

## TEMPLE TANKS – THE ANCIENT WATER HARVESTING SYSTEM OF CHHATTISGARH AND THEIR MULTIFARIOUS ROLES

SUSHMA MENE<sup>a1</sup>

<sup>a</sup>Department of Botany Bhilai Mahila Mahavidyalaya, Hospital Sector Bhilai (C.G)

### ABSTRACT

**Chhattisgarh state covers an area of 135133 sq km, which is 4.14% of India. It lies between 170 to 23.70 North Latitude and 80 to 830 Meridians. Rainfall 60 inches p.a. Rivers are lifelines of Chhattisgarh. Mahanadi, Shivnath, Hasdeo, Pairi, Udanti and Indravati are main rivers.**

**Keywords:** Meridians, Mahanadi, Shivnath, Hasdeo, Pairi, Udanti and Indravati.

Chhattisgarh is gifted with nature's bounty of water resources, with its major rivers interconnecting canals and umpteen tanks and lakes of diverse area and capacities. But the ever burgeoning population, disappearing paddy fields, coming up plantation of cash crops and erratic monsoons are likely to lead to water crisis in the coming millennium. This threat has led to different opinions among experts regarding water storage, one group believing in large storage in the form of reservoirs, while the second group being ecologically sensitive, insists that small storage tanks make far more sense as they are less expensive and can be controlled by the local people. This second concept takes us to the traditional water harvesting system in every village of Chhattisgarh.

#### **The temple tank/ sacred tanks**

In Chhattisgarh, temples have historically played an important role in harvesting their surplus water in tanks; every village has at least one temple, associated with each of which is a "Sacred tank". For every pond, there was an unwritten dictum among the local folks as to the traditional practice of maintenance of tanks, which sluice to be opened and how one would ration water in times of storage. Apart from serving as water harvesting device these tanks are found to facilitate the growth of a wide verity of plants ranging from herbs to hefty tree species in the surrounding moist banks, as well as algal and other aquatic vegetation in the water.

The temples can be square, rectangular or circular in plan based on which the shape and size of the tank is decided. Hence larger temples have

large tanks. Most of the larger tanks in the ancient times were found to have inlets and outlets, with sluice to control the inflow and outflow of water. This aided in constant circulation of water, with a constant flushing out the polluted water and inflow of fresh water (rain/ river water). Besides, there were also canals interconnecting a few tanks together.

With the advent of bore wells and modern water distribution system, with the insects and outlets clogged, walls dilapidated and overgrown by plants, many of the tanks have been reduced to mere functional legacies of the past. Consequently, the quantity of water has been reduced greatly due to eutrophication and growth of microorganism and since each one in most instances having a sacred tank attached, a project was undertaken to study the temple tank of Chhattisgarh, on various aspects such as hydrography, planktonology, biodiversity and economic importance of these structures. The present work enumerates some of the most important utilitarian values of the temple tanks of Chhattisgarh.

#### **METHOD OF STUDY**

Extensive field trips were taken to survey the temple tanks of 4 districts of Chhattisgarh. Data were collected on the biodiversity of tanks along with analysis of hydrographic parameters. Interviews with local communities of people living in close proximity to the tanks in regards to the utilitarian aspects.

#### **IMPORTANCE OF TEMPLE TANKS**

The present study reveals that the temple tank, apart being a religious relic and a mere water

harvesting structure, has multifarious roles to play. Some of the most important aspects are enumerated here.

#### As a source of potable water

From time immemorial temple tanks have been used as potable water resources, since many of these tanks especially in the ancient days, were clean due to their restricted use, many of the tanks can be converted into potable water resources.

#### As Swimming Pools

Many of the tanks, especially the larger ones have been used as swimming pools by the local communities of people since ancient times, usually a separate bathing ghat being reserved for the priest of the temple. Thus structures serve as ground for social and cultural interactions for local residents.

#### As Pockets of Biodiversity

Most of the temple tanks having perennial water sources help to key the surrounding moist and cool and harbour dense and varied flora. Those tanks, which dry up during summer, also harbour a variety previous annuals during the rainy season. Around huge tanks with granite walls are seen trees like *Mangifera indica*, *Tamarandus indica*, *Ficus religiosa*, *Ficus bengalensis* etc. A survey of more

than 200 temple tanks of Chhattisgarh revealed that these tanks with their moist cool banks are repositories for different species of angiosperms (as many as 325 bans species and 20 aquatic species), ferns, fern allies, algae and other hydrophytes. The floras are in turn found to support various animals including visiting birds and butterflies, fishes, frogs, sponges, worms and zooplanktons.

#### As Pockets for Preservation and Multiplication of Medicinal Plant Flora

The survey reveals that the tanks shelter in their vicinity several medicinal plants of great value not only for primary health care of village communities, but also those important in pharmacopoeia. The table enlist some of the commonly occurring plants in and around the temple tanks. Very rarely only temple tanks are exposed to industrial or sewage pollution, though mild pollution occurs in some tanks.

#### As Aesthetic

Last but not the least, the temple tanks with placid waters, lush growth of various types of plants around and cool breeze, act as a recreational ground in the midst of concrete structures of the city, where the local residents are often found to sit and relax in the evenings.

**Table-1 Flora of temple tanks- Common representative**

#### A- Angiosperm

*Achyranthes aspera*  
*Calophyllum*  
*Cleome viscosa*  
*Cyanodon dactylon*  
*Cyperus rotundus*  
*Eclipta alba*  
*Ficus benghalensis*  
*Euphorbia hirta*  
*Hibiscus*  
*Ipomea fistula*  
*Leucas aspera*  
*Corchorifolia*  
*Ocimum sanctum*  
*Portulaca oleracea*  
*Phyllanthus*  
*Bahunia parviflora*  
*Bahunia variegata*  
*Saraca indica*  
*Nimphaea stellata*  
*Hydrilla verticillata*

#### B- Pteridophytes

*Azolla filiculoides*  
*Lygodium microphyllum*  
*Pteris vittata*  
*Salvinia molesta*

#### C- Bryophytes

*Riccia* sp.  
*Anthoceros* sp.  
*Funaria* sp.

#### D- Algae

*Chara* sp.  
*Nitella polycarpa*  
*Spirogyra* sp.  
*Oedogonium* sp.  
*Hydrodictyon*  
*Udorina*

Table-2 Some medicinal plants around temple tanks and their uses

Botanical Name	Important Uses
<i>Acalypha indica</i>	Bronchial infection, skin ailments
<i>Aerva lanata</i>	Plant diurectic, flower in religious rituals
<i>Andrographis paniculata</i>	Whole plant in fever roots and leaves anthelmintic tonic
<i>Bacopa monieri</i>	Hair tonic, dried leaf powder for nerves disorder
<i>Biophytum sensitivum</i>	Plants as a antiseptic
<i>Boerhaavia diffusa</i>	Root purgative anthelmintic, leaf juice for jaundice
<i>Cassia angustifolia</i>	Plants used as laxative, root antidiabetic, fruit aphrodisiac
<i>Cyanodon dactylon</i>	Fresh juice used as diurectic
<i>Desmodium triflorum</i>	Roots carminative, tonic, diurectic
<i>Eclipta prostrata</i>	Plants as hair tonic
<i>Heliotropium indicum</i>	Leaf juice on wounds, sores and boils, antiseptic
<i>Leuccas aspara</i>	Plant as anti-insect poison, leaf juice in skin infections
<i>Mimosa pudica</i>	Whole plant are aphrodisiac, blood purifier
<i>Nelumbo nucifera</i>	Fruits, carpels as tonic, digestive, rhizome paste against ring worm
<i>Ocimum sanctum</i>	Whole plant antibacterial, insecticidal, used in colds and coughs
<i>Oxalis corniculata</i>	Leaf infusion for fever, dysentery, dyspepsia
<i>Phyllanthus amarus</i>	Plant decoction against jaundice
<i>Physalis minima</i>	Fruit as tonic, diurectic
<i>Pistia stratiotes</i>	Leaves and roots as expectorant, whole plant as bug destroyer
<i>Saraca indica</i>	Bark in uterine afflictions
<i>Sida cordifolia</i>	whole plant as hair tonic
<i>Zizyphus mumularia</i>	Root bark promotes healing of wounds

## CONCLUSION

The present study reveals that the most neglected temple tanks have multifarious roles to play such as being repositories of rich and varied plant species, which in turn support an assemblage of faunal population; as a source of potable water, aesthetic, recreational grounds and structures preserving medicinal flora

The preservation of temple tanks involves two processes, viz. Conservation of biodiversity and maintenance of tanks and quality of water through periodic checking linked with the eco amelioration activities and this can be probably achieved by encouraging active participation of local communities who are familiar with tank morphometry/ architecture and the changes that have happened down the decades.

## REFERENCES

- Induchoodan N. C.; 1998. Ecologica; studies of Sacred Groves, M. Sc. Thesis, Kerala Agriculture University, Tissur.
- Khoshoo T. N.; 1996. Environment Priorities in India and Sustainable Development. Presidential Address 73<sup>rd</sup> Session, Indian Science Congress Association, New Delhi.

Mishra R.; 1991. Planning for Environmentally sustainable development. In Ecology and Sustainable Development, National Institute of Ecology, New Delhi.

Sharma P.D.; 2001. Ecology and Environment (Rastogi Publication, Meerut).

Thampuratti Laxmi Bai; 1995. Sree Padamanabham Temple, Thiruvananthapuram.