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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Revenue DEPARTMENT

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6048
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GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

20th September 1877, No. 329 I.

Irrigation.
Account.

Read the following paper :—

No. 163 I.

No. 96. *Note by the Chief Engineer for Irrigation.*

THE following estimates from the Poloor Range are forwarded by the District Engineer, North Arcot, with his letter No. 108, dated 10th April 1877. marginally noted for tanks forming part of the Mahathavimungalum group :—

Taluq.	Village.	Work.	Amount.
			RS.
Ploor	Mahathavimungalum ...	V. tank ...	6,650
	Athoovambody ...	V. tank ...	1,370
	Thoorinjecoopum ...	V. chittary ...	580
	Cummanundel ...	V. tank ...	520
	Thappanunthal ...	V. tank ...	1,150
	Kalur ...	V. chittary ...	495
	Easverapooram ...	V. tank ...	495
	Moonivanthangle ...	V. tank ...	660
	Kulvasel ...	V. tank ...	1,230
	Moonivanthangle ...	V. nullary tank ...	780
Total ...			13,930

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.			PER CENT
						PROPOSED ORDINARY AGRICULTURAL, IRRIGATION.			
						Original Works.	Repairs.	Average Annual proportion of Charges to Revenue.	
	ACRES.	RS.	RS.		RS.	RS.	RS.	RS.	
Mahathavimungalum tank	276	2,634	1,897	Not stated.	187	1,200	5,450	75.6	
Athoovambody tank	189	898	773	Do.	NIL	230	1,140	35.4	
Theorinjeeoopum chittary	71	333	274	Do.	..	160	420	42.3	
Cummanundel tank	41	193	141	Do.	82	115	405	85.3	
Thappenunthal tank	38	190	157	Do.	NIL	250	900	146.5	
Kalur chittary	64	431	363	Do.	..	140	355	27.2	
Easverapooram tank	32	102	73	Do.	..	215	280	130.5	
Moonivanthangle tank	58	232	177	Do.	..	216	444	74.5	
Kulvasel tank	84	454	350	Do.	..	330	850	70.2	
Moonivanthangle nullary tank ..	41	172	182	Do.	..	360	420	85.7	
Total ..	894	4,939	4,397	..	269	3,260	10,064	66.0	

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.
		Catchment per Second.	Channels per Second.	Total.	Effective.	Above F.T.L.	Above M.T.L.		
	SQ. M.	C. FT.	C. FT.	FT.	FT.	FT.	FT.	C. FT.	
Mahathavimungalam tank ..	13	2,110	..	C 62 C 31 W 62 W 130 W 78	77	1.96	0.00	828.6	15
Athoovambody tank ..	2	893	..	E 30 W 100	30	2.55	0.55	235.1	1
Theorinjecoopum chittary ..	1	562	..	E 20 W 54	20	1.61	0.00	156.7	1
Cummanundel tank ..	5	354	..	E 11 F 36	11	2.94	0.94	513.1	NIL
Thappenunthal tank ..	4.6	1,533	..	E 41 F 150	41	2.51	0.51	321.3	6
Kalur chittary ..	1	662	..	F 54	54	2.71	0.71	368.2	1
Easverapooram tank ..	0.5	354	..	F 57	57	2.36	0.83	280.0	NIL
Moonivanthangle tank ..	2	893	..	F 90	90	2.63	0.63	117.5	1
Kulvasel tank ..	1	562	..	E 36 W 54	36	2.31	0.31	235.1	NIL
Moonivanthangle Nullary tank ..	1	562	..	F 54	54	1.13	0.00	78.3	NIL

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 over fall. E.—Escape at ground level. B.—Bund of tank. V.—Village. F.—Masonry flush escape.

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

Mahathavimungalam Tank.—This tank is situated in latitude 12° 35' 10", longitude 79° 14' 25". The bund is low and weak and the revetment is in disorder. The

two Irrigation sluices are in very bad order and choked up with silt; they are beyond repair. Their two calingulahs, one 31 and the other 62 feet in length, are to be converted into weirs, and the body walls raised to F.T.L., and rear aprons provided to both.

The former will be extended an additional length of 99 feet. A flush escape 78 feet in length is to be constructed, so as to make an aggregate length of 270 feet available for the surplus discharge.

The estimates provide for—

- (1.) Raising and repairing the bund, and repacking the revetment with partly new stones.
- (2.) Reconstructing the two Irrigation sluices.
- (3.) Converting the two calingulahs into weirs and extending the smaller one as above noted.
- (4.) Constructing an extra masonry flush escape 78 feet long.

They are recommended for sanction; that for repair of the bund however being reduced by Rupees 360, the provision "for turfing," and its share of contingencies being taken out. The sums provided in this estimate for "clearing bushes" (Rupees 100) and "sowing grass seeds" (Rupees 150) are high and will require care to ensure full value of work being obtained for them. The size of the tunnels of the new sluices should be not less than 2 feet 6 inches high by 2 feet broad. As designed they could not be inspected from inside.

Athoovambody Tank.—The bund of this tank is low and weak and the revetment is in disorder. The means for discharging the surplus is an irregular opening in the bund.

The estimates provide for—

- (1.) Raising and repairing the bund and repacking the revetment.
- (2.) Constructing a masonry weir 100 feet long.

The catchment basin is stated to be only 2 square miles, but this would appear to be an under-statement, as the irrigated area supplied by the tank is 189 acres. The matter should receive the attention of the District Engineer before constructing the proposed weir of only 100 feet in length. The estimates are recommended for sanction; that for repairing the bund however being reduced to Rupees 920, by the omission of the provision for "turfing" work of very doubtful success.

Theorinjecoopum Chittary.—The bund of this tank is low and weak throughout and breached. The surplus is discharged by means of a cut in the bund.

The estimate provides for—

- (1.) Raising and repairing the bund and closing the breach.
- (2.) Constructing a masonry weir 54 feet in length.

In this case also judging from the ayacut area given (71.40 acres) the size of the catchment basin has been under-estimated, and is probably more than 1 square mile. Even if it be only that the length proposed for the escape is rather too little, and it will be as well to provide 75 feet length of crest which can probably be done for Rupees 40 more than the estimate submitted, and Rupees 200 are recommended for sanction for this work.

The estimate for repair of the bund is recommended for sanction, reduced to Rupees 295 by the removal from it of the provision for turfing.

Cummanundel Tank.—The bund of this tank is low and weak, and the surplus is discharged through a cut in the bund.

The estimate provides for—

- (1.) Raising and repairing the bund.
- (2.) Constructing a masonry flush escape 36 feet long.

As the ayacut area is 41 acres, the size of the catchment basin is probably more than that stated, half a square mile, and it will be advisable to make the escape at least 50 feet long instead of 36 feet as proposed, adding for this purpose Rupees 20 to the estimate, and making it Rupees 135; it is recommended for sanction.

The estimate for repair of the bund is recommended for sanction, reduced to Rupees 270 by the removal from it of the provision for turfing.

Thappanuthal Tank.—The bund of this tank is low and the existing means of discharging the surplus is through a cut in the bund.

The estimate provides for—

- (1.) Raising and repairing the bund.
- (2.) Constructing a masonry flush escape 150 feet in length.

The ayacut area* of this tank is very small as compared with the size† of the basin from which it receives its supply, and before spending between seven and eight times the average revenue on

* 38 Acres.

† 4½ Square miles.

its repairs it will be as well for the District Engineer to see if this tank cannot with advantage to the revenue be abandoned, its bed given for cultivation and the wet land under it supplied from a higher lying tank of the group. The ground is commanded by no less than four tanks, Nos. 10, 13, 14 and 16 of the sketch map of the group, and its original construction was a mistake. It would seem to be in every way preferable to enlarge slightly one of the upper tanks than to continue to maintain a petty tank so unfavorably circumstanced.

Kalur Chittary.—Portions of the bund of this tank are low and the tank has no proper surplus work, the surplus is discharged through a cut in the bund.

The estimate provides for:—

- (1.) Raising and repairing the bund.
- (2.) Constructing a masonry flush escape 54 feet long.

Judging from the ayacut and the sketch map the drainage area has been underestimated at 1 square mile, and the escape had perhaps better be 75 instead of 54 feet long, and Rupees 160 are recommended for sanction for the work.

The estimate for repair of the bund is recommended for sanction, reduced to Rupees 230 by the omission of the provision for "turfing."

Easverapooram Tank.—The bund of this tank is low and weak throughout and the surplus is discharged by means of a cut in the bund from want of a proper surplus work.

The existing Irrigation sluice is a pot pipe and has no means of regulation.

The estimates provide for—

- (1.) Raising and repairing the bund and closing breaches.
- (2.) Constructing a masonry Irrigation sluice.
- (3.) Constructing a masonry flush escape.

The first is recommended for sanction, reduced to Rupees 175 by the removal from it of the provision for turfing.

The second requires revision to make the interior dimensions of the tunnel not less than 2 feet 6 inches high by 2 feet wide, and so little is saved by the step upon the foundations that they should be a platform of uniform thickness. The length of the barrel, however, need not be so long as provided for, if long enough to suit slopes of 2 to 1 it will be sufficient, and probably Rupees 100 or Rupees 20 more than the estimate submitted will cover the cost of the work with the alterations named, and that amount is recommended for sanction.

The estimate for the escape (Rupees 135) is recommended for sanction as it stands. The breadth of the apron is wrongly shown in the plan as 6 feet instead of 9 feet as in the estimate.

60/200
3

Moonivanthangle Tank.—The bund of this tank is low and in very bad order; the surplus escapes through a cut in the bund, and the existing Irrigation sluice is entirely out of order and quite unmanageable.

The estimates provide for—

- (1.) Raising and repairing the bund.
- (2.) Reconstructing an Irrigation sluice.
- (3.) Constructing a masonry flush escape.

The estimate for repairing the bund is recommended for sanction, reduced to Rupees 210 by the removal from it of the provision for turfing.

The estimate for the sluice (Rupees 124) is recommended for sanction. The tunnel should be not less than 2 feet by 2 feet 6 inches interior dimensions, and may with advantage be shortened, so that the front face wall may catch the slope of the bank at M.W.L.

The estimate (Rupees 216) for the escape is recommended for sanction as it stands.

Kulrasel Tank.—The bund of this tank is low and weak. The low level sluice is in a ruined condition. The existing dry stone escape is insufficient, and a high level sluice is required.

The estimates provide for—

- (1.) Raising and repairing the bund.
- (2.) Reconstructing the low level Irrigation sluice.
- (3.) Constructing a high level Irrigation sluice.
- (4.) Constructing a masonry weir.

The estimate for repairing the bund is recommended for sanction, reduced to Rupees 425 by the removal of the provision for turfing.

The estimate* for reconstructing the low level sluice is recommended for sanction. The tunnel should not be less than 2 feet by 2 feet 6 inches inside dimensions, and the platform for working the plugs from had better be not lower than F.T.L.

The work might with advantage be made to conform generally with design No. 8, circular 67. The advisability of constructing the proposed "high level sluice" is not clear, and it is recommended that sanction for it (Rupees 97) be accorded only provisionally, it being left to the District Engineer to decide whether it is not possible by an arrangement of the rear cistern of the "low level sluice" to supply from it all the lands under the tank. The weir had better be 75 feet long and sanction for Rupees 325 for it is recommended.

Moonivanthangle Nullary Tank.—The bund of this tank is low and weak and is breached. The surplus is discharged by means of a cut in the bund. The tank is not provided with an Irrigation sluice, so that the water required for irrigation has to be taken off by means of a cut which is opened and closed at considerable risk and great wastage of water.

The estimate provides for—

- (1.) Raising and repairing the bund and closing the breach.
- (2.) Constructing an Irrigation sluice.
- (3.) Constructing a masonry flush escape.

The estimate for repair of the bund is recommended for sanction, reduced to Rupees 270 by the omission of the provision for turfing.

From the longitudinal section of the proposed sluice it would appear as if it were intended to run under some road, and the District Engineer should see if some site for it might not be found where so great a length of tunnel would not be required; its interior dimensions should not be less than 2 feet x 2 feet 6 inches. The estimate, Rupees 210, is recommended for sanction.

The escape had better be 75 feet long, which will add Rupees 25 to the estimate submitted raising it to Rupees 175, which amount is recommended for sanction.

The District Engineer reports that of the other six tanks which form this group two (Nos. 10 and 12 on the sketch map) are in good order, two (Nos. 3 and 6) are being put into good order on local sanction, and two (Nos. 2 and 4) are in the Arnee Jaghire. The last two being out of repair, the Collector has it is stated been addressed regarding them, and it is trusted that there will be no unnecessary delay in so repairing them that they shall not be a source of danger to the tanks below them.

The complete way in which this group has been dealt with is very satisfactory.

The District Engineer should give greater attention to the designs of sluices. Those submitted do not generally provide for essentials as would have been evident at once had the slopes of the connected earthworks been plotted.

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

Head of Service—Irrigation.
Fund—Ordinary Agricultural.

Name of System or Group.	Distinquishing number or letter of Group.	Name of Tanks.	Description of Work.	Main-head.	Class.	Amount of each item.	Amount to be separately accounted for.
Mahathavimungalam Group.	1	Mahathavimungalam tank.	Repairing bund ...	Irrigation.	Repairs ..	Rs. 3,970	Rs. 5,090
			Two sluices ...		Do. ...	820	
			Weir ...		Do. ...	300	
			Revetment ...		Original Works.	420	
			Weir ...		Do. ...	570	
			Flush Escape ...		Do. ...	210	
	5	Atheoanbody tank.	Repairing bund ...		Repairs ..	920	920
			Weir ...		Original Works.	230	230
	7	Theorinjecoopum Chittary.	Repairing bund ...		Repairs ..	295	295
			Weir ...		Original Works.	200	200
	8	Cummanundel tank.	Repairing bund ...		Repairs ..	270	270
			Flush Escape ...		Original Works.	135	135
	9	Thappanunthal tank.	Repairing bund ...		Repairs ..	900	900
			Flush Escape ...		Original Works.	250	250
	11	Kalur Chittary.	Repairing bund ...		Repairs ..	230	230
			Flush Escape ...		Original Works.	160	160
	12	Easverapooran tank.	Repairing bund ...		Repairs ..	175	235
			Sluice ...		Original Works.	100	
			Flush Escape ...		Do. ...	135	
	14	Moonivanthangle tank.	Repairing bund ...		Repairs ..	210	334
			Sluice ...		Do. ...	124	
			Flush Escape ...		Original Works.	216	
	15	Kulvasel tank.	Repairing bund ...		Repairs ..	425	645
			Sluice ...		Do. ...	220	
			Sluice ...		Original Works.	97	
			Weir ...		Do. ...	325	
	16	Moonivanthangle Nullary tank.	Repairing bund ...		Repairs ..	270	270
			Sluice ...		Original Works.	210	385
			Flush Escape ...		Do. ...	175	

Fort St. George,
31st August 1877.

(Signed) G. T. WALCH,
Ag. Dy. Chief Engr. for Irrigation,
for Chief Engineer for Irrigation.

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

No. 97.

ORDER THEREON, 20th September 1877, No. 329 I.

No. 163 I, dated 31st August 1877.

The estimates for Irrigation works in the Poloor Range, North Arcot District, forwarded by the Chief Engineer for Irrigation with his memorandum marginally noted are sanctioned.

Head of Service—Irrigation.

Name of Tanks	Description of Work	Amount.	Irrigation Register No.
Mahathavimungalam Tank.	Repairing bund ...	Rs. 3,970	194 I.
	Two sluices ...	820	
	Weir ...	300	
	Revetment ...	420	
	Weir ...	570	
	Flush Escape ...	210	
		6,290	
Atheoanbody Tank.	Repairing bund ...	920	195 I.
	Weir ...	230	
		1,150	
Theorinjecoopum Chittary.	Repairing bund ...	295	196 I.
	Weir ...	200	
		495	
Cummanundel Tank.	Repairing bund ...	270	197 I.
	Flush Escape ...	135	
		405	
Thappanunthal Tank.	Repairing bund ...	900	198 I.
	Flush Escape ...	250	
		1,150	
Kalur Chittary.	Repairing bund ...	230	199 I.
	Flush Escape ...	160	
		390	
Easverapooran Tank.	Repairing bund ...	175	200 I.
	Sluice ...	100	
	Flush Escape ...	135	
		410	
Moonivanthangle Tank.	Repairing bund ...	210	201 I.
	Sluice ...	124	
	Flush Escape ...	216	
		550	
Kulvasel Tank.	Repairing bund ...	425	202 I.
	Sluice ...	220	
	Sluice ...	97	
	Weir ...	325	
		1,067	
Moonivanthangle Nullary tank.	Repairing bund ...	270	203 I.
	Sluice ...	210	
	Flush Escape ...	175	
		655	

2. These sanctions are registered as shown above.
(True Extract.)

Chas. W. Winder

Asst. Secy.

Winder

Colonel, R.E.,

Asst. Secy. to Govt., P.W.D.,

Irrigation Branch.

5710

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

Exd. E. C. Shunker.

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Revenue Department

No 4265

IRRIGATION.
ACCOUNT.

Gobt. of 1877 Madras
PUBLIC WORKS.

To

THE DISTRICT ENGINEER,
NORTH ARCOT,
&c., &c., &c.

Dated September 20th

Issued

Recd.

3 October

Encl.

G. O., 20th September 1877, No. 329 I.

SEPTEMBER.

Nos 96-97.

Mahachavinungalum Tank Group, North
Arcot District.—Sanctions estimates for
repairs of ten tanks of the—

No. 6048
Comm. to the
Board of Revenue
1: 6/11/77

9 To 12 of Revenue 8-6-77