

Lessons on Attaining Sustainable Financing for Lake Basin Management Authorities in the Philippines

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1. Introduction

The Laguna Lake Development Authority (LLDA) is the only lake basin management authority in the Philippines. It was created on July 18, 1966 through Republic Act 4850 as a semi-government corporation that exercises both a regulatory and developmental function over the entire Laguna de Bay Region covering a total area of 3,820 km² of which 900 km² comprise the surface area of the lake. Further amendments to R.A. 4850 was enacted through Presidential Decree (P.D.) 813 of 1975 and Executive Order (E.O.) 927 of 1983 which further strengthened the institutional, financial and administrative responsibilities of the Authority including its regulatory functions on industrial pollution.

Classified as a government-owned and controlled corporation (GOCC), the LLDA has an authorized capital of PHP 700,000,000.00 divided into 7 million shares of stock with a par value of PHP 100.00 per share. As specified in Section 6 of R.A. 4850, more than half of the share equivalent to PHP 351,000,000.00 shall be subscribed by the National Government and PHP 349,000,000.00 shall be subscribed by cities, municipalities, government corporations and private investors. The allocated capital has not been fully subscribed since the law requires that at least 20% shall be subscribed out of which 25% shall be fully paid.

The shares of stock are divided into:

- A. 4,900,000 common shares (voting)
 - minimum of 2,800,000 shall be subscribed by the National Government
 - at least 60% of the balance shall be subscribed by the Provinces of Rizal and Laguna in such proportion as may be agreed upon by both provincial governments in accordance with the respective financial capacities.
 - the remaining balance of the common shares is open for subscription to cities, provinces, municipalities and private investors.
- B. 2,100,000 preferred shares (non-voting)
 - minimum of 770,000 shares subscribed by the National Government.
 - the remaining balance is available for subscription to cities, municipalities, government corporations, and private investors.

Provided, however, that preferred shares shall enjoy preference with respect to distribution of dividends and assets in case of dissolution. From 1998-2008 the total dividend given by the LLDA to its stockholders amounted to PHP 68.5 million.

The LLDA became operational in 1969 with an initial subsidy of PHP 1,000,000.00 from the general fund of the National Government, which was appropriated annually for five years. It was also exempted from paying taxes for 5 years, after which the taxes were imposed on a graduated scale of 20% on the 6th year with an annual increment of 20% until the tenth year wherein 100% of the tax was paid thereafter.

Under its present mandate, LLDA is authorized to source its funds from the following:

- National Government subsidies and financial assistance to carry out its social overhead projects;
- Bilateral and multilateral sources through technical assistance grants or loan facilities;
- Contracted loans through floating of bonds and other debt instruments;
- Sale of stocks and investment in secured debt instruments;
- Public-private partnership;
- Build-Operate-Transfer contracts with private entities;
- Revenue and non-revenue generation.

The LLDA can also make recommendations to the proper government agencies on the peso or foreign currency financing requirements of its mandated functions, technical support, the level of priority to be given to certain projects, and accordingly, solicit assistance from the National Government or any of its instrumentalities. The Charter of the LLDA further allows the Philippine Government to guarantee the payment for principal and interest of the loans, bonds, debentures and other obligations of the Authority.

2. Management structure

The policy-making body of the LLDA is the Board of Directors (BOD) which consist of representatives from the Office of the President of the Philippines, the National

Government (Department of Environment and Natural Resources, Department of Trade and Industry, National Economic and Development Authority) the Governor of Rizal Province, the Governor of Laguna Province, the respective president of the League of Mayors and Rizal and Laguna, the Chairman of the Metropolitan Manila Development Authority, representative from the Private Sector and the General Manager of the LLDA as an *ex-officio* member. The BOD approves the annual plans and programs and operational budget of the LLDA.

In 1993, the LLDA was placed under the administrative supervision of the Department of Environment and Natural Resources (DENR) through Executive Order 149. As such, it maintains its separate policy-making functions through the Board of Directors. The LLDA acts and decides upon policy matters; not all are necessarily elevated to the DENR Secretary for final approval, since the Secretary is a member of the LLDA Board.

The Chief Executive Officer of the LLDA is the General Manager (GM) who is appointed by the President of the Philippines. Under the GM are the Assistant General Manager and the respective head of the different support units, namely:

- Administrative
- Finance
- Legal
- Planning and Projects Development
- Engineering and Construction
- Corporate Management Services Staff
- Special Concerns Division
- Pollution Control Division
- Lake Management Division
- Research and Development Division

- Environmental Quality and Management Division
- Community Development Division
- Integrated Water Resources Management Division
- International and Local Cooperation Division
- Public Information Unit

At present the LLDA has a total workforce of 262 personnel covering a lake basin management and development area of 3820 km².

3. Financing Mechanisms

As a GOCC, the LLDA can retain its revenues for its own disposition. This was a key factor on the evolution of the LLDA as a self-sustaining organization. Sources of revenues are classified based on four major sources:

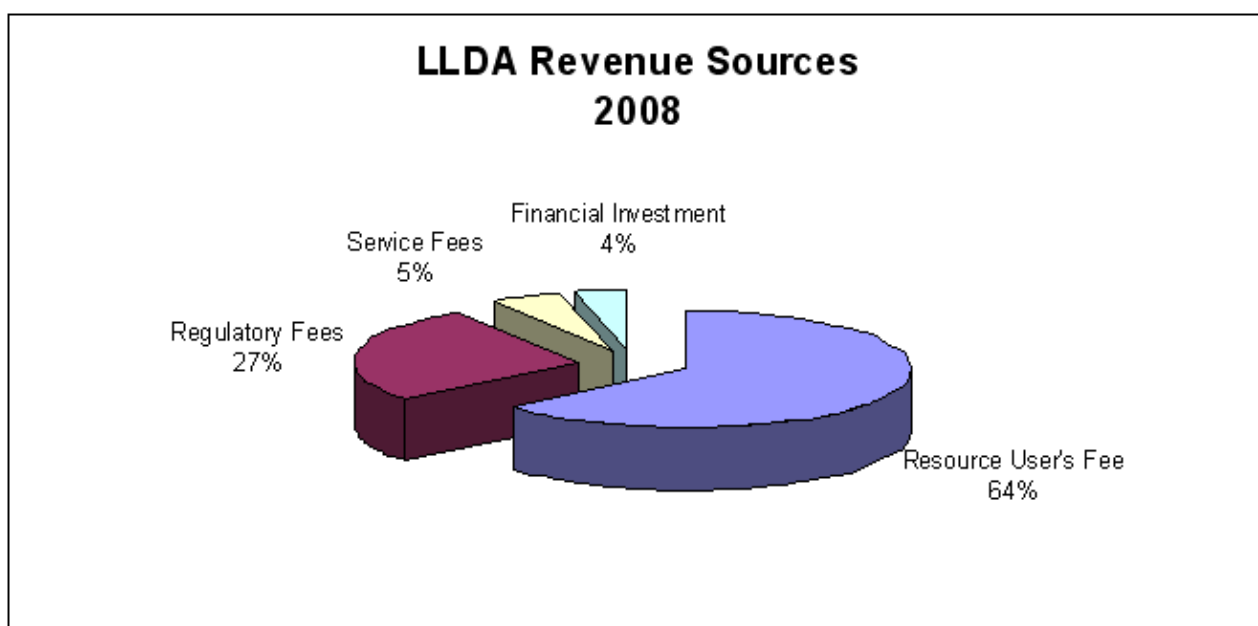
3.1. Resource User's Fee

a. Fishpen and fishcage fees.

The LLDA charges an annual fishpen fee of PHP 6,000.00 per hectare or US\$ 125.00 (based on an exchange rate of 1 PHP = US \$ 48) and an annual fishcage fee of PHP 4,200.00 per hectare which was conceived as payment for the use of specified areas in the lake at the exclusion of others. The Zoning and Management Plan (ZOMAP) for Aquaculture in Laguna de Bay sets the limit of 10,000 hectares for fishpen operation and 5,000 hectares for fishcage operation.

Part of the fishpen fee share is shared to the local government units (LGUS) wherein lakeshore municipalities with fishpens off their shore receive 35% and the rest of the lakeshore municipalities receive 15% which they can use for environmental projects.

Figure 1. LLDA Revenue Sources



b. *Discharge permit fee*

It covers all industrial firms that discharge their effluent to the tributary rivers and the lake and carries a legal authorization for the enterprise to discharge their wastewater of acceptable concentration to the lake or its tributary rivers set under the Department of Environment and Natural Resources - Department Administrative Order (DENR-DAO) 35 for Class C Water (good for fisheries).

In 1997, the fee was structured as a market-based instrument that applies the “polluters pay principle” and was named as Environmental User Fee System or EUFS. It is composed of a fixed fee and a variable fee paid on annual basis. The fixed fee covers the administrative cost of implementing the system based on volumetric rate of discharge (Q) and are grouped into three specified range:

Q < 30 m ³ /day	- PHP 6,800.00
31 > Q < 150 m ³ /day	- PHP 12,000.00
Q > 150 m ³ /day	- PHP 18,000.00

The variable fee depends on whether the BOD concentration is above or below the concentration threshold, which corresponds to the existing effluent standard for BOD of 50 mg/L, regardless of the total BOD load. The fee is structured as follows:

BOD load of < 50 mg/L	- PHP 5.00/kg
BOD load of > 50 mg/L	- PHP 30.00/kg.

Aside from the payment, an industrial firm with effluent discharge that does not meet the standard for Class C water is subject to the filing by LLDA of a pollution case for violation of the law. This scheme has induced firms to be more cost effective in trying to comply with standards and

in effect made the EUFS a model of mixed regulatory and economic instruments.

c. *Shoreland Management*

Laguna de Bay’s shoreland covers a total area of 14,000 hectares. The LLDA monitors the use of these areas and issues permits based on their allowable uses in the form of a shoreland occupancy permit at a cost of PHP 1,500.00 per application. The shoreland areas can also be leased subject to conformance with the allowable uses and the lease rate is subject to the land classification per municipality.

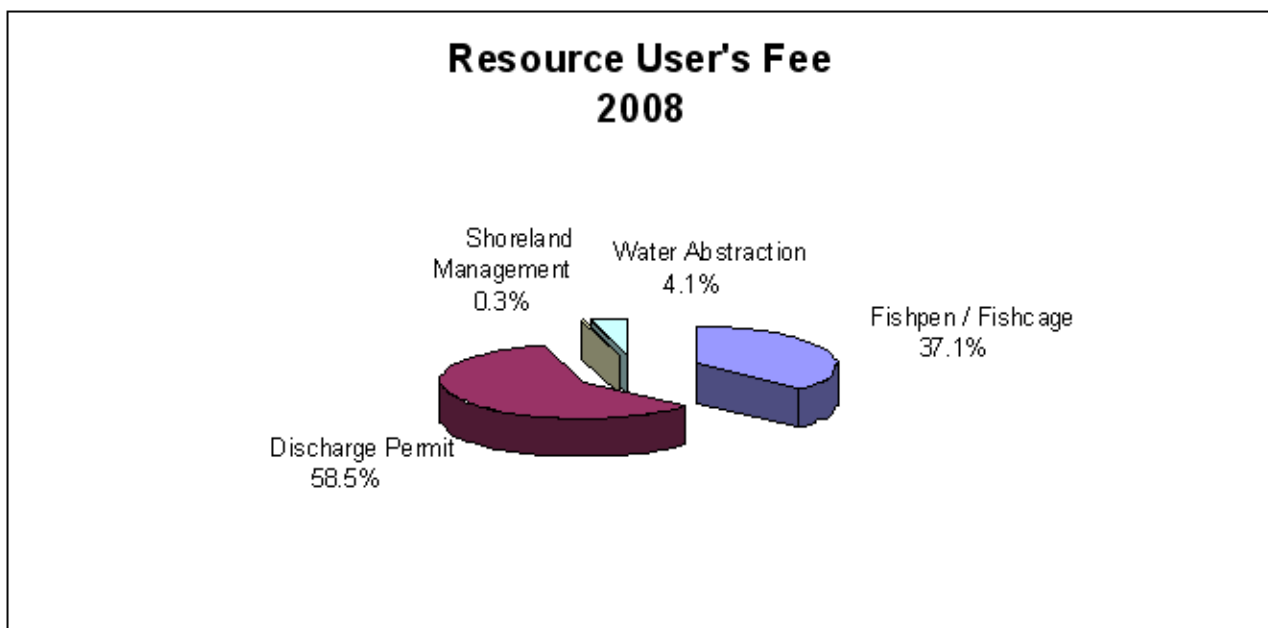
d. *Water Abstraction*

In 1999 the LLDA started to charge a fee for the abstraction of water from the lake for domestic water supply. At present a private land developer draws 10 million liters per day (MLD) raw water from the lake at a fee of PHP 3.10/ m³. Advanced treatment is applied prior to domestic use in a posh residential area along the West Bay. An indication of the dwindling supply of groundwater is the numerous proposal received by the LLDA. Negotiation is in progress with a private water service provider for the abstraction of 300 million liters per day (mld) of raw lake water.

3.2. Regulatory Fees

As a component of the regulatory function of the LLDA, all development projects within the basin should have an LLDA Clearance. A processing fee of PHP 1,600.00 is charged for every application. Expansion in operation of an existing firm would also be covered by another LLDA Clearance and other regulatory fees. Failure to secure such clearance would subject the violator to an administrative fine of PHP 5,000.00. Industries who do not meet the effluent standards are subject to daily penalties and the filing of cases for violation of environmental rules and regulations.

Figure 2. Resource User’s Fee



The Authority also regulates the use of barges in transporting goods and raw materials. The annual barging fee ranges from PHP 20,000.00 to PHP 40,000.00 and is based on the load of the barge. On top of this is a processing fee of PHP 2,000.00.

3.3. Service Fee

a. Survey, delineation and mapping of aquaculture areas

The Engineering and Construction Division provides technical services in the survey, delineation and mapping of fishpen and fishcage areas in the lake. A survey fee of PHP 5,000.00 is charged for 10 hectares and below and PHP 10,000.00 for areas greater than 10 hectares. The delineated area and the resulting map is the basis for the collection of fishpen fee.

The LLDA has sole jurisdiction on the shoreland. Thus, a development activity/project needs to be certified by the LLDA that it is not within the shoreland area, otherwise it would be subjected to certain restrictions based on the allowable uses. For this reason, the size of the area to be occupied by the activity/project needs to be determined by the LLDA and at the same time, verified whether it is within or outside the shoreland. For these technical services a fee of PHP 8,300.00 for area determination of 500 m² and below (with a step increment of PHP 500.00 for every 1,500 m²) is paid by the applicant and PHP 8,300 as verification fee for areas of 5000 m² and below up to PHP 12,800.00 for up to 5 hectares.

b. Laboratory Services

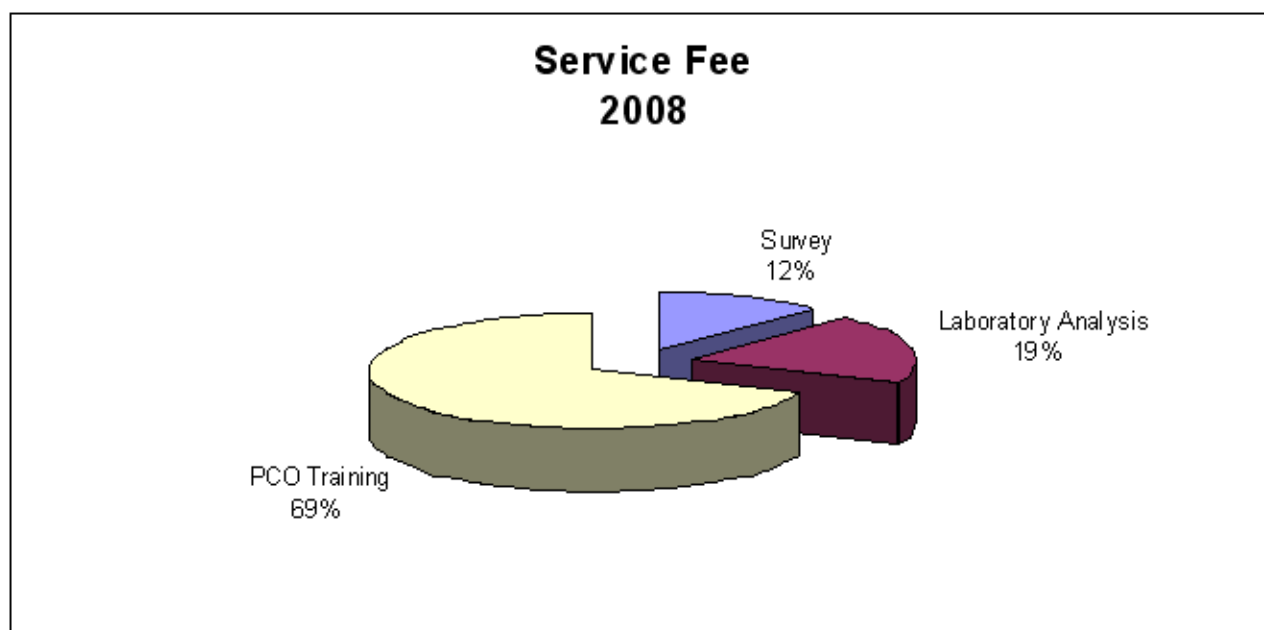
The LLDA's water quality laboratory has been in operation since 1971 and since then has regularly monitored the water quality of the lake and the tributary rivers. It is capable of analyzing various water quality parameters using

state of the art equipment, apparatus and instruments. It also handles the analysis of wastewater effluent collected for regulatory and monitoring purposes. Aside from the in-house service, the laboratory also accepts for analysis water samples submitted by private individuals, industrial firms and other academic and research institutions.

c. Training for Pollution Control Officers

All industrial firms that discharges wastewater effluent is required by the Department of Environment and Natural Resources (DENR) to have a Pollution Control Officer (PCO) accredited by the DENR. In case of industrial firms within the Laguna de Bay Region, the LLDA takes charge in the accreditation of PCO's. One of the requirements for accreditation is attendance to trainings and seminars on pollution control laws, rules and regulations. The LLDA technical staff used to be invited as resource persons in the training being conducted by DENR-recognized private institutions such as the Pollution Control Officers Association of the Philippines of which a training fee is paid by a participant. In 2001 the LLDA found its niche in providing the required training to PCO's. It used to be funded by the Pasig River Rehabilitation Commission until it became institutionalized as a regular program of the LLDA in 2001. Since then it has become a major source of revenue among the services provided by the LLDA. Two types of trainings are being given, the 40-hour Continuing Education Enhancement Program which is required for accreditation as PCO and the 4-hour Continuing Education Enhancement Seminar which is a requirement prior to the issuance of the annual discharge permit. The fees are PHP 8,000.00 and PHP 2,500.00, respectively.

Figure 3. Service Fee



3.4. Financial Investment

Other sources of income for the LLDA are from its investment portfolio in the form of marketable securities and interest income from bank account.

4. Sustaining the operation of LLDA through other funding sources

4.1 Overseas Development Assistance (ODA)

The LLDA has always been an ODA recipient since the early stages of its operation in the early seventies. Major projects such as the water resources development study. The birth and development of the water quality laboratory as well as staff training were made possible through financial and technical support from the World Health Organization and the Asian Development Bank. Through the years, other ODA's came which further enhances the capability of the LLDA to fulfill its mandate. Some of these are the following:

- a. the Royal Dutch Government-funded Sustainable Development of the Laguna de Bay Environment which exposes the LLDA to the state-of-the-art modeling tools for decision-making and capacity building in different fields of integrated water resources development;
- b. the World Bank and the Royal Dutch-Government funded Laguna de Bay Institutional Strengthening and Community Participation Project (LISCOP) which enables the LLDA and the LGUs to work in hand in hand in developing sub-projects that would address the environmental problems in the watershed and at the same time strengthen and capacitate the LLDA and its partners in watershed management;

- c. the Japan Climate Change Initiative - World Bank funded Laguna de Bay Community Carbon Finance Project or Carbonshed Project which help mitigate greenhouse gas emission in the watershed through LGU sub-projects under the Clean Development Mechanism and enable the LGUs to earn Carbon Credits as well as capacitate the LLDA in the development and registration of CDM-subprojects;

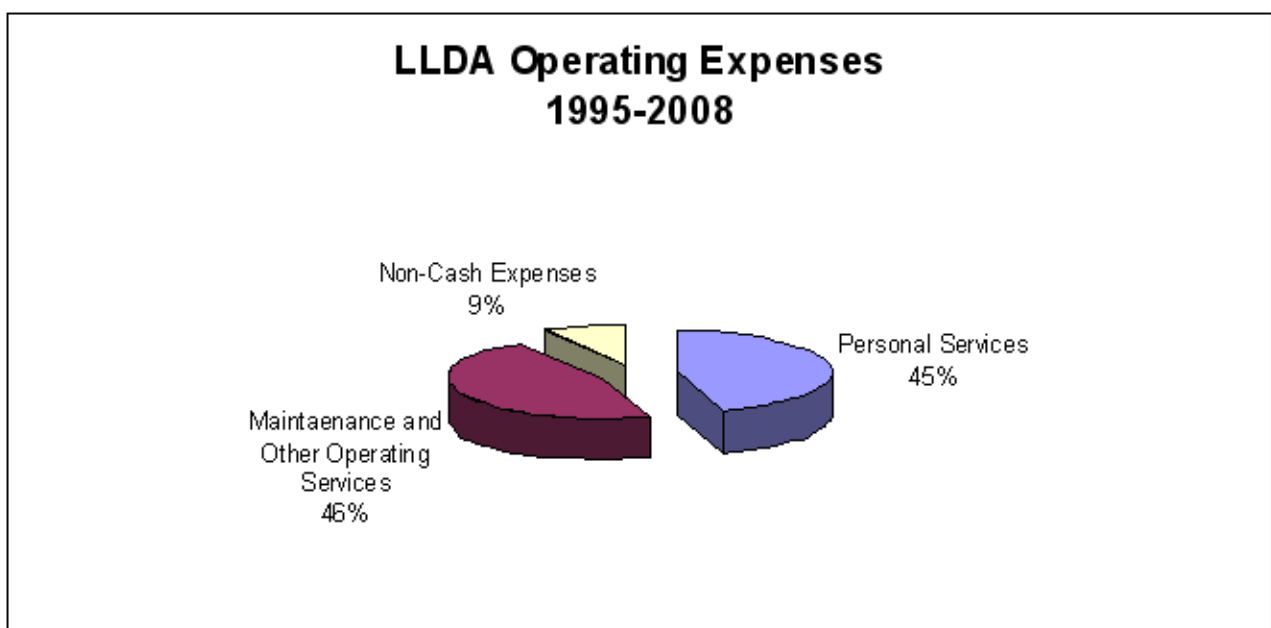
- d. the Australian Government-funded project through the Australian Center for International Agricultural Research (ACIAR) on Minimizing Agricultural Pollution to Enhance Water Quality in the Laguna de Bay.

All these ODA's gave a premium on the further development of the LLDA staff and the LLDA as a lake basin management institution, the provision of computer hardware and software, equipment, field and laboratory instruments, etc. that would otherwise eat on the operating budget of the LLDA.

4.2 Partnership

Trust-building and collaboration with socio-civic, professional, environmental and other sectoral organizations are part of the lake basin management approach of the LLDA. Certain degree of success has already been manifested on environmental awareness campaign such as the environmental education program under the tri-partite partnership CLEAR or the Conservation of Laguna de Bay's Environment and Resources consisting of the Society for the Conservation of Philippine Wetlands, Unilever Philippines Inc. and the the LLDA. The Laguna de Bay bike caravan was successfully implemented through partnership with the Rotary Club of Manila East and other industrial firms that gave substantial financial and logistical support. This

Figure 4. LLDA Operating Expenses



activity is now part of the annual environmental activity for the observance of Earth Day (April 22).

5. LLDA's operating costs

From 1995-2008 the bulk of LLDA's expenses are for the salary and benefits of personnel and from maintenance and other operating expenses at 45% and 46%, respectively. Non-cash expenses cover the depreciation cost. In 2008, majority of the expenses are for personnel services (55%), followed by maintenance and other operating cost (16%) and lastly by non-cash expenses (19%).

6. Challenges in sustaining revenue generation and collection

The strongest backbone of the LLDA is the legal authority it carries as a semi-government corporation. The authority to raise and retain revenues enables it to sustain its operation with less dependence on the National Government. Experience has shown that increasing the fees as well as the fines and penalties needs a certain degree of consultation with the affected sectors since it is always faced with opposition and complaints. The LLDA was able to meet this challenge based on strong legal and technical arguments upon which the Board of Directors refers to in arriving at a decision.

Among the various revenue sources, the Regulatory Fees and the Resource User's Fees form the bulk of LLDA's revenue. There was a significant increase in 2002 on the Resource User's Fee in view of wider implementation of the EUFS and the collection of water abstraction fee.

a. Less dependence on Regulatory Fees

The regulatory fees being charged by the LLDA are indicators of how well the LLDA exercises its regulatory mandate. Lesser regulatory fees in the form of fines and penalties

reflect higher degree of compliance by the sectors affected by the prevailing environmental rules and regulations as well as efficient implementation by the LLDA. Thus, regulatory fees should not really be looked at as a sustainable source of funds since it would defeat the real intent of the regulatory mandate of the Authority.

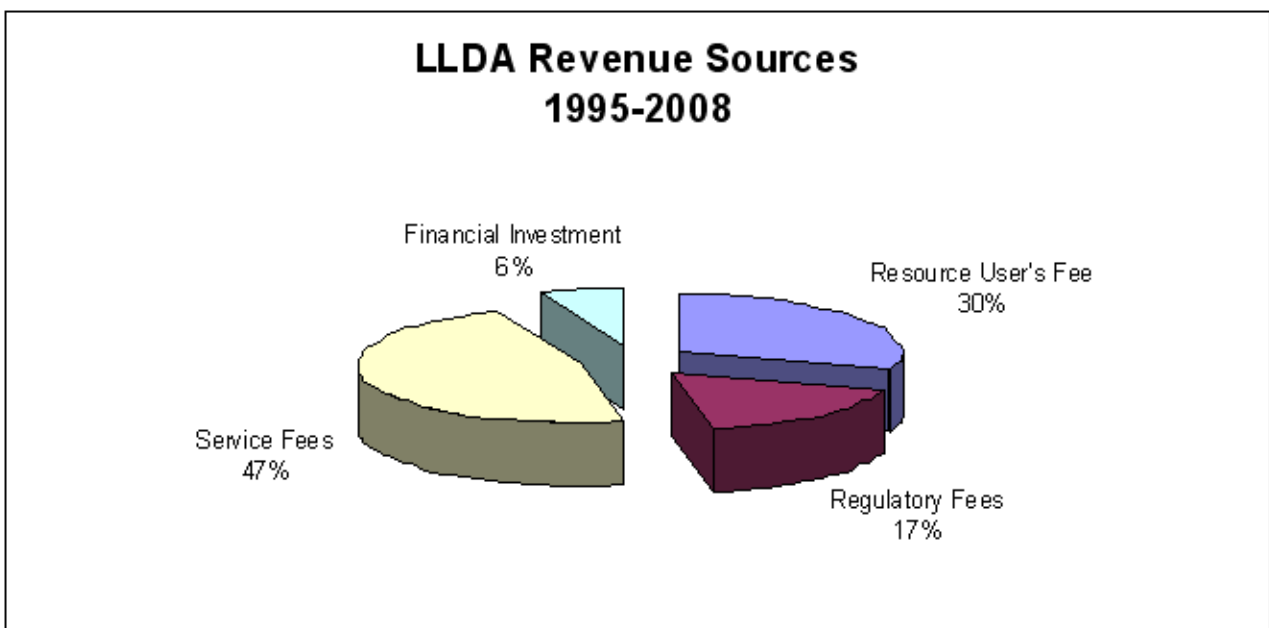
b. Further development of Resource User's Fee

The regulatory mandate of LLDA has always been strongly manifested compared to its developmental mandate. It was only in the late 1990's that the LLDA started to give more focus on its developmental function. This was further catalyzed by the LISCOP Project (2004-2010) and the Carbonshed Project (2004-2008).

It is time for LLDA to look at its Resource User's Fee (RUF) as payment for environmental services (PES) provided by the lake, the tributary rivers, the remaining forest cover and vegetation in the watershed, etc. This would require costing of such services, which would lead to the restructuring or revision of the present user's charge.

The bigger challenge for LLDA in further pursuing the PES scheme is to assure the users of the resource that it can maintain the desired water quality for a specified use. Thus the PES has a payback component in which the Authority should use the PES revenue in financing both structural and non-structural environmental projects to safeguard the lake basin environment and ensure sustainable provision of the environmental services. A resource user's fee structure involving the abstraction of 300 MLD from the lake is currently being developed by the LLDA taking into account the assurance that the required water quality of the lake will be provided by the LLDA.

Figure 5. LLDA Revenue Sources



c. *Expansion of technical services*

Fees collected from the survey of fishpens and fishcages are not expected to increase substantially through time since the maximum areas for aquaculture operation are already fixed in the Zoning and Management Plan or ZOMAP.

Considering the long-time existence of LLDA as a lake basin management authority, there are already built-in knowledge and experience of the technical staff that can be tapped to provide more trainings on different aspects of Integrated Lake Basin Management (ILBM). A case in point is the success of the Pollution Control Officer's Training which has not only become a good source of revenue but also has established a more professional and cordial relationship among the PCO's and between the LLDA and the PCO's. Annual conferences of LLDA-trained PCO's are being held for updating of information, sharing of experiences and mentoring on appropriate measures adopted by a certain firm to minimize pollution and further strengthening of partnerships among and between the firm's CEO's, PCO's and the LLDA.

d. *More investment opportunities*

The traditional investment activity of the LLDA is in the form of marketable securities. Lately, there has been a wide range of offers from some Local Government Executives and private sector groups on forging partnership with the Authority in pursuing development projects along the lakeshore. This is also seen as a strategy to protect the lakeshore areas from informal settlers and other illegal reclamation activities. The changing landscape in the Metropolitan Manila area and in the western corridor in the watershed triggered a paradigm shift in the management of the LLDA from the more traditional investment approach to a more contemporary developmental projects involving infrastructure. One of those in the pipeline is the Laguna Lakeshore Recovery Development Project in Taguig City which consists of a mixed-use complex and is being pursued in partnership with the Development Bank of the Philippines and the City of Taguig. Early into the discussion for the proposed development project, the LLDA has stressed that aside from the feasibility study, a thorough environmental impact assessment should be done.

e. *Continuously pursuing projects through ODA's.*

The LLDA has grown to what it is now in terms of staff competence and logistical support that have become very significant in its operation partly due to projects that were and are being implemented with overseas financial assistance either in the form of a loan or grant. Some of these projects are now mainstreamed in the operation of the LLDA such as the Dutch-funded Sustainable Development of the Laguna de Bay Environment Project which led to the creation of an Integrated Water Resources Management Division and lately, the Carbonshed Project which is now mainstreamed in the LLDA through the creation of the Carbon Finance Unit.

The LLDA has already established a good name in implementing ODA projects and has taken stock of the learnings, technology transfer, lessons and experience to meet the challenges in the development and implementation of future ODA projects.

7. Concluding remarks

Finance is one of the 6 pillars of ILBM that gives premium on the development of innovative approaches to generate locally-generated and usable funds. The LLDA experience has manifested some innovative approaches such as the EUFS. The revenue may decrease through time as wider compliance to environmental laws is achieved but the administrative fee is ensured to remain as a sustainable revenue source. Other approaches such as Payment for Environmental Services (PES) are being explored with regards to the use of the lake and basin resources. As stated in ILEC's Report for Lake Basin Managers and Stakeholders published in 2005, "Unless there is a high value use extracted from the lake's resources, these funds are not usually sufficient for lake basin management." The greater challenge for a lake basin authority such as the LLDA is to ensure that the water quality of the lake and the tributary rivers as well as the environmental quality in the watershed are in a level that would allow the multiple uses of the basin resources in a sustainable way.

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