4.19.713	11.842	26	11.868	4661	201	4862	7006	1850	5.156	1·23
7	Cauvery	17.84.258	[a] 45.38.420	3.569	45.41.989	4.12.688	39666	4.52.354	4089635	32.85.722	8.03.913	45.06
8	Srivaikuntam	14.61.028	1.77.383	1.566	1.78.949	34330	1989	36.319	1.42.630	66.500	76.130	5·21
10	Rushikulya	40.10.884	47.160	1.023	48.183	15.290	376	15666	32.517	20.850	11.667	0·29
	Total Major works 1894-95	594.83.794	100.27.139	194.183	102.21.322	18.28.484	11.109	19.39.593	8281.729	37.57.522	45.24.207	7·61
	Total for 1893-94	586.63.056	86.05.260	187.599	87.92.859	18.00.984	04291	19.05.275	68.87.584	25.19.250	43.68.334	7·45
	Minor works											
	I. Irrigation											
5	Cumbum tank	55.375	42.677	.	42.677	3.763	82	3845	38.832	29975	8857	15·99
6	Thadapalli channel	93.552	1.06.469	80	1.06.549	3.334	55	3.389	1.03.160	76369	26.791	28·64
7	Arkenkota do	1.02.964	28.465	.	28.465	1654	30	1.684	26.781	19498	7283	7·07
8	Kalingarayen do	60.278	1.06.514	.	1.06.514	2574	25	2.599	1.03.915	84786	19.129	31·73
9	Palar anicut	20.35.378	2.68.734	1077	2.69.811	66967	3017	69.984	1.99.827	121.100	78.727	3·87
20	Ponniy do	2.31.828	90.133	689	90822	29460	738	30,198	60.624	46.539	14.085	6.07
21	Cheyaru do	3.85.049	81.715	129	81.844	20.889	499	21.388	60456	44349	16.107	4·18
22	Chembrambakam tank	7.44.038	39.030	50	39.080	6502	136	6.638	32.442	9.100	23.342	3·14
23	Madras water-supply.	17.54.045	21.988	13462	35450	9915	398	10.313	25.137	6200	18.937	1·08
24	Vallure aniaut	63.805	9.259	4	9.263	1199	26	1225	8.038	5282	2.756	4·32
25	Tirukkoyilur do	2.54.451	97.070	494	97564	15.766	368	16.134	81.430	58.551	22.879	8·99
26	Mehamuttur do	71.047	12.378	20	12398	3.595	76	3671	8.727	2084	6643	9·35
27	Vriddhachalam do	49.737	25.364	55	25.419	5053	111	5.166	20.253	8463	11.790	23·70
28	Shatiatope do	1.36.047	1.21.440	315	1.21.755	13.786	226	14012	107.743	20.027	87.716	64·47
29	Pelandorai do	4.53.931	32.023	273	32.296	10.264	234	10.498	21.798	2850	18,948	4·17
30	Lower Coleroon do	5.73.826	4.39.722	1.619	4.41.341	42.455	709	43.164	3.98.177	1.45.302	2.52.875	44·07
32	Maradur do	41.135	1.85.896	192	1.86.088	16.517	341	16858	1.69230	1.14264	54.966	133·62
	Total I Irrigation	71.06.486	17.08.877	18.459	17.27.336	2.53.695	7.071	2.60.766	14.66570	7.94.739	6.71.831	9·45
	II. Navigation											
33	Chilka lake canal	31.027	.	.	.	609	16	625	-625	.	-625	
34	Buckingham do	8479.914	.	1.09.427	1.09.427	97.883	3653	1.01536	7891	.	7891	0·09
35	Vedarannyam do	.	.	1136	1.136	3722	110	3832	-2696	.	-2696	
36	Ganjam Gopalpore do	1.55493	.	.	.	15	.	15	-15	.	-15	
	Total II Navigation	86.66.434	.	1.10.563	1.10.563	1.02.229	3.779	1.06.008	4533	.	4.555	0·05
	Total Minor works 1894-95	157.72.920	17.08.877	1.29.022	18.37.899	3.55.924	10.850	3.66.774	14.71.125	7.94.739	6.76.386	4·22
	Total for 1893-94	154.98.379	17.39.681	1.27.874	18.67.555	2.89.912	8018	297.930	15.69.625	7.78.988	7.90.637	5·10

[a] Exclusive of the revenue of the year derived from the system in the Trichinopoly District & inclusive of Rs 650.297 the revenue of the previous year brought into the accounts in 1894-95.

Administration Report of the Public Works Department, Irrigation Branch, Madras Presidency, for 1894-95. No 2 J dt 7-1-96

Submitted to Govt with the remark that the report could not have been submitted earlier owing to the unusual delay in the receipt of the revenue information, the last instalment of which was received from the Board of Revenue only on the 21st Dec. 1895 with its Proc. No 405, Rev Settlt. Land Records & Agriculture. As already reported in Proc No 820. J, dt 7th Oct 1895, the delay in the submission of the revenue account is due to the revision of the settlement in the

Trichinopoly District.

2. A copy of the Administrative accounts for 1894-95 was available only on the 13th Dec/95. In these accounts the revenue results of the Cauvery Delta System (Trichinopoly Dt) intimated by the Board of Revt in its Proc marginally noted have not been included, as the accounts both Finance & Administrative were closed by the Examr of I.W.A. on the 2nd idem under telegraphic orders from the Accountant General, P.W. Dept. The revenue shown in the margin will be adjusted in the accounts of the current year as directed by the Govt of India in its letter No. 82. A.I. dy

No. 392 dy 11 Dec/95

Cauvery Delta System — (Trichinopoly Dt).

	Rs
Total irrigation revenue	245,843
Enhanced share of land revenue	870
Total	246,713
Deduct portion due to old irrigation	196,579
net revenue	50,134

+ Express.

W
10 Jan

BS
13/1/96

DS
15/1/96

2nd No. 795 to the Accountant General, P.W. Dept. vide Govt W. 1103. P. dy 19 Dec/95.

Order thereon.
No. 394 dy 16th January 1896

The Govt regrets the unavoidable delay in the submission of the Administration Report of the Public Works Department, Irrigation Branch, for 1894-95. The report submitted by the Chief Engineer for Irrigation is approved.

2. It deals with 10 "Major works" & 26 "Minor works" for which Capital & Revt Accounts are kept & numerous other irrigation & agricultural works individually small for which such accounts

are not kept. Nine of the Major works are classed as productive & one, the Rushikulya project, as protective. With the exception of the Tungar project which is under construction, the other Major works are all in operation, & the construction estimates of seven of these have been closed.

3. During the year, the Ganjam Minor Rivers system & the Nandyar channel in the Trichinopoly Dt. were brought into the category of Minor works: 22 of which are irrigation systems & 4 are tidal canals intended for purely navigation purposes. With the exception of the Mungaroo, Doudapad

Sagileru & Nandyar channel projects & the Ganjam. Gopalpur tidal canal, the whole of the above are in operation & of these the construction estimates have been closed except in the following six cases:— the Buckingham Canal, the Cumbum tank, Re Dalai, Poiney, Cheyar & Lower Coleroon Anicut systems.

4. The capital outlay incurred on the Major & Minor works during & up to the end of 1894-95 was as follows:—

	Number of Works	During the year 1894-95							Total direct & indirect charges to end of 1894-95
		Works	Establishments	Tools & Plant	Suspense Account	Total direct charges	Indirect charges	Total direct & indirect charges	
1	2	3	4	5	6	7	8	9	10
Major Works.									
Protective Irrign Works (account head 35) . .	1	243,747	52,613	11,366	-	309,726	26,702	336,428	40,10,884
Irrigation Works not charged to Revenue (account head 49) . .	9	1067,083	2,39,215	111,723	- 807	14,17,214	49,659	14,66,873	630,22,149
Minor Works & Navigation									
Works for which Capital & Revenue Accounts are kept (Account head 43) . .	1a/ 23	324,577	72,866	11,657	-	409,122	12,824	421,946	16,038,587

1a/ Exclusive of the Ganjam minor rivers system, the Nandyal channel & the Vedaranniyam Canal for which complete Capital Accts up to end of 1894-95 have not yet been prepared.

5. Under Major Works, the Capital outlay was incurred chiefly on the Kistna Delta system, the Periyar & Ruchikulya Projects.

The capital outlay on the Kistna Delta system was Rs 4,29,197, including indirect charges, and was incurred on various improvements to the works, canals, distributaries & drains. The Sitanagaram head sluice being badly cracked, the foundations for a new subsidiary sluice in rear was put in hand.

The capital outlay on the Periyar Project was Rs 9,82,563, including indirect charges. The progress of work in the head works division was somewhat impeded by an outbreak of cholera in the beginning of the year. The dam was raised from an average

height of 68 feet to an
average of 115 feet
above the bed of the
river or 47 feet during
the season, representing
an addition of 1,552,656
cubic feet of material
to the dam. The boring
of the water shed
tunnel was completed
& masonry work at the
mouth of the tunnel
was put in hand.
In the Madura Dn
36 miles of canals
& 70 3/4 miles of distri-
butaries were completed
up to the end of the
year under review.

The capital outlay
on the Rushikulya
Project was Rs 336,428
including indirect
charges. The progress
of work was satisfactory.

4. In the
Russelkonda
reservoir dam & head
sluice were completed.
Water was let down
the whole length of the
Rushikulya canal in
Augt 194.

Under Minor works,
the principal outlay
was incurred on the
Sagileru Project & the
Buckingham Canal.

On the Sagileru
Project the capital
outlay was Rs 84,065,
including indirect
charges. The anicut,
head & scouring sluices
& supply channel were
in progress & materials
were collected for a
few masonry works.

On the Buckingham
Ca. D [illegible] pital

which
outlay was Rs 16,452
including indirect
charges. Seven tanks
were completed & some
improvements & diversions
were in progress.

6. The following
statement shows the
revenue receipts &
working expenses
of each work in
operation for which
Capital & Rev: Accounts
are kept:—

[illegible]
tory.

derived from the
works as worked by
the Examiner of P.W.A.
was higher by Rs 15587
than it was in 1893-94
& the percentage on
capital outlay has
risen from 7.45 to 7.61
The gross revenue &
working expenses were
respectively Rs 14,26,463
& Rs 34,318 more than
in the previous year.
The increase in net
revenue occurred on
all systems, except the
Cauvery Delta & the
Tiruchirapalli Anicut
systems. The decrease
in the former case
is attributable to the
irrigation revenue due
to the system in the
Jaghirs only Rs having
been intimated too
late for inclusion in
the accounts of the year.

off. The latter
kind is due to wind
and water erosion.

8. The net revenue realised from the capital outlay on minor irrigation works was Rs 67,831 representing a return of 9.46 per cent on the capital outlay compared with 11.57 per cent during the previous year.

Of the four minor navigation works the gross revenue derived from the Buckingham Canal exceeded the working expenses by Rs 7,891, while the income realized from each of the other works was insufficient to cover the working expenses, the net loss of Rs 3331, being Rs 546 more than in the previous year.

9. The total irrigation receipts from the major works amounted to Rs 102,73,852, of which Rs 97,89,468, inclusive of a sum of Rs 6,50,297 of the old irrigation revenue of the previous year of the Cauvery Delta System brought into the accounts of 1894-95, represented the share of land revenue on account of water supplied from the canals & Rs 4,84,384 was the irrigation share of enhanced land revenue. Of the total irrigation revenue Rs 2,46,713 will be adjusted in the accounts of the current year.

10. The following statement compares the irrigation receipts with the areas under first & second crops

charged as irrigated:—

Systems	Revt. derived from irrigated lands		Area charged as irrigated		Rate per acre	
	1894-95	1893-94	1894-95	1893-94	1894-95	1893-94
1	2	3	4	5	6	7
	Rs	Rs	Acs	Acs	Rs	Rs
Major Works						
Godavari	2504022	2417675	759513	721740	3·3	3·3
Kistna	2036154	2029290	519976	512578	3·9	4·0
Pennar	283118	280141	70559	70346	4·0	4·0
Sangam	324490	313561	76678	74960	4·2	4·2
Kurnool	104550	118621	33540	31424	3·1	3·8
Bunder	11842	11045	4480	4324	2·6	2·5
Cauvery	[a] 478133	3885598 ~~3235301~~	98891	96055	4·8	3·9
Vriddhachalam	177383	182055	38573	40570	4·6	4·5
Ruchikulya	47160	17571	27389	8195	1·7	2·1
Total, Irrigation Works not charged to Revt.	10273852	~~8605260~~ 9255557	2520599	2460192	4·1	3·8
Minor Works.						
1. Irrigation						
Total,	1708877	1739681	463064	471676	3·7	3·7
Grand Total	11982729	~~10374941~~ 10995238	2983663	2931868	4·0	3·7

[a] Inclusive of Rs 60,297 of the old irrigation revenue of the Cauvery Delta System of the previous year brought into the accounts of 1894-95.

Under major works the area charged as irrigated & the revenue derived therefrom were greater by 60,407 acres & Rs 10,18,295 respectively than in 1893-94. Of the increase in revenue Rs 6,50,297 appertains to the revenue of the previous year. ~~[illegible]~~ The largest increase appears under the Cauvery Delta System viz Rs 2,49,138 representing chiefly the annual increment of the settlement assessment falling due in the year. Under the Godavari Delta System there was an increase of over Rs 85,000 & under the Ruchikulya project an increase of nearly Rs 30,000 from extended irrigation.

The area & revenue under minor works were less by 8,612 acres & Rs 30,804 respectively than in the previous year.

11. The following statement gives details of the average water-rate per acre for first & second crops under Major Works including the 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
Godavari delta	4·01	2·11	4·06	2·45	4·01	2·56	2·53
Krishna -	4·08	3·28	3·88	2·68	4·08	3·35	2·88
Penner Ancient	4·52	3·16	.	.	4·07	3·25	2·57
Sangam -	4·59	3·74	.	.	3·87	3·27	2·91
Kurnool Cuddapah Canal	4·10	1·87	.	.	3·90	2·33	2·92
Bazur tank -	3·76	3·80	4·00	.	4·00	3·67	1·26
Cauvery Delta	4·69	3·00	.	.	3·96	3·11	3·71
Periyakulam Anicut	6·25	3·42	3·93	3·06	4·00	3·50	3·23
Pushkulya Project	1·94	2·27	2·11	.	2·07	1·98	1·11

12 The area irrigated under first crop on Major Works was 2,23,5404 acres & under second crop 227,957 acres, making a total of 2,463,361 acres these figures are less than those shown in column 4 of the table in paragraph 10 as the latter includes the extent of waste charja of the total area of 2463361 acres, 2390653 acres were irrigated by flow & 72708 acres by lift or about 9.7.05 per cent & 2.95 per cent respectively.

13. The following statement shows the details of the works & sources including the old maintenance charges for each of the Major systems & for the minor systems in the aggregate:—

Systems	1894–95					1893–94
	New Works & Repairs	Establishment	Tools & Plant	Indirect charges	Total	Total
	Rs	Rs	Rs	Rs	Rs	Rs
Major Works.						
Godavari	2.41922	3.25953	45582	35044	6.48.501	6.24.380
Kistna	2.17534	2.63948	37.233	23.500	5.42.215	5.93.819
Pennar	24787	29.818	.	3.182	57787	57.443
Sangam	33129	35.121	182	3777	72.209	77.223
Kurnool	75902	29.326	1078	3374	109.680	1.42.842
Bezwada	2831	1830	.	201	4862	4912
Cauvery	85918	3.26662	108	39666	4.52.354	3.55.830
Srivaikuntham	15.221	19.109	.	1989	36.319	37.907
Periyakulya	11.239	4003	48	376	15666	10.919
Total of Major Works.	7.08.483	10.35.770	84231	1.11.109	19.39.573	19.05.275
Per acre irrigated by Major Works . .	-	-	-	-	0.79	0.77
Minor Works & Navigation	2.39.785	1.11.791	4348	10850	3.66.774	2.97.930
Grand Total	9.48.268	11.47.561	88579	1.21.959	23.06.367	22.03.205

The cost of maintaining the major works during the year was 19.00 per cent of the gross revenue + 23.4 per cent of the net revenue derived from them against 21.6 per cent + 27.6 per cent respectively 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 & Navigation	Total
		Rs	Rs	Rs
Rev. management	Direction & execution	5.89.307	12.986	6.02.293
	Collection charges	2.90.123	44.919	3.35.042
	Total. .	8.79.430	57.905	9.37.335
Maintenance of works . . .		1.56.340	53.886	2.10.226
Grand Total . .		10.35.770	1.11.791	11.47.561

The cost of revenue management on major works was 8.6 per cent of the gross revenue realized from them.

15. The report shows that there are now in actual operation 3494 miles of canals of which 990 miles are for irrigation & navigation, 2200 miles for irrigation only

+304 miles for navigation only. From the irrigation canals, 6753 miles of distributary channels are taken off. The total ultimate irrigable area under the canals is 3,023,784 acres & the area irrigated during the year was 2,886,483 acres, the crops grown being valued at Rs 669,00,782 or Rs 10,369,697 less than in the previous year. The estimated out-turn of the year compares with the corresponding figures of the previous year as shown below:—

	1894-95. Rs	1893-94 Rs.
Paddy . .	631,32,502	734,26,754
Ragi . .	4,07,319	5,78,860
Other crops.	33,60,963	32,64,867
Total	669,00,784	772,70,481

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

	Length of navigable canals	Receipts	Expenditure	Value of Goods	Ton miles	Passengers
	miles	Rs	Rs	Rs		
Godavari delta canals	493	103892	81261	23052554	11967929	256612
Kistna delta canals	307	37222	64921	11975805	12583540	117337
Buckingham Canal	262	107784	62885	17853374	25975977	93825
Total for 1894-95 -	1252	250355	219169	53120783	50678811	467806
Total for 1893-94 -	1242	241542	227655	54074418	45552976	486368

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

Class	Area of 1st & 2nd crops	Irrigation Revr.	Rate per acre	Outlay, direct & in. direct & collection charges	Rate per acre.
	Acs.	Rs	Rs	Rs	Rs
I. Works under P.W.D for which a continuous record of expenditure is kept individually -	230949	802518	-	.	.
II. Other works under P.W.D. . . . -	1328053	3752115	-	-	.
III Works under the Revr. Dept . . -	1675631	3884222	.	.	.
Total, 1894-95 -	3234633	8438853	2·61	[a] 17,59,321	0·54
Total, 1893-94 -	3573871	9069303	2·54	1746915	0·49

[a] Inclusive of Rs 396461, the outlay incurred by Civil Officers & not included in the accounts of the Examiner of P. W. A.

The total area irrigated was made up of 2467109 acres of first crop & 767524 acres of second crop, & the irrigation revenue was Rs 630448 less than in the previous year. The decrease occurred chiefly under works in the Cuddapah, Anantapur, Chingleput, North Arcot, Madura & Tinnevelly Districts owing to deficient rainfall.

18. The following statement shows the outlay on Agricultural works:—

	Rs	Rs
Original works . .	83,869	
Repairs . .	213,265	297,134
Establishment . .		64423
Tools & Plant . .		4032
Total		365,589.

The receipts realized from the plantations along the river embankments amounted to Rs 2,69,979 against Rs 43,777 in the previous year.

19 Six irrigating parties were at work on the tank restoration scheme, the expenditure on which during & up to the end of the year was as follows:—

	Expenditure during 1894-95					Expenditure to end of 1894-95
	Works	Repairs	Establishment	Tools & Plant	Total	
	Rs	Rs	Rs	Rs	Rs	Rs
Execution . .	241375	119652	82355	5392	448774	4124193
Investigation . .	216		53341	579	56136	1225470
Total	241591	119652	137696	5971	504910	5349663

Up to the end of the year 31,377 square miles had been completely investigated & estimates for 4315 works to the amount of Rs 45,66,193 had been sanctioned.

20. The following figures refer to the

discharge of some of the principal canals which are not supplied mostly from storage works, & the areas irrigated from them:-

	Area actually irrigated 1st crop	Maximum discharge as designed	Maximum discharge during the year	Average discharge at head	Acres irrigated per cubic foot per second of average discharge
	Acres	cubic feet per second	cubic feet per second	cubic feet per second	First crop
Godavari . .	654126	[a] 8516	13176	7006	93·36
Kistna . .	514812	8126	9184	4508	114·20
Penner . . .	64508	2306	1004	371	173·87
Sangam . . .	70517	4800	5361	670	105·25
Kurnool . .	25832	1468	935	563	45·88
Cauvery . . .	855258	Not known	28460	11252	76·01

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

21. During the year the investigation of the Mallavagu, ~~project in the Kistna District~~ Attuakur & Manchikalla projects in the Kistna Northern Dn were put in hand.

22. From local irrigation assignment an outlay of Rs 104,84 was incurred on improving & repairing the Cauvery channels in the Salem Dt & on improving the Penneri No 1 branch channel in the Trichinopoly Dt.

23. A sum of Rs 7,671 was also spent on irrigation works in the estates under the Court of Wards.

24. The descriptive note on the Kistna Delta System illustrated by photo: prints forms an interesting appendix to the report under review. For the first time the annual diagrams of the principal rivers connected

work maps have also been appended to the report.

26. Ordered that 40 copies of the Administration Report of these Proc: be forwarded to the Govt of India.

Endorsement:—
No. 40 dtd 16 January 1896
Forwarded.

Hd
Hon'ble Mr. Hobbs
Hon'ble Mr. Lyon
Director
Regd: 16.1.96

Special

Administration Report, P. W. D, Irrigation Branch, for 1894-95

Print emergently

Wh 16/1 Encls

8/1/96

Issue W 15/1

Low for parts of Counter initials. for Under 31-1-96

No. 820 dtd 17-10-95
" 189 " 12-1-95

To the Chief Engr for I.
all Supdg Engrs.
Coneg Engr for Rly.
Ex. E. W.
Rev Dept.
Public Dept.

15/1 15/1/96

7.E.D. 16/1 Cell 15/1

Secs 31/12/95 B/1. 4-1-96 circ 8/1. R 14/1.

... Supdt. of Works, Peri par Project.

8 11/95 | RH/S-6 | 95

7539

RH-95

No. 168

14.11.95 No 2900-1 W
24.4.95 - 2361 W
29.4.95 - 74.87
29.3.95 - 8055
13.8.94. 2002 W

Rec: 9.1.96

No 38 dt 15 Jany 1896

B

Sent Vide

Communicated to the Supdt. of
works No. I PEriyar Division in
continuation of G.O. No 2900 W
dated 14th November 1895.

Communicated to the
Supdt of works No I PEriyar
Division in Continuation
of G.O No 2900 W dated
14th Nov 95

10/1/96

Ch Kv 4.96

9-1-96

To
The Supdt. of Works,
Periyar Project.

8 11/95 | RH 5-6 | 95

7539

RH 95

COPY REPORT BY THE CONSULTING ENGINEER, Dated 13th Dec.1895.

I have examined the report received from India in response to our request that the result of the experiment with oil engines might be reported for future guidance. The report on the whole seems favourable to the use of these Engines, but as I stated in my report dated 15th July 1892 might be the case, difficulties have arisen in manipulating the machinery.

Report from India. { Para 4 starting of Engines, 5 & 6 Adjustment of valves, 12 Carbonization of oil } See my report of 15/7/92 { Para 1, 5, 6

Para.11 says "It is left to us to discover that a very moderate breeze stops the Engine" on the contrary this point was specially mentioned in para 2 of my report above mentioned.

With regard to the more serious complaint of inferior workmanship it must be remembered that we were asked to supply engines to be obtained from a special maker and in accordance with an advertisement sent with the Indent. The engines are therefore of the ordinary build and finish indeed they were bought ready made and are identical with a large number which have been supplied to other persons and now working successfully.

With regard to the complaint of leaky tanks and broken teeth on wheels, I can only say that the engines were carefully examined by a very competent Inspector and were tested for some hours under working conditions, their valves adjusted and the tanks tested in the usual way and they were both then and when subsequently examined for packing in good condition.

Since the engines were sent out (in 1892) nearly

all the Oil Engine makers have made several improvements in detail and economy of working and I think on the whole the experiment shows encouraging results.

9748

DUPLICATE

S. 12825.

20th December 1895.

Sir,

With reference to your letter No. 2901 W of 14th November 1895, transmitting a copy of a report by the Superintendent of Works Periyar Project, on the oil engines supplied in compliance with indent No 653 W of 8th March 1894, I have the honour to enclose for your information, a copy of a report on the subject by the Consulting Engineer, dated 13th December 1895. His previous report of 13th July 1894, was forwarded to you with my letter No. S 7474 dated 20th July 1894

I have the honour to be, Sir,

Your obedient Servant,

A. PARKER

Director general of Stores.

The Secretary to the Govt. of Madras

Public Works Dept.

Madras.

bundle

Ow 168/96

38J
1871

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[illegible] (in 1894) nearly

all

all the Oil Engine makers have made several improvements in detail and economy of working and I think on the whole the experiment shows encouraging results.

It is requested that in any further communication on this subject the under-mentioned letter and number may be quoted, and the reply addressed to

The Director General of Stores,
India Office,
Whitehall,
London, S.W.

S. 12825.

India Office,

Whitehall,

London, S.W.

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J. Gerken

Director General of Stores.

The Secretary to the Govt. of Madras

Public Works Dept.

Madras.

O.W.E.1
768/96

No. 168

14.11.95 Rs 2900-1 W
24-9-95 - 2361 W
29-4-95 - 24 B
29-3-95 - 805 W
13-8-94. 2002 W

Rec: 9.1.96

No 38 I W 15th Jany 1896.
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Communicated to the Supdt. of
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works No. I PEriyar Division in
Supdt. of Works Periyar
continuation of G.O.No 2900 W
dated 14th November 1895.
Division in Continuation
of GO No 2900 W dated
14th Nov/95

10/1/96

Ch Asst
9.1.96

To
The Supdt. of Works,
Periyar Project.