

## Management of Dal Lake

Jammu and Kashmir in the northern reaches of India is gifted with numerous water bodies, Dal Lake being the most famous among them. Conservation of these water bodies has been a serious challenge for the State Government due to large scale encroachments, non-availability of funds and improper management. Although some progress has been made in the scientific management of the Dal Lake, other lakes in the valley have remained largely ignored.

The performance review on 'Conservation and Management System of Lakes in Jammu & Kashmir' was attempted to assess the State's performance in planning, operating and monitoring the scientific management of its lakes, some of which have been victims of increased human interference over the years due to constantly growing population and failing civic management of the lakeside towns and cities. The review covered an evaluation of the policies and programmes of the Government for conservation of lakes in the State. Since, no comprehensive policy has been formulated for lakes in the State other than Dal; the scope of this performance review was confined to Dal Lake only.

### Findings:

The State Government had not conducted any survey of lakes for source water protection. No nodal agency was formulated for the overall formulation, implementation and co-ordination of the comprehensive programme for pollution control in lakes. Detailed Project Report (DPR) for conservation of Dal Lake had not been prepared after exhaustive study and had been accepted without proper evaluation. The performance efficiency of STPs was not up to the mark; as a result, ₹11.05 crore spent on installation of these STPs had remained largely unfruitful. Also, non-completion of IPS and Sewer works/trunk sewer/remodelling of drains had resulted into non-optimal use of installed STPs.

Sub-optimal performance of the STPs, partial working of settling basin, non-completion of house-to-house connectivity for carriage of sewer, non-construction of gates, etc. for the bays had resulted in increase in the nutrients and weeds and depletion of the fish population in the lake. Despite spending ₹ 70 lakh on pilot studies for management of solid/liquid wastes of population residing in and around Dal Lake, no considerable headway had been made on the sanitation front.

No studies had been carried out to ascertain whether the springs existing in the lake were actually carrying water to lake or had choked. No adequate planning existed for re-settling Dal-dwellers despite spending huge amount on this count. Improper land use planning by Lake Development Agency prior to acquiring land and delayed decision of the State Government to change the originally envisaged land-use had rendered ₹8.32 crore unfruitful, besides adversely affecting the rehabilitation and resettlement programme of the lake-dwellers. The monitoring by scientific advisory committee and Board of Directors was poor. Also, the internal control mechanism was virtually non-existent. Though water quality testing reports showed that Nitrogen Nitrate and Ammonical Nitrogen components have come down, the other components have increased to the detriment of the quality of water leading to excessive vegetation. The drastic change in the water quality was attributed to intensified release of nutrients due to soil erosion, run-off from catchment area and discharge of urban wastes including inorganic fertilizers. The increase in the value of total dissolved solids indicated continued siltation, failure of retention of silt by settling basin and high ingress of sewage into the lake and mineralization process of organic matter. This indicated that multi-pronged approach to conserve and manage the lake had been neither effectively

implemented nor properly monitored for the desired outcomes. There was entrapping of phosphorous and inorganic nitrogen, dwindling of local fish species and invasion of exotic species like Azolla in the lake. The prolific growth of azolla was attributed to unabated inflow from effluent channels and drains, raw sewage and enrichment of sediments particularly due to heavy load of organic nitrogen and phosphates.

### **Recommendations**

- The State Government needs to appoint a nodal agency to coordinate planning and implementation of the programmes for all the water bodies in the State.
- LAWDA needs to have a well-functioning and adequately empowered PMC, State Level Monitoring Committee, Scientific Advisory Committee and Board.
- LAWDA needs to have a well-documented accounting system in place for efficient financial management of the programme to prevent occurrence of any frauds.
- House-to-house connectivity and houseboat sanitation needs to be given priority so that the wastes from the areas outside and inside the lake do not enter the lake.
- Dredging of the blocked channels, de-weeding, creation of reed belt, development of shoreline, establishment of aerators and carrying of fresh water from streams to the lake need to be done on scientific lines for stopping degradation of the lake.
- Rehabilitation and resettlement programme of the lake-dwellers needs to be given top most priority.
- With a view to making the Authority a self-sustaining organization as per the provisions of the DPR, all the activities undertaken in and around the lake needs to be transferred to LAWDA.