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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

REVENUE DEPARTMENT

G.O. No.	1952	Press.
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Dated	12-8-1878	197 . .

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GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

1st August 1878, No. 3,053 W.

Buildings and Roads.
Civil Works.

Read the following paper :—

No. 1. From Colonel P. O'CONNELL, R.E., Superintending Engineer, Chingleput, to the Chief Engineer, Public Works Department, dated St. Thomas' Mount, 23rd July 1878, No. 2,672.

In reference to G.O., No. 2,824 W, dated 10th instant, I have the honor to forward in original a report received from Conductor Falvey, in charge of the Mount Division, relative to the present supply of the water in the Red Hills Lake, from which it will be observed that the water will probably stand on the 15th October next at a level 1.295 feet above the lowest level from which the Town of Madras can be supplied without lifting the water. I may add that the water in the tank on the 15th instant stood $3\frac{1}{2}$ inches higher than it stood on the same date last year, though last year the tank was well supplied by the cyclone rains of May, so that the present state of the supply in the tank is quite sufficient if the north-east monsoon does not fail and no expense for lifting water would, in that case, be incurred by the Municipality. I have directed Mr. Falvey to warn the ryots that they must not bring any more land under cultivation.

2. With respects to the prospects of its receiving a fresh supply of water I have the honor to state that the surface of the Red Hills Tank began to rise materially as follows :—

	FEET.
1873—27th September to 30th October	9.7
1874—5th to 25th July	1.7
"—2nd September to 20th October	5.8
1875—22nd July to 5th September	2.2
"—28th September to 21st December	5.1
1876—No rise	...
1877—Cyclone in May, May 17th to June 19th	11
"—12th September to 16th November	10.7

3. When Mr. Jones, the Municipal Executive Engineer, visited the tank its surface fell during the week ending 24th June $4\frac{1}{2}$ inches, or at the rate of about 18 $\frac{1}{2}$ inches a month, but between July 9th and July 15th its surface fell only .22 feet, or at the rate of 1.1 foot per mensem. This favorable change was produced by the late cloudy and showery weather, for the fall of the surface of the Red Hills Tank is very materially affected by changes in the amount of evaporation. At the time of Mr. Jones' visit only about $\frac{1}{18}$ or 37 per cent. of the total fall of the surface of the tank was caused by the water taken off for irrigation rather less than 7 per cent. was caused by the water taken off for the supply of Madras, and the remainder or 56 per cent. was caused by evaporation. The cloudy weather which we have since had has halved the rate of loss from evaporation.

4. Since the above was written I have received from Mr. Price the accompanying "Memorandum on the results from a revenue point of view which will most likely follow the closing of the irrigation sluices of the Red Hills Tank."

5. In accordance with the recommendations of that memorandum, in which we agree, I shall issue orders that water is to be supplied for irrigation at the rate of 90,000 cubic yards per diem for 20 days from July 17th, and afterwards at the rate of 57,500 cubic yards per diem until the 15th September. The first part of this order has already been given by me verbally to the monigar in charge of the tank sluices. These orders will be acted on until further orders are received from Government.

6. The sums to be balanced here are those representing the losses which Government would suffer, added to those which would be inflicted on the cultivators, and the sums which the Madras Municipality would have to expend in order to lift water to the level necessary to send a sufficient supply through their sluice. Below the level of that sluice 548 millions of cubic feet or four times the volume taken by Madras annually are stored.

No. 197.

MEMORANDUM

THE level of the water in the Red Hills Tank on the 10th July 1878 was 38.02, and it is subsiding at the rate of 1.5 foot a month. There are now 2,146 acres of wet cultivation under the tank,* and it is estimated that this will require water for two months longer or until, say, the 10th of September 1878. At the above rate of subsidence (which may be expected to continue) the water in the tank on the 10th September 1878 will stand at 38.02 - 3.00 = 35.02, and by the 15th October, when the monsoon may be expected to break, it will have gone down probably another foot (owing to evaporation, discharge to Municipality, &c.) or say to 34.02.

Now the quantity of water required for the Town of Madras, omitting the watering of roads and trees, is 10,000,000† cubic feet monthly, or 10,000,000 $\div$ 30 $\times$ 24 $\times$ 60 $\times$ 60 = 3.86 cubic feet a second.

The Municipal delivery channel from the tank is 4½ feet wide at bottom slopes 1½: 1 and fall 3 inches per mile. With a depth of 1½ foot in the channel it will discharge the required quantity.

The probable quantity required for all the necessary purposes, omitting watering roads, trees, &c., may be taken at 10,000,000 cubic feet per mensem.

The level of the bottom of the 4th or lowest pipe is 31.31 (the same as the channel bed at its head where the pipe leads into it) and diameter 2½ feet. Let us assume the lower 6 inches of the pipe open—

$$\text{Here } D = A \times c \times 8.02 \sqrt{h} \quad c = .8$$

$$\text{And } 3.86 = 1.12 \times 6.4 \sqrt{h} \quad A = \text{area of disc open} = 1.12 \text{ foot.}$$

$$\therefore \sqrt{h} = \frac{3.86}{7.16} = .54$$

$$\text{And } h = .29 \text{ foot or } 3\frac{1}{2} \text{ inches.}$$

The portion of the pipe open is entirely submerged. Hence the level of water in the tank, in order to ensure the required head, should be 31.31 + 1.125 + 0.29 = 32.725.

Now it has been already shown that the water will on the 15th October 1878 stand at 34.02 or 1.295 foot above the minimum level required.

Moreover it is possible that there may be freshes in September.

If the supply to the cultivation were cut off now it has been estimated roughly that about 1,500 acres would perish for want of water, and Mr. Jones, the Deputy Collector, estimates that the probable loss to Government on account of remissions would be Rupees 7,500, besides the great loss to the cultivators.

MONT,
13th July 1878.

(Signed) D. FALVEY, Conductor,
Executive Officer.

MEMORANDUM on the results, from a Revenue point of view, which will most likely follow the closing of the Irrigation Sluices of the Red Hills Tank.

In accordance with the instructions conveyed in G.O., Public Works Department, No. 2,824 W, dated 10th instant, I have, with the Superintending Engineer, visited the Red Hills Tank and made such inquiries as appeared to me necessary.

2. I have also inspected a considerable extent of the crops.

3. Colonel O'Connell has shown me the results of the calculations in regard to the effect upon the supply for Madras of continuing to allow the quantity of water now running through the irrigation sluices to still do so.

4. I fully agree with him in the opinion that there is no present necessity for closing the irrigation sluices, and that it would be, in the interests both of Government and the ryots, highly undesirable to deprive the crops now on the ground of water.

5. As settled between us, I put the results of my inquiries into the form of a memorandum which I submit through the Superintending Engineer. Every Curnam and Monigar has been personally examined by me, and the accounts of cultivation have been compared by me with the requisitions made upon the Tank Monigar for water by the village officers concerned. The discrepancies in these have in each case been accounted for, and the differences are in the end so very slight that the account given by the Curnams may be taken to be correct. The extent shown is 1,902 acres assessed at Rupees 7,323.

6. The accompanying statement exhibits the ayacut and holding of the Red Hills Tank, the assessment thereon, the cultivation of the last and the present year up to the 15th instant, and information as to the degree of forwardness of the crops now upon the ground.

7. Of the acreage shown as being supplied with water, 126 acres or thereabouts are cultivated with ragi. With the concurrence of the Superintending Engineer I decided that a supply for half this extent (as ragi requires certainly only half so much water as rice) should be given, and this, with stopping water for the acreage shown in columns 7 and 8, added to a few miscellaneous reductions which we were able to make, brought the acreage to be supplied this morning to 1,709.

8. We decided that, pending the orders of Government, water for no more land than the extent mentioned above was to be supplied. This would come to 90,000 cubic yards per diem for 20 days, decreasing still further after that period when the crop under column 9 would come in and water for the land under column 10 might be stopped. The quantity then required would become to 57,500 cubic yards per diem, and at the end of 50 days, or, say, the 15th September at the outside, the betel gardens would alone remain. The water which they would want would be so small in quantity as not to be worth taking into serious consideration.

9. Presuming that the water for irrigation is forthwith cut off, the crops shown in columns 9 and 10 will, if not destroyed, be most materially injured and those under columns 11 and 12 will certainly be entirely lost.

10. Leaving the item under column 9 out of consideration, on the supposition that with cloudy weather and rain it might be saved, and granting that remission of assessment only is to be given for lands under column 10, Government will in the first place have to remit Rupees 6,320, actual assessment, and will further in equity be liable for the payment of compensation for crops destroyed by their act. This, at a very moderate computation, would be at the rate of Rupees 30 per acre, as the standing crops are particularly fine and promising, and prices are double of those of ordinary times. This would give on columns 11 and 12 alone Rupees 35,430 and a total of Rupees 41,750.

11. Besides this there will be loss of assessment on account of second crop which would otherwise have been grown, and which may be fairly estimated at 20 per cent. of the whole holding. This calculation presumes that the whole of the holding will eventually receive water sufficient to raise one crop during the current Revenue year.

12. Lastly, but not least, there will be a loss to the people, after a long period of famine and the stoppage of water last year, of the grain which (unforeseen misfortunes excepted) will within two months at the outside be produced by upwards of two square miles of cultivation.

13. It may be said that money can compensate them to a great extent for this—so it may—but whatever they may be paid will not make up to the ryots or the laboring classes the advantages which they would acquire by Government suffering such a supply of water to be let out of the Red Hills Tank as will permit, at any rate, of the crops now on the ground being brought to maturity and harvested.

14. Having seen the figures which will appear in the memorandum of the Superintending Engineer, I would most strongly and earnestly deprecate closing the irrigation sluices of the tank. There is on the one hand a possible contingency which could hardly be as bad as that which

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PUBLIC WORKS DEPARTMENT, 1st August 1878, No. 3,053 W.

occurred on the last occasion, and on the other a certainty of loss, not only to Government, but to the ryots and the people whom they employ.

SAIDAPETT,
19th July 1878.

(Signed) J. F. PRICE
Acting Coll

No. 2. ORDER THEREON, 1st August 1878, No. 3,053 W.

THE orders issued by Colonel O'Connell in consultation with the Collector reported in the 5th paragraph of his letter, are approved.

2. On the 1st September the Superintending Engineer will again report matters stand.

3. There are apparently less grounds for apprehension than Government believed; moreover, it is not improbable that, with the change of moon, the sun may be augmented by rains.

(True Extract.)

(Signed) E. A. FOORD, Colonel, R.E.,
Secretary to Govt., P.W.D.

(True Copy.)

E. A. Foord

Major, R.
Under Secy. to Govt., P.W.D.

- To the Superintending Engineer, Chingleput.
- " Collector of Chingleput.
- " Financial Department.
- " Revenue Department.
- " Chief Engineer for Irrigation.

Exd. A. F. Goodall.

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Revenue 1878 Report
No. 3464.

BUILDINGS AND ROADS
CIVIL WORKS.

Sect. of (1878) *Public Works.*

INSUBSISTING ENGINEER
CHENGELUR.

1878 August 1st.

1878

1878

1878

AUGUST

Nos. 1-2

On 1952

Communicated to the
Board of Revenue

12 August 1878

See also Table - The ...
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With order

11 Side Board of Revenue on 1952