



O mittur Lakes Monitoring

Chikkakere Lake (Tank no. 365)

Hosakere Lake (Tank no. 124)

Shaktikunte Lake (Tank no. 46)

Doddakere Lake (Tank no 62)

11.07.2022

Overview

The objective of this study was to monitor the lakes based on standardized protocols that included the specifications ranging from measurement of lake's area, its elevation, crops grown in the command area, water quality to socio-economic status of the village. The group four covered 4 lakes namely Chikkakere, Hosakere, Shakti kunte and Doddakere. Apart from the stated objective the aim is to understand the significance of these water bodies in making the village self-sufficient with respect to dependency on water which is both a **"human right and an economic good"**. Collecting data, presenting and analyzing it will allow us to take corrective actions in order to ensure that the issues of silting and bund leakage are resolved while also acting as a source of document for attracting funds.

I. CHIKKAKERE TANK

The 25-acre Chikkakere Lake is situated in the Kolar district's O Mittur (Urukunte Mittur) settlement. The lake is about 800 meters above sea level. The lake contains the upstream lake, Kankalam Kera, and the downstream lake, Doddakere. It includes two inlet channels and one waste weir to provide a constant flow of water into the downstream lake. The rainwater is collected and falls straight into the lake from a rural catchment that is situated close to the lake. One RajKaluve, or feeder channel, exists in the lake. The major purpose of the feeder channel is to deliver water equitably throughout all of the crop fields. **Since the Raja Kaluve (feeder canal) is clogged with silt, a suction pump is used to push water straight from the lake.**

The settlements of Urukunte and Mittur each have roughly 100 and 199 households, respectively. We learned from speaking with one of the farmers of the village, Lakshman, that the village has seen large rainfall for the past two years. When it didn't rain, farmers used to grow Rabi crops since Kharif crops are more likely to need a lot of water. 40 to 50 farmers use the lake as a source of irrigation. Concerning the occupation of women in the village, it should be noted that **roughly 70% of women work in agriculture. Additionally, fishing is done in the lake.** Rohu & Katla are the two varieties of fishes which are mainly cultivated. The majority of the crops planted in the command area are paddy, which takes up around 30 to 40 hectares of land. There is an open well in the command area, and water



from it is mostly used to grow mulberry and rabi crops. The private open well is 40 feet deep and 25 feet in diameter. To pump water from the well for irrigation, a pump house is situated close to the well. Typically from October to November, the lake's water level is at its highest. The summer months, when farmers depend on raising dairy cattle and fish, are when water stress is most noticeable.

There is a dairy in every village. There are between 50 and 100 cows in each village. Vegetables including tomatoes, beans, and capsicum are also farmed in addition to paddy and silk. The village's primary source of drinking water currently is the Borewell. Presently, there are 8–10 RO plants for water purification in 14 villages. There is also a 5- to 6-feet-deep Kalyani, or stepped temple tank, close to the lake. Water enters the Kalyani after passing through a catchment region. The stepped well is mostly utilized for religious purposes.

To further emphasize the location's religious significance, a holy idol may be seen nearby under a peepal tree close to the lake. A representation of eternity is the Hindu deity Shesh Nag, who has a thousand heads and holds the entire planet on his head. The Shesh Nag also functions as Lord Vishnu's sleeping couch. He belongs to the Hindu male Trinity (Lord Shiva and Lord Brahma are the other two). Lord Shiva wears a snake around his neck as jewelry. Furthermore, it is said that this kind of devotion will neutralize any danger that snakes may pose.

In the entire region, several biodiversity species have been discovered. Some of the plant species that were seen in and around the Chikakere lake are ***Lantana Camara, Pongamia Pinnata, Eucalyptus, Morning glory, Peepal, Tamarind, Neem, and water lettuce***. While certain plant species are beneficial to the environment, others are not. For instance: Eucalyptus trees are accused of a variety of crimes, including destroying watersheds, causing erosion, promoting fires, and obstructing local vegetation.

One of the top ten worst invasive species in the world and a species of High Concern for India is **lantana**. It affects the soil's nitrogen cycle and competes with native plants for resources and space. The lack of natural feed plants for wild animals is a result of this invasion. Animals' muzzles may develop allergies if the leaves are consumed. In certain instances, consuming large amounts of lantana has caused the animal to have diarrhea, liver failure, and even death. For both people and animals, **Pongamia** provides a variety of advantages. Its fragrant blossoms are prized as an attractive tree, and bees use them to

manufacture black honey using pollen and nectar. Rural communities may use this honey's yield to support their economies and practice Apiculture. A variety of medical uses exist for the leaves as well. As a home remedy for rheumatic and skin conditions, the seeds' oil is useful. Apart from the stated functions it is also used in treating liver disease and liver pain, it also treats dyspepsia.

Specifications

BASIC INFORMATION	MORPHOLOGY
Name: Chikkakere Lake Location : Lat. 13.076409 Long.78.335132 Village : O Mittur (Urukunte Mittur) Taluk : Mulbagilu District : Kolar Custodian/Planning Authority:Gram Panchayat	Elevation:800 meters Area: 25 acres Waste Weirs:1 Inlets:2
HYDROLOGY	SOCIO- ECONOMIC VALUE
Upstream lake: Kankalam Kera Downstream lake:Doddakere Catchment:Rural	Mainly used for irrigation purposes

Problem identification

- In conversation with one of the village's farmers, Lakshman, he stated that around half of young people tend to travel in search of job prospects.
- Issues of conflict regarding ownership & encroachments.



Chikkakere Lake



Bund



Command area



Inlet



Waste weir



Open well



Kalyani

II. HOSAKERE LAKE

Hosakere lake, spread across 30 acres having a depth of 6 feet lay in the middle of the green bushes and trees gave us some respite from the scorching heat during our visit. After exploring our first lake i.e. Chikkakere our exhausted self compromised on the enthusiasm that we carried while documenting the Hosakere tank but once we started surveying and receiving responses from the farmer Shivananda which were translated by Asha, founder of an NGO Grameen Abhivrudhi Sangha, our translator, guide and mentor we got back our heightened spirits of curiosity.

The lake (13.067979, 78.330193) is located at an elevation of 800 m. It has 2 inlet channels, one big and one small. The water from the overflow channel i.e waste weir enters into the Avalamarkalgatta Village which also has its downstream lake namely Doddakere. Regrettably while mapping the locations we couldn't access bund, catchment area, well situated in the catchment area due to the problems of bund leakage, silting and dense tree cover and vegetation. Apart from the paddy cultivation, crops grown in the command area are ragi and coriander.

There are 90 households in the village and this lake has 5 dependents. Apart from farmers of the kottur village, it is also a source of livelihood for the farmers of Urukente village who come here to do the cultivation. In India more than 80% farmers hold small and marginal landholdings (less than 1 hectare) due to which ownership conflicts and claims over the land are pervasive. In the catchment area of the Hosakere lake there has been conflicts

over the rights to claim land and to utilize it for agricultural activities. Farmers have demarcated small patches of land where they undertake agricultural activities. Despite DC's orders to vacate the land giving rationale that it's a public good farmers have been reluctant to follow the same. Once summer sets in, farmers face water stress. They do less agricultural work in summers and engage in allied activities such as animal husbandry, dairy farming, fishery activities, livestock management to sustain themselves.

Problem identification

- From the catchment area a good amount of water enters the lake but due to bund leakage it can't be stored and thus utilized by the farmers.
- Immediate requirement of desilting.
- Wage disparity

HYDROLOGY	SOCIO-ECONOMIC VALUE
NAME: Hosakere Lake Location: 13.067979, 78.330193 village: kottur Village Custodian/planning authority: Panchayat Created/rejuvenated year: 2020 (Desilting) Present status: Silted	livestock Management, Irrigation
MORPHOLOGY	HYDROLOGY
Elevation: 800 m Area: 30 acres Maximum depth: 6 feet Islands: Nil waste weirs: 1	Type: seasonal Downstream: Markalgatta Dodda Kere Catchment: Rural

Inlet: 2 (one big and one small)	
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HOSAKERE LAKE



BUND



COMMAND AREA



Hosakere Lake

III. SHAKTI KUNTE

Shakti Kunte lake (Tank No. 46) which is 300 years old is located in the Bandahalli village of Kolar district. **The term 'Banda' means stone and the village got its name due to the presence of a stone quarry.** There are 140 families residing in this village and 90% of them belong to the Godas and Vokkaliga communities of Scheduled Caste. Two villages which are dependent on this lake are Urukunte and Bandahalli. Mainly, the Bandahalli farmers use the catchment area for cultivation.

BASIC INFORMATION	MORPHOLOGY
Name: Shakti Kunte	Elevation: 813 m
Location: Lat: 13.076417	Depth: Lake 1: 18 ft
Long: 78.343362	Lake 2: 6-8 ft
Village : Bandahalli	Waste weirs: 1
Taluk : Mulbagal	Inlet: Lake 1: 1
District : Kolar	Lake 2: 2
Custodian/Planning Authority: Gram Panchayat	
HYDROLOGY	SOCIO-ECONOMIC VALUE
Type: Seasonal	Farming
Catchment Area: Quarry	Dairy farming
	Quarry

This lake is different from the other lakes documented as it is divided by a land in between. The lake situated at the other side of the land is not a separate lake but a continuous body of water divided by the land. The command area of the water body that we visited first is 7

acres and the bandahalli village is dependent on it. The water depth is 18 feet but due to the presence of stone surface, the water just gets stored and cannot recharge the groundwater. This water body at the other end of the land has 2 Rajakaluves but due to excessive vegetation these were inaccessible. When compared with the first one, it can be said that silting is less. The stone quarry acts as the catchment area and there is one feeder channel.

Whereas, in case of the second part of the lake, the command area is of about 10-15 acres and both the villages are dependent on it. The depth is 6-8 feet and siltation is more in this part which is a problem. This has 3 Raja Kaluve and two feeder channels. One feeder channel is the same as that of the first part.



Shakti Kunte Lake



Command Area



Catchment Area



Children of the Anganwadi

After a conversation with Venkatesh Appa, local resident of Bandahalli village, the vegetation and the main occupation of the villagers were known. In the first part of the lake crops like tomato, green chili, ragi and paddy are cultivated and for the second part, tomato, paddy and ragi,



eucalyptus is cultivated. Not many people are associated with farming as they do not own any land; so they are associated with the quarry operations. Though the quarry is owned by the government and the activities are illegally done, yet the livelihood of the majority people depends on it. The monthly income of people working in the quarry is about Rs 6000-8000/-. Apart from this, Bandahalli village has 80 cows and 150 goats out of which 30 goats are owned by Venkatesh Appa. The cows are used for dairy farming and the goats for their meat.

We also got the opportunity to visit an **Anganwadi** of the Bandahalli village. Children of age 3-6 years are taken care of by the Anganwadi and sometimes their mothers accompany them. Vaccines and mid-day meals are provided from here to these children. Pregnant and lactating mothers are also taken care of and currently there are 5 pregnant women and 7 lactating mothers.

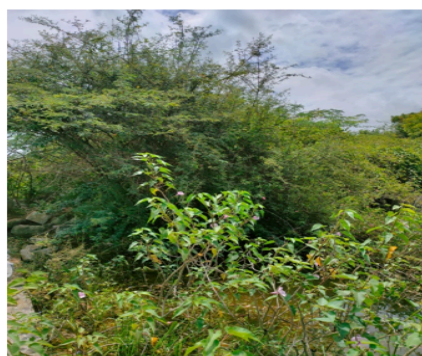
A 18 feet deep well is located nearby though it was inaccessible due to excessive vegetation. And for the drinking water, the village uses the borewells.

IV. DODDAKERE LAKE

Doddakere lake in the Avala Marakalagatta village is approximately 10-12 feet deep. The lake is seasonal in nature and is commonly known as “Palar” in kannada. **First thing to catch our attention when we arrived at the lake was the non-functional bund.** After talking with Prasanna, our local guide, we found that the bund had developed a leakage. We were able to record the bund location (13.069987, 78.315405) however, we could not mark the exact location of Rajakaluve (13.067073, 78.319090 approximate location) as there was excessive plant growth and the bund was not functional. The lake had two waste weirs (13.070052, 78.315346, 13.067146, 78.319232). Crops like tomato, paddy and other seasonal vegetables are grown in the command area (13.067040, 78.318736) using the water from the lake by employing drip irrigation practice.



Command Area



Lake Bund

The lake water also acts as a drinking water source for animals like goats and cows. The lake is usually full during the months of October and November and sees a drop in water level usually during March-April. The lake also had an open well nearby (13.067047, 78.318931) and a pump house. The pump house is also used by travelers as a resting place. The





diameter of the well is 20 feet and the approximate depth of the well is recorded as 50 feet as told to us by Prasanna. The well however is not used for drinking purposes, it is mostly used for other purposes like irrigation and livestock management. The village earlier had a total of 3 borewells, which met the drinking requirement of people, a recent one was installed 3-4 years back, however, only 2 were functional as of the date of our visit.

Out of the 110 households in the village, 30 families grow crops in the command area, the rest depend on activities like dairy farming for their livelihood. The village has 70-80 cows, around 250 liters of milk is collected in morning and 300 liters is collected in the evening which is then sent to the local milk collection centers. Some of the villagers also make their living by selling 3-4 varieties of local fishes in the Betmangla market.

Our local guide, Prasanna, who helped us in getting all the information about the lake, makes his living by working for another farmer. He is also the Neerganti for the village. His job as Neerganti is to decide where and how to utilize the available water resources.

KEY TAKEAWAYS AND SCOPE OF FUTURE STUDY

- The common motif that was observed while monitoring all the four Lakes is that water inside the lake is not utilized for drinking purposes and was utilized for irrigation and Livestock Management. Most farmers in all the villages are dependent on agriculture as their source of livelihood but apart from that they engage in allied agricultural activities especially in summers when water stress is acutely noticed.
- Desilting and bund leakage are two prominent problems persistent in Hosakere and Doddakere Lake.
- The Kaluveys (feeder channel) are not functional in Chikkare Lake.
- Estimated cost for bund leakage in Hosakere Lake is around 10 to 12 lakhs. Desilting is supposed to be done under the supervision of the panchayat but no such action

has been taken. (farmers are managing it by filling the space with sand to prevent bund leakage).

- Desilting has its own drawbacks. It is a costly proposal when compared to other alternatives and therefore needs study of alternatives as well as detailed hydrological investigations.
- Mobility challenges for women: Asha from Arohana expresses her willingness to learn to ride a scooter as this is not common for women in the village to own vehicles and drive. This restricts women's mobility and thus hinders their empowerment.
- Prevalence of wage disparity. While conversing with Shivananda, a farmer in kottur he, like many others, was of the view that since men work more than women they receive higher wages. Thus, wage parity can be ensured when more women-led NGOs like Arohana empower women by providing them equal opportunities and ensure that both the genders are paid equal wages.
- Migration rate is constantly increasing at an alarming rate which is a concern since ensuring a good lifestyle in urban cities becomes a challenge and thus forces the migrants to live under poor circumstances. The objective should be to make villages self-sufficient and generate employment opportunities in the rural areas itself.
- The Next generation is reluctant to continue farming and want to pursue other careers due to the reasons of low income and undignified lifestyle.
- Groundwater recharge rate, percolation rate and the estimation of the catchment area could be some of the areas for exploratory research.

For more better understanding of the lake monitoring project the link to the presentation is attached: [O Mittur Lakes Monitoring PPT](#)