

Public Works (189) Department.

✓ G.O., No.

715-9

DATED

17 August 1888

17/8/88

[Despatch Abstract.]

Old Maintenance Charges - Directing
that no alteration in the present system
of fixed debit and credit to irrigation systems
on account of "old irrigation" need be made
& calling on the Examiners of P. W. Accts. to take
the necessary steps for ascertaining the
of certain ^{irrigation} systems

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Government {1899} of Madras.
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G.O., No. 715 I., 17th August 1899.

AUGUST.

Old Maintenance Charges

Directing that no alteration in the present system of fixed debits and credits to irrigation systems on account of "old irrigation" need be made, and calling on the Examiner of Public Works Accounts to take the necessary steps for ascertaining the — of certain irrigation systems.

	First crop.	Second crop.	Total.
	ACRES.	ACRES.	ACRES.
Old irrigation	33,316	11,827	45,143
New " "	10,483	..	10,483
Total ..	43,799	11,827	55,626
	RS.	RS.	RS.
Total irrigation revenue	1,13,052	18,087	131,139
Deduct proportionate share due to old irrigation	85,992	18,087	104,080
Increase due to new irrigation	27,059	..	27,059
Do. as entered in the accounts according to the present method	..	..	6,139
Difference ..	..	..	20,920

10. As regards charges it is suggested that the capital cost of the works being designed to give an improved supply to the existing irrigation and to bring fresh land under irrigation and the original cost of the tanks before the improvements were carried out not being included in the capital account, the working expenses may be allocated in direct proportion to the areas of old and new irrigation, as it is impossible to distinguish the amount spent on each.

11. Unless some such modification of the existing system of estimating revenue due to old irrigation and to old maintenance charges is adopted and steps are taken to distribute working expenses according to the areas actually watered, a time must come when the profit derived from these systems will be altogether concealed by imaginary credits and debits. With a fixed contribution towards working expenses, a constant increasing number of tanks and varying seasons, fixed credits and debits on account of working expenses and old irrigation revenue are impossible, if any value is to be derived from the accounts.

12. The statements attached compare the financial results for all minor irrigation works for which Capital and Revenue Accounts are kept for 1891-92 and for 1894-95 according to the present and proposed methods. From these statements it will be observed that during the year 1894-95, when the season was favourable, the difference in irrigation revenue, calculated according to the existing and proposed methods, will not be very considerable but, in a year of scarcity, such as 1891-92, when the whole of the irrigation was probably largely due to the supply of river water, the result of the proposed change will be to credit the systems with a fair share of revenue. The amount of revenue which in 1891-92, according to the proposed method was improperly credited to works for which Capital and Revenue Accounts are not kept was according to the statement, no less than Rs. 2,62,917 representing about 120 per cent. on the revenue actually credited in the accounts.

Memorandum No. 2082-C., Public Works, dated 28th April 1896.

Referred to the Revenue Department for remarks.

(Signed) F. J. WILSON,
Under Secretary to Government.

Mis. No. 1794, Revenue.

Referred to the Board of Revenue for remarks.

OOTACAMUND,
9th May 1896.

(Signed) F. J. WILSON,
for Ag. Secy to Government.

Read—also letter from W. HUGHES, Esq., Chief Engineer for Irrigation, No. 200 M., dated 9th June 1897, forwarding, with reference to Board's Memorandum Mis. No. 3981, dated 2nd June 1897, a copy of note on allocation of Irrigation Revenue and Working expenses of Minor Irrigation works for which capital and Revenue Accounts are kept.

Reference thereon, dated 23rd June 1897.

The Chief Engineer for Irrigation is requested to favour the Board with copies of the statements referred to in paragraph 12 of the copy of his note received with his endorsement read above.

(Signed) R. V. SRINIVASIAH,
Secretary.

Read—also the following letter from W. HUGHES, Esq., B.A., Chief Engineer for Irrigation, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated Madras, 26th August 1897, No. 281-M:—

With reference to Board's Reference on No. 4355-G.R., dated 23rd June 1897, I have the honour to forward herewith two statements.

The statement for 1894-95 is a copy of the statement for that year appended to the note by the Chief Engineer for Irrigation, No. 70 I., dated 20th March 1896. A copy of the original statement for 1891-92 was not kept. A fresh statement has therefore been prepared, but this shows that the amount of revenue which in that year according to the proposed method was improperly credited to works for which Capital and Revenue Accounts are not kept was Rs. 2,61,687 or Rs. 1,230 less than the sum mentioned in paragraph 12 of the above note. The difference cannot now be explained, it is probably due to some error in the calculations in the original statement.

ENCLOSURE No. 1.

STATEMENT showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works for which Capital and Revenue Accounts are kept, the revenue and expenditure distributed between old and new irrigation in proportion to the area irrigated during 1891-92 and comparing the results with those arrived at according to the present method.

Districts.	Minor irrigation works for which Capital and Revenue accounts are kept.	Particulars.	Area irrigated.			Irrigation revenue.			Enhanced share of land revenue.	Direct receipts in the Public Works Department.	Total revenue (columns 9+10+11).	Working expenses.	
			First crop.	Second crop.	Total.	First crop.	Second crop.	Total.				Extensions and improvements.	Maintenance and repairs.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Kurnool ..	1. Cumbum tank ..	(1) Total ..	4,586	1,347	5,933	21,519	1,480	22,999	585	..	23,584	195	7,992
		(2) Deduct due to old irrigation ..	4,210	1,347	5,557	19,712	1,480	21,192	..	..	21,192	182	7,473
		(3) Net due to improvements ..	386	..	386	1,807	..	1,807	535	..	2,342	13	519
Coimbatore.	2. Thadapalli channel.	(1) Total ..	13,975	482	14,457	99,376	2,038	1,01,414	2,594	13	1,04,021	6,176	4,153
		(2) Deduct due to old irrigation ..	10,005	170	10,175	71,145	718	71,863	..	..	71,863	4,347	2,923
		(3) Net due to improvements ..	3,970	312	4,282	28,231	1,320	29,551	2,594	13	32,158	1,829	1,230
Coimbatore.	3. Arakankottai do.	(1) Total ..	4,096	58	4,154	27,093	235	27,258	282	1	27,541	17	1,145
		(2) Deduct due to old irrigation ..	2,667	6	2,673	17,595	24	17,619	..	..	17,619	11	737
		(3) Net due to improvements ..	1,429	52	1,481	9,498	211	9,659	282	1	9,922	6	409
North Arcot.	4. Kalingarayen do.	(1) Total ..	11,250	10,505	21,755	64,518	36,338	1,00,856	387	222	1,01,455	512	10,808
		(2) Deduct due to old irrigation ..	8,338	8,403	16,741	47,818	29,067	76,885	..	..	76,885	394	8,317
		(3) Net due to improvements ..	2,912	2,102	5,014	16,700	7,271	23,971	387	222	24,580	118	2,491
North Arcot.	5. Pálár anikut ..	(1) Total ..	43,799	11,827	55,626	1,13,052	18,087	1,31,139	15,380	1,313	1,47,832	16,331	58,522
		(2) Deduct due to old irrigation ..	33,316	11,827	45,143	85,994	18,087	1,04,081	..	..	1,04,081	13,263	47,493
		(3) Net due to improvements ..	10,483	..	10,483	27,058	..	27,058	15,380	1,313	43,751	3,078	11,029
North Arcot.	6. Poiney do. ..	(1) Total ..	17,392	1,647	19,039	53,895	4,016	57,911	4,885	730	63,526	4,141	8,291
		(2) Deduct due to old irrigation ..	12,895	1,647	14,542	38,410	4,016	42,426	4,885	730	42,426	3,054	6,115
		(3) Net due to improvements ..	4,497	..	4,497	15,485	..	15,485	4,885	730	21,100	1,087	2,176
North Arcot.	7. Cheyáru do. ..	(1) Total ..	14,194	9,364	23,558	38,463	11,692	50,155	3,103	585	53,843	56,882	22,884
		(2) Deduct due to old irrigation ..	12,698	1,723	14,421	34,138	2,151	36,289	..	..	36,289	34,578	13,911
		(3) Net due to improvements ..	1,496	7,641	9,237	4,325	9,541	13,866	3,103	585	17,554	22,304	8,973
Chingleput.	8. Chambrambakam ..	(1) Total ..	6,050	1,528	7,578	13,643	2,631	16,274	386	5	16,665	94	12,502
		(2) Deduct due to old irrigation ..	5,605	1,235	6,740	12,414	2,126	14,540	..	..	14,540	83	11,119
		(3) Net due to improvements ..	545	293	838	1,229	505	1,734	386	5	2,125	11	1,383
Chingleput.	9. Madras water-supply and irrigation extension.	(1) Total ..	6,829	1,342	8,171	14,275	1,837	16,112	450	14,435	30,997	605	13,102
		(2) Deduct due to old irrigation ..	5,279	786	6,065	11,034	1,076	12,110	..	..	12,110	449	9,725
		(3) Net due to improvements ..	1,550	556	2,106	3,241	761	4,002	450	14,435	18,887	156	3,377
South Arcot.	10. Vallur anikut.	(1) Total ..	3,997	90	4,087	4,738	196	4,934	477	..	5,411	..	718
		(2) Deduct due to old irrigation ..	3,310	..	3,310	3,324	..	3,324	..	..	3,324	..	581
		(3) Net due to improvements ..	687	90	777	814	196	1,010	477	..	1,487	..	137
South Arcot.	11. Tirukkóyilár do.	(1) Total ..	23,414	1,937	25,351	74,375	5,550	79,925	2,757	375	83,057	4,903	15,220
		(2) Deduct due to old irrigation ..	18,954	22	18,976	56,252	63	56,315	..	..	56,315	3,418	10,610
		(3) Net due to improvements ..	5,460	1,915	7,375	18,123	5,487	23,610	2,757	375	26,742	1,485	4,610

Statement showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works, &c.—cont.

Districts.	Minor irrig ^s on works for which Capital and Revenue Accounts are kept.	Particulars.	Working expenses—cont.					Results according to the present method.				
			Establishment.	Tools and plant.	Total.	Indirect charges.	Collection charges.	Total.	Net revenue (column 12--20).	Total revenue.	Working expenses.	Net revenue.
			15	16	17	18	19	20	21	22	23	24
Kurnool ..	1. Cumbum tank ..	(1) Total ..	Rs. 1,883	Rs. 642	Rs. 10,712	Rs. 264	Rs. 1,177	Rs. 12,153	Rs. 11,381	Rs. 23,534	Rs. 10,790	Rs. 12,744
		(2) Deduct due to old irrigation..	1,761	600	10,016	246	1,060	11,322	9,870	27,251	..	27,251
		(3) Net due to improvements ..	122	42	696	18	117	831	1,511	3,717	10,790	14,507
		(1) Total ..	1,896	..	12,225	265	5,201	17,691	86,330	1,04,021	13,928	90,093
{	2. Thadapalli channel	(2) Deduct due to old irrigation..	1,334	..	8,604	186	3,593	12,383	59,480	75,249	..	75,249
		(3) Net due to improvements ..	562	..	3,621	79	1,608	5,308	26,850	28,772	13,928	14,844
		(1) Total ..	268	..	1,431	37	1,377	2,845	24,696	27,541	1,897	25,644
		(2) Deduct due to old irrigation..	172	..	920	24	881	1,825	15,794	18,955	..	18,955
Coimbatore.	3. Arakankottai do.	(3) Net due to improvements ..	96	..	511	13	496	1,020	8,902	8,586	1,897	6,689
		(1) Total ..	2,626	..	13,946	368	5,062	19,376	82,089	1,01,465	15,211	86,254
		(2) Deduct due to old irrigation..	2,021	..	10,732	283	3,844	14,859	62,026	83,301	15,211	83,301
		(3) Net due to improvements ..	605	..	3,214	85	1,218	4,517	20,063	18,164	15,211	2,953
{	4. Kalingaroyen do.	(1) Total ..	17,325	..	92,178	2,425	7,326	1,01,929	45,903	1,47,832	95,678	52,154
		(2) Deduct due to old irrigation..	14,060	..	74,806	1,968	5,204	81,978	22,103	1,25,000	3,900	1,21,100
		(3) Net due to improvements ..	3,265	..	17,372	457	2,122	19,991	23,800	22,882	91,778	68,946
		(1) Total ..	2,913	..	15,345	408	3,140	18,893	44,633	63,526	16,725	46,801
North Arcot.	5. Pálár anikut ..	(2) Deduct due to old irrigation ..	2,148	..	11,317	301	1,379	13,739	28,687	43,362	..	43,362
		(3) Net due to improvements ..	765	..	4,028	107	1,019	5,154	15,946	20,164	16,725	3,439
		(1) Total ..	18,405	..	98,171	2,577	2,663	1,03,411	49,568	53,843	1,01,455	47,612
		(2) Deduct due to old irrigation..	11,188	..	59,677	1,567	1,814	63,058	26,769	39,114	..	39,114
{	6. Poiney do. ..	(3) Net due to improvements ..	7,217	..	38,494	1,010	849	40,353	22,799	14,729	1,01,455	86,726
		(1) Total ..	2,898	..	15,494	406	833	16,733	68	16,665	15,933	732
		(2) Deduct due to old irrigation..	2,578	..	13,780	361	727	14,868	328	16,000	6,900	9,100
		(3) Net due to improvements ..	320	..	1,714	45	106	1,865	260	665	9,033	8,368
{	7. Cheyáru do. ..	(1) Total ..	4,592	..	18,299	643	828	19,770	11,227	30,997	19,220	11,777
		(2) Deduct due to old irrigation..	3,408	..	13,582	477	605	14,664	2,554	11,000	4,800	6,200
		(3) Net due to improvements ..	1,184	..	4,717	166	223	5,105	13,781	19,997	14,420	5,577
		(1) Total ..	165	..	883	23	271	1,177	4,234	5,411	1,015	4,396
Chingleput..	8. Chembrambakam..	(2) Deduct due to old irrigation..	134	..	715	19	196	930	2,994	3,240	..	3,240
		(3) Net due to improvements ..	31	..	168	4	75	247	1,240	2,171	1,015	1,156
		(1) Total ..	4,666	..	24,789	653	4,134	29,576	53,481	83,057	26,816	56,241
		(2) Deduct due to old irrigation..	3,252	..	17,280	455	2,815	20,551	35,764	55,191	..	55,191
{	9. Madras water-sup- ply and irriga- tion extension.	(3) Net due to improvements ..	1,414	..	7,509	198	1,318	9,025	17,717	27,866	26,816	1,050
		(1) Total ..	10,790	..	52,154	1,050	10,790	63,994	1,01,455	1,01,455	1,01,455	1,01,455
		(2) Deduct due to old irrigation..	9,100	..	47,612	86,726	47,612	47,612	47,612	47,612	47,612	47,612
		(3) Net due to improvements ..	1,690	..	5,542	274	978	6,794	5,542	5,542	5,542	5,542
South Arcot.	10. Vallur anikut ..	(1) Total ..	1,015	..	4,396	1,015	4,396	4,396	4,396	4,396	4,396	4,396
		(2) Deduct due to old irrigation..	86,726	..	47,612	47,612	47,612	47,612	47,612	47,612	47,612	47,612
		(3) Net due to improvements ..	1,015	..	4,396	1,015	4,396	4,396	4,396	4,396	4,396	4,396
		(1) Total ..	26,816	..	56,241	26,816	56,241	56,241	56,241	56,241	56,241	56,241
{	11. Tirukkóvilár do.	(2) Deduct due to old irrigation..	55,191	..	27,866	27,866	27,866	27,866	27,866	27,866	27,866	27,866
		(3) Net due to improvements ..	26,816	..	56,241	26,816	56,241	56,241	56,241	56,241	56,241	56,241
		(1) Total ..	1,015	..	4,396	1,015	4,396	4,396	4,396	4,396	4,396	4,396
		(2) Deduct due to old irrigation..	86,726	..	47,612	47,612	47,612	47,612	47,612	47,612	47,612	47,612

Statement showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works, &c.—*cont.*

Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Area irrigated.			Irrigation revenue.			Enhanced share of land revenue.	Direct receipts in the Public Works Department.	Total revenue (columns 9 + 10 + 11).	Working expenses.		
			First crop.	Second crop.	Total.	First crop.	Second crop.	Total.				Extensions and improvements.	Main-tenance and repairs.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
South Arcot — <i>cont.</i>	12. Mehamattur anikat	(1) Total	2,614	2,072	4,686	8,813	78	8,891	84	5	8,930	12,483	2,555	
		(2) Deduct due to old irrigation	542	23	565	1,827	..	1,827	..	..	1,827	..	2,555	
		(3) Net due to improvements	2,072	2,049	4,121	6,986	..	7,064	..	5	7,103	..	9,878	
	13. Vriddhachalam anikat.	(1) Total	5,880	226	6,106	20,741	657	21,398	807	3	22,205	2,840	5,331	
		(2) Deduct due to old irrigation	1,888	..	1,888	6,659	..	6,659	..	..	6,659	878	1,648	
		(3) Net due to improvements	3,992	226	4,218	14,082	657	14,739	807	3	15,549	1,962	3,683	
	14. Shattistope anikat.	(1) Total	27,825	2,013	29,838	89,108	6,010	95,118	13,986	195	1,09,249	1,647	14,897	
		(2) Deduct due to old irrigation	7,304	6	7,310	23,391	18	23,409	..	..	23,409	408	3,649	
		(3) Net due to improvements	20,521	2,007	22,528	65,717	5,992	71,709	13,986	195	85,840	1,244	11,248	
Tinnevely ..	15. Pelandorai do.	(1) Total	8,201	88	8,289	26,191	229	26,420	126	109	26,555	3,571	9,746	
		(2) Deduct due to old irrigation	2,070	88	2,158	6,611	229	6,840	..	..	6,840	929	2,532	
		(3) Net due to improvements	6,131	..	6,131	19,580	..	19,580	..	109	19,815	2,642	7,214	
	16. Lower Coleroon anikat.	(1) Total	105,082	4,722	109,804	3,36,393	12,782	3,49,175	53,717	761	4,03,653	2,736	17,178	
		(2) Deduct due to old irrigation	43,423	..	43,423	1,89,007	12,782	2,10,168	53,717	..	1,89,007	1,082	6,793	
		(3) Net due to improvements	61,659	4,722	66,381	1,97,386	..	2,10,168	53,717	761	2,64,646	1,654	10,385	
	17. Maradur anikat ..	(1) Total	17,420	16,213	33,633	1,17,155	68,240	1,85,395	226	1,088	1,86,659	599	7,661	
		(2) Deduct due to old irrigation	16,955	429	17,384	1,14,027	1,805	1,15,832	..	..	1,15,832	309	3,960	
		(3) Net due to improvements	465	15,784	16,249	3,128	66,435	69,563	..	1,088	70,827	290	3,701	
Tinnevely ..	Total ..	(1) Total	315,614	63,412	379,026	11,23,278	1,72,096	12,95,374	1,00,082	19,790	14,15,246	1,01,249	2,22,584	
		(2) Deduct due to old irrigation	186,759	27,689	214,448	6,89,958	60,860	7,50,818	..	..	7,50,818	63,370	1,40,141	
		(3) Net due to improvements	128,855	35,723	164,578	4,33,320	1,11,236	5,44,556	1,00,082	19,790	6,64,428	37,879	82,443	

Statement showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works, &c.—*cont.*

Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Working expenses—cont.				Results according to the present method.						
			Establishment.	Tools and plant.	Total.	Indirect charges.	Collection charges.	Total.	Net revenue column (12—20).	Total revenue.	Working expenses.	Net revenue.	
			15	16	17	18	19	20	21	22	23	24	
South Arcot —cont.	12. Mehamattur anikat	(1) Total	Rs. 2,860	..	Rs. 15,293	400	446	Rs. 16,139	—	7,209	Rs. 2,830	Rs. 16,046	Rs. 7,116
		(2) Deduct due to old irrigation	588	..	3,143	82	91	3,316	1,489	—	1,863	..	1,863
		(3) Net due to improvements	2,272	..	12,150	318	355	12,823	5,720	—	7,067	16,046	8,979
	13. Vriddhachalam anikat.	(1) Total	1,880	..	10,051	263	1,110	11,424	10,784	22,208	11,143	11,065	
		(2) Deduct due to old irrigation	581	..	3,107	81	333	3,521	3,138	5,627	..	5,627	
		(3) Net due to improvements	1,299	..	6,944	182	777	7,903	7,646	16,581	11,143	5,438	
	14. Shattistope anikat	(1) Total	3,825	..	20,369	535	545	26,357	82,892	1,09,249	25,390	83,859	
		(2) Deduct due to old irrigation	937	..	4,989	131	1,170	6,290	17,119	19,324	..	19,324	
		(3) Net due to improvements	2,888	..	15,380	404	4,283	20,067	65,773	89,925	25,390	64,535	
	15. Pelandorai do.	(1) Total	3,010	..	16,327	421	1,327	18,075	8,580	26,655	17,925	8,730	
		(2) Deduct due to old irrigation	784	..	4,245	109	342	4,696	2,144	3,000	150	2,850	
		(3) Net due to improvements	2,226	..	12,082	312	985	13,379	6,436	23,655	17,775	5,880	
16. Lower Coleroon anikat.	(1) Total	4,619	..	24,533	647	20,145	45,325	3,58,328	4,03,653	38,883	3,64,770		
	(2) Deduct due to old irrigation	1,827	..	9,702	256	6,960	16,908	1,22,099	1,28,826	..	1,28,826		
	(3) Net due to improvements	2,792	..	14,831	391	13,195	28,417	2,36,229	2,74,827	38,883	2,36,944		
Tinnevely ..	17. Maradur anikat	(1) Total	2,097	..	10,267	281	9,281	19,829	1,66,830	1,86,659	14,112	1,72,547	
		(2) Deduct due to old irrigation	1,037	..	5,306	145	5,792	11,243	1,04,589	1,14,337	..	1,14,337	
		(3) Net due to improvements	970	..	4,961	136	3,489	8,586	62,241	72,322	14,112	58,210	
	Total ..	(1) Total	75,838	642	4,00,313	10,616	69,774	4,80,703	9,34,543	14,15,246	4,42,167	9,73,079	
		(2) Deduct due to old irrigation	47,810	600	2,51,921	6,691	37,539	2,96,151	4,54,667	7,70,640	16,750	7,54,890	
		(3) Net due to improvements	28,028	42	1,48,392	3,925	32,235	1,84,552	4,79,876	6,44,606	4,26,417	2,18,189	

ENCLOSURE No. 2.

STATEMENT showing the area irrigated, the revenue derived and working expenses of Minor Irrigation Works for which Capital and Revenue Accounts are kept, the revenue and expenditure distributed between old and new irrigation in proportion to the areas irrigated during 1894-95 and comparing the results with those arrived at according to the present method.

Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Area irrigated.			Irrigation revenue.			Enhanced share of land revenue.	Direct receipts in the Public Works Department.	Total revenue, columns 9, 10 and 11.	Working expenses.	
			First crop.	Second crop.	Total.	First crop.	Second crop.	Total.				Extensions and improvements.	Maintenance and repairs.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Kurnool ..	1. Cumbum tank ..	(1) Total ..	5,649	10,414	15,463	28,602	13,515	42,117	560	..	42,677	170	2,373
		(2) Deduct due to old irrigation ..	4,803	7,449	12,252	24,319	7,505	31,824	..	..	31,824	122	1,697
		(3) Net due to improvements ..	846	2,965	3,811	4,283	6,010	10,293	560	..	10,853	48	676
Coimbatore.	2. Thadapalli channel.	(1) Total ..	14,042	603	14,645	1,01,465	2,352	1,03,817	2,652	80	1,06,469	64	1,499
		(2) Deduct due to old irrigation ..	9,979	157	10,136	72,107	609	72,716	2,652	..	75,368	44	1,037
		(3) Net due to improvements ..	4,063	445	4,508	29,358	1,743	31,101	..	80	31,883	20	462
North Arcot.	3. Arakankottai do.	(1) Total ..	4,075	91	4,166	27,733	383	28,116	349	..	28,465	1	989
		(2) Deduct due to old irrigation ..	2,602	5	2,607	17,708	21	17,729	..	..	17,729	..	619
		(3) Net due to improvements ..	1,473	86	1,559	10,025	362	10,387	349	..	10,736	1	370
Chingleput.	4. Kalingarayan do. ..	(1) Total ..	11,246	10,276	21,522	69,466	36,637	1,06,103	411	..	1,06,514	304	1,007
		(2) Deduct due to old irrigation ..	8,209	8,140	16,349	50,691	29,021	79,712	..	..	79,712	231	765
		(3) Net due to improvements ..	3,037	2,136	5,173	18,775	7,616	26,391	411	..	26,802	73	242
South Arcot.	5. Pálar anikát system.	(1) Total ..	74,947	23,428	98,375	2,04,233	48,410	2,52,643	16,091	1,077	2,69,811	7,327	41,408
		(2) Deduct due to old irrigation ..	53,184	15,227	68,411	1,44,928	31,464	1,76,392	..	..	1,76,392	5,095	28,866
		(3) Net due to improvements ..	21,763	8,201	29,964	59,305	15,946	75,256	16,091	1,077	93,419	2,232	12,542
Chingleput.	6. Poiney do.	(1) Total ..	23,061	4,820	27,881	72,347	12,624	84,971	5,162	689	90,822	2,589	19,540
		(2) Deduct due to old irrigation ..	16,023	2,325	18,348	50,212	6,094	56,306	..	..	56,306	1,707	12,866
		(3) Net due to improvements ..	7,038	2,495	9,533	22,135	6,530	28,665	5,162	689	34,516	882	6,674
Chingleput.	7. Cheyáru do.	(1) Total ..	20,372	12,853	33,225	61,350	17,089	78,339	3,320	129	81,844	2,227	13,227
		(2) Deduct due to old irrigation ..	15,538	1,740	17,278	46,601	2,307	48,908	..	..	48,908	1,158	6,929
		(3) Net due to improvements ..	4,834	11,113	15,947	14,755	14,732	29,487	3,320	129	32,936	1,069	6,298
Chingleput.	8. Chembrambakam tank.	(1) Total ..	11,565	3,886	15,450	28,990	9,158	38,148	882	50	39,080	1,960	3,119
		(2) Deduct due to old irrigation ..	10,327	1,185	11,512	25,887	2,793	28,680	..	..	28,680	939	2,324
		(3) Net due to improvements ..	1,238	2,700	3,938	3,103	6,365	9,468	882	50	10,400	321	796
Chingleput.	9. Madras water-supply irrigation extension.	(1) Total ..	5,418	2,770	8,188	16,990	4,538	21,528	460	13,462	35,450	309	6,214
		(2) Deduct due to old irrigation ..	5,670	3,340	9,010	12,757	1,329	14,086	..	..	14,086	196	3,921
		(3) Net due to improvements ..	1,848	1,860	3,708	4,233	3,209	7,442	460	13,462	21,364	114	2,293
South Arcot.	10. Vallur anikát system.	(1) Total ..	4,961	188	5,149	7,863	441	8,304	965	4	9,263	527	286
		(2) Deduct due to old irrigation ..	3,920	..	3,920	6,216	..	6,216	..	..	6,216	401	222
		(3) Net due to improvements ..	1,041	188	1,229	1,647	441	2,088	965	4	3,047	126	64
South Arcot.	11. Tirukkóyilár anikát.	(1) Total ..	22,798	3,556	26,354	88,614	10,285	98,899	3,171	494	97,564	2,616	8,696
		(2) Deduct due to old irrigation ..	16,023	15	16,038	58,777	43	58,820	..	..	58,820	1,532	5,296
		(3) Net due to improvements ..	6,773	3,521	10,294	24,837	10,242	35,079	3,171	494	38,744	984	3,400

Statement showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works, &c.—cont.

Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Working expenses—cont.					Results according to present method.				
			Establishment.	Tools and plant.	Total.	Indirect charges.	Collection charges.	Total.	Net revenue, column (12—20).	Total revenue.	Working expenses.	Net revenue & c.
15	16	17	18	19	20	21	22	23	24			
Kurnool ..	1. Cumbum tank ..	{ (1) Total ..	Rs. 585	..	3,128	Rs. 82	2,134	Rs. 5,344	37,333	42,677	3,845	Rs. 38,832
		{ (2) Deduct due to old irrigation ..	418	..	2,237	58	1,591	3,886	27,938	29,975	..	29,975
		{ (3) Net due to improvements ..	167	..	891	24	543	1,453	9,395	12,702	3,845	8,855
{	2. Thadapalli channel.	{ (1) Total ..	394	..	1,819	55	5,323	7,207	99,342	1,06,549	3,389	1,03,160
		{ (2) Deduct due to old irrigation ..	272	..	1,265	38	3,636	4,939	67,777	76,369	..	76,369
		{ (3) Net due to improvements ..	122	..	554	17	1,687	2,268	31,565	30,180	3,385	26,791
Coimbatore.	3. Arakankottai do.	{ (1) Total ..	216	..	1,206	30	1,423	2,659	25,806	28,465	1,684	26,781
		{ (2) Deduct due to old irrigation ..	135	..	794	19	886	1,659	16,070	19,498	..	19,498
		{ (3) Net due to improvements ..	81	..	412	11	537	1,000	9,736	8,967	1,684	7,283
{	4. Kalingarayan do. ..	{ (1) Total ..	177	..	1,488	25	5,326	6,839	99,675	1,06,514	2,599	1,03,915
		{ (2) Deduct due to old irrigation ..	134	..	1,130	18	3,986	5,134	74,578	84,786	..	84,786
		{ (3) Net due to improvements ..	43	..	358	7	1,340	1,705	25,097	21,728	2,599	19,129
{	5. Pálar anikát system.	{ (1) Total ..	11,045	..	59,780	3,017	13,437	75,234	1,93,577	2,69,811	69,984	1,99,827
		{ (2) Deduct due to old irrigation ..	7,688	..	41,588	2,098	8,820	52,506	1,23,886	1,25,000	3,900	1,21,100
		{ (3) Net due to improvements ..	3,357	..	18,192	919	4,617	23,728	69,691	1,44,811	66,084	78,727
North Arcot.	6. Poiney do.	{ (1) Total ..	5,151	..	27,280	788	4,507	32,525	58,297	90,822	30,198	60,624
		{ (2) Deduct due to old irrigation ..	3,392	..	17,965	486	2,815	21,266	35,040	46,539	..	46,539
		{ (3) Net due to improvements ..	1,759	..	9,315	252	1,692	11,259	23,257	44,283	30,198	14,085
{	7. Cheyáru do.	{ (1) Total ..	3,567	..	19,021	499	4,086	23,606	58,238	81,844	21,388	60,456
		{ (2) Deduct due to old irrigation ..	1,855	..	9,942	256	2,445	12,643	36,265	44,349	..	44,349
		{ (3) Net due to improvements ..	1,712	..	9,079	243	1,641	10,963	21,973	37,495	21,388	16,107
{	8. Chembrambakam tank.	{ (1) Total ..	972	..	5,351	136	1,951	7,438	31,642	39,080	6,638	32,442
		{ (2) Deduct due to old irrigation ..	724	..	3,987	101	1,434	5,522	23,158	16,000	6,900	9,100
		{ (3) Net due to improvements ..	248	..	1,364	35	517	1,916	8,484	23,080	262	23,342
Chingleput.	9. Madras water-supply irrigation extension.	{ (1) Total ..	2,843	..	9,366	398	1,099	10,863	24,587	35,450	10,313	25,137
		{ (2) Deduct due to old irrigation ..	1,794	..	6,910	251	704	6,865	7,221	11,000	4,800	6,200
		{ (3) Net due to improvements ..	1,049	..	3,456	147	395	3,998	17,366	24,450	5,513	18,937
{	10. Vallur anikát system.	{ (1) Total ..	187	..	1,000	26	463	1,489	7,774	9,263	1,225	8,038
		{ (2) Deduct due to old irrigation ..	142	..	765	19	311	1,095	5,121	5,282	..	5,282
		{ (3) Net due to improvements ..	45	..	235	7	152	394	2,653	3,981	1,225	2,756
North Arcot.	11. Tirukkóyilár anikát.	{ (1) Total ..	2,628	..	13,840	368	4,853	19,061	78,503	97,564	16,134	81,430
		{ (2) Deduct due to old irrigation ..	1,601	..	8,429	224	2,941	11,694	47,226	58,551	..	58,551
		{ (3) Net due to improvements ..	1,027	..	5,411	144	1,912	7,467	31,277	39,013	16,134	22,879

Statement showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works, &c.—cont.

Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Area irrigated.			Irrigation revenue.			Enhanced share of land revenue.	Direct receipts in the Public Works Department.	Total revenue, columns 9, 10 and 11.	Working expenses.	
			First crop.	Second crop.	Total.	First crop.	Second crop.	Total.				Extensions and improvements.	Maintenance and repairs.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
South Arcot—cont.	12. Mehamuttur anikat.	(1) Total	2,852	55	2,907	12,148	194	12,342	36	20	12,398	186	2,354
		(2) Deduct due to old irrigation ..	447	..	447	1,904	..	1,904	..	..	1,904	29	361
		(3) Net due to improvements ..	2,405	55	2,460	10,244	194	10,438	36	20	10,494	157	1,993
		(1) Total	6,353	247	6,600	24,311	777	25,088	276	55	25,419	440	2,978
Tinnevely.	13. Vriddhachalam anikat.	(2) Deduct due to old irrigation ..	2,395	..	2,395	8,993	..	8,993	..	..	8,993	159	1,079
		(3) Net due to improvements ..	3,958	247	4,205	15,318	777	16,095	276	55	16,426	281	1,899
		(1) Total	23,608	3,518	32,126	95,976	10,323	1,06,299	15,141	315	1,21,765	894	6,209
		(2) Deduct due to old irrigation ..	7,260	..	7,260	17,341	..	17,341	..	..	17,341	202	1,403
Tinnevely.	14. Shatiatepe anikat.	(3) Net due to improvements ..	21,348	3,518	24,866	78,635	10,323	88,968	15,141	315	1,04,414	692	4,806
		(1) Total	8,760	188	8,948	31,308	532	31,840	183	273	32,296	422	6,721
		(2) Deduct due to old irrigation ..	2,062	83	2,145	7,369	235	7,604	..	..	7,604	101	1,611
		(3) Net due to improvements ..	6,698	105	6,803	23,939	297	24,236	183	273	24,692	321	5,110
Tinnevely.	15. Pelandorai anikat.	(1) Total	107,017	4,649	111,666	3,70,930	14,859	3,85,789	53,933	1,619	4,41,341	3,934	18,739
		(2) Deduct due to old irrigation ..	44,337	..	44,337	1,53,673	..	1,53,673	..	..	1,53,673	1,582	7,440
		(3) Net due to improvements ..	62,680	4,649	67,329	2,17,257	14,859	2,32,116	53,933	1,619	2,87,068	2,372	11,299
		(1) Total	17,415	16,185	33,600	1,17,504	68,149	1,85,653	243	192	1,86,088	496	10,005
Tinnevely.	16. Lower Coleroon anikat.	(2) Deduct due to old irrigation ..	16,875	447	17,322	1,13,458	1,882	1,15,340	..	..	1,15,340	256	5,158
		(3) Net due to improvements ..	540	15,738	16,278	4,046	66,267	70,313	243	192	70,748	240	4,847
		(1) Total	371,147	91,917	463,064	13,54,836	2,50,216	16,05,052	1,03,825	18,459	17,27,386	23,538	1,45,364
		(2) Deduct due to old irrigation ..	219,564	32,740	252,304	8,12,941	83,373	8,96,244	..	..	8,96,244	18,645	81,553
Tinnevely.	17. Marudur anikat ..	(3) Net due to improvements ..	151,583	59,177	210,760	5,41,895	1,66,843	7,08,608	1,03,825	18,459	8,31,092	9,893	63,831
		(1) Total	..	..	..	..	..	..	..	..	..	..	..
		(2) Deduct due to old irrigation ..	..	..	..	..	..	..	..	..	..	..	..
		(3) Net due to improvements ..	..	..	..	..	..	..	..	..	..	..	..

Statement showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works, &c.—cont.

Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Working expenses—cont.					Results according to present method.				
			Establishment.	Tools and plant.	Total.	Indirect charges.	Collection charges.	Total.	Net revenue column (12-20).	Total revenue.	Working expenses.	Net revenue.
			15	16	17	18	19	20	21	22	23	24
South Arcot —cont.	12. Mehamuttur anikat.	(1) Total	RS. 540	..	RS. 3,080	RS. 76	619	RS. 3,775	RS. 8,623	12,398	RS. 3,671	RS. 8,727
		(2) Deduct due to old irrigation ..	83	..	473	11	96	579	1,325	2,084	..	2,084
		(3) Net due to improvements ..	457	..	2,607	65	524	3,196	7,298	10,314	3,671	6,643
	13. Vriddhachalam anikat.	(1) Total	792	..	4,210	111	1,268	5,589	19,830	25,419	5,166	20,253
		(2) Deduct due to old irrigation ..	287	..	1,525	40	449	2,014	6,979	8,463	..	8,463
		(3) Net due to improvements ..	505	..	2,685	71	819	3,575	12,851	16,956	5,166	11,790
	14. Shatiatope anikat.	(1) Total	1,612	..	8,715	226	6,372	15,013	1,96,742	1,21,755	14,012	1,07,743
		(2) Deduct due to old irrigation ..	364	..	1,969	51	867	2,887	14,454	20,027	..	20,027
		(3) Net due to improvements ..	1,248	..	6,746	175	5,905	12,126	92,288	1,01,728	14,012	87,716
	15. Pelandorai anikat.	(1) Total	1,670	..	8,813	234	1,601	10,648	21,648	32,296	10,498	21,798
		(2) Deduct due to old irrigation ..	400	..	2,112	56	380	2,548	5,056	20,027	150	2,850
		(3) Net due to improvements ..	1,270	..	6,701	178	1,221	8,100	16,592	29,296	10,348	18,948
16. Lower Coleroon anikat.	(1) Total	5,061	..	27,734	709	21,986	50,429	3,90,912	4,41,341	43,164	3,98,177	
	(2) Deduct due to old irrigation ..	2,009	..	11,011	281	7,684	18,976	1,34,697	1,45,302	..	1,45,302	
	(3) Net due to improvements ..	3,052	..	16,723	428	14,302	31,453	2,56,215	2,96,039	43,164	2,52,875	
17. Maradur anikat ..	(1) Total	2,434	..	12,935	341	9,295	22,571	1,83,517	1,86,088	16,858	1,69,230	
	(2) Deduct due to old irrigation ..	1,255	..	6,669	176	5,767	12,612	1,02,728	1,14,264	..	1,14,264	
	(3) Net due to improvements ..	1,179	..	6,266	165	3,528	9,959	60,789	71,824	16,858	54,966	
Tinnevelly ..	Total ..	(1) Total	39,874	..	2,08,776	7,071	85,443	3,01,290	14,28,046	17,27,336	2,60,765	14,66,570
		(2) Deduct due to old irrigation ..	22,553	..	1,17,731	4,183	44,811	1,66,725	7,29,519	8,10,489	2,15,750	7,94,739
		(3) Net due to improvements ..	17,321	..	91,045	2,888	40,632	1,34,565	6,98,527	9,16,847	2,45,016	6,71,831

Resolution—No. 306, dated 18th August 1898.

In the first paper read above, the Chief Engineer for Irrigation proposes certain new methods for determining the shares of Irrigation revenue to be credited to "Old works" and the shares of maintenance charges to be debited thereto in the case of Minor Irrigation works for which Capital and Revenue Accounts are kept.

2. The proposal is made in view of a remark by the Government of India in its letter, No. 41-A.I., dated 20th February 1893, printed in G.O., No. 248 I., dated 22nd March 1893, to the effect that an attempt should be made to reduce the working expenses of irrigation works as far as possible. The Chief Engineer states that every endeavour is being made to reduce expenditure on these works; that it appears to him that, as regards minor works, the prevailing high percentage of expenditure on revenue is largely due to the method of keeping accounts and that this method, by which he refers indiscriminately to two distinct methods which will be described below, should be replaced by another method which he suggests.

3. In the case of all irrigation works, whether belonging to class I or class II, which have been improved by Government and for which Capital and Revenue Accounts are kept, the distribution of Irrigation revenue between old works and improvements used to be effected according to an elaborate method devised in 1879-83 by Mr. Wilson, the then Director of Revenue Settlement, who was placed on special duty in connection with Irrigation Accounts. That method is briefly described in paragraph 2 of B.P., No. 73, dated 14th March 1890. As will be seen from the papers quoted in that Board's Proceedings and in paragraph 5 of B.P., No. 516, dated 6th December 1894, the Government of India and the Secretary of State were, from the very beginning, in favour of the adoption of some simple method of making the distribution, but this Government elected to adopt the method suggested by Mr. Wilson.

4. As regards the maintenance charges also the method of distribution adopted by this Government was somewhat elaborate; but on a suggestion made by the Government of India in its letter, No. 68-A.I., dated 17th May 1883, the system of taking certain fixed amounts to represent the old maintenance charges was adopted. A similar method of taking the old irrigation revenue at certain fixed amounts was recommended by the Government of India in its letter quoted above; but this Government preferred to continue Mr. Wilson's method.

5. Matters were in this state until 1889, when the Government of India again returned to the subject and, in its letter, No. 184 I., dated 14th September 1889, it pointed out that the old irrigation revenue, calculated according to Mr. Wilson's method, showed little fluctuation from year to year and suggested the adoption of certain fixed amounts to represent such revenue.

This method was accordingly adopted in 1890 in respect of all works then shown under classes I and II. In the case of works since added to classes I and II, Mr. Wilson's method continues to be followed pending the collection of sufficient data for fixing the old irrigation revenue in their case.

6. Though the method of fixing once for all the credit due to old irrigation is open, in any year of drought, to the objections urged by the Chief Engineer, the Board is nevertheless convinced of the desirability of accepting some approximate figure, based on averages, in preference to Mr. Wilson's elaborate and laborious system, which necessitates the annual compilation of particulars for every irrigated field under a score of different heads, showing the group of the village, the class and sort of soil, extent, assessment divided between land and water, single crop, double crop, usual wet, dry converted into wet, dry crops watered, waste brought in, zemin and inam charged for and free, deductions and remissions, fixed and temporary, and so on.

7. The subject is one of great complexity and the Board has not yet found time to deal with it; but it would, in the first place, demur to the assumption which underlies the Chief Engineer's proposals, viz., that there will be a continuance of the present method, under which the old and new irrigation revenue is annually ascertained by a compilation of particulars field by field. When the Chief Engineer asserts that to ascertain the old irrigation revenue annually will not complicate the accounts or

cause inconvenience, he contemplates the continuance of a system which the Board earnestly hopes to see abolished, as involving an intolerable amount of tabulation of figures which cannot be verified and on the correctness of which it is after all unsafe to rely. That (as pointed out by the Chief Engineer) the system of fixing the old irrigation revenue may, in any particular year, lead to absurd results cannot be denied; but in answer to the Chief

Engineer's suggested improvement it may suffice to point out that his method would be yet more faulty, and would have quite the opposite effect to what he supposes and desires. For instance, in the case of the Pálár anikat system, which has been taken by the Chief Engineer to exemplify his method, the marginally-noted figures compare for the six years ending with 1896-97 the amounts which should be credited to new irrigation in accordance with each of the three methods mentioned

Fasli.	Mr. Wilson's method.	Fixed credit.	Chief Engineer's method.
	Rs.	Rs.	Rs.
1301 (1891-92) ..	1,843	6,139	27,058
1302 (1892-93) ..	1,16,293	1,23,056	56,819
1303 (1893-94) ..	1,21,662	1,33,632	82,366
1304 (1894-95) ..	1,13,987	1,27,643	76,256
1305 (1895-96) ..	1,29,052	1,41,301	89,377
1306 (1896-97) ..	94,796	1,12,904	73,362
Total ..	5,77,633	6,44,675	4,05,238

above. It will be seen that while it is true, as pointed out by the Chief Engineer, that for the year 1891-92, his method gives larger credit to new irrigation by about Rupees 21,000 than the old method, it gives for the next five years smaller credit, aggregating more than Rs. 2,60,000.

8. That this is not an isolated result will be seen from statement No. I appended to these Proceedings, in which the results of the application of the two methods to all the works included in class II are shown for each of the six years ending with fasli 1306. The statement shows that while the gain to new irrigation according to the Chief Engineer's method for fasli 1301 will be less than Rs. 19,000, the loss during the next five faslis will be about Rs. 5-34 lakhs. The reason for this remarkable result is not far to seek. The new method proposes to distribute the revenue in the proportion of the areas shown under the old and new irrigation; but under each irrigation system there are large areas, mostly included under old irrigation, which are either irrigated free of charge (*māmūl* wet areas in zamindari and inam villages), or for which irrigation revenue gets credit only at certain reduced rates (wet inams paying quit-rent), and to credit all these areas with their proportion of the total revenue is obviously to give undue credit to "old irrigation."

The results will be more striking if the Chief Engineer's method and the present method are applied to systems like the Gódávári and Kistna anikats. The results for these two systems for the year 1891-92 (fasli 1301) are shown in statement No. II appended. It will be seen from the statement that even for that unfavourable year the Chief Engineer's method will result in credit being given to old irrigation to a much larger amount than under the present system of fixed credits, the excess amounting to Rs. 3-62 lakhs in the case of the former anikat and to Rs. 2-05 lakhs in the case of the latter. In ordinary years the excess will be still larger, as will be seen from statement No. III appended.

9. It is not clear why the Chief Engineer has limited his proposal to class II works, when the remark of the Government of India referred to by him seems to apply more to major than to minor works.

10. It may be further remarked that in a year of drought the Chief Engineer's plan would no more represent the truth than the method of fixed credits. He proposes that the credit to old and new irrigation should be apportioned in proportion to the actual irrigation of the old area and the new area as ascertained by annual field-war tabulation. But it is obviously probable that in a year of drought the effective irrigation of the old area may be in great measure due to the outlay on improvements, and thus the Chief Engineer's method of distribution would in no way disclose.

11. Turning next to the question of "working expenses," the Chief Engineer's proposal is to distribute them in direct proportion to the areas of old and new irrigation instead of taking, as at present, the average of the charges actually incurred prior

to improvements as the old maintenance charges, and debiting the balance of the expenditure of the year to the area under new irrigation.

The same circumstances that forbid a distribution of revenue in proportion to area are equally fatal to the proposal to distribute working charges according to area.

The zamindari and inam "mamul wet" now irrigated by one or other of the systems, and contributing nothing to the irrigation revenue, formerly cost Government nothing for the maintenance of its irrigation. The zamindari and inam tanks, which were the old sources of supply were maintained by the proprietors, and obviously no portion of the working expenses of the system can be properly debited to the ayakats of these superseded tanks.

It has been shown that the proposed distribution of revenue according to area will not work, and if the one proposal be disapproved, the other, viz., the proposed distribution of charges according to area, must fall with it.

12. No doubt in the case of several of the second-class works the fixed debit for working expenses seems (as urged by the Chief Engineer) absurdly low; but the amounts were the average of actuals ascertained by the Public Works Department itself. The fact is that where natural facilities for irrigation existed a certain amount of irrigation revenue could be got with little or no outlay on maintenance. The ryots

were left to do most of the work. But when the works are improved up to as high a standard as engineering science can attain, and are placed under special professional supervision, the cost of maintenance becomes great. This is, to some extent, illustrated by the marginal statement in which the proportion of maintenance charges to revenue in the case of minor irrigation works in charge of the Revenue Department is compared with that of the same class of works in charge of the Public Works Department.

13. For the above reasons the Board is unable to accept the Chief Engineer's proposal in regard to the distribution of "maintenance charges," and must advocate strongly the retention of the system of fixed credits and debits.

14. In the statements appended to the Chief Engineer's letter, the amount of "net revenue" due to improvements (that is, gross revenue *minus* working expenses), arrived at according to his proposals, is compared with the amount "according to present method," in the case of 17 systems under class II works (columns 21 and 24 of the statements). The former is in many cases much in excess of the latter; but the main reason for the difference appears to be that in respect of 13 Systems which were added to class II after 1890, the working expenses debitable to "old irrigation" are shown as *nil*. The Board is not aware of any order directing that the entire working expenses of these systems should be debited to improvements. Possibly the portion to be debited to "old works" has not yet been fixed. If so, the comparison instituted in the case of these works is misleading.

(True Copy and Extract.)

(Signed) C. BENSON,
for Secretary.

APPENDIX
COMPARATIVE statement showing the results of the application of the Chief Engineer's method to irrigation revenue derived from class II works, for faslis 1301 to 1306.

	Fasli 1301.				Fasli 1302.				Fasli 1303.				Fasli 1304.			
	Under present method.	Under proposed method.	Difference.		Under present method.	Under proposed method.	Difference.		Under present method.	Under proposed method.	Difference.		Under present method.	Under proposed method.	Difference.	
1	2	3	4		5	6	7		8	9	10		11	12	13	
Pálar anikat	Rs. 27,058	Rs. 1,04,081	Rs. 20,919	+	Rs. 1,23,056	Rs. 56,819	Rs. 66,237	+	Rs. 1,35,632	Rs. 82,366	Rs. 53,266	+	Rs. 1,27,643	Rs. 76,256	Rs. 51,387	+
Chembrañakam tank	1,04,081	1,04,081	20,919	+	1,23,056	1,91,237	68,181	+	1,35,632	1,76,256	40,624	+	1,27,643	1,76,256	48,613	+
Madras water-supply and irrigation extension project.	1,734	1,734	1,460	+	33,206	8,251	24,955	+	35,784	18,326	17,458	+	1,25,000	9,468	115,532	+
Pelandorai anikat	1,460	1,460	1,110	+	16,000	40,955	24,955	+	16,000	37,458	21,458	+	16,000	10,928	5,072	+
Cumbum tank	4,002	4,002	1,110	+	5,551	13,668	8,117	+	9,173	6,253	2,920	+	10,928	14,066	3,138	+
Tadepalli channel	12,110	12,110	3,840	+	11,000	21,938	10,938	+	11,000	13,890	2,890	+	11,000	24,236	13,236	+
Arakankóttai channel	19,680	19,680	3,840	+	23,828	4,870	1,870	+	25,751	7,228	4,228	+	28,840	7,504	21,336	+
Kalingaroyen channel	1,807	1,807	6,059	+	3,000	28,746	25,746	+	3,000	29,504	26,504	+	3,000	31,824	28,824	+
Valluru	27,951	27,951	3,886	+	11,062	27,768	16,706	+	10,938	30,410	19,472	+	10,938	31,824	20,886	+
Cheyaru	26,165	26,165	3,886	+	27,768	31,962	4,194	+	26,780	30,410	3,630	+	27,448	31,824	4,376	+
Poinoy	8,303	8,303	3,886	+	75,462	71,268	4,194	+	76,394	75,394	1,000	+	76,369	72,716	3,653	+
Lower Coleroon do.	9,689	9,689	1,336	+	18,982	17,669	1,313	+	18,935	17,502	1,433	+	18,887	17,729	1,158	+
Shatyatope do.	17,619	17,619	6,416	+	20,336	25,000	4,664	+	20,490	25,007	4,517	+	21,317	26,391	5,074	+
Vridhachalam do.	23,571	23,571	6,416	+	83,301	78,637	4,664	+	83,328	78,751	4,577	+	84,786	79,712	5,074	+
Mehmatpur do.	1,010	1,010	684	+	2,289	1,403	886	+	1,362	1,202	160	+	3,022	2,088	934	+
Tirukóvilár do.	3,994	3,994	684	+	4,521	5,407	886	+	3,352	3,732	380	+	5,282	6,216	934	+
Marudur do.	11,041	11,041	2,825	+	41,052	32,881	8,211	+	42,162	33,625	8,537	+	34,046	29,487	4,559	+
Ganján minor rivers system	39,114	39,114	2,825	+	39,269	47,470	8,211	+	40,201	48,738	8,537	+	44,349	48,908	4,559	+
Total	14,549	14,549	986	+	42,865	93,955	18,910	+	43,343	81,343	38,000	+	38,432	28,665	9,767	+
	43,362	42,426	936	+	43,490	62,400	18,910	+	45,862	67,862	22,000	+	46,539	56,306	9,767	+
	2,10,168	2,10,168	10,181	+	2,22,487	2,11,491	9,996	+	2,40,431	2,38,395	1,036	+	2,40,487	2,32,116	8,371	+
	1,39,007	1,39,007	4,085	+	1,43,892	1,43,892	10,996	+	1,49,802	1,49,802	12,025	+	1,45,302	1,53,673	8,371	+
	23,409	23,409	1,032	+	27,011	27,011	4,445	+	19,631	13,379	6,252	+	86,272	88,958	2,686	+
	14,739	14,739	1,032	+	10,232	8,509	1,723	+	15,406	14,756	650	+	20,027	17,341	2,686	+
	6,659	6,659	1,032	+	6,326	7,049	723	+	8,465	9,135	670	+	16,095	16,095	500	+
	7,094	7,094	36	+	6,860	7,877	1,017	+	8,837	9,135	298	+	8,463	8,993	530	+
	1,827	1,827	36	+	1,751	1,234	517	+	2,044	1,858	186	+	10,258	10,258	180	+
	23,610	23,610	1,124	+	28,843	25,096	3,747	+	36,925	35,928	997	+	2,084	1,904	180	+
	56,315	56,315	1,124	+	64,674	54,421	10,253	+	61,999	61,999	3	+	85,348	85,079	269	+
	69,563	69,563	1,495	+	62,279	4,337	64,942	+	71,357	71,357	0	+	58,551	58,820	269	+
	1,5832	1,5832	1,495	+	90,037	94,374	4,337	+	1,15,032	1,16,181	1,149	+	71,389	70,313	1,076	+
	22,182	22,182	1,709	+	20,303	17,573	2,730	+	21,177	19,275	1,902	+	1,14,264	1,15,340	1,076	+
	90,161	90,161	1,709	+	88,924	91,564	2,640	+	89,310	91,212	1,902	+	95,068	96,489	1,421	+
	5,66,738	5,66,738	18,113	+	7,72,244	6,29,155	1,43,089	+	8,38,441	7,25,631	1,12,810	+	8,16,587	7,29,416	87,171	+

Note.—1. Figures in columns 3 and 12 are those given in columns 9 of the Chief Engineer's statements.

2. Figures in columns 2 and 11 = column 22—(columns 10 + 11) of Chief Engineer's statements.

3. Revenue due to new irrigation is printed in roman figures.

4. Do. do. antique figures.

* The figures relating to Ganjam minor rivers system are not included in the Chief Engineer's statements.

APPENDIX I—cont.
Comparative statement showing the results of the application of the Chief Engineer's method to Irrigation Revenue derived from class II works, for faslis 1301 to 1306—cont.

	Fasli 1305.			Fasli 1306.			Total.		
	Under present method.	Under proposed method.	Difference.	Under present method.	Under proposed method.	Difference.	Under present method.	Under proposed method.	Difference.
	14	15	16	17	18	19	20	21	22
Pálar anikat	RS. 1,41,301	RS. 89,377	RS. 51,924	RS. 1,12,904	RS. 73,362	RS. 39,542	RS. 6,44,675	RS. 4,05,238	RS. 2,39,437
Chembrambakam tank	1,25,000	1,76,924	51,924	1,25,000	1,64,542	39,542	7,50,000	9,89,437	2,39,437
Madras water-supply and extension project	16,000	30,035	14,035	29,875	7,494	22,381	1,45,265	1,61,206	16,941
Pelandarai anikat	9,530	30,035	20,505	16,000	38,381	22,381	52,380	1,90,049	1,37,669
Cumbum tank	11,000	13,998	2,998	11,000	13,979	2,979	66,000	68,979	2,979
Tadepalli channel	29,751	25,452	4,299	31,202	26,392	4,810	1,62,792	1,67,602	4,810
Arakankottai channel	3,000	7,269	4,269	3,000	7,810	4,810	18,000	22,810	4,810
Kalingaroyen do.	10,831	8,840	1,991	3,144	3,813	669	1,71,801	1,72,637	836
Valluru anikat	30,001	31,992	1,991	30,048	29,379	669	1,65,417	1,65,417	0
Tadepalli channel	26,785	31,434	4,649	27,461	32,498	5,037	4,55,247	4,30,708	24,539
Arakankottai channel	76,033	71,424	4,609	76,710	71,673	5,037	5,02,269	4,58,775	43,494
Kalingaroyen do.	8,446	9,720	1,274	8,388	9,813	1,425	1,14,290	1,06,784	7,506
Valluru anikat	18,943	17,669	1,274	19,021	17,593	1,428	1,19,910	1,51,797	31,887
Tadepalli channel	20,141	25,638	5,497	20,071	25,730	5,659	5,04,611	4,72,724	31,887
Arakankottai channel	84,963	79,466	5,497	84,932	79,273	5,659	10,030	10,030	0
Kalingaroyen do.	3,165	2,202	963	3,101	2,125	976	26,746	31,659	4,913
Valluru anikat	5,259	6,222	963	5,092	6,158	1,066	2,21,316	1,87,221	34,095
Cheyaru do.	46,311	38,324	7,987	46,664	39,038	7,626	2,51,639	2,85,734	34,095
Pooney do.	44,391	52,378	7,987	44,391	51,951	7,560	2,16,072	1,49,286	66,786
Lower Coleroon do.	40,938	27,410	13,528	35,946	22,438	13,508	2,57,927	3,24,713	66,786
Shatyatops do.	40,514	54,042	13,528	38,160	51,677	13,517	13,94,120	13,41,055	53,065
Vidhachalam do.	2,39,405	2,32,515	6,890	2,30,971	2,26,369	4,602	8,46,318	8,99,383	53,065
Mehmatpur do.	1,48,424	1,56,314	7,890	1,52,093	1,56,695	4,602	6,03,995	4,85,720	118,275
Trukkyilur do.	85,301	85,301	0	85,301	85,301	0	1,23,654	1,41,929	18,275
Marudur do.	20,999	25,105	4,106	21,107	25,084	3,977	88,142	84,398	3,744
Ganjam minor rivers system	8,400	8,400	0	8,400	8,400	0	44,703	49,447	4,744
Total	8,40,580	7,39,594	1,00,986	8,16,552	7,26,854	89,698	46,33,029	41,17,388	5,15,641

Note 1.—Revenue due to new irrigation is printed in roman figures.
2. Do. do. antique figures.

APPENDIX II.

COMPARATIVE statement showing results of application of the Chief Engineer's method to Gódávári and Kistna Anikats in fasli 1301.

	First crop.	Second crop.	Total
<i>Gódávári Anikat.</i>			
Old irrigation	ACS. 154,241	ACS. 578,123	ACS. 732,364
New	486,540	91,583	578,123
Total	640,781	91,583	732,364
Total irrigation revenue	RS. 20,20,345	RS. 2,24,230	RS. 22,44,575
Deduct proportionate share due to old irrigation	4,86,313	..	4,86,313
Increase due to new irrigation	15,34,032	2,24,230	17,58,262
Do. as entered in the accounts according to the present method	..	..	21,20,575
Difference, or excess credit to old irrigation under the Chief Engineer's method	..	..	3,62,313
<i>Kistna Anikat.</i>			
Old irrigation	ACS. 77,045	ACS. 397	ACS. 4,03,683
New	403,286	397	4,03,683
Total	480,331	397	4,80,728
Total irrigation revenue	RS. 17,20,771	RS. 1,620	RS. 17,22,391
Deduct proportionate share due to old irrigation	2,76,011	..	2,76,011
Increase due to new irrigation	14,44,760	1,620	14,46,380
Do. as entered in the accounts according to the present method	..	..	16,51,391
Difference, or excess credit to old irrigation under the Chief Engineer's method	..	..	2,05,011

APPENDIX III.

ALL INDIA IRRIGATION ENGINEERS' CONFERENCE, 1906.

COMPARATIVE statement showing the results of the application of the Chief Engineer's method to Irrigation Revenue derived from Gódávári and Kistna Anikats, for faslis 1301 to 1306.

[illegible]

Note.—Revenue due to new irrigation is printed in roman figures.
Do. old do. in antique figures.

Mis. No. 2378, Revenue.

Transferred to the Public Works Department.

(By order.)

Ootacamund,
28th June 1899.

(Signed) H. E. CLERK,
for Ag. Secretary to Government.

No. 153 I.

Note by the Chief Engineer for Irrigation.

The Revenue Board shows conclusively that the method of calculating old irrigation revenue proposed in the note by Chief Engineer for Irrigation, No. 70 I., dated 20th March 1896, would lead to no better results than the present method, but would on the contrary be more faulty. The undersigned quite agrees with the Board in the circumstances brought to notice that the present system of fixed credits and debits on account of old irrigation should be adhered to. It is, however, necessary that particular care should be taken in fixing the amounts of these credits and debits; the Board admits that, as pointed out by the Chief Engineer for Irrigation, the fixed debits for working expenses in the case of several second-class works are absurdly low and the delay in fixing the amount of debit for working expenses of old irrigation in the case of the Periyár project is due to a desire to avoid a repetition of such an error in this case and to the enquiries thus involved. As regards the remarks of the Board in the final paragraph of its proceedings, it would appear to be the case that the amount which should be debited as working expenses of old works in respect of thirteen systems referred to has not yet been fixed and enquiries on this subject should be made.

(Signed) W. HUGHES,
Chief Engineer for Irrigation.

22nd July 1899.

ORDER—No. 715 I., dated 17th August 1899.

In the circumstances reported by the Board of Revenue and dealt with in the foregoing note by the Chief Engineer for Irrigation, no alteration in the present system of fixed debits and credits to irrigation systems on account of "old irrigation" need be made.

2. The Examiner of Public Works Accounts will, as soon as possible, take the necessary steps for ascertaining the old maintenance charges of the thirteen systems referred to in G.O., No. 286 I., dated 21st May 1890.

(True Extract.)

(Signed) W. HUGHES,
Joint Secy. to Government,
Irrigation Branch.

To the Chief Engineer for Irrigation.
 " Superintending Engineers of Circles.
 " the Examiner of Public Works Accounts.
 " the Revenue Department.

Exd. T. K. Narayana Aiyangar.

Public Works (1899) Department.

CURRENT No. 6675

From

The Chief Engineer for Irrigation

Order

No. 15-3 J

Dated 22nd July 1899

Received

Registered

Enclosures

Spare copies.

15-8-99
Plans - 10
Other - 2

SUBJECT.

Old maintenance charges —
to be recommending that the
present system of fixed credits
and debits on account of —
should be adhered to.

A/

BACK PAPERS.

FURTHER PAPERS.

Reas. P. of the Birds of Nev: no 306 d. 18. 8-98
Shaw! detem. } d. 5 Nev: Oct. no 2378 m.
d. 28. 6-98

No 53 Edy. 22. 7-89
made by Σ. I.

The Revenue Board shows conclusively that the method of calculating old irrigation revenues proposed in the note { Chap. 8 of the Irrigation No. 70 } and 20 March 1866 would lead to no better results than the present method but would on the contrary be more faulty - The undersigned quite agrees with the Board in the circumstances brought to notice that the present system of fixed credits and debits on account of old irrigation should be adhered to - It is however necessary that particular care should be taken in fixing the amount of these credits and debits - The Board admits that as far as out of the Chap. 8 of Irrig. the fixed debits for working expenses in the case of several second class works are abnormally low and

Issue

7.8.99 Int

9

the in fixing the
 an of debit for
 working expenses of old
 irrigation in the case of
 the Poyar project is
 due to a desire to avoid
 a repetition of the error
 in this case, and to the
 inquiries thus involved.
 As regards the remarks
 of the Board in the final
 para. of its proceedings
~~the Board was of the~~
~~the case it would appear~~
~~to be the case that the~~
 amount which should be
 debited to ~~the~~ as working
 expenses of old works in
 respect of 13 Systems referred
 to has not yet been fixed
 and inquiries on this
 subject ~~are being~~ ^{should be} made - *seen*

JH.
 6/12 No: 715 Ld 17-888
 In the circumstances
 reported by the Board of
 Rev: and dealt with in
 the foregoing note by the C.I.
 there is no alteration in the
 present system of fixed debits

22P

and credits to irrigation
 Systems on account of
 "old irrigation" need be
 made

4.94.
 5.8.99

2. The Examiner of P.W.A.
 will as soon as possible
 take the necessary
 steps for ascertaining
 the old maintenance charges
 of the 13 Systems referred
 to in G.O. No. 286, S. of 21st May/90

JH.
 20/12
 98.

W.H.
 22-2-99

AT
 31.7.99

To
 The Chief Engineer for Irrigation
 Superintending Engineer of Circle
 Examiner of P.W. Accounts
 Revenue Department

C No. 7693 of 1898.

From the Board of Revenue (Rev. Lett.)

No 306 Dated 18 - 8 - 1898.
received 10 - 11 - 1898
FOR ORDERS.

In the case of ~~the~~
irrigation works ~~in this District~~
~~the~~ for which Capital and
Revenue accounts are kept
i.e. works of classes I + II
the distribution of irrigation
Revenue between 'Old Irrigation
works' and 'improvements
by the British Govt' was
originally effected according
to the method devised by Mr
Wilson. Under this method
the Revenue due to 'old
irrigation' comprised the
following items:—

(a) The portion due to water
of the Consolidated Assessment
and quit-rent on moorland
heathlands minus the average
of the remissions, of the five
years prior to the improve-
ments; and

(b)

Para 2 of R.P.
No 73 printed in
14-3-90
for 395 I A
18-7-90

(b) The average annual net receipts due to water during the five years preceding the improvements, from dry lands converted into wet and dry crops watered, from main and Laminari lands charged for water, and from second crop.

This system necessitated the annual compilation of a great many particulars and is characterized by the Board as very elaborate and laborious.

2. In 1883 the Govt of India suggested that the gross revenue and maintenance charges of the old works prior to the improvements by the British Govt should be once and for all finally settled, so that the difference between the gross irrigation revenue under each work and the gross revenue due to old work, and that between the gross outlay actually incurred on the maintenance and repairs of the works and the gross ~~fixed~~ expenditure on ~~the~~ work, might represent

FOR ORDERS.

Para 6 of the B.P.
(Current)

Para 2 of the 8th letter
in 8th 477.9 B
16-6-83

Para 4 of the
8th of 8 letter
in 8th 3086 C
19-5-90

Para 3. 90.

Sub. para 4 para 5
of the B.P. Current.

respectively the gross revenue due to improvements and the working charges thereon. This method was adopted and followed by this Govt only so far as it related to maintenance charges the old (Mr Wilson's) method having been still followed in regard to irrigation revenue.

In 1889 the Govt of India pointed out that the old irrigation revenue calculated according to Mr Wilson's method showed very slight variations from year to year and consequently urged upon this Govt the necessity for the adoption of a definite figure to represent each revenue. This suggestion was accepted by this Govt and adopted in the case of all the ^{then} works falling under classes I & II. In the case of works since added to these classes, Mr Wilson's method is being followed pending the collection of data for fixing the old irrigation revenue.

revenue in those cases.

3. In 1893 the Govt of India desired that an attempt should be made to reduce the working expenses of irrigation works without in any way affecting their efficient maintenance and that the result should be reported. With reference to this question the Chief Engineer for irrigation while stating that every endeavour was being made to reduce the expenditure, remarked that so far as minor irrigation works were concerned, the prevailing high percentage of expenditure on revenue was largely due to the method of keeping accounts. He was of opinion that it was absolutely impossible and quite unnecessary to attempt to correctly fix once and for all the old irrigation revenue and the old maintenance charges, and that it would not complicate accounts

Para 3 of the
L of D letter in
No. 248 I
22-3-93 D

Para 1 of his note
printed on page 2
of the current.

Para 4 of his note

or in any way cause incon-
venience if they are fixed
annually. His objections to
the system of fixing the old
revenue and charges once and
for all are

(1) That the old irrigation
revenue if fixed once and for all
would show at times absurd
results especially in times of
scarcity when the whole of
the irrigated area might be
entirely dependent on the
ancient and old channels,
and that the fixed amount
based on the average of a
series of years might be more
than the total revenue actually
received in a year of drought
described in which case the
result of improving the works
and giving a better supply would
appear in the accounts as a
debit instead of as a credit
to the system.

(2) That the cost of the
maintenance of the old works
even if ascertained from the
accounts kept prior to the im-
provement

Para 4 of his
note in the current.

improvement by the British font would not represent the correct

Share of the cost of maintenance. as it was determined that the charges were not properly maintained before the Chief Engineer accordingly

suggested a method by which the old irrigation revenue is to be calculated on the areas reported by the Board of Rev to be due to old irrigation under first and second crops in proportion to the total areas irrigated for each crop to the total revenue derived therefrom inclusive of remissions. Adopting this plan the Chief Engineer works out an additional credit of Rs 21,000 to new irrigation under the Palan Acreage system for the year 1891-92. The working charges are also to be allocated in direct proportion to the areas of old and new irrigation.

Unless some such system is adopted, the Chief Engineer considers that a time must come when the profit de-

Para 8 of his note.

The area due to old irrig. $\frac{1}{2}$ The revenue $\frac{1}{2}$ derived therefrom $\frac{1}{2}$ The total area irrig. $\frac{1}{2}$ The total revenue

Para 11 of note printed in the current

Rs. 1794
9-5-96
S

Para 6 of the P.P.

ruined from improvements will be altogether concealed by imaginary credits and debits, and that with a fixed contribution towards working expenses, a constant increasing number of tanks and varying seasons of credit and debits (on account of working expenses) would be impossible if any value is to be attached to the accounts.

The Chief Engineer's note which was referred for the remarks of the R.D. was referred to the Board of Revenue for remarks. The current read above is the Board's reply.

The Board agrees with the Chief Engineer in considering that the present method of fixing once and for all the credit due to old irrigation is open to objection in any year of drought, but it is at the same time convinced of the desirability of accepting some approximate figure based on averages in preference to Mr Wilson's elaborate and laborious system.

of annual calculation.

System & the Board arrives that the system of fixing the old irrigation revenue may in any particular lead to absurd results as pointed out by the Chief Engineer, but at the same time it considers that the method suggested by the Chief Engineer would be yet more faulty and would have quite the opposite effect to what he supposes and desires. It gives an illustration of this in the case of the Palas Ancient System in which the Chief Engineer's method gives to new irrigation a ~~credit~~ smaller credit than the present fixed credit system by Rs 2,60,000 for the five years ending 1896-97 though it brings an additional credit of Rs 21,000 for the year 1891-92. Applying the two methods to all the works included in Class II, the Board arrives at the conclusion that while the Chief

Para 7 of the B.P.

Para 8 of the B.P.

Para 8 of the B.P.

Chief Engineer's method brings an additional credit of less than Rs 19,000 to the new works in 1891-92, it brings on a loss of about 5.34 lakhs for the 5 years ending 1896-97. The fault underlying the Chief Engineer's method by which the revenue due to be distributed according to the area, is stated to be that, while, under each irrigation system, there are large areas mostly included under old irrigation which are either irrigated free of charge (such as manual well areas in Lamin & are and main villages) or for which reduced rates are paid (such as well-irrigated paying quit rent) the Chief Engineer's system proposes to credit all these areas with their proportion of the total revenue which is obviously to give undue credit to old irrigation. This is illustrated in the case of Gadavari and Krishna Ancients in which the old

old irrigation, under the Chief Engineer's method, gets a credit of Rs 3.62 lakhs and 2.05 lakhs respectively in excess of the present fixed credit system even in a year of drought (1891-92) and much larger credits in many years as shown in Appendix III to the B.P. The Board is further of opinion that the proposed method in a year of drought the proposed method would no more represent the truth than the present fixed system.

The same objections apply to the allocation of working expenses according to the area irrigated.

As for the working expenses in some cases under the fixed debit system being absurdly low, the Board says that where natural facilities for irrigation exist a certain amount of irrigation revenue can be got

Para 10 of the
B.P.

Para 11 of the
B.P.

Para 12 of
the B.P.

for with little or no outlay on maintenance, but the ryots are in many cases left to do most of the work themselves and that the supervision by Revenue officers costs much less than that by professional men of the P.W.D.

For the foregoing reasons the Board would not accept the method proposed by the Chief Engineer, but strongly advocates the retention of the present system of fixed credits and debits.

The Board's objections to the proposed method appear to be weighty.

Orders are requested as to whether the B.P. may be transferred to the P.W.D. with an expression of concurrence in the B.P.'s views.

RS
7-12-98

Seen by
9/1/99

Before dealing with the Board's views as expressed in the B.P. we should have

first have the remarks thereon
by the Irrigation Dept. to
from the file will now be
sent u.o. h.

S.D. 27/11/97

W. Dept. no.

Recd
The Secy. Rev. Dept.

I quite agree with the Board
of Revenue

19-6-99 W.H.
Joint Secy. R. & D.
Irrigation Branch

may be pp. to then transferred
to P.W.D. for the issue
of a G.O. to this effect

L.P.W.D. Encls. 11/22/6/99

Revenue Department

To Secy

Please see draft Encls.

in docket.

Encl

25-11-99

Rev. Secy

There is no objection to this
Course

W.H.
23-6-99

11/23/6

0
18 4,000-18-10-98.

Revenue (1899) Department.

CURRENT No. 7693.

From

The Board of Revenue,
Revenue Settlement
Madras.

No. 306.

Dated 18th August 1898.

Received 10th Nov. 98

Registered 11th Nov. 98.

Enclosures

Spare copies.

SUBJECT.

Reviewing the note by the Chief
Engineer for Irrigation on allocation
of Irrigation Revenue and working
expenses of class II Irrigation works
between old and new irrigation.

208
Indt. No. 2378 Indt.
Order

Transferred to the Public
Works Department.

(By Order) S

H. H. H.
for Ag. Secretary to Government.

Cochin
28th June 1899

To.

The Public Works Department (9)
with notes in original.

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BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

Standing
J.B.
21-8-99

REVENUE DEPARTMENT.

1898.

Board of Revenue (Revenue Settlement, Land Records and Agriculture), MADRAS.

Recd.

Enclosures

Begd.

1898.

Spare copies

Printed November th.

Proceedings, No. 306, 18th August 1898.

AUGUST.

Allocation of Irrigation Revenue.—Reviewing the note by the Chief Engineer for Irrigation on the — and working expenses of Class II Irrigation Works, between old and new irrigation.

PROCEEDINGS OF THE BOARD OF REVENUE
(REVENUE SETTLEMENT, LAND RECORDS AND AGRICULTURE).

READ—the following Memorandum from the Public Works Department, Madras, No. 2082 C., dated 28th April 1896 :—

Read—the following note by the Chief Engineer for Irrigation, No. 70 I., dated 20th March 1896 :—

The question of reducing working expenses of the various irrigation works in this Presidency was raised by the Government of India in letter printed with G.O., No. 248 I., dated 22nd March 1893, and every endeavour is being made to reduce expenditure on those works without affecting their efficiency. On considering the matter it appears to the undersigned that so far as Minor Works for which Capital and Revenue Accounts are kept are concerned, the prevailing high percentage of systems consist of tanks of old construction, the supply of water to which has been supplemented and assured by connecting them with a river by means of an anikat and the necessary channels, and the proper proportion of revenue due to the improvements is naturally a question of some difficulty.

2. In letter No. 68 A. I., dated 17th May 1883, printed with G.O., No. 477 I., dated 16th June 1883, the Government of India proposed that the revenue and maintenance charges of old works prior to their improvement by the British Government should be once and for all finally settled, and the Government of Madras, after considerable hesitation, adopted the proposal with certain reservations.

3. In G.O., No. 395 I., dated 18th July 1890, the old irrigation revenue and old maintenance charges for certain systems were fixed as requested by the Government of India, though the improved supply from the anikat systems is extended, as necessity arises from time to time to other tanks which have never before received anikat supply.

4. It is in the opinion of the undersigned absolutely impossible and quite unnecessary to attempt to correctly fix once and for all, the old irrigation revenue and the old maintenance charges of these works. It will not complicate the accounts or in any way cause inconvenience if they are fixed annually. The old irrigation revenue, if fixed once and for all, will show at times absurd results as in times of scarcity when the whole of the irrigated area might be entirely dependent on the anikat and its channels, the fixed amount based on the average of a series of years might be more than the total revenue actually derived, in which case the result of improving the works and giving a better supply would appear in the accounts as a debit instead of a credit to the system. The cost of maintenance of the old works, even if ascertained represent the correct share of the cost of maintenance as it is a matter of notoriety that these works were not properly maintained in those days and the actual cost is not known.

5. The Administration report shows that in several systems no deduction at all is made for the maintenance of tanks and in others the deductions are very inadequate. The Pálár anikat system, for instance, consists of over 250 tanks and in 1891-92, the

Board of Revenue estimated that no less than 33,316 acres under first-crop and 11,827 acres under second crop were due to old irrigation, out of a total irrigated area, under first and second crops, of 55,626 acres. In the same year out of a total expenditure of Rs. 94,603, the allowance for old maintenance charges was Rs. 3,900. Thus 45,243 acres of old irrigation are said to have cost only Rs. 3,900 to maintain or at the rate of Rs. 0.086 per acre, while 10,483 acres, said to be irrigated by river water, were debited with Rs. 90,703 or at the rate of Rs. 8.65 per acre, although in that particular year the amount actually spent on tanks was Rs. 41,643 which sum instead of Rs. 3,900 should have been debited to works for which neither Capital nor Revenue Accounts are kept and not to the system. The year 1891-92 was, of course, exceptional as there was a general failure of rain, but this only emphasises the defects of the present system of accounts as probably the greater part of the irrigation was by river water supplied from the anikat.

6. From whatever point the accounts are viewed similar, though modified, results will be obtained in ordinary years, but a year of scarcity has been selected as an example to show how faulty the present system of accounts is. In 1891-92, the revenue accounts were not included in the Administration report, as they were not received in time from the Board of Revenue. Had these accounts been received, the Administration report would have recorded the fact that the supply of river water which saved the crops resulted in an inappreciable increase of revenue of Rs. 6,139 when it is probable that the bulk of the revenue was really due to the supply of river water and if the remissions granted had been a little heavier the supply of river water might easily, according to the accounts, have resulted in a loss of revenue.

7. From the above it does not seem necessary to produce further proof that the present system of fixing old irrigation revenue and maintenance charges is indefensible and it is suggested that the method indicated below is preferable.

8. The old irrigation revenue of each of the minor irrigation works for which Capital and Revenue Accounts are kept should, it is thought, be calculated on the areas reported by the Board of Revenue to be due to old irrigation under first and second crops in proportion to the total areas irrigated for each crop to the total revenue derived therefrom inclusive of remissions. By this method the remissions during bad years will be proportionately distributed.

9. The effect of the proposed method on the revenue derived from the Pálár anicut system during 1891-92 will be as shown below :—

		First crop.	Second crop.	Total.
		ACRES.	ACRES.	ACRES.
Old irrigation	.. .. .	33,316	11,827	45,143
New " " " " " " " "	.. .. .	10,483	..	10,483
Total ..		43,799	11,827	55,626
		RS.	RS.	RS.
Total irrigation revenue	.. .. .	1,13,052	18,087	131,139
Deduct proportionate share due to old irrigation	.. .. .	85,992	18,087	104,080
Increase due to new irrigation	.. .. .	27,059	..	27,059
Do. as entered in the accounts according to the present method	.. .. .	..	..	6,139
Difference ..		..	..	20,920

10. As regards charges it is suggested that the capital cost of the works being designed to give an improved supply to the existing irrigation and to bring fresh land under irrigation and the original cost of the tanks before the improvements were carried out not being included in the capital account, the working expenses may be allocated in direct proportion to the areas of old and new irrigation, as it is impossible to distinguish the amount spent on each.

11. Unless some such modification of the existing system of estimating revenue due to old irrigation and to old maintenance charges is adopted and steps are taken to

distribute working expenses according to the areas actually watered, a time must come when the profit derived from these systems will be altogether concealed by imaginary credits and debits. With a fixed contribution towards working expenses, a constant increasing number of tanks and varying seasons, fixed credits and debits on account of working expenses and old irrigation revenue are impossible, if any value is to be derived from the accounts.

12. The statements attached compare the financial results for all minor irrigation works for which Capital and Revenue Accounts are kept for 1891-92 and for 1894-95 according to the present and proposed methods. From these statements it will be observed that during the year 1894-95, when the season was favourable, the difference in irrigation revenue, calculated according to the existing and proposed methods, will not be very considerable but, in a year of scarcity, such as 1891-92, when the whole of the irrigation was probably largely due to the supply of river water, the result of the proposed change will be to credit the systems with a fair share of revenue. The amount of revenue which in 1891-92, according to the proposed method was improperly credited to works for which Capital and Revenue Accounts are not kept was according to the statement, no less than Rs. 2,62,917 representing about 120 per cent. on the revenue actually credited in the accounts.

Memorandum No. 2082-C., Public Works, dated 28th April 1896.

Referred to the Revenue Department for remarks.

(Signed) F. J. WILSON,
Under Secretary to Government.

To the Revenue Department, with two statements
in original (to be returned).

Mis. No. 1794, Revenue.

Referred to the Board of Revenue for remarks.

OOTACAMUND,
9th May 1896.

(Signed) F. J. WILSON,
for Ag. Secy. to Government.

To the Board of Revenue (Revenue Settlement, Land
Records and Agriculture).

READ—also letter from W. HUGHES, Esq., Chief Engineer for Irrigation, No. 200 M., dated 9th June 1897, forwarding, with reference to Board's Memorandum Mis. No. 3981, dated 2nd June 1897, a copy of note on allocation of Irrigation Revenue and Working expenses of Minor Irrigation works for which capital and Revenue Accounts are kept.

Reference thereon, dated 23rd June 1897.

The Chief Engineer for Irrigation is requested to favour the Board with copies of the statements referred to in paragraph 12 of the copy of his note received with his endorsement read above.

(Signed) R. V. SRINIVASIAH,
Secretary.

To the Chief Engineer for Irrigation.

READ—also the following letter from W. HUGHES, Esq., B.A., Chief Engineer for Irrigation, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated Madras, 26th August 1897, No. 281-M:—

With reference to Board's Reference on No. 4355-G.R., dated 23rd June 1897, I have the honour to forward herewith two statements.

The statement for 1894-95 is a copy of the statement for that year appended to the note by the Chief Engineer for Irrigation, No. 70 I., dated 20th March 1896. A copy of the original statement for 1891-92 was not kept. A fresh statement has therefore been prepared, but this shows that the amount of revenue which in that year according to the proposed method was improperly credited to works for which Capital and Revenue Accounts are not kept was Rs. 2,61,687 or Rs. 1,230 less than the sum mentioned in paragraph 12 of the above note. The difference cannot now be explained, it is probably due to some error in the calculations in the original statement.

STATEMENT showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works for which Capital and Revenue Accounts are kept, the revenue and expenditure distributed between old and new irrigation in proportion to the area irrigated during 1891-92 and comparing the results with those arrived at according to the present method.

Districts.	Particulars.	Area irrigated.			Irrigation revenue.			Enhanced share of land revenue.	Direct receipts in the Public Works Department.	Total revenue (column 9 + 10 + 11).	Working expenses.	
		First crop.	Second crop.	Total.	First crop.	Second crop.	Total.				Extensions and improvements.	Maintenance and repairs.
1	3	4	5	6	7	8	9	10	11	12	13	14
Kurnool ..	1. Cumbar tank ..	ACS. 4,596 4,210 386	ACS. 1,347 1,347 ..	ACS. 5,943 5,557 386	RS. 21,519 19,712 1,807	RS. 1,480 1,480 ..	RS. 22,999 21,192 1,807	RS. 635	RS.	RS. 23,594 21,192 2,342	RS. 195 182 13	RS. 7,992 7,473 519
	2. Thadapalli channel ..	13,975 10,005 3,970	482 170 312	14,457 10,175 4,282	99,376 71,145 28,231	2,088 1,320 718	1,01,414 71,863 29,551	2,594 .. 2,594	..	1,04,021 71,863 32,158	6,176 4,347 1,829	4,153 2,923 1,230
	3. Arakankottai do. ..	4,096 2,667 1,429	58 6 52	4,154 2,673 1,481	27,023 17,619 9,408	285 24 211	27,258 17,619 9,639	282 .. 282	1	27,541 17,619 9,922	17 11 6	1,145 737 409
Coimbatore.	4. Kalingarayen do. ..	11,250 8,338 2,912	10,505 8,403 2,102	21,755 16,741 5,014	64,518 47,818 16,700	36,338 29,067 7,271	1,00,856 76,885 23,971	387 .. 387	222	1,01,465 76,885 24,580	512 394 118	10,808 8,317 2,491
	5. Palār anikat ..	43,799 33,316 10,483	11,827 11,827 ..	55,626 45,143 10,483	113,092 85,994 27,098	18,087 18,087 ..	1,31,139 1,04,081 27,058	15,380 .. 15,380	1,313	1,47,832 1,04,081 43,751	16,331 13,253 3,078	58,522 47,493 11,029
	6. Poiney do. ..	17,392 12,395 4,997	1,647 1,647 ..	19,039 14,042 4,997	53,895 38,410 15,485	4,016	57,911 42,426 15,485	4,885 .. 4,885	750	63,596 42,426 21,170	4,141 3,054 1,087	8,291 6,115 2,176
North Arcot.	7. Cheyāru do. ..	14,194 12,598 1,596	9,364 1,723 7,641	23,558 14,321 9,237	38,463 34,138 4,325	11,692 2,151 9,541	50,155 36,289 13,866	3,103 .. 3,103	585	53,843 36,289 17,554	94 83 11	12,502 11,119 1,383
	8. Chambrambakam ..	6,050 5,505 545	1,528 1,235 293	7,578 6,740 838	13,643 12,414 1,229	2,631 2,126 505	16,274 14,540 1,734	386 .. 386	5	16,665 14,540 2,125	605 449 156	13,102 9,725 3,377
	9. Madras water-sup- ply and irriga- tion extension.	6,829 5,279 1,550	1,342 786 556	8,171 6,065 2,106	14,275 11,034 3,241	1,837 1,076 761	16,112 12,110 4,002	450 .. 450	14,435	30,997 12,110 18,887	605 449 156	718 581 137
Chingleput.	10. Vallar anikat.	3,997 3,310 687	90 .. 90	4,087 3,310 777	4,738 3,924 814	196 .. 196	4,934 3,924 1,010	477 .. 477	..	5,411 3,924 1,487	..	718 581 137
	11. Tirukkoñilār do.	22,414 16,954 5,460	1,937 22 1,915	24,351 16,976 7,375	74,375 56,252 18,123	5,550 63 5,487	79,925 56,315 23,610	2,757 .. 2,757	375	83,057 56,315 26,742	4,903 3,418 1,485	15,220 10,610 4,610
South Arcot.												

Statement showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works, &c.—cont.

Statement showing the area irrigated, the revenue derived and the working expenses of minor irrigation works, according to the present method.												
Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Working expenses—cont.					Net revenue (column 12—20).	Total revenue.	Working expenses.	Net revenue.	
			Establishment.	Tools and plant.	Total.	Indirect charges.	Collection charges.					Total.
			15	16	17	18	19	20	21	22	23	24
Karnool ..	1. Cumbar tank ..	(1) Total .. (2) Deduct due to old irrigation.. (3) Net due to improvements ..	RS. 1,883 1,761 122	RS. 642 600 42	RS. 10,712 10,016 696	RS. 264 245 18	RS. 1,177 1,060 117	RS. 12,153 11,222 931	RS. 11,881 9,870 1,911	RS. 23,534 27,251 3,717	RS. 10,790 .. 10,790	RS. 12,744 27,251 14,507
	2. Thadapalli channel ..	(1) Total .. (2) Deduct due to old irrigation.. (3) Net due to improvements ..	1,896 1,334 562	.. .. ..	12,225 8,604 3,621	265 186 79	5,201 3,593 1,608	17,691 12,483 5,208	86,330 59,480 26,850	1,04,021 75,245 28,772	13,928 .. 13,928	90,093 75,249 14,844
	3. Arakankotai do. ..	(1) Total .. (2) Deduct due to old irrigation.. (3) Net due to improvements ..	268 172 96	.. .. ..	1,431 920 511	37 24 13	1,377 881 496	2,815 1,825 1,020	24,696 15,794 8,902	27,541 18,955 8,586	1,897 .. 1,897	25,644 18,955 6,689
Coimbatore.	4. Kalingarayen do. ..	(1) Total .. (2) Deduct due to old irrigation.. (3) Net due to improvements ..	2,626 2,021 605	.. .. ..	13,946 10,782 3,164	368 283 85	5,062 3,844 1,218	19,376 14,859 4,517	82,089 62,026 20,063	1,01,465 83,301 18,164	15,211 .. 15,211	86,254 83,301 2,953
	5. Palār anikat ..	(1) Total .. (2) Deduct due to old irrigation.. (3) Net due to improvements ..	17,325 14,060 3,265	.. .. ..	92,178 74,806 17,372	2,425 1,908 457	7,326 5,204 2,122	1,01,929 81,978 19,951	45,903 22,103 23,800	1,47,832 1,25,000 22,832	95,678 3,900 91,778	52,154 1,21,100 68,946
	6. Poiney do. ..	(1) Total .. (2) Deduct due to old irrigation.. (3) Net due to improvements ..	2,913 2,148 765	.. .. ..	15,345 11,317 4,028	408 301 107	3,140 2,121 1,019	18,893 13,739 5,154	44,633 28,687 15,946	63,526 43,362 20,164	16,725 .. 16,725	40,801 43,362 3,489
North Arcot.	7. Choyāru do. ..	(1) Total .. (2) Deduct due to old irrigation.. (3) Net due to improvements ..	18,405 11,188 7,217	.. .. ..	98,171 59,677 38,494	2,577 1,567 1,010	2,663 1,814 849	1,03,411 68,068 40,363	49,568 26,769 22,799	53,843 39,114 14,729	1,01,455 .. 1,01,455	47,612 39,114 8,500
	8. Chembrambakam ..	(1) Total .. (2) Deduct due to old irrigation.. (3) Net due to improvements ..	2,898 2,678 320	.. .. ..	15,494 13,780 1,714	406 361 45	833 727 106	16,733 14,868 1,865	— 328 260	16,665 16,000 665	16,333 6,900 9,433	732 9,100 8,368
	9. Madras water-sup- ply and irriga- tion extension.	(1) Total .. (2) Deduct due to old irrigation.. (3) Net due to improvements ..	4,592 3,408 1,184	.. .. ..	18,299 13,582 4,717	643 477 166	828 605 223	19,770 14,664 5,106	11,227 — 13,781	30,997 11,000 19,997	19,220 4,800 14,420	11,777 6,200 5,577
Chingleput.	10. Vallur anikat ..	(1) Total .. (2) Deduct due to old irrigation.. (3) Net due to improvements ..	165 134 31	.. .. ..	883 715 168	23 19 4	271 196 75	1,177 930 247	4,234 2,994 1,240	5,411 3,240 2,171	1,015 .. 1,015	4,396 3,240 1,156
	11. Tirukkōyilār do.	(1) Total .. (2) Deduct due to old irrigation.. (3) Net due to improvements ..	4,666 3,232 1,434	.. .. ..	24,789 17,280 7,509	653 455 198	4,134 2,815 1,318	29,576 20,561 9,025	53,481 35,764 17,717	83,057 55,191 27,866	26,816 .. 26,816	56,241 55,191 1,050

Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Area irrigated.			Irrigation revenue.			Enhanced share of land revenue.	Direct receipts in the Public Works Department.	Total revenue (columns 9 + 10 + 11).	Working expenses.		
			First crop.	Second crop.	Total.	First crop.	Second crop.	Total.				Extensions and improvements.	Main-tenance and repairs.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
South Arcot —cont.	12. Mehamattur anikat	(1) Total .. (2) Deduct due to old irrigation .. (3) Net due to improvements ..	2,614 542 2,072	23 .. 23	2,637 542 2,095	8,813 1,827 6,986	78 .. 78	8,891 1,827 7,064	34 .. 34	5 .. 5	8,930 1,827 7,103	.. .. ..	RS.	RS. 12,433 2,555 9,878
	13. Vridhachalam anikat.	(1) Total .. (2) Deduct due to old irrigation .. (3) Net due to improvements ..	5,880 1,888 3,992	226 .. 226	6,106 1,888 4,218	20,741 6,659 14,082	657 .. 657	21,398 6,659 14,739	807 .. 807	3 .. 3	22,208 6,659 15,549	2,840 878 1,962	RS.	RS. 5,331 1,648 3,683
	14. Shatiatope anikat ..	(1) Total .. (2) Deduct due to old irrigation .. (3) Net due to improvements ..	27,825 7,304 20,521	2,013 6 2,007	29,838 7,310 22,528	89,108 23,391 65,717	6,010 18 5,992	95,118 23,409 71,709	13,886 .. 13,886	195 .. 195	1,09,249 23,409 85,840	1,647 403 1,244	RS.	RS. 14,897 3,649 11,248
	15. Pelandorai do.	(1) Total .. (2) Deduct due to old irrigation .. (3) Net due to improvements ..	8,201 2,070 6,131	88 88 ..	8,289 2,158 6,131	26,191 6,811 19,380	229 229 ..	26,420 6,840 19,580	126 .. 126	109 .. 109	26,655 6,840 19,815	3,571 929 2,642	RS.	RS. 9,746 2,532 7,214
	16. Lower Coleroon anikat.	(1) Total .. (2) Deduct due to old irrigation .. (3) Net due to improvements ..	105,082 43,423 61,659	4,722 .. 4,722	109,804 43,423 66,381	3,36,393 1,39,007 1,97,386	12,782 .. 12,782	3,49,175 1,39,007 2,10,168	53,717 .. 53,717	761 .. 761	4,03,653 1,39,007 2,64,646	2,736 1,082 1,654	RS.	RS. 17,178 6,753 10,385
Tinnevely ..	17. Maradur anikat ..	(1) Total .. (2) Deduct due to old irrigation .. (3) Net due to improvements ..	17,420 16,955 465	16,213 429 15,784	33,633 17,384 16,249	1,17,155 1,14,097 3,128	68,240 1,805 66,435	1,85,395 1,15,832 69,563	226 .. 226	1,038 .. 1,038	1,86,669 1,15,832 70,837	599 309 290	RS.	RS. 7,661 3,960 3,701
	Total ..	(1) Total .. (2) Deduct due to old irrigation .. (3) Net due to improvements ..	315,614 186,759 128,855	63,412 27,689 35,723	379,026 214,448 164,578	11,23,278 6,89,958 4,33,320	1,72,096 60,860 1,11,236	12,95,374 7,50,818 5,44,556	1,00,082 .. 1,00,082	19,790 .. 19,790	14,15,246 7,50,818 6,64,428	1,01,249 63,370 37,879	RS.	RS. 2,22,884 1,40,141 82,443

Statement showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works, &c.—cont.

Statement showing the area irrigated, and the results according to the present method.												
Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Working expenses—cont.					Results according to the present method.				
			Establishment.	Tools and plant.	Total.	Indirect charges.	Collection charges.	Total.	Net revenue column (12-20).	Total revenue.	Working expenses.	Net revenue.
			15	16	17	18	19	20	21	22	23	24
South Arcot —cont.	12. Mehamattur anikat	(1) Total ..	RS. 2,860	RS. ..	RS. 15,293	RS. 400	RS. 446	RS. 16,139	RS. 7,209	RS. 8,930	RS. 16,046	RS. 7,116
		(2) Deduct due to old irrigation ..	588	..	3,143	82	91	3,316	1,489	1,863	..	1,863
		(3) Net due to improvements ..	2,272	..	12,150	318	355	12,823	5,720	7,067	16,046	8,979
	13. Vridhachalam anikat.	(1) Total ..	1,880	..	10,051	263	1,110	11,424	10,784	22,208	11,143	11,065
		(2) Deduct due to old irrigation ..	581	..	3,107	81	333	3,521	3,188	5,627	..	5,627
(3) Net due to improvements ..		1,299	..	6,944	182	777	7,903	7,546	16,581	11,143	5,438	
14. Shatiatope anikat .	(1) Total ..	3,825	..	20,369	535	5,453	26,357	82,802	1,09,249	25,390	83,859	
	(2) Deduct due to old irrigation ..	937	..	4,989	131	1,170	6,290	17,119	19,324	..	19,324	
	(3) Net due to improvements ..	2,888	..	15,380	404	4,283	20,067	65,773	89,925	25,390	64,535	
15. Pelandorai do.	(1) Total ..	3,010	..	16,327	421	1,327	18,075	8,580	26,655	17,925	8,730	
	(2) Deduct due to old irrigation ..	784	..	4,245	109	342	2,144	3,000	3,000	150	2,850	
	(3) Net due to improvements ..	2,226	..	12,082	312	985	13,379	6,436	23,655	17,775	5,880	
16. Lower Coleroon anikat.	(1) Total ..	4,619	..	24,533	647	20,145	45,325	3,58,328	4,03,653	38,883	3,64,770	
	(2) Deduct due to old irrigation ..	1,827	..	9,702	256	6,950	16,908	1,22,099	1,28,826	..	1,28,826	
	(3) Net due to improvements ..	2,792	..	14,831	391	13,195	28,417	2,36,229	2,74,827	38,883	2,35,944	
17. Maradur anikat ..	(1) Total ..	2,997	..	10,267	281	9,281	10,829	1,66,830	1,86,659	14,112	1,72,547	
	(2) Deduct due to old irrigation ..	1,037	..	5,306	145	5,792	11,243	1,04,589	1,14,337	..	1,14,337	
	(3) Net due to improvements ..	970	..	4,961	136	3,489	8,586	62,241	72,322	14,112	58,210	
Tinnevely ..	(1) Total ..	75,838	642	4,00,313	10,616	69,774	4,80,703	9,34,543	14,15,246	4,42,167	9,73,079	
	(2) Deduct due to old irrigation ..	47,810	600	2,51,921	6,691	37,539	2,96,151	4,54,667	7,70,640	15,750	7,54,890	
	(3) Net due to improvements ..	28,028	42	1,48,392	3,925	32,235	1,84,552	4,179,576	6,44,606	4,26,417	2,18,189	

ENCLOSURE No. 2.

STATEMENT showing the area irrigated, the revenue derived and working expenses of Minor Irrigation Works for which Capital and Revenue Accounts are kept, the revenue and expenditure distributed between old and new irrigation in proportion to the areas irrigated during 1894-95 and comparing the results with those arrived at according to the present method.

Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Area irrigated.			Irrigation revenue.			Enhanced share of land revenue.	Direct receipts in the Public Works Department.	Total revenue, columns 9, 10 and 11.	Working expenses.	
			First crop.	Second crop.	Total.	First crop.	Second crop.	Total.				Extensions and improvements.	Maintenance and repairs.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Kurnool	1. Cumbum tank	(1) Total	ACS. 5,619	ACS. 4,765	ACS. 10,414	RS. 28,602	RS. 13,515	RS. 42,117	RS. 569	RS. ..	RS. 42,677	RS. 170	RS. 2,373
		(2) Deduct due to old irrigation	4,803	2,646	7,449	24,319	7,505	31,824	..	..	31,824	122	1,697
		(3) Net due to improvements	846	2,119	2,965	4,283	6,010	10,293	560	..	10,853	48	676
Coimbatore.	2. Thadapalli channel.	(1) Total	14,042	603	14,645	1,01,465	2,352	1,03,817	2,652	80	1,06,519	64	1,499
		(2) Deduct due to old irrigation	9,979	157	10,136	73,107	609	72,716	..	..	72,716	..	1,037
		(3) Net due to improvements	4,063	446	4,509	28,358	1,743	31,101	2,652	80	33,833	20	462
North Arcot.	3. Arakankottai do.	(1) Total	4,975	91	5,066	27,733	383	28,116	549	..	28,465	1	989
		(2) Deduct due to old irrigation	2,692	5	2,697	17,708	21	17,729	..	..	17,729	..	619
		(3) Net due to improvements	1,473	86	1,559	10,025	362	10,387	..	..	10,736	1	370
Chingleput.	4. Kalingarayan do.	(1) Total	11,246	10,276	21,522	69,466	36,037	1,06,103	411	..	1,06,514	304	1,007
		(2) Deduct due to old irrigation	8,209	16,349	24,558	60,691	29,021	79,712	..	..	79,712	231	765
		(3) Net due to improvements	3,037	2,136	5,173	18,775	7,616	26,391	411	..	26,802	73	242
South Arcot.	5. Pular anikat system.	(1) Total	74,947	23,498	98,375	2,04,233	48,410	2,52,643	16,091	1,077	2,69,811	7,327	41,408
		(2) Deduct due to old irrigation	53,184	15,227	68,411	1,44,928	31,464	1,76,387	..	..	1,76,387	5,095	28,805
		(3) Net due to improvements	21,763	8,201	29,964	59,305	16,946	76,255	16,091	1,077	93,419	2,232	12,603
Chingleput.	6. Poiney do.	(1) Total	23,061	4,820	27,881	72,347	12,624	84,971	5,162	689	90,822	2,589	19,540
		(2) Deduct due to old irrigation	16,033	2,325	18,358	50,212	6,094	56,306	..	..	56,306	1,707	12,866
		(3) Net due to improvements	7,028	2,495	9,523	22,135	6,530	28,665	5,162	689	34,516	882	6,674
Chingleput.	7. Cheyaru do.	(1) Total	20,372	12,853	33,225	61,350	17,039	78,389	3,320	129	81,844	2,227	13,327
		(2) Deduct due to old irrigation	16,538	17,278	33,816	46,601	2,307	48,908	..	..	48,908	1,158	6,929
		(3) Net due to improvements	4,834	1,113	5,947	14,749	14,732	29,487	3,320	129	32,936	1,069	6,398
Chingleput.	8. Chembrambakam tank.	(1) Total	11,565	3,885	15,450	28,900	9,158	38,148	882	50	39,080	1,260	3,119
		(2) Deduct due to old irrigation	10,327	1,185	11,512	25,887	2,793	28,680	..	..	28,680	839	2,324
		(3) Net due to improvements	1,238	2,700	3,938	3,013	6,365	9,468	882	50	10,400	321	795
Chingleput.	9. Madras water-supply irrigation extension.	(1) Total	4,961	188	5,149	7,863	441	8,304	955	4	9,263	527	286
		(2) Deduct due to old irrigation	3,920	..	3,920	6,216	..	6,216	..	..	6,216	401	222
		(3) Net due to improvements	1,041	188	1,229	1,647	..	2,088	955	4	3,047	126	64
South Arcot.	10. Vallur anikat system.	(1) Total	22,796	3,536	26,332	83,614	10,255	93,869	3,171	494	97,564	2,516	8,696
		(2) Deduct due to old irrigation	16,023	15	16,038	68,777	43	68,820	..	..	68,820	1,532	5,296
		(3) Net due to improvements	6,773	3,521	10,294	24,837	10,242	35,079	3,171	494	38,744	984	3,400
South Arcot.	11. Tirukkoyilur anikat.	(1) Total	22,796	3,536	26,332	83,614	10,255	93,869	3,171	494	97,564	2,516	8,696
		(2) Deduct due to old irrigation	16,023	15	16,038	68,777	43	68,820	..	..	68,820	1,532	5,296
		(3) Net due to improvements	6,773	3,521	10,294	24,837	10,242	35,079	3,171	494	38,744	984	3,400

Statement showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works, &c.—cont.

Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Working expenses—cont.					Results according to present method.				
			Establishment.	Tools and plant.	Total.	Indirect charges.	Collection charges.	Total.	Net revenue, column (12-20).	Total revenue.	Working expenses.	Net revenue.
			15	16	17	18	19	20	21	22	23	24
Karnool	1. Cumbum tank	(1) Total	RS. 585	..	3,124	82	2,134	RS. 5,344	RS. 37,333	RS. 42,677	RS. 170	RS. 2,373
		(2) Deduct due to old irrigation	418	..	2,237	58	1,591	3,886	27,938	29,975	122	1,697
		(3) Net due to improvements	167	..	891	24	543	1,453	9,395	12,702	48	676
Coimbatore.	2. Thadapalli channel.	(1) Total	394	..	1,829	55	5,323	7,207	90,342	1,06,549	64	1,499
		(2) Deduct due to old irrigation	272	..	1,265	38	3,636	4,939	67,777	76,369	..	1,037
		(3) Net due to improvements	122	..	564	17	1,687	2,268	31,565	30,180	..	462
North Arcot.	3. Arakankottai do.	(1) Total	216	..	1,206	30	1,423	2,059	28,806	28,465	1	989
		(2) Deduct due to old irrigation	135	..	754	19	886	1,053	16,070	19,498	..	619
		(3) Net due to improvements	81	..	452	11	537	1,000	9,736	8,967	..	370
North Arcot.	4. Kalingarayan do.	(1) Total	177	..	1,488	25	5,326	6,839	99,875	1,06,514	2,589	19,540
		(2) Deduct due to old irrigation	134	..	1,130	18	3,886	5,134	74,786	84,786	..	12,866
		(3) Net due to improvements	43	..	358	7	1,340	1,705	25,097	21,728	..	6,674
North Arcot.	5. Pular anikat system.	(1) Total	11,045	..	59,780	3,017	13,437	76,234	1,93,577	2,69,811	7,327	41,408
		(2) Deduct due to old irrigation	7,688	..	41,588	2,098	8,820	52,506	1,23,886	1,25,000	5,095	28,805
		(3) Net due to improvements	3,357	..	18,192	919	4,617	23,728	69,691	1,44,811	2,232	12,603
Chingleput.	6. Poiney do.	(1) Total	5,151	..	27,240	738	4,507	32,525	58,297	90,822	2,589	19,540
		(2) Deduct due to old irrigation	3,392	..	17,965	486	2,815	21,266	35,040	46,539	..	6,929
		(3) Net due to improvements	1,759	..	9,275	252	1,692	11,259	23,257	44,283	..	12,866
Chingleput.	7. Cheyaru do.	(1) Total	3,557	..	19,021	499	4,086	23,606	58,238	81,844	21,388	60,456
		(2) Deduct due to old irrigation	1,855	..	9,942	256	2,445	12,643	36,265	44,349	..	44,349
		(3) Net due to improvements	1,712	..	9,079	243	1,641	10,963	21,973	37,495	..	16,107
Chingleput.	8. Chembrambakam tank.	(1) Total	972	..	5,351	136	1,951	7,438	31,642	39,080	6,638	32,442
		(2) Deduct due to old irrigation	724	..	3,987	101	1,434	5,522	23,158	26,000	..	23,342
		(3) Net due to improvements	248	..	1,364	35	517	1,916	8,484	13,080	..	6,095
Chingleput.	9. Madras water-supply irrigation extension.	(1) Total	2,843	..	9,366	398	1,099	10,863	24,587	35,450	10,313	25,137
		(2) Deduct due to old irrigation	1,794	..	5,910	251	704	6,865	11,000	11,000	4,800	6,200
		(3) Net due to improvements	1,049	..	3,456	147	395	3,998	17,366	24,450	5,513	18,937
South Arcot.	10. Vallur anikat system.	(1) Total	187	..	1,000	26	463	1,489	7,774	9,263	1,225	8,038
		(2) Deduct due to old irrigation	142	..	765	19	311	1,095	5,121	5,382	..	5,382
		(3) Net due to improvements	45	..	235	7	152	394	2,653	3,981	..	2,756
South Arcot.	11. Tirukkoyilur anikat.	(1) Total	2,628	..	13,840	368	4,853	19,061	78,503	97,564	16,134	81,430
		(2) Deduct due to old irrigation	1,601	..	8,429	224	2,941	11,594	47,326	58,551	..	58,551
		(3) Net due to improvements	1,027	..	5,411	144	1,912	7,467	31,177	39,013	..	22,879

Statement showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works, &c.—cont.

Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Area irrigated.			Irrigation revenue.			Enhanced share of land revenue.	Direct receipts in Works Department.	Total revenue, columns 9, 10 and 11.	Working expenses.		
			First crop.	Second crop.	Total.	First crop.	Second crop.	Total.				Extensions and improvements.	Maintenance and repairs.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
South Arcot— cont.	12. Mehamattur anikat.	(1) Total (2) Deduct due to old irrigation (3) Net due to improvements	ACS. 2,852 447 2,405	ACS. 55 .. 55	ACS. 2,907 447 2,460	RS. 12,148 1,904 10,244	RS. 194 .. 194	RS. 12,342 1,904 10,438	RS. 36 .. 36	RS. 20 .. 20	RS. 12,368 1,904 10,464	RS. 186 29 157	RS. 2,354 361 1,993	
	13. Vriddhachalam anikat.	(1) Total (2) Deduct due to old irrigation (3) Net due to improvements	6,363 2,395 3,968	247 .. 247	6,610 2,395 4,215	24,311 8,993 15,318	777 .. 777	25,088 8,993 16,095	276 .. 276	55 .. 55	25,419 8,993 16,426	440 159 281	2,978 1,079 1,899	
	14. Shatitope anikat.	(1) Total (2) Deduct due to old irrigation (3) Net due to improvements	28,698 7,260 21,438	3,518 .. 3,518	32,216 7,260 24,956	95,976 17,341 78,635	10,323 .. 10,323	1,06,299 17,341 88,958	15,141 .. 15,141	315 .. 315	1,21,755 17,341 1,04,414	894 202 692	6,209 1,403 4,806	
	15. Pelandorai anikat.	(1) Total (2) Deduct due to old irrigation (3) Net due to improvements	8,760 2,062 6,698	188 83 105	8,948 2,145 6,803	31,308 7,369 23,939	632 235 397	31,940 7,604 24,336	183 .. 183	273 .. 273	32,213 7,604 24,609	422 101 321	6,721 1,611 5,110	
Tinnevely.	16. Lower Coleroon anikat.	(1) Total (2) Deduct due to old irrigation (3) Net due to improvements	107,017 44,337 62,680	4,649 .. 4,649	111,666 44,337 67,329	3,70,930 1,55,673 2,15,257	14,859 .. 14,859	3,85,789 1,55,673 2,30,116	53,933 .. 53,933	1,619 .. 1,619	4,41,341 1,55,673 2,85,668	3,934 1,562 2,372	18,739 7,440 11,299	
	17. Maradur anikat ..	(1) Total (2) Deduct due to old irrigation (3) Net due to improvements	17,415 16,875 540	16,185 447 15,738	33,600 17,322 16,278	1,17,504 1,13,458 4,046	68,149 1,882 66,267	1,85,653 1,15,340 70,313	243 .. 243	192 .. 192	1,86,088 1,15,340 70,748	496 256 240	10,005 5,158 4,847	
	Total ..	(1) Total (2) Deduct due to old irrigation (3) Net due to improvements	371,147 219,564 151,583	91,917 32,740 59,177	463,064 252,304 210,760	13,54,836 8,12,941 5,41,895	2,50,216 88,303 1,61,913	16,05,052 8,96,244 7,08,808	1,03,825 .. 1,03,825	18,469 .. 18,469	17,27,366 8,96,244 8,31,122	23,538 13,645 9,893	1,45,364 81,533 63,831	

Statement showing the area irrigated, the revenue derived and the working expenses of Minor Irrigation Works, &c.—cont.

Districts.	Minor irrigation works for which Capital and Revenue Accounts are kept.	Particulars.	Working expenses—cont.					Results according to present method.				
			Establishment.	Tools and plant.	Total.	Indirect charges.	Collection charges.	Total.	Net revenue column (12—20).	Total revenue.	Working expenses.	Net revenue.
			15	16	17	18	19	20	21	22	23	24
			RS.		RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
South Arcot —cont.	12. Mehamuttur anikat.	(1) Total	540	..	3,080	76	619	3,775	8,623	12,398	3,671	8,727
		(2) Deduct due to old irrigation	83	..	473	11	95	579	1,325	2,084	..	2,084
		(3) Net due to improvements	457	..	2,607	65	524	3,196	7,308	10,314	..	6,643
	13. Vriddhachalam anikat.	(1) Total	792	..	4,210	111	1,268	5,589	19,830	25,419	5,166	20,253
		(2) Deduct due to old irrigation	287	..	1,525	40	449	2,014	6,979	8,463	..	8,463
		(3) Net due to improvements	505	..	2,685	71	819	3,575	12,851	16,956	..	11,790
	14. Shatistope anikat.	(1) Total	1,612	..	8,715	226	6,072	15,013	1,06,742	1,21,755	14,012	1,07,743
		(2) Deduct due to old irrigation	364	..	1,969	51	867	2,887	14,454	20,027	..	20,027
		(3) Net due to improvements	1,248	..	6,746	175	5,205	12,126	92,288	1,01,728	..	87,716
	15. Pelandorai anikat.	(1) Total	1,670	..	8,813	234	1,601	10,648	21,648	32,296	10,498	21,798
		(2) Deduct due to old irrigation	400	..	2,112	56	380	2,548	5,056	3,000	150	2,850
		(3) Net due to improvements	1,270	..	6,701	178	1,221	8,100	16,592	29,296	10,348	18,948
16. Lower Coleroon anikat.	(1) Total	5,061	..	27,734	709	21,986	50,429	3,90,912	4,41,341	43,164	3,98,177	
	(2) Deduct due to old irrigation	2,009	..	11,011	281	7,684	18,976	1,34,697	1,45,302	..	1,45,302	
	(3) Net due to improvements	3,052	..	16,723	428	14,302	31,453	2,56,215	2,96,039	43,164	2,52,875	
Tinnevely.	17. Maradur anikat ..	(1) Total	2,434	..	12,935	341	9,295	22,571	1,63,517	1,86,088	16,858	1,69,230
		(2) Deduct due to old irrigation	1,255	..	6,669	176	5,767	12,612	1,02,728	1,14,264	..	1,14,264
		(3) Net due to improvements	1,179	..	6,266	165	3,528	9,959	60,789	71,824	16,858	54,966
Total ..	Total ..	(1) Total	39,874	..	2,08,776	7,071	85,443	3,01,290	14,26,046	17,27,336	2,60,766	14,66,570
		(2) Deduct due to old irrigation	22,553	..	1,17,781	4,183	44,811	1,66,725	7,29,519	8,10,489	..	7,94,739
		(3) Net due to improvements	17,321	..	91,045	2,888	40,632	1,34,565	6,96,527	9,16,847	2,45,016	6,71,831

RESOLUTION—No. 306, dated 18th August 1898.

In the first paper read above, the Chief Engineer for Irrigation proposes certain new methods for determining the shares of Irrigation revenue to be credited to "Old works" and the shares of maintenance charges to be debited thereto in the case of Minor Irrigation works for which Capital and Revenue Accounts are kept.

2. The proposal is made in view of a remark by the Government of India in its letter, No. 41-A.I., dated 20th February 1893, printed in G.O., No. 248 I., dated 22nd March 1893, to the effect that an attempt should be made to reduce the working expenses of irrigation works as far as possible. The Chief Engineer states that every endeavour is being made to reduce expenditure on these works; that it appears to him that, as regards minor works, the prevailing high percentage of expenditure on revenue is largely due to the method of keeping accounts and that this method, by which he refers indiscriminately to two distinct methods which will be described below, should be replaced by another method which he suggests.

3. In the case of all irrigation works, whether belonging to class I or class II, which have been improved by Government and for which Capital and Revenue Accounts are kept, the distribution of Irrigation revenue between old works and improvements used to be effected according to an elaborate method devised in 1879—83 by Mr. Wilson, the then Director of Revenue Settlement, who was placed on special duty in connection with Irrigation Accounts. That method is briefly described in paragraph 2 of B.P., No. 73, dated 14th March 1890. As will be seen from the papers quoted in that Board's Proceedings and in paragraph 5 of B.P., No. 516, dated 6th December 1894, the Government of India and the Secretary of State were, from the very beginning, for the adoption of some simple method of making the distribution, but this Government elected to adopt the method suggested by Mr. Wilson.

4. As regards the maintenance charges also the method of distribution adopted by this Government was somewhat elaborate; but on a suggestion made by the Government of India in its letter, No. 68-A.I., dated 17th May 1883, the system of taking certain fixed amounts to represent the old maintenance charges was adopted. A similar method of taking the old irrigation revenue at certain fixed amounts was recommended by the Government of India in its letter quoted above; but this Government preferred to continue Mr. Wilson's method.

5. Matters were in this state until 1889, when the Government of India again returned to the subject and, in its letter, No. 184 I., dated 14th September 1889, it pointed out that the old irrigation revenue, calculated according to Mr. Wilson's method, showed little fluctuation from year to year and suggested the adoption of certain fixed amounts to represent such revenue.

This method was accordingly adopted in 1890 in respect of all works then shown under classes I and II. In the case of works since added to classes I and II, Mr. Wilson's method continues to be followed pending the collection of sufficient data for fixing the old irrigation revenue in their case.

6. Though the method of fixing once for all the credit due to old irrigation is open, in any year of drought, to the objections urged by the Chief Engineer, the Board is nevertheless convinced of the desirability of accepting some approximate figure, based on averages, in preference to Mr. Wilson's elaborate and laborious system, which necessitates the annual compilation of particulars for every irrigated field under a score of different heads, showing the group of the village, the class and sort of soil, extent, assessment divided between land and water, single crop, double crop, usual wet, dry converted into wet, dry crops watered, waste brought in, zemin and inam charged for and free, deductions and remissions, fixed and temporary, and so on.

7. The subject is one of great complexity and the Board has not yet found time to deal with it; but it would, in the first place, demur to the assumption which underlies the Chief Engineer's proposals, viz., that there will be a continuance of the present method, under which the old and new irrigation revenue is annually ascertained by a compilation of particulars field by field. When the Chief Engineer asserts that to ascertain the old irrigation revenue annually will not complicate the accounts or

cause inconvenience, he contemplates the continuance of a system which the Board earnestly hopes to see abolished, as involving an intolerable amount of tabulation of figures which cannot be verified and on the correctness of which it is after all unsafe to rely. That (as pointed out by the Chief Engineer) the system of fixing the old irrigation revenue may, in any particular year, lead to absurd results cannot be denied; but in answer to the Chief Engineer's suggested improvement it may suffice to point out that his method would be yet more faulty, and would have quite the opposite effect to what he supposes and desires. For instance, in the case of the Pálár anikat system, which has been taken by the Chief Engineer to exemplify his method, the marginally-noted figures compare for the six years ending with 1896—97 the amounts which should be credited to new irrigation in accordance with each of the three methods mentioned

Fasli.	Mr. Wilson's method.	Fixed credit.	Chief Engineer's method.
	RS.	RS.	RS.
1301 (1891-92) ..	1,843	6,139	27,058
1302 (1892-93) ..	1,16,293	1,23,056	56,819
1303 (1893-94) ..	1,21,662	1,33,632	82,366
1304 (1894-95) ..	1,13,987	1,27,643	76,256
1305 (1895-96) ..	1,29,052	1,41,301	89,377
1306 (1896-97) ..	94,796	1,12,904	73,362
Total ..	5,77,633	6,44,675	4,05,238

above. It will be seen that while it is true, as pointed out by the Chief Engineer, that for the year 1891-92, his method gives larger credit to new irrigation by about Rupees 21,000 than the old method, it gives for the next five years smaller credit, aggregating more than Rs. 2,60,000.

8. That this is not an isolated result will be seen from statement No. I appended to these Proceedings, in which the results of the application of the two methods to all the works included in class II are shown for each of the six years ending with fasli 1306. The statement shows that while the gain to new irrigation according to Chief Engineer's method for fasli 1301 will be less than Rs. 19,000, the loss during the next five faslis will be about Rs. 5.34 lakhs. The reason for this remarkable result is not far to seek. The new method proposes to distribute the revenue in the proportion of the areas shown under the old and new irrigation; but under each irrigation system there are large areas, mostly included under old irrigation, which are either irrigated free of charge (*māmūl* wet areas in zamindari and inam villages), or for which irrigation revenue gets credit only at certain reduced rates (wet inams paying quit-rent), and to credit all these areas with their proportion of the total revenue is obviously to give undue credit to "old irrigation."

The results will be more striking if the Chief Engineer's method and the present method are applied to systems like the Gódávári and Kistna anikats. The results for these two systems for the year 1891-92 (fasli 1301) are shown in statement No. II appended. It will be seen from the statement that even for that unfavourable year the Chief Engineer's method will result in credit being given to old irrigation to a much larger amount than under the present system of fixed credits, the excess amounting to Rs. 3.62 lakhs in the case of the former anikat and to Rs. 2.05 lakhs in the case of the latter. In ordinary years the excess will be still larger, as will be seen from statement No. III appended.

9. It is not clear why the Chief Engineer has limited his proposal to class II works, when the remark of the Government of India referred to by him seems to apply more to major than to minor works.

10. It may be further remarked that in a year of drought the Chief Engineer's plan would no more represent the truth than the method of fixed credits. He proposes that the credit to old and new irrigation should be apportioned in proportion to the actual irrigation of the old area and the new area as ascertained by annual field-war tabulation. But it is obviously probable that in a year of drought the effective irrigation of the old area may be in great measure due to the outlay on improvements, and this the Chief Engineer's method of distribution would in no way disclose.

11. Turning next to the question of "working expenses," the Chief Engineer's proposal is to distribute them in direct proportion to the areas of old and new irrigation instead of taking, as at present, the average of the charges actually incurred prior

to improvements as the old maintenance charges, and debiting the balance of the expenditure of the year to the area under new irrigation.

The same circumstances that forbid a distribution of revenue in proportion to area are equally fatal to the proposal to distribute working charges according to area.

The zamindari and inam "mamul wet" now irrigated by one or other of the systems, and contributing nothing to the irrigation revenue, formerly cost Government nothing for the maintenance of its irrigation. The zamindari and inam tanks, which were the old sources of supply were maintained by the proprietors, and obviously no portion of the working expenses of the system can be properly debited to the ayakats of these superseded tanks.

It has been shown that the proposed distribution of revenue according to area will not work, and if the one proposal be disapproved, the other, viz., the proposed distribution of charges according to area, must fall with it.

10. No doubt in the case of several of the second-class works the fixed debit for working expenses seems (as urged by the Chief Engineer) absurdly low; but the amounts were the average of actuals ascertained by the Public Works Department itself. The fact is that where natural facilities for irrigation existed a certain amount of irrigation revenue could be got with little or no outlay on maintenance. The ryots were left to do most of the work. But when the works are improved up to as high a standard as engineering science can attain, and are placed under special professional supervision, the cost of maintenance becomes great. This is, to some extent, illustrated by the marginal statement in which the proportion of maintenance charges to revenue in the case of minor irrigation works in charge of the Revenue Department is compared with that of the same class of works in charge of the Public Works Department.

Faslis.	Percentage of maintenance charges on revenue.	
	Public Works Department.	Revenue Department.
1300 (1890-91)	55.6	13.9
1301 (1891-92)	42.5	18.6
1302 (1892-93)	41.7	11.6
1303 (1893-94)	34.6	7.7
1304 (1894-95)	36.5	10.7
1305 (1895-96)	31.0	9.2
1306 (1896-97)	40.6	1.8

11. For the above reasons the Board is unable to accept the Chief Engineer's proposal in regard to the distribution of "maintenance charges," and must advocate strongly the retention of the system of fixed credits and debits.

12. In the statements appended to the Chief Engineer's letter, the amount of "net revenue" due to improvements (that is, gross revenue *minus* working expenses), arrived at according to his proposals, is compared with the amount "according to present method," in the case of 17 systems under class II works (columns 21 and 24 of the statements). The former is in many cases much in excess of the latter; but the main reason for the difference appears to be that in respect of 13 Systems which were added to class II after 1890, the working expenses debitable to "old irrigation" are shown as *nil*. The Board is not aware of any order directing that the entire working expenses of these systems should be debited to improvements. Possibly the portion to be debited to "old works" has not yet been fixed. If so, the comparison instituted in the case of these works is misleading.

(True Copy and Extract.)

(Signed) C. BENSON,
for Secretary.

To the Secretary to Government, Revenue Department.

APPENDIX I.

APPENDIX I.
COMPARATIVE statement showing the results of the application of the Chief Engineer's method to irrigation revenue derived from class II works, for faslis 1301 to 1306.

18 BOARD OF REVENUE (REV. SETT., L. RDS. AND AGRI.), No. 306, 18TH AUG. 1898.

	Fasli 1301.			Fasli 1302.			Fasli 1303.			Fasli 1304.		
	Under present method.	Difference.	Under proposed method.	Under present method.	Difference.	Under proposed method.	Under present method.	Difference.	Under proposed method.	Under present method.	Difference.	Under proposed method.
1	2	3	4	5	6	7	8	9	10	11	12	13
Pálar anikat	6,139	27,058	20,919	1,23,056	56,819	66,237	1,33,632	52,366	51,266	1,27,643	76,256	51,387
Chembambakam tank	1,95,000	1,04,081	20,919	1,23,056	1,91,237	66,237	1,23,000	1,76,266	51,266	1,25,000	1,76,256	51,387
Madras water-supply and irrigation extension project	16,000	1,460	1,460	16,000	8,251	24,955	38,784	18,326	21,458	22,148	9,468	12,680
Pelandorai anikat	11,000	4,002	1,110	11,000	8,219	2,681	16,000	37,458	21,458	16,000	28,680	12,680
Cumbum tank	23,470	19,560	3,840	23,470	21,958	2,681	11,000	13,890	2,890	11,000	14,086	3,086
Tadepalli channel	3,000	6,840	3,840	3,000	4,870	1,870	25,751	7,238	4,238	28,840	24,236	4,604
Arankóttai channel	27,251	1,197	6,059	26,914	9,230	1,832	10,298	8,906	1,792	12,142	10,293	1,849
Kalingaroyen channel	56,165	20,551	3,386	27,708	31,962	4,194	26,780	30,410	3,630	27,448	31,101	3,653
Valluru anika	75,249	71,663	3,586	75,432	71,268	4,164	75,394	71,764	3,630	76,369	72,716	3,653
Choyaru do.	8,303	9,639	1,336	8,419	9,702	1,283	8,095	9,514	1,419	8,618	10,387	1,769
Poinoy do.	18,955	17,619	1,336	18,952	17,669	1,283	18,921	17,502	1,419	19,498	17,729	1,769
Lower Coleroon do.	17,555	23,571	6,416	20,336	25,000	4,664	20,400	25,007	4,577	21,317	26,391	5,074
Shatyatope do.	83,301	76,885	6,416	83,301	78,637	4,664	83,328	78,751	4,577	84,786	79,712	5,074
Vridhdachalam do.	1,694	1,010	684	2,289	1,403	886	1,582	1,202	380	3,022	2,088	934
Mehmattur do.	3,240	3,924	684	4,591	5,407	886	3,362	3,732	380	6,232	6,216	16
Tirukkóyilur do.	11,041	13,866	2,825	41,082	32,881	8,211	42,162	33,625	8,537	34,046	29,487	4,559
Marudur do.	39,114	36,289	2,825	39,289	47,470	8,211	43,343	48,738	5,395	44,349	48,908	4,559
Ganjám minor rivers system	14,649	15,485	836	42,865	23,955	18,910	43,343	31,343	12,000	38,432	28,665	9,767
Total	43,362	42,426	936	43,400	62,400	18,910	45,862	57,862	12,000	46,539	56,306	9,767
	2,20,349	2,10,168	10,181	2,22,487	2,11,491	10,996	2,40,421	2,28,396	12,025	2,40,487	2,32,116	8,371
	1,28,623	1,39,007	10,384	1,32,896	1,43,892	10,996	1,37,777	1,49,802	12,025	1,45,302	1,53,673	8,371
	75,794	71,709	4,085	79,100	74,655	4,445	82,738	78,380	4,358	86,272	83,958	2,314
	15,771	14,739	1,032	22,566	27,011	4,445	19,631	23,979	4,348	30,027	17,341	12,686
	5,627	6,659	1,032	10,232	8,509	1,723	15,406	14,750	650	16,095	16,095	0
	7,028	7,064	36	6,826	7,099	273	8,485	9,135	650	8,483	8,993	510
	1,863	1,827	36	1,751	1,234	517	2,044	1,858	186	2,084	1,904	180
	24,734	23,610	1,124	28,843	25,096	3,747	36,925	36,928	3	35,348	35,079	269
	55,161	56,315	1,154	54,674	58,421	3,747	61,999	61,996	3	58,551	58,820	269
	71,058	69,563	1,495	62,279	57,942	4,337	71,857	70,708	1,149	71,389	70,813	576
	1,14,337	1,16,632	2,295	90,037	94,374	4,337	1,15,032	1,16,181	1,149	1,14,284	1,15,340	1,056
	23,891	22,182	1,709	20,303	17,373	2,930	1,15,032	1,16,181	1,149	1,14,284	1,15,340	1,056
	90,161	90,161	0	86,324	91,554	5,230	89,310	91,212	1,902	90,003	96,489	6,486
Total	5,48,635	5,66,738	18,113	7,72,244	6,29,155	1,43,089	8,38,441	7,25,631	1,12,810	8,16,587	7,29,416	87,171

Note.—1. Figures in columns 3 and 12 are those given in columns 9 of the Chief Engineer's statements.
2. Figures in columns 2 and 11 = column 22—(columns 3 + 11) of Chief Engineer's statements.
3. Revenue due to new irrigation is printed in roman figures.
4. Do. do. antique figures.

• The figures relating to Ganjam minor rivers system are not included in the Chief Engineer's statements.

BOARD OF REVENUE (REV. SETT., L. RDS. AND AGRI.), No. 306, 18TH AUG. 1898. 19

APPENDIX I—cont.
Comparative statement showing the results of the application of the Chief Engineer's method to Irrigation Revenue derived from class II works, for faslis 1301 to 1306—cont.

	Fasli 1305.			Fasli 1306.			Total.		
	Under present method.	Difference.	Under proposed method.	Under present method.	Difference.	Under proposed method.	Under present method.	Difference.	Under proposed method.
	14	15	16	17	18	19	20	21	22
Pálar anikat	1,41,301	89,377	51,924	1,12,904	73,362	39,542	6,44,675	4,05,238	2,39,437
Chembambakam tank	1,25,000	1,76,924	51,924	1,25,000	1,64,542	39,542	7,60,000	9,89,437	2,29,437
Madras water-supply and irrigation extension project	16,000	5,933	14,065	16,000	38,381	22,381	1,45,255	61,206	84,049
Pelandorai anikat	11,000	6,532	4,035	11,000	13,979	2,979	52,360	1,90,049	1,37,689
Cumbum tank	3,000	7,289	4,289	3,000	13,979	2,979	66,000	81,731	15,731
Tadepalli channel	30,001	31,992	1,991	30,046	28,379	1,667	1,02,792	1,39,151	36,359
Arankóttai channel	26,795	31,434	4,639	27,461	32,498	5,037	1,62,417	42,489	20,928
Kalingaroyen do.	76,063	71,424	4,639	76,710	71,673	5,037	1,62,417	42,489	20,928
Valluru anikat	8,446	9,720	1,274	8,388	9,813	1,425	50,269	58,775	8,506
Choyaru do.	40,338	17,669	22,669	19,021	17,596	1,425	1,14,290	1,05,784	8,506
Poinoy do.	40,514	23,515	16,999	20,071	25,730	5,659	1,19,910	1,51,797	31,887
Lower Coleroon do.	23,470	25,638	2,168	24,932	29,273	4,341	5,04,611	4,72,724	31,887
Shatyatope do.	1,49,424	79,466	5,497	84,932	79,273	5,659	14,943	10,030	4,913
Vridhdachalam do.	3,165	2,202	963	3,161	2,125	1,036	26,746	31,659	4,913
Mehmattur do.	46,311	38,324	7,987	46,664	39,038	7,626	2,21,316	1,87,221	34,095
Tirukkóyilur do.	12,719	12,831	112	13,045	13,177	132	2,61,639	2,65,734	4,095
Marudur do.	2,069	1,977	92	2,096	1,964	132	1,49,286	1,49,286	0
Ganjám minor rivers system	59,914	60,021	107	59,696	59,279	417	3,60,025	3,64,852	4,827
	68,651	67,683	968	71,290	70,343	947	4,16,454	4,06,552	9,902
	1,10,412	1,11,380	968	1,14,892	1,15,769	877	6,58,974	6,68,876	9,902
	26,158	23,844	2,314	24,204	22,925	1,279	1,47,737	1,36,292	11,445
	95,249	97,543	2,294	83,832	86,101	2,269	5,40,855	5,52,360	11,505
Total	8,40,580	7,39,594	1,00,986	8,16,552	7,25,631	89,698	46,38,029	41,17,338	5,20,691

Note 1.—Revenue due to new irrigation is printed in roman figures.
2. Do. do. antique figures.

BOARD OF REVENUE (REV. SETT., L. RDS. AND AGRI.), No. 306, 18TH AUG. 1898. 21

APPENDIX III.

COMPARATIVE statement showing the results of the application of the Chief Engineer's method to Irrigation Revenue derived from Gódlavari and Kistna Anikats, for faslis 1301 to 1306.

[illegible]

Note.—Revenue due to new irrigation is printed in roman figures.
Do. old do. in antique figures.