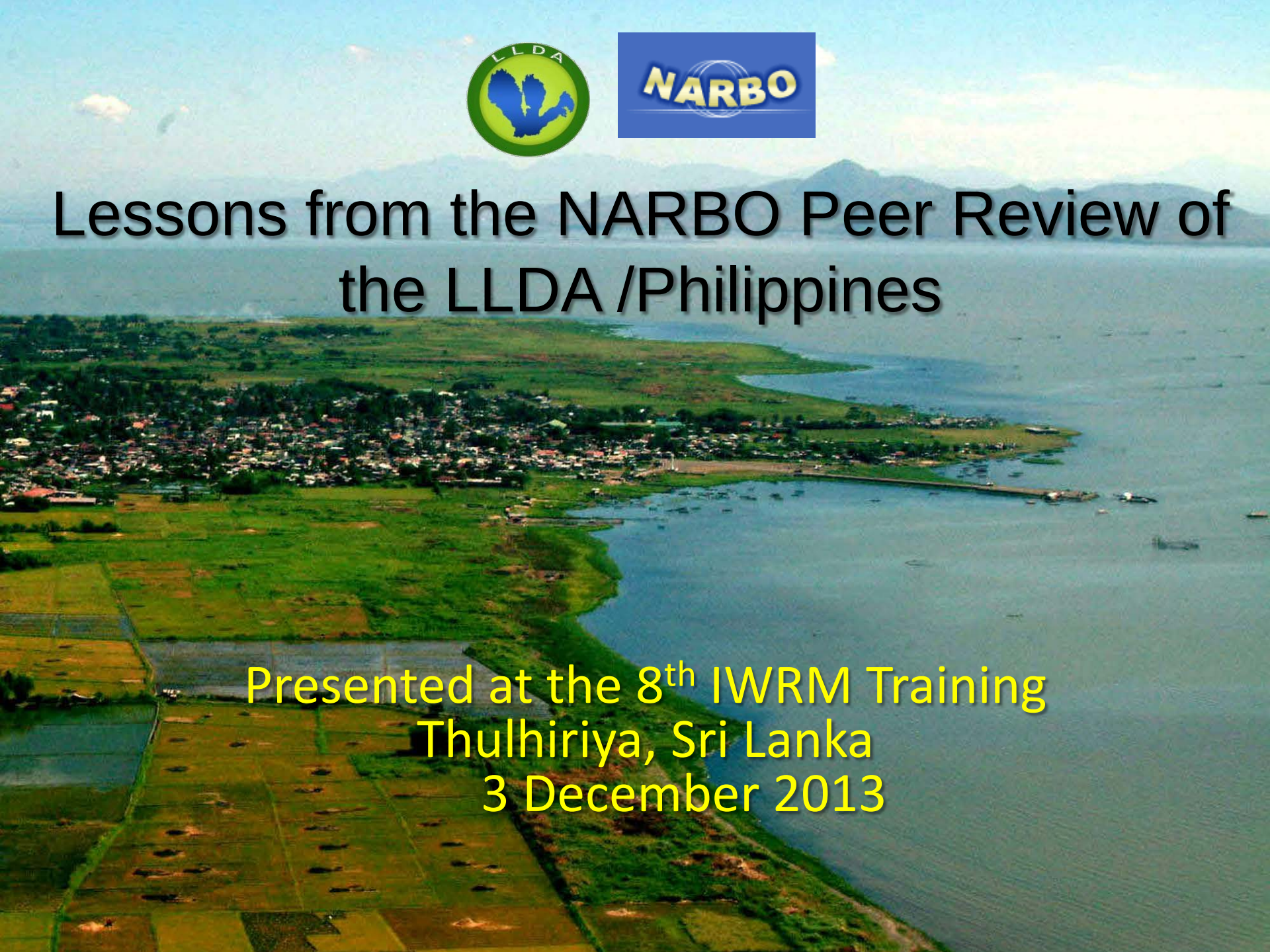
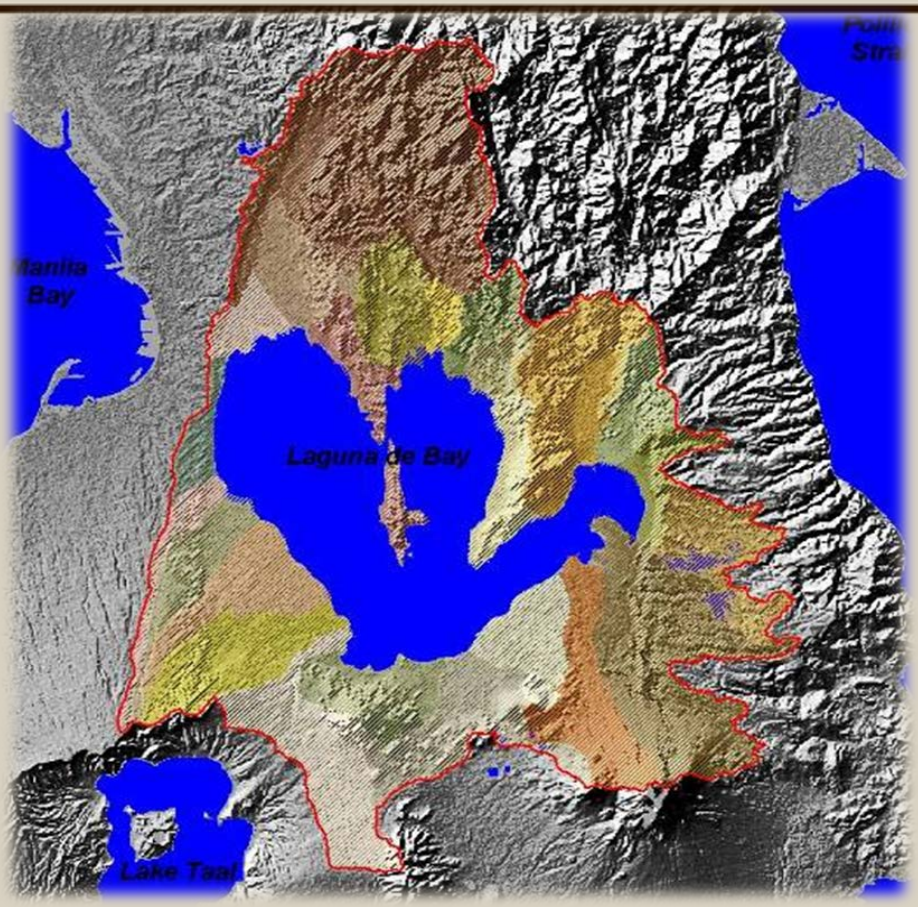


Lessons from the NARBO Peer Review of the LLDA /Philippines

Presented at the 8th IWRM Training
Thulhiriya, Sri Lanka
3 December 2013

Quick Facts



Surface Area:	*** 900 km²**
Average Depth:	**~ 2.5 m**
Maximum Depth:	**~ 20m (Diablo Pass)**
Average Volume:	**2,250,000,000 m³**
Watershed Area:	*** 2,920 km²**
Shoreline:	*** 285 km**
Biological Resources:	**fish, mollusks, plankton macrophytes**

(* At 10.5m Lake Elevation)

Sources of Surface Recharge: 21 Tributaries

The lake is life support system to about 13 million people
3.5 million of whom live in 29 lakeshore municipalities and cities

Lakeshore cities/municipalities	**=**	**29**
Non-lakeshore cities/municipalities	**=**	**32**
Total no. of barangays	**=**	**2,656**

Only Outlet

Napindan Channel connects the lake to Manila Bay

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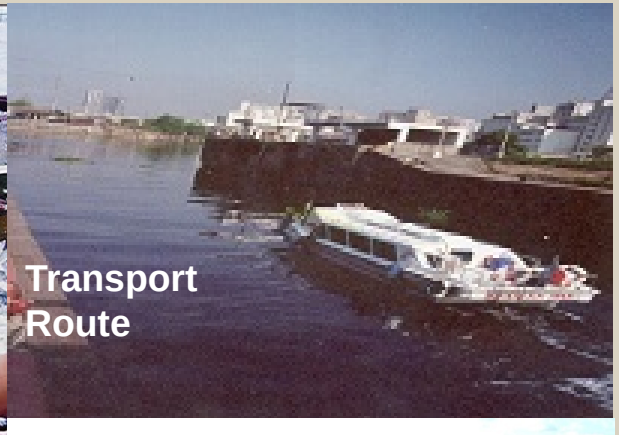
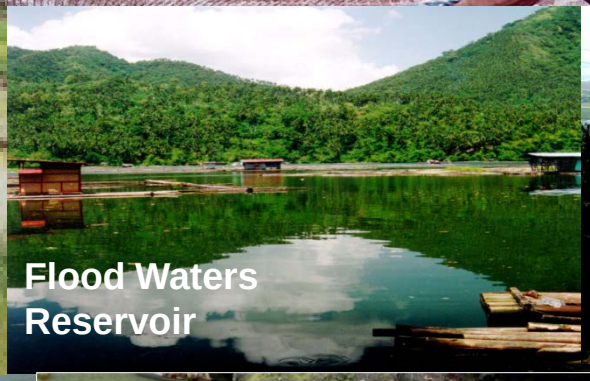
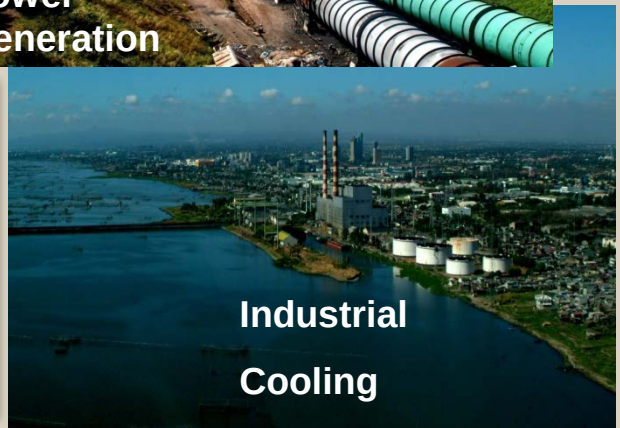
Multiple Use Resource





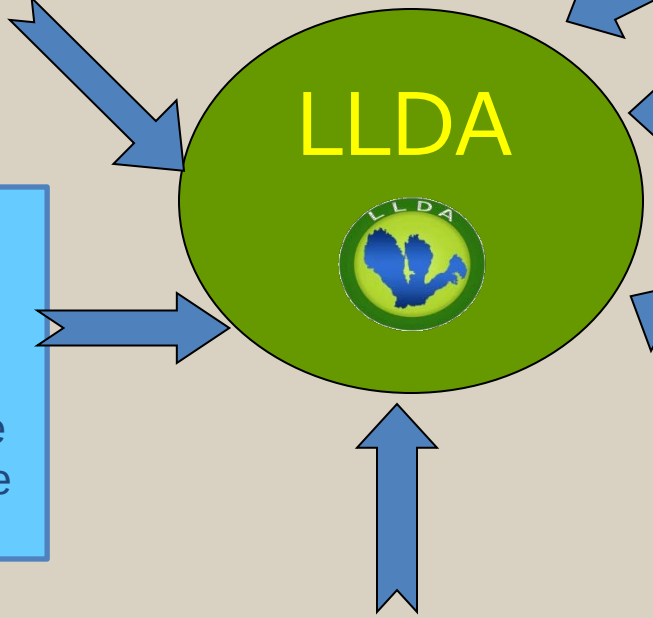


Legal & Institutional Arrangements

RA 4850 (1966). . .to promote and accelerate the development and balanced growth….with due regard for environmental management….

RA 9275 (2004)
Declared the jurisdiction of LLDA as one WQMA

EO 349 (1996)
Adoption and implementation of Laguna de Bay Master Plan



PD 813 (1975)
Expanded the mandate of LLDA to address environmental protection including the power to issue permit for the use of surface waters

EO 149 (1993)
Placed under DENR for administrative supervision and policy coordination

EO 927 (1983)
- Classified LLDA as Class A Corporation
- Authorized to modify its organization
- Granted water rights over Laguna de Bay and other water bodies within the region
- Granted power to control and abate pollution within the region
- Authorized to collect fees for the use of lake water

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THREE KEY FUNCTIONS

POLICY AND PLANNING

- Develop Lake with due regard to environment and prevention of ecological imbalance
- Conduct comprehensive survey/studies
- Prepare comprehensive plan to conserve and utilize resources
- Exercise water rights within Laguna Lake
- Prepare a water quality management program
- Coordinate policies with other government agencies and stockholders

REGULATORY

- Establish and enforce water quality standards for industrial, agricultural and municipal use
- Issue and revoke permits for use of surface waters within the lake region
- Approve development plans proposed by LGUs, private persons or enterprises
- Collect fees for use of Laguna Lake resources for all beneficial purposes
- Compel compliance

INFRASTRUCTURE AND RESOURCES DEVELOPMENT

- Prepares and implement infrastructure projects such as river works, flood control and sewerage
- Reclaim portions of the Lake
- Undertake re-adjustments, relocations or resettlement of populations
- Finance Infrastructure projects
- Collect reasonable fees and toll charges
- Develop water supply from groundwater or Lake water sources
- Engage in fish production and other aquaculture projects

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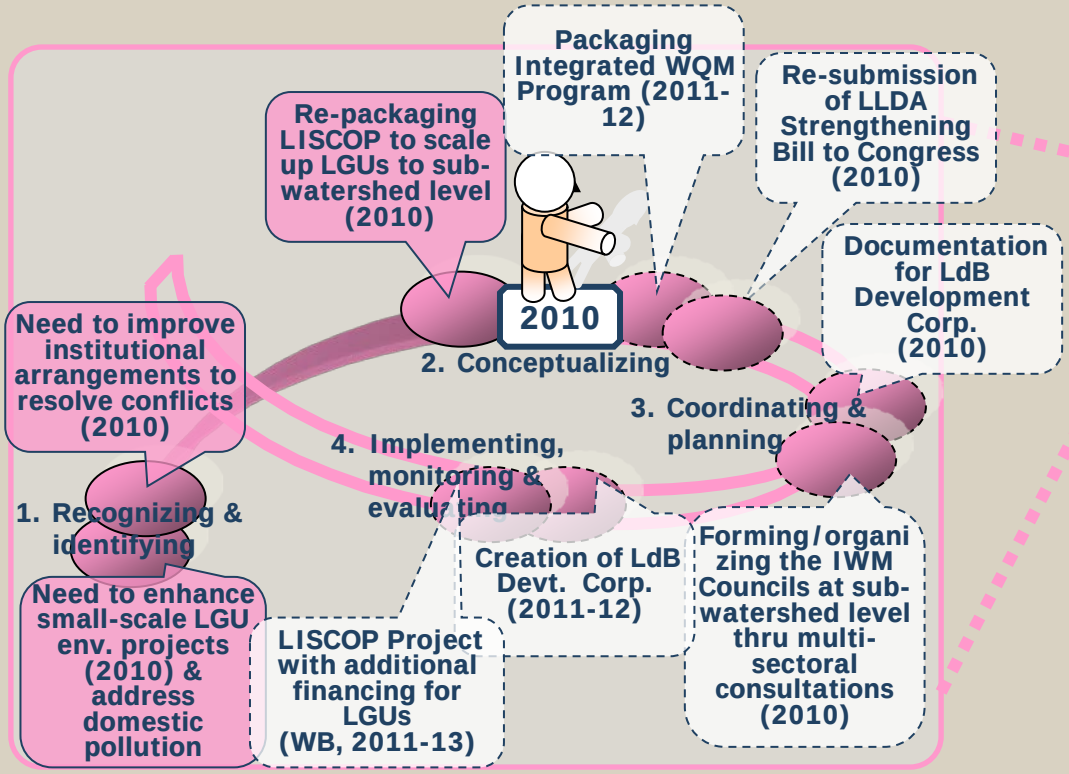
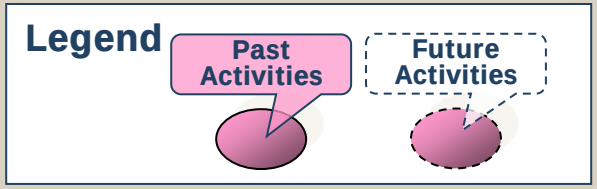
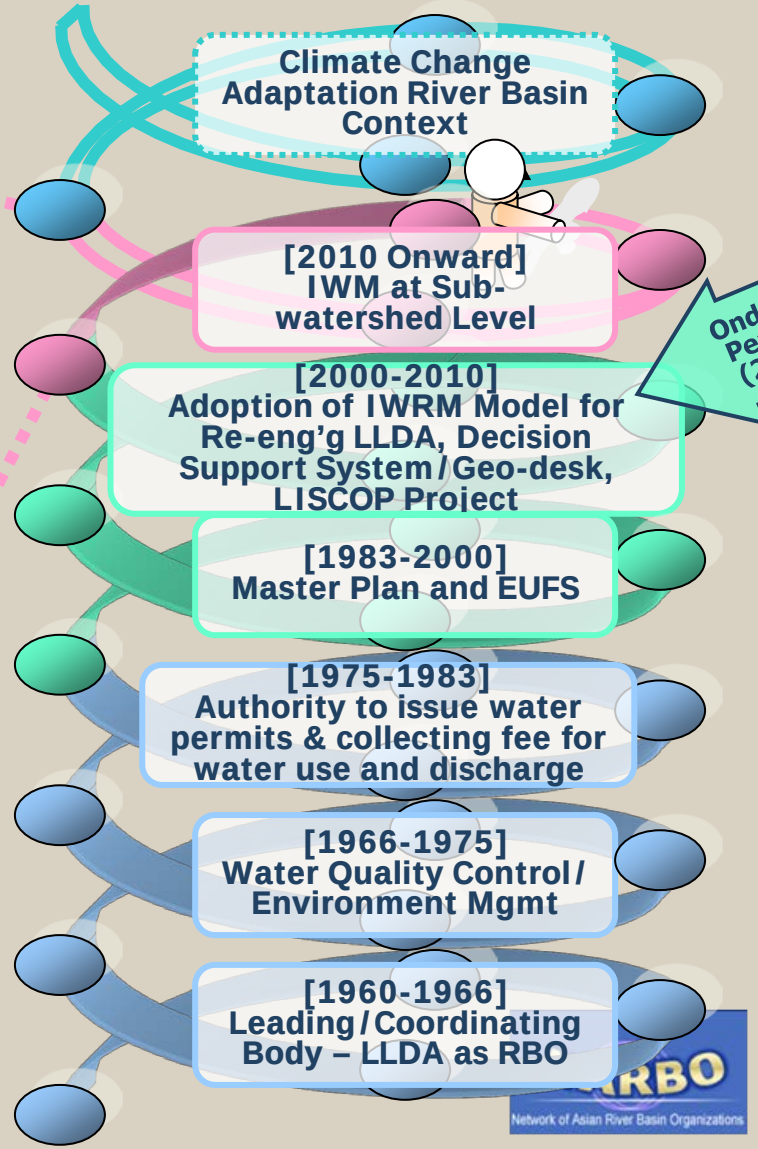
IWRM Progress in the Laguna de Bay Basin

Using the IWRM Spiral Model







The LLDA Self-Assessment

January to March 2007

NARBO Performance Benchmarking of Pilot River Basin Organizations

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The LLDA Self Assessment Team*

Name	Position
Dolora N. Nepomuceno	Chairperson
Cesar R. Quintos	Focal Person
Eduardo L. Torres	Member
Jose K. Carino	Member
Alicia E. Bongco	Member
Adelina Santos-Borja	Member
Lilibeth Joves	Member
Rosanna Rustica Avenido	Member
Aida Samiano	Member
Jacqueline N. Davo	Member
Jocelyn G. Sta. Ana	Member
Gil Orgil	Member
Emiterio Hernandez	Member

* Created under Memorandum Order No. 2007-09

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Self-Assessment Process

Steps	Timelines
• Creation of SAT and Secretariat	• January 2007
• Orientation and familiarization by NARBO Representatives	• January 26-27, 2007
• Consultation with SAT & drafting of SAR	• February 16-23
• Consultation with LLDA ground staff & stakeholders	
• Modification of SAR	
• Compilation of supporting documents	
• Presentation to Management Committee	• March 26
• Presentation to the LLDA Board	• March 27
• Finalization of SAR	
• Submission of SAR to NARBO Peer Reviewers	• March 27

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The LLDA Self-Assessment Report

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Overall Analysis and Recommendations

- On the 2007 Ratings: 36 out of 56 total rating for 14 indicators or 64.28%
- On 2011 target Ratings: 49 out of 56 total rating for 14 indicators or 87.5%

Notes: Given the current/on-going/planned initiatives for the next 3-5 years, supported by LISCOP & Carbonshed Projects, implementation of the LLDA Re-engineering Program including its Rationalization Plan, the realization of the LIDO Commitments, the expected improvements leading to target ratings for 2011 under key performance areas area reasonably achievable.

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Overall Analysis

- LLDA's strengths

Mission	RBO Status
Stakeholders	Customer involvement Customer feed back
Learning & Growth	Technical infrastructure
Internal Business Process	Planning maturity Data sharing
Finance	Financial independence Financial efficiency

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Areas needing improvement

Mission

Stakeholders

Learning & Growth

Internal Business Process

RBO Governance

Basin Livelihood

Environmental audits

Infrastructure Development

Organizational Development

Water Allocation

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SAT's Recommendations for improvement

- Sustain stakeholders partnership
- Develop & implement an integrated policy framework on water resources management
- Sustain & optimize the use of technical tools & IS technologies
- Prepare & implement an effective asset management plan including replacement program
- Establish permanent office including modern laboratory building, facilities & equipment
- Modernize/improve organizational structure & staffing
- Fully implement the LLDA Medium-Term IEC & Capacity Building Programs

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Conclusion and Recommendations on the Performance Benchmarking Exercise

- The exercise will enable the LLDA to fully realize its central role in IWRM of LdB and its watershed
- Gaps are easily identifiable given the successes & practical lessons learned
- The exercise provided a platform for possible experience and lessons learned sharing among RBOs
- The exercise has been challenging: carrying out an objective self-assessment given the built-in biases of the SAT being the key players themselves in moving IWRM in LLDA.
- SAT's stock knowledge of the RBO operation and its initiatives, access to important references/ documents, linkage to sources of info within and outside the LLDA contributed to the self assessment

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Difficulties Encountered & Recommendations

- For RBOs whose Missions are multi-faceted like the LLDA, need to contextualize the Mission & breakdown the indicator "RBO Status and Governance"
- On "Finance", specifically "cost recovery", need to clarify how the rating should be determined. For instance, in the case of LLDA which derives revenues from a number of sources, not only water users, how will percentage of operational costs be determined: LLDA-wide operational costs, or just the costs to operate or implement specific water use charging programs?
- Limited time to do self-assessment given the requisites (involvement of ground staff, middle & top management); lack of common time among self-assessors (SAT)
- Some indicators are less relevant, hence difficult to measure, e.g. sewerage & sanitation
- Attention to proper documentation and referencing of LLDA experiences/achievements and lessons learned

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The LLDA Peer Review

April 10-13, 2007

The Peer Review Team

- **Dr. Nguyen Tat Dac - Chairman**
  Former Senior Project Manager, Dong Nai RBO, Southern Institute for Water Resources Planning, Viet Nam
- **Mr. J.A.S.A. Jayasinghe – Member**
  Former Director, Mahaweli Authority of Sri Lanka
- **Mr. Tjoek Walujo Subijanto - Member**
  Former President Director, Jasa Tirta I Public Corporation, Indonesia
- **Ms. Supaporn Thongpook - Member**
  Former President, Ping RBO, Thailand

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Supported By

- **Mr. Ian Makin, Asian Development Bank**
- **Mr. Dennis Von Custodio, Asian Development Bank**
- **Ms. Arlene Inocencio, previously from International Water Management Institute**
- **Mr. Herath Mantrithilake, International Water Management Institute**

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Presentation of Self Assessment Report to the Peer Reviewers

April 10, 2007

Peer Reviewers Consultation Meeting with Ground Staff

April 10, 2007

LLDA Office Tour

April 10, 2007

Visit to the Permitting Section, Pollution Control Division

Visit to the LLDA Laboratory

Presentation of LLDA Decision Support System at IWRM Division

April 10, 2007

Engr. Emil Hernandez briefing the Peer Review Team on the LLDA-Decision Support System,

… while the staff and Peer Review Team Members listen

Lake Tour and ZOMAP Visit

April 11, 2007

Consultation Meeting with Fishpen Operators, FARMCs and Environmental Army

April 11, 2007

Consultation Meeting with Tanay LGU, FRBC and URS
April 11, 2007

Tanay Microwatershed Enhancement Sub-Project

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Site Visit of the Ayala Land Inc. Filtration Plant

April 12, 2007

ALI Filtration Plant, Brgy. Putatan, Muntinlupa

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Consultation Meeting with Eco-Industrial Waste Exchange (EcoIndex)

April 12, 2007

LIIP, Biñan, Laguna

Presentation of LISCOP and ACIAR Projects

April 12, 2007

LLDA Office in Calauan, Laguna

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Consultation Meeting with the FARMCs of the Seven Crater Lakes and San Pablo City Government

April 12, 2007

Sampalok Lake and Lake Pandin

Presentation of Results of Peer Review

April 13, 2007

Asian Development Bank
HQ, Mandaluyong City

Farewell Dinner

April 13, 2007

Linden Suites, Ortigas Center

Final Ratings Presented by the Peer Reviewers

CPA	Indicator	LLDA		PEER	
		As of Jan.07 Rating (0-4)	Target Rating for 2011	As of Jan.07 Rating	Target Rating for 2011
Mission	River Basin Organization status	3.5	4.0	3.5	4.0
	RBO Governance	3.0	3.0	4.0	4.0
Stakeholders	Customer Involvement	3.0	4.0	3.5	4.0
	Customer feed back	3.0	4.0	3.0	4.0
	Environment Audits	2.5	4.0	2.5	3.5
	Basin Livelihood	2.0	2.5	2.0	2.5
Learning and Growth	Human Resource Development	2.5	3.5	2.5	3.5
	Technical Development	2.0	2.5	2.0	3.0
	Organizational Development	2.0	3.0	2.5	3.5
Internal Business Processes	Planning Maturity	3.0	3.5	3.0	3.0
	Water Allocation	2.0	4.0	2.0	4.0
	Data sharing	3.0	4.0	3.0	4.0
Finance	Cost Recovery Operational	1.5	2.0	3.0	3.5
	Financial Efficiency	2.5	3.0	3.0	3.5

Outcome and Lessons Learned

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General Observations from the IWMI

- Excellent LLDA SA Team as evidenced by SA Report, meeting, work
- Strong SA Team
- Peer Review visit was well organized
- LLDA SA Team provided full support for PR Team and allowed access to information

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General Observations from the IWMI

- PR team actively looked into LLDA affairs
- LLDA showed openness and willingness to be subjected to peer review (as shown by consent and support of the leadership)
- PR Team showed willingness to learn and flexibility; and were very cordial
- PR Team showed expertise and understanding of their RBO and the issues of LLDA

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Over-all Assessment

- LLDA obtained the highest rating in terms of Key Performance Area among the four pilot RBOs
- LLDA mandate and functions are fully supported by enabling laws
- LLDA staff training is well organized and structured
- Stakeholders' consultation/participation is among the best among RBOs
- Laboratory and Decision Support System was impressive and can support the needs of LLDA

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Recommendations

- LLDA should move forward from a regulatory agency into an IWRM oriented agency
- LLDA is encouraged to interact / engage more with Peer Review team before and after the visit
- Use the availability of staff and stakeholders to the maximum
- Explore alternative ways of verifications/ consultations and take the advantage of “informal” opportunities to gain more insights from staff and stakeholders (do not rely only on group meetings)
- Work for ISO Certification and Accreditation

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Some Initiatives

TO IMPROVE TARGETS

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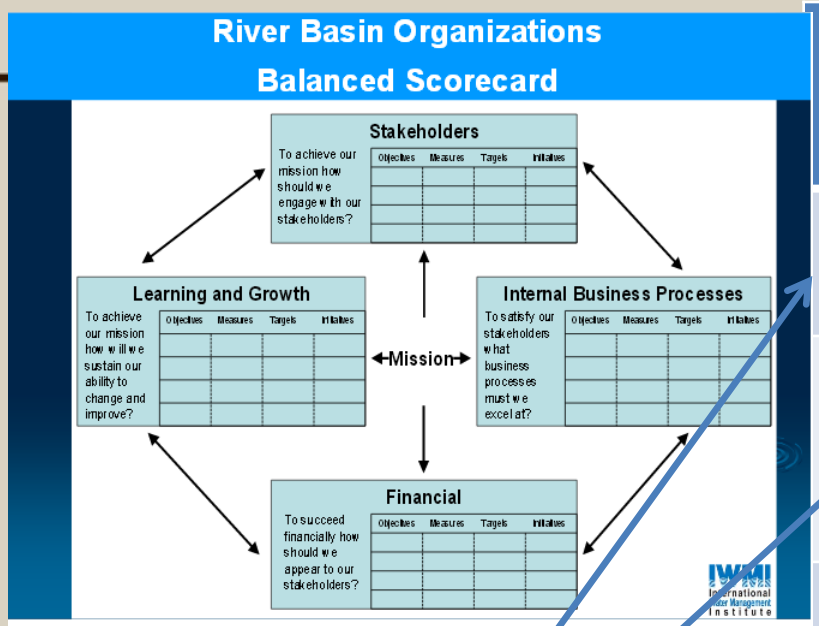
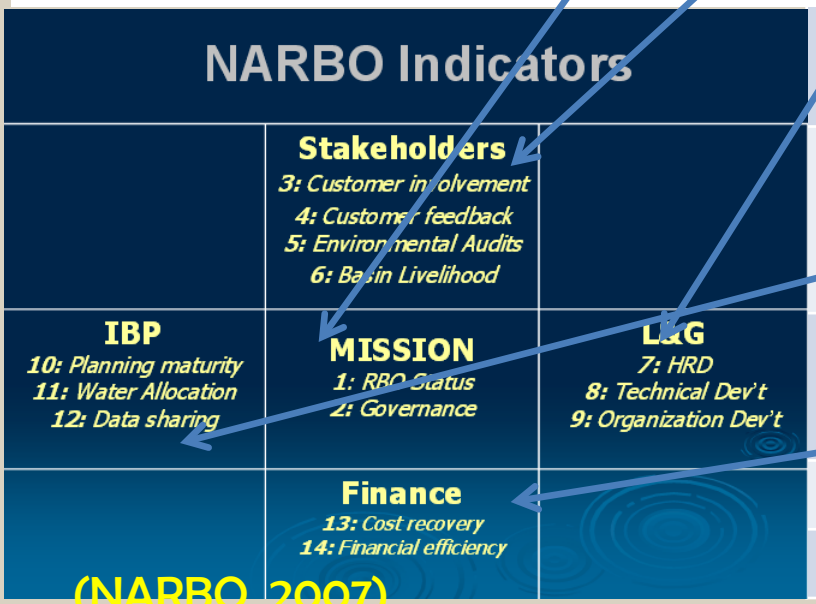
NARBO Performance Benchmarking





(NARBO, 2007)

Performance Indicators	Max Score	Jasas Tirta 2 (Indonesia)	Mahaweli Auth of Sri Lanka	LLDA	Red River Basin Org (Vietnam)
Mission					
1. RBO Status	4	3.0	2.5	3.5	1.5
2. RBO Governance	4	3.0	1.5	3.0	1.5
Stakeholders					
3. Customer involvement	4	4.0	1.5	3.0	2.0
4. Customer feedback	4	4.0	1.5	3.0	2.0
5. Environmental audits	4	2.0	2.5	2.5	0.5
6. Basin livelihoods	4	1.0	1.5	2.0	2.5
Learning & Growth					
7. Human resource development	4	3.0	2.0	2.5	2.0
8. Technical development	4	1.5	1.0	2.0	2.0
9. Organizational development	4	3.0	1.5	2.0	2.0
Internal Business Objectives					
10. Planning maturity	4	1.5	2.0	3.0	1.5
11. Water allocation	4	2.5	2.0	2.0	1.5
12. Data sharing	4	2.0	1.5	3.0	2.0
Finance					
13. Cost recovery	4	2.0	0.5	1.5	0.0
14. Financial efficiency	4	3.0	1.0	2.5	0.5
TOTAL	**56**	**36.5**	**22.5**	**36.5**	**21.5**
As % of maximum score of 56	100	63	40	63	38

Katsunori Iha
Research Economist
Global Footprint Network

Australian AID

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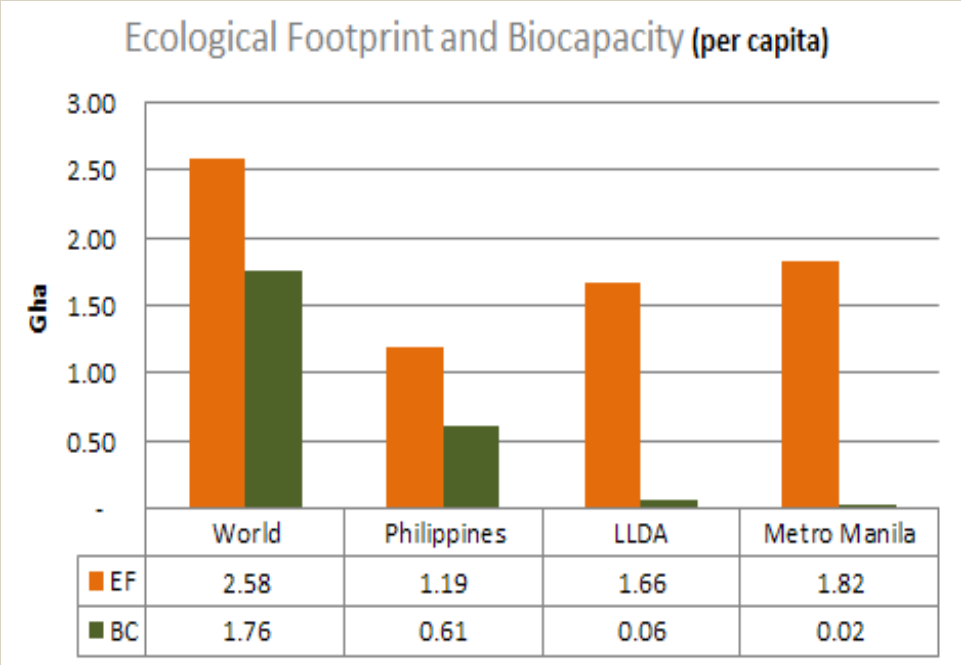
Key Finding 1: The biocapacity of 30 Laguna Lake regions are required to meet the demand of its population



	World	Philippines	LLDA	Metro Manila
EF	2.58	1.19	1.66	1.82
BC	1.76	0.61	0.06	0.02
% dif.	1.5	1.9	27.7	91.0

Australian AID

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Wealth Accounting and Valuation of Ecosystem Services in the Philippines – Phil-WAVES

Key policy issue identified for Phil-WAVES: Laguna Lake

- **National water accounts cannot be constructed** under Phil-WAVES due to their complexity and limited budget resources.
- Selected **Laguna Lake as a case study**,
  - LLDA request for **re-pricing consumptive water**
  - However, the **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.

Phil-WAVES will be able to inform this debate by

(i) Providing detailed water accounts & water pricing scheme;

(ii) Testing and developing tools and methodologies for an ecosystem valuation of water uses in Laguna Lake;

Policy Issues to be addressed by Phil-WAVES

Sector	Economic & Social Policy Issues	Environmental Concerns
Laguna Lake case study	o Analyze competing land uses from capture and culture fisheries, recreation, & potential water demand from Metro Manila; o Improve income for local communities; o Analyze production costs and developing water pricing scheme;	o Account for ecosystem services, including watershed protection, pollution & flood control; o Increase water supply; o Reduce environmental risk;

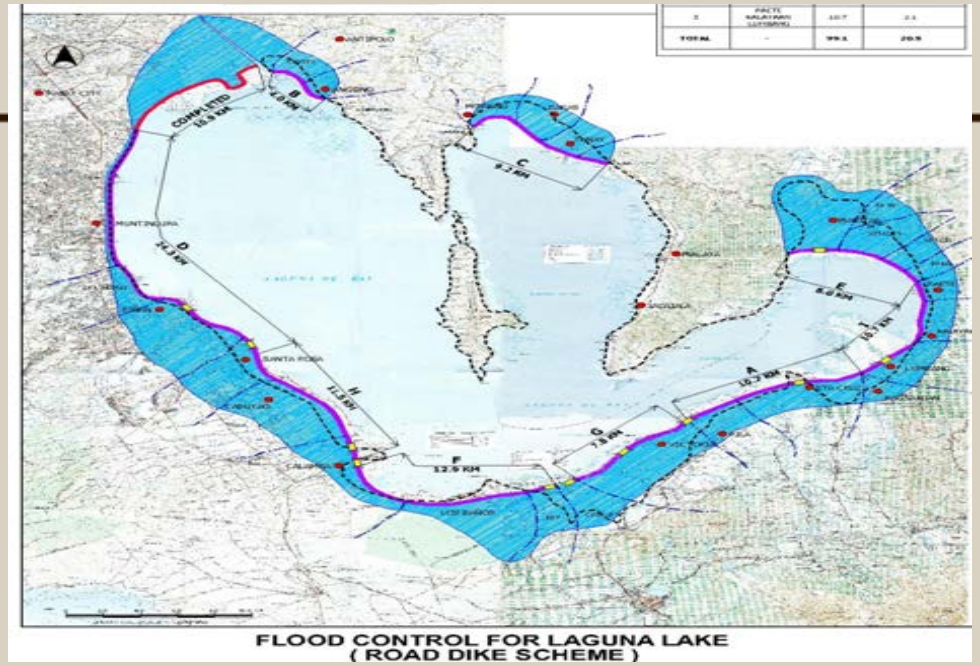
Raw Water Permitting

- **Maynilad Water Services, Inc.**
  - Water Permit (2009): 300,000 cu. m at P3.61/cu.m.
- **Manila Water Company,Inc.**
  - Allowable volume: 50 MLD
  - Resource user fee:
    - Fixed Fee: P500,000 subject to 10% annual increase every 5 years; additional P500,000 if allowable volume is exceeded
    - Minimum guarantee payment: P450,000/month or P5.4M when water production is below daily ave. prodn.
    - Variable Fee:
      - P0.30/cu.m. for 1st 100 MLD
      - P0.25/cu. m for next 101-200 MLD
      - P0.20/ cu.m. for next 201-300 MLD

    Signing of Agreement: August 20, 2013

LLDA-DPWH FLOOD CONTROL AND RIVER BASIN IMPROVEMENT PROJECT

Flood Control Projects



Dredging of river mouths has to be integrated and synchronized with flood control and drainage systems

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SUMMARY OF FLOOD AND SOIL EROSION CONTROL PROJECTS

Project Title	Funding Requirement (in Pesos)	Appropriation Source	Collaborating Agency
LLDA-DPWH Flood Control and River Basin Improvement Project			
A. Sta Maria-Mabitac River	400,000,000	Department of Budget and Management	Laguna Lake Development Authority
B. Sta Cruz River	180,000,000	DBM	LLDA
C. San Pedro River	100,000,000	DBM	LLDA
D. Biñan River	100,000,000	DBM	LLDA
TOTAL	780,000,000		
Source of Fund: Php780M is part of the Php351.72B fund approved by NEDA on Sept. 14, 2012 for the Manila Flood Management Master Plan prepared by DPWH.			

LISCOP

ADDITIONAL FINANCING
Component 1

.....meeting the challenges towards sustainable development




Completed 33 Sub-projects Under Original Financing

17 MRF

3 Flood Control

3 WWTF

1 Sanitary Landfill

6 Ecological Enhancement / eco-tourism

2 Rehab of dumpsites

1 Reforestation

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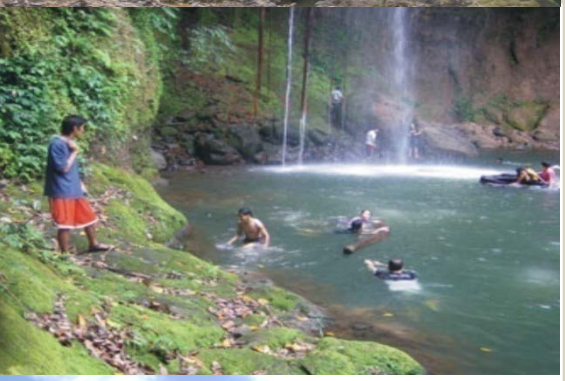
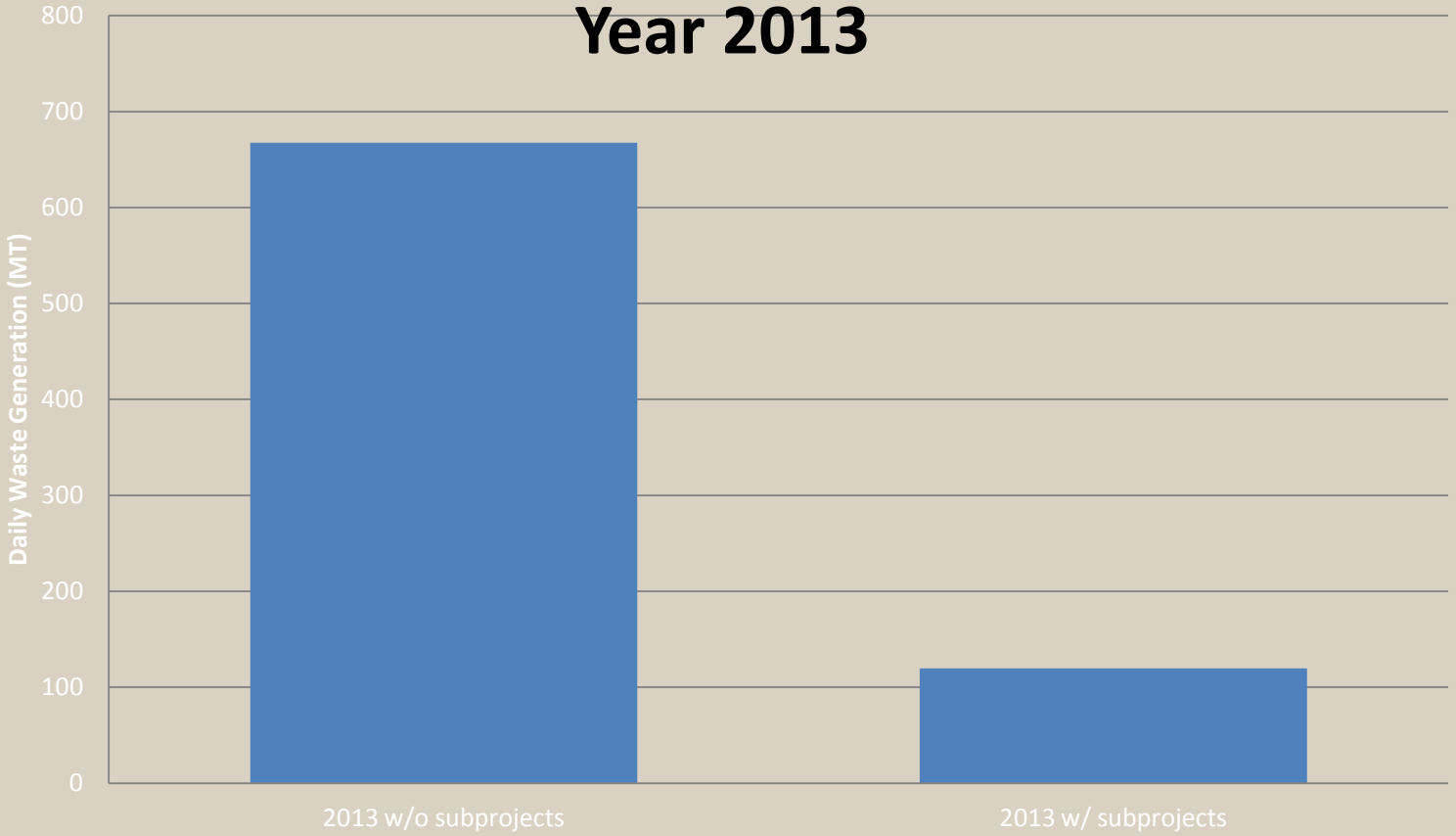
Sub-Projects under Additional Financing



10 sub-projects approved, completed and under procurement

7 under appraisal/ approval stage at MDFO-Policy Governing Board

Solid Waste Generation in a Given Municipalities Year 2013



With LISCOP sub-projects: solid wastes reduced by 82% or by 547.85 MT per day or from 667.6 MT per day or about 67 trucks without sub-projects to 119.75 MTper day or down to 12 trucks

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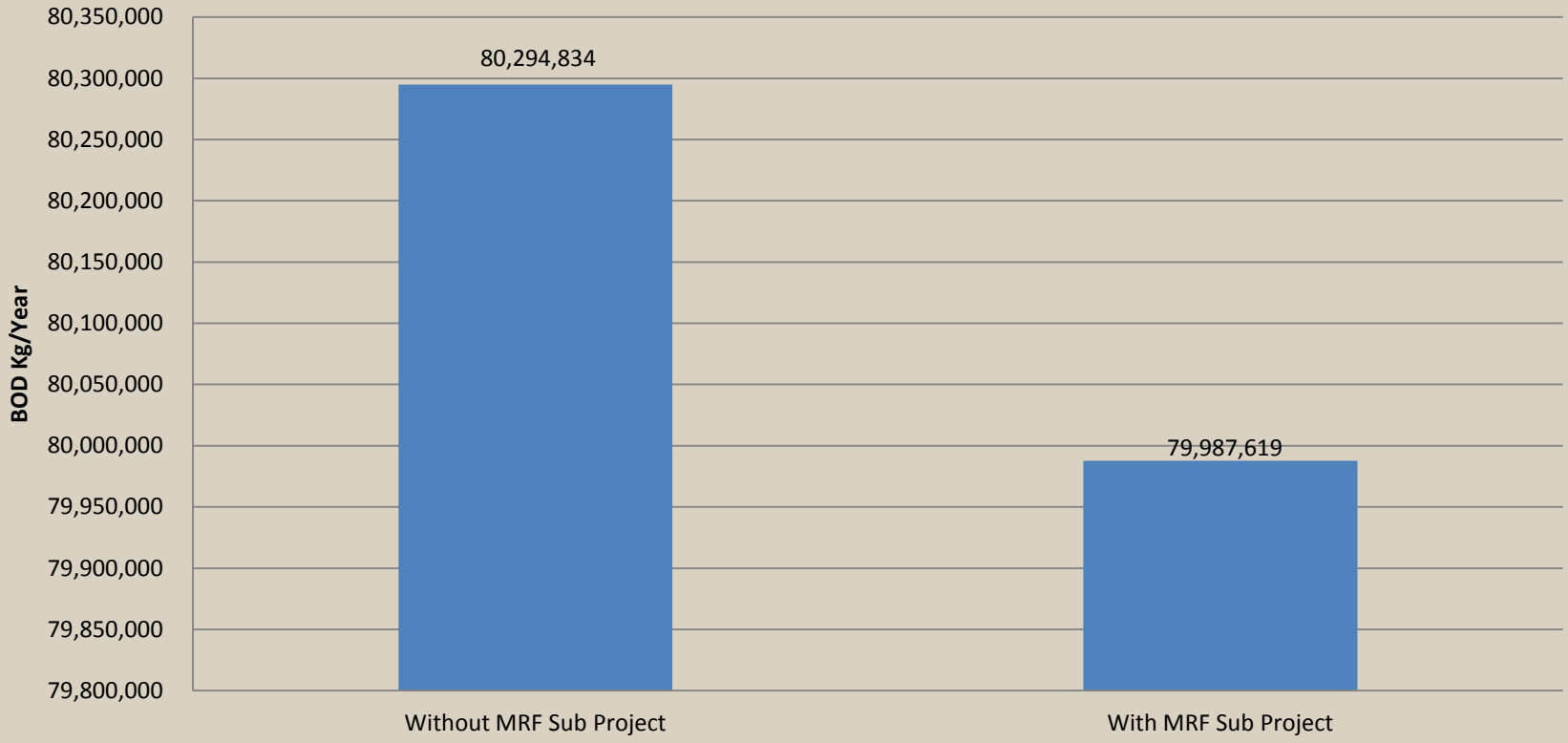
2013 BOD Loading Reduction of 17 Sub Projects



With the intervention of MRF LISCOP sub projects, BOD loading of 80,285 MT/yr. is reduced to about 79,987 MT/yr. Or by 0.38% or 307,214.29 kg or 307 MT/yr.

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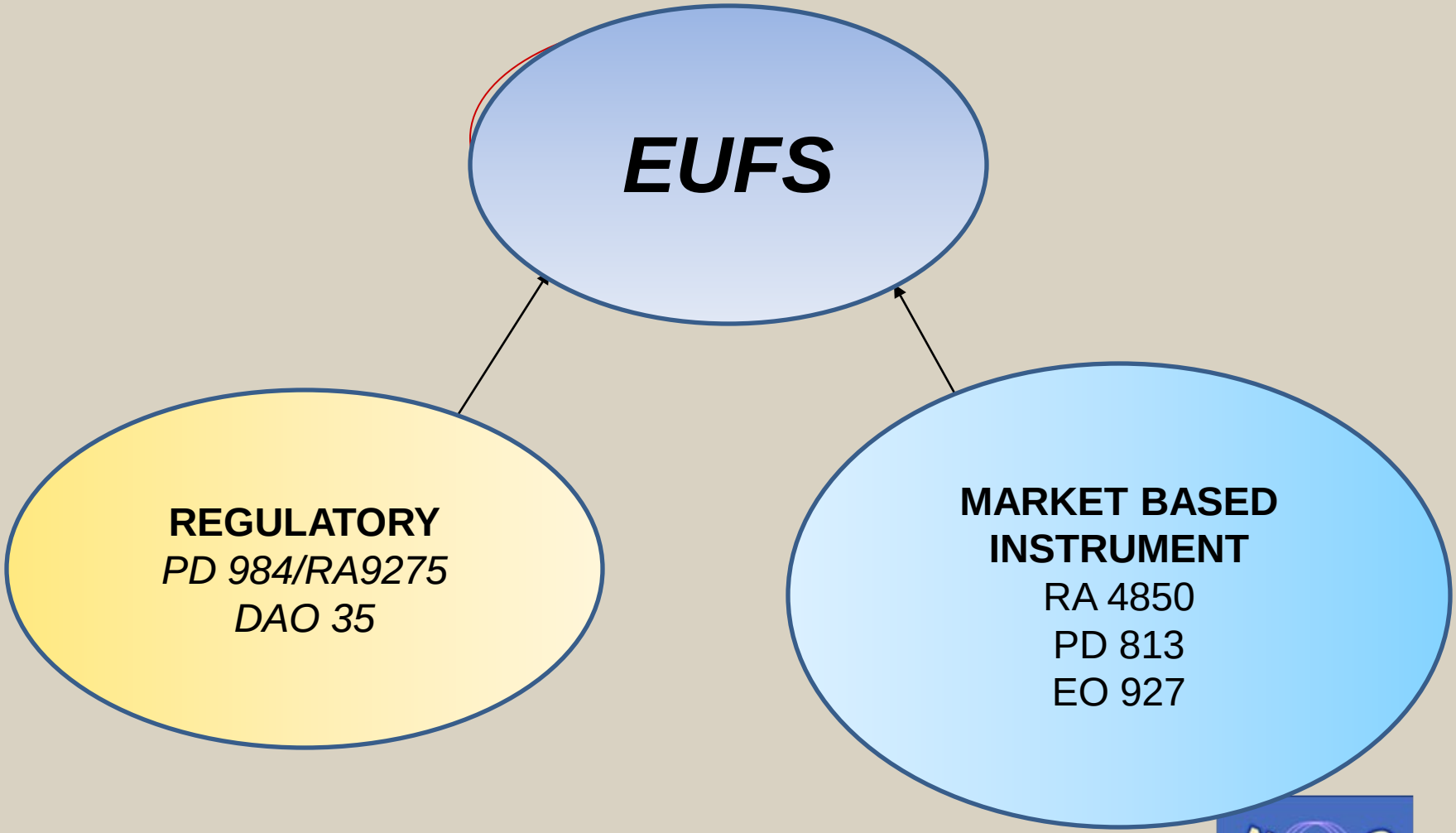
Environmental User Fee System
LLDA Model



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Policies & Institutional Actions
FUFS Enhancement: Key Priorities

Recommendations	Priorities	Remarks
Sustain EUFS implementation putting more emphasis : •Expanding coverage •Compliance monitoring esp. of industrial/manufacturing, food sector •Improve database – diff. btwn Industrial & non-industrial establishments •Assist non-complying establishments to access info on technologies, etc.	•Determining the universe: Tie-up with LGUs via the Business Permit database; •geo-tagging application •Replication/scale up of CACs	e.g., MOAs with Muntinlupa City, Q.C., Marikina City, etc. including revenue sharing scheme (Q.C.)
Inclusion of more PPPs -Aggregate of HM	•Retain BOD, TSS •Phosphorous & nitrate •Heavy metals (Lead, Cadmium, Chromuim, Zinc, Nickel & Copper	Continue to use single parameter for each establishment 1st Qtr HM analysis thru outsourcing; 2nd qtr –LLDA Lab
-- COD		Pending GES approval, recommend eff. standards thru

Short-Medium Term (2013-2014) Priorities

Recommendations	Priorities	Remarks
Propose incentives to encourage “zero discharge”	Refine guidelines on incentives for “zero discharge”	Practice of ZD is limited mostly to hauling wastewater to accredited treaters, rather than recycling/ re-use
Increase penalties	Continue to impose P10,000 daily penalty Review of existing P5,000 admin. Fine for operating without clearance/permits	Harmonization of LLDA rules with CWA
•Introduce concept of “Pollution Units” •New fixed fee & variable fee rates •Use of fixed fee for SMEs; flat rate for subdivisions, condos, commercial ctrs, etc.	Consult Management, stakeholders; conduct of further studies	

Medium Term (2014)

Recommendations	Priorities	Remarks
Concentration based to load based EUF	Conduct key policy studies	
Differentiation of EUFs by industrial sector	-do	
Effluent trading among industrial sectors	-do	
Set up investment fund for wastewater projects using domestic EUF collections – financing of sewerage, septage & sanitation projects using investment fund	-do-	Current clamor among LGUs for LLDA to share EUF collections for environmental projects following the model for fishpen fee revenue sharing

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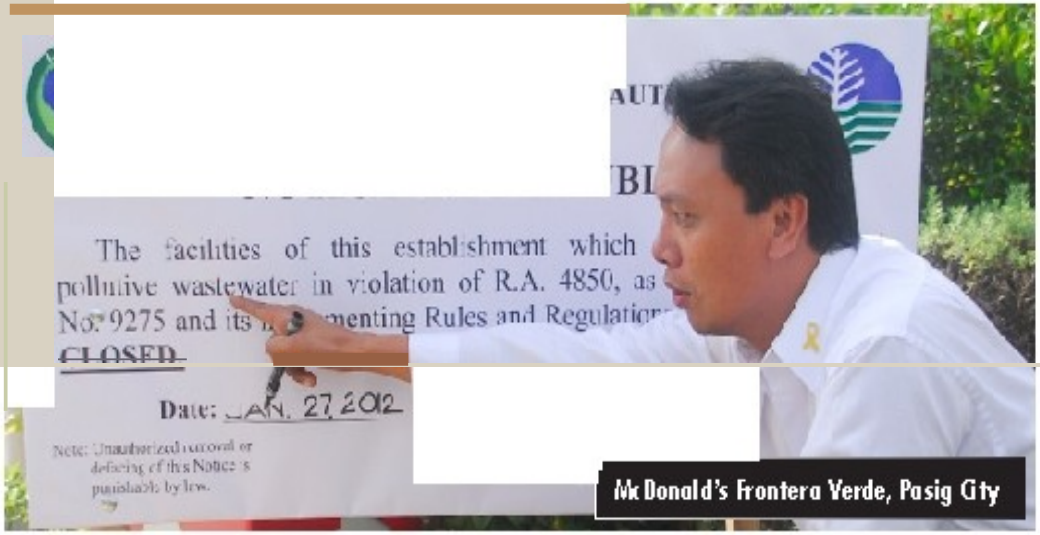
Towards Determining the LLDA Universe: MOA Signing with LGUs

Marikina

Quezon City

Enforcement of CDOs



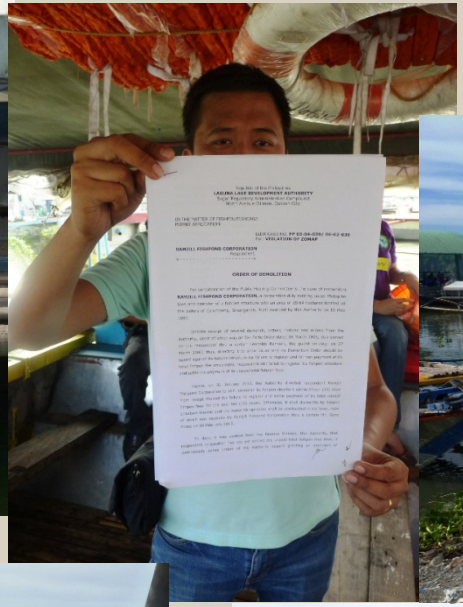
Mc Donald's Frontera Verde, Pasig City

KFC Shaw, Blvd., Pasig City

King Sue Ham and Sausage Co., Inc.

Jollibee San Mateo, Rizal

Demolition of Illegal Aquastructures



SELF-DEMOLITION OF ILLEGAL AQUASTRUCTURES

Managing Environmental Risks to Food and Health Security in Asian Watersheds ("LakeHEAD" Project

A research collaboration with the RIHN/Yokohama Univ. (Japan), U.P. (Manila/Los Banos

2012

CONSTRUCTION OF LLDA GREEN BUILDING

Building Model

Thank you for your attention!