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(3) Initials of the Reference _____

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

DEPARTMENT

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Dated	197

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

29th April 1878, No. 353 I.

Irrigation.
Account.

Read the following papers :—

No. 86. From Colonel P. O'CONNELL, R.E., Superintending Engineer, Chingleput, to the Chief Engineer for Irrigation, dated St. Thomas' Mount, 8th December 1877, No. 3,737.

I HAVE the honor to forward the undermentioned tank estimates, amounting to Rupees 12,221, for Kuruvanmedu and Venapakkam Hissa tank series in Chingleput and Conjeveram Taluqs, No. 3 or Chingleput Division, for the sanction of Government :—

1 Group plan.
7 Sluice do.
3 Escape do.
18 Estimates.
2 Sections.

Head of Service.—IRRIGATION.

Fund.—ORDINARY AGRICULTURAL.

Name of Work.	Original Works.	Repairs.
Chingleput Taluq.	Rs.	Rs.
Kuruvanmedu and Venapakkam Hissa tank	...	5,330
Sluice do. do.	225	...
Dry stone escape do. do.	230	...
Sendamangalam tank	...	245
Sluice do.	375	...
Dasarikunnattur do.	...	280
Sluice to Dasarikunnattur tank	470	...
Conjeveram Taluq.		
Vadakkupattu tank	...	1,950
Dry stone escape tank	150	...
Sennakuppam do.	...	220
Sluice do.	490	...
Bahadarvadi do.	...	175
Sluice do.	470	...
Valayakaranai Pudukottai tank	...	190
Sluice do.	330	...
Dry stone escape do.	31	...
Valayakaranai do.	...	560
Sluice do.	500	...
Total ...	3,271	8,950

No. 108 I.

No. 86-A. *Note by the Chief Engineer for Irrigation.*

THE following estimates from the No. 3 or Chingleput Range are forwarded by the Superintending Engineer, Chingleput, with his letter marginally noted. These tanks appertain to the group of which the Kuruvanmedu and Venapakkam hissa tank is the terminal :—

No. 3,737, dated 8th December 1877.

Taluq.	Village.	Work.	Amount.
			RS.
Chingleput ...	Kuruvanmedu	S. No. 70 V. and Venapakkam Hissa tank.	5,785
Conjeveram ...	Vadakkupattu	S. No. 340 V. tank	2,100
Do. ...	Sennakuppam	S. „ 343 V. do.	710
Chingleput ...	Sendamangalam	S. „ 66 V. do.	620
Conjeveram ...	Bahadarvadi	S. „ 339 V. do.	645
Do. ...	Valayakaranai Pudukottai ...	S. „ 338 V. do.	551
Do. ...	Valayakaranai	S. „ 338 V. do.	1,060
Chingleput ...	Dasarikunnattur	S. „ 68 V. do.	750
		Total ...	12,221

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.	OUTLAY. During the previous four years.	OUTLAY. Proposed. Ordinary Agricultural, Irrigation. Original Works.	Repairs.	Average Annual Proportion of Charges to Revenue.
	ACRES.	RS.	RS.	RS.	RS.	RS.	RS.	PER CENT. RS.
Kuruvanmedu and Venapakkam Hissa tank	394	1,668	1,486	1,716	None.	455	5,330	77·8
Vadakkupattu tank	1,874	6,437	3,037	3,500	Do.	150	1,950	13·8
Sennakuppam tank	138	287	225	265	Do.	490	220	63·1
Sendamangalam tank	103	170	167	187	Do.	420	200	74·2
Bahadarvadi tank	74	103	98	148	Do.	470	175	131·6
Valayakaranai Pudukottai tank ..	37	95	143	237	Do.	361	190	77·0
Valayakaranai tank	295	534	537	593	Do.	500	560	39·4
Dasarikunnattur tank	108	394	243	272	Do.	555	195	60·6
Total ..	3,023	9,796	5,941	6,918	..	3,401	8,820	41·1

II.—Hydraulic Details.

Name of Work.	Catchment Basin Area.	Maximum Supply. Catchment per Second	Maximum Supply. Channels per Second	Length of Escape or Area of Surplus Sluice Vent. Total.	Length of Escape or Area of Surplus Sluice Vent. Effective.	Average Height of Bund. Above F.T.L.	Average Height of Bund. Above M.W.L.	Surplus Discharged at M.W.L. per Second.	Tanks above.
	SQ. M.	C. FT.	C. FT.	FT.	FT.	FT.	FT.	C. FT.	NO.
Kuruvanmedu and Venapakkam Hissa tank.	14	3,268	..	W 119 A 112 W 119 E 152	119 112 271	4·0 6·5	1·5 4·0	2,738·6 3,245·5	11
Vadakkupattu tank ..	4	1,417	..	W 70·5 20·75 A 99	20·75 99	5·36	3·11	...	2
				W 70·5 E 67·0	137·5	6·25	4·0	1,426·0	
Sennakuppam tank ..	1·5	737	..	E 15 E 153	15 153	3·0 4·5	1·0 2·5	117·5 750·7	None.
Sendamangalam tank ..	1·5	737	..	E 30 E 94	30 94	3·0 4·5	1·0 2·5	235·1 446·6	2
Bahadarvadi tank	0·75	464	..	None. E 98	None. 98	3·75 4·5	1·75 2·5	0·0 465·6	None.
Valayakaranai Pudukottai tank	0·5	354	..	E 6 E 45	6 45	2·75 4·5	0·75 2·5	47·0 352·7	Do.
Valayakaranai tank ..	3	1,170	..	C 24·6 W 24·5 E 20·0	19·5 224·5	3·75 5·0	1·75 3·0	176·5 1,183·1	Do.
				C 32	26	3·0	1·0	234·0	Do.
Dasarikunnattur tank. ..	1·0	562	..	W 32 E 54	86	4·5	2·5	560·6	

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. S.—Revenue Survey. A.—Area of surplus sluice vent.

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

Kuruvanmedu and Venapakkam Hissa Tank.—This is rather an important tank, situated in latitude 12° 48′ 0″ and longitude 80° 0′ 45″, and is the terminal of a group of twelve tanks including itself; of these, two are now undergoing repairs, and the estimates for the repairs of eight others are now submitted for sanction; of the remaining two tanks one* is a Shrotriem tank, which is also in need of repairs; but the Superintending Engineer does not state what measures, if any, have been adopted to get the repairs carried out. The remaining tank, the Perumattangal, is shown in the list on the sketch map as having been estimated for, but as the estimates amount to nearly 14 years' average revenue, and have not been submitted, probably they are being reconsidered with a view to reduction, which is very necessary.

* Orakadam tank.

The bund of the tank under review is low and weak, and the revetment is in disorder and very deficient. The tank has four irrigation sluices; all are in need of repairs, particularly No. 3 sluice, which is in very bad order. In addition to these sluices it is proposed to construct a high-level irrigation sluice to irrigate 29 acres of land which is at present irrigated by means of a cut made in the bund.

The tank is provided with two weirs, each measuring 59·5 feet in length, with tamboghies or notches $19\frac{1}{2}' \times 2\frac{7}{8}'$ and $19\frac{3}{4}' \times 2\frac{1}{2}'$ respectively, but they are insufficient to discharge the surplus. These weirs are in need of repairs, the notches will be built up to F.T.L., and a rough stone escape 152 feet long will be provided.

The estimate provides for—

1*st*.—Raising and repairing the bund, repacking the revetment with gravel backing, using new stones as much as is needed; also repairing the two weirs and four irrigation sluices.

2*nd*.—Constructing a masonry irrigation sluice.
3*rd*.—Constructing a rough stone escape.

The repair estimate is capable of some reductions—

	Rs.	A.	P.
1*st*.—The average lift for the earthwork is not nearly 5 yards, and the rate may be reduced from 1 Anna 5 Pies to 1 Anna 2 Pies a cubic yard, saving	408	5	6
2*nd*.—For the gravel backing to revetment a thickness of 1 foot will suffice, saving	106	4	0
	514	9	6
Contingencies	25	6	6
	540	0	0

The construction of a sluice with its sill only $2\frac{1}{2}$ feet below F.T.L. is not desirable, for it would not be capable of supplying the lands under it during the entire period necessary for a crop. It is moreover not advisable to construct a sluice for so small an area as 29 acres unless there is some special obligation so to do.

Vadakkupattu Tank.—This tank is situated in latitude 12° 49′ 30″, longitude 80° 0′ 10″. It is stated that the revenue derived from this tank is high compared with its catchment basin. The irrigated land under this tank extends into the bed of the Kuruvanmedu tank, the soil is rich and moist, and very little water is needed to bring the crops to maturity. The ends of the bund of this tank need to be raised, but the rest is higher than necessary; the revetment is in bad order, and the two irrigation sluices are in need of considerable repairs. The tank has two weirs, one at the east end, 70·5 feet in length, and the other at the west end, 20·75 feet long; the former has 4 tamboghies, each $4\frac{1}{2}' \times 5\frac{1}{2}'$. The surplus is discharged through the notches of this weir and over the crest of the western weir, which latter is not only in a dilapidated condition, but the body wall is too low and will be abandoned. The notches of the eastern weir are to be built up to F.T.L., and a rough stone escape, 67 feet in length, will be constructed.

The estimate provides for—

1*st*.—Raising and repairing the ends of the bund, repacking the revetment, planting the unrevetted portions of the water slope up to M.W.L. with tank grass, repairing the weir and irrigation sluices.
2*nd*.—Constructing a rough stone escape.

It is stated that plans of the two sluices, which are in need of considerable repair, will be furnished at an early date.

The rate for earthwork is noted as fixed with reference to a 6-yards lift, but the actual average lift is much less, and most of the earthwork has to be done where the height of the bund is small. The rate has been reduced therefore from $1\frac{1}{2}$ to $1\frac{1}{6}$ Annas.

Sennakkappam Tank.—This tank is situated in latitude 12° 50′ 30″, longitude 80° 0′ 0,″ at the head of the group, and was injured by cyclones in 1872-74. The bund is low and weak, and portions of it are unrevetted; such portions and the space between the top of the existing revetment and F.T.L. are to be planted with tank grass. The opening in the bund, which is at present the only means of discharging the surplus, is insufficient. The tank is provided with a high and a low level sluice; the former is in need of slight repairs, and the latter is so dilapidated that it is beyond repair.

The estimate provides for—

1*st*.—Raising and repairing the bund and planting the unrevetted portions of the water slope with tank grass, repairing the high-level irrigation sluice, and forming an escape planted with grass.
2*nd*.—Constructing a masonry irrigation sluice to replace the low-level sluice in ruins.

Sendamangalam Tank.—This tank is situated in latitude 12° 49′ 49″, longitude 80° 1′ 15″. The bund is low and weak, and the water slope was considerably damaged by the cyclones of 1872-74. The surplus is discharged by means of an opening made in the bund, which is to be closed and a planted escape formed instead. The tank has an earthenware sluice, which is to be replaced by a masonry structure.

The estimate provides for—

1*st*.—Raising and repairing the bund and securing the water slope with a belt of tank grass up to F.T.L.
2*nd*.—Forming an escape planted with grass.
3*rd*.—Constructing a masonry irrigation sluice to replace the earthenware sluice.

Bahadarvadi Tank.—This is one of the upper tanks of this group, and is situated in latitude 12° 49′ 40″, longitude 80° 1′ 0″. The bund was injured by cyclones in 1872-74, the irrigation sluice is out of order, and the tank is unprovided with a surplus work of any kind.

The estimate provides for—

1*st*.—Raising and repairing the bund, securing the front slope with a belt of tank grass up to F.T.L., and for forming an escape planted with grass.
2*nd*.—Constructing a masonry irrigation sluice to replace the damaged sluice.

It is very doubtful whether this tank ought to be retained. Its lands are commanded by the Sendamangalam tank, which has twice as large a catchment basin. This matter should be inquired into, and in the mean time it is recommended that sanction be postponed.

Valayakarunai Pudukottai Tank.—This is one of the upper tanks of the group, and is situated in latitude 12° 50′ 25″ and longitude 81° 30′ 0″. The water slope of the bund was very much eroded by cyclones in 1872-74; the bund itself is very low, probably owing to its not having been repaired for many years. The tank has no proper surplus work, and the surplus is discharged by means of a cut made in the bund; the irrigation sluice is of earthenware.

The estimate provides for—

1*st*.—Raising and sectioning the bund and securing the water slope with a belt of tank grass up to F.T.L.
2*nd*.—Extending the existing cut in the bund and converting it into a rough stone escape.
3*rd*.—Constructing a masonry irrigation sluice to replace the earthenware pipe.

A very pretty tank; but as there are no other means of irrigating its ayacut, its retention is probably desirable, and the estimate may be passed.

Valayakarunai Tank.—This tank forms one of the Kuruvanmedu series, and is situated in latitude 12° 49′ 10″, longitude 80° 2′ 0″, and was injured by the cyclones of 1872-74, which carried away a portion of the revetment and eroded the water slope of the bund to a considerable extent. The tank has three irrigation sluices, of which No. 1 is in good order, No. 2 is much dilapidated and not repairable, and No. 3 is in need of slight repairs. The existing work for the discharge of the surplus is insufficient.

The estimate provides for—

1*st*.—Raising and repairing the bund, repacking the revetment, securing the unrevetted portion of the water slope with a belt of tank grass up to F.T.L., repairing an irrigation sluice, and converting the calingulah into a weir by removing the dam stones and raising the body wall to F.T.L., and also for forming an escape planted with grass.
2*nd*.—Constructing a masonry irrigation sluice to replace the damaged sluice.

It is doubtful whether a grass planted escape is suited to the circumstances, and

it will be better to provide a dry stone escape, for which 130 Rupees in addition to the item for the temporary escape may be allowed.

There should have been a longitudinal section of the bund of this tank.

Dasarikunnattur Tank.—This is one of the same series that drain into the Kuruvammedu tank, and is situated in latitude 12° 47′ 50″, longitude 80° 1′ 15″, and was damaged by the cyclones of 1872-74; the front slope and the ends of the bund are much injured. The surplus is discharged by means of a calingulah which is insufficient. The tank has a high and a low level irrigation sluice; the former is entirely destroyed and the latter is in need of repair.

The estimate provides for—

1*st*.—Raising and sectioning the bund, protecting the water slope with a belt of tank grass up to F.T.L., repairing the low-level irrigation sluice, and forming an escape planted with grass.

2*nd*.—Converting the calingulah into a weir by removing the dam stones and raising the body wall up to F.T.L.

3*rd*.—Constructing a masonry irrigation sluice to replace the ruined high-level sluice.

It is to be noticed that the rate, 3 Fies a cubic yard, entered in these estimates for tamping will be susceptible of material reduction if the cast-iron rammers recently designed for general use be made available, and it is probable that the saving will more than pay for the rammers. The Superintending Engineer should attend to this matter and obtain such transfers from Repairs to Tools and Plant as will enable him to supply rammers in sufficient numbers for all his earthworks.

Circular No. 85, dated 6th December 1877.

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.	Distinguishing Number 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.
						rs.	rs.
Kuruvammedu and Venapakkam Hissa Tank.	1	Kuruvammedu and Venapakkam Hissa tank.	Repairing bund, two weirs, and four irrigation sluices.	Irrigation.	Repairs	3,570	3,570
			New stone revetment to bund.		Original Works.	1,220	1,450
			Constructing a dry stone escape.		Do..	230	
	2	Vadakkupattu tank.	Repairing bund, weir, and two irrigation sluices.		Repairs	1,760	1,760
			Constructing a dry stone escape.		Original Works.	150	150
	3	Sennakuppam tank.	Repairing bund and sluice and forming a planted escape.		Repairs.	220	710
			Reconstructing an irrigation sluice.		Do..	490	
	5	Sendamangalam tank.	Repairing bund ..		Do..	200	245
			Forming planted escape.		Do..	45	
			Constructing an irrigation sluice.		Original Works.	375	375
	7	Valayakaranai Pudukottai tank.	Repairing bund ..		Repairs.	190	190
			Constructing a dry stone escape.		Original Works.	31	361
			Constructing an irrigation sluice.		Do ..	330	
	8	Valayakaranai tank.	Repairing bund and sluice, converting calingulah into weir.		Repairs	525	525
			Constructing an irrigation sluice.		Original Works.	500	665
			Constructing a rough stone escape.		Do ..	165	

Name of System or Group.	Distinguishing Number 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.
						rs.	rs.
Kuruvammedu and Venapakkam Hissa Tank.	13	Dasarikunnattur tank.	Repairing bund and sluice and forming a planted escape.	Irrigation.	Repairs	195	750
			Converting calingulah into weir.		Do..	85	
			Constructing an irrigation sluice.		Do..	470	

FORT ST. GEORGE,
11th April 1878.

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

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

No. 87. ORDER THEREON, 29th April 1878, No. 353 I.

THE following estimates for irrigation works in the No. 3 or Chingleput Range, Chingleput District, forwarded by the Chief Engineer for Irrigation with his memorandum marginally noted, are sanctioned:—

No. 108 I, dated 11th April 1878.

Head of Service.—IRRIGATION.

Name of System or Group.	Name of Tank.	Description of Work.	Class.	Amount.	Irrigation Register No.
				rs.	
Kuruvammedu and Venapakkam Hissa Tank.	Kuruvammedu and Venapakkam Hissa tank. 1	Repairing bund, two weirs, and four irrigation sluices.	Repairs	3,570	1 } 35 I.
	2	New stone revetment to bund ..	Original Works ..	1,220	2 }
	3	Dry stone escape	Do. ..	230	
				5,020	
	Vadakkupattu tank 1	Repairing bund, weir, and two irrigation sluices.	Repairs	1,760	1 } 36 I.
	2	Dry stone escape	Original Works ..	150	2 }
				1,910	
	Sennakuppam tank 1	Repairing bund and sluice and forming a planted escape.	Repairs	220	1 } 37 I.
	2	Irrigation sluice	Do. ..	490	2 }
				710	
	Sendamangalam tank. 1	Repairing bund	Repairs	200	1 } 38 I.
	2	Planted escape	Do. ..	45	2 }
	3	Irrigation sluice	Original Works ..	375	
				620	
	Valayakaranai Pudukottai tank. 1	Repairing bund	Repairs	190	1 } 39 I.
	2	Dry stone escape	Original Works ..	31	2 }
	3	Irrigation sluice	Do. ..	330	
				551	
	Valayakaranai tank. 1	Repairing bund and sluice, converting calingulah into weir.	Repairs	525	1 } 40 I.
	2	Constructing dry stone escape ..	Original Works ..	165	2 }
	3	Irrigation sluice	Do. ..	500	
				1,190	
	Dasarikunnattur tank. 1	Repairing bund and sluice and forming a planted escape.	Repairs	195	1 } 41 I.
	2	Converting calingulah into weir..	Do. ..	85	
	3	Irrigation sluice	Do. ..	470	
				750	

2. These sanctions are registered as shown above.

(True Extract.)

(Signed) JOHN MULLINS, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

(True Copy.)

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

To the Superintending Engineer, Chingleput.
" Collector of Chingleput.
" Chief Engineer for Irrigation.
" Examiner of Public Works Accounts.
" Revenue Department.

1715

Esd. A. F. Goodall.
Spare Copies

Reference 1878 No 2142.

IRRIGATION.
ACCOUNT.

Govt. of [1878] Madras.

PUBLIC WORKS.

To

THE SUPERINTENDING ENGINEER,
CUDDALORE,
&c. &c. &c.

Dated April 1878.

Issued

Read May 17th

Read

G. O. 200 April 1878, No. 850 T.

APRIL.

Nos. 66-67

No 1250

Communicated to the Board of Revenue

21 May 1878

Karrecondah and Vadakiyapatta Tank Groups, Chingleput.—Note of the Chief Engineer for Irrigation submitting estimates for the repairs of the—sanctioned.