

Proposal for LAKE Cleaning & Beautification



Lake Survey

The lake survey usually depicts the area of the lake which may be in square feet or acres, the current level of pollution and the source of pollution. Further the depth of the lake is depicted, the volume of layer of sludge is depicted, nitrogen and phosphorus levels are depicted and other roots causes harmful spreading weeds are figured out. The type of harmful insects like mosquito breeding is also an important thing that is taken care of, all in all the survey highlights the urgent need for restoration to prevent further deterioration of the lake.

Steps of Lake Restoration

To restore the Lake, the first step is desilting, which involves removing the thick sludge using pontoon excavators. This will increase water storage, stop mosquito breeding, and remove weed seeds from the lakebed. Along with this, patented biochemicals and microbes will be used to clean the lake water by adding oxygen, reducing harmful nutrients like nitrogen and phosphorus, and preventing the growth of algae and weeds. This combined method will help bring the lake back to a healthy and balanced state.

Before (Pictures from our previous project)



Banjara Lake, Banjara Hills, Hyderabad

IN PROCESS



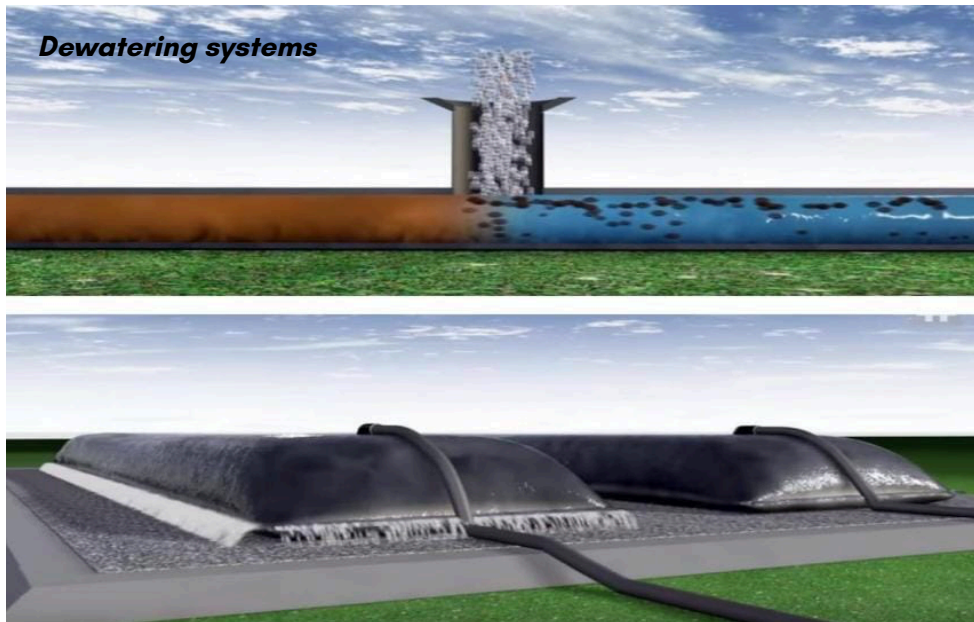
TECHNOLOGY & CHEMICALS USED



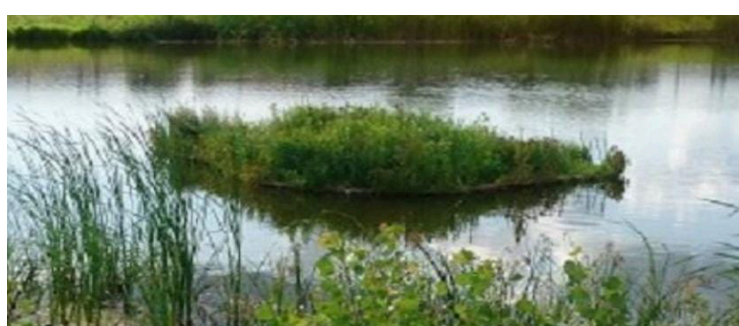
Incinerator



Dewatering systems



After



Banjara Lake, Banjara Hills, Hyderabad

Budget for Lake Cleaning and Restoration

S.No.	Expense Head	Allocation (₹)	Description
1	Lake Survey	₹20,000	Includes topography, water quality testing (BOD, COD, N, P), sludge depth assessment
2	Rented Incinerator for Garbage Removal	₹40,000	Includes rental and operation of mobile incinerator unit for on-site burning of surface waste/plastics
3	Desilting using rented pontoon excavator	₹1,20,000	Short-term rental of amphibious/pontoon excavator for removal of silt from lake bed
4	Dewatering using D-Tube	₹60,000	Cost of D-tube rental and setup to remove excess water and silt slurry
5	Biochemicals for Oxygenation & Rejuvenation	₹70,000	Includes probiotics, bioenzymes, oxygen-releasing compounds (e. g. calcium peroxide)
6	Labour Cost	₹70,000	Includes wages for manual cleaning staff, support workers, and daily laborers over the course of project
7	Miscellaneous Expenses	₹20,000	Transportation, protective gear, basic tools, refreshments, first-aid, unforeseen costs
	Grand Total	₹4,00,000 (exluding taxes)	Note- This budget cover a lake of area under 1 acres

Carbon Sequestration & Climate Impact Analysis

<u>S.No.</u>	Component	Contribution to Carbon Sequestration / Emission Reduction
1	Desilting of Lake Bed	Removes sludge layers that release methane (CH ₄) and CO ₂ through anaerobic decomposition. Estimated reduction of 1–1.5 tons of CO ₂ e/year from cleaner sediment layers.
2	Weed & Biomass removal	Removal of invasive weeds (e.g., water hyacinth) prevents excessive organic decay and methane release. Estimated reduction of 0.5–0.8 tons CO ₂ e/year.
3	Biochemical Oxygenation (Probiotics, etc.)	Improves aerobic conditions, limiting GHG emissions from anaerobic zones. Estimated reduction of 0.3 tons CO ₂ e/year.
4	Improved Aquatic Ecosystem	Enables return of aquatic flora (e.g., submerged plants, algae) that naturally absorb carbon. Estimated sequestration of 0.5–0.7 tons CO ₂ /year in stable biomass.
5	Future edge plantation enabled	With water quality improved, plantation of native shrubs and trees along the lake edge (estimated 50–70 saplings) is possible, leading to 0.6–1.2 tons CO ₂ /year sequestration.

Total Estimated Impact (Annually)

- **Total GHG Emissions Reduced: ~2.3 to 2.6 tons CO₂e/year**
- **Potential CO₂ Sequestration (through biomass/aquatic plants): ~1.1 to 1.9 tons CO₂/year**
- **Total Climate Benefit: ~3.5 to 4.5 tons CO₂e/year**

Long-Term Impact (Over 10 Years)

Assuming ongoing maintenance and plantation efforts:

- **Cumulative Emission Reduction: ~25–30 tons CO₂e**
- **Cumulative Sequestration through Natural Growth: ~15–20 tons CO₂**

Conclusion

In conclusion, the badly polluted lakes due to sewage, plastic waste, and harmful plant growth, makes it unsafe and unpleasant for nearby residents. To bring the lake back to life, we remove the thick sludge and garbage, and use special eco-friendly chemicals and microbes to clean the water and make it healthy again. These steps will help stop the growth of mosquitoes and weeds, reduce pollution, and improve the water quality. Once restored, the lake will store more clean water, support local plants and animals, and become a beautiful and peaceful place for the community. With regular maintenance and care, the lake can stay clean and useful for many years.