(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Reference _____

MADRAS RECORD OFFICE.

Government of Madras.

Public (Misc.) DEPARTMENT.

G.O. No. 880-82 Press Mist.

12-12-24

Dated 9-4- 1874.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 3rd April 1872.

Read the following papers:—

No. 12. Proceedings of the Board of Revenue, dated 23rd March 1872.

Read G. O., dated 20th March 1872, No. 793, Public Works Department.

In this order the Government request the Board to lose no time in submitting their views upon the revised project for the improvement of the Chembrambaukum tank.

2. The proposed revision of the assessment of the villages which are affected by this project is submitted in Mr. Banbury's letter under date 15th February 1872, No. 287, recorded in the Board's Proceedings dated 8th March 1872, No. 431. Mr. Banbury has limited the area to which his proposals apply with reference to the supply of water which, under Major Mullins' estimate, is likely to be obtained by the Chembrambaukum tank when the project is completed, and to an estimated requirement of 6,500 cubic yards of water per acre instead of 6,750, and has consequently only included in his calculations two villages, besides the fifty-eight which have hitherto been held to be dependent upon this tank for their irrigation. He has informed the Board however that, after a personal inspection of the locality, he is satisfied that should any further quantity of water be found to be available, there will be no difficulty in bringing the lands of other villages under the influence of the work.

3. The principles which have guided Mr. Banbury in the revision of the assessment of these lands are precisely similar to those which he has adopted in dealing with the Red Hill tank lands, and which have already received the Board's approval in their Proceedings, dated 17th December 1870, No. 7,175. There are however four descriptions of soil which have been assessed somewhat more highly owing to their superior character, as is explained in paragraph 9 of Mr. Banbury's letter.

4. The revised assessment of the "wet" land, as compared with the settlement of the revenue year 1870-71, an unusually favourable one, will result in an increase of Rupees 7,851, which is almost entirely owing to the increase in area discovered by survey. The improved character of the irrigation which will in future be provided under the new project has, however, enabled Mr. Banbury to transfer nine second-class villages to the first group, and two villages which, under other circumstances, would have been placed in a third class, to the second group. The Board are of opinion that Mr. Banbury's proposals for the assessment of this tract may be accepted for present purposes, and think that he has shown good grounds for reducing Major Mullins' estimate of the requirements of an acre of cultivation from 6,750 cubic yards of water to 6,500.

5. It will be observed that the only portion of this increased revenue which is to be fairly ascribed to the improvement of the Chembrambaukum tank works is the sum obtained by raising the class or group of certain villages, and this Mr. Banbury points out will amount to Rupees 1,979 only.

6. In the tract under consideration there were during the year of comparison (1870-71) but 164 acres of irrigable land left waste, 185 acres of dry land

which could, under the new project, be converted into wet, and 507 acres of single crop land on which a second crop will in future be obtained. The revenue to be derived hereafter from these lands at the revised rates of assessment will amount to the sums noted in the margin; in all Rupees 2,965.

	Acres.	Assessment.
Wet waste	164	750
Dry converted to wet	185	585*
Second crop	507	1,630
		2,965

* Additional assessment.

7. It thus appears that a sum of Rupees 4,944 being composed of the two amounts referred to in the two preceding paragraphs is the total of the excess revenue beyond the settlement of 1870-71, which is to be expected when the irrigation project is completed. The very unusually favourable nature of the season in 1870-71 has of course had the effect of reducing the additional areas referred to in paragraph 6 above to the very lowest possible limits, and has consequently proportionably reduced the second asset referred to in the same paragraph which is to be placed to the credit of the project.

8. It is clear however that if the execution of this project will ensure in all future years an average area of cultivation equal to that of the year 1870-71, the difference between the revenue obtained in that year and the average revenue may fairly and properly be considered as a third asset to be credited to the project. It is to be noted that the estimated supply of water which the tank will hereafter receive is taken by Major Mullins to be an average supply only, and we find that this average supply is more than sufficient to meet the requirements for the area under cultivation in the very favourable year under notice, so that when the project is completed that year's area of occupation will become an average one and cease to be exceptional.

9. Mr. Banbury shows that the average occupation of wet land in the tract under consideration during the past fifteen years has, according to the new survey, been 979 acres below the cultivation of 1870-71, which he expects to be the normal cultivation in future years, and he accordingly credits the project with Rupees 5,333, being the assessment of this number of acres at the average settlement rate. He further proposes to credit the project with a sum of Rupees 12,785 as "gain by cessation of remissions." He arrives at this sum as the average remissions of the past fifteen years, treating exceptionally the years 1868-69 and 1869-70 in which the remissions were unusually high.

10. It would appear at first sight that *both* these items could not be admissible, inasmuch as the allowance for cessation of remissions would apparently include the allowance for increased area, but on examination it will be found that this is not the case, and that both items may be reasonably allowed in making out the probable returns to be obtained from the outlay incurred. If the figures given in paragraph 12 of Mr. Banbury's letter had represented the actual *cultivation* of each year, and if lands left waste and for which remission of assessment had been granted had been excluded, then the allowance taken as representing excess area would have in a great measure included the allowance for the cessation of remissions; but it is to be observed that these figures are the occupied area, or the land *taken up* for the year and included in the puttahs, and on which the revenue demand of the year is fixed. If therefore the project will result in the average quantity

of lands taken up being largely increased, it is equivalent to a permanent increase in the average revenue demand, and is therefore quite separate from the sum gained by ceasing to remit any portion of the existing average demand of previous years.

11. The gain by remission has, the Board think, been fairly estimated by Mr. Banbury; but, as remarked by him, it would not be safe to reckon upon a permanent cessation of remission, and they would, therefore, fix this asset of the project at Rupees 10,000.

12. The total of the sums with which the project may then in the Board's opinion be credited will amount to Rs. 20,277 as noted in the margin, or, deducting the additional cost of up-keep, to Rupees 14,657. This amount on the outlay of Rupees 4,14,000 would only give a return of a little over $3\frac{1}{2}$ per cent.

	Rs.
Raising the class of certain villages ...	1,979
Increase of cultivation and irrigation ..	2,965
Additional average area of cultivation.	5,333
Gain by cessation of remissions ...	10,000
	20,277
Deduct additional cost of up-keep ...	5,620
	14,657

13. If, however, only the true cost of the reduced project, namely, Rupees 3,02,859, be taken into account, and the Board think that Colonel Wilkieson, in paragraph 6 of his memorandum recorded in the G. O. under disposal, has shown good grounds for adopting this course, the rate of return will be increased to nearly 5 per cent. Further showed the estimates of the capacity of the tank when completed, and of the average supply of water which it will obtain which are contained in Colonel Wilkieson's memorandum, prove to be more correct than the similar estimates put forward in Major Mullins' memorandum, recorded in the G. O. under date, 9th March 1871, No. 705; the return on the outlay will be still further raised. In answer to a telegram on this subject, Mr. Banbury, who is now at Cuddapah, states that on Colonel Wilkieson's data he estimates roughly that Rupees 6,000 may be added to the annual gain of revenue, but it must be remembered that the cost of the project will be increased because new channels will have to be made.

14. On full consideration of the revised project in all its bearings, the Board think that the Government of India should at any rate be requested to allow the additional expenditure required for the completion of the reduced project (Rupees 1,43,608) to be incurred from Loan Funds.

No. 12-A. Proceedings of the Board of Revenue, dated 8th March 1872, No. 431.

From G. BANBURY, Esq., Acting Director of Revenue Settlement, to the Secretary to the Board of Revenue, dated Poonamallee, 15th February 1872, No. 287-7.

In reply to Board's Proceedings dated 8th ultimo, No. 61, I have the honour to submit the following report as to the probable financial results of the outlay upon the improvements to the Chembrambaukum tank. These results both as regards lands hitherto irrigated, and those hereafter to be irrigated from the above reservoir, are based upon the new survey areas and upon the new settlement rates.

2. It is not necessary that I should again detail the various steps and the several data taken to arrive at the rates of assessment as in the case of the Red Hill and Cholaveram projects. Those rates were generally accepted and will suit our present purposes, although, as will be presently shown, some enhancement is

Series.	Class.	Sort.	WET. 1st Group. Occupied. Extent.	Occupied. Per-centage.	Unoccupied. Extent.	Unoccupied. Per-centage.	Dry to be converted into wet. Extent.	Dry to be converted into wet. Per-centage.	Total. Extent.	Total. Per-centage.	2nd Group. Occupied. Extent.	Occupied. Per-centage.	Unoccupied. Extent.	Unoccupied. Per-centage.	Dry to be converted into wet. Extent.	Dry to be converted into wet. Per-centage.	Total. Extent.	Total. Per-centage.	TOTAL. Occupied. Extent.	Occupied. Per-centage.	Unoccupied. Extent.	Unoccupied. Per-centage.	Dry to be converted into wet. Extent.	Dry to be converted into wet. Per-centage.	Total. Extent.	Total. Per-centage.	Inam. Extent.	Inam. Per-centage.
Regula	III.	1	Acs. 1,958	...	Acs. 8	...	Acs. 60	...	Acs. 1,126	...	Acs. 71	...	Acs. 5	...	Acs. 10	...	Acs. 86	...	Acs. 1,129	...	Acs. 13	...	Acs. 70	...	Acs. 1,212	...	Acs. 90	...
		2	628	...	1	...	...	...	629	...	68	...	4	...	...	...	102	...	726	...	5	...	...	...	731	...	70	...
		3	199	...	3	...	...	...	202	...	113	...	5	...	...	...	118	...	317	...	7	...	...	...	320	...	18	...
		4	445	...	21	...	...	...	466	...	...	...	...	...	...	...	...	...	445	...	21	...	...	...	466	...	27	...
		5	32	...	...	...	...	...	32	...	84	...	20	...	...	...	104	...	116	...	20	...	...	...	136	...	...	...
			2,302	25	33	26	60	49	2,475	29	336	44	34	80	10	16	380	41	2,728	26	45	41	70	38	2,805	29	205	13
	IV.	1	660	...	9	...	...	...	669	...	30	...	...	...	...	...	30	...	690	...	9	...	...	...	705	...	217	...
		2	80	...	...	...	...	...	80	...	24	...	...	...	...	...	24	...	104	...	...	...	...	...	104	...	27	...
		3	66	...	...	...	...	...	66	...	...	...	...	...	...	...	...	...	66	...	...	...	...	...	66	...	18	...
		4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			806	8	9	7	...	...	815	8	60	7	...	...	...	...	60	6	866	8	9	9	...	...	875	8	262	16
			3,108	33	42	33	60	49	3,290	33	426	51	34	80	10	16	470	50	3,594	34	76	46	70	38	3,740	34	467	29
	Total...																											
	VI.	1	308	...	1	...	...	...	309	...	12	...	...	...	...	...	12	...	320	...	1	...	...	...	321	...	29	...
		2	68	...	4	...	...	...	72	...	17	...	...	...	...	...	17	...	85	...	4	...	...	...	89	...	24	...
		3	28	...	1	...	...	...	29	...	...	...	...	...	...	...	...	...	28	...	1	...	...	...	29	...	...	...
		4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			404	4	6	5	...	...	410	4	29	3	...	...	...	...	29	3	433	4	6	4	...	...	439	4	53	3

Proceedings of the Madras Government, Public Works Department, 3rd April 1872.

Series.	Class.	Sort.	WET. 1st Group. Occupied. Extent.	Occupied. Per-centage.	Unoccupied. Extent.	Unoccupied. Per-centage.	Dry to be converted into wet. Extent.	Dry to be converted into wet. Per-centage.	Total. Extent.	Total. Per-centage.	2nd Group. Occupied. Extent.	Occupied. Per-centage.	Unoccupied. Extent.	Unoccupied. Per-centage.	Dry to be converted into wet. Extent.	Dry to be converted into wet. Per-centage.	Total. Extent.	Total. Per-centage.	TOTAL. Occupied. Extent.	Occupied. Per-centage.	Unoccupied. Extent.	Unoccupied. Per-centage.	Dry to be converted into wet. Extent.	Dry to be converted into wet. Per-centage.	Total. Extent.	Total. Per-centage.	Inam. Extent.	Inam. Per-centage.
Regula—(*Concluded.*)	VII.	1	3,516	...	23	...	5	...	3,544	...	80	...	1	...	...	...	81	...	3,596	...	24	...	5	...	3,625	...	688	...
		2	1,464	...	24	...	29	...	1,517	...	82	...	...	...	1	...	83	...	1,546	...	24	...	30	...	1,600	...	277	...
		3	603	...	10	...	...	...	613	...	44	...	...	...	17	...	61	...	647	...	10	...	17	...	674	...	45	...
		4	56	...	..	...	25	...	81	...	22	...	...	...	...	...	22	...	78	...	...	...	25	...	103	...	5	...
		5	...	...	...	...	...	...	...	...	6	...	...	...	...	...	6	...	6	...	...	...	...	...	6	...	...	...
			5,639	59	57	45	59	48	5,755	58	234	28	1	3	18	29	253	27	5,873	56	58	35	77	42	6,008	56	1,015	62
	VIII	1	290	...	5	...	4	...	299	...	42	...	1	...	24	...	67	...	332	...	6	...	28	...	366	...	75	...
		2	145	...	16	...	...	...	161	...	104	...	2	...	1	...	107	...	249	...	18	...	1	...	268	...	23	...
		3	...	...	...	...	...	...	...	...	7	...	...	...	9	...	16	..	7	...	...	...	9	...	16	...	...	...
		4	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			435	4	21	17	4	3	460	5	153	18	3	8	34	55	190	20	588	6	24	15	38	20	650	6	98	6
	Total.		6,478	67	84	67	63	51	6,625	67	416	49	4	11	52	84	472	50	6,894	66	88	54	115	62	7,097	66	1,166	71
	Grand Total.		9,646	100	126	100	123	100	9,895	100	842	100	38	100	62	100	947	100	10,488	100	164	100	185	100	10,837	100	1,633	100
																											Shrotriem...	279
																												1,912

8. Before entering upon the subject of the assessment of the lands under discussion, I must explain how one feature in the new settlement, viz., "the grouping of villages," will tell favourably to the Project. As matters stood formerly many of the villages under the tank would have been classed as "first group," those less favourably situated falling into the "second." As, however, the supply to these latter villages will, by the contemplated outlay, be rendered equal to that enjoyed by the former, they can, owing to the similar goodness of their soil, be raised to the "first group." In like manner two villages will be raised from the 3rd to the 2nd group. The increase in revenue derivable from these elevations must, therefore, in all fairness, be credited to the project. The villages thus raised from the 2nd to the 1st group, and from the 3rd to the 2nd, are given in the margin.

From 2nd to 1st Group.	1. Poonamallee. 2. Agraharam. 3. Meypoor. 4. Agaram. 5. Kavanur. 6. Tirunagesveram. 7. Iyappandangal. 8. Tarappakam.
From 3rd to 2nd Group.	9. Srinivasapuram. 10. Ecuwayur. 11. Kolappakam.

9. As already mentioned the rates of assessment to be applied to the tract now under discussion are the same as those affixed to the lands under the Red Hill and Choleveram reservoirs, with the following exceptions :—In the latter case the money-rate assigned to the "best loamy regada," Class four, Sort one, was Rupees 7; in the present instance it will be Rupees 7-8-0. Similarly the following soils :—

Class.	Sort.	
III.	1.	Best clay regada;
IV.	2.	Ordinary loamy do.;
VII.	1.	Best red ferruginous;

all fell into the same money-rate of Rupees 6; they will now be assessed at Rupees 6-4-0. This enhancement is not only warranted by the superiority of these particular soils in the Chembrambaukam tract, but will be borne out by facts adduced when submitting the Settlement Report. The Government may perhaps remember that in the report on the Red Hill Project, I thus mentioned the probability of an increase in the rates for this portion of the district.—"one point, remains to be noticed: although 7 Rupees per acre is the highest wet rate advocated for the villages under the project, there will be eventually higher gradations for the rich black loams which are to be found under the Chembrambaukam Tank, Palar channels, and other soures of irrigation in different parts of the district, where the natural fertility of the soil far surpasses that of the villages we are now dealing with."*

* *Vide* paragraph 22, of Acting Director's report to Board, dated 24th November 1870, No. 2,051-71.

10. Taking, therefore, the rates arrived at both by the enhancement of the assessment upon the above-mentioned soils, and by the grouping of villages with reference to the improved capacity of the tank, and applying them to the lands

as classified in the manner already shown, the results of the new settlement will be as follows :—

	Class and Sort.	Rate.	Occupied. Extent.	Occupied. Assessment.	Unoccupied. Extent.	Unoccupied. Assessment.	Dry to be converted into wet. Extent.	Dry to be converted into wet. Assessment.	Total. Extent.	Total. Assessment.
		Rs. A. P.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.
2nd Group.	III. 1	5 0 0	71	355	5	25	...	...	76	380
	2	4 8 0	98	392	4	16	10	40	112	448
	3	3 8 0	113	395	5	17	...	...	118	412
	4	3 0 0	...	...	...	...	...	...	...	...
	IV. 1	3 0 0	94	210	20	60	...	...	114	270
	2	2 8 0	90	216	...	...	...	...	90	216
	3	2 0 0	24	120	...	...	...	...	24	120
	4	1 8 0	...	...	...	...	...	...	...	...
	5	1 0 0	...	...	...	...	...	...	...	...
	VI. 1	3 8 0	12	48	...	...	...	...	12	48
	2	3 0 0	17	60	...	...	...	...	17	60
	3	2 8 0	...	...	...	...	...	...	...	...
	4	2 0 0	...	...	...	...	...	...	...	...
	5	1 8 0	...	...	...	...	...	...	...	...
	VII. 1	3 0 0	80	400	1	5	1	4	81	405
	2	2 8 0	82	328	...	...	1	4	83	332
	3	2 0 0	44	154	...	...	17	60	61	214
	4	1 8 0	22	66	...	...	...	...	22	66
	5	1 0 0	6	15	...	...	9	36	15	51
	VIII. 1	3 0 0	42	168	1	4	24	96	67	268
	2	2 8 0	104	364	2	7	1	3	107	374
	3	2 0 0	7	21	...	...	8	27	15	48
	4	1 8 0	...	...	...	...	...	...	...	...
	5	1 0 0	...	...	...	...	...	...	...	...
	Total ...	...	842	3,312	38	121	62	220	942	3,666
	2nd Group ...	...	...	...	...	...	...	...	...	...
1st Group.	III. 1	6 0 0	1,058	6,012	8	50	60	375	1,126	7,037
	2	5 0 0	628	3,140	1	5	...	...	629	3,145
	3	4 8 0	199	796	3	12	...	...	202	808
	4	3 8 0	445	1,558	21	74	...	...	466	1,632
	5	3 0 0	33	99	...	...	...	...	33	99
	IV. 1	3 0 0	660	4,950	9	68	...	...	669	5,018
	2	2 8 0	80	500	...	...	...	...	80	500
	3	2 0 0	66	330	...	...	...	...	66	330
	4	1 8 0	...	...	...	...	...	...	...	...
	5	1 0 0	...	...	...	...	...	...	...	...
	VI. 1	3 8 0	306	1,530	3	15	...	...	309	1,545
	2	3 0 0	68	272	4	16	...	...	72	288
	3	2 8 0	28	98	1	3	...	...	29	101
	4	2 0 0	...	...	...	...	...	...	...	...
	5	1 8 0	...	...	...	...	...	...	...	...
	VII. 1	3 0 0	4,316	21,975	23	144	5	31	3,344	22,150
	2	2 8 0	1,464	7,320	24	120	29	145	1,517	7,585
	3	2 0 0	603	2,412	10	40	...	...	613	2,452
	4	1 8 0	55	193	...	...	25	88	81	284
	5	1 0 0	...	...	...	...	...	...	...	...
	VIII. 1	3 0 0	290	1,450	5	25	4	20	299	1,495
	2	2 8 0	145	580	16	64	...	...	161	644
	3	2 0 0	...	...	...	...	...	...	...	...
	4	1 8 0	...	...	...	...	...	...	...	...
	5	1 0 0	...	...	...	...	...	...	...	...
	Total ...	...	9,646	53,835	193	820	133	659	9,895	55,110
	2nd Group ...	...	843	3,312	38	124	62	230	942	3,666
	Total ...	...	10,489	57,147	231	944	195	889	10,837	58,776
	2nd Group ...	...	...	...	...	...	...	...	1,793	5,397
	Total ...	...	...	...	...	...	...	...	10,837	64,173

Abstracts and Comparison with former area and assessment.

Irrigation.	Items.	Extent.	Assessment.	Average.	Remarks.
I.—Existing.		ACRES.	RS.	RS. A. P.	
1. As per new settlement ...	1. Irrigated ...	10,488	57,137	5 7 2	
	2. Second crop.		5,397	3 0 2	
	Total ...	10,488	62,534	5 15 5	
2. As per Jamabundy... ...	3. Irrigated ...	9,194	49,605	*5 6 3	* When the old assessment is applied to the correct areas ascertained by survey, this average falls to 4-11-8.
	4. Second crop.		5,078	2 15 2	
	Total ...	9,194	54,683	5 15 2	
3. Comparison ...	5. Difference ...	+ 1,294	+ 7,851*	... .	
II.—Future.	1. Wet waste ...	164	750	4 9 3	
	2. Dry cultivation	185	889†	4 12 11	† 889
	3. Second crop..		1,630	3 3 5	304 Deduct existing dry Assessment.
	Total ...	349	3,269	... ...	585 Net return in favour of the project.

11. It will thus be seen that the present revision of the assessment yields an increase in Revenue of Rupees 7,851; and it now becomes necessary carefully to determine how much of this increase, and what other assets can justly be credited to the project.

12. The first point in connection with this subject is the unusually favourable nature of Fasli 1280, the cultivation of which year I have taken as the basis of our calculations. It is necessary to take one individual year as the ground work of the settlement procedure; and as the classification was carried out during the past Revenue year, Fasli 1,280, it was selected as the most convenient and desirable. In a Revenue point of view, however, the year thus selected was remarkably favourable, and, in fact, far above the ordinary run. On the other hand, the quantity of water which has been calculated as the available supply from the reservoir is, as already mentioned, the average as given by Major Mullins; and thus we have an average supply on the one side, against a year of unwonted prosperity on the other. The cultivation of the past year was, as will be seen from the marginal Statement, only twice surpassed during the last fifteen years, and cannot consequently be deemed to represent the normal state of affairs under the existing *regime*,

Fasli.	Occupied. ACRES.
1266	6,693
1267	7,334
1268	8,706
1269	8,009
1270	8,176
1271	8,928
1272	8,360
1273	8,413
1274	8,541
1275	8,605
1276	8,065
1277	8,682
1278	8,792
1279	8,962
1280	8,856
Total...	1,25,128
Average...	8,342

before the improvements to the reservoir. To correct this inequality an allowance must be given in favour of the project, and this adjustment can be made as follows:—

The average wet cultivation during the last 15 years throughout the tract in question amounts to 8,342 acres. For the purpose of comparison with the past fusly, 14 per cent. being the increase obtained by survey in these villages must be added, and thus the average cultivation of the 15 years comes to 9,509 acres. Deducting this from the area cultivated in Fusly 1280, the year I have taken as the standard, the remainder, or, in other words, the excess over the usual run of cultivation is 979 acres. In order therefore fairly to balance the ordinary former cultivation against the ordinary improved supply, this excess of 979* acres which will hereafter be permanently cultivated owing to the improvements must be credited to the results of the project, thus forming the first asset.

* 979 Acres at Rupees 5-7-2, the settlement average yields Rupees 5,333 in favour of the project.

13. The next sum to go to the credit side of the account is the increased revenue derivable from certain villages which have been raised by the new grouping, and this point has already been fully explained in paragraph 8.

Items.	Assessment.		
	As per original grouping.	As per enhanced grouping.	Difference.
	RS.	RS.	RS.
Nine villages raised from 2nd to 1st	7,068	8,781	+ 1,713
Two do. do from 3rd to 2nd	1,440	1,706	+ 266
Total..	8,508	10,487	+ 1,979

14. Then follows the asset of "gain by cessation of remissions." When the supply to the reservoir has been both augmented and rendered permanent, the loss to the State which has occurred owing to remissions annually given under the heads of "Dittum Bunjer,"* "Shavy,"† etc., will, it is anticipated, be no longer heard of; and the increase in revenue thus obtained is, of course, attributable to the outlay now being incurred. For calculating the average remissions, I have taken the same 15 years as in the case of the average cultivation. This series seems fair in both instances, as not only did the Kasaveram anicut, as far as I can gather, begin to furnish a fair supply to the tank from the commencement of this period, but it was just about that time that the "Dittum Bunjer" first began to be included in the ryots' puttas, these documents before then merely exhibiting

* Lands retained in the putta, and upon which assessment is consequently due; but which were not cultivated, owing ostensibly to want of water, under which plea remission is claimed.

† Fields the crops upon which have perished from deficiency of irrigation.

the actual cultivation from year to year; and this important item of remission being consequently in those days unknown. The marginal statement shows the amount of remissions for the period thus taken, and it will be noticed that during Fusly 1278 (A. D. 1868-69) and 1279 (A. D. 1869-70) the seasons were so exceptionally bad that only one-fourth of the demand was realized during the first, and only one-fifth during the second, of these extremely unfavourable years. It seems, therefore, hardly fair to include such extraordinary failures in our calculations, and it is likewise not fair to exclude them altogether. I have, therefore, taken half the amount foregone during these two exceptional seasons, thereby still raising the alleviations of those years above those ordinarily granted, and the average thus struck gives Rupees 12,785 as the amount to go to the credit side of the account under the head in question.

Fusly.	Amount of remissions. Rs.	
1266...	5,476	
1267...	8,967	
1268...	5,813	
1269...	4,723	
1270...	26,280	
1271...	25,327	
1272...	15,553	
1273...	12,783	
1274...	3,083	
1275...	12,396	
1276...	2,833	
1277...	27,639	
1278...	19,296	Half of the remissions granted is entered.
1279...	19,761	
1280...	1,844	
Total...	1,91,774	
Average...	12,785	

15. In case exception should be taken to this mode of arriving at the average as unfair to the project, it must be remembered that it is not altogether safe to reckon upon a total and permanent cessation of remissions after the outlay has been undergone. Thus the present improvements will ere long "become a history little known," and the procedure as regards remissions under the Chembrambaukum tank will not differ from that pursued in the case of any other reservoir in the district. Again, the supply from the anicuts may really fail; there may come Collectors with a weakness for "bad seasons;" and as the Government once very justly remarked, "there will never be wanting interested native subordinates ever ready to plead the necessity for remissions."* Under these considerations I cannot but think the amount allowed to the project under this head is sufficiently liberal.

* *Vide* Orders of Government, dated 18th June 1859, paragraph 11.

16. The remaining items to be credited as returns on the outlay are those shown in the statement appended to paragraph 5 and comprised under the head "for future irrigation."

They consist of—

(1). Wet waste hereafter to be cultivated.

(2). Dry cultivation to be converted into wet.

(3). Assessment to be derived from additional second crop cultivation.

Proceedings of the Madras Government, Public Works Department, 3rd April 1872.

17. Having now enumerated each item that can be carried to the credit of the work, I annex a statement showing the returns that can thus be anticipated from the sanctioned outlay :—

Outlay.		Anticipated Returns.	Amount.
Amount of capital to be expended on the project.	Rs. 4,14,000	1. By additional area granted in favour of the project owing to a most unusually good year being taken for the ground-work of the new settlement, *vide* paragraph 12	Rs. 5,333
		2. By villages placed in higher groups, *vide* paragraph 13	1,979
		3. By cessation of annual remission, *vide* paragraph 14	12,785
Vide abstract statement at paragraph 10.		4. By wet waste land to be brought under cultivation	750
		5. By dry cultivation to be converted into wet ...	585
		6. By assessment to be derived from lands newly cultivated with second crop	1,630
		Total...	23,062
Deduct additional outlay for up-keep, *vide* paragraph 11 of Major Mullins' Report			5,620
		Net return... or 4·21 per cent.	17,442

18. This result may I fear prove disappointing, considering the large returns which are so often attributed to irrigation projects; but it must be remembered that the present undertaking is rather an enhancement of the wonted supply than the extension of irrigation to new and hitherto unremunerative tracts. Moreover, the old high wet rates of former days were far more favourable for schemes of this nature; for, as matters now stand, the high rates of assessment have been lowered, whilst the cost of labour and materials has probably doubled. It is, therefore, a subject for consideration whether some special measures should not be taken, and some special agreements entered into *previous* to the commencement of works of this kind in those Provinces where the prevailing rates of assessment are not in themselves alone calculated to lead to a good return on the outlay.

19. It will be noticed that the extension of second crop cultivation forms one of the main anticipated assets, and the proper realization of this not unfrequently eluded charge should be carefully annually watched. Again, it is the practice to exempt from charge second crops on wet lands when raised "*purely* by wells," *vide* Board's Proceedings, dated 17th August 1863, No. 5,116. Although this immunity was granted with no doubt the best and most liberal intentions, the curnums have, I am afraid, now and again taken advantage thereof to act improperly, and bring under the scope of this exemption lands that have no title thereto. These wells* are situated in wet lands, and are now, as a rule, full to the brim, and flush with the surrounding paddy fields; in a word the tank may be deemed the *raison d'etre* of the wells, and under its improved condition it will

* Most of them that I have seen are known as "ஏணைகிணறு," or small wells made of rings of earthenware, and may be dug and constructed within 10 Rupees outlay.

furnish them with an improved supply. I would, therefore, cancel this order of immunity, and look upon these wells as the "lopala* bhavila" of Nellore and elsewhere, which are not thus favoured. When the settlement is introduced, I would advocate that the compounding system for second crop be brought into play as largely as possible, as in the case of Salem and Trichinopoly; thus not only doing away with any difficulties regarding wells, scrutiny, petty frauds, and everything else, but rendering permanent a now somewhat precarious source of revenue.

* Wells situated within the limits of wet lands and the crops under which are not exempted from wet assessment.

THIS report will be communicated to the Committee appointed in Government Order, 12th February 1872, No. 414.

2. The Collector will report on the statements in paragraph 19.

Proceedings of the Board of Revenue dated 17th December 1870, No. 7,175.

Read the following letters:—

From the Acting Director of Revenue Settlement, to the Acting Secretary to the Board of Revenue, dated Madras, 24th November 1870, No. 2,031.

ABSTRACT.—Submitting, as directed in Government Order, 17th May 1870, No. 729, an approximate set of assessment rates for the various soils in the Sydapet and Ponnery Taluqs of the Chingleput District.

From the Acting Collector of Chingleput, to the Acting Secretary to the Board of Revenue, dated Sydapet, 9th December 1870, No. 527.

I HAVE the honour to reply to the Board's Proceedings, dated 10th May 1870, No. 3,155, communicating the Proceedings of Government, dated the 3rd idem, No. 630, on the subject of revising the assessment of the lands in the various villages now under the irrigation of the Red Hills and Sholaveram tanks, and in those likely to benefit by them hereafter.

2. I submit, herewith, a Statement A. showing the villages at present irrigated by the tanks in question, together with the tenure and mode of settlement prevailing in each. I also enclose a similar Statement B. showing the villages which will derive advantage from these tanks in their enlarged condition.

3. The Board will observe from Statement A. that the number of villages at present under the irrigation of the Red Hills tank is thirteen. Of these, ten are ryotwary villages, and one is held on a fixed cowle, the remaining two being Shrotriems, namely, Teeyambakam and Chembrambeakum. The villages watered by the Sholaveram tank are nine in number, all of which, with the exception of two, are purely ryotwary. The village of Nalloor is partly Shrotriem and partly Ryotwary, while the village of Warakad is a Mootah. The number of villages to which irrigation will be extended in the improved condition of the tanks is in the case of the Red Hills tank forty-nine, and in that of the Sholaveram tank twenty-three. In the former group of villages seven are held on Shrotriem tenure, and in the latter group two are held on the same description of tenure, and four are under permanent settlement. All the above villages are at present situated partly in the Sydapet and partly in the Ponnery Taluq. At one time they constituted a portion of the late Nayer (now Ponnery) Taluq, but in 1839 the villages now under the irrigation of the Red Hills tank, and those likely to be irrigated by it hereafter, were transferred to the Sydapet Taluq to which they still belong. The villages watered by the Sholaveram tank, and those which will be influenced by it in its improved state, always formed part of the late Nayer (now Ponnery) Taluq.

4. The system under which revenue was collected in these villages during the early years after the assumption of the Jaghire by the British Government was either by annual rents or

Amany management. In Fusly 1211 (A. D. 1802) this mode of settlement was abandoned, and the permanent settlement, based on the average collections of a series of years, was introduced throughout the district; the whole of the villages comprising the district, with the exception of those held on Shrotriem and Inam tenure being parcelled out into sixty-one Mootahs. This system remained in force from Fusly 1212 to 1224, when from various causes the Mootahs began to revert to Government.

5. The survey and settlement of the Nayer Taluq, to which the villages forming the subject of this report belonged, were conducted under the orders of the then Collector, Mr. Maclean, who reported the completion of the settlement of the taluq in question in October 1837. He describes the soil of the Nayer Taluq as poor and particularly sandy.

Vide Mr. Maclean's letter to the Board, dated 3rd October 1837.

6. The mode of settlement adopted by Mr. Maclean was as follows:—The lands of a circle of villages were first surveyed and classified according to their productive powers, facilities of irrigation, and other natural advantages, and a statement of produce was then made out. This being done the next step was to deduct the swatantrams or grain fees of the village servants from the gross produce according to the established rate of the village, and the net produce was then divided between the Government and the ryot. The proportion of the produce thus assigned to the Government varied not only in different villages, but on different descriptions of soil according to the ancient "Warachattam" of the village.

7. According to Mr. Maclean's report the Government share on wet lands varied from 35 to 50 per cent., and the ryot's share from 40 to 50 per cent. of the net produce in the Nayer Taluq. The commutation rate adopted by Mr. Maclean in converting the Government share of the produce of wet lands into money was 18 mercals per pagoda, or Rupees 77 per garce.

8. The assessment on dry and garden land was not fixed upon a commutation price of the various grains produced thereon. These grains were so frequently changed on the same soils, and the value of each sort differs so greatly in price one from the other that it was reckoned inexpedient to base the assessment altogether on returns so obtained. The dry land assessment was, therefore, fixed on the average collections of preceding years, corrected and checked by other standards, namely, the permanent or Mootah beriz and the collections of Faslies 1210 and 1232, reference also being had at the same time to the rates at which dry grains were sold in the markets of the district.

9. The settlement thus arrived at was also carefully compared with and tested by the average collections of a series of years, and particularly by the collections of Fusly 1232, a most favourable year for agricultural operations, as well as with the collections under the permanent settlement.

10. The result of this comparison showed an increase of 16 per cent. above the permanent settlement, and a decrease of 1¾ per cent. below the wet average collections of 23 years, and of 4 per cent. below the collections of Fusly 1232.

11. The settlement was further compared with that fixed by the "Sir Taramdars," a superior class of Assessors, who in those days formed a part of the regular Survey establishment, and with the beriz proposed to be fixed by the ryots themselves. Mr. Maclean's settlement was found to be 12¼ per cent. lower than the former, and 2½ per cent. higher than the latter of these assessments.

12. The Board considered that Mr. Maclean's settlement was too light, inasmuch as it fell short of the average collections of 23 years and the collections of Fusly 1232, and suggested that it should be increased by 11½ per cent.

Vide Board's letter to Collector, dated 8th May 1845.

13. Mr. Maltby, who replied to the Board's letter in 1846, showed in his letter, dated the 8th April, that the decrease of 4 per cent. in Mr. Maclean's settlement, as compared with the collections of Fusly 1232, was due to special causes peculiar to that year, and was confined to a portion of the taluq, namely, the Striharikottah villages, and a few villages near to Madras which

were rented out at sums far in excess of their annual collections, owing to the great competition among the Merassidars of the villages. Mr. Maltby was of opinion that generally the assessment fixed by Mr. Maclean was not too low when the soil and other natural advantages of the Nayer Taluq were duly taken into consideration, and pointed out that the soil was inferior to that of the Manmangalum Taluq, and that the means of irrigation were remarkably defective and precarious, the taluq being mainly dependant on the falling rains.

14. I beg to send a statement marked C. showing the ayacut, cultivation, waste, remissions, etc., for all the villages now under the irrigation of the Red Hills and Sholaveram tanks for as many Fuslies as possible. I have endeavoured to procure this information for 25 years for all the villages, but I regret to say that I have been unable in all cases to obtain these statistics for so long a series of years more especially as regards Jary Mootahs and Shrotriems; the Curnums in such villages having kept no accounts for some years, and having lost the accounts for others.

15. I also send two other Statements D. and E. Statement D. is an abstract showing the average cultivation, waste, and remissions in the villages now under the irrigation of the Red Hills and Sholaveram tanks, with similar particulars for the villages likely to be influenced by the tanks in their enlarged condition. Statement E. shows the particulars of ayacut, cultivation, and waste under each rate of assessment in all the villages comprised in Statement D. It will be seen from Statement D. that the total wet ayacut in the several Government villages now under the irrigation of both the tanks, and in those to which irrigation will eventually be extended, amounts to Acres 15,146, assessed at Rupees 51,736. Out of this extent the cultivation, according to the accounts of Fusly 1279, amounts to Acres 13,716, bearing an assessment of Rupees 47,004. The waste amounts to Acres 1,430, assessed at Rupees 4,734, of which Acres 1,036, assessed at Rupees 3,596, and extending over 77 villages, are reported by the Curnums to be fit for wet cultivation. The remaining Acres 395, although assessed, are for various reasons said to be unfit for wet cultivation.

16. The dry area in all the above-named villages, including the Manawari lands lately transferred to poonjah, amounts to Acres 20,688. Out of this dry land the extent that can be converted into wet is given by the Curnums at Acres 2,775. There are also Acres 1,935 of dry land in Jary Mootah and Shrotriem villages that could be brought under cultivation if water were available. It will, however, be shown later on in this report that there will be no water to spare for these lands.

17. The total additional area, exclusive of second crop cultivation, that may be expected in future to be irrigated under both the tanks will, therefore, be Acres 3,811, which is less than the extent given in Mr. Thornhill's letter to Colonel Anderson, dated 5th December 1868, No. 400, by Acres 11,096. The large difference between these two areas is owing to the statement furnished by Mr. Thornhill having been prepared on a rough estimate, and having included every acre of assessed land that was unoccupied in the villages in question, on the supposition that there would be an unlimited supply of water, and that the whole of the land included in the villages concerned would be converted into wet, without taking into account the level of the lands and other circumstances; whereas the area here given as available for future cultivation has been determined after excluding the lands in Shrotriems and Mootahs, making allowance for the quantity of land within the water-spread of the tanks, and after due consideration of the situation of the lands, and their adaptability for wet cultivation.

18. In Major Mullins' Memorandum, dated 21st January 1870, the average rate of assessment on the additional area to be brought under cultivation is stated to be under Rupees 2-4-4 per acre. The process by which this result has been arrived at is by dividing the gross assessment of the entire waste, both wet and dry, in all the villages including Mootahs and Shrotriems, by the area which that assessment represented without taking into account the additional revenue which the lands will yield to Government in the shape of Teerwajasti. What Major Mullins should have done was to have divided the assessment of all the waste lands, inclusive of the

Proceedings of the Madras Government, Public Works Department, 3rd April 1872.

estimated Teerwajasti upon the dry lands, by the total area, and he would then have found the average to be Rupees 3-9-7 per acre, or Rupees 4-12-0 per cawny, which is not much below the average rate of the district on its total nunjah ayacut, as shown in the margin.

Rupees 5-3-0 per Cawny.
Rupees 3-14-3 per Acre.

19. The average wet assessment on the cultivated area under the Red Hills tank is Rupees 4-1-11, and under the Sholaveram tank Rupees 3-11-8 per acre; while the average assessment under both tanks on the existing cultivated area is Rupees 3-15-8 per acre. The average wet assessment of the lands under the Red Hills tank to which it is proposed to extend the irrigation of that tank is Rupees 3-2-2, and of the lands to which it is proposed to extend the irrigation of the Sholaveram tank Rupees 3-8-11. The average wet assessment on the entire area to which it is proposed to extend the irrigation of both the tanks amounts to Rupees 3-4-0 per acre.

20. The average assessment of the cultivated area now under the irrigation of the Red Hills tank, and of the area to which it is intended to extend the irrigation hereafter, is Rupees 3-5-8. Similarly the average assessment of the cultivated area now irrigated by the Sholaveram tank, and of the wet lands to which it is intended to extend the irrigation of that tank, is Rupees 3-9-9 per acre. The average assessment of the wet area now cultivated under both tanks, and of that to which the irrigation will hereafter be extended, is Rupees 3-6-10 per acre, or Rupees 4-9-1 per cawny.

21. The average assessment of the dry area under cultivation in the villages at present under the irrigation of the Red Hills tank is Rupees 1-13-0, and in those under the irrigation of the Sholaveram tank Rupees 1-14-9 per acre; the average under both tanks being Rs. 1-14-2 per acre. The average assessment of the cultivated dry area of the villages to which it is proposed to extend the irrigation of the Red Hills tank is Rupees 1-14-8, and of those to which the irrigation of the Sholaveram tank is to be extended Rupees 2-9-2 per acre; the average of both tanks being Rupees 2-1-6. The average dry assessment on the cultivated lands in the villages now under the irrigation of the Red Hills tank, and in those which are hereafter to be brought under its influence, amounts to Rupees 1-14-6, while that of similarly situated lands under the Sholaveram tank amounts to Rupees 2-5-6; the total average of the dry lands under both tanks being Rupees 2-0-11 per acre.

22. The above averages will not be found in all cases to agree with those given by the Director of Revenue Settlement. The cause of this difference is that the averages of the Settlement Department are calculated with reference to the new Survey areas, while mine are based on the old Pymash areas, and that when striking their averages the Settlement Department have included in the wet area those dry lands upon which wet crops are usually raised by the aid of Government water. They have also deducted the 20 per cent. temporary remission of assessment recently sanctioned by Government on Manawari lands, which I have not done.

23. The new survey has brought out an average increase above the present areas of 14 per cent. on the whole of the wet, and of the same percentage on the whole of the dry lands under both the tanks combined, and I am informed by the Director of Revenue Settlement that the commutation price which he proposes to adopt in re-settling the wet lands of this district is Rupees 105 per garce. The result of this increase in the survey areas and in the commutation price above that adopted by Mr. Maclean, will be to raise the average assessment of the total wet ayacut under the Red Hills tank to Rupees 3-10-6, and under the Sholaveram tank to Rs. 3-11-8 per acre. This is equivalent to an addition to the present average wet assessment of 25 per cent. in the case of the Red Hills tank, and of 20 per cent. in that of the Sholaveram tank.

24. I annex a statement exhibiting the average assessment of the wet area at present under the irrigation of both tanks, and of that to which it is intended to extend their irrigation, as

compared with the average assessment which the Director of Revenue Settlement proposes to adopt :—

		Average rate per acre as per old Pymash.	Average rate per acre as per proposed new settlement.
		Rs. A. P.	Rs. A. P.
Red Hills tank	{At present irrigated ... ... {To be irrigated	4 1 11 3 2 2	4 6 6 3 6 9
	Total..	3 5 8	3 10 6
Sholaveram tank	{At present irrigated ... ... {To be irrigated	3 11 8 3 8 11	3 15 8 3 10 7
	Total...	3 9 9	3 11 8
	Grand Total...	3 6 10	3 10 10

25. It appears to me that this addition to the present assessment is the utmost that the lands can possibly bear. It is true that Mr. Lanbury's average rate is below the average rates in Trichinopoly and in the re-settled taluqs of the South Arcot District, but it must be remembered that the soil of the villages influenced by the project, and in fact of the whole of the late Nayer Taluq to which all the villages in question at one time belonged, is poor and sandy. This circumstance was fully recognized by Mr. Maclean, by whom the fieldwar settlement was introduced into the Nayer Taluq, and, although the improvements now made to the Red Hills and Sholaveram tanks will ensure a better supply of water, they will not have the effect of altering the intrinsic quality of the soil, inasmuch as the water drawn from the tanks will not contain any alluvial deposit. It must also be borne in mind that the supply of water to these tanks is somewhat precarious, being, as remarked in paragraph 16 of Major Mullins' Memorandum, dated 21st January 1870, mainly dependant on the north-east monsoon, and drawn from a comparatively limited tract of country, on the drainage of which there are many other demands.

26. The ryots' holding lands under the Red Hills tank have always maintained that, without high manuring, very little profit can be derived from the cultivation of the wet lands under the tank, and this statement of the ryots is confirmed by the Tahsildar of Sydapet, who has been at the head of the taluq for nearly seven years.

27. Labour is dearer in the neighbourhood of Madras than it is at a distance from the Presidency town, and as a body the ryots are poor. The collection of the revenue has been attended with a good deal of difficulty at all times, and particularly so during the last few years in consequence of the series of bad seasons which the district has had to contend against.

28. I do not think that the proximity of the Madras market can be regarded as placing the ryots of this district in a better position than those of other districts for disposing of their produce, as the large quantity of grain constantly imported into Madras both by sea and land influences the market prices of grain in the district so much that it can hardly be said that the price of grain in the Chingleput District is regulated by the quantity produced. In proof of this statement I may mention the fact of the ruling prices in the district having been lower of late years than those in other districts, although last season was much below an average one, and the previous two years were almost famine years.

29. The average dry assessment of the villages, which will be brought under the influence of the project, as shown in paragraph 21 of this report, is much higher than the rates* prevailing in the re-settled taluqs of South Arcot and in Trichinopoly. These high averages, however, are the result of the transfer

*Average of the re-settled taluqs of South Arcot ... Rs. 1 0 10
Do. do. Trichinopoly ... 1 3 10

of the Manawari Nunjah lands to the head of Punjah, and to my not having taken into account the reduction of 20 per cent. sanctioned by Government in the assessment of lands of this description.

30. I annex an abstract showing the average assessment of the dry lands which were classified and assessed as such at the old Pymash, as distinguished from the average rate of dry assessment including the Manawari area, but deducting the 20 per cent. remission of assessment on the latter description of lands, the area taken in both cases being that determined by the new survey :—

		Average rate per acre on the Ain dry lands according to the new Survey area.	Average rate per acre on the dry lands including Manawari lands after deducting the remission of 20 per cent.
		Rs. A. P.	Rs. A. P.
Red Hills tank...	{Villages at present under the irrigation of the tank ... ... {Villages to be hereafter brought under the irrigation of the tank... ...	1 6 3 1 5 10	1 9 8 1 11 0
	Total...	1 5 10	1 10 10
Sholaveram tank.	{Villages at present under the irrigation of the tank ... ... {Villages to be hereafter brought under the irrigation of the tank	1 8 6 1 13 0	1 11 10 2 3 3
	Total ..	1 10 10	2 0 8
	Grand Total...	1 7 5	1 12 10

31. It will be seen from the above abstract that the average dry rate of assessment in the villages affected by the project, after deducting the 20 per cent. remission of assessment on Manawari lands, is considerably less than the average rate given in paragraph 21, and more than the Ain dry average rates. In my opinion, these rates are as high as can be imposed considering the poverty of the soil generally, and the fact that the more remunerative products, such as cholum, cumboo, etc., are only grown to a limited extent, the soil not being adapted to the cultivation of such grains.

32. The total average dry assessment of the whole tract of country influenced by the project is Rupees 1-12-10 per acre. This rate falls short of the average dry rate of the re-settled taluqs of South Arcot by Anna 1, and is more by Annas 7 and Pies 11 than the average rate of the Trichinopoly District. If in the comparatively fertile districts of South Arcot and Trichinopoly it has been found necessary to fix the averages so low, it follows that the rates should be lower still for a poor district like Chingleput. As, however, the dry area comprises a good deal of Manawari land suitable for growing paddy without irrigation, I think that the present averages should be left undisturbed, care being taken to enter the better description of Manawari lands on the higher classes.

33. I am of opinion that a consolidated assessment should be continued for the lands under both tanks which are now assessed as wet. My reasons for arriving at this conclusion are :—

1*st*.—Because the lands in question have for a long series of years been cultivated with wet crops, have at considerable expense been specially prepared for wet cultivation, and are unsuited for producing dry crops.

2*ndly*.—Because the effect of assessing wet lands with a dry rate and then adding a separate uniform water-rate is to unduly lower the assessment on the best lands, and to raise the assessment disproportionately to the profits on the inferior lands.

34. As regards the lands to be hereafter converted into wet by the water of the tanks, I consider that the Government demand for water supplied should be by a distinct water-rate. The advantage of a separate water-cess will be that the Government may demand the land-tax from the ryots whenever the supply of water is deficient and the lands cannot be cultivated with punjah produce.

35. In the Proceedings of the Board, dated 11th October 1869, No. 7,554, on the subject of the introduction of a fixed water-rate for the whole Presidency, it is only proposed to charge the highest rate of Rupees 4 for water used from sources the supply of water from which is *quite certain*. It has already been shown that the supply of these tanks is rather uncertain, and that their water is quite free from that alluvial deposit which renders the water of rivers like the Kistna, Godavery, and Cauvery so fertilizing. I therefore think that the water-rate should not be higher than Rupees 3 per acre.

36. I now proceed to estimate what the returns will be from the outlay on the project, and in doing so I shall adopt the new survey acres and Mr. Banbury's proposed new rates of assessment for wet lands.

37. The Board will observe that none of the increase of assessment on the wet lands under the tanks can fairly be placed to the credit of the project, as it is in no way attributable to the enlargement of the tanks, but would have occurred all the same if they had been left in their former condition.

38. In paragraph 15 of his report, dated the 20th February 1866, No. 50, Mr. Fraser states that the united capacity of the two tanks in their unimproved state was cubic yards 45,011-8-13. This is much in excess of the quantity of water that can be accounted for by the extent of cultivation under the tanks, as the annexed Statement will show. It is drawn up from the Cultivation Returns from Fusly 1276, which is the year referred to by Mr. Fraser in paragraph 14 of the above report, and in which the tanks received a full supply :—

	Acres.
Wet cultivation in Government Villages	3,954
Do. in Shrotriems and Motahs	356
Do. in Minor Inams	431
Dry lands converted into wet	117
Second crop cultivation	667
	* 5,525
Lands on which Shavi remission was granted	34
	5,559

This gives—

Acres 4,858 at 6,000 cubic yards	29,148,000
Do. 667 at 4,000 do. do.	2,668,000
Do. 34 at 1,500 do. do.	51,000
	31,867,000

being cubic yards 13,134,813 less than Mr. Fraser's estimate.

39. This difference, though very considerable, is, I presume, to be set down to absorption, evaporation, and wastage, and I shall therefore in the following calculations assume that Mr. Fraser's estimate as to the former capacity of the tanks is correct.

* NOTE.—This is the extent of land on which the crops came to maturity. The total extent occupied was Acres 5,594, but out of this extent remission was granted for Waste and Shavi on Acres 275. The waste amounted to Acres 241, and as these lands of course received no water at all, I have excluded them from my calculation. I have assumed that the lands on which remission was granted for Shavi received one-fourth of a full supply, *i. e.*, 1,500 cubic yards per acre.

40. Fusly 1276 was an exceptionally good year, and the annexed Statement shows the demand for water on both tanks on an average of from sixteen to twenty-five years :—

	Acres.
Wet cultivation in Government Villages	3,734
Do. in Shrotriems and Mootahs	325
Do. in Minor Inams	393
Dry land converted into wet	100
Second crop cultivation	205
	4,757
Lands on which Shavi remission was granted	223
	4,980

The water required for this extent of land is cubic yards 28,466,500, so that there will be a surplus of cubic yards 16,535,313 after providing for the existing average demand for water for irrigation purposes. This surplus I propose to set of against the remissions which it has hitherto been necessary to grant under the various minor tanks in the villages hereafter to be influenced by the project, in consequence of the insufficiency of their supply. The average of the remissions on this account amounts to Rupees 6,048 per annum.

41. The quantity of water that will be available for extension of irrigation is cubic yards 33,439,000. The return that this supply of water will produce may be estimated thus :—

	Rs.
956 Acres of wet land under the Red Hills tank, at Rupees 3-10-6 per acre	3,495
223 Acres of do. under the Sholaveran tank, at Rupees 3-11-8 per acre	832
1,548 Acres of second crop cultivation under the Red Hills tank, at Rupees 1-13-3 per acre	2,830
1,548 Acres of do. under the Sholaveram tank, at Rupees 1-13-10 per acre	2,886
3,163 Acres of dry land converted into wet, at Rupees 3 per acre ...	9,489
Average remissions	7,568
Total...	27,100
Deduct on account of loss of Revenue on lands submerged and taken up for the supply and delivery channels...	4,395
	22,705
Add town supply	32,000
Grand Total...	54,705

being a gross return of 5·25 per cent. on the present amount of the estimate of the cost of the project. Major Mullins states that a gross return of 9·45 per cent. is as little as would be likely to yield a net return of 5 per cent. on the average years. Taking the same proportion, a gross return of 5·25 per cent. would yield a net return of 2·7 per cent.

42. The Government will doubtless be much disappointed at finding that the scheme will prove so much less remunerative as an irrigation project than they expected. This expectation, however, was based on Mr. Fraser's representation, that most of the waste land under the lakes was of an unusually fruitful character. How Mr. Fraser could have made such a statement, I am quite at a loss to understand, the fact being that the land in question is very unproductive.

ENCLOSURE No. 1, A.

ABSTRACT.—Statement of villages under the irrigation of the Red Hills and Sholaveram anks in the Chingleput District.

ENCLOSURE No. 2, B.

ABSTRACT.—Statement of villages which are expected to be benefited by the enlargement of the Red Hills and Sholaveram tanks.

ENCLOSURE No. 3, C.

ABSTRACT.—Statement showing the ayacut, cultivation, waste, remission, etc., for all the villages now under the irrigation of the Red Hills and Sholaveram tanks.

ENCLOSURE No. 4, D.

ABSTRACT.—Statement showing the average cultivation, waste, and remission under each tank in the villages under the irrigation of the Red Hills and Sholaveram tanks, and those likely to be influenced by them hereafter.

ENCLOSURE No. 5, E.

ABSTRACT.—Statement showing the ayacut, cultivation and waste under each rate of assessment in the villages now under the irrigation of the Red Hills and Sholaveram tanks and those to which it is proposed to extend the irrigation.

THESE reports will be submitted to Government, with reference to Government Order, 26th April 1870, No. 1,100, (Irrigation.)

2. Government have called for information on the following points:—

I.—As to the prospective assessment of waste lands which will be irrigated by the Madras Water Works.

II.—As to whether the present assessment on irrigated lands should be raised.

III.—As to whether a separate water-rate might be levied instead of continuing a consolidated nunjah assessment.

I. With regard to the first point, the Board have only to submit the report of the Acting Director of Revenue Settlement, and to state their entire concurrence in his proposals as regards irrigated lands. He has adhered strictly to the principles of his department, and where there had been a slight deviation from practice elsewhere, as in the case of straw, it has had the effect of raising the rates, so that, without examining the calculations in detail, it may be safely asserted that any change which it may be found necessary to make hereafter will not have the effect of increasing the demand. The commutation rates adopted are decidedly high. In the case of Varagu, the rate is above the price now ruling in the Madras market. The rates (for irrigated lands) are eight in number; the highest being Rupees 7, and the lowest Rupees 2. It seems to be clearly established that the soil is of an inferior description, so that Rupees 7 an acre is not too low a rate for the best of it. The neighbourhood of Madras is far from being an unmixed benefit, but such influence as is due to it is embodied in the commutation rate and the grouping.

The general effect of Mr. Banbury's proposals is to raise the present assessment on unoccupied irrigated land, which will be irrigable when the works are completed, by 21 per cent. under the Red Hills tank, and 20 per cent. under the Cholaveram tank; and the Board agree with Messrs. Banbury and Blair in considering this the utmost increase that the land will bear.

II. Next, with regard to the present assessment on occupied irrigated land. The Board have no doubt that these rates can be raised, and the data collected by the Director show that an increase should be made, even if no new works had been begun or were contemplated. The improvement in irrigation, which is expected, has been taken into account in grouping the villages; but it contributes comparatively little to the final result, which is, that the assessment on this description of lands is raised by 25 per cent. under the Red Hills tank, and by 20 per cent. under the Cholaveram tank. It is obvious, however, that this increase resulting as it does almost entirely from recalculation of gross produce, commutation rate and cultivation expenses, cannot be attributed to the new irrigation works.

Proceedings of the Madras Government, Public Works Department, 3rd April 1872.

III. Finally, with regard to the expediency of assessing all the lands under the tanks as dry lands, and charging such as are irrigated with a water-rate. The Board, although the water-rate system is established in some parts of this Presidency, are opposed to it on principle. It disturbs the relation between assessment and profits, so that it cannot even be imagined that the proportion is uniform; and it presses heavily on the worst description of soil, whilst it reduces the amount which settlement data show should be paid by the best land. The calculation by which the assessment is fixed rests upon the false hypothesis that the land is used to grow dry crops, and the result must therefore be utterly unreliable. In the present case the introduction of a water-rate on irrigated land now under occupation would be most distasteful to the people, and would provoke resistance in the Courts. The Director proposes that the 4,000 acres of dry land, to which irrigation may be extended hereafter, should be charged a water-rate of Rupees 3 per acre, but the Board are opposed to this also. It would be unwise to assess lands lying side by side, and which are about to enjoy the same advantages on different principles. Moreover, the assessment calculated with reference to the real net produce is, as the Board have already said, sufficiently high, and a water-rate would be too severely felt. It would be impolitic to introduce false data and stultify a settlement, merely to save Rupees 5,000 a-year. The trouble which this system will give the Revenue Department will be well bestowed in the case of Government ryots, but in the case of Shrotriems and Inams a uniform water-rate might be levied, and the Board do not see why it should be less than Rupees 4.

3. The financial result of the Director's proposals, so far as regards the irrigation project, is to fix the gross returns at from 5·25 to 5·52 per cent. on the expenditure.

4. The Chief Engineer for Irrigation calculated the gross returns at 9·45 per cent., but in doing so, he assumed that the present rates of assessment could be more than doubled—an assumption which was improbable in itself, and based on no sufficient reason—and he also wrongly credited to the irrigation project an enhancement of the revenue which will not be attributable to it.

5. Taking into account the unexpected work which has had to be done lately, the extent to which the entry, "compensation for land," has to be increased, and the annual cost of maintaining the works in repair, the Board fear that there can be no hope that the project will be remunerative, but they hope it will not be abandoned or curtailed on that account. The advantages which will be conferred on the Town of Madras and its neighbourhood by the storage of so large a body of water at the Red Hills are manifold, and many of them are of a description which cannot be represented by money-values.

Proceedings of the Board of Revenue, dated 8th January 1872, No. 61.

Read the following letter from the Acting Collector of Chingleput, to the Secretary to the Board of Revenue, dated Sydapet, 18th December 1871, No. 613:—

WITH reference to the Board's Proceedings, dated the 18th March last, No. 1,197, communicating the Order of Government, dated the 9th idem, No. 705, I have the honour to reply, as directed, to the points raised by Major Mullins at paragraph 10 of his letter *seriatim*.

(1).* The period referred to in the statement given in paragraph 31 of Mr. Fraser's report comprises fourteen years, or from Fasli 1262 to Fasli 1275 inclusive.

* NOTE.—These numbers correspond with Major Mullin's queries at paragraph 10.

(2). Enclosure No. 1 is a Statement showing the ayacut cultivation, and revenue for the 58 villages under the tank for the five years subsequent, or from Fasli 1276 to 1280, and gives also the water supply received by the tank in each year. The difference† between the ayacut given in Mr. Fraser's statement and that now sent by me, is owing to the transfer of certain nunjah lands to the head Punjah in Fasli 1276.

	Cawnies.	Acres.
By Mr. Fraser's statement	7,441	9,839
By the statement now sent	6,966	9,211
Difference ...	475	628

(3). The period to which the statement of the 28 villages given in paragraph 53 of Mr. Fraser's report refers is for five years, or from Fasli 1271 to 1275.

(4). Enclosure No. 2 is a supplemental statement giving the ayacut average cultivation and revenue of these villages for subsequent years, or from Fasli 1276 to 1280 inclusive. This statement, however, gives information for 23 of the 28 villages only, five having had their wet ayacut wholly transferred to the head Dry in Fasli 1276. The names of these villages and the wet ayacut so transferred to the head Dry, are given in the margin; and as regards the 23 villages, there is again a difference between the ayacut given by Mr. Fraser and the one now sent, of acres 2,164, arising also from the transfer of Nunjah (chiefly what was called in this district Manavari) land to Punjah.

	Cawnies.	Acres.
Tenjery	56	
Nangalkom	39	
Agaram	31	
Malavilagom	4	
Sivabhootham ...	37	
	187	221

(5). Both sets of villages, the 58 and 23, were brought under Ryotwar settlement in Fasli 1248 (1837-38), and there have been since then slight reduction in the assessment in Fasli 1272, and again in Fasli 1276 in all of them; the former reduction was carried out throughout the district, and consisted in lowering the high nunjah rates then subsisting as shown in the margin, while the latter change reduced the number of nunjah rates in the district from 184 to 34, by doing away with intermediate rates‡ of less than quarter of a rupee. In some cases this involved a raising of the rates; but on the whole reduction was the result. These changes, however, affected the averages very slightly, as shown in the subjoined table:—

All Nunjah lands above Rupees 13 per Cawny to Rs. 11.
Above 12 and under 13 Rs 10
,, 10½ and ,, 12 to 9
,, 8½ and ,, 10½ to 8½

‡ Vide Scale of Rates published in Board's Proceedings, dated 13th March 1866, No. 1,707.

	Rs.	A.	P.
Average rate per acre on the total Circar Ayacut of the 58 villages at the former rates	5	11	10
Do. do. do. at the existing rates	5	7	10
Do. do. do. on the last five years' average cultivation at the former rates.	5	14	9
Do. do. do. at the existing rates	5	9	8
Average rate per acre on the total Circar Ayacut of the 28 villages at the former rates	3	11	5
Do. do. do. at the existing rates	3	10	3
Do. do. do. on the last five years' average cultivation at the former rates	3	13	8
Do. do. do. at the existing rates	3	12	5

(6). It is true that in some instances the collections divided among the area cultivated give a higher average per acre than the total ayacut assessment divided by the ayacut area. Major Mullins is correct in supposing that this is due partly to the better and more highly assessed lands having been cultivated and inferior lands left waste; but it is mainly owing to the collections, on account of second crop cultivation, the area and assessment of which are given in Enclosures Nos. 1 and 2 for the 58 and 23 villages respectively.

Enclosures Nos. 1 and 2.—Statements.

This letter will be submitted to Government with reference to their order in the Public Works Department quoted by the Collector, and Official Memorandum No. 202, dated 2nd December 1871.

2. The Collector gives the particulars required by the Chief Engineer in paragraph 10 of his note, but has failed to consider the consequence of changes to be introduced by the new settlement, and by the application of the correct survey areas, though the Board believe Mr. Banbury has by this time completed his inquiries so far as to be able to furnish full information on the subject. The papers will therefore be forwarded to the Director with the request that he will submit the financial results of his proposed settlement so far as they affect the project for the information of Government with the least possible delay.

No. 40.

Note on the Chembrambaukum Tank Estimates.

The original estimate prepared for the improvement of this tank amounted to Rupees 3,35,820; it provided for increasing the depth of the tank by 15 feet, but did not include any arrangements to afford an extra supply to the tank, which, though situated in a valley containing an area of 400 square miles, is estimated to have received on an average only 40 millions of cubic yards of water in a season; this represents the yield of only 1·16 inch from the whole area, though the rainfall in the valley is about 26 inches per annum, a very large proportion of the drainage being intercepted by 320 irrigation tanks in the valley above the Chembrambaukum tank. The average quantity of water received by the tank as given above is probably below the mark, for the average area cultivated under the tank during the last fifteen years has been 9,509 acres, and they, at the rate of 6,500 cubic yards per acre, show that the average quantity of water utilized must have been 61¾ millions of cubic yards, and this is exclusive of the quantity discharged by the surplus weirs, and which cannot be estimated but which may be set off against the quantities by which the supply may have fallen short of the above estimate of 61¾ millions in years in which remissions may have been granted owing to the partial failure of crops due to a defective supply.

2. The average cultivation had been far below the ayacut of the tank, and it was clear that what was required was the improvement of the supply to the tank rather than an increase to its capacity, and this the more as water had passed over the surplus weirs of the tank only in eight out of twenty-one years.

3. A revised estimate was then submitted, amounting to Rupees 8,38,000, for providing an extra depth of water of 15 feet, and for obtaining a supplemental supply from the Cooum river; this extra supply was estimated at 75·84 millions of cubic yards. The capacity of the tank was far in excess of the probable supply, and a large area of valuable land would have been submerged by its water-spread, it was determined therefore to reduce the capacity of the tank to 103 millions of cubic yards of water by raising the water level by 6 feet. The amount of the estimate for this work was Rupees 3,22,000, subsequently reduced to Rupees 3,02,859, but before it had been determined that the smaller capacity should be given to the tank, or what is termed the 6-feet project had been adopted, Rupees 1,11,141 had been expended on the 15-feet project, or work which formed no part of the smaller project; hence the total expenditure on the tank before the 6-feet project is completed will be Rupees 4,14,000.

4. Owing to a proposed revision of the assessment on the lands in the Chingleput District, it was not possible to deduce correct results of the probable returns from the Chembrambaukum tank. The Director of Revenue Settlement has now furnished a statement estimating the returns which may be expected

from the tank at Rupees 17,442, or 21 per cent. on the outlay of Rupees 4,14,000. The Board of Revenue acquiesce in the method adopted by the Director of Revenue Settlement in calculating the probable return from the tank. His estimate is based on the average supply which Major Mullins estimated the tank would receive, namely, 88⅓ millions of cubic yards of water. The Superintending Engineer is of opinion that the quantity of water the tank would receive has been under-estimated by Major Mullins, and this is probably the case, for while the latter calculates upon the receipt of 75·84 millions of cubic yards in eight days when the Coum generally has a considerable flood passing down it, he altogether ignores the small supplies which a river which receives the surplus water from a large number of tanks and which drains a considerable area must carry for a great part of the season throughout the north-east monsoon. Unfortunately data are not available from which this supply may be calculated, but from observations made by the Superintending Engineer during the two last years, he is of opinion that the tank will receive at least 100 million cubic yards of water; this probably is well within the mark, for, as shown in paragraph 1, the average quantity the tank must have received during the last 15 years could not have fallen short of 61¼ millions, while Major Mullins estimates the quantity at 40 millions, and this apparently owing to the fact that surplus water passed over the waste weir in eight years out of twenty-one; in the eight years the quantity the tank contained before water began to escape must have been 55⅓ millions of cubic yards, that being the then capacity of the tank, and this independently of the quantity drawn off for cultivation and re-placed up to the period when the water rose above the waste weir; hence the fact of water not having risen to the level of the crown of the weirs is not an indication that the tank necessarily received less than a full tank supply, or 55⅓ millions of cubic yards, and that this view is correct is borne out by the facts stated in paragraph 1.

5. The Superintending Engineer's estimate of an extra supply of 12 millions of cubic yards of water does not appear to be excessive; this quantity would be sufficient for 1,800 acres, and would, at Rupees 5 per acre, yield an extra sum of Rupees 9,000, which he adds to the expected returns as estimated by the Director of Revenue Settlement. The return from "wet waste" appears to be Rupees 4-9-3 per acre; so the sum to be added to the amount estimated by the Director of Revenue Settlement would be Rupees 8,221-14-0, making a total of Rupees 25,664, or a return of 6·2 per cent. on the sum of Rupees 4,14,000 which will have been expended on the tank before the 6-feet project has been completed.

6. The Revenue Board state that the Director of Revenue Settlemen estimates the increase of revenue, if the extra quantity of water which the Superintending Engineer calculates upon obtaining is available, at Rupees 6,000, or at Rupees 23,442 on the whole project; this would yield a per-centage of 5·66 on a capital of Rupees 4,14,000.

7. The Superintending Engineer is of opinion that the estimate of returns should be calculated on a capital of Rupees 3,02,859, the amount the 6-feet project would have cost had not Rupees 1,11,141 been expended on the works

provided in the larger project. As, ho
the tank, it must be debited to capital.

8. The amount expended upon t
leaving Rupees 1,43,608 to complete t
this sum at any rate should be provide

9. The Superintending Engineer
the sluice may be reduced, and a savin
however some extra amount will be re
extending the channels for the supply
may be cultivated, it is unadvisable to ca
way.

(Signed)

28th March 1872.

No. 13. ORDER THEREON, 3r

IRRIGATION, No. 2.

(Here enter No. 881, da

(True Ext

(Signed) J. (

Exd. E. C. Shunker.

PUBLIC WORKS DEPARTMENT,

FORT ST. GEORGE, *3rd April* 1872.

No. 14.

No. 881.

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,

PUBLIC WORKS DEPARTMENT.

SIR,—I am directed by the Honourable the Governor in Council to lay before the Government of India the papers marginally noted regarding the Chembrambakkum Tank Project in the Chingleput District of this Presidency.

IRRIGATION, No. 3.

G. O., No. 705, dated 9th March 1871.
" " 414, " 12th February 1872.
Note by Colonel Wilkieson recorded in G. O., No. 798, dated 20th March 1872.
Proceedings of the Board of Revenue, dated 23rd March 1872, with report of Director of Revenue Settlement, dated 15th February 1872, No. 287-7.
Note by Chief Engineer for Irrigation, dated 28th March 1872, No. 40.

2. The history of this project may be briefly summarized as follows:—The scheme for the enlargement of the tank was first brought under the consideration of the Government of India in the letter from this Government, dated 11th September 1867, No. 2,798, when an estimate of Rupees 3,55,435 was submitted for sanction. The project was reviewed by that Government in their letter of the 25th October 1867, No. 162-I., but it was subsequently ascertained that a serious mistake had been made in the contour of the proposed full level of the lake, and that if the project were carried out according to the original design a large tract of valuable land would be submerged, a considerable outlay rendered necessary on protective works, and the work would prove unremunerative. The further investigations which were made in consequence, and which are detailed in paragraph 3 of the note by the Chief Engineer for Irrigation, recorded in G. O., No. 705, dated 9th March 1871, led to the preparation of estimates for a tank on a reduced scale, and the projects thus designed are termed in the correspondence herewith submitted, the 15 and 6-feet projects, the estimated outlay being, respectively, Rupees 8,38,000 and Rupees 4,14,000. The larger scheme was on account of the precarious nature of the water-supply for a reservoir of the proposed capacity definitively abandoned in favour of the other, and the correspondence which has since taken place has had reference to the promise which the smaller project holds out of proving remunerative. The calculations of the Director of Revenue Settlement, based on Major Mullins' estimate of the average supply of the tank being 88½ millions of cubic yards, and on the new survey areas and on the new settlement rates, show that the net returns may be computed at Rupees 17,442, or 4·21 per cent. on the capital outlay of Rupees 4,14,000. The Superintending Engineer, however, is of opinion that Major Mullins has under-estimated the supply of the tank, and in this view, Captain Oakes, the Acting Chief Engineer for Irrigation, concurs. Colonel Wilkieson, the Superintending Engineer, considers that the supply will be at least 100 millions of cubic yards, which would yield an extra revenue of Rupees 8,222, and raise the returns to Rupees 25,664, or about 6·2 per cent. on the outlay of

Rupees 4,44,000. The Board of Revenue accept the Director's estimate of revenue, but considering that it would not be safe to reckon upon a permanent cessation of remissions for which Mr. Banbury has allowed Rupees 12,785, they would raise the cost of the project at Rupees 10,000, and thus reduce the net return to a little over 5¼ per cent., exclusive of any addition due to an increased supply; but the Government see no reason for declining to accept Mr. Banbury's estimate of gain by the cessation of remissions, which is calculated on the experience of the last fifteen years, a period which includes exceptionally good as well as exceptionally bad years, and affords a fair average.

2. In order to a fair estimation of the probable returns from the 6-feet project, which, after a large outlay on the original scheme, it was decided on adopting, it seems to the Honourable the Governor in Council necessary to exclude from the calculation that outlay amounting to Rupees 1,11,141, and to allow the estimate to stand at Rupees 3,02,859. The scheme now in progress will not benefit in the least by that outlay, and is for all practical purposes an entirely distinct project. It is much to be regretted that there should have been such a serious loss of public money, but the Government have no hesitation in accepting this loss and giving up that project as in every way preferable to carrying out the original design. According to Mr. Banbury's estimate of revenue, namely, Rupees 17,442, and allowing roughly Rupees 6,000 on account of the larger supply which it is expected the canal will receive, the returns may be safely set down at Rupees 23,442, or a little more than 7¾ per cent. on the outlay of Rupees 3,02,859.

3. In application from this Government dated 30th July 1869, No. 2,517, for sanction to prosecute the undertaking from Loan Funds was negatived by the Government of India pending the submission of revised plans and estimates with satisfactory evidence of its remunerative character. In now laying the papers before that Government, I am to express a hope that, on a consideration of the foregoing circumstances, sanction may now be accorded for the sum of Rupees 1,79,251 already expended, and for the further sum of Rupees 1,23,608 required to complete the work, or in all Rupees 3,02,859 being charged to Loan Funds.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) J. CARPENDALE, Colonel, R.E.,

Secretary to Government.

From Colonel J. Carpendale, R.E., Secretary to Government, to the Secretary to the Government of India, Public Works Department, No. 5334, dated Poona, 1st September 1869.

Revenue Department.

Proceedings of the Board of Revenue.

Dated 23rd March 1872.

Read G. O. dated 20 March 1872 No 198 P.W.D.

1. Has this order the Government required the Board to have an estimate submitting their opinion upon the revised project for the improvement of the Chembrambakkam tanks.

2. The proposed removal of the encroachments of the villages which are affected by this project is submitted and the Superintending Engineer under date 15th January 1872 No 28 forwarded an estimate dated 8th January 1872 No 431.

3. The Superintending has furnished the area to which the proposed supply with reference to the capacity of tanks which under ordinary circumstances is likely to be obtained by the Chembrambakkam tank system the project is considered and to be estimated requirement of 6500 cubic yards of water per acre instead of 4750 and has consequently only included in the calculations two villages besides the 58 which have hitherto been

been held to be dependent upon this
Bank for their irrigation. He has informed the Board however that after a personal inspection of the locality he is satisfied that should any further quantity of water be found to be available there will be no difficulty in bringing the lands of other owners under the influence of the work.

3. The principles which have guided Mr. C. Bardsley in the revision of the assessment of these lands are precisely similar to those which he has adopted in dealing with the Red Hill Bank lands, and which have already received the Board's approval in their proceedings dated 17th December 1870 No. 7175. There are however four descriptions of land which have been assessed somewhat more highly owing to their superior character as explained in para 9 of Mr. Bardsley's

letter.

4. The revised assessment as compared with the settlement of the season 1870-71, an immediate favourable one, will result in an increase of Rupees 1857, which is almost entirely owing to the increased irrigation obtained by Survey. The improved irrigation which will be rendered available by the new project has, however, enabled Mr. Bardsley to transfer nine 2nd class villages to the 1st Group, and two villages which under other circumstances would have been placed in a third class to the second Group. The Board are of opinion that Mr. Bardsley's proposals for the assessment of this Canal may be accepted.

accepted for present purposes
and think that the two observers
good grounds for reducing Major
Hurford's estimate of the
Equivalents of one acre of
cultivation from 24,250 cubic
yards of water to 6500.

5. It will be observed
that the only fractions of the
increased revenue notified is to
be jointly ascribed to the
improvement of the Chandrambanhus
tanks works in the sums obtained
by leaving the cases of groups
of certain villages, and the
Dandburg points out

entail amounted to Rs 1979 only.

6. In the trial under consideration
there were during the year of comparison (1870-71)
but 164 acres of irrigable land left waste, 185 acres of
dry land which could, under the new project be
converted into wet and 507 acres of single crop
land on which a second crop might in future,
be obtained. The revenue to be derived hereafter

	acres	assmt
Wet waste	164	7-0
Dry converted to wet	185	0850
second crop	607	1630
	2965	

from these lands at the revised rates of assessment
will amount to the sum noted in the margin, in
all Rs 2965.

7. It appears that a sum of Rs 4949
[illegible] of these assessments is referred to in
the preceding paragraph as the total of the excess revenue
beyond the settlement of 1870-71 which is to be ex-
pected when the irrigation project is completed. The
very unusually favorable nature of the season in
1870-71 has, of course, had the effect of reducing the
additional area referred to in para b above to the
very lowest possible limits, and has consequently
proportionately reduced the second assmt referred to in
the same para which is to be placed to the credit of
the project.

8. It is to be observed that if the execution of this
project will ensure in all future years an increased
area of cultivation equal to that of the year 1870-71.

[illegible]

the difference between the revenue obtained in that year and the average revenue may fairly and properly be considered as a third asset to be credited to the project. It is to be noted that the estimated supply of water which the lands will hereafter receive is taken by Major Mullins to be an average supply only and we find that this average supply is more than sufficient to meet the requirements for the area under cultivation in the very favorable year under notice, so that when the project is completed that year's area of occupation will become an average one and cease to be exceptional

9. Mr Bunbury shows that the average occupation of wet lands in the tract under consideration during the last fifteen years has according to the new survey been 979 acres below the cultivation of 1870-71 which he expects to be the normal cultivation in future years, and he accordingly credits the project with Rs 6,333 being the assessment of this number of acres at the average settlement rate. He further proposes to credit the project with a sum of Rs 12,785 as gain by cessation of remissions. He arrives at this sum as the average remissions of the last fifteen years treating exceptionally the years 1868-69 and 1869-70 in which the remissions were unusually high

M-

10. [illegible] would appear to be right that this revenue should not be taken into account as the allowance for cessation of receipts would be offset by the allowance for increased area, but on examination it will be found that there is not the exact correspondence between the remissions and the assessment of the lands newly brought under cultivation, as the figures given in para 12 of Mr Bunbury's letter should represent the actual cultivation of each year and of lands left waste, and for which remission of assessment had been granted, had been exceeded then the allowance taken as

represent[illegible]

Representing Excess area would have been in a great measure, included the allowance for the separation of remissions, but it is to be observed that these figures are the occupied area, or the Lands taken up for the year and included in the Pattahs, and on which the remitted demand of the year is fixed & therefore the present result in the average quantity of Lands taken up being largely increased it is equivalent to a permanent increase in the assessed demand and is therefore quite separate from the sum gained by remissions to remit any portion of the existing average demand of preceding years.—

The

11 The Survey Revision has the Board think been fairly Estimated by Mr Sanberg, but assuming that it would not be safe Reckon upon a permanent Cessation of Remissions and they would therefore fix this asset of the project at Rs 10,000.

12. The total of the Lands which the project may throw in the Board's opinion be chargeable with Assessment to Rs 20,277, are noted in the account to Rs 20,277, are noted in the Margin, or deducting the additional Cabs of unplough to Rs 14,657. This account on the outlay of Rs 4,14,000 would only give a return of a little over 3/2 per Ct.

Existing Revenue of Lands of Actual Village	1979
Increase of Cultivation & Irrigation	2,965
Additional Average area of Cultivation	5,333
Sum by Cessation of Remissions	10,000
	20,277
Deduct additional Cabs of unplough	5,620
	14,657

13. If, however, only the Assessment of the reduced project, viz Rs 3,02,857 be taken into account, and the Board think that Colonel Welsh's

on

in para 6 of his Memorandum recorded in the C. O. under disposal, has shown good grounds for adopting this Course, Route of Return will be increased nearly 5 per cent. Further should the Estimates of the Capacity of the tank when Completed, and of the Average supply of Rivers which it will obtain when Colonel Walker's Memorandum, proves to be more Correct than the Calculations Estimates put forward in Major Bullers Memo recorded in the C. O. under date 9th March 1871 No 705. the Return on the outlay will be still further raised. In Answer to a telegram on the subject Mr Bentley who is now at Cape Palmas

Notes that on Colonel Walkers data he Estimates roughly that £6000 may be added to the annual Saving of Revenue but it must be remembered that the Cost of the project will be increased because new channels will have to be made.

4 On full Consideration of the Revised project in all its bearings the Board think that the Sum of £ India should at once be required for the additional Expenditure required for the Completion of the Ferozepore project (Rs 1,43,608) to be incurred from Local funds.

(True Extract)

J Grote
Secretary

To the Secretary to Government
Public Works Department
with Copies of Board's Proceedings Nos 705 of 1870
& 614 & 431 of 1872.

No. 881.

To

The Secretary to the
Govt. of India.

Sir,

I am directed by
the Hon'ble the Governor
in Council to lay before
the Government of India
the papers marginally
noted regarding the
Chemkhurma Kanthuma
Tank Mysol in the
Chengleput District
of this Presidency.

L. D.

W. M.

G. O. No 705 Dg. March/71
" No 414 " 12 " Feby/72
Note by Col. Wilkinson recorded
in G. O. No 798 Dg 20 " March/72
Rev. Office Bd Orders Dg 23 March/72
with Report of Director of Revenue
Settlement Dg 15 " Feby/72. No 287-7
Note by Chief Engr
for Irrigation Dg 28 "
March/72 No 40.

Rec'd 23rd Sept. 1872 and sent 25th Sept.

Letter No 1872
Dg. 18th Sept.
To 1472.

Forwarding copy of
Memorandum of Revenue.

Ordered that the following
letter be sent.

No 880

Ordered that the following
letter be sent.

Chief Engr
for Irrigation
Dg 28th Sept. 1872

The history of this Project may be briefly summarized as follows: The scheme for the enlargement of the bank was first brought under the consideration of the Govt: of India in the letter from Madras dated 11 September 1867, No 2798, when an estimate of Rs: 3,55,435 was submitted for sanction. The Project was returned by that Govt: in their letter of the 25 Septr: No 1208, but it was subsequently ascertained that a serious mistake had

been made in the costing of the proposed full bund of the lake, and that if the project were carried out according to the original design a large tract of valuable land would be submerged and a considerable outlay considered necessary in protective works. The further investigations which were made in consequence, and which are detailed in para 5 of the note by the Chief Engr for Irrigation recorded in G. O. No 705 dated 9 March 1871 led to the preparation of estimates for a tank

on a reduced Rate and
the projects thus designed
are termed in the Corrs-
pondence hereinto
referred, the 15" and
6 feet projects. The
estimated outlay thereon
respectively Rs: 8,38,000
3,02,859.
and Rs: 4,14,000. The larger
Scheme was on account
of the precarious nature
of the water supply for
a Reservoir of the pro-
posed capacity depri-
tively abandoned in
favour of the other, and
the correspondence which
has since taken place
has had reference
to the promise which
the Supdg
(and fixed) project

(The new basis of calculation
is 3,02,859. as against
4,14,000 the old)

holds out of proving re-
munerative. The Cal-
culations of the Bricks
of Revenue Settlement,
based on Major Pudlins
Estimate of the average
supply of the tank during
88½ millions of cubic
feet, and on the new
Survey areas and the
new Settlement rates,
show that the net returns
may be computed at
Rs: 17,442 or 4.21 per
Cent on the capital out-
lay of Rs: 4,14,000. The
Supg: Engineer however
is of opinion that Major
Pudlins has under es-
timated the supply of

the bank, and in this
view Capt. Oakes, the
Acting Chief Engineer for
Bengal Circuits. Col:
Pitcher considers
that the supply will
be at least 100 millions
of cubic yards; which
would yield an extra
revenue of Rs: 8,222
and raise the returns
to Rs: 25,664 or about
8.47
1. 2 per cent on the out-
lay of Rs: 2,14,000. 302.859.
Board of Revenue ac-
cept the Director's es-
timate of revenue,
but considering that
it would not be safe
to reckon upon a
permanent expansion
of revenue for which
Br: Bamberry has allowed
Rs: 12,785, they would
give this asset of the pro-
ject at Rs: 10,000 and
thus reduce the net re-
turn to a little over
5½ per cent, exclusive
of any addition due to
an increased supply;
but this Govt: see no
reason for declining
to accept Br: Bamberry's
estimate of gain by
the expansion of revenue.

In order to a fair
estimation of the probable
return from the project
which, after a
large outlay on the

which is called
stated on the expense
of the last 15 years.
a figure about
which includes 24 extremely
fruitful years all on Ex-
-cellent alluvial land &
could afford a free
average.

original scheme it was
decided to adopt during
it seems that the Madras
the Governor in Council
necessary to exclude
from the calculation
that outlay amounting
to Rs: 1,11,141 and to al-
low the estimate stand
at Rs: 3,02,859. Hence Mr.
Captain Mr. Kennedy's
estimate of Revenue Rs
Rs. 17,442. and adding
roughly Rs: 6000 on account
Water Cooler supply which
it is expected the Canal
will receive, the returns
may be safely put down at
~~Rs: 23,442~~ Rs: 23,442
or a little more than
7½ per cent on the
outlay viz Rs: 3,02,859

The scheme cannot
in any case be
but benefit in the
least by that act-
-ing - and is safe
from all and any other
an entirely distinct
project. It is need
to be reported that
there should have been
such a serious loss of
public money but it
not have no hesitation
in sanctioning the
proposal to that extent
in any case
desirable to carrying

-ing in a days.

18 Sept/69. No 3331

Mr application
from this Govt. dated
30 July 1869. No. 2577
for sanction to prose-
cute the undertaking
from Loan funds was
negatived by the Govt.
of India pending the sat.
inspection of revised plans
and estimates with satis-
factory evidence of its
remunerative character.
In now laying the papers
before that Govt. I am
to express a hope that
on a consideration of
the foregoing circum-
stances, sanction may
now
at least be accorded to

[the sum of Rs: 1.43.608 required to complete the Project being charged to borrowed Capital.)

×

Estimate Rs: 4.14.000
Expenditure .. 2.70392
1.43.608

E.J.
April 1st

× I would say "for the sum of Rs 270.392 already expended and for the further sum of Rs 143.608 required to complete the works, or in all Rs 302,85[illegible] from Loan Funds".

I think we should ask as suggested by Mr. [illegible] for 302,859.
[illegible]

[illegible] despt 3/4/72 with papers noted in the margin of the letter
1 Book of plans, 1 detailed Estte, 1 [illegible] & [illegible] despt 10/4/72 [illegible]

12 printed copies of the letter & 30 copies of Govt 880 of 1872 despt 26/4/72

(5)

No 40.

Note on the Chembrumbakum Tank Estimates.

The original estimate prepared for the improvement of this tank amounted to Rs: 3.35,820, it provided for increasing the depth of the tank by 10 feet, but did not include any arrangements to afford an extra supply to the tank, which, though situated in a valley containing an area of 400 square miles, is estimated to have received on an average only 40 millions of cubic yards of water in a season — this represents the yield of only 1.18" from the whole area though the rain fall in the valley is about 26" per annum; a very large proportion of the drainage being intercepted by 320 Irrigation tanks in the valley above the Chembrum[illegible]k. The [illegible]

quantity of water received by the Bank
as shown above is probably below the
mark. For the average has estimated
under the Bank during the last 15 years
has been good and they after the life
of 1820 cubic yards service show that
the average quantity of water utilized
must have been 61¾ million gallons
yards and this is exclusive of the quantity
discharged by the surplus weirs and
which cannot be estimated but which may
be set off against the quantities by which
the supply may have fallen short of the
above estimate of 61¾ million gallons
in which deficiency may have been
counted during the period failure
of crops due to a defective supply

The average cultivation had been
for below the agreed of the Bank
and it was clear that what was required
was the enlargement of the supply

to the Bank rather than an increase to
its capacity and this the more, as water
had passed over the surplus weirs of the
Bank only for part of 21 years.

A revised estimate was then
submitted accordingly for 2,350,000
for providing an extra depth of water
of 15 feet and for obtaining a definite
annual supply from the Canon
River. This extra height has increased
the capacity of the Bank by 750,000
gallons of the probable supply and a
large area of arable land would
have been submerged by it but
offset, it was calculated, by
the increase the capacity of the Bank
to 1½ million gallons would
be effected by raising the dam
by 15 feet for the expenditure
of £2,350 for the purpose

For this work has Rs: 3,22,000 subsequently
been passed Rs: 3,12,85 but, before it had
been completed, but the Builder Capa-
city should be known to the Land, or,
that it termed the Project proper
had been worked, Rs: 1,00,000 had
been expended on the 3rd part Project
a more skilful Assessment of the
Factor proved, since the total Ex-
penditure on the Land before Rs:,
the Project is completed more be
Rs: 4,14,100.

Being to a proposed Revision
of the Rs proposed in the Land in the
Permanent Records it has not yet
been ascertained what the probable
Return from the Land under Revi-
sion of the Rules of Revenue Settle-
ment has not provided a Estimate
Return may be

the surplus water from a large number
of tanks and which Engineers consider-
able area must carry for a great part
of the season throughout the North East
Division. Unfortunately data are
not available from which this supply
may be calculated, but from observa-
tions made by the Chief Engineer during
the last year, he is of opinion
that the tanks will receive at least
50 million cubic yards of water,
and this quantity is the least
that is necessary, the effect of water not
carried to the level of the ground
for the crops is not an indication
of the water is not actually received
by the tanks as more than a full tank
holds, but 55½ millions of cubic yards and
of this water is correct is known
only by the facts stated in para 1.
The Chief Engineer estimates
that after taking off 12 millions of
cubic yards of water lost by evapo-
ration the quantity would

as regard the quantity the tanks con-
tained before water began to escape
must have been 55½ millions of
cubic yards, that being the maximum
capacity of the tanks, and this independently
of the quantity drawn off for cultiv-
ation and replaced with the rainfall
when water rose above the mouths
of their sluices, the effect of water not
carried above the level of the ground
for the crops is not an indication
of the water is not actually received
by the tanks as more than a full tank
holds, but 55½ millions of cubic yards and
of this water is correct is known
only by the facts stated in para 1.
The Chief Engineer estimates
that after taking off 12 millions of
cubic yards of water lost by evapo-
ration the quantity would

the sufficient for 1820 hereof and brot
to Rs: 5 per acre yield the expenditure
of Rs: 9000 which he adds to the ex-
pected Returns as estimated by the
Director of Revenue Settlement.
The Returns from "Mehrasle" ap-
pears to be Rs: 4-9-3 per acre-to
the sum he added to the Amount
estimated by the Director of Revenue
Settlement would be Rs: 82 21-4
Rupees & Calculated Rs: 25114 per
acre of 1.2 per cent on the Sum
of Rs: 4,14,000 ~~to~~ be expended on the
Canal ~~before~~ the Project
has been completed.
The Revenue Board state that
the Director of Revenue Settlement
"Considers the increase of Revenue
of the extra duties of Water Rate
the Superintending Engineer Calculates after
deducting 10 Annas per acre, &c.

Rs: 1000 or at Rs: 23,42 2 m the whole pro-
jected Civil would yield a percentage
of 5. 11 m a capital of Rs: 2,14,000

The Say: Engineer is of opinion
that the returns of returns should be
estimated on Capital of Rs: 3,12,857,
the amount the Project would
have cost had Rs: 1,11,143 been
expended on the works provided in
the larger project. As however the
Civil Canal has been extended on the
Left Bank only a small portion
of the amount expended to date
has been applied to the Left Bank
Civil Canal, & the Superintending
Engineer has therefore

May be asked and a copy of
his will be effected as soon
over some extra amount will be re-
quired to pay the rent and also
for extra gas used if it is ascer-
tained by the Sanitary Officer that
it is necessary for the health
of the occupants that they

28 March 92

Master of the
Rolls Chief Engrossing Clerk

No. 1495
Govt. of India
PUBLIC WORKS.

To Secretary to the
Govt. of India

Nos. 12-1314

Subject 880-884.

Madras

Chennai Corporation &

Project Passing order

on Kuyam Retaining

Wall Chennai Corporation

Canal Project.

Sanctioning, with

Letters, Papers

&c. to Chennai

Corporation Canal

Project in the Triangle-

Wise Treasury