

Lake governance: pathway forward

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May 2020



With urbanisation, lake governance has evolved in Bangalore. To strengthen lake governance, we need:

- ❑ Coordinated planning and action,
- ❑ Transparency in data and decision-making,
- ❑ Strengthening of agency capacity,
- ❑ An adaptive learning process, and
- ❑ Improved fund allocations.

We need an overall shift in lake governance – from a reactive paradigm to a proactive and participatory integrated lake and water governance paradigm.

This article is the fourth in a multi-part series on lakes that aims to provide a comprehensive overview of lake-related problems in Bangalore and approaches to address them. This article outlines a pathway forward for improved lake governance.

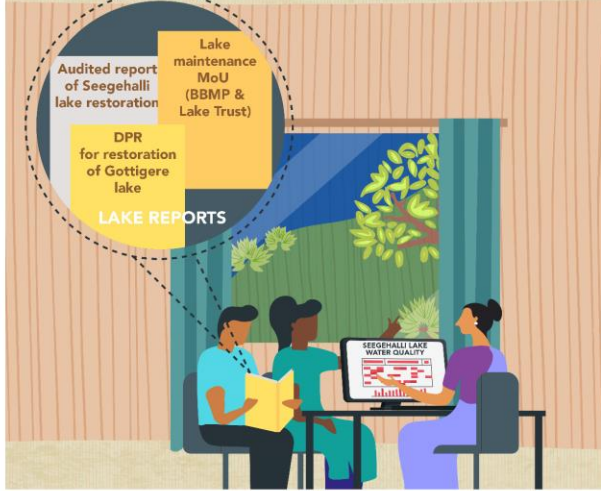


FOR STRENGTHENING LAKE GOVERNANCE, WE NEED...

Coordinated planning and action



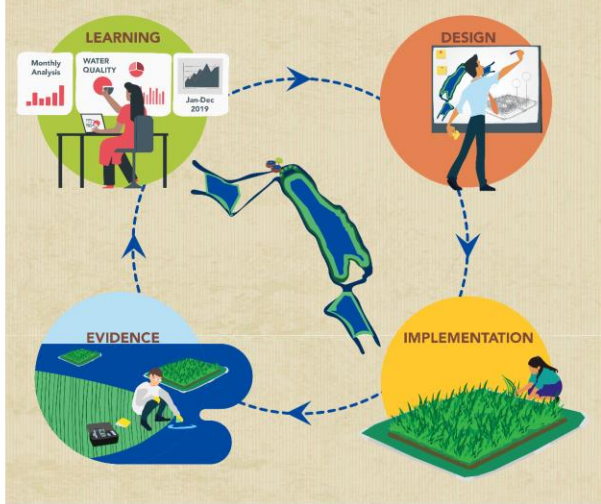
Transparency in data and decision-making



Improved fund allocations



Adaptive learning process



Capacity building of government agencies



Credits: Aparna Nambiar

Lakes are an integral part of Bangalore’s water system. They act as flood buffers, facilitate surface water – groundwater exchange, support ecosystems and serve as potential water sources. Despite these benefits, lakes are not managed well. To address this, we need to strengthen lake governance.

With urbanisation, lake governance has evolved over the decades (Figure 1). Beginning as irrigation tanks governed by the social rules of village communities, these water bodies were later taken over by the government during the colonial period and post-independence. Since then, the responsibility of lakes has been shifting across different agencies.



Figure 1: Evolution of lake governance in Bangalore



Figure 2: Lake management roles

In the recent past, lake governance has witnessed greater civil society participation, driven primarily by people's interests in protecting the water bodies from pollution and encroachment and conserving them for their aesthetic and environmental values [1].

Today, different aspects of lakes are managed by different agencies, each playing different roles (**Figure 2**). As agencies have specific mandates, they often work in silos with very little coordination amongst themselves.

We need common lake visioning and applied systems thinking to improve our collective understanding of lakes for better decision-making. But visioning is not enough. There is also a need for improved coordination in lake management, better transparency in data and decision-making, strengthening government agency capacity, improved fund allocations and an adaptive learning process.

Lake governance needs coordinated planning and action

Lake governance is not a simple matter of fencing the lake, planting trees and adding a walkway. As lakes are fed by urban stormwater drains (often sewage laden), lakes are closely connected to the city's water and wastewater infrastructure. Given that the decisions and actions by many government agencies affect lakes, there is a clear need for coordinated planning and action. Lake-related decisions affect citizens, therefore public consultative processes regarding lake management are needed.

Participatory lake visioning is the first step. It is needed to drive consensus on lake goals and management plans in a collaborative manner [2]. For lake management at the watershed-level and the city-level, we need integration along three dimensions – conceptual, institutional and political. We outline a pathway for improved conceptual understanding of lakes towards integrated lake governance.

The proverbial story of the elephant and the blindfolded people illustrates well the fragmentation in lake governance (**Figure 3**). Each of the lake stakeholders has a limited view of the system as well as limited capacity to act.

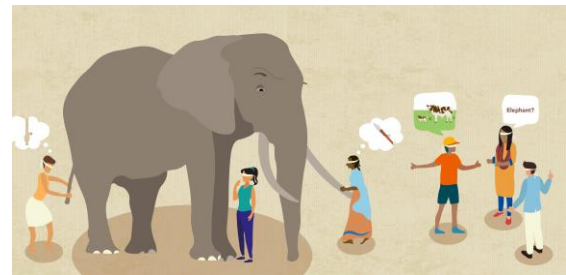


Figure 3: Illustration of fragmentation in lake governance

For example – in most parts of the city, wastewater flows along with stormwater in drains meant for the latter. Although at present, the infrastructure (i.e. drains) is common, the municipality, which is responsible for storm water ignores the wastewater in the drains and the water utility, which is in charge of sewage, does not account for stormwater.

Therefore, there is a critical need to recognize lakes as a part of the city's watersheds and its blue-green-grey water infrastructure and bring lakes within the broader water governance discourse in the city.

One of the hardest tasks is communicating the implications of decisions made by one agency on the functioning of another. This is surprisingly difficult, given the fragmented world views. Some cities have attempted novel visualisation approaches such as decision theatres and serious games to improve understanding of complex problems, involving multiple stakeholders. Given the complexity of lake-related problems and the siloed actions of lake stakeholders, there is immense potential for the application of such approaches for Bangalore's lakes.

Recently, a game-theatre approach based on a board game has been developed to help citizens understand different stakeholder interests and the impact of different decisions on lakes in Bangalore.

These approaches offer the advantage of helping stakeholders better visualise complex cause-and-effect chains. Scenarios can show how actions involving one aspect of a lake affects other aspects and users and how there can even be unintended consequences. Such approaches help stakeholders look at the problems with a common set of

assumptions and arrive at a common vision (**Figure 4**).

These approaches can be integrated with visioning exercises and discussions at the lake-series and city-levels with the added benefit of data-backed models that can improve decision making. Such exercises can enable both government agencies and citizens to comprehensively understand the system and its linkages. This can help improve urban planning related to lakes and water and wastewater management within the city.



Figure 4: Illustration of a gamified scenario-based exercise

Lake governance needs transparency in data and decision-making

In the recent past, lake management decisions have been influenced by politics, court judgements, civil society activism and specific mandates of different government agencies. Lake management decisions impact different stakeholders differently. Some may gain, while others may lose. This makes it important that there is transparency in decision-making.

For improved transparency, we need well-defined processes for structured decision-making around lakes and water. The city needs to evolve a democratic process for

lake governance, being cognizant of different stakeholder needs and the need for effective coordination.

For example - Jakkur lake is widely considered to be a success story in Bangalore. It originally received 10 MLD of treated sewage from the BWSSB Jakkur sewage treatment plant. Citizens were very concerned by a proposal to sell the treated sewage water to a power plant for cooling instead of entering the lake. The concern was that the lake would dry up completely, destroying the vast habitat and ecosystem it supports. This led to a discussion that included both technical questions such as - *Would the lake really dry up? How much should be released for “environmental needs?”* - and also social questions - *Who has the right to decide? Who should be consulted? How to resolve the competing demands of developmental and environmental needs?*

At present, government agencies have little formal processes for stakeholder engagement regarding lakes. In the absence of such processes and incentives, government officials tend to be risk-averse and continue to work only on their limited mandates. Meanwhile, citizen lake groups lack the formal constitutional basis for deeper engagement with lake governance.

At the ward-level, municipal ward committees offer a democratic platform for stakeholder engagement on local issues. Although the functioning of ward committees is still ineffective, they provide a space for local government officials, elected representatives and citizens to engage. At present, citizen lake groups

have very little engagement with local ward committees. To strengthen lake governance, there is a critical need for citizens and citizen lake groups to use the ward committees as platforms for highlighting issues with lakes, water and wastewater infrastructure at the ward-level.

At the city-level, the municipal corporation (the BBMP) is the present custodian of about 150 lakes (that have water). Therefore, its Lakes Department, Storm Water Drains Department and Solid Waste Management Department have immense responsibilities to manage issues related to lakes within the city. BBMP can play an effective role in the following ways.

First, making public the data on lake plans and Detailed Project Reports (DPRs), lake assets, lake health, all lake Memoranda of Understanding (MoUs) and lake finances. This would help benefit decision-making around individual lakes.

Second, convening annual public consultative workshops on lake management visions and plans at the city-level. This can serve as a platform to discuss and decide on matters involving multiple lakes and stormwater/ wastewater infrastructure at the city-level whereas ward committee meetings can help engage with individual lakes matters.

Third, setting up a grievance redressal mechanism for lakes and stormwater management in the city. For this, Lake Adalats (like the Water Adalats convened by the BWSSB) can be convened every 3 months in each of the BBMP divisions to

address immediate local-level lake problems.

Lake governance needs an adaptive learning process

There have been substantial efforts by different government departments, NGOs and citizen lake groups in addressing lake-related problems. However, there are no clear manuals or guidelines on how to meet the multiple competing functions urban lakes must serve such as how large a wetland should be, which plants are most appropriate, or even whether treated sewage should be stored in lakes at all.

Consequently, a lot of the efforts are ad hoc. But, even having implemented solutions in one lake, the learning from these efforts does not effectively inform lake management elsewhere. We need manuals that document best practices and a feedback process that allows it to constantly be updated based on lessons from new projects.

Lake governance needs to be strengthened by investments in capacity-building

Strengthening capacity of government agencies to manage lakes and urban water effectively requires investments in different areas.

As lakes are common-pool resources, they cannot be governed in a top-down manner with decisions made by government agencies without public consultations. This implies that government agencies working on lakes need to regularly interact with lake stakeholders that include citizen

lake groups, resident welfare associations, fishermen and farmers. This requires skills in structuring public interactions, negotiations and approaches for collaborative problem-solving. Most government officers, especially technical staff, need capacity building on this front. Due to weak skills in public engagement and low trust, government officers are often wary of public discussions.

As lakes are an integral part of the city's water and wastewater infrastructure, they require multi-disciplinary efforts at management. The BBMP engineers working on lakes primarily have civil engineering expertise. There is a need for building expertise both internally and externally on various dimensions of lake management. This includes both the science related to lakes such as limnology, water quality and aquatic ecology as well as social aspects such as social audits of lake projects and socio-economic assessments of floods. In areas where the government departments lack capacity, there is a need for external expert consultations.

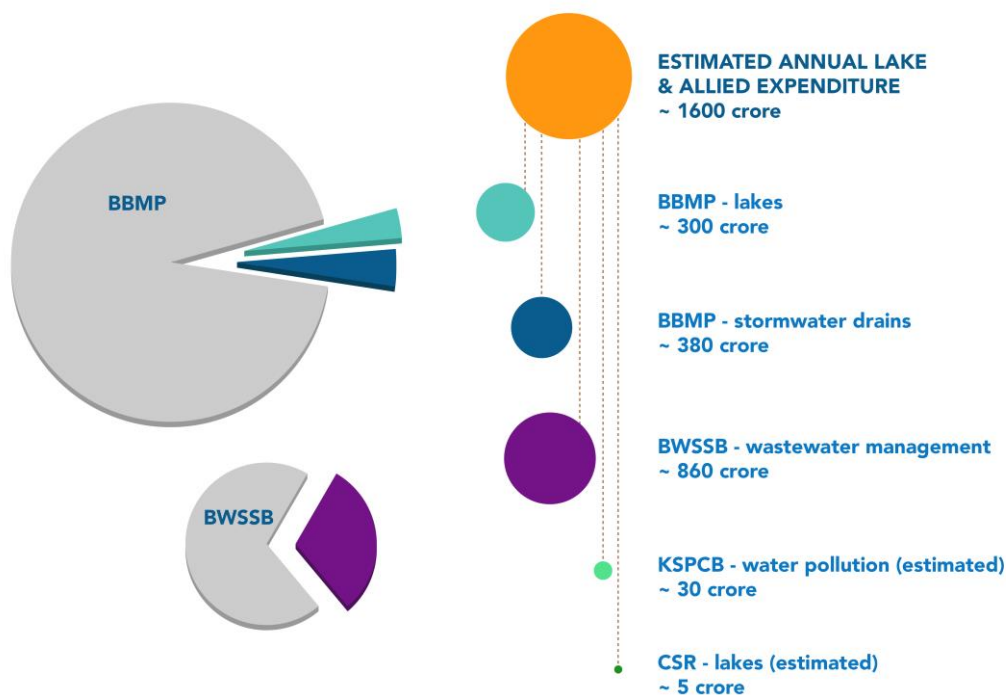
Lake governance needs improved fund allocations to be effective

BBMP's efforts to rejuvenate lakes has focussed primarily on civil works related to fencing, bund strengthening, desilting, de-weeding and cleaning of inlets and wetlands and creating walkways and parks. To prevent wastewater entry into lakes, stormwater drains have been diverted downstream at several lakes. This approach transfers the wastewater

pollution problem from upstream to downstream lakes.

There is an urgent need to prioritise and allocate adequate funds for sewage treatment infrastructure to prevent lake

pollution. The dedicated allocation for lakes is about INR 300 crore annually by the BBMP, i.e., ~3% of its total budget (Figure 5).



(Data Sources: BBMP Budget 2020-21, BWSSB Action Plan 2019-20, KSPCB annual report 2017-18, newspaper articles on CSR funding for lakes)

Figure 5: Estimated lakes and allied expenditure

The bulk of the job work budget estimates in BBMP’s large lake schemes (2016-19) has been on lake civil development works, only 9% of the expenditure was for creating and managing STPs. More than 80% of the funds are released through central and state government grants [3].

For 2020-21, approximately 65% of BBMP’s lake department budget has been allocated for complying with the National Green Tribunal order for addressing Bellandur lake pollution. For this, funds would be channelized by the BBMP to the other agencies involved – the BWSSB, the

BDA and the Central Pollution Control Board [4]. Clearly, the BBMP has limited funds for addressing lake pollution.

On the pollution regulation front, the KSPCB currently monitors 100 lakes in the city [5]. There is a need for additional fund allocations to expand on lake water quality monitoring to the remaining lakes.

The KTCDA is the agency responsible for conservation, restoration and overall regulation of lakes. However, its annual reports and information on its finances are not available in the public domain.

Corporate Social Responsibility (CSR) funds for lakes has been in discussion in the recent past, more than INR 50 crore has been pledged by companies for lake rejuvenation till date. While this has the potential to bring in additional funding for lakes in the city, there is a need for increased public consultations and transparency in project details. Citizen lake groups (registered as trusts) that receive CSR funds also need to disclose fund details in the public domain. Further, there is a need for a shift in funding from lake beautification to improving lake health and its ecosystem services.

Pathway forward...

Improved coordination, building of agency capacity, effective fund allocations, better transparency in data and decision-making and adaptive learning can strengthen lake governance in the city. However, this alone is not sufficient.

There is a need for an overall shift in the way lakes are governed in the city – from a reactive paradigm to a proactive and participatory integrated lake and water governance paradigm.

In the absence of lake management plans developed in a democratic manner

through proactive governance, litigation has often been used as a route to not only resolve lake-related conflicts but also to direct the executive wing of the government to take corrective measures. While this helps address urgent lake concerns, long term governance needs collective visioning and integrated blue-green-grey water-wastewater infrastructure plans for the city and an ability to learn adaptively.

Acknowledgements

This article is based on research supported by Rohini Nilekani Philanthropies and Oracle CSR.

Suggested Readings

[1] S. Lele and M. B. Sengupta, 'From lakes as urban commons to integrated lake-water governance: The case of Bengaluru's urban water bodies', *South Asian Water Stud. SAWAS J.*, vol. 8, no. 1, Jun. 2018.

[2] V. Srinivasan, R. Apoorva, P. Jamwal, and S. Bhattacharyya, 'How do we solve Bangalore's lake problem?', *Insight Article #2*, CSEI, Ashoka Trust for Research in Ecology and the Environment, Bangalore, Mar. 2020.

[3] 'BBMP Lake Job Works Budget Estimates 2016-19'. 2019, [Online]. Available: <http://bbmp.gov.in/documents/10180/13452466/308-LAKES.pdf/27eb5acf-3bd3-4cdc-b687-2691b1bc114c>

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[5] KSPCB, 'Classification of River, Lake Water Quality under GEMS and MINARS programme April 2020 to May 2020.' 2020, [Online]. Available: https://kspcb.gov.in/RWQ_GEMS_MINAR_April_20_to_Mar_21.pdf.