Bangalore’s Lakes and Impact on Ground Water
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Anil Agarwal Dialogues
Centre for Science and Environment
Bangalore’s lakes

- Lakes of Bangalore are all built and interconnected by an intricate network of canals, as is the case across South India.
- Lakes help capture monsoon overflow, and store it for use in the post-monsoon season, in the process creating an intricate network of biodiversity rich wetlands, that help recharge ground water aquifers.
- Bangalore’s lakes are formed along three major valley systems namely Hebbal Valley, Koramangala & Challaghatta Valley and Vrishabhavat Valley.
Bangalore’s Lake system
Eg To show the Lake systems _Puttenahalli Lake Series

<table>
<thead>
<tr>
<th>Name of the Lake</th>
<th>Area in Ha</th>
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</thead>
<tbody>
<tr>
<td>1. Lalbagh Lake</td>
<td>12.9</td>
</tr>
<tr>
<td>2. Yediyur Lake</td>
<td>6.45</td>
</tr>
<tr>
<td>3. Byrasandra Lake</td>
<td>6.19</td>
</tr>
<tr>
<td>4. Sarakki Lake</td>
<td>0.81</td>
</tr>
<tr>
<td>5. Puttenahalli Lake</td>
<td>32</td>
</tr>
</tbody>
</table>
Lakes first victims of intense urbanisation of Bangalore

- This has resulted in lakes being built over, replaced by bus stations, public buildings, stadiums, high rises, layouts, etc.
Encroachment and pollution of Raja Kaluves, canals interconnecting lakes, destroys lakes.

Location: Near Madivala

Location: Near Bismillahanagara
Come monsoon, Bangalore floods, often resulting in loss of lives. A result of callous disregard for lakes.
Surviving Lakes of Bangalore
Some common problems in urban lakes
Name of The Project: INTEGRATED DEVELOPMENT HEBBAL LAKE

Project Taken up by: M/s E.I.I Ltd., Bangalore

Project Work Commenced on: 01/02/2007

Targeted Completion time: 12 months

Project Cost: Rs.16.5 crores
LDA: Choosing Profits over people?

• Between 2004 & 2007, LDA leased out Nagawara, Hebbal, Vengaiahana Agara and other lakes to private companies.
• Developers altering the character of the lakes because of activities like food courts, restaurants and amusement parks.
• Restrictions on people’s right to access open spaces.
Lakes dependent Livelihoods

- Fisherfolk, Dhobis, Agriculture, Harvesting of lotus are some of the livelihoods that are dependent on access to lakes.
Human Chain, protests, candle light vigils, representations mark the efforts to protect lakes.
Pil Against Privatisation of Lakes

- PIL against the privatization heard by the High Court
- Status Report of the lakes prepared by the PCCF, on the direction of the Court, strongly makes a case against privatization
- On November 4, 2008, High Court passes an interim order restraining the Government and private parties from further investment in developing lakes under the PPP model.
- Court appointed committee examines the realities and prepares a comprehensive report for the preservation of lakes.
Key recommendations of the report include:

- Immediate action to remove encroachments.
- Lake restoration to be taken up based on lake series and not in isolation.
- Stop entry of raw sewage.
- Select lakes that are relatively undisturbed and rehabilitate them into drinking water reservoirs.
Key recommendations of the Report

- Lakes with high biodiversity to be notified for conservation.
- Promoting the involvement of local communities in lake preservation and restoration.
- Recommends constitution of lake management committees involving local residents and voluntary organisations.
- Highlights the need to protect the interest of traditional users of the lakes such as dhobis (washerpeople), fisherpeople, etc.
Final Judgment 2012

- Protects lakes across Karnataka
- Prohibits dumping of Garbage and Sewage in Lakes
- Lake area to be surveyed and fenced, declare a **no development zone around lakes.**
- Forest department to plant trees in consultation with experts in lake surroundings and in the water shed region
- Member Secretary of state legal services authority to monitor implementation of the above in coordination with Revenue and Forest Departments.
- Also set up **district lake protection committees**
- Court did not interfere with the four leases for which we are now approaching the supreme court to settle the issue of who truly owns, controls and governs the commons.
Bore wells in Bangalore touch 1000 ft

- In 2009, a study on the city’s groundwater by the Department of Mines and Geology indicated overexploitation, leading to an alarming decline in the water levels.

<table>
<thead>
<tr>
<th>Number of Bore wells in Bangalore (conservative estimate)</th>
<th>No.</th>
<th>200,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of each Bore well</td>
<td>Rs</td>
<td>20,000</td>
</tr>
<tr>
<td>Total (private) investment on Bore wells in Bangalore</td>
<td>Million Rs.</td>
<td>4,000</td>
</tr>
<tr>
<td>Investment on water storage sump (underground tank)</td>
<td>Rs. per lt.</td>
<td>5</td>
</tr>
<tr>
<td>Total (private) investment on water storage sumps in Bangalore</td>
<td>Million Rs.</td>
<td>25,000</td>
</tr>
</tbody>
</table>
Cauvery Stage IV, Phase 2 less conveyance losses once commissioned, 350 mld

Pvt. Unregistered borewells, 200 mld
Pvt. Registered borewells, 106 mld

River sources [Cauvery Stages I to IV (Phase 1), Arkavathy] (minus losses), 682.5 mld

BWSSB borewells, 35 mld
Water Mafia in Bangalore

- The local water mafia has taken control of the city's water supply to run an extortionist private supply network.
Groundwater Act 2011 and Rainwater Harvesting through BWSSB Act

- The State took a step toward redressing the issue in November 2011 by passing the Karnataka Groundwater Act 2011 (Regulation and Control of Development and Management).
- Rainwater harvesting was mandated in Bangalore by law twice. Once in 2005, through building bye-laws. And more recently through an amendment of the BWSSB Act in 2009.
Immediate Action

- Awareness on the High Court Judgment
- Community Participation
- Recharge to ground water.
- Roof top Rainwater harvesting.
- Remodel urban pavements and surfaces
- Rejuvenation of tanks and lakes.
- Alternatives for strong detergents and cleaning agents
- Waste water recycling for secondary uses.
Thankyou