

# WATER RESOURCES DEPARTMENT

## DETHRIDGE WHEEL

### Upper Vellar Sub-Basin

By the use of this flow measurement device the volume of water used by the farmer for a particular field is measured and the water charges has been collected, in the previous year. Now the same water flow is measured by computerized shutters by canal Automation and water charges are collected accordingly. The canal Automation is very costlier and need so much safty measures including yearly maintenance also. But the **Dethridge wheel** is a cheaper water measuring device and with out any yearly maintaince



charges and hence, it can be adopted for developing countries like India.



The same type of **Dethridge wheel** has been manufactured at salem in Tamilnadu State, India and erected in Kariyakovil Reservoier project, Left main canal, Right side distributory to measure the water flow.

### About the Dethridge wheel in KGRP Dam in Upper Vellar Sub Basin

(KGRP Site) Salem, Tamil nadu, India.

Location	Upper Vellar sub Basin, Salem, Kariyakovil Reservoier project, Left Maincanal, Rightside distributory
Diameter of the Drum	100 cm
Blade Depth	23 Cm
Material used ( For wheel )	Steel plate ( 16 Gauge )
Material used (for measuring device)	Nylon Plastic Gear wheels
Volume of water discharge :	360 litre / Rotation or 0.36 m <sup>3</sup> / Rotation
Total Cost	> Rs.10,000/-
Accuracy	± 10%
Findings	It is more accurate in small distributaries where the water flow is slow and steady.

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### UPPER VELLAR SUB BASIN- PERIYA ANICUT PERIYA ANICUT WAS CONSTRUCTED ACROSS PERIYAR RIVER, A TRIBUTORY OF VASISTA RIVER NEAR VALAPPADY IN SALEM DISTRICT.

#### Pre-Project Condition:

The existing Anicut was constructed in R.R. Masonry long back with an open off take and was in dilapidated condition. The anicut was completely filled up with silt / sand upto the crest level of the anicut.



#### Impact of the Project:

- 1) Storage capacity restored (Water stored during the rains in July and August of 2008)
- a) Improvement in water level in surrounding wells (as per Ground Water Division Records):-

#### WATER LEVEL IN THE NEAREST WELL (in metres from top of Parapet)

SI No	Well No	Pre Project		Post Project		Water level raised
		Month	Water Level	Date	Water Level	
1	53511	August / 07	14.32	August / 08	9.81	4.51m
2	53511	September /07	15.23	September /08	8.12	7.11m

#### Farmers Opinion:

**Thiru. Natarajan** one of the farmer of this anicut says, *“during the recent rains more water is stored in the anicut and the water level in the wells in the surrounding areas improved, beneficial for irrigation and drinking purpose”.*

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### PAMBAR SUB-BASIN REHABILITATION OF NEMMENI TANK IN PERIAKOTTAKUDI VILLAGE OF KARAUKUDI TALUK IN SIVAGANGAI DISTRICT

#### PRE-PROJECT CONDITION:

The existing tank bund was weakened, bed silted up and the storage capacity considerably reduced. The existing weir was in dilapidated condition. Existing sluice no.I was damaged and requires reconstruction and repair works to sluice no.II.

#### IMPACT OF THE PROJECT

- By desilting the tank bed & strengthening the bund the original capacity of tank is restored and the ayacut is being fully stabilised by bridging the gap. Also recurring damages by flood to the bund is avoided.
- By reshaping supply channels, the original designed discharge is restored
- By reconstruction of weir the storage of tank is restored to it's FTL with out any wastage.
- By reconstruction & repair works to sluices effective supply of water to the fields is achieved.

#### EVIDENCE OF SUCCESS OF THE PROJECT:

- The ayacutdars of nemmeni tank of nemmeni village have appreciated that the works were carried out to their requirements.



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### PAMBAR SUB-BASIN KANDADEVI ANICUT WAS CONSTRUCTED ACROSS THENAR RIVER IN DEVAKOTTAI TALUK OF SIVAGANGAI DISTRICT

#### PRE-PROJECT CONDITION:

The existing anicut was constructed in R.R masonry during 1990. Anicut is completely silted up and with weakened flood banks, dilapidated apron. Inadequate carrying capacity of silted up & disturbed supply channels and regulatory arrangements.



Before Execution

#### IMPACT OF THE PROJECT

- By providing flood protection wall at vulnerable points, the wastage of water in supply channels is completely arrested and recurring expenditure is also reduced.
- By reshaping supply channels, the original designed discharge is restored.
- By providing inlet, sufficient supply is ensured to feeding tank by avoiding backwater as in nature.
- By providing river training works, the adjacent villages are protected from consequent flood damages.
- By providing flood banks the anicut is protected from out flanking by flood.



After Execution

#### EVIDENCE OF SUCCESS OF THE PROJECT:

The ayacutdars of kandadevi anicut and the president of vengalur village panchayat have appreciated collectively that the works were carried out to their requirements.

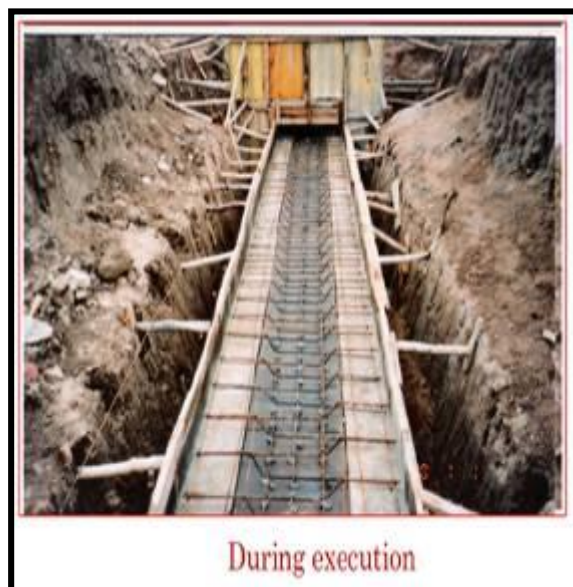


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### KOTTAKKARAIYAR SUB BASIN - PULIYUR TANK

#### Pre - project conditions :

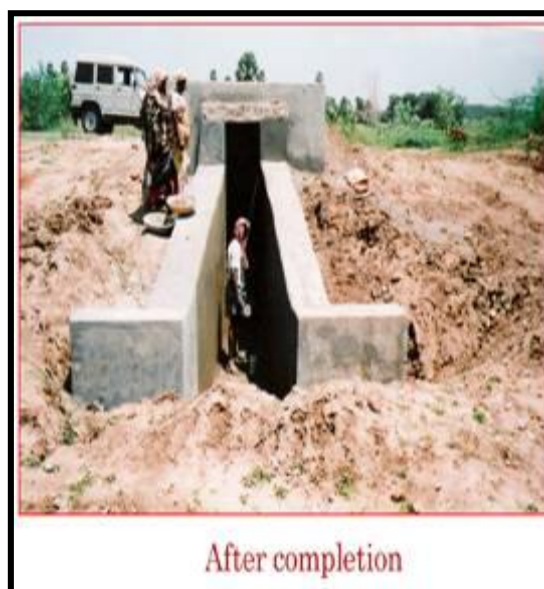
The Tank bund for its entire length was below standards . Out of the four sluices, two sluices (3&4) were completely in dilapidated condition. There was heavy leakage in all the sluices. The surplus weir was also in collapsed condition . The Head sluice also requires rehabilitation .



During execution

#### Farmers Opinion :-

**Thiru.Pulikutti** One of the leading farmer of this tank says “The surplus weir has been reconstructed completely with cement concrete. During the recent rains, water stored in the tank about forty percent of its capacity. This water will be effectively used for first crop cultivation. By the reconstruction of all these structures water wastage has been arrested completely which leads to save more water in the tank. The farmers of this tank are planning to cultivate second crop ( Mostly cotton , chilly , etc.,) with the balance water available in the tank”



After completion