ADB funded Rejuvenation of Lift Irrigation Scheme

at Vennaaru Sub-basin in Cauvery Delta, Tamil Nadu.

Lift Irrigation

ASIAN DEVELOPMENT BANK

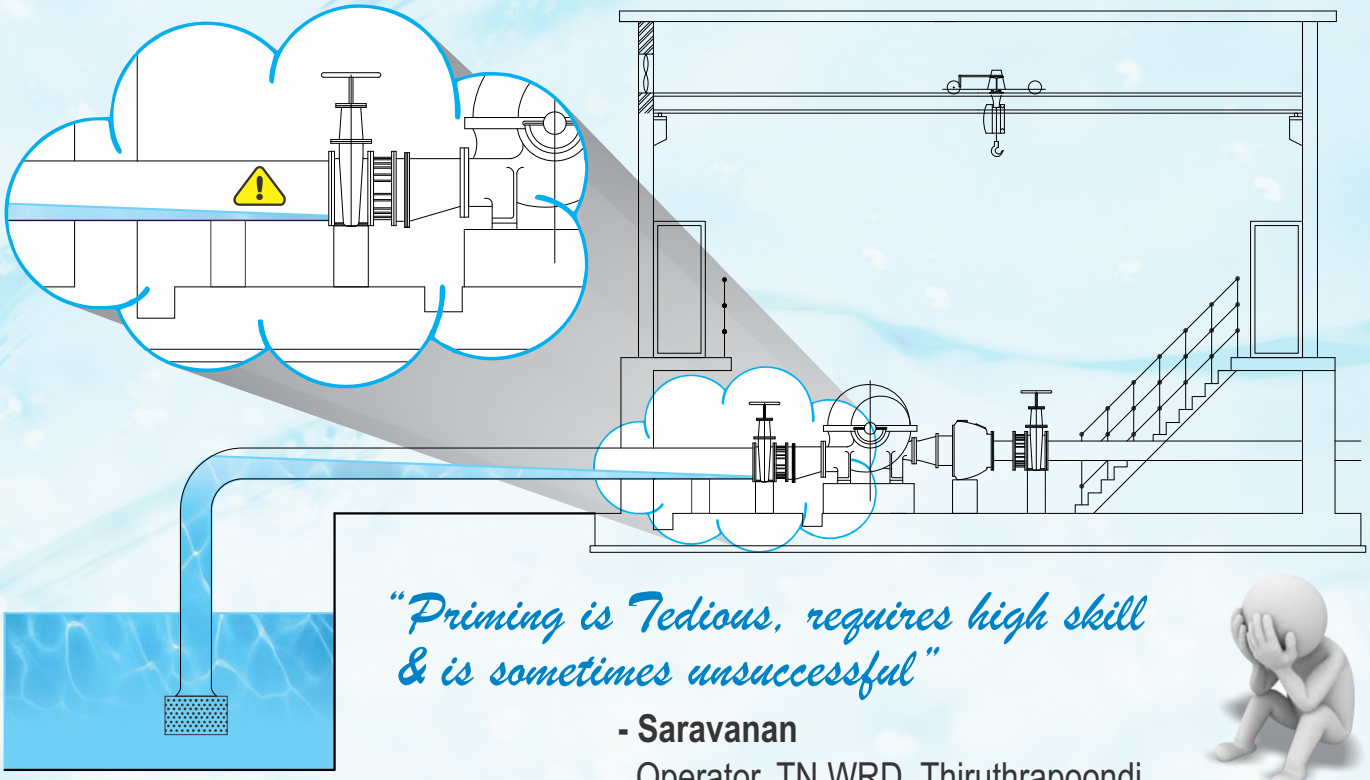
The Cauvery delta system having 12.02 Lakh acres of command area is spread over four districts namely Thanjavur, Thiruvarur, Nagapattinam and part of Pudukottai District.

Because of large command area, large amount of drainage water is discharged into sea for a brief time during monsoon – while on the other hand, some of fertile lands are not getting water due to higher elevation.

To make use of this drainage quantum and to increase the food production of state, 29 Lift Pumping schemes were commissioned for a total food production capacity of 16,544 M.T.

Situation :

Dry Installed Centrifugal Pumps



"Priming is Tedious, requires high skill & is sometimes unsuccessful"

- Saravanan
Operator, TN WRD, Thiruthrapoondi.

The Pump Rooms are at the ground level & are fitted with End Suction Back Pull Out, Horizontal CF pumps + Slip Ring Induction Motors.

Foot Valves are provided at the end of each Suction Pipe to ease up Priming, but to little benefit – **they often failed to provide proper priming & many time lead to erratic watering.**

The priming problems of pumpsets, materials used for construction, root activity and swelling nature of soil lead to reduction of reliability & usability of motor pumps and damage of leading channel and head sluices in general.

Solution :

Based on the observations from Joint Site Visits; estimates were prepared for complete rejuvenation of each pumping scheme to restore its original Irrigation command full flow by renewing electro mechanical components and rehabilitation of civil components – **Asian Development Bank *(ADB)*** decided to fund the project.

Climate Adaptation in Vennar Sub-basin in Cauvery Delta

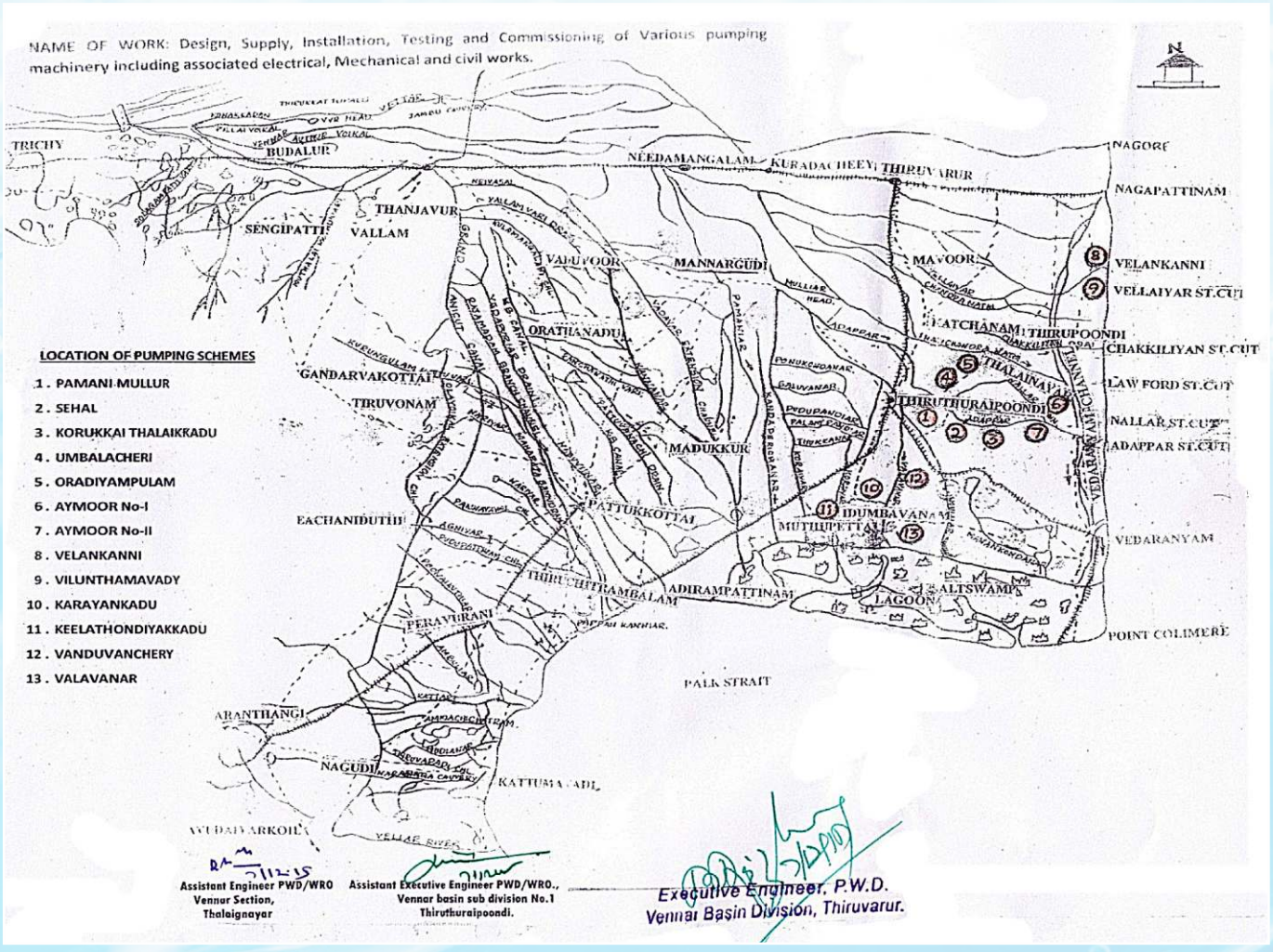
"Procurement of Plant, Design, Supply, Installation, Testing and Commissioning of Various Pumping Machinery Including Associated Electrical, Mechanical and Civil works".

Package No. : CAVSCD/TN/PS vide National Competitive Bidding

NIT No.1 : ADB-CAVSCD/2016-17/L.C.B. Circle, Thanjavur

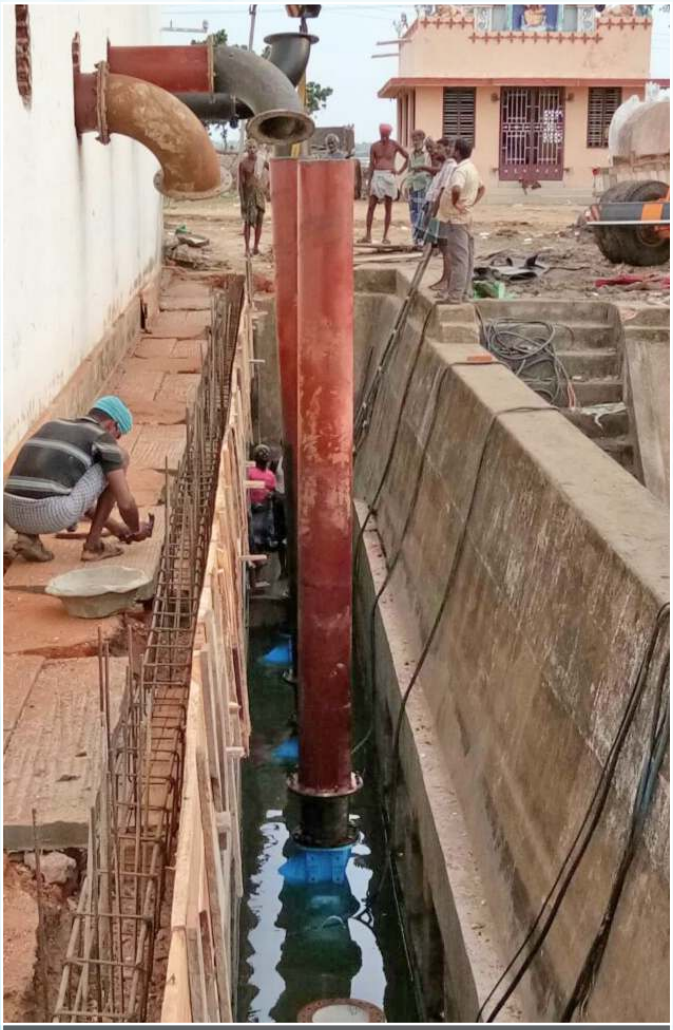
NCB No. : CAVSCD/ TN/ PS

Employer : Superintending Engineer, Lower Cauvery Basin Circle, Thanjavur-1



Pumping scheme showing flow, head, ratings and numbers of pumps installed

Sr. No	Pumping Scheme	Flow	Head	Rating	Qty.
		m^3/Hr	(m)	hp	Nos.
1	Pamini Mullur Pumping scheme	1101	6	35	3
2	Sekal Pumping scheme	1101	6	35	2
3	Korukkai Thalaikadu Pumping scheme	801	6	25	4
4	Karayakadu Pumping scheme	1000	6	30	3
5	Keelathodiyakadu Pumping scheme	1000	6	30	3
6	Umbalacheri Pumping scheme	801	6	25	3
7	Oradiyambulam Pumping scheme	801	6	25	4
8	Aymoor – I Pumping scheme	1101	6	35	3
9	Aymoor – II Pumping scheme	1301	6	40	2
10	Velankanni Pumping scheme	1101	6	35	4
11	Vilunthamaavadi Pumping scheme	801	6	25	6
12	Vanduvanchery Pumping scheme	801	6	25	3
13	Valavanar Pumping scheme	1301	6	40	6



Work on Removal of Old Suction pipes & Installation of New Pumping Machinery

Submerged CF Pumps can be simply bottom rested in to existing suction pits.

Results :

Customer's Satisfaction :

GOVERNMENT OF TAMILNADU
TRUTH ALONE TRIUMPHS

ADB
ASIAN DEVELOPMENT BANK

Mrs. Susan Mathew of Asian Development Bank *(ADB - the Financer of this Rejuvenation project)* personally inspected the Pumping Stations, met the Beneficiary Farmers & appreciated the results.....

Low Energy Cost

Wire to Water efficiency is Slightly better than Centrifugal pumps *(due to elimination of various mechanical & suction head losses)*

Low Life Cycle Costs (LCC)

Minimal Maintenance & Low Energy Costs

Robust & Reliable

Over-safe Design & Smart Protection Systems result in high Reliability.

Simple & Quick to Start / Stop

- No Valves to be Open-Closed
- No Priming to be done

Minimal Noise, Vibration & Heat Emission

Maintenance Free

Requires No Consumables or Routine maintenance

- no Oiling,
- no Greasing,
- no Gland Rope Tightening or Replacement,
- no Shaft Alignment hassles,
- no Dewatering of Gland/ Leakage or Seepage from pump rooms

User Friendly

Compact, Fully Portable - can be installed directly in Suction Pit & connected with Earlier Suction Pipes *(converting them to Delivery pipes)* – i.e. Minimal Civil work modification

"Priming of the End Suction CF pumps was always a big problem. However, these Submerged Centrifugal pumps virtually eliminate all Operational problems & are Maintenance free"

- Senthil –
Operator, Valavanar, Balu Umblamcherry.

"Rejuvenation of an existing LIS is more difficult than building a new one - there are so many local farmer's issues; existing Civil works & pumping m/c constraints.

But on the pumpset front, we gladly recommend "Aqua" Submerged Centrifugal pumpsets as their simplicity of ITC & their performance has exceeded not just Our, WRD's & ADB's expectations - but also that of Local Operators & beneficiary Farmers....!"

- Mr. Sundarpandian Panchapakesan
M.D. Anchor Ceramics (Contractor)

After the Rejuvenation of Pumping Machinery, Farmers are assured of consistent watering

Happy Farmers, Happy Clients & Happy Financers (ADB)

Aqua Machineries Private Limited

www.aquapumps.com

Registered Office & Manufacturing Plant
Survey No. 504/1-2, 442/2, Near Haridarshan Estate, Near Express Highway, Ramol, Ahmedabad-382 445. Gujarat, India.
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