

Civic Groups Engagement in Saving Bengaluru Lakes: A Study

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ABSTRACT

This article discusses the role of civic groups in the protection and management of lakes in Bangalore. It explores the different activities of civic groups and how they help improve the city environment in lake management. Nowadays, civic groups play a significant role in community interests where the ecology and environment are central concerns. In addition, this paper discusses how urban expansion has collected huge tolls from the lake environment and how civic groups form over a period to save the lake environment. The paper also examines how the groups negotiate with the government and other agencies for policy change and the adaptation of sustainable practices to save the lake environment in the city.

Keywords: *Urbanisation, Urban Environmental Movements, Urban Lakes, Civic Groups, BBMP, Bengaluru*

INTRODUCTION

Urbanisation in Bengaluru started increasing after the economic liberalisation when the massive scale of the private sector and Multinational Companies (MNCs) across the world took part to raise the city Gross Domestic Product (GDP) (Husain, 2019). During the period of 1993 to 2004, the country's GDP growth rate was 7.93 per cent, where the city had a 20.76 per cent growth rate.¹ In addition, many universities and colleges are located in the city, which attract youths from different parts of the world. As a result, software, MNCs and industries have set up their headquarters in the city, leading to massive migration into the city. This situation has caused a variety of problems for the city, especially environment-related.

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However, when the urbanisation process is fast and urban challenges get intense, it poses severe challenges to public urban government institutions, affecting the quality of life. When problems reach an unacceptable threshold for the citizens, we see various forms of protests through collective action by civil society organisations demanding change. These are pressure groups that push the government authorities to make the necessary changes and have led to environmental movements in urban contexts when the magnitude of the problems gets uncontrollable, with profound implications. For instance, Environment Support Group has filed a Public Interest Litigation (PIL) against lake privatization in Bengaluru. Residents such as *dhobis* (washer community), fishermen/women, Resident Welfare Associations (RWAs) supported Mr Leo Saldana on this issue, and they got huge attention. Finally, on March 3, 2011, the High Court of Karnataka accepted the letter to protect urban lakes in Bengaluru.

Given this backdrop, it has been observed that citizens' involvement in governance has immensely increased. Bengaluru city citizens' networks are vibrant in action and have showcased marked improvement in solid waste management, lakes' rejuvenation, and tree planting. This paper is confined to lake-related movements only. It briefly discusses urban environmental movements and elaborately explores how the citizens have been active and created an environmental movement in the context of lake rejuvenation at length.

Urban Environmental Movements

The urban environmental movement seeks to protect the natural world and promote sustainable living in urban areas. The urban environmental movements are conceived as broad networks of people and organizations engaged in collective action in the pursuit of environmental benefits in urban areas. Manasi and Deepa (2020) talk about arsenic contamination and environmental degradation of Hootgalli Village in Mysore. This village is affected by water contamination (arsenic) due to industrial effluents. This industrial effluent is the primary source of Potassium Nitrate, which came from the manufacturing sector. Potassium Nitrate has increased the Biochemical Oxygen Demand (BOD) in the lake, water-borne disease, and arsenic contamination in groundwater. The political leaders identify problems and mobilise local people to protest against the industrialists. The local people demand their rights for unpolluted drinking water, which can happen only with the shutting down of the industries. Vote banks and political ideology have played a significant role in this movement. This local conflict has a significant impact on politics, the economy, and the society.

Another paper by Manasi and Smitha (2012) documents a case in Koramangala that focuses on urban floods, resulting in conflict (Mansi & Smitha, 2012). An apartment complex of 300 plots was built on the gradient of Shinivagulu Tank bed in 1989 by the Bangalore Development Authority at Koramangala. A storm water drain of about 40 feet passes through the layout. During heavy rains, water enters the households causing inconvenience to the residents. Hence, a secondary drain was built to divert floodwaters into storm water drains solving the problem partially. The natural slope of the Koramangala valley of which Shinivagulu Tank bed is a component, facilitates water to drain through the wetlands into the Bellandur Lake, affecting the natural flow and causing flooding along the belt. The residents filed a writ petition in the High Court against the nuisance of the drain, asking for covering. The government came up with a Rs110 crore project of re-modelling the open drains passing through four valleys in Bengaluru but this remains incomplete. This pursuance helped resolve the issue wherein Rs 400 crore was sanctioned for re-modelling the drain and resolving the issue.

The above-discussed problems highlight the intensity and dimensions of the problems leading to agitations and environmental movements. Thus, the environmental movement can be described as a social and political movement, mainly concerning preserving the environment and improving the state of the environment (P.P. Karan, 1994). It can also be said of the green and conservation movement. Generally, environmentalists favour the sustainable management of natural resources and the protection of the environment via changes in public policy and individual behaviour.

Methodology

The article is based on the urban environmental initiatives in Bengaluru city, India, the citizen networks and their approaches, with specific reference to asserting lake rejuvenation. The information is based on a review of literature on urban environmental initiatives which have gradually transformed into environmental movements, lake rejuvenation, secondary data analysis and some focus group discussions. Secondary data was collected from several sources such as books, journals, and websites. This data will help overview the location of local Urban Environmental Movements (UEM), nature of environmentalist actors, population engagement, and source of funding. Qualitative data helped identify citizen perceptions, the structure of movements function, socio-political and economic status. The sample frame of the study was prepared based on different parameters: location criteria, organisational status, actors involved, the area covering of actors, their

involvement in the issue, and their period of struggle and influence of change. Indicators were developed to measure the outcomes of UEM.

Actors involved in Urban Environmental Movements

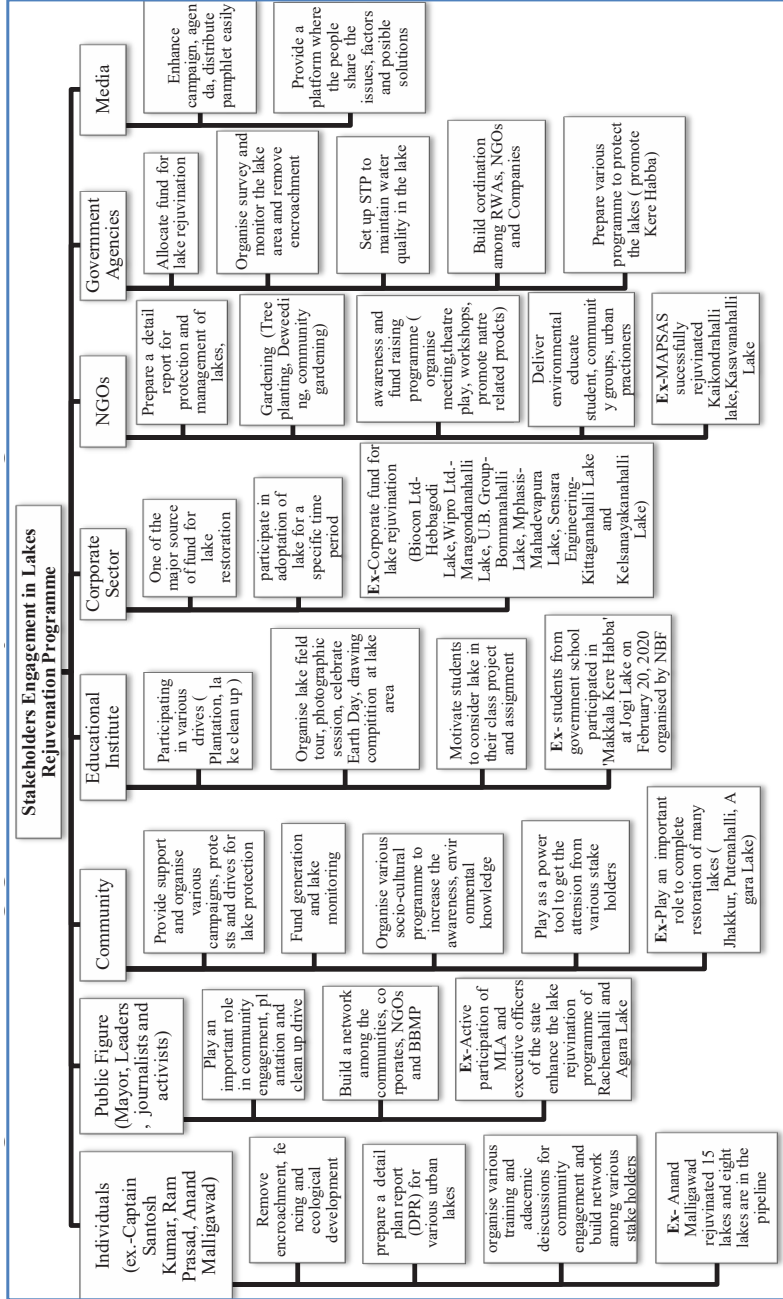
Several factors trigger urban environmental movements. It is observed that citizens, civil society, media NGOs and Residents Welfare Association (RWAs), individual organisations are various institutional organisations involved in collective action in demanding change, more so when the threshold level is reached, affecting the quality of life (Fig. 1). For instance, the agitation against the Lingadeeranahalli processing plant near the Turahalli forest view, Bengaluru, is apt. People were agitated with the foul smell they had to bear and the anger that the nearby lake was polluted with leachate. It is essential to have a processing plant, but the technology must be in place to ensure no pollution.

Interestingly, it is observed that Bengaluru is characterised by high civic activism. Some of the initiatives have effectively influenced policy change, thus improving urban governance. More than 20 NGOs are working specifically on environmental concerns. In India, urban environmental problems vary across cities because of their geographical location, economic activity, socio-cultural factors, local governance and citizen perceptions. For example, Chennai and Mumbai face urban flooding and other natural hazards, and Kolkata faces poor urban service and encroachment of public space. Similarly, Delhi faces air pollution; Bengaluru faces land encroachment and industrial effluents, causing lake pollution and urban waste.

Bengaluru City Lake Details

There are no accurate statistics of lakes and water bodies in Bengaluru, so it is not easy to provide a complete picture of lakes in the city (Thippaiah, 2009). As there are inadequate data sources on lakes and tanks, the current study has attempted to draw attention to Bengaluru lakes and tanks. The 'Garden City' of Bengaluru had 260 lakes, ponds, and water bodies in 1962. It was sufficient for groundwater recharge for the supply of drinking water and it also fulfilled the water demands in the city's agriculture sector and the outside suburban areas. Also, these numbers (total number of lakes and water bodies) were able to control the local climate variability (Rau, 1986). One study done by Deepa mentioned that in 1973, the Bangalore Urban District had a total number of 379 tanks and out of this, 138 and 241 tanks were located in North Taluk and South Taluk respectively (Bharadwaja, 2016). However, today, most of the lakes have vanished, are polluted, sewerage fed, encroached by developers due to unplanned urbanisation, increased

Fig. 1: Stakeholders' Engagement in Lakes Rejuvenation Programme

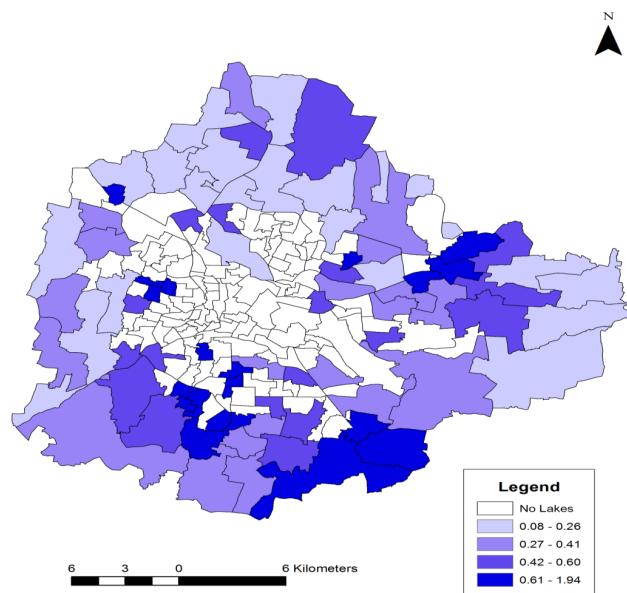


Source: Field Observation by the Authors.

population growth and anthropogenic activities. The total number of lakes has reduced from 262 to 127, and out of these, only 81 lakes are liveable in the city (Namma Bengaluru Foundation, 2014).

The city has a maximum number of lakes located on the periphery (See Map 1). The southern part has more lakes, followed by northern, eastern and western parts of the city. The highest lake density is occurring in the south-eastern and northern part of the city limit, and moderate density is located in south-western and north-western part of the city limits. The lake density in the core area is very low compared to other parts of the city as the transport nodes, i.e., bus station, railway station, industrial and commercial activity, are concentrated here. In the overall scenario, rapid urbanisation and population growth significantly reduce the number of lakes and lake density.

Map-1: Choropleth Map Showing the Ward-Wise Lake Area in km², 2011



Source: Map prepared by author based on BBMP's Lake Department Data, 2011.

Role of Civic Groups in Lake Rejuvenation Programme

Lakes are an essential focal point of several civic groups, NGOs, resident associations, academicians, and environmentalists. The group formed is usually based on the people residing in the lake neighbourhood and several other associations, NGOs and volunteer groups. To draw the attention of the residents and the government, the concerned groups organise photographic sessions, file Public Interest Litigation (PIL),

campaigning, and painting competitions among the students. Similarly, they organise lake clean-up drives, celebrating cultural and religious festivals, awareness creation programmes, community meetings, *KereHabba* (lake festival), and plantation programmes. The civic groups also discuss issues with the local government and corporate bodies as they share possible solutions to rejuvenate the lakes.

Some citizen groups secure lake ownership from the Bruhat Bengaluru Mahanagara Palike (BBMP), like United Way of Bengaluru, Mahadevapura Parisara Samrakshane MattuAbhivrudhi Samiti (MAPSAS), and Puttenahalli Neighbourhood Lake Improvement Trust (PNLIT). They are maintaining seven, five, and one lake, respectively. For rejuvenating the lakes, these citizen groups are following three significant steps. They are:

- (i) The first step includes cleaning, gardening, beautification, and maintaining of the lakes;
- (ii) The second step involves working with the BBMP and forming guidelines to increase the strength of lake revival activities; and
- (iii) The third step includes getting the attention of the local community groups, organising the programmes, community meetings, and lake festivals for the involvement of people, and other civic groups towards the lake rejuvenation programme.

Timeline for Formation of Civic Groups

Most of the environmental NGOs, civic groups and volunteer groups were formed during the post-economic reforms period. The reason is that under this policy, several MNCs, IT firms, and service sector industries got started in Bengaluru city. This created a large job market, better infrastructure and improved the living standard of the citizens as well. It also increased the population growth and built-up area in the city. India has significant economic disparities between the rural and urban areas, and people prefer to migrate from rural to urban areas. The concentration of population and the rapid urbanisation created several environmental problems in the city.

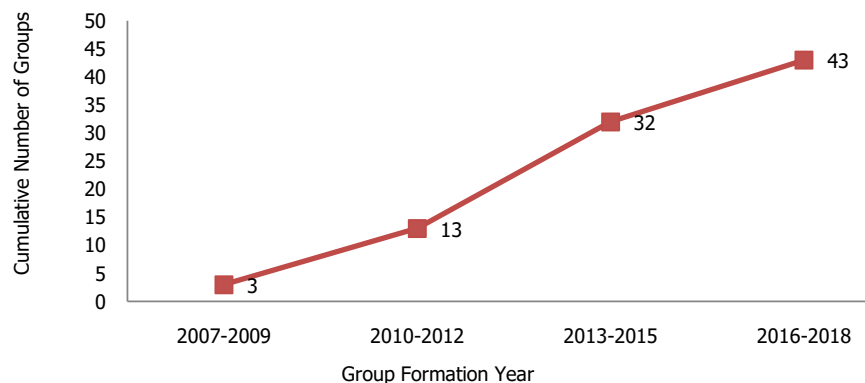
To protect and conserve the city environment, various citizen groups, volunteer groups, NGOs and activists formed a network to combat these problems and challenges. These groups play a significant role in creating awareness, citizen involvement, fixing the programme schedule, and reaching the targeted goals. The groups frequently discuss with the neighbours, politicians, academic institutes and other groups

to create public pressure, file PILs, get attention or seek funds from the government and other agencies.

Digital media plays a significant role in urban environmental movements. Social media is an easy way to disseminate the issues, agendas, activities, events, and contacts with ordinary people and other groups. These civic groups have a Facebook page and Whatsapp groups to discuss the problems and solutions concerning the related issues. Various stakeholders, like BBMP officials, urban planners, academicians, and engineers are attached through these social media groups (Fig. 2).

The line graph (Fig. 2) is showing the group formation year of forty-three groups in the city. The study found that more than ninety per cent of the groups were formed after 2010. As per census data, 2011 the population growth and area expansion have drastically increased after 2000, which has created numerous problems for the lake environment in the city. Some of the civic groups' activities are discussed in details as below.

Fig. 2: Line Graph-Showing the formation year of civic groups



Source: Compiled by the authors from the different sources (Field Survey, LDA Data, News papers)

The Role of Jalmitra to protect the Rachenahalli Lake

Jalmitra is a local voluntary citizen group that is committed to social services for conserving and maintenance of Rachenahalli Lake. Jalmitra is playing a significant role in mobilising local community groups and is also involved in cleaning the lake of its debris, parthenium, and other weeds. It is a civic activity group consisting of around 200 volunteers along with local community groups, academicians, Members of the Legislative Assembly (MLAs) and students. It provided a platform where everyone can fulfil their civic and social responsibilities. Jalmitra

was formed when Rachenahalli Lake was severely affected due to increasing migration and urban expansion. In the initial stages of Jalmitra, fifteen volunteers had set specific goals for the protection of Rachenahalli Lake. To achieve these goals volunteers identified specific problems with the nearby apartment residents, local community groups, local leaders, and concerned government departments to resolve the identified issues. The core group of Jalmitra consists about twelve volunteers, who also work towards expanding their team and formalising the structure for official purposes to engage in various activities related to improving and maintaining the lake. They organise weekly meetings, seminars and educational programmes such as World Environment Day, Varshikotsav, and World Earth Day to educate and motivate people for coming together to protect the lake. Due to this initiative, many citizens have joined the group and are working along with the intervention of the government for rejuvenating the Lake. In the year 2016-17, they were successful enough to sign a Memorandum of Understanding (MoU) with the BBMP for rejuvenating and protecting Rachenahalli Lake and other urban water bodies.

Ecological Importance of Rachenahalli Lake

Rachenahalli Lake is an ecologically crucial natural resource located on the northern outskirts of Bengaluru. The total area of Rachenahalli Lake is approximately one hundred and forty acres. It is performing a significant role in maintaining the ecological balance, the habitat of flora and fauna, groundwater recharge, reducing urban waterlogging, and also catering as a recreation centre. Around the lake area, there are plenty of trees, plants, bushes, and medicinal herbs. The lake attracts migratory and territorial birds and the island located in the middle houses many of these birds. The lake and the attached wetland are the habitats of several birds such as Woods and Piper, Kingfisher, Sun Bird, Baya Weaver, Egret, Spot Billed Pelican, Grey Heron, Pond Heron, Darter, and Purple Moorhen.

Involvement of Local Political Leaders

Sri Krishna Byre Gowda, MLA is engaged with Jalmitra voluntary citizen group. He is guiding Jalmitra to help the government and BBMP with the protection, planning and maintenance of the lake. He is very much interested in ensuring the revival and rejuvenation of all lakes of the entire Yellamallappa Chetty lake series of Hebbal valley and mainly the lake in his constituency. He is playing a useful role in the Jalmitra citizen group by involving citizens from his constituency and also receiving funds from the BBMP.²

Community Participation

Community participation and engagement in the protection of common property resources are essential to ensure that the natural resources are well preserved. For protecting and managing the lake, volunteer groups discuss the issues and challenges with local people for its rejuvenation. Surrounding the lake area several community groups and citizens are involved with the activities of the Jalmitra civic volunteers group. On March 18, 2017, a community meeting was held, and garden equipment was distributed to ensure the upkeep of the lake. Subsequently, every weekend people continue to attend the lake clean-up drive.

Involvement of Academicians and Resource Persons

The formation of Jalmitra Trust which was envisioned by the Executive Director of MGIRED (Mahatma Gandhi Institute of Rural Energy and Development) Sri Punati Sridhar, Indian Forest Service (IFS) in 2015 has resulted in the involvement of the community for better management of the lake and its environment. The chairperson of the trust is Major (Retired) General Haridas Gopalan, who has been very effectively taking care of the issues and concerns related to this lake. The Managing Trustee of Jalmitra Dr Shobha Ananda Reddy and Director of Biome Mr Viswanath are playing a significant role in sustaining the Jalmitra civic volunteer group. When Dr Shobha Ananda Reddy was working as an Executive Director of MGIRED, she formed a team of colleagues from MGIRED and with the assistance of Viswanath to visit Jakkur lake maintained by Jolaposhan. When the team visited Jakkur Lake, they were very much impressed by the volunteers' activities for the lake development and protection of flora and fauna. Subsequently, they were motivated, inspired and pushed to form Jalmitra as a civic volunteer group for the protection of Rachenahalli Lake.

Involvement of Other Civic Groups

Jalmitra has a reliable connection-cum-association with other civic and volunteer groups, such as BIOME, United Way for Bengaluru and so on. The Jalmitra citizen group is similarly managing the upstream Jakkur Lake with the help of Jalposhan.

Involvement of Academic Institutions

In August 2015, a team was created in the initial stages of Jalmitra with the help of staff and students of School Energy Clubs from MGIRED. Their task was to visit house to house, distributing pamphlets regarding the need for citizens' movement for the protection and maintenance of the lake. They invited citizens and local community groups for a meeting

on August 1, 2015, on the premise of MGIRED. They received a massive number of responses from the people, and more than one hundred people attended the meeting. Some of the active members present in the meeting were from St. James School, Jakkur; St. John's School, Jakkur; Government Pre-University College, Jakkur; and Sheshadripuram College, Yelahanka. The group is also associated with Indian Institute for Human Settlements (IIHS); Shrishti School of Art and Design; the Indian Institute of Management, Bengaluru; and KLE College.

Jalmitra is a guardian of Rachenahalli Lake, and this civic volunteer group is playing a significant role to conserve, protect and maintain the lake. From a dump yard, wasteland Jalmitra has converted Rachenahalli Lake into a beautiful park-cum-recreational resource. Jalmitra acknowledges the support extended by United Way for Bengaluru (UWBe) in maintaining the lake under the tripartite agreement between BBMP-Jalmitra-UWBe. Based on the requirement of the Lake Division of BBMP a formal structure had to be formed to persuade the government for taking up infrastructure related works in and around the lake. Surrounding the lake areas are passionate people with a great concern for the environment whose help is needed to manage and maintain the lake. In February 2016, Jalmitra got itself registered and entered into a tripartite agreement with BBMP and UWBe for maintenance of the lake by June 2016. Further, the tripartite agreement strengthened the trust's activities of lake management.

List of Activities of Jalmitra

- Discussion with the local community to engage in the lake protection;
- Discuss the lake conservation-related problem and motivate community members;
- Interaction with the temporary settlements outside the lake who use the lake for several activities;
- Discuss with BBMP lake division officials to get funds and conserve the lake;
- Educating school children about precautions to be taken for safety at the lake;
- Regular meetings for discussing the progress and proposed activities;
- Promote students' interaction with the migrant labourers to understand social aspects related to lake; and
- Experimenting with different methods for maintenance of water

quality in consultation with BBMP and Fisheries Department; introducing ducks, setting up floating wetlands all along the periphery of the lake with Lotus, Vetiver and other species.

Volunteers Mobilisation Activities

- Meeting and regular clean-up drives in 2014-15 with the members, students, surrounding people and BBMP officials;
- Educate the students about the importance of the Urban Lake Eco-System and its maintenance;
- Engage the college students in a short-term project to study social issues, environmental issues, and ecological issues related to lakes in urban areas;
- Jalmitra team supports BBMP in managing the idol immersion in Kalyani of the Rachenahalli Park during Ganesh Chaturthi festivities for the last three years. They also educate people to come to Kalyani about the harmful effects of Plaster of Paris (PoP) idols and request the public to use clay, mud or turmeric idols; and
- Jalmitra, UWBe and BBMP Lake Division jointly organised “Deepavali Celebration at the Lake Side”. Around sixty people participated and lighted around two hundred and fifty mud *diyas* (lamps). The primary objective of the events was to create awareness about the hazards of crackers and nature-friendly ways of celebrating festivals.

Jalmitra volunteer citizen group is helping the government in managing Rachenahalli Lake, and it is coordinating with the BBMP for further improvement of the lake. Over the last few years, the Jalmitra group is bringing several remarkable changes to protect and conserve Rachenahalli Lake. The initial task was challenging and almost impossible to clear the lake of its extensive undergrowth, dumped garbage, sewage entry, and control the practice of open defecation. However, they have secured success because they mobilised several local citizen groups, cleaned the lake every weekend and organised several effective programmes to conserve and protect the lake. The ultimate aim of the citizen group is to protect and preserve the lake environment which is fast gaining momentum through optimum government public partnership. This kind of citizen group driven management of common property resources can help in better maintaining and conserving the environment. It requires much effort at all levels and a positive bent of mind towards each other by both civic groups and government which will go a long way in preserving the city’s natural resources.

Puttenahalli Lake Rejuvenation Programme

Puttenahalli Lake is located in BBMP ward no-187 in Jaya Prakash Nagar, Bangalore South. The total lake area is 13 acres and 25 guntas. The primary water source of this lake is rainwater. However, due to the urbanisation, and encroachment by the builder, the lake was filled with weeds, garbage, and untreated sewerage. To save the lake, some of the concerned citizens started organising campaigns, seminars, and group discussions towards lake rejuvenation. The volunteer groups also collected monetary contributions from the neighbouring apartments and houses. In June 2007, they formed 'Puttenahalli Neighbourhood Lake Improvement Trust (PNLIT)' as a trust to protect and save Puttenahalli Lake.

Lake Conditions before Restoration

The lake was dried most of the time and the lake bed had become a marshy dump yard. The lake area was covered by mounds of garbage and had been encroached by the private parties and people living in huts. Further, the lake was getting untreated sewerage from the neighbouring residents and apartments. People residing in huts have encroached on the eastern side of the lake area and also they use to throw garbage directly into the lake.

Ecological Importance of the lake

The lake is playing a very vital role in groundwater recharge, reducing waterlogging problems, and maintaining the ecological balance. The lake is a habitat for a variety of flora and fauna. The lake is a beautiful spot for bird watchers and some of the bird photos captured by the visitor at Puttenahalli Lake are- Duck, Geese, Grebes, Herons, Kingfisher, Kites, Sandpipers, Pelicans, Wagtails, Warblers, Bulbuls, Bee-Eaters, Crows, Hornbills, Kites, Owls, Parrots, Sparrows, and Woodpeckers.

Lake Restoration Activity

The lake restoration activity was started by a few neighbours residing around the lake in 2007. They organised a signature campaign to revive the lake, and more than two thousand people signed the campaign. After the signature campaign, they went to meet BBMP officials to restore the lake. The BBMP was very supportive, and they promised to assist by extending financial support. Moreover, the BBMP also suggested forming a registered civic group to restore the lake. The civic group started collecting contributions from the neighbouring residents for registration of the group, and a significant amount of donations came from Brigade Millennium and Larson and Toubro (L&T) from South

City. They incurred an expense of Rs. 2000 from the contribution for registering the group as a Trust and in 2010 the group registered as a trust came to be known as 'Puttenahalli Neighbourhood Lake Improvement Trust (PNLIT)'. The trust employed a wild date palm tree for their logo, which is situated inside one of the islands in the lake. They used that tree for the logo; because that was the only tree that had survived for a long period before the restoration of the lake. According to them, it represents the characteristics of resilience and perseverance. They included the word 'neighbourhood' word in the name of the trust as they received immense support and cooperation from the citizens residing in the lake vicinity.

With the help of BBMP, they started rejuvenating the lake, but in the initial stages, some of the engineers and environmentalists were against the Trust's activities. They argued that the drying and filling of the lake is a natural process, and any human interference will destroy this natural process. Another major issue faced by the Trust was encroachment, particularly in the eastern and south-western parts of the lake. This lake area had been encroached on by the residents, and they were opposed to any lake restoration activities. A multipurpose Convention Centre had also encroached on some of the lake areas in the north-western part. However, the Trust started its rejuvenating activities for managing and protecting the lake despite these issues. The trust followed two-step strategies for reviving the lake. In the first step, they identified the actual lake area and started fencing the lake boundary. In the second phase, de-silting, infrastructure development, and lake beautification were included. In the second phase, they built walking track (920 meters), gazebo, exercise bars, a toilet, dry and wet waste dustbins, a security cabin, garden waste collection bins, rainwater harvesting, a bicycle stand, and park benches. The lake is getting eight lakh litres of water per day from South City Sewerage Treatment Plant and has four treated sewerage entry points in this lake.

On July 17, 2010, PNLIT organised a tree-planting drive with the help of neighbouring residents, and they planted 127 saplings around the lake area. Sh. Satish Reddy, Member of the Legislative Assembly, was the chief guest, and he planted the first sapling. Sh. Ramesh, then Corporator of Puttenahalli and Sh. Purushottam Ravi, then Corporator of Arekere planted the saplings along with the other participants. In May 2011, PNLIT signed a Memorandum of Understanding (MoU) with the BBMP for the maintenance of the lake. PNLIT is the first civic body that has secured such MoU to support the lake. PNLIT also engages in other additional activities related to the betterment and improvement of the neighbourhood.

Mobilisation Strategy

The first mobilisation strategy towards lake restoration was meeting neighbourhood people and securing a signature campaign. To get more signatures and people's attention, they went door to door campaign and discussed the problems with the neighbouring citizens. To create awareness and importance of the lake environment the group organised several environmental-related programmes such as photography sessions, lake clean-up drive, and tree plantation programmes with the residents, as well as students from schools and colleges. On the first Saturday of every month PNLIT celebrates 'Family Gardening Day', and many family members spend their time wherein they clean and beautify the lake.

In the initial stages, the participants were fewer, but later there was increased participation over a period. In 2010, the group registered as a Trust and in May 2011, they signed a MoU with BBMP for three years. Through the MoU, BBMP assured PNLIT that they would provide financial assistance for three years for lake rejuvenation and improving the infrastructure of the lake area. After the post-signing of the MoU, the primary source of funds for the lake restoration programme was mostly the financial assistance extended by BBMP. Currently, the primary sources of funds are public donations and Corporate Social Responsibility (CSR) funds. They have connections with the various CSR activities and corporate volunteers from CISCO, Deloitte, and VMware. They also have merchandise called 'PNLIT Merchandise' to raise funds and create awareness. Merchandise includes cloth bags, t-shirts, calendars, postcards, and photo frames.

During the lake visit, one of the trustees mentioned that they engage in several educational and environment-related projects. For securing projects, the Trust shares its experiences, activities, and target goal with CSR representatives as well as other organisations. In the last year, a private bank had adopted the lake for one year. This initiative has helped to get funds and also acts as another vital link to engage them with their group's activities. Further, many of the organisations and CSR representatives continue to keep in contact with Trust and assist them after their discussions and meetings. The Trust has maintained a Google Email Group and Facebook page, where they post their current activities, pamphlets, handbills, leaflets, flyers, and programme schedules. Also, they publish a Trust Annual Report wherein they discuss details about lake rejuvenation activities, current challenges, the status of present flora and fauna, cultural and educational activities, corporate connections, and audited accounts which are all shared with the people.

PNLIT activities are one of the success stories of the lake rejuvenation programme. Various organisations have recognized and awarded the Trust for their involvement in the lake rejuvenation programme, such as

- In March 2013, Namma Bengaluru Award 2012 by Namma Bengaluru Foundation;
- In April 2015, 'Sahar Green Karo Contest' by Earth Day Network;
- In September 2015, the Prakrti Mitra Award by B.N. M. Institute of Technology; and
- In July 2012, the People's Green Award by Tata Consultancy Services (TCS). (Annual Report 2015-16, PNLIT)

Present Status

The PNLIT core committee consists of seven trustees, and they are assisted by four gardeners, one sweeper, and one manager. The Trust has a good connection with the BBMP and Karnataka State Pollution Control Board (KSPCB) and has also signed a MoU for receiving funds from BBMP. At present, the Trust is facing financial problems to maintain the lake, and the only sources of funds are public donations and CSR contributions. However, this fund is not sufficient to provide a salary for the gardeners, sweepers, managers, and maintenance of the lake. Furthermore, PNLIT is continuously fighting to overcome financial as well as additional problems. Another major hurdle faced by the Trust is an encroachment on the eastern side of the lake area, occupied by people living in huts who do not want any restoration of the lake. None of them has participated in the lake rejuvenation programme. PNLIT discussed this matter with the BBMP officials and the government has taken up the resettlement initiative. However, they do not want to leave their huts as they have voter identification cards, due to which vote bank politics also plays a significant role. As of now, there are conflicts between the Trust and the people living in huts, and it is considered one of the significant problems. They have damaged the fence, dump garbage directly in the lake bed, and dry their clothes on the fence. Meanwhile, BBMP has promised to build a fence once again on that side of the lake and also assign some home guards to monitor the lake.

Suggestion by PNLIT for Lake Revival Programme to other civic groups

Citizens should change their behaviour and mindset towards protecting the lake environment in the city. Every problem can be resolved if a

large number of people express their concerns. The civic groups have to identify the current issues and discuss them with the neighbourhood. In general, citizens living in the neighbourhood are more concerned about their surroundings and the development of their vicinity. Some environment-related events are to be organised wherein citizens, students, government officials, and other organisations can share their knowledge and experience. People's participation is much more crucial compared to government participation as people can easily participate in lake restoration activities. The civic groups need not have a large number of inactive people; instead eight to ten committed people are enough to rejuvenate the lake.

Summary

Environmental challenges have become more prominent issues in the contemporary world. The civic groups play a significant role in this regard by organising the people, identifying the problems and putting up pressure on the authorities. The environmental challenges are interconnected in nature, so it is getting attention from the different parts of the world. As a result, the area of civic groups is spreading, overlapping with the regional, national, and world levels (Khondker, 2001). The groups share their problems, opinions and practices with other groups to create a proper framework to combat the environmental problems.

For forming a group, the residents of the area residing/near and around/the lake take the first initiative, discuss the problems with the people and try to organise them. The residents generally organise weekend and public holiday meetings and discuss possible solutions and future activities. Sometimes, to draw the public's attention to the problems and save the lake, they gather, agitate, and criticise the existing policies. By using social media, they are trying to mobilise the people, and many of them have lake rejuvenating Whatsapp, Facebook groups, and websites and internet blogs.

In summation, the citizen networks have provided a platform for engaging in the management of the city environs and also aided in monitoring both the local authorities and the urban ecosystems. The networks have created opportunities for stakeholders to connect and discuss the requirements and interventions needed for transformations. Besides, their approaches have been unique to match the local contexts across neighbourhoods and provide lessons amongst them and others. For instance, Jakkur Lake's transformation showcases the success of the citizen group wherein they worked closely with the government. Besides, involving volunteers at various levels is a strong point. During the process, they do face issues on the ground and these are addressed

by negotiations. Since some of the issues remain, the groups do see the need for change on several fronts. As a whole, these civic groups have played an important role in transformations that aid in protecting and sustaining water bodies in Bengaluru and showcased the strength of citizen participation in improved governance.

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Footnotes

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