

NARBO's 9TH IWRM TRAINING
12-19 May 2014 • Philippines



Building on IWRM Good Practices

The Laguna Lake Basin Experience

“LLDA’s Coordination of Sectoral Perspectives”

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Outline of Presentation

- Overview of inter/intra sectoral issues/conflicts
- Balancing act: key areas for consideration
- Mechanisms for coordination, conflict resolution measures
- On-going development on studies/tools to help address conflicts in water uses/users
- Key messages for IWRM



Conflicts:

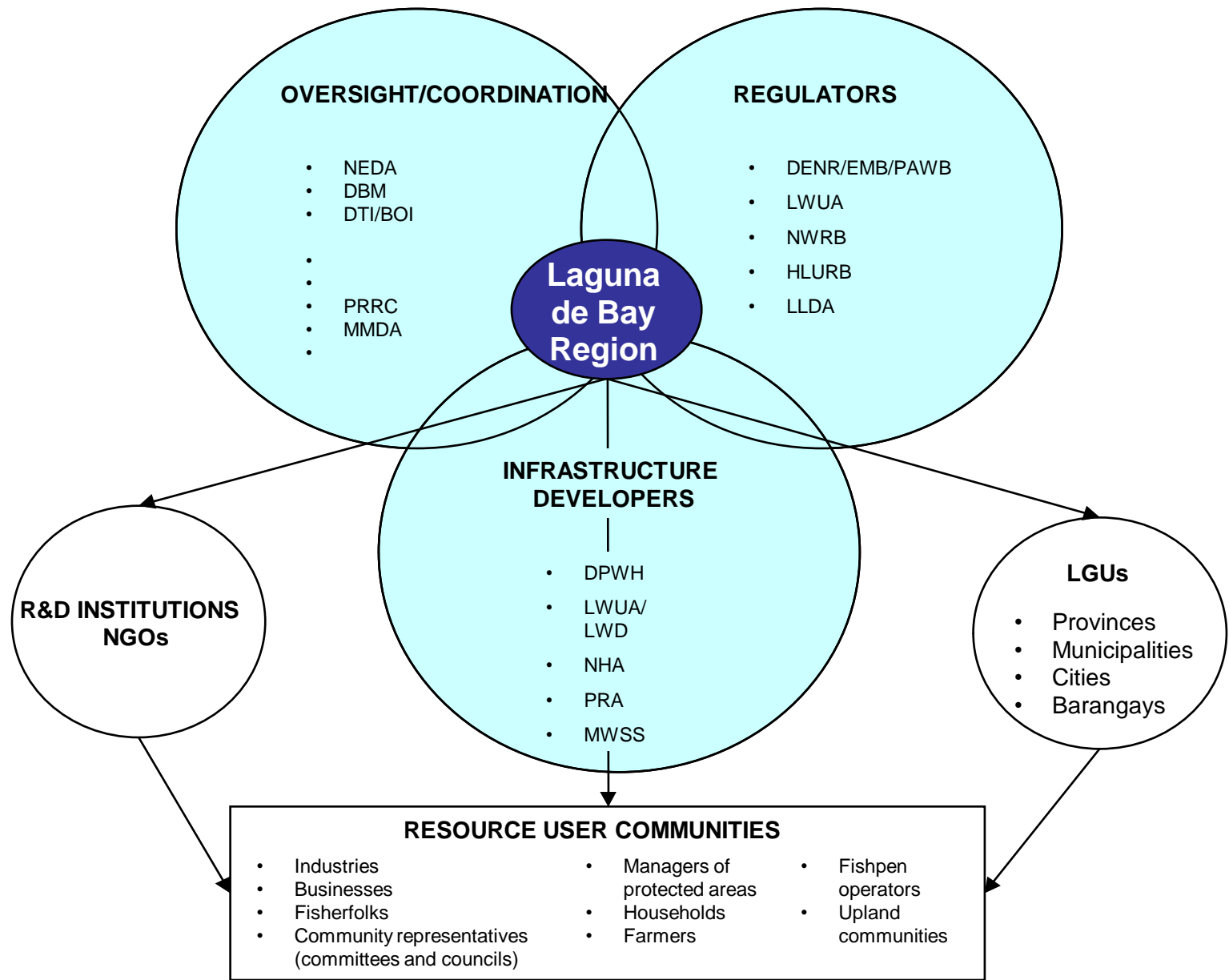
- Among institutions
- Among uses/users



Root Causes:

- Ecosystem lacks the carrying capacity to meet demands
- Quality and quantity dependency of lake water uses
- Lack of common objective/vision for the lake and its watershed
- Unclear/overlapping institutional mandates
- Inadequate integration of sectoral policies
- Lack of willingness to delegate/devolve

Stakeholders of Laguna de Bay



Conflict Costs

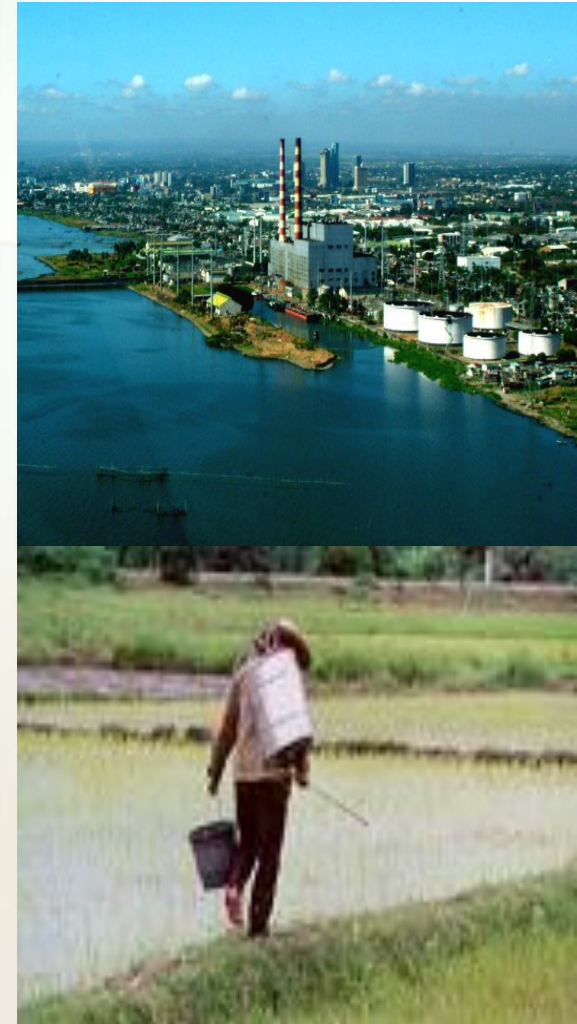
- Poor public health and sanitation
- Threats to water and food security
- Loss of livelihood
- Loss of lives and properties



INTER-SECTORAL ISSUES/ CONFLICTS ON RESOURCE USES

Water Supply vs. Irrigation

- Increasing salinity and contamination from pollutants would make lake water unsuitable for both water supply & irrigation uses
- Both uses are consumptive, hence conflict may arise if supply is limited
- Pollution from industries, households & transportation within the lake threatens agricultural activities
- Current interventions: Strict regulations vs. effluent discharges by industries, but pollution from domestic sources still a major problem



Major source of potable water for Metro Manila and environs



Metro Manilans & other basin residents are already suffering from water shortage

A full blown water crisis is seen to hit Metro Manila in the near future; looming impacts of El Nino Phenomenon

A private water company already been granted permit for approx. 300MLD of raw water; another has signed up 50 MLD

Water Supply vs. Fisheries



Conflict in water quality-quantity demands of various water users.

- Increasing emphasis on the lake as the most economic raw water source for domestic use (including potable drinking water) will challenge all other uses of the lake
- Increasing salinity from the Pasig River is perceived as beneficial for fisheries, but unsuitable for water supply



Napindan Hydraulic Control Structure

- Napindan HCS was built to prevent saltwater intrusion
- Cause of conflict between fishery sector & government sector (DPWH)
- NHCS' purpose to regulate backflow from the Pasig River has been ignored in favor of fishermen who need the brackish water to promote the growth of natural fish food (algae) to improve the productivity of aquatic resources in the lake.



Flood Water Storage

- The use of the lake as a reservoir of flood waters coming from Metro Manila and adjoining areas exacerbating the flooding along the shoreland communities, Marikina and Pasig Rivers, and consequently the overtapping of aquaculture (fishpens/fishcages) farms



Intra-Sectoral issues

- Aquaculture vs. open fishing (communal fishing)
- On fisheries, there is a perception/mindset especially among small fisherfolks that their “traditional” right to the fishery resources of the lake takes precedence over all other beneficial uses



Inter-regional issues

- Benefits from use of lake water for domestic water supply spill over to areas outside the basin
- Hydro-electric power generated from the lake supplies the Luzon Power Grid benefiting consumers outside the basin (Central & Northern Luzon)



LLDA's Coordination Mechanisms

- Institutional and organizational structures
 - Policy coordination through the LLDA Board of Directors
 - Structures for stakeholder involvement (e.g., River Councils)
- Basin-based action planning process
- LLDA Decision Support System (DSS)
- Policy tools and market-based instruments
- Alternative dispute resolution (ADR)



LLDA's IWRM Approach

- Watershed-based: 24 micro-watersheds serve as the basic units for planning & implementing environmental improvement programs
- Integrated and participative in approach
- Transcends political, economic and social interests
- Supported by scientifically-based natural resources and environmental management programs built upon LLDA's extensive water quality monitoring data

Composition of the LLDA Board of Directors Under R.A. 4850 as amended



Representative of the Office of the President



Secretary, DENR



Secretary, DTI



Secretary, NEDA



Governor, Province of Laguna



Governor, Province of Rizal

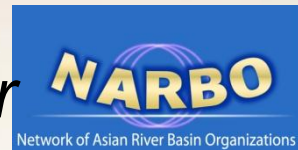


Chairman, MMDA

Presidents, Leagues of Mayors of Rizal and Laguna

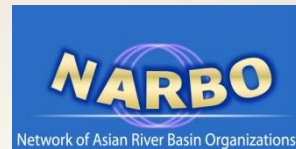
Private Investors' Representative

General Manager, LLDA, *ex-Officio member*



Philippine Clean Water Act of 2004 -R.A. 9275

- Section 5 expressly designated the Laguna de Bay Region under the jurisdiction of the LLDA as one Water Quality Management Area (WQMA) under the administration of the LLDA in accordance with its Charter (RA 4850 as amended)
- LLDA Board as WQMA Governing Board



Stakeholders Involvement

River Basin Councils organized in each river basin starting 1996

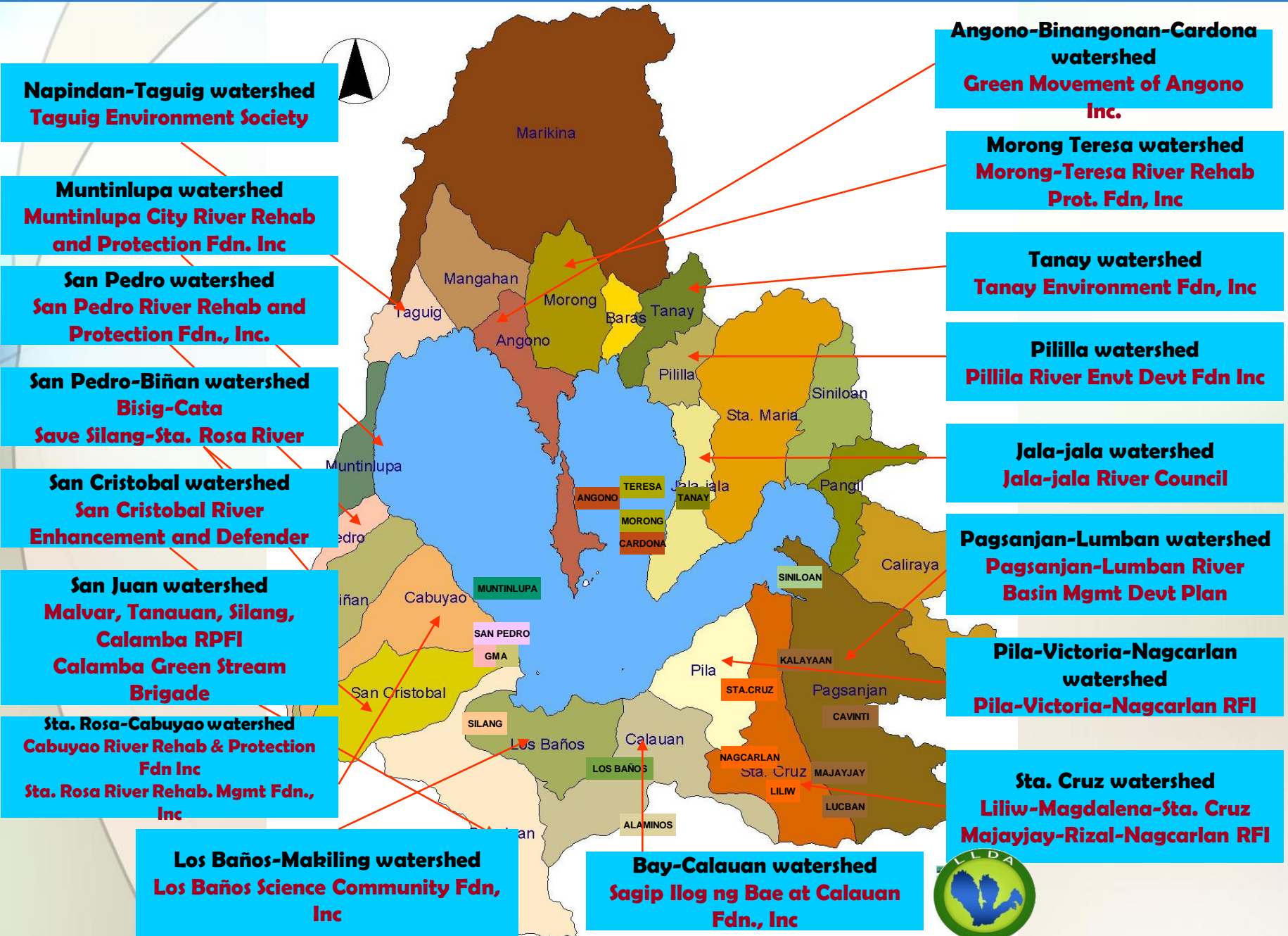
Federation of River Basin Councils (FRBC)

- Network of RBCs officially recognized by the Authority as partners in managing the various watersheds in Laguna de Bay Region, under Board Resolution 167 in 2001



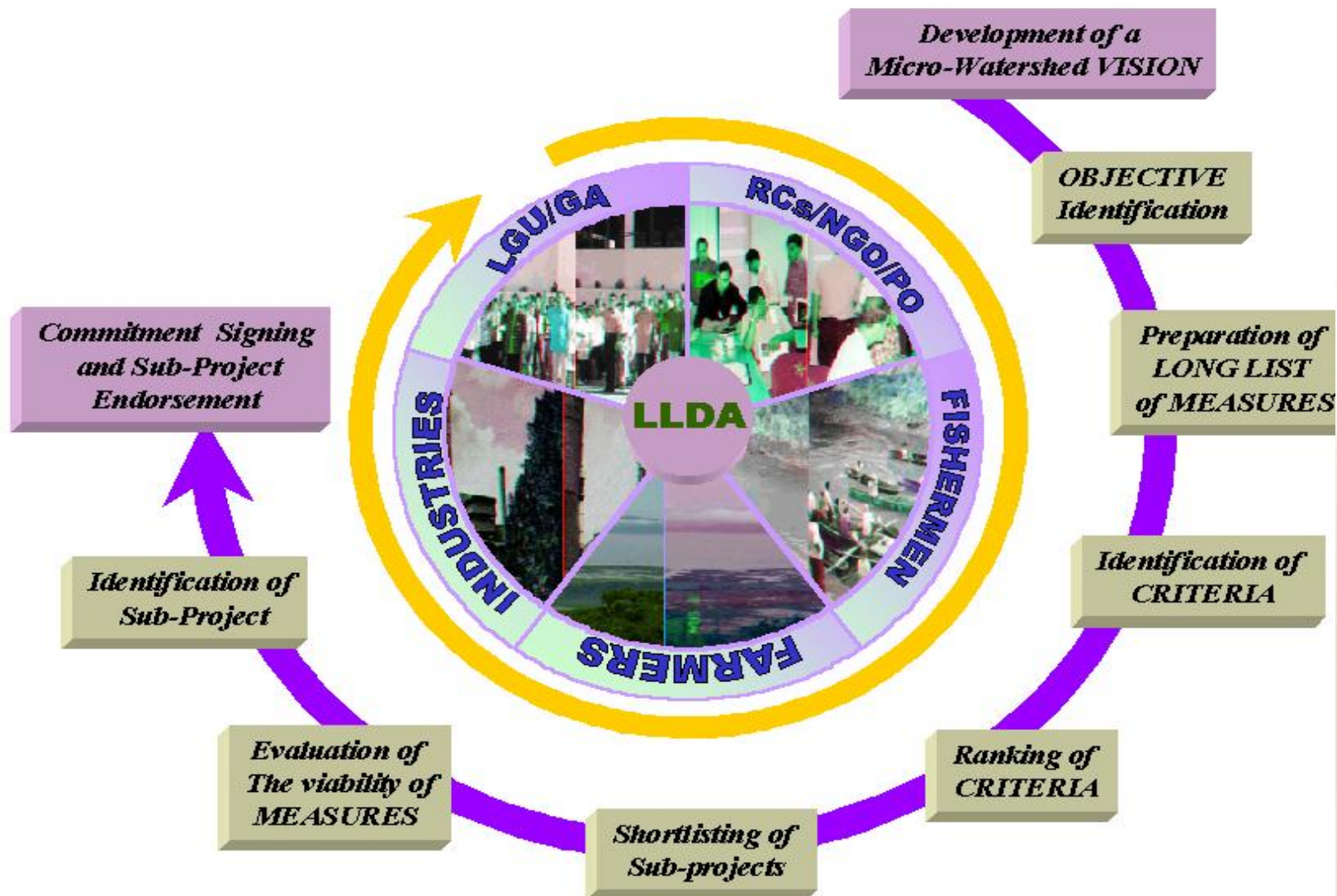
Serves as focal point of convergence for review of policies & participation in lake and river rehabilitation

Network of River Basin Councils



Lake Environment Action Planning (LEAP)

Multi-stakeholder involvement in IWRM



LLDA Decision Support System

- A dedicated IWRM team (dealing with the interactions between the water system, its users and its management) supporting other LLDA units;
- Many new insights in the functioning of the lake;
- Tools to support future planning, development and research
- Great opportunities for sustainable development
- Credibility to the organization as a recognized knowledge institution regarding Laguna de Bay

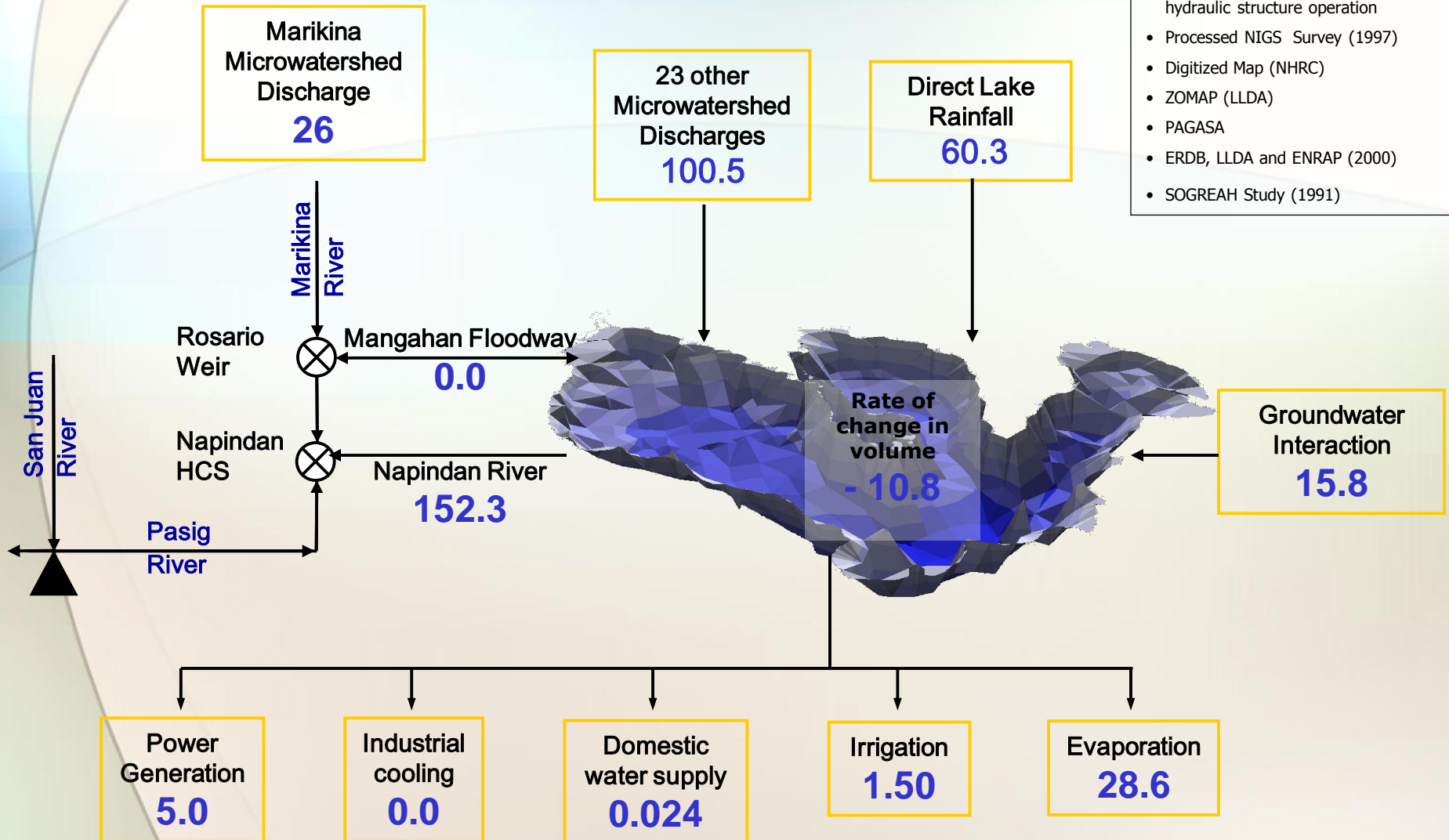


Laguna Lake Water Balance

[Year 2008 Estimates]

(unit: m^3 per second)

- Data sources:
- Sacramento Hydrologic Modelling (SDLDBE, 2000) using processed hydro-meteo data as input
 - Hydro-meteo data processing using HYMOS
 - DPWH-EFCOS / JICA data on hydraulic structure operation
 - Processed NIGS Survey (1997)
 - Digitized Map (NHRC)
 - ZOMAP (LLDA)
 - PAGASA
 - ERDB, LLDA and ENRAP (2000)
 - SOGREAH Study (1991)





Wealth Accounting & Valuation of Ecosystem Services

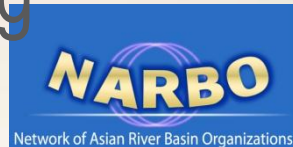
- GDP is an outdated and misleading measure of growth
- Natural capital is a critical component of wealth
- It can tell us whether growth is growing or declining and help informed decisions about resource use





Wealth Accounting & Valuation of Ecosystem Services

- WAVES promotes sustainable development worldwide through the implementation of comprehensive wealth accounting that focuses on the value of natural capital and integration of “green accounting” in more conventional development planning analysis.
- WAVES will enable more informed decision making
- Launched by President Zoellick in October 2010 at the Convention on Biological Diversity , WAVES is a 5-year global program to implement green accounting in a critical mass of countries, both developed and developing



WAVES Case Study on Laguna Lake Basin Ecosystem Accounts

- **Developing detailed land and water accounts**
- **Detailed water pricing scheme**
 - **Re-pricing consumptive water**
 - **Interactions with other lake uses** also needs to be considered, including habitat for capture & culture fisheries, recreation, watershed protection, pollution & potential water demand for Metro Manila.
- **Testing and developing tools and methodologies** for an ecosystem valuation of water uses in Laguna Lake



What WAVES can do to address water quantity & quality degradation?

- Optimum water resources allocation for various uses
- Carrying capacity of the watershed can be determined as basis for policy making
- Possibility of total pollution load management system and effluent trading
- Rationalization of user fee rates
- Prioritization of management initiatives and budget allocation
- Provide direction for appropriate research areas



Alternative Dispute Resolution (ADR)

- ADR as an effective tool in resolving disputes among users/ stakeholders in the lake basin
 - Applied by LLDA prior to adjudication or litigation, by trying to find middle ground solutions
 - LLDA at times will be a party of a conflict, but more importantly, play a role as a mediating party between conflicting parties regarding water use/ water rights
- Shared interest, common ground on having a healthy lake can lead to conflict/issue resolution



Involving stakeholders -- is essential, not optional!

- Consideration to upstream, downstream and even outside-basin interests
- Effective sectoral/stakeholder participation & coordination depends on degree of awareness of important technical and social considerations
- Need for public awareness & information campaigns
- Be clear on what LLDA's authority is



Key Messages for IWRM

- Sectoral perspectives are linked to:
 - Water quantity and quality dependency of competing uses
 - Multiplicity of agencies/institutions with varying mandates/ plans/ policies, each striving to meet stand-alone sectoral goals
- Sectoral issues give rise to threats to water & food security
- As a RBO for IWRM of the Laguna Lake basin, LLDA performs a balancing act through various coordination mechanisms from institutional/organizational structures, technological applications, policy tools and market-based instruments
- Search for worldwide trending tools to help address conflicts in water uses/users to help achieve IWRM goals



Thank you!

