

(1) Number of pages 6
(2) Date of repair 5. 10. 82
(3) Initials of the Referencer _____

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Revenue DEPARTMENT

G.O. No.	335	Press.
B.P. No.		Mis.
Dated	7. 2. 1828 197.	

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GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

22nd January 1878, No. 57 I.

Irrigation.

Read the following papers:—

No. 5 I.

No. 56. *Note by the Chief Engineer for Irrigation.*

The following estimates from the Wallajah Range are forwarded by the District Engineer, North Arcot, with his letter No. 2,079, dated 22nd September 1877. These tanks appertain to the Mudur Tank Group.

Taluq.	Village.	Work.	Amount.
Wallajah	Mambakkam	7. Tank	Rs. 1,200
Do.	Kaihur	V. Tangal	430
Do.	Do.	V. Large tank	1,315
Do.	Soganur	V. Tank	1,420
Do.	Sittambadi	V. Tangal	190
Do.	Do.	V. Large tank	970
Total			5,525

2. The financial and hydraulic details of the Irrigation works concerned are exhibited in the following statement:—

I.—Financial Details.

Name of Work.	Ayacut Area.	Assessment.	Average Revenue for five years.	Highest Revenue for five years.	During the previous four years.	OUTLAY.			
						PROPOSED ORDINARY AGRICULTURAL IRRIGATION.			PER CENT.
						Original Works.	Repairs.	Average annual portion of charges to Revenue.	
Mambakkam tank	208	Rs. 755	Rs. 786	Not stated.	Rs. ..	Rs. ..	Rs. 1,200	Rs. 30.5	
Kaihur tangal	9	68	84	Do.	..	..	430	102.4	
Do. large tank	96	459	299	Do.	..	145	1,170	57.9	
Soganur tank	92	478	407	Do.	..	170	1,250	69.7	
Sittambadi tangal	20	76	63	Do.	..	..	190	60.3	
Do. large tank	58	284	275	Do.	..	440	530	70.5	
Total	483	2,101	1,914	..	..	755	4,770	57.7	

II.—Hydraulic Details.

Name of Work.	Catchment Basin, Area.		MAXIMUM SUPPLY.		LENGTH OF ESCAPE.	AVERAGE HEIGHT OF BUND.		Surplus discharged at M.T.L. per Second.	Tanks above.
	sq. m.	C. FT.	per Second.	Channels per Second.		Above F.T.L.	Above M.T.L.		
Mambakkam tank	40.75	464	134	63	63	1.03	0.0	896.0	1 + 1.75
Kaihur tangal	0.6	354	..	1 escape	63	4.5	2.5	598.6	None.
Do. large tank	1.5	737	..	1 escape	Nil.	4.5	2.5	..	1 + 2
Soganur tank	2.0	893	..	78	Nil.	4.5	2.5	611.3	None.
Sittambadi tangal	0.6	354	..	94	27	1.98	0.02	211.6	..
Do. large tank	1.5	737	..	27	78	4.5	2.5	211.6	2 + 4

NOTE.—The proposed dimensions of escapes and heights of bund are printed in large type; the existing dimensions in small type. The following abbreviations are used:—C.—Calingulah with dam stones. W.—Weir with overfall. E.—Escape at ground level. B.—Bund of tank. V.—Village. F.—Masonry flush escape.

3. The following is a summary of the work proposed to be carried out in each case:—

Mambakkam Tank.—This tank is situated in latitude $79^{\circ} 42' 30''$ and longitude $13^{\circ} 6' 0''$. The bund is low and weak and the revetment is in disorder. The tank has two irrigation sluices; one is in need of slight repairs. The body wall and wing walls of the calingulah are low and the apron also is out of order.

The estimate provides for—

1st.—Raising and repairing the bund, repacking the revetment, turfing the land slope and the unrevetted portion of the water slope, also repairing the irrigation sluice.

2nd.—Converting the calingulah into a weir by removing the dam stones and raising the body wall to F.T.L., and also for repairing the apron and raising the wing wall.

No plan or sketch map of this tank is furnished from which the corrected alignment of the tank bund can be seen, but from the cross section it would appear that the new earth is proposed to be placed on the rear slope of the bund.

The old bank should be carefully stripped before the new earth is placed on the bank, and the new earth should be placed so as to form a continuation of the slope of the revetment in front.

The item for turfing, viz., Rupees 255, will be struck out of the estimate.

It is stated that this tank has a drainage area of three-fourths of a square mile. From the sketch map it appears that the tank is situated about one mile below the Kaihur Sitteri tank which surpluses into it and which has a drainage area of one square mile.

The Mambakkam tank has probably therefore a drainage area of at least $1\frac{1}{2}$ square miles, and the extent of irrigation confirms this supposition. The surplus weir should therefore be 22 feet longer than is proposed or 85 feet altogether. An addition of Rupees 100 will be required for extending the present or providing a second weir. The earthwork rate, $5\frac{1}{2}$ Annas a 100 cubic feet, is very high.

Kaihur Tangal.—This tangal is situated in latitude $79^{\circ} 4' 45''$, longitude $13^{\circ} 4' 0''$. The bund is low and weak and the revetment is out of order; the irrigation sluice is in need of slight repairs. The surplus is discharged by means of a natural escape over hard ground at the north end of the bund which is stated to be sufficient.

The estimate provides for raising and repairing the bund, closing a breach, repacking the revetment, turfing the land slope and the unrevetted portion of the water slope, repairing the irrigation sluice, and removing 160 palmyrah trees.

The item for turfing Rupees 114 is considered unnecessary for so small a tank and will be struck out of the estimate. It is unnecessary to allow a margin of $2\frac{1}{2}$ feet above M.W.L., as a tank of this class $1\frac{1}{2}$ feet will be sufficient. The length of the natural escape has not been stated and the longitudinal section is very incomplete.

The new earth of the bund repairs should be placed inside not outside the old bund. The sections C.S. Nos. 1 and 11 appear to be misplaced. If practicable the natural escape should be made long enough to discharge the surplus with 1 foot of water going over, and then the bund need be $2\frac{1}{2}$ feet above F.T.L. In any case a considerable reduction of estimate will be possible.

Kaihur Large Tank.—This tank is situated in latitude $79^{\circ} 43' 0''$, longitude $13^{\circ} 5' 0''$. The bund is in some parts low and weak and the revetment is out of order; the irrigation sluice is in need of slight repairs. The tank has no surplus work, and it is not stated by what means the surplus is disposed of.

The estimate provides for—

1st.—Raising and repairing the bund, repacking the revetment, turfing the land slope and the unrevetted portion of the water slope of the bund, removing brushwood and 160 palmyrah trees and for repairing the irrigation sluice.

2nd.—Constructing a dry stone escape.

The item for turfing, Rupees 262, being unnecessary will be struck out.

The design for the escape is suited rather to masonry than to dry stone. The face batters should be $\frac{1}{2}$ to 1 at least and the "hard morambou" out of the foundations should be used as a backing to the wings and should be so shown on the plan. The catchment basin has not been correctly put at $1\frac{1}{2}$ square miles apparently, and the proper area appears to be 2 square miles; 100 feet would then be a suitable length of weir, adding 50 Rupees to the estimate. It will suffice to make the bund 2 feet instead of $2\frac{1}{2}$ feet above M.W.L., and the item for earthwork has been reduced to Rupees 500. On the longitudinal section the bund is represented as terminating at the north end on ground $2\frac{1}{2}$ feet below F.T.L., which arrangement is unintelligible.

Soganur Tank.—This tank is situated in latitude $79^{\circ} 37' 30''$, longitude $13^{\circ} 5' 30''$. The bund is low and weak and has been breached, when and how breached are not specified. A portion of the revetment is in disorder. The tank has no surplus work and the means employed for discharging the surplus is not specified.

The estimate provides for—

1st.—Raising and repairing the bund, closing the breach, repacking the revetment, turfing the land slope and the unrevetted portion of the water slope of the bund.

2nd.—Constructing a rough stone escape.

The drainage area is stated to be 2 square miles, and this will require a surplus weir 100 feet long instead of only 94 feet.

The amount required for turfing, viz., Rupees 288 will be struck out. The area irrigated under this tank is 46 acres per square mile of drainage. The remarks on the sheet of sections should be attended to.

Sittambadi Tangal.—This tangal is situated in latitude $79^{\circ} 38' 40''$, longitude $13^{\circ} 5' 0''$. The bund is low and weak and the rough stone escape is in need of slight repairs.

The supply is greater than the escape is capable of discharging, but it is stated that the extension of the escape is unnecessary as the tank spills into the Sittambadi tank when full. The description of the arrangement is not clear, and it will be better to extend the dry stone escape to 40 feet at a cost of about Rupees 30.

The estimate provides for raising and repairing the bund, removing brushwood, turfing the land and water slopes of the bund, and repairing the rough stone escape.

The item in this estimate for turfing, viz., Rupees 109 is more than one-half of the estimate and cannot be allowed. It is altogether unnecessary to make the bund of this petty tank $2\frac{1}{2}$ feet above M.V.E., and in all probability the escape could be so arranged as to make a bund 3 feet above H.T.L. perfectly safe.

Sittambadi Large Tank.—This tank is situated in latitude $79^{\circ} 38' 45''$, longitude $13^{\circ} 4' 45''$. The bund is low and the head and a portion of the tunnel of the irrigation sluice is in bad condition. The calingulah is in a ruined condition and not repairable:—

The estimate provides for—

1st.—Raising and repairing the bund, closing a breach, removing brushwood, turfing the water and land slopes of the bund, and repairing the irrigation sluice.

2nd.—Constructing a masonry weir.

This tank receives the drainage of the basins of the Soganur tank and Sittambadi tangal which alone amount to $2\frac{1}{2}$ square miles, adding its own basin 4 square miles appear to need provision, and the length of the surplus weir should be 150 feet. There appears to be no special necessity for building the escape in masonry, the soil being favorable to the stability of a dry stone work of the kind designed for other tanks of the group, but with the modification of batter indicated the cost may be taken as Rupees 300.

The item for turfing, Rupees 109 will be struck out of this estimate also.

The following statement shows the proposed distribution of the outlay recommended for sanction to the debit of several heads of account involved:—

HEAD OF SERVICE—IRRIGATION.
Fund—Agricultural.

Name of System or Group.	Distinguishing No. or Letter of Group.	Name of Tank or Channel.	Description of Work.	Main-head.	Class.	Amount of each item.	Amount to be separately accounted for.
Mudur tank, main group. Uliyanbakkam tank, Karappan tangal, sub-group.	3	Mambakkam tank.	Repairing bund and sluice. Converting calingulah into weir. Extending weir ..	Irrigation.	Repairs ..	Rs. 799	Rs. 1,054
					Do. ..	145	
					Do. ..	110	
	5	Kaihur tangal.	Repairing bund and sluice.		Do. ..	316	316
	8	Kaihur large tank.	Do. do.		Do. ..	765	765
	21	Soganur tank.	Rough stone escape ..		Original Works.	195	195
	20	Sittambadi tangal.	Repairing bund ..		Repairs ..	962	962
			Rough stone escape ..		Original Works.	170	170
	19	Sittambadi large tank.	Repairing bund and loose stone escape and extending the latter ..		Repairs ..	111	111
			Repairing bund and sluice ..		Do. ..	331	331
			Dry stone weir ..		Original Works.	300	300

Fort St. George,
27th December 1877.

To the Joint Secretary to Government, Public Works Department, Irrigation Branch.

(Signed) P. MONTGOMERIE, Major, R.E.,
Ag. Dy. Chief Engr. for Irrigation,
for Chief Engineer for Irrigation.

No. 57.

ORDER THEREON, 22nd January 1878, No. 57 I.

The following estimates for Irrigation works in the Wallajah Range, North Arcot District, forwarded by the Chief Engineer for Irrigation with his memoranda marginally noted are sanctioned:—

HEAD OF SERVICE—IRRIGATION.

Name of System or Group.	Name of Tank.	Description.	Class.	Amount.	Irrigation Register No.
Mudur tank, main group. Uliyanbakkam tank, Karappan tangal, sub-group.	Mambakkam tank.	Repairing bund and sluice. Converting calingulah into weir. Extending weir ..	Repairs ..	Rs. 799	1 } 325 of 1877-78.
			Do. ..	145	2 }
			Do. ..	110	3 }
				1,054	
	Kaihur tangal.	Repairing bund and sluice.	Do. ..	316	326 of 1877-78.
	Kaihur large tank.	Do. do.	Do. ..	765	1 } 327 of 1877-78.
		Rough stone escape ..	Original Works.	195	2 }
				960	
	Soganur tank.	Repairing bund ..	Repairs ..	962	1 } 328 of 1877-78.
		Rough stone escape ..	Original Works.	170	2 }
				1,132	
	Sittambadi tangal.	Repairing bund and loose stone escape and extending the latter ..	Repairs ..	111	329 I of 1877-78.
	Sittambadi large tank.	Repairing bund and sluice ..	Do. ..	331	1 } 330 of 1877-78.
		Dry stone weir ..	Original Works.	300	2 }
				631	

2. These sanctions are registered as shown above.

(True Extract.)

Major, R.E.,
Ag. Under Secy. to Govt., P.W.D.,
Irrigation Branch.

To the District Engineer, North Arcot.
Collector of .. do.
Chief Engineer for Irrigation.
Examiner of Public Works Accounts.
Revenue Department.

E. C. Shunker.
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 Came to the
 Board of Revenue
 7 July 1838