Course Name: An Introduction To Urban Ecological Heritage: Theories and Applications

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Example 3: The Kaikondrahalli Lake

Kaikondrahalli Lake is situated on Sarjapur Road in the south-east of Bangalore. Home to a variety of migratory birds, fruiting trees, foxes and reptiles, the lake spreads over 48 acres of land. Sarjapur Road, which runs along one edge of the lake, is packed with traffic, while the lake itself is surrounded by all those elements that agitate a modern Indian city, including malls, apartments and IT companies, as well as shanties and tented slums. By 2003, the lake had begun to dry up, with the incoming channels to the lake blocked by construction and the dumping of debris and garbage. The problems that the lake faced include severe inflow of sewage, silting and settled deposits, dumping of waste and encroachments.

By 2007, the lakebed turned into a slushy malarial bed of sewage and waste. Since 2008, local resident associations, researchers and government organisations including the municipal corporation Bruhad Bangaluru Mahanagarapallike came together to restore the lake through various lake rejuvenation programmes. Later, they were engaged with MAPSAS, that is Mahadevapura Parishara Samarakshane Matho Avivrudhi Samiti, a local trust to maintain the lake. MAPSAS entered into a tripartite agreement with BBMP and a corporate funding body United Way to manage Kaikondrahalli Lake.

Despite the challenges arising from working together on a public interest issue in a city, the outcome has been positive. And the story is worth hearing. In 2008, Priya Ramasubhan, a documentary filmmaker and local resident who had recently moved nearby the Kaikondrahalli Lake, saw a newspaper report about a proposed BBMP initiative to rejuvenate the lake. Concerned about the deteriorating condition of the lake, she along with a social activist and other residents formed a core group which invited to join them other members with technical expertise in specific aspects of planning relevant to the rejuvenation, including ecologists and architects.

When I moved into that area to 2007 in Sarjapur Road, it was a dying lake, dried up defuncted and then Priya Ramasubhan, Ramesh Sibaram two local residents who read about the article newspaper, said that the BBMP Municipality is going to restore the lakes. And then they said they approached the government who said that you can work with the

other citizens, We gathered people that's how I also came into the thing it was an architect, there was a local architect called, so lot of people came together and tried to make a better plan for the lake restoration so we did a few think that are very enable, firstly, many of these lakes because they were originally wetlands in created, they had an inner incoming part the shallow wetland and the outcoming part is the deep water, so there is a gradient, so it starts from shallow and moves to deep but when the BDA was restoring the lake they use to call it a soup bowl the deepest point at the bottom and it was like this. And that's not ecologically good, that's not good for fishing because it does not clean up the water but we have a wetland and initially, it naturally cleans up the water and it come so we not only got the BBPM to change that, it was already a detailed project to put which was out on tender, we got them not only to change that but now no longer when BBPM does lakes like soup bowl. Lakes department they were following the BDA Bangalore Development Authority they changed that approach completely. So it means it's a more ecologically friendly approach. The second thing we did is very important also was when you desilt the lake there is no place for the mud to go so there is great islands they were creating workplaces having parks, putting lights and having parking and then using for food and then no longer it is an ecological space at all and was becoming completely a commercial. They said no if we have an island in the middle of the lake, then it is the island only for ecology don't even have a pathway or a walkway so that again went very well and then third thing is they wanted to remove the fisher and the grazing, fisher continued but grazing they didn't allow what they said was that grazers can come in and cut the grass and they are ones who can take their bikes on the walking path, take the grass and then go, so in some sense we get the relationship still with the people who are, they are stakeholders and they help to tell us many things about the areas. So those went well, we found other renovating ideas, so there is a aided government school on the side of the lake and is a low income school which caters to the children of that region and very good school. And what happened was they the playground is on the lake so according to the BBPM plans it was illegal acquisition and they were taken but how can you take a playground away from children. So we figured out a way by which it was fenced, part of the lake but the school has a side gate, school children use it during the school times anyway the lake is closed and in the evenings and weekends the lake people use it. And we got another school which is a higher income school to come and create a playground in the area for them with some games in the area. So few things you know you can try and collaborate with groups wherever possible.

The first DPR for example, had ideas for an expensive ornamental garden designed with exotic flowering species. This group felt that this money could be much better utilized in other ways and had the plans to develop an ornamental garden that was removed from the DPR. The local community contributed funds and gathered hundreds of saplings of local species for planting around the lake. Washroom facilities were also created thanks to

donations from a business organization near the lake. It was designed for the school children, particularly the girls, who lacked access to safe, clean bathroom facilities. A separate enclosure has been constructed at the corner of the lake to protect the lake from contamination during Ganesha idol immersions and other religious festivals that involved the use of lake water.

In this way, the rejuvenation of the space was completed between 2009 and 2011. A year after restoration, the lake attracted over 50 species of birds, butterflies, frogs, toads and snakes, with many additional bird species added to the list. The diversity of animal and insect around the lake has grown substantially since then. A larger and increasing number of people from the areas nearby visit the lake on a regular basis and have engaged in a variety of activities related to lake restoration, maintenance and fundraising throughout the years. Many people visit the lake, often with cameras and binoculars in hand, with small children on bikes or in trams, and groups of senior citizens gathering around a pair of benches beside the lake.

An amphitheatre near the lake hosts a number of community events, covering activities as varied as the screening of nature films, talks on recycling, reading of children's books, training on the making of eco-friendly clay Ganesha idols, nature photography and organic composting. Kaikundrahalli Walkway and Cycle Track public events focusing on the broad theme of sustainable living are often held at Kaikundrahalli with free access. Kere habba, i.e. the lake festival is organized every year.

Kere habba held in January 2015, attracted over 3,000 visitors in a single day, while a follow-up event in January 2016 had close to 4,000 visitors. During these festivals, children from elite international neighborhood schools and from the slum adjacent to the lake have painted stones and leaves and created temporary art installations or rangolis made of flowers and grasses. MAPSAS has also worked with a local non-profit water research group, i.e. Biome and Wipro, a corporate body, to examine and identify biological options for sewage treatment that can be applied in the sub-chain of lakes around Kaikundrahalli.

The technical and social knowledge that MAPSAS gained as a consequence have been useful to the restoration of several other lakes nearby. In this way, Kaikundrahalli emerged as a seemingly idyllic social-ecological space. However, there have been challenges along the way. A common issue is when nearby landowners and residents let in sewage into the lake. Though initially a small diversion was made to divert the wastewater, sewage still flows into the lake making the lake frothy.

While the lake has been fortunate in having a huge intact wetland upstream, which helps

to clean up sewage and replenish the lake during the monsoon, a number of buildings are set to stand in this wetland in the next years. Indeed, it will significantly affect the sustainability of the lake. And very importantly, the wetlands behind the lake have been given over to commercial authorities who are building real estate. So we don't know about the long-term future of these lakes because if the wetland is gone, how does the water flow come into the lake? So we don't know three, four, five years from now what happens to these lake systems and the communities that have cases in court and in GTA at various places there. Despite the fact that this construction goes against environmental norms, the attempts of MAPSAS to stop it have so far been ineffective.

Economic sustainability is another long-standing challenge. The lake was funded for several years by a corporate donor United Way, but with the donor gradually reducing its financial support, the Trust is struggling to raise money for regular maintenance of the lake. Although many local residents have been willing to contribute to the lake maintenance activities, gathering funds, which takes a lot of time and effort, is a constant challenge. But in the end, Kaikundrahalli narrates a story of a nuanced social-ecological system which interacts in various ways with the inclusive, community-based lake protection practices. The experiences of the restoration of Kaikundrahalli Lake indicates to that the urban commons are central to the question of urban governance and re-envisioning the lake as a social-ecological space.

Two things that are very important about Bangalore Lakes or any water bodies in cities, one is that they are really social-ecological spaces. Lakes in many other contexts you could think of them as pure ecological spaces, but I think first of all in India any water bodies are social-ecological spaces, particularly so in cities because the human footprint shapes it in a way. So that interconnection between the social and the ecological is very important and I think that's important because very often as managers or researchers we separate the two, the social plus the ecological and it's not, it's a coupled system, so that's the first thing. The second thing is that what gets left out in the cities is the commons part. We are very aware that in rural parts of India, lakes or water bodies are commons.

People use them for water, for fishing, for bathing, for agriculture. In cities we think of them as purely public goods, recreational spaces and occasionally they get captured by private players, but they are not, they are really commons. You still have foraging, you have fishing, you have all the other kinds of agricultural uses and even the kind of management of these lakes effectively is often still, though it's controlled by municipalities, it's really a lot of local participation. So they are really both common pool resources in the way they contribute to a local community and they are common property regimes in one way if you think of a governance system because local people are usually have some say in managing them. And I think both of these arguments get left out when

we look at managing lakes as urban spaces.

You know any sustainability goals, any city planning goals, we don't think of them as social ecological spaces and we don't think of them as commons. Yes, yes. I think I can also resonate what you are saying within the context of Kolkata as well. So what I also would like to ask you is that there is lot of civic activism going on in terms of lake preservation and lake rejuvenation and we clearly see at least two kinds of trends in this kind of conservationist approach. So on one hand we see that there are a number of these trusts which have come up, like for example this Puttanhali neighborhood lake improvement trust and several other trusts who are trying to manage lakes and rejuvenate it, having kind of like embanked walkers pathways and those kind of things.

But on the other hand we see that there are lots of legal cases which are going on where activists are more prone to talk about people, about the urban slums or the households which are there on the banks of the lakes and how these people are facing difficulty when the lake rejuvenation is taking place from that kind of like absolutely ecologically conservationist perspective. So what do you think, what should be the ideal way of rejuvenating? I think it's very hard to come up with one ideal way. I think both challenges are very strong. For instance, let's take both extremes. One is if you did pure ecology and you throw out the people, we knew even the ecology will suffer.

Because let's say for instance if you ban fishing and grazing from the lakes, the fishermen are the best allies in maintaining the lakes because most nights is when people let in sewage or dump garbage and the fishermen want to protect their fish. So we have seen practically they are the biggest allies because they are there at the night watching and monitoring and patrolling in a way no local trust will do, no government will do. Similarly, the grazers, the cows come and pull that biomass, the nitrogen, the phosphorus that has gone with. So it's a natural way of cleaning the lake plus you get your organic milk and everything and we don't think of them. We want to separate these two out.

So it's bad for the ecology if you take out the people. But similarly, if we said that it's only justice that is important, then we should actually fennel all our lakes and do let's say other kinds of initiatives that are that convert it maybe into housing for the poor. But that will not be good for the people. If you talk to the low income settlements in the lake, they don't want that. They are very clear that they were the original custodians of the lake.

For instance, you talk to the people near the Puttenahalli lake, the slums, they were the original custodians of the lake. They had been maintaining it well before the large apartments came and started discharging sewage. So justice is a very important component. She is a very important component. We have to see can we marry these two

through innovative ways and it's difficult to find a global argument or even a city wide argument case to case it will have.

Like in Jakkur lake, what they are doing is working with women of the local village to see if they can have a medicinal plant garden. So those kinds of initiatives can be do so that it is not based on first thing is resettlement of the poor out of the lakes. That is not something we should be doing. On the other hand, can we integrate that into the ecology and their livelihoods in a way? That's I guess what we have to be looking for.

Yeah. So like also there was a technical argument coming up that is about the perenniality of this lake. So previously they were non-perennial. But now with this Rajkuleva kind of channelizing wastewater, so they remain always full of water throughout the year. So what is your take on that? I think we have to accept that cities are novel ecological systems. There's an entire framework of ecology called resilience ecology, which you know, and that talks about restoring to them to the original.

But then there's also an entire new area working on novel ecological systems and cities are a perfect example. See like let's say take Bangalore or Delhi. They are semi arid ecosystems. They didn't have all these trees. Does that mean we don't plant trees now? We've also put concrete.

We need the trees for shade because we have transformed the system. Similarly, how if you wait only for the water, since you concretized and removed all the wetlands, they will not be perennial systems. And we used to have a system by which farmers would desilt every year. And we don't have that. So we have to fill the lakes with water otherwise they will dry up.

And the way we will have to do that is the wastewater. Where will this wastewater go otherwise? So we have to acknowledge that it's not easy. We'll have to also monitor the ecology. What happens when you change it to perennial? How do you deal with that? There will be side effects we have not anticipated.

We'll have to figure that. But can we stop it? I don't think we can. That's the thing. We'll have to figure out a new way of managing. Maybe something like East Kolkata Wetland.

Which is so interesting. Like this novel ecological system, this idea of how it is this can think of accommodating, you know, this new new frameworks. So like another thing which I wanted to ask you is that there is again another argument that a lot of discussions about the social communities who are using these lakes, the grazers, the cattle grazers, the fishers. So there is an argument that you know in Bangalore their numbers have reduced

to a great extent. So no more, you know, they are not that visible. So then when we are discussing about this custodianship, these people as custodians, you know, as important stakeholders.

So do you think that, you know, these people are still there? I think they are very much still there. Our research has shown, we did for instance an interview of 200 women from low income families across Bangalore. In the heart of Bangalore next to Alsoor lake, we went 50 families. Almost all the women forage for weeds for all these plants that grow at the side of the lake and they use it. They said they would like to forage more, but people are throwing them out of the lake.

So they are still very prominent here. So they are still there. Grazers are there in Koramangala, grazers are there in Alsoor lake. They stopped raising cattle because there is no place to graze. Give them a place to graze and they will always want to continue. And fishermen are there. Fishermen, men, women, there are associations across Bangalore in every single lake. I think they have stopped being visible to us. We do not see them, but they are there. They are very much there.