

**COUNTRY REPORT**  
**Republic of the Philippines**

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**1. Introduction**

Laguna de Bay is the largest inland body of water in the Philippines and the second largest body of freshwater in Southeast Asia. The lake whose shape resembles a bird's foot is divided into 4 bays, East, West, South, and Central Bays. Approximately, it has a surface area of 90,000 hectares, total volume of 3.2 billion cu. m., an average depth of 2.5 meters and with a shoreline of 285 kms. **(Laguna de Bay Master Plan, Main Report 1995,)** For purposes of clarity, the Laguna de Bay Region refers to the Provinces of Rizal and Laguna; the cities of San Pablo, Pasay, Caloocan, Quezon, Manila, and Tagaytay; the towns of Tanauan, Sto. Tomas and Malvar in Batangas Province; the towns of Silang and Carmona in Cavite Province; the town of Lucban in Quezon Province; and the towns of Marikina, Pasig, Taguig, Muntinlupa, and Pateros in Metro Manila, **(Laws and Rules affecting the Management of Laguna de Bay and its Basin, 1999, E. O. 927, 1983)** all in the Philippines. It spans 188 lakeshores and 2469 inland barangays. The lake has 24 hydrological sub-basins and drains to the Napindan Channel, flows along the Pasig River and finally into the Manila Bay. **(Laguna de Bay Master Plan, 1995,)**

In the early 60s, because of perceived threats of the changing character of the lake region, political leaders of the area sought the enactment of legislation to control and manage the resources of the lake. Thus, in view of the imperatives for sustainable development and in recognition of the potential of the lake as an economic resource, the Philippine Government enacted in 1966 a law that provides and institutionalizes the policy framework for the management of the lake and its watershed. **(Laguna de Bay Master Plan, 1995)**

**2. Organizational Structure**

The management of the Laguna de Bay Basin is vested in the Laguna Lake Development Authority (LLDA), a government-owned and controlled agency with powers and functions to act as a corporation. Republic Act 4850, which created the Authority in 1966, laid down the government policy on the development and utilization of the Laguna de Bay's water resources and watershed area, and in effect, institutionalized the management of the Laguna de Bay Basin.

By virtue of Presidential 813 in 1975, and Executive Order 927 in 1983, the LLDAs powers and functions were expanded in order to include environmental protection and jurisdiction over the surface waters of Laguna de Bay, to effectively regulate and monitor activities within the Region, hence, the LLDA performs the following functions: policy and planning, regulation, resource and environmental infrastructure development.

And in 1993, the administrative supervision of LLDA was transferred to the DENR through Executive Order 149.

Structurally, LLDA's corporate powers are vested upon the Board of Directors, which sets the strategic policies for operational level. One of the major functions of the Board of Directors, as set forth in the legal framework is "to formulate, prescribe, amend, and repeal rules and regulations to govern the conduct of business of the Authority" The LLDA Board of Directors is composed representatives from the Office of the President, National Economic and Development Authority, Dept. of Trade and Industry, Governors of Rizal and Laguna Provinces, Presidents of Mayor's League of the two provinces, Representatives from the private sector, and the General Manager of LLDA. (**Laguna de Bay Master Plan, 1995**)

Today, LLDA continues to work towards the vision of sustainable development of the Laguna de Bay that fosters both its economic development and maintains balanced ecosystem.

### **3. Challenges and Opportunities for Integrated Water Resource Management (IWRM) Approaches**

**3.1 Water quality in Surface Waters** – Domestic wastewater, industrial pollution, accounts and garbage coming from households has been identified to account for the decline of the water quality of the lake. Some concentration of heavy metals from toxic and hazardous waste has been observed, but these concentrations have not exceeded the level for class "C" waters. Another activity linked to water quality is the problem of solid waste disposal where households dumped their garbage in waterways, thus a major cause of pollution. (**Letter of Institutional Development Objective, 2003**)

**3.2 Expansion of Development Activities** – Various development activities such as rapid population growth, urbanization and industrialization, and uncontrolled settlement along the lakeshore areas has caused severe stress on the lake environment and to the whole watershed. Some LGUs and a few communities pursue waste segregation and recycling practices. More often, open dumping of waste is still the common practice. (**LIDO, 2003**)

**3.3 Inadequate Regulation and Enforcement** – LLDA has tried its best to improve compliance through the implementation of the EUFS whereby industries has to pay for every pollutant they discharge into Laguna de Bay and the watershed. Deficiencies in the manner of collection, and disposal of sewage have upset the chances of potential benefits from the water resource development. In terms of regulating the use of aquaculture in the lake, LLDA is to some extent effective due to the implementation of the ZOMAP. However, LLDA's efforts in the restoration and protection of the shoreland are minimal and ineffective. (**LIDO, 2003**)

**3.4 Weak Watershed Planning at the Local Level** – Lack of coordination and cooperation between LLDA and the LGUs in the development and implementation of sound environmental planning. This may be due to the

lack of institutional structures where environmental issues can be confronted and discuss upon beyond the territorial limits of the concerned LGU; and limited engagement and full utilization of the various stakeholders at the micro-watershed level in environmental planning. **(LIDO, 2003)**

### **3.5 Lack of Strength as an Integrated Watershed Management Authority**

– LLDA has been in existence for 34 years and has been regarded as the only lake basin authority who functions effectively. However, it lacks the institutional capacity and pragmatic approaches to meet the new demands in its regulatory and management functions. **(LIDO, 2003)**

## **4. Structural and Non-Structural Countermeasures**

To ensure sustainability of the lake's resources, a Master Plan for Laguna de Bay was formulated whose ultimate objective is the development and identification of strategies and programs for the protection, rehabilitation and enhancement of the environment. Master Plan Programs include Environmental Management; Watershed Management; Fisheries Development; and Institutional Development. **(Laguna de Bay Master Plan, 1995)** These were translated into flagship programs, hence:

**4.1** Implementation of the Revised ZOMAP – Recognizing the issue on sectoral conflicts specifically, the scarcity of the lake's resources and the growing demand for the lake as fishery host, the ZOMAP was formulated for the strategic allocation of the lake's aquatic resource. One of the objectives of the ZOMAP is to alleviate poverty by ensuring the small fisherfolk gain access to the resource and maximize opportunities for growth while protecting Laguna de Bay. **(LLDA Journal, Laguna de Ba'i, The Living Lake, 2004)**

**4.2** Environmental User Fee System – The EUFS is a pioneer market-based instrument for pollution control in the Philippines. Under this system all establishments within the Laguna de Bay Region are required to obtain a Discharge Permit, authorizing them to discharge liquid waste of specified concentration and volume into the lake and its tributaries. However, the wastewater discharge should conform to effluent standards set under DENR Administrative Order 35 Series of 1990. **(LLDA Journal, Laguna de Ba'i, The Living Lake, 2004)**

**4.3** Shoreland Management Plan – Shoreland is a strip of land along the lake's perimeter, which is exposed when water levels are low, and submerged when water levels rise. It has hosted informal settlers, carried industrial and domestic waste products and caused many land tenurial disputes. This program covers the inventory of titleholders, occupants, owners, and claimants. It observes an intensive IEC and administrative system that guarantees the execution of the rights of legitimate shoreland users before conducting business on public land. LLDA issues a Shoreland Leasehold

Agreement and a Shoreland Occupancy Permit. (LLDA Journal, Laguna de Ba'i, The Living Lake 2004)

**4.4 River Rehabilitation Program** - In 1996, LLDA launched the River Rehabilitation Program in an effort to curb further degradation of the lake. It focuses on the rehabilitation and conservation of Laguna de Bay, including the lake's 21 tributaries with an integrated approach to watershed management using the 24 sub-basin of the Region as basic units for planning and implementation of its river rehabilitation strategies. (LLDA Journal, Laguna de Ba'i, The Living Lake, 2004)

## **5. Re-engineering the Laguna Lake Development Authority**

The Government's approach to integrated water resource management, challenges the Authority to not only strengthen itself as a watershed management authority, but also to increase its cooperation to LGUs, River Councils, and with the civil society. A co-management approach will have to be implemented for both environmental and investment planning and implementation.

## **6. Future Visions/Directions**

To carry out the mandate effectively and in response to the demands of Laguna Lake's multiple stakeholders, the Authority has initiated a re-engineering program to strengthen the institution and be guided by strategic objectives designed to reinforce its role as an integrated watershed management institution:

- 5.1 Eco-system-based planning and management of lake resources that adopts basin/sub-basin as the unit for planning and implementation;
- 5.2 Participatory and partnership approach in planning and implementation that recognize the shared responsibility of LGUs, civil society, business enterprise, and local community to preserve the lake and its resource;
- 5.3 Broadened market-based instruments that encourage participation and partnership using economically sound resource-use fees and charges;
- 5.4 Improvement of Lake Water Quality to a sustainable level that satisfies the increasing demand for consumptive and non-consumptive use; and
- 5.5 Developing and sharing knowledge with stakeholders in order to cultivate competence and potential for the co-management of the lake and watershed resources

## 6 Concrete Actions

### 6.1 Implementation of the Laguna de Bay Institutional Strengthening and Community Participation (LISCOP) Project.

In the context of socio-economic significance of Laguna de Bay and its increasing environmental deterioration, LLDA has initiated the Laguna de Bay Strengthening and Community Participation (LISCOP) Project, which specifically aims at improving the environmental quality of the lake through direct micro-watershed interventions and ensuring effective development governance necessary to meet the demands for a more integrated resource management to safeguard the lake's ecological integrity. Furthermore, the project also aims to foster a harmonious interaction between the environmental, social, economic, and institutional dimensions of lake resource conservation and put into practice a system in which usage is consistent with the goals of integrated water resource management.

The project is funded through a loan from the World Bank and a grant from The Netherlands government. It has 2 main components namely: Component 1- Co-managed Investments for Watershed Development; and Component 2- Strengthening Institutions and Instruments.

The strategies employed in Component 1 involve the implementation of demand-driven interventions designed to the overall improvement of the environmental quality of the whole watershed. Watershed communities are encouraged to participate to strengthen local government involvement in the identification and implementation of the projects. Projects are identified through the Laguna de Bay Environmental Action Planning (LEAP), which is a participative and structured way of identifying priority interventions that will address the most pressing natural resource and environmental projects in a given watershed. Presently, two sub-projects were approved for financing thru the LISCOP funding package. The identified interventions will subsequently constitute an integrated program of sub-projects that will be implemented concurrently within a single or multiple LGUs. ( **LISCOP Operations Manual, 2003**)

Component 2 is divided into two sub-components, one that provides institutional support to LLDA, and another through which the LLDA in turn provides support to the LGUs and the River Councils. The project recognizes the need for the Authority to exercise its mandate as the integrated watershed management institution, hence the capacity building program for LLDA, LGUs and the River Councils, and other stakeholder groups.

## 7. Future LLDA – NARBO Collaborations

As a founding member of NARBO, LLDA can assist in the introduction of IWRM approaches, due to the existence of various programs being implemented by the Authority. However, these programs still lack the

necessary refinements to enable LLDA to effectively pursue the various challenges that confronts the agency during implementation.

The NARBO will be a good venue to discuss and set up an information, experience, sharing and networking process to improve the IWRM policies, plans, programs, and projects that the LLDA currently implements. In addition, the development and application of conflict resolution mechanisms that persistently confronts the Authority will be institutionalized; formulation and subsequent implementation of programs that would enhance the environment of Laguna de Bay; and the development of a mechanism to encourage participation of stakeholders and the local government units within the Region, all within the context of IWRM.

## **REFERENCES**

Laguna de Bay Master Plan, Main Report, 1995

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