

**102C. 4) ASSESSMENT OF HYDROLOGICAL AND PHYSICAL STATUS OF TRADITIONAL WATER HARVESTING SYSTEMS IN KARNATAKA STATE USING GEO-SPATIAL TECHNOLOGIES AND MEASURES FOR RESTORATION AND REJUVENATION**

Project Investigator : Dr. U.T.Vijay  
Budget & Funding Agency : Rs. 48,29,500/- & DST, GOI  
Duration : 2 Years  
(April 2017 - March 2019)

**Background:**

Traditional Water Harvesting Systems were constructed to store water for various needs of rural communities such as drinking, washing, cattle drinking, irrigation and temple purposes including recharging of ground water.

At present most of these ancient water bodies have become dump yards and dry resulting into the decline in their potentials. Keeping this importance in view, KSCST has taken up a project on assessing the hydrological and physical status of ancient water harvesting structure such as Kalyanis, Pushkaranis/Temple tanks, Gokatte and Kunte etc., of the state for suggesting scientific interventions for rejuvenation and restoration of these structures.

**Objectives:**

- To carryout field survey and map the Geographic location of Traditional Water Harvesting Systems using GPS technology
- To create digital database on both spatial & non spatial database on various parameters and hyperlink the photographs using Geo-spatial technologies
- To assess the Physical and Hydrological status including the water quality of these water bodies by integrating various thematic layers in GIS Environment
- To provide suggestions and scientific measures for restoration and rejuvenation based on its Physical and hydrological status and usage.
- To conduct District level workshops to highlight the importance of TWHS, present status and measures for restoration and rejuvenation

**Progress:**

- Initiated the field survey of Traditional Water Harvesting Systems(TWHS) in Dakshina Kannada, Chikkaballapura, Mysuru, Gadag, Vijayapura, Ramanagar and Mandya districts
- Completed the field survey of Traditional Water Harvesting Systems(TWHS) in Udupi, Chitradurga, Chamarajnagar, Dharwad and Belagavi districts

- Field survey of around 4500 Water harvesting structures has been completed and collected the hydrological and physical data of these systems.
- Creation of database in GIS Environment and GIS analysis with preparation of report is under progress
- Awareness creation on importance of Traditional Water harvesting systems among Officials from Panchayath raj Institutions of Dakshina Kannada district in Mangaluru during May 2018
- Technical reports on the status of TWHS systems with measures for rejuvenation of Davanagere, Chikkamagalur, Kodagu and Bidar have been submitted for taking rejuvenation work of these water harvesting structures to respective zilla panchayats.
- Creation of database in GIS Environment and Preparation of report for Ballary, Koppal, Shivamogga and Chitradurga districts is under progress.
- Progress of the project was presented before the DST-GoI PAMC Committee constituted by DST, GOI to review the progress of the projects on 17-09-2018 at INSA, New Delhi.
- The Committee noted that voluminous work has been carried out and very practical recommendations have been made from the work done to enhance substantially the storage capacity of TWHS in Karnataka
- The Committee also recommended that these reports should share with all State Councils so that maximum benefit can accrue out of the work.
- The committee rated the progress of the work done as **Excellent**.

**Table 1. : District wise status of Field survey completed**

Sl no	District	No. of TWH Structures
1	Bengaluru Urban	171
2	Bengaluru Rural	351
3	Ballary	429
4	Bidar	200
5	Chikkamagalur	160
6	Davanagere	290
7	Kodagu	45
8	Koppal	240
9	Dharwad	348
10	Haveri	627
11	Belagavi	245
12	Shivamogga	778
13	Chitradurga	704
14	Chamarajanagar	527
15	Udupi	355
	<b>Total</b>	<b>5500</b>

## Glimpses of Photographs on Traditional Water Harvesting Systems



Kalyani in Gudekote,  
Kudligi taluk, Ballary District

Submission of Scientific report  
on TWHS in Chikkamagaluru  
district to the CEO, Zilla  
Panchayath, Chikkamagaluru  
on 25-04-2018



Submission of Scientific report  
on TWHS in Kodagu district  
to the Chief Executive Officer,  
Zilla Panchayath, Kodagu on  
26-04-2018

Creating awareness on the  
importance of TWHS among PRO  
Officials at Zilla Panchayath,  
Dakshina Kannada, Mangaluru on  
22-05-2018



## RESTORATION AND REJUVENATION OF KALYANIS IN KARNATAKA

Kalyanis are the Traditional Water Harvesting Systems which were constructed to store water for various needs of rural communities such as drinking, washing, cattle drinking, irrigation and temple purposes including recharging of ground water. Kalyanis which are constructed in the premises of temples are called Pushkarinis in Karnataka have played very important role which were used for religious, social and cultural activities of temples in rural and as well as urban areas of the state.

At present most of these ancient water bodies have become dump yards and became dry resulting into the decline in their potentials. Keeping this importance in view, KSCST has taken up a project on assessing the hydrological and physical status of ancient water harvesting structure such as Kalyanis, Pushkaranis/Temple tanks, Gokatte and Kunte etc., of the state for suggesting scientific interventions for rejuvenation. The council has completed the assessment of around 4000 ancient water bodies and submitted the technical report to the concerned authorities for taking up rejuvenation of these structures.

Keeping this in view, in order to showcase the technologies and models for rejuvenation of these Kalyanis, the Council has initiated to take up the restoration and rejuvenation of one problematic Kalyani in each district to impress upon the Panchayath Raj Institutions of the state and on the importance of rejuvenation of Kalyanis for future use.

In this connection, KSCST has initiated the restoration rejuvenation of Kalyani in Shantigramma village in Hassan taluk and district having the capacity of 14500 cu.m. with the help of Hasiru Bhomi Prathishtana and ZP. Rejuvenation work is under progress and work will be completed by the end of December 2018.



Kalyani in Shantigramma, Hassan taluk & District, before and during Rejuvenation