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MADRAS RECORD OFFICE.

Government of Madras.

PUBLIC WORKS DEPARTMENT.

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*Proceedings of the Madras Government, Public Works Department,
5th January 1876.*

Nos. 41 & 42. Read the following endorsement of the Acting Secretary to Government, Revenue Department, dated 8th October 1874 :—

Proceedings of the Board of Revenue, dated 29th September 1874, No. 2,805.

Read the following letter from R. W. BARLOW, Esq., Collector of the Chingleput District, to J. GROSE, Esq., Secretary to the Board of Revenue, dated Sydapet, 26th August 1874, No. 451 :—

I HAVE the honor to forward the statement of irrigation under the Cholaveram and Red Hills Tanks for a series of years, as directed in G.O., No. 1,313, of the 27th November, and Board's Miscellaneous Proceedings of the 4th December last, No. 8,303. I regret, however, to state that I am unable to give the necessary statistics for the Cholaveram Tank for a longer period than the last seventeen years, as, from the report of the Tahsildar of Ponnery, it seems that accounts for the previous three years are not forthcoming. As regards irrigation under the Red Hills Tank, I have given the statistics for twenty years for all villages under it but one, *viz.*, Cosa-poor, and the Tahsildar reports that the accounts of this village, for Faslis 1270, 1271, 1272, and 1273 inclusive, are not forthcoming, though a careful search has been made for the same.

2. Adverting to the concluding part of paragraph 3 of the Chief Engineer's letter, printed in the Proceedings of Government quoted above, wherein he remarks "that the causes which have led to a decrease of cultivation, and particularly to the grant of considerable remissions in Fasli

1281, should be inquired into," I may observe that there has been an increase in the actual cultivation of late years, and also in the net revenue, though there was a slight falling off in Fasli 1281, but this increase is nothing like

what was expected for the reasons stated further on.

3. The remissions granted in Fasli 1281 are due chiefly to a great deal of nunjah cultivation having been destroyed by floods, owing to the enormous quantity of water that was let out in that fasli to prevent the tank bursting.

4. It is to be remarked that the irrigation under the Red Hills and Cholaveram Tanks has not as yet been extended by cutting channels newly to any of those villages which were expected to be benefited by the project; but it is a question for calculation and consideration how far, if this was done, the supply of water would suffice for Madras, and for the extended cultivation.

5. As regards the apparent decrease of cultivation, noticed by the Chief Engineer in Faslis 1280, 1281, and 1282, as compared with Fasli 1276, I beg to remark that the figures of the former do not include (1) cultivation of nunjah minor inams in ryotwary villages; (2) the area irrigated in Zemindary and Shrotriem villages; (3) the area on which second-crop cultivation was raised in those faslis; whereas the figures of Fasli 1276, as given in Mr. Blair's report alluded to, includes the area of all these items, and further an amount was added, calculated at sixteen per cent. on the holding, as the approximate increased area likely to result from the new more accurate survey, and all these swelled the total to acres 5,559.

6. I may also add that the object of the figures given in Mr. Blair's report was to determine, as nearly as possible, the quantity of water required for irrigating the

	Actual culti- vation.	Assessment including Fasli duty and Tervai- duty.	Net Revenue after deduct- ing remis- sions.
	ACRES.	RS.	RS.
1280 ...	3,329	14,107	13,299
1281 ...	4,070	14,069	12,005
1282 ...	4,494	15,108	14,915

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lands already entitled to it, and to see what supply would be available for Madras, after meeting the demand for irrigation, while that aimed in the statement furnished by this office to the District Engineer in August last, on which the Chief Engineer's remarks as to decreased holding are based, was simply intended to show the net revenue of Fasli 1282, as compared with the two previous ones.

7. The statements now sent even do not include the extent of cultivation in Moottahs and Shrotriom villages, because it is not possible to separate the revenue due to irrigation in these cases from other sources; the peishcush or the quit-rent collected being a lump sum fixed with reference to the average collections of a series of years on the entire villages.

SUBMITTED to Government with reference to G.O., dated 27th November 1873, No. 1,313.

2. The Collector shows that the figures contained in Mr. Blair's report included the cultivation on wet minor inams; the area irrigated in Shrotriom and Zemindary villages, and the breadth under second-crop cultivation. But these items formed no part of the Collector's statement, and hence the difference remarked upon.

3. The heavy remissions in Fasli 1281 appear to have been owing to the damage done when allowing an enormous escape to prevent the bank breaching.

4. The Board would direct attention to the Collector's remark regarding nothing having been done towards extending the channels for new irrigation, now that the capacities of the reservoirs have been increased. If there is surplus water at any time it might be diverted into some of the many tanks lying below the Red Hills Tank.

5. It is observed from the report of the Director of Revenue Settlement now before the Board, that he has raised the grouping of the villages under these tanks owing to the certainty of the supply, and placed the assessment thus derived to the credit of the project.

(A true Copy and Extract.)

(Signed) J. GROSE,
Secretary.

TRANSFERRED to the Public Works Department.

(Signed) C. G. MASTER,
Acting Secretary to Government.

No. 42-A. Read the following Proceedings of the Madras Government in the Revenue Department, dated 25th August 1875, No. 1,276.

Proceedings of the Board of Revenue, dated 23rd July 1875, No. 2,058.

Read the following Proceedings of the Madras Government, dated 9th June 1875, No. 1,221, Revenue Department.

Read the following Proceedings of the Madras Government, dated 2nd June 1875, No. 1,548, Public Works Department.

ABSTRACT.—*Madras Water Works Project.*—Passing orders on the Memorandum of the Chief Engineer for Irrigation affording some information as to points noticed by the Government of India relative to the —.

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ORDER THEREON, 9th June 1875, No. 1,221.

FORWARDED to the Board of Revenue with the request that they will be good enough to report at an early date on the points referred to in paragraphs 4 and 10 of the foregoing Order.

(True Extract.)

(Signed) LORNE A. CAMPBELL,
Under Secretary to Govt.

With reference to paragraph 4 of Government Order, Public Works Department, printed with the Order above read, the Board observe that the discrepancies therein referred to were explained in, and a statement of revenue forwarded with, the Board's Proceedings, dated 29th September 1874, No. 2,805. The Board, however, observe that the statement is slightly defective, since it does not show the assessment of dry lands, and the quit-rent of Inams, irrigated, both of which under the Order of Government, dated 25th July 1872, No. 1,166, Public Works Department, have to be treated as revenue due to irrigation. Board's Proceedings, dated 21st Sept. 1874, No. 2,711. The Collector will, therefore, be separately requested to submit the statement in the

form required by Government in their Order, dated 23rd March 1874, Public Works Department, No. 791.

2. The Collector's attention will be drawn to paragraphs 7 and 8 of the Government Order, Public Works Department, printed with the Order above read.

3. With reference to paragraph 10 of the Order just referred to, the Acting Director of Revenue Settlement in his report, about to be separately submitted to Government, on the resettlement of the Sydapet Taluq, which includes fifty villages under the influence of the Red Hill Tank, has furnished information which enables the Board to answer the questions now put. An extract from this report, which contains also suggestions as to the best method of utilizing the supply, is herewith submitted.

4. The area of waste in these villages is not large, and the land is of a very poor description. The tract is a poor one on the whole, and the people are not well off. Mr. Puckle doubts whether the land would fetch much at auction. It would have to be sold, under the terms of the settlement now made, subject to a swatantram, payable to mirassidars, of two Annas in the Rupee of assessment. The revised assessment has not yet come into operation; the lands are specially poor, and the people are as yet unacquainted with the benefits of good irrigation. Under these circumstances there would probably be a reluctance to buy, and the Board are, therefore, of opinion that the sale of the waste is not expedient.

5. The Board see no reason whatever for revising the Inam settlements in this tract by the imposition of additional charge for water supplied to wet lands, which they suppose is the intention of the Government Order. They have recently placed their views on this point and the grounds of them before Government in connection with the Sangam project, and there is nothing in the present case to render different treatment of the Inams possible.

6. From Mr. Puckle's report it will be seen that the wet lands in Government villages could bear, if furnished directly or indirectly, by means of Red Hill Tank water, with a regular and sufficient supply, an addition of Rupees 2 per acre to their present revised wet assessment, and that the dry lands could pay a water-rate of

Rupees 4 in addition to the dry assessment. The wet average being now almost exactly 3 Rupees and the dry about 1 Rupee, this arrangement would bring all the lands under the influence of the project to a rate of Rupees 5 per acre on the average; and this, in Mr. Puckle's opinion, will be a moderate and fair rate of assessment.

7. Mr. Puckle, it will be seen, suggests certain methods for extending the supply and making it go as far as possible; and, if his estimate of the quantity of water available is correct, a return of Rupees 61,266 might be obtained from the fifty Government villages under the Red Hill Tank alone. It is for the professional department to say how much water can be made available and whether it can be utilized as suggested by the Director of Revenue Settlement.

(True Extracts.)

(Signed) H. E. STOKES,
Acting Secretary.

Extract from a letter from the Acting Director of Revenue Settlement, to the Acting Secretary to the Board of Revenue, dated 9th June 1875, No. 1,093 A.
31 A.

PARAGRAPH 18.—Red Hill Tank.—This tank commands fifty of the villages reported on with an aggregate area of 35,608 acres. Of this, 3,535 acres are now irrigated from the tank direct, and 10,833 acres from petty rain-fed tanks; these latter are nearly all out of repair, and probably have been purposely left so, as the District Engineer informs me that when the system of irrigation from the Red Hill Tank is complete, these minor tanks will no longer be needed but may be levelled in and cultivated. If this is done, the tank beds will add 2,935 acres to the irrigable area; the manawari* will give 3,670 acres and ordinary dry lands 6,021 acres, total 12,626 acres, supposing the whole to be cultivated.

* Including Government and iram cultivated and waste land.

19. Now, the Red Hill Tank contains 48,000,000 cubic yards of water, of which Madras takes 5,000,000, there are thus at least 40,000,000 cubic yards available for irrigation, and if each acre requires 6,000 cubic yards of water there is store sufficient to irrigate 6,600 acres without replenishing, but the tank is supplied by a river channel which has a continual flow; deducting therefore the area already irrigated 3,585 acres, there is probably water enough for 10,000 acres of dry land, and if the small tanks are repaired and deepened and their water-spread contracted, enough may be stored in these tanks from falling rain and the drainage of higher levels to fully irrigate the area that they now poorly supply.

20. The want of drainage and protection from the inundation of the Courtaliyar river is very much felt in these villages, and a thorough system of drainage to get rid of the salt and soda that has now no escape from the soil should, I think, be the precursor of an improved system of irrigation, as much that is deleterious may be washed away with the aid of falling rain if there is but an open channel. But as matters stand at present there is no drainage whatever, the calingulah channel from the Red Hill Tank is bunded across in places to turn water to the fields, and the surplus of the nunjai is allowed to soak into the manawari lands instead of being carried away by a clear cut channel. The consequence is that some lands deteriorate yearly, and all are more or less injured by the want of a proper out-fall.

21. The advantage of repairing the minor tanks and restricting their capacity to their deep water bed is the more apparent from the fact that the shallow waterspread of many of these tanks is already cultivated, and only the deep bed is available for the extension of cultivation; if these deep beds are defined and the cultivation above them embanked, a high level channel from the Red Hill Tank might not only irrigate the cultivation hitherto periodically submerged, but might furnish the rain-fed tanks with a regular supply for the better cultivation of the lands below them.

22. If the Red Hill Tank water is brought to these lands, the assessment of the existing nunjai may be raised by at least half a water-rate, or by Rupees 2 an acre. This will give Rupees 21,666 on the 10,833 acres now cultivated, and if to this be added Rupees 40,000, at a full water-rate of Rupees 4 an acre, on the 10,000 acres of dry land to be irrigated, the total results will be Rupees 61,666 for one crop plus Rupees 11,772, the present single crop assessment of the 3,535 acres now irrigated by the Red Hill Tank.

(True Extract.)

(Signed) H. E. STOKES,
Acting Secretary.

COMMUNICATED to the Public Works Department, with reference to G.O. in that Department, dated 2nd June 1875, No. 1,548, for early attention and full report.

(True Extract.)

(Signed) A. MACGREGOR,
Acting Secretary to Government.

No. 42-B.

No. 1,439.

Note by the Chief Engineer for Irrigation.

THE Board of Revenue in the first paragraph of their Proceedings No. 2,058, of the 23rd July 1875, point out that, in their Proceedings of the 29th September 1874, No. 2,805, the discrepancies pointed out in Proceedings, Madras Government, No. 1,313, of the 27th November 1873, were explained. This was overlooked when the order of the 2nd June 1875, No. 1,548, was passed, and the undersigned regrets that very great carelessness in his office led to the Government being misinformed. The revised statements for the Madras Water Works, directed by the Board to be prepared, have not yet been received, but as a settlement has recently been made of the quantity of water to be reserved in the Red Hills Tank in connection with the supply of the town of Madras, information can be given as to the quantity likely to be available for irrigation.

2. In paragraph 19 of the extract from the report of the Acting Director of Revenue Settlement there are some material misapprehensions. He mentions that the Red Hills Tank contains 48 millions of cubic yards, that Madras takes 5 millions of cubic yards, and that the supply-channel has a continual flow. The facts are as follow:—

	Millions of Cubic Yards.
The Cholaveram tank holds	28.47
„ Red Hills do. do.	101.98
Total ...	130.45

In the Government Order quoted above the Government have directed that water is to be retained in the Red Hills Tank at 6 feet above the sill* of the lowest sluice of the Municipal off-take, and the quantity of water below this level† is 45.32, so that the water available for irrigation, if the tanks be only once filled annually, would be 85.13. Generally a great deal of additional water will be received, but this year it is possible or probable that the tanks will not be once filled, the Red Hills Tank being now more than 5 feet below the full level.

3. The storage of water in a tank required for the irrigation of an acre of land is in many cases more than the 6,000 cubic yards mentioned by the Acting Director,

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owing to the large quantity wasted by evaporation; but in these tanks of great area and considerable depth, in the larger of which, moreover, under the arrangements directed in connection with the supply of Madras, a considerable depth of water will always be maintained, evaporation will be less, while it will be probably more than compensated for by the additional surplus received from the river. Ere this, detailed information as to the supplies received in the last few years, and as to the extent and details of expenditure of water, should have been forthcoming; but the Superintending Engineer has not yet sent in his report for any year. Pending the receipt of the more definite information required, and looking to the low level of the land irrigated and to be

irrigated, it may, it is thought, be assumed that the quantity* of water available for irrigation in the reservoirs of the Madras Water Works up to F.T.L., may be divided by 4,500 to obtain the irrigable acreage, which will thus be 18,900 acres.

4. The Acting Director of Revenue Settlement, in the extract from his report transmitted by the Board, refers to the area already irrigated and to the land capable of irrigation under the Red Hills Tank only, and the Cholaveram tank is not referred to; but it would seem from the following figures that his area of 3,585 acres is under both tanks. From the statements transmitted with the Board's Proceedings, No. 2,805, of the 29th September 1874, it appears that, subject to the corrections yet to be made, the cultivation and revenue for years prior to the enlargement of the tanks were as follow:—

		AVERAGE CULTIVATION.		INAM FASULJASTI, &C.		Total Revenue.	Remarks.
		Extent.	Revenue.	Extent.	Revenue.		
Faslis 1263 to 1279	...	1,458	4,991	1½	1	4,995	Cholaveram Tank. Red Hills do.
Do. 1263 to 1279	...	1,824	7,487	1	3	7,490	
		3,282	12,481	1½	4	12,485	
Similarly, the average for the subsequent faslis are,							
Faslis 1280 to 1282	...	1,730	4,945	...	1	4,946	Cholaveram Tank. Red Hills do.
Do. do. ...	...	2,451	9,119	23	70	9,189	
		4,181	14,064	23	71	14,135	

It appears, therefore, that only nine villages are irrigated under the Cholaveram and ten under the Red Hills Tank, and, as the Acting Director states that there are fifty villages altogether—thirty-one remain to be supplied. A list of these thirty-one, with the area irrigated and irrigable in each, will be useful to the Superintending Engineer, Chingleput, in determining the details of the distribution arrangements required. The available area of land for irrigation, taking the Director's figures, will apparently be—

The old irrigation ...	ACRES.
Do. under petty tanks to be superseded ...	3,585
Do. tank beds ...	10,833
Do. manawari or waste ...	2,935
Do. dry lands to be converted ...	3,670
	6,021
Total ...	27,044

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but of this, unless the water-supply prove better than has been supposed, only 18,900 acres can be irrigated, and, judging from the particulars of returns from the several descriptions of land given by the Director, it would appear that the most profitable application of water to the 15,315 acres, which can be supplied in addition to the old area, will be to arrange, at least in the first instance, for the irrigation of the—

Waste lands...	...	...	...	...	...	ACRES.
Dry lands to be converted	...	...	...	...	...	3,670
	...	...	...	...	...	6,021
and to make up the difference by bringing about 5,624 acres of the irrigation under minor tanks under the influence of the better supply. The revenue will then be—						
9,691 acres at 4 Rupees ...	...	...	...	...	Rs.	38,764
5,624 do. 2 „ ...	...	...	...	...	„	11,248
					Rs.	50,012

5. The additional quantity of water stored in the reservoirs by the outlay on the Madras Water Works project is the—

						Millions of Cubic Yards.
Cholaveram	...	...	...	...	...	130.45
Red Hills	...	...	...	...	...	23.84
					Total ...	23.84

In both cases the zero of Mr. Fraser's contours has been taken as ordinary F.T.L. instead of the occasional or possible F.T.L., which would make the former capacity 45.01.

Additional storage... 106.61
and it may perhaps be assumed that by extrasupplies at intervals the total receipts annually of water will amount to one-fifth more or $130.45 + 26.09 = 156.54$, and the additional water provided will then be in round numbers 132.70 millions. As above stated, the water reserved for municipal purposes is to be 45.32, and the additional supply for irrigation will be 87.38.

6. The Government of India have intimated that a part of the capital outlay on the project should be borne by Provincial Letter No. 854 I, dated 9th December 1873. Funds, and a sum of two lakhs of Rupees was suggested as the share of the latter, but at that time apparently neither the cost of the project nor the proportion of water to be appropriated for new irrigation and town purposes respectively was known. The cost of the project has not yet been determined, but the proportionate shares can be fixed from the information above given, and should, it is thought, be—

The Municipal or the Provincial Fund share, ...	45.32	45	15
	132.70	say	132 = 44
The irrigation share...	87.38	87	29
	132.70	say	132 = 44

Further, the sum to be thus divided will be the total cost of the project less the outlay on distribution and excluding the contribution for the town delivery channel, and to the ratable share chargeable to Provincial Funds the amount of the contribution will have to be added, while the irrigation share will be enhanced by all distribution outlay for conveying water to the fields.

7. The Acting Director's report refers to the want of improved drainage for the lands of the villages commanded by the reservoirs. There can be no doubt of the great improvement which good drainage would secure, and the necessary investigations should be made. Probably the levels taken for distribution purposes will enable

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the wants of this tract of country as regards drainage to be readily determined and estimated for.

8. In the argument enunciated in paragraph 21 of the Director's Report the undersigned is unable to concur. To take water, other than surplus, from the reservoirs and store it in petty tanks would be the reverse of economical; there would inevitably be additional waste. The natural out-fall of the drainage of fields situated in the beds of these petty tanks is into the deeper parts of those beds, and were the fields bunded to enable water in the deep beds to be stored above the fields' level there would be a complete barrier to drainage: if not so stored embanking will be unnecessary. Some water will remain in the hollow parallel to the bunds of the minor tanks, even if the beds be generally reclaimed; but this should be used, or can conveniently be used, only for the irrigation of lands lying on a lower level and below the bunds. Some of the tanks will be capable of abandonment altogether; others probably will have to be retained, and some little judgment will be needed to make the best selection for either purpose.

FORT ST. GEORGE,
7th December 1875.

(Signed) JOHN MULLINS, Lieut-Col., R.E.,
Chief Engineer for Irrigation.

A.

Abstract Statement of the Area of Cultivation and Revenue of each Faslî from 1266 to 1282 for all the Villages together under the Cholaveram Tank.

Villages.	Faslî.	NUNJAH AYACUT.		CULTIVATION.		INAM FASULJASTY AND TEERVAJASTY.		Total of Columns 6 and 8.
		Extent.	Assess-ment.	Extent.	Revenue.	Extent.	Assess-ment.	
1	2	3	4	5	6	7	8	9
No. 6, Sembilivaram.	1266	...	RS. A. P.	1,325 43	RS. A. P.	0 48	RS. A. P.	RS. A. P.
	1267	...	...	1,230 56	4,347 5 1	...	...	4,347 5 1
	1268	...	...	1,343 84	5,026 4 11	...	...	5,026 4 11
	1269	...	...	1,503 09	5,592 8 2	...	...	5,592 8 3
	1270	...	...	1,444 23	5,205 10 1	0 76	0 8 2	5,206 2 3
	1271	...	...	1,663 26	5,999 1 2	...	...	5,999 1 2
	1272	...	...	1,759 51	6,043 9 7	...	...	6,043 9 7
	1273	...	...	1,760 16	6,079 8 7	...	...	6,079 8 7
	1274	...	...	1,681 67	5,756 9 3	...	...	5,756 9 3
	1275	...	...	1,803 03	6,163 11 8	1 86	4 8 9	6,163 4 0
	1276	...	...	1,292 54	4,545 4 9	3 32	8 7 7	4,553 12 4
	1277	...	...	1,071 36	1,501 0 6	...	...	1,501 0 6
	1278	...	...	1,180 20	4,228 8 2	0 67	1 1 0	4,229 9 3
	1279	...	...	1,321 15	4,562 0 7	...	...	4,562 0 7
	Total ...	...	...	20,419 63	69,910 0 9	7 03	15 6 4	69,925 7 1
	Average...	...	...	1,459 53	4,993 9 2	0 50	1 1 7	4,994 10 9
No. 8, Amkadoo.	1280	...	...	1,361 68	4,529 1 6	1 17	2 10 6	4,531 12 0
	1281	1,474 66	4,674 0 6	1,756 92	4,778 4 8	...	...	4,778 4 8
	1282	...	...	2,071 97	5,528 2 5	...	...	5,528 2 5
	Total ...	...	...	5,190 57	14,835 9 7	1 17	2 10 6	14,835 4 1
	Average...	...	...	1,730 19	4,945 3 2	0 39	0 14 2	4,946 1 4

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December 1875.

(Signed) JOHN MULLINS, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

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B.

Abstract Statement of the Area of Cultivation and Revenue of each Faslî from 1263 to 1279 for all the Villages together under the Red Hills Tank.

Villages.	Faslî.	NUNJAH AYACUT.		CULTIVATION.		INAM FASULJASTY AND TEERVAJASTY.		Total of Columns 6 and 8.
		Extent.	Assess-ment.	Extent.	Revenue.	Extent.	Assess-ment.	
1	2	3	4	5	6	7	8	9
No. 22, Kosapoor.	1263	...	RS.	1,544 0	RS. A. P.	...	...	RS. A. P.
	1264	...	...	1,320 0	6,059 0 0	...	...	6,059 0 0
	1265	...	...	1,396 0	5,452 0 0	1 0	3 0 0	5,453 0 0
	1266	...	...	1,628 0	6,302 0 0	...	...	6,302 0 0
	1267	...	...	1,759 0	7,520 0 0	...	...	7,520 0 0
	1268	...	...	1,856 0	7,831 0 0	1 0	1 0 0	7,832 0 0
	1269	...	...	1,956 0	8,457 0 0	1 0	1 0 0	8,458 0 0
	1270	...	...	1,798 0	7,864 0 0	...	...	7,864 0 0
	1271	...	...	1,701 0	7,250 0 0	...	...	7,250 0 0
	1272	...	...	1,766 0	7,836 0 0	3 0	7 0 0	7,839 0 0
	1273	...	...	1,933 0	8,356 0 0	1 0	3 0 0	8,359 0 0
	1274	...	...	1,983 0	8,825 0 0	...	...	8,825 0 0
	1275	...	...	2,211 0	8,839 0 0	...	...	8,839 0 0
	1276	...	...	2,133 0	9,080 0 0	4 0	10 0 0	9,084 0 0
	1277	...	...	2,009 0	6,923 0 0	3 0	5 0 0	6,926 0 0
	1278	...	...	1,831 0	4,665 0 0	2 0	10 0 0	4,667 0 0
	1279	...	...	2,182 0	9,036 0 0	1 0	7 0 0	9,037 0 0
	Total ...	...	...	31,006 0	1,27,286 0 0	17 0	47 0 0	1,27,333 0 0
	Average...	...	...	1,823 88	7,487 6 7	1 0	2 12 3	7,490 2 10
No. 9, Velangaloovalam.	1280	...	...	2,109 0	9,170 0 0	...	79 0 0	9,249 0 0
	1281	2,913 0	10,260	2,607 0	8,083 0 0	19 0	55 0 0	8,143 0 0
	1282	...	...	2,637 0	10,093 0 0	49 0	76 0 0	10,174 0 0
	Total ...	...	...	7,353 0	27,356 0 0	68 0	210 0 0	27,566 0 0
	Average...	...	...	2,451 0	9,119 0 0	23 0	70 0 0	9,189 0 0

FORT ST. GEORGE,
December 1875.

(Signed) JOHN MULLINS, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

C.

Statement showing the Average Area of Cultivation and Revenue for each Village under the Cholaveram Tank, from Faslî 1266 to 1279, and the subsequent years (1280 to 1282) individually.

Villages.	Faslî.	NUNJAH AYACUT.		CULTIVATION.		INAM FASULJASTY AND TEERVAJASTY.		Total of Columns 6 and 8.
		Extent.	Assess-ment.	Extent.	Revenue.	Extent.	Assess-ment.	
1	2	3	4	5	6	7	8	9
No. 6, Sembilivaram.	1266 to 1279	...	RS. A. P.	115 85	RS. A. P.	0 23	RS. A. P.	RS. A. P.
	1280	...	...	121 60	612 14 7	...	0 7 7	613 6 3
	1281	165 96	653 2 2	157 40	619 7 11	...	...	619 7 11
	1282	...	...	157 27	676 7 11	...	...	676 7 11
No. 8, Amkadoo.	1266 to 1279	...	...	185 77	634 13 8	...	...	634 13 8
	1280	...	...	154 13	609 4 11	...	...	609 4 11
	1281	202 88	686 14 2	341 43	778 5 2	...	...	778 5 2
No. 9, Kammanoor.	1266 to 1279	...	...	350 84	843 15 5	...	...	843 15 5
	1280	...	...	103 45	303 14 5	...	...	303 14 5
	1281	76 31	217 15 11	63 70	217 15 11	...	...	217 15 11
	1282	...	...	163 60	297 3 5	...	...	297 3 5

Proceedings of the Madras Government, Public Works Department,
5th January 1876.

Statement showing the Average Area of Cultivation and Revenue for each Village, &c.—(Concluded.)

Villages.	Fasli.	NUNJAH AYACUT.		CULTIVATION.		INAM FASULJASTY AND TEERVAJASTY.		Total of Columns 6 and 8.
		Extent.	Assess-ment.	Extent.	Revenue.	Extent.	Assess-ment.	
1	2	3	4	5	6	7	8	9
			RS. A. P.		RS. A. P.		RS. A. P.	RS. A. P.
No. 10, Seroona- yam.	1266 to 1279	...	...	134 73	583 5 0	...	...	583 5 0
	1280	...	...	165 24	660 0 9	...	...	660 0 9
	1281	205 57	707 15 0	216 68	730 2 3	...	...	730 2 3
	1282	...	...	217 24	778 9 7	...	...	778 9 7
,, 13, Cholave- ram.	1266 to 1279	...	...	584 68	1,814 7 11	0 19 0	8 5	1,815 0 4
	1280	...	...	543 24	1,703 12 0	...	...	1,703 12 9
	1281	545 60	1,643 7 5	612 64	1,719 13 3	...	...	1,719 13 3
	1282	...	...	757 80	2,073 0 11	...	...	2,073 0 11
,, 64, Karanoodai	1266 to 1279	...	...	39 77	166 11 7	0 03 0	0 11	166 12 6
	1280	...	...	35 67	176 10 4	1 17	2 10 6	179 4 10
	1281	36 85	149 8 7	38 62	175 0 7	...	...	175 0 7
	1282	...	...	43 90	214 2 9	...	...	214 2 9
,, 72, Vijianul- loor.	1266 to 1279	...	...	72 53	147 3 7	...	...	147 3 7
	1280	...	...	24 12	29 5 1	...	...	29 5 1
	1281	31 80	53 6 2	31 50	45 8 7	...	...	45 8 7
	1282	...	...	31 24	61 6 4	...	...	61 6 4
,, 105, Sathoope- rambedu.	1266 to 1279	...	...	119 78	468 5 1	0 05 0	0 7	468 5 8
	1280	...	...	118 54	126 11 3	...	...	126 11 3
	1281	8 69	46 1 8	133 63	153 0 4	...	...	153 0 4
	1282	...	...	198 73	223 2 7	...	...	223 2 7
,, 153, Nulloor...	1266 to 1279	...	...	102 90	259 13 1	...	...	259 13 1
	1280	...	...	135 44	357 5 1	...	...	357 5 1
	1281	200 00	500 8 8	143 72	340 14 8	...	...	340 14 8
	1282	...	...	152 85	355 2 6	...	...	355 2 6

FORT ST. GEORGE.

(Signed) JOHN MULLINS, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

D.

Abstract Statement showing the Average Area of Cultivation and Revenue for each Village under the Red Hills Tank from Fasli 1263 to 1279, and the subsequent years (1280 to 1282) individually.

Villages.	Fasli.	NUNJAH AYACUT.		CULTIVATION.		INAM FASULJASTY AND TEERVAJASTY.		Total of Columns 6 and 8.
		Extent.	Assess-ment.	Extent.	Revenue.	Extent.	Assess-ment.	
1	2	3	4	5	6	7	8	9
			RS. A. P.		RS. A. P.		RS. A. P.	RS. A. P.
No. 23, Kosapoor.	1263 to 1279	...	...	91 23	331 13 2	0 47	0 10 4	332 7 6
	1280	...	...	135 0	496 0 0	...	...	496 0 0
	1281	239	712 0 0	190 0	503 0 0	...	...	503 0 0
	1282	...	...	191 0	521 0 0	2 0	4 0 0	523 0 0
,, 20, Sathimu- door.	1263 to 1279	...	...	36 0	123 4 8	...	...	123 4 8
	1280	...	...	49 0	151 0 0	...	...	151 0 0
	1281	127 0	362 0 0	58 0	178 0 0	...	...	178 0 0
	1282	...	...	59 0	168 0 0	...	...	168 0 0
,, 18, Alingiva- kum.	1263 to 1279	...	...	64 53	505 0 0	...	...	505 0 0
	1280	...	...	64 0	574 0 0	...	...	574 0 0
	1281	71 0	414 0 0	66 0	571 0 0	...	...	571 0 0
	1282	...	...	66 0	574 0 0	...	...	574 0 0
,, 16, Thundlaka- lai.	1263 to 1279	...	...	141 30	451 11 3	...	...	451 11 3
	1280	...	...	134 0	519 0 0	...	...	519 0 0
	1281	155 0	431 0 0	156 0	604 0 0	...	...	604 0 0
	1282	...	...	151 0	573 0 0	6 0	15 0 0	583 0 0

Proceedings of the Madras Government, Public Works Department,
5th January 1876.

Abstract Statement showing the Average Area of Cultivation and Revenue, &c.—(Concl'd.)

Villages.	Fasli.	NUNJAH AYACUT.		CULTIVATION.		INAM FASULJASTY AND TEERVAJASTY.		Total of Columns 6 and 8.
		Extent.	Assess-ment.	Extent.	Revenue.	Extent.	Assess-ment.	
1	2	3	4	5	6	7	8	9
			RS. A. P.		RS. A. P.		RS. A. P.	RS. A. P.
No. 15, Vadaka- rai.	1263 to 1279	...	...	36 06	143 15 0	0 12	0 4 8	144 3 8
	1280	...	...	41 0	165 0 0	...	...	165 0 0
	1281	43 0	133 0 0	50 0	186 0 0	9 0	26 0 0	212 0 0
	1282	...	...	49 0	179 0 0	3 0	7 0 0	186 0 0
,, 21, Vadapoo- rambakum.	1263 to 1279	...	...	156 41	590 0 0	...	...	590 0 0
	1280	...	...	220 0	723 0 0	...	...	723 0 0
	1281	359 0	1,116 0 0	310 0	663 0 0	...	...	663 0 0
	1282	...	...	322 0	1,034 0 0	...	...	1,034 0 0
,, 33, Polul ...	1263 to 1279	...	...	563 12	2,375 13 2	...	0 11 3	2,376 8 5
	1280	...	...	622 0	2,952 0 0	...	79 0 0	3,031 0 0
	1281	663 0	2,784 0 0	658 0	2,049 0 0	10 0	29 0 0	2,078 0 0
	1282	...	...	658 0	3,031 0 0	33 0	50 0 0	3,081 0 0
,, 13, Line ...	1263 to 1279	...	...	347 53	1,213 8 5	...	...	1,248 8 5
	1280	...	...	319 0	1,236 0 0	...	...	1,236 0 0
	1281	430 0	1,221 0 0	399 0	1,907 0 0	...	...	1,907 0 0
	1282	...	...	409 0	1,344 0 0	...	...	1,344 0 0
,, 19, Poyasum- kum.	1263 to 1279	...	...	32 12	150 5 8	...	...	150 5 8
	1280	...	...	45 0	213 0 0	...	...	213 0 0
	1281	145 0	569 0 0	112 0	313 0 0	...	...	313 0 0
	1282	...	...	114 0	417 0 0	...	...	417 0 0
,, 9, Velangadoo- vakum.	1263 to 1279	...	...	356 59	1,553 15 0	0 41	1 1 10	1,560 0 10
	1280	...	...	480	2,111 0 0	...	...	2,111 0 0
	1281	711 0	2,518 0 0	608	2,014 0 0	...	...	2,014 0 0
	1282	...	...	618 0	2,227 0 0	...	...	2,227 0 0

(Signed) JOHN MULLINS, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

No. 43. ORDER THEREON, 5th January 1876, No. 21.

IRRIGATION, No. 5-A.

These papers contain in an approximate form part of the information required in connection with the Madras Water Works Project.

1st.—There is the water-supply available, and this supply, though necessarily liable to variation, has been supposed by the Chief Engineer for Irrigation to be equivalent to one-fifth more than the capacity of the two reservoirs in which it is stored. The figures are as follow, and they will be liable to correction when the actual receipts and expenditure of water as deduced from the registers of recent years, including the present year, have been worked out :—

	Millions of C. yds.
156-54—45-32.	Available for irrigation ... 111-22
156-54—(23-84+45-32.)	Do. for additional irrigation 87-33
	Reserved for town of Madras ... 45-32

2ndly.—The land capable of being irrigated, and this is shown to be—

	ACRES.
That already or formerly irrigated under the reservoir ...	3,585
Other lands ...	23,459

Total ... 27,044

Of this, for the reasons stated in the foregoing note, somewhat more than two-thirds will, it is anticipated, be actually irrigated ultimately, and the additional area, after deducting the old irrigation, will be about 15,315 acres.

*Proceedings of the Madras Government, Public Works Department,
5th January 1876.*

3rdly.—The probable returns from irrigation will be, selecting out of the gross area which can be irrigated, those lands which will give the largest income,

9,691 Acres at 4 Rupees	...	...	...	...	...	...	RS. 38,764
5,624 Do. „ 2 „	...	...	...	...	...	...	11,248
Total							50,012

or, say, in round numbers, half a lakh of Rupees gross revenue will be the return on the outlay.

The average cost of maintenance of the tanks prior to Fasli 1279 (1869-70), and the cost of upkeep subsequently, with the probable average from 1870-71, have yet to be determined and stated.

The gross revenue up to 1869-70 inclusive averaged, subject to correction, Rupees 12,485.

4thly.—A material portion of the storage provided by the outlay on the project having been reserved for the benefit of the town of Madras, this outlay has to be divided between Provincial and Agricultural in proportion to the quantity of water made available for municipal purposes and irrigation respectively, and it has been shown that out of 132·70 millions of cubic yards additional supply provided altogether by the project, the shares will be—

Municipal ...	...	...	...	...	...	45.32 millions.
Irrigation ...	...	...	...	...	...	87.38 „

subject to certain deductions and additions specified in paragraph 6 of the Chief Engineer's Note, the shares of outlay chargeable to Provincial will therefore be $\frac{1}{2}$, and to Agricultural $\frac{1}{4}$ of the cost of the project. Under this arrangement the payments for water-supply made by the Municipality will be carried to the credit of Provincial Funds, but these will have to bear $\frac{1}{4}$ of the difference between the cost of maintenance of the works prior and subsequent to 1869-70.

2. These papers will be communicated to the Revenue Department, with reference to the Order in that Department of the 25th August last, No. 1,276, and to the Board of Revenue in order that the revised statements referred to in their Proceedings of the 23rd July 1875, No. 2,058, may be submitted as soon as possible. Also to the Superintending Engineer, Chingleput, and to the Controller of Public Works Accounts, who should submit the information needed from them at an early date.

3. Ordered that a copy of these Proceedings be forwarded for the information of the Government of India.

(True Extract.)

(Signed) G. W. WALKER, Major-General, R.E.,
Secretary to Government.

No. 44. (DOCKET No. 22, dated 5th January 1876.)

COPY of the above forwarded to the Government of India.

(True Extract.)

Major-General, R.E.,
Secretary to Government.

Exd. S. T. Austin

Spare Copies

Court of 1876 Madras.

PUBLIC WORKS.

To

THE SECRETARY TO THE GOVERNMENT
OF INDIA.

Dated January 1901.

Is

Recd.

Recd.

G. O. No. 11-11-11.

JANUARY.

No. 11-11

Forwarding copy of Proceedings passed
on papers relating to the Madras Water
Works Project.

List of papers put up with Ch. 5522 on No.
Rev. Dep. No. 1276 of 25th Augt/95. 15.
No. 30th Octr/68 No. 634-639.
" 24th March/69 " 753-754
" 17th May " " 391-392
" 20th July " " 456-457
" 29th Sept " " 690-691 (right) with Ch. 3643 (right)
" 26th Octr/70 " 349-350.
" 5th June/71 " 71-72 (right) with Ch. 2460 (right).
" 23rd Augt " " 310-312
" 20th Sept " " 320-322 & 323 - with right with
" 18th Apr/72 " 286 to 288 right - with Ch. 813 & other right
" 12th June " " 189-190
" 25th July " " 391-392 right - with Ch. 3271 (right)
" 5th Feb/73 " 102 to 104
" 26th Augt " " 434-435.
" 19th " " " 525-526.
" 8th Sept " " 106-108 & 109.
" 13th Octr " " 191-192.
" 6th Dec " " 19 mins: (right)
" 17th Jan/74 " 228-229
" 24th May " " 321 CC & 321 J
" 15th June " " 492-493 & 494.
" 6th Feb " " 277-278
" 6th Feb " " 74-77.
" 23rd March " " 590-591.
" 17th Sept " " 351-352
" 5th May/75 " 140 to 142
" 23rd " " " 492-493 & 494.
" 2nd June " " 58-61.

173

17 P 8

N^o 1439.

Note by the Chief Engineer for Irrigation

The Board of Revenue in the first paragraph of their Proceedings N^o 2058 of the 23rd July 1875 point out that, in their Proceedings of the 29th September 1874 N^o 2805, the discrepancies pointed out in Proceedings Madras Government, N^o 1313 of the 27th November 1873, were explained. This was overlooked when the order of the 2nd June 1875, N^o 1548, was passed, and the undersigned regrets that very great carelessness in his office led to the Government being misinformed. The revised statements for the Madras Water Works, directed by the Board to be prepared, have not yet been received, but as a settlement has recently been made of the quantity of water to be reserved in the Red Hills tank in connection with.

G. O. N^o 2981
dated 21 Octo-
ber 1875.

with the supply of the Town of Madras,
information can be given as to the quanti-
-ty likely to be available for irrigation.

2 In para: 19 of the extract from the
report of the Acting Director of Revenue
Settlement there are some material
misapprehensions. He mentions that the
Red Hills tank contains 48 millions of
cubic yards, that Madras takes 5 millions
of cubic yards, and ^{that} the supply channel
has a continual flow. The facts are
as follow,-

The Cholaveram Tank holds - <sup>millions of
cub. yds.</sup> 28.47

" - Red Hills - do - " - 101.98
130.45

In the G. O. quoted above the Government
have directed that water is to be retained
in the Red Hills Tank at 6 feet above
the sill of the lowest sluice of the Municipi- * + 31.31 M.S.L.

-pal off-take, and the quantity of water
below this level is - 45.32 + 37.31 - " -

so that the water available for irrigation,
if the tanks be only once filled annually,
would be - 85.13

generally

Generally a great deal of additional water
will be received, but this year it is impos-
-sible or probable that the tanks will not
be once filled, the Red Hills Tank being
now more than 5 feet below the full
level.

3 The storage of water in a Tank
required for the irrigation of an acre of
land is in many cases more than ^{the} 6000
cubic yards mentioned by the Acting
Director, owing to the large quantity
wasted by evaporation, but in these
tanks of great area and considerable
depth, in the larger of which moreover
under the arrangements directed in
connection with the supply of Madras
a considerable depth of water will
always be maintained, evaporation will
be less, while it will be probably
more than compensated for by the

additional

additional surplus received from the river. On this, detailed information as to the supplies received in the last few years, and as to the extent and details of expenditure of water should have been forthcoming, but the Superintending Engineer has not yet sent in his report for any year. Pending the receipt of the more definite information required, and looking to the low level of the land irrigated and to be irrigated, it may, it is thought, be assumed that the quantity of water available for irrigation in the reservoirs of the Madras Water Works up to F.T.L. may be divided by 4,500 to obtain the irrigable acreage, which will thus be 18,900 acres. -

* $130.45 - 45.32 = 85.13$

4 The Acting Director of Revenue Settlement in the extract from his report transmitted by the Board refers to the

the area already irrigated ~~land~~ and to the land capable of irrigation under the Red Hills Tank only, and the Cholaveram Tank is not referred to, but it would seem from the following figures that his area of 3,585 acres is under both tanks. From the statements transmitted with the Board's Proceedings No. 2805 of the 29th September 1874 it appears that, subject to the corrections yet to be made, the cultivation and revenue for years prior to the enlargement of the Tanks were as follow-

	Average culti- -vation		Inam Tax -ation		Total Revenue	
	Extent	Revenue	Extent	Revenue		
Fuslis 1266 to 1279-	1458	4994	1/2	1	4995	Cholaveram Tank
-do- 1263 to 1279-	1824	7487	1	3	7490	Red Hills - do
	3282	12481	1 1/2	4	12485	

Similarly the average for the subsequent fuslis are

1280 to 1282 -	1730	4945	-	1	4946	Cholaveram tank
- do -	2451	9119	23	70	9189	Red Hills - do
	4181	14064	23	71	14135	

It appears therefore that only 9 villages are irrigated under the Choolavaram and 10 under the Red Hills Tank, and, as the Acting Director states that there are 50 villages altogether - 31 remain to be supplied. A list of these 31 with the area irrigated and irrigable in each will be useful to the Superintending Engineer Chingleput in determining the details of the distribution arrangements required. The available area of land for irrigation, taking the Director's figures will apparently be,

The old irrigation	3,585 acres
" — do — under petty tanks to be superseded	10,833
" — tank beds	2,935
" — Manawari or waste	3,670
" — dry lands to be converted	6,021
	<u>27,044</u>

but of this, unless the water supply prove better than has been supposed, only 18,900 acres can be irrigated, and judging from the particulars

particulars of returns from the several descriptions of land given by the Director it would appear that the most profitable application of water to the 15,315 acres, which can be supplied in addition to the old area, will be to arrange, at least in the first instance, for the irrigation of the

Waste lands ————— 3670 acres
dry lands to be converted — 6021 —
and to make up the difference by bringing about 5,624 acres of the irrigation under minor tanks under the influence of the better supply. The revenue will then be

9,691 acres at 4 Rupees	38,764
5,624 — do — at 2 — "	<u>11,248</u>
	<u>50,012</u>

5 The additional quantity of water stored in the reservoirs by the outlay on the Madras water works project is

is the,

Present capacity of the tanks — ^{Millions of} 130.45
less the former do. — do. — 23.84*
additional storage 106.61

and it may perhaps be assumed that
by extra supplies at intervals the total
receipts annually of water will amount
to one fifth more or $130.45 + 26.09 = 156.54$,

and the additional water provided
will then be in round numbers — ^{Millions} 132.70

As above stated the water reserved for
Municipal purposes is to be — 45.32

and the additional supply for irri-
-gation will be — 87.38

6. The Government of India have
intimated that a part of the Capital
outlay on the project should be borne
by Provincial funds, and a sum of
2 lakhs of Rupees was suggested as
the share of the latter, but at that
time apparently neither the cost of the

project

* Chalavaram 3.36
Red Hills — 20.48
23.84

In both cases the
Level of Mr. Fraser's
Contours has been
taken as ordinary
F.T.L. instead of
the occasional or
possible F.T.L. which
would make the
former capacity
45.01.

Letter No. 854, I
dated 9th Dec.
-ember 1873.

project nor the proportion of water to be
appropriated for new irrigation and
Town purposes respectively was known.
The cost of the project has not yet been
determined, but the proportionate
shares can be fixed from the informat-
-tion above given, and should, it is
thought be

The Municipal or the Provin-

-cial Fund share — $\frac{45.32}{132.70}$ say $\frac{45}{132} = \frac{15}{44}$

The irrigation share — $\frac{87.38}{132.70}$ say $\frac{87}{132} = \frac{29}{44}$

Further the sum to be thus divided will
be the total cost of the project less the
outlay on distribution, and excluding
the contribution for the Town delivery
channel, and to the rateable share
chargeable to Provincial Funds the
amount of the contribution will have
to be added, while the Irrigation shares
will be enhanced by all distribution

outlay

outlay for conveying water to the fields.

7 The Acting Directors report refers to the want of improved drainage for the lands of the Villages commanded by the reservoirs. There can be no doubt of the great improvement which good drainage would secure, and the necessary investigations should be made. Probably the levels taken for distribution purposes will enable the wants of this tract of country as regards drainage to be readily determined and estimated for.

8 In the argument enunciated in para 21 of the Director's report the undersigned is unable to concur. To take water, other than surplus, from the reservoirs and store it in petty tanks would be the reverse of economical: there would inevitably be additional waste. The natural

out-fall of the drainage of fields situated in the beds of these petty tanks is into the deeper parts of those beds, and were the fields banked to enable water in the deep beds to be stored above the fields' level there would be a complete barrier to drainage: if not so stored embanking will be unnecessary. Some water will remain in the hollows parallel to the bands of the minor tanks even if the beds be generally reclaimed, but this should be used, or can conveniently be used, only for the irrigation of lands lying on a lower level and below the bands. Some of the tanks will be capable of abandonment altogether, others probably will have to be retained, and some little judgment will be needed to make the best selection for either purposes.—

Fort St. George
7th December
1845-

Wm Perkins Lieut Col
Chief Engineer for Brigade

To, The Secretary to Government P.W. D.

Leut. Col.
Chief Engineer for R.

1875/76

B.
 Abstract Statement of the Area of Cultivation and Revenue of each Taeli from 1263 to 1279 for all the Villages together under the Red Hills Tank.

31

Villages.	Taeli	Ninja Aypent.		Cultivation		Irram Taeli		Total of Columns 8 and 9.	Remarks.
		Extent.	Ayaso- munt	Extent.	Revenue.	Extent.	Ayaso- munt.		
1	2	3	4	5	6	7	8	9	10
102 - Oracappoor. 20 - Lathimadon. 18 - Alingiwabum. 16 - Thullukalini. 15 - Vailukarai. 21 - Vadapuranbukum. 38 - Polul. 13 - Line. 14 - Poyasumbankum. 9 - Velangadomankum.	1263	"	"	1544	6936	"	"	6936	"
	1264	"	"	1320	6059	"	"	6059	"
	1265	"	"	1396	5452	1	3	5455	"
	1266	"	"	1628	6302	"	"	6302	"
	1267	"	"	1759	7520	"	"	7520	"
	1268	"	"	1836	7831	1	1	7832	"
	1269	"	"	1936	8457	1	1	8458	"
	1270	"	"	1798	7864	"	"	7864	"
	1271	"	"	1701	7250	"	"	7250	"
	1272	"	"	1766	7836	3	7	7843	"
	1273	"	"	1938	8356	1	3	8359	"
	1274	"	"	1983	8825	"	"	8825	"
	1275	"	"	2211	8889	"	"	8889	"
	1276	"	"	2133	9080	4	10	9090	"
	1277	"	"	2089	6928	3	5	6933	"
	1278	"	"	1831	4665	2	10	4675	"
	1279	"	"	2182	9036	1	7	9043	"
	Total -	"	"	31006	127286	17	47	127333	"
	Average -	"	"	1823.88	7487.67	1	2.123	7490.210	"
	1280	"	"	2109	9170	"	79	9249	"
	1281	2948	10260	2607	8088	19	55	8143	"
	1282	"	"	2637	10098	49	76	10174	"
	Total	"	"	7353	27356	78	210	27566	"
	Average	"	"	2451	9117	26	70	9189	"

For J. George
 December 1875

Comptroller
 Chief Engineer for Irrigation

Statement showing the average area of cultivation and produce for each village under the Chola tank from Sudi 1266 to 1277, and the subsequent years (1280 to 1282) individually.

39

Villages	Average of cultivation and produce for each village under the Chola tank from Sudi 1266 to 1277								Remarks
	1	2	3	4	5	6	7	8	
		1266 to 1277	1280	1281	1282	1266 to 1277	1280	1281	1282
N. 6 Sankhilarum		115 85 612 147	121 60 617 155	105 96 650 2 2 157 40 618 7 11	157 27 676 7 11	22	77	613 63	
N. 8 Anshador		185 77 634 138	154 13 609 4 11	202 80 606 14 2 341 43 778 5 2	350 34 348 15 5			609 4 11	
N. 9 Kumanavoor		102 45 303 14 5	63 70 217 15 11	76 31 217 15 11	163 60 247 3 5			217 15 11	
N. 10 Seroonayam		134 72 585 5	165 24 660 9	205 57 707 15 9 216 68 730 2 3	217 24 778 7 7			660 0 9	
N. 13 Cholaveram		584 68 1814 7 11	543 24 1703 12 9	545 80 1648 7 5 612 64 1719 13 3	757 80 2073 11	19	85	1815 4	
N. 64 Naravodai		39 77 166 11 7	35 67 176 10 4	36 85 149 8 7 38 82 178 7 1	42 90 214 2 9	13	11	166 12 6	
N. 72 Vijanulloor		72 58 147 3 7	24 12 29 5 1	31 80 58 6 2 31 50 45 8 7	31 24 61 6 4	17	2	147 3 7	
N. 105 Sathosferumbedu		119 78 468 5 1	118 54 126 11 3	8 59 146 1 8 133 62 152 4	198 73 223 2 7	15	7	468 5 8	
N. 153 Vallor		102 90 259 13 1	135 44 357 5 1	200 90 500 8 8 140 72 340 14 8	152 105 355 2 5			259 13 1	

Mr. 2980/95

56/886/117

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Abstract statement showing the average area of cultivation and revenue for each village under the Red Hills Tank from Suli 1263 to 1277, and the subsequent years (1280 to 1282) individually

Villages	Average Cultivation and Revenue										Remarks		
	Suli	Extent	Revenue	Suli	Extent	Revenue	Suli	Extent	Revenue	Suli	Extent	Revenue	
1	2	3	4	5	6	7	8	9	10				
No. 22 Rozaffoor	1263 to 1277	-	-	-	91 23	331 13 2	-	47	-	10 4	332 7 6		
	1280	-	-	-	135	496	-	-	-	-	496		
	1281	239	-	712	190	603	-	-	-	-	503		
	1282	-	-	-	191	521	2	4	-	-	525		
No. 20 Sathimundoor	1263 to 1277	-	-	-	36	128 4 8	-	-	-	-	128 4 8		
	1280	-	-	-	49	151	-	-	-	-	151		
	1281	127	-	362	58	178	-	-	-	-	178		
	1282	-	-	-	59	168	-	-	-	-	168		
No. 18 Alingivakum	1263 to 1277	-	-	-	64 53	505	-	-	-	-	505		
	1280	-	-	-	64	574	-	-	-	-	574		
	1281	71	-	414	66	571	-	-	-	-	571		
	1282	-	-	-	66	574	-	-	-	-	574		
No. 16 Chundla Kalini	1263 to 1277	-	-	-	141 30	454 11 3	-	-	-	-	454 11 3		
	1280	-	-	-	134	549	-	-	-	-	549		
	1281	155	-	41	-	571	-	-	-	-	571		
	1282	-	-	-	-	571	-	-	-	-	571		
No. 15 Vadakarai	1263 to 1277	-	-	-	36 06	143 15 2	-	-	-	4 8	144 3 8		
	1280	-	-	-	41	165	-	-	-	-	165		
	1281	43	-	133	50	186	9	26	-	-	212		
	1282	-	-	-	49	179	3	7	-	-	186		
No. 21 Vadapoorambakum	1263 to 1277	-	-	-	156 41	590	-	-	-	-	590		
	1280	-	-	-	220	723	-	-	-	-	723		
	1281	359	-	1116	310	663	-	-	-	-	663		
	1282	-	-	-	322	1034	-	-	-	-	1034		
No. 30 Pohl	1263 to 1277	-	-	-	562 12	2375 13 2	-	-	-	11 3	2376 8 5		
	1280	-	-	-	622	2952	-	-	-	79	3031		
	1281	660	-	2784	650	2049	10	29	-	-	2078		
	1282	-	-	-	658	3031	38	50	-	-	3081		
No. 13 Cine	1263 to 1277	-	-	-	347 53	1248 8 5	-	-	-	-	1248 8 5		
	1280	-	-	-	319	1236	-	-	-	-	1236		
	1281	430	-	1221	399	1007	-	-	-	-	1007		
	1282	-	-	-	409	1344	-	-	-	-	1344		
No. 17 Vyasaambakum	1263 to 1277	-	-	-	32 12	150 5 8	-	-	-	-	150 5 8		
	1280	-	-	-	45	213	-	-	-	-	213		
	1281	145	-	549	112	313	-	-	-	-	313		
	1282	-	-	-	114	447	-	-	-	-	447		

PROCEEDINGS OF THE BOARD OF REVENUE, dated 29th September 1874.

Read the following letter from R. W. BARLOW, Esq., Collector of the Chingleput District, to J. GROSE, Esq., Secretary to the Board of Revenue, dated Sydapet, 26th August 1874, No. 451:—

I HAVE the honor to forward the statement of irrigation under the Cholaveram and Red Hills Tanks for a series of years, as directed in G.O., No. 1,313, of the 27th November, and Board's Miscellaneous Proceedings of the 4th December last, No. 8,303. I regret, however, to state that I am unable to give the necessary statistics for the Cholaveram Tank for a longer period than the last seventeen years, as, from the report of the Tahsildar of Ponnery, it seems that accounts for the previous three years are not forthcoming. As regards irrigation under the Red Hills Tank, I have given the statistics for twenty years for all villages under it but one, viz., Cosapoor, and the Tahsildar reports that the accounts of this village, for Faslis 1270, 1271, 1272, and 1273 inclusive, are not forthcoming, though a careful search has been made for the same.

2. Adverting to the concluding part of paragraph 3 of the Chief Engineer's letter, printed in the Proceedings of Government quoted above, wherein he remarks "that the causes which have led to a decrease of cultivation, and particularly to

	Actual cultivation.	Assessment including Fasli-jasty and Terra-jasty.	Net Revenue after deducting remissions.	
	ACRES.	RS.	RS.	
1280...	3,329	14,107	13,299	Fasli 1281, should be inquired into," I
1281...	4,070	14,069	12,005	may observe that there has been an
1282...	4,494	15,103	14,915	increase in the actual cultivation of late

years, and also in the net revenue, though there was a slight falling off in Fasli 1281, but this increase is nothing like what was expected for the reasons stated further on.

3. The remissions granted in Fasli 1281 are due chiefly to a great deal of nunjah cultivation having been destroyed by floods, owing to the enormous quantity of water that was let out in that fasli to prevent the tank bursting.

4. It is to be remarked that the irrigation under the Red Hills and Cholaveram Tanks has not as yet been extended by cutting channels newly to any of those villages which were expected to be benefited by the project; but it is a question for calculation and consideration how far, if this was done, the supply of water would suffice for Madras, and for the extended cultivation.

5. As regards the apparent decrease of cultivation, noticed by the Chief Engineer in Faslis 1280, 1281, and 1282, as compared with Fasli 1276, I beg to remark that the figures of the former do not include (1) cultivation of nunjah minor inams in ryotwary villages; (2) the area irrigated in Zemindary and Shrotriem villages; (3) the area on which second-crop cultivation was raised in those faslis; whereas the figures of Fasli 1276, as given in Mr. Blair's report alluded to, includes the area of all these items, and further an amount was added, calculated at sixteen per cent. on the holding, as the approximate increased area likely to result from the new more accurate survey, and all these swelled the total to Acres 5,559.

Mr. 2980/205
6/1/75
No. 5. Aug. 14. 1874

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6. I may also add that the object of the figures given in Mr. Blair's report was to determine, as nearly as possible, the quantity of water required for irrigating the lands already entitled to it, and to see what supply would be available for Madras, after meeting the demand for irrigation, while that aimed in the statement furnished by this office to the District Engineer in August last, on which the Chief Engineer's remarks as to decreased holding are based, was simply intended to show the net revenue of Fasli 1282, as compared with the two previous ones.

7. The statements now sent even do not include the extent of cultivation in Moottahs and Shrotriem villages, because it is not possible to separate the revenue due to irrigation in these cases from other sources; the peishcush or the quit-rent collected being a lump sum fixed with reference to the average collections of a series of years on the entire villages.

SUBMITTED to Government with reference to G.O., dated 27th November 1873, No. 1,313.

2. The Collector shows that the figures contained in Mr. Blair's report included the cultivation on wet minor inams; the area irrigated in Shrotriem and Zemindary villages, and the breadth under second-crop cultivation. But these items formed no part of the Collector's statement, and hence the difference remarked upon.

3. The heavy remissions in Fasli 1281 appear to have been owing to the damage done when allowing an enormous escape to prevent the bank breaching.

4. The Board would direct attention to the Collector's remark regarding nothing having been done towards extending the channels for new irrigation, now that the capacities of the reservoirs have been increased. If there is surplus water at any time it might be diverted into some of the many tanks lying below the Red Hills Tank.

5. It is observed from the report of the Director of Revenue Settlement now before the Board, that he has raised the grouping of the villages under these tanks owing to the certainty of the supply, and placed the assessment thus derived to the credit of the project.

(A true Copy and Extract.)

Secretary.

To the Acting Secretary to Government, Revenue Department,
with an original statement.

the Collector of the Chingleput District.

Exd. J. Wright.

Chingleput District.

Chingleput District.

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Revenue Dept
Proceedings of the Madras Government
Read the following
No. 2,058.

PROCEEDINGS OF THE BOARD OF REVENUE, dated 23rd July 1875.

Read the following Proceedings of the Madras Government, dated 9th June 1875, No. 1,221, Revenue Department.

Read the following Proceedings of the Madras Government, dated 2nd June 1875, No. 1,548, Public Works Department.

ABSTRACT.—*Madras Water Works Project*.—Passing orders on the Memorandum of the Chief Engineer for Irrigation affording some information as to points noticed by the Government of India relative to the —.

ORDER THEREON, 9th June 1875, No. 1,221.

FORWARDED to the Board of Revenue with the request that they will be good enough to report at an early date on the points referred to in paragraphs 4 and 10 of the foregoing Order.

(True Extract.)

(Signed) LORNE A. CAMPBELL,
Under Secretary to Government.

With reference to paragraph 4 of Government Order, Public Works Department, printed with the Order above read, the Board observe that the discrepancies therein referred to were explained in, and a statement of revenue forwarded with, the Board's Proceedings, dated 29th September 1874, No. 2,805. The Board, however, observe that the statement is slightly defective since it does not show the assessment of dry lands, and the quit-rent of Inams, irrigated, both of which under the Order of Government, dated 25th July 1872, No. 1,766, Public Works Department, have to be treated as revenue due to irrigation. The Collector will, therefore, be separately requested to submit the statement in the form required by Government in their Order, dated 23rd March 1874, Public Works Department, No. 791.

2. The Collector's attention will be drawn to paragraphs 7 and 8 of the Government Order, Public Works Department, printed with the Order above read.

3. With reference to paragraph 10 of the Order just referred to, the Acting Director of Revenue Settlement in his report, about to be separately submitted to Government, on the resettlement of a tract in the Sydapet Taluq, which includes fifty villages under the influence of the Red Hill Tank, has furnished information which enables the Board to answer the questions now put. An extract from this report, which contains also suggestions as to the best method of utilizing the supply, is herewith submitted.

4. The area of waste in these villages is not large, and the land is of a very poor description. The tract is a poor one on the whole, and the people are not well off. Mr. Puckle doubts whether the land would fetch much at auction. It would have to be sold, under the terms of the settlement now made, subject to a

MADRAS.

Board of Revenue

PROCEEDINGS, 29th SEPTEMBER 1874, No. 2,805.

24-9-75

Encl.

SEPTEMBER.

Chingleput District.

Chingleput District.

Chingleput District.

Chingleput District.

Chingleput District.

Chingleput District.

Chingleput District.

Chingleput District.

swatantram, payable to mirassidars, of two Annas in the Rupee of assessment. The revised assessment has not yet come into operation; the lands are specially poor, and the people are as yet unacquainted with the benefits of good irrigation. Under these circumstances there would probably be a reluctance to buy, and the Board are, therefore, of opinion that the sale of the waste is not expedient.

5. The Board see no reason whatever for revising the Inam settlements in this tract by the imposition of additional charge for water supplied to wet lands, which they suppose is the intention of the Government Order. They have recently placed their views on this point and the grounds of them before Government in connection with the Singam project, and there is nothing in the present case to render different treatment of the Inams possible.

6. From Mr. Puckle's report it will be seen that the wet lands in Government villages could bear, if furnished directly or indirectly, by means of Red Hill Tank water, with a regular and sufficient supply, an addition of Rupees 2 per acre to their present revised wet assessment, and that the dry lands could pay a water-rate of Rupees 4 in addition to the dry assessment. The wet average being now almost exactly 3 Rupees and the dry about 1 Rupee, this arrangement would bring all the lands under the influence of the project to a rate of Rupees 5 per acre on the average, and this, in Mr. Puckle's opinion, will be a moderate and fair rate of assessment.

7. Mr. Puckle, it will be seen, suggests certain methods for extending the supply and making it go as far as possible; and, if his estimate of the quantity of water available is correct, a return of Rupees 61,266 might be obtained from the fifty Government villages under the Red Hill Tank alone. It is for the professional department to say how much water can be made available and whether it can be utilized as suggested by the Director of Revenue Settlement.

(True Extracts.)

Signed) H. E. STOKES,
Acting Secretary.

To the Acting Secretary to Government, Revenue Department,
with extract from report of Director of Revenue
Settlement referred to in paragraph 3.

„ the Collector of Chingleput, with copy of G. O.,
dated 2nd June 1875, No. 1,548, Public Works Department.

Copy to the Director of Revenue Settlement, with do.

Exd. J. W. Fischer.

Order

1875.
Board of Revenue,
MADRAS.

Proceedings, 23rd July 1875, No. 2,058.

Encl.

Received

JULY.
No. 2,058.

Madrass Water Works Project.—Remarks submitted to Government in reply to paragraphs 4 and 10 of their Order, dated 2nd June 1875, No. 1,548, in Public Works Department, on subject of —.

8417

Order then on 25th August 1875 No. 1276

*Communicated to the
Public Works Dept., with reference
to G. O. in that Dept. dated 2d
June 1875 No. 1548, for early
attention and file report.*

(True Extract)

*Handwritten
By Secretary of Govt.*

To

The Public Works Dept.

with enclosures.

Extract from a letter from the Acting
Director of Revenue Settlements to the
As Secretary to the Board of Revenue,
dated 9th June 1875, No. 1099 A.
31 A

Para 18. Red Hill Tank. This tank
commands 50 of the villages reported on
with an aggregate area of 35,608 acres.
Of this, 3585 acres are now irrigated
from the tank direct and 10,833 acres
from petty rain-fed tanks; these latter
are nearly all out of repair, and pro-
bably have been purposely left so,
as the District Engineer informs me
that when the system of irrigation from
the Red Hill tank is complete, these
minor tanks will no longer be needed,
but may be levelled up and cultivated.
If

Ref: Officer with the present
and system of irrigation
Minister.

P. W. 1875 Dept.
No: 5522

Re: of the Revenue Dept.

Order 25th Aug 1875
Recd. 27th 1875
E. I. No: 1276

Communicating
Board's Proceedings on
the subject of having
Water Works Project.

6215

1875/2/25

Gen 31-12-75
K. 12-1-76 N. 8-75

E. I. No 21922. 5.1.76

If this is done the tank beds will add 2935 acres to the irrigable area; the Manawari will give 3670 acres and ordinary dry lands, 6021 acres, total 12626 acres supposing the whole to be cultivated.

19. Now the Red Hill tank contains 48,000,000 cubic yards of water, of which Madras takes 5,000,000, there are thus at least 40,000,000 cubic yards available for irrigation, and if each acre requires 6000 cubic yards of water there is store sufficient to irrigate 6600 acres without replenishing, but the tank is supplied by a river channel which has a continual flow; deducting therefore the area already irrigated, 3,585 acres, there

* Including Government and Inam cultivated and waste land.

Chennai 18,400
Co. Co. 101,450
120,000

Chennai 18,400
Co. Co. 101,450
120,000

Chennai 18,400
Co. Co. 101,450
120,000

Chennai 18,400
Co. Co. 101,450
120,000

Chennai 18,400
Co. Co. 101,450
120,000

There is probably water enough for 10,000 acres of dry land, and if the small tanks are repaired and deepened and their water-spread contracted, enough may be stored in these tanks from falling rain and the drainage of higher levels to fully irrigate the area that they now poorly supply.

20. The want of drainage and protection from the inundation of the Courtaliyar river is very much felt in these villages, and a thorough system of drainage to get rid of the salt and soda that has now no escape from the soil should, I think, be the precursor of an improved system of irrigation, as much that is deleterious may

may be washed away with the aid of falling rain if there is but an open channel. But as matters stand at present there is no drainage whatever the Calingulah channel from the Red Hill tank is banded across in places to turn water to the fields, and the surplus of the Nanjai is allowed to soak into the Manawari lands instead of being carried away by a clear cut channel. The consequence is that some lands deteriorate yearly and all are more or less injured by the want of a proper out-fall.

21. The advantages of repairing the minor tanks and restricting their capacity to their deep water bed is the more apparent from the fact that the

them are probably
be made to
in doing this, some
of the water
drainage of the
lands must be
the bed but the
the water is
which would then
be available to
probably with
the loss of embank-
ments & drainage beds

47 5
the shallow waters spread of many of these tanks is already cultivated, and only the deep bed is available for the extension of cultivation: if these deep beds are defined and the cultivation above them embanked a high level channel from the Red Hill tank might not only irrigate the cultivation hitherto periodically submerged, but might furnish the rain-fed tanks with a regular supply for the better cultivation of the lands below them.

22. If the Red Hill tank water is brought to these lands, the assessments of the existing Nanjai may be raised by at least half a water rate, or by Rs 2 an acre. This

This will give Rs 21,666 on the
10,833 acres now cultivated, and
if to this be added Rs 40,000 at
a full water rate of Rs 4 an acre,
on the 10,000 acres of dry land to
be irrigated, the total results will
be Rs 61,666 for one crop, plus
Rupees 11,772 the present single
crop assessment of the 3585 acres
now irrigated by the Red Hill
tank.

(True Extract)

H. J. Evans
Secretary

CPK

No. 21.

Public Works Dept
Proceedings of the Madras Government

Under date the 5th Jan/76

Read the following:-

Proc. of the Board of Revenue. (H.E. No 2805 of 29th Sept/75)
Proc. of the Rev. Dept. (No 1276 of 25th Aug/75)
The Chief Engineer } C.R. No 1439 of 7th Dec/75
for Irrigation

These papers contain
in an approximate form
part of the information
required in connection with
the Madras Water Works
project.

There is the water supply
available, and this supply,
though necessarily liable
to variation, has been supposed
by the Chief Engineer for
Irrigation to be equivalent
to one fifth more than the
capacity of the two reservoirs
in which it is stored. The
figures are as follow, and
they will be liable to

corrected

Enclosure in Proceedings
of the Board of Revenue
to the Secy to
Government, Madras.
of 23rd July 1875, No 29058

Jan 30/75/75

Copy of an extract
from Memo. of the
Director of Revenue
to the Secy to Govt
of 175, No 1099 A
31 A

Ms. 5522/75

Ms. 980/75

correction when the actual receipts and expenditure of water, as deduced from the registers of recent years, including the present year, have been worked out.

Available for irrigation -	Millions of Rs.	
111.22 -	156.54 - 45.32	
- do - for additional irrigation -	87.38	156.54 - (23.84 + 45.32)
Reserved for Town of Madras	45.32	
2 nd the land capable of being irrigated and this is shown to be		
that already or formerly irrigated under the Reservoir	Acre. 3585	
other lands	23,459	
Total	27,044	

Of this, for the reasons stated in the foregoing note, somewhat more than two thirds will, it is anticipated, be actually irrigated ultimately, and the additional area after deducting the old irrigation will be about 15,315 acres.

3rd the probable returns from irrigation will be, selecting out of the gross area which can

18
can be irrigated, those lands which will give the largest income, 5 3/4
9,691 acres at 4 Rupees 38,764
5,624 do " 2 do 11,248
50,012

or, say, in round numbers half a lakh of Rupees gross revenue will be the return on the outlay.

The average cost of maintenance of the tanks prior to Saali 1279 (1869-70), and the cost of upkeep subsequently, with the probable average from 1870-71, have yet to be determined and stated.

The gross revenue up to 1869-70 inclusive averaged, subject to correction, Rupees 12,485.

4th a material portion of the storage provided by the outlay on the project having been reserved for the benefit of the Town of Madras, this outlay has to be divided between Provincial and Agricultural

Agricultural in proportion to the quantity of water made available for Municipal purposes and irrigation respectively, and it has been shown that, out of 132.70 millions of cubic yards additional supply provided altogether by the project, the shares will be

Municipal — 45.32 millions
Irrigation — 87.38 "

subject to certain deductions and additions specified in para 6 of the Chief Engineer's Note; the shares of outlay chargeable to Provincial will therefore be $\frac{15}{44}$ and to Agricultural $\frac{29}{44}$

of the cost of the project. Under this arrangement the payments for water supply made by the Municipality will be carried to the credit of Provincial funds, but these will have to bear $\frac{15}{44}$ of

the difference between the cost of maintenance of the works prior and subsequent to 1869-70 55

2. These papers will be communicated to the Revenue Department, with reference to the order in that department of the 25th August last, N: 1276, and to the Board of Revenue in order that the revised statements referred to in their Proceedings of the 23rd July 1875, N: 2050, may be submitted as soon as possible - also to the Superintending Engineer, Chingleput, and to the Comr. of Pub. Works Accts: who should submit the information needed from them at an early date.

7th Sept 76
Rev. Secy
S^r Chingleput
Chd^r of Rev
Comr. of Pub. Works Accts

3. Ordered that a copy of these Proceedings be forwarded for the information of the Govt. of India

by 11/12 G.M.V.

Box No 22 of 5 Jan 76

Copy of the above
forwarded to the Govt.
of India.

11/7/29 BTT

63590
5522
1980

Govt. of Madras.

PUBLIC WORKS.

To
Govt of India
Public Dept

Dated

Issued

Recd.

Recd.

G. O. 5th July 1876, No. 21822

Nos. 41-43

44

Forwarding copy of
passed on paper
to the Madras Water
Dept.

Madras Water Works Dept.
Passing orders on papers
on the subject of the —