

Approach to Rehabilitation of Urban Lakes: A Case Study in Mysore City

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Abstract:

Need for rehabilitation of lakes and water bodies within urban areas has been recognised by Government and general public. Because of this, some projects on rehabilitation of urban lakes have been taken up in India. But, planning and implementation of lake rehabilitation project is not easy. Adequate experience in lake rehabilitation projects is essential for project implementing agencies. The paper attempts to share the Author's experience in lake rehabilitation project in India.

Keywords - Urban lake, rehabilitation, beautification, ownership of lake, feeder channel

1. INTRODUCTION AND CONTEXT

In urban areas of India, there are many urban lakes or water bodies. Many urban lakes including the feeder channels to the lakes are encroached by people. Solid wastes are dumped into the lakes. As a result, many urban lakes are dying. This has increased urban flooding and caused different environmental problems such as mosquito breeding, smell nuisance, water pollution etc. Therefore, there is an urgent need to rehabilitate all neglected lakes in different towns and cities in India. After rehabilitation, the urban lakes can become recreational areas and improve quality of life of people.

2. THE CASE STUDY:

The case study project was for rehabilitation of five lakes within Mysore City. The lakes were in bad condition and needed rehabilitation. For rehabilitation of the lakes, detailed project reports were prepared for the five lakes. However, actual implementation of rehabilitation works was carried out in two lakes only. The remaining three lakes had

land ownership issue and therefore rehabilitation works were not taken up. The situation of the lakes before implementation of the project was as below:

- i) Both the lakes named Karanji and Kukkarahalli were not in bad condition.
- ii) The lakes had clear ownerships. Karanji lake was owned by Mysore Zoo Authority, while Kukkarahalli lake was owned by University of Mysore.
- iii) The owners of the lakes had shown keen interest in rehabilitation of the lakes.
- iv) Water in the lakes was polluted and there was high silting. There were periodic events of death of fish in the lakes.
- v) Weeds had grown over water spread areas of the lakes.

- vi) There was no recreational facility near the lakes.
- vii) There was high pressure from several local non- governmental organisations on Government for rehabilitation of the lakes.

The main activities carried out in the project were:

- i) Topographic survey of the water spread and fore shore areas of the lakes was done.
- ii) Rehabilitation works were identified based on analysis of existing situation by detailed field studies.
- iii) Beautification works were decided by architects engaged in the project,
- iv) There were detailed consultations with different stake holders to decide on rehabilitation and beautifications works to be taken up.
- v) Detailed drawings of proposed rehabilitation works were prepared along with cost estimates.
- vi) Detailed project reports were prepared for rehabilitation of each of the lakes. The reports were approved by State Government.
- vii) Subsequently, two separate bid documents were prepared to take up actual works in the lakes. Two separate contractors were selected to take up rehabilitation works in both the lakes.

The rehabilitation works done by the contractor in Kukkarahalli Lake included the following:

- Removal and disposal of weeds from the lake
- Desilting of the lake and formation of islands within the lake
- Formation of a bund on western side
- Construction of approach drain, silt traps and wetlands
- Providing drinking water facilities
- Construction of dust bins
- Providing barbed wire fencing
- Improvement of existing southern bund
- Restoration of feeder canals to the lake
- Redevelopment of pathways inside the park
- Water supply and sanitary works for toilet block and drinking water facilities
- Providing parking facilities for vehicles
- Construction of a public toilet in the lake premises
- Electrification works for the toilet, parking area, and bund area

The rehabilitation works carried out by contractor in Karanji Lake included the following:

- Removal and disposal of weeds from the lake
- Desilting of the lake
- Providing revetment to the feeder channel
- Diversion of incoming waste water drains to the lake
- Construction of silt traps and wetlands for incoming drains
- Providing drinking water facility
- Construction of dust bins
- Construction of elephant ride machan

- Construction of bird watch tower
- Construction of large walk in bird aviary made of chain link net
- Providing lighting (solar) fixtures
- Construction of a small bridge to connect to an existing butterfly park within the lake
- Providing chain link fencing in parts of boundaries
- Construction of entrance gate cum ticket counter
- Construction of a boating jetty
- Providing car parking facilities, improvement of internal roads and providing railing at existing culverts
- Construction of a Public Toilet in the lake premises
- Electrification works for the toilet, entrance cum ticket counter, bird watch tower etc.

3. MAJOR FINDINGS AND CONCLUSIONS:

The major findings from implementation of the lake rehabilitation project were:

- i) For lake rehabilitation projects, topographic survey needs to be carried out in foreshore and water spread areas of the lakes. Detailed project report for lake rehabilitation works should be prepared by engaging professional consultants. There should be experienced architect in the consultant's team.
- ii) Several existing urban lakes were encroached, solid wastes are dumped and waste water drains were linked to the lakes. Lakes with high encroachment and in real bad condition are generally not taken up for rehabilitation. Concerned authorities have tendency to avoid taking up rehabilitation works in

such lakes. Generally, such lakes also have land ownership dispute.

- iii) Entry of waste water in to lakes from drains is a major issue. Preferably, waste water flows into urban lakes should be diverted by construction of interception and diversion structures. If that is not possible, onsite treatment of waste water at their entry points to the lake needs to be provided.
- iv) There are illegal construction activities over the path of inflow channels to the lakes. In one lake in the case study, the paths of inflow channels are fully encroached. Entry of storm water into lake needs to be ensured by removing encroachments on the alignment of inflow channels.
- v) Desilting works in existing lakes are difficult to execute. Large desilting works in urban lakes need to be done by engaging suitable machinery.
- vi) There is high appreciation from public on lake rehabilitation project, if implemented properly.
- vii) Concerned urban authorities in India should direct land revenue authorities to identify and measure land at locations of all water bodies in urban areas. Strict measures should be taken to remove encroachments inside the water bodies and over its inflow channels.
- viii) Urban lakes in any city can be converted into recreational areas. This will improve quality of life of residents of the city.
- ix) Projects on rehabilitation of urban lakes need to be included in large Government

projects like AMRUT, Smart City
Mission etc.

Disclaimer: The findings and conclusions
presented in the paper are personal opinion of
the author.