

**NARBO'S 9<sup>TH</sup> IWRM TRAINING**  
12-19 May 2014 • Philippines



*Building on IWRM Good Practices*

*The Laguna Lake Basin Experience*

# “STAKEHOLDERS PARTICIPATION IN IWRM IN LAGUNA LAKE BASIN”

- The LLDA Experience -

# OUTLINE OF PRESENTATION

A. Background

B. River Rehabilitation Program

i. Organization of River Councils (RCs) and Environmental Army (EAs)

ii. Adopt-A-River Project

iii. National Greening Program (NGP)

C. FARMC

D. ECO-INDEX

E. Knife Fish Project



# Existing Water Uses



Fisheries



Irrigation



Power Generation



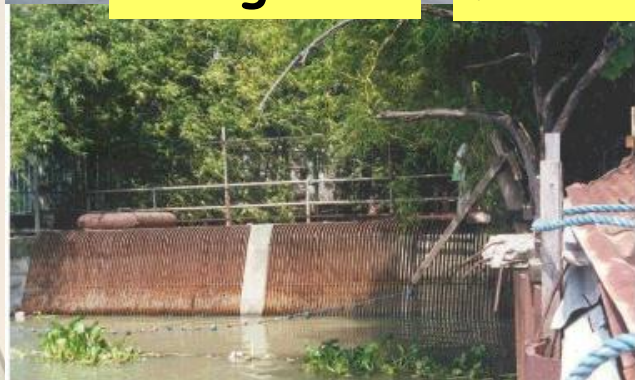
Navigation



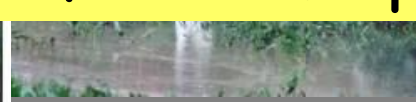
Habitat for various species



Industrial cooling



Drinking water supply



Recreation



...and many others



# Current Issues and Concerns

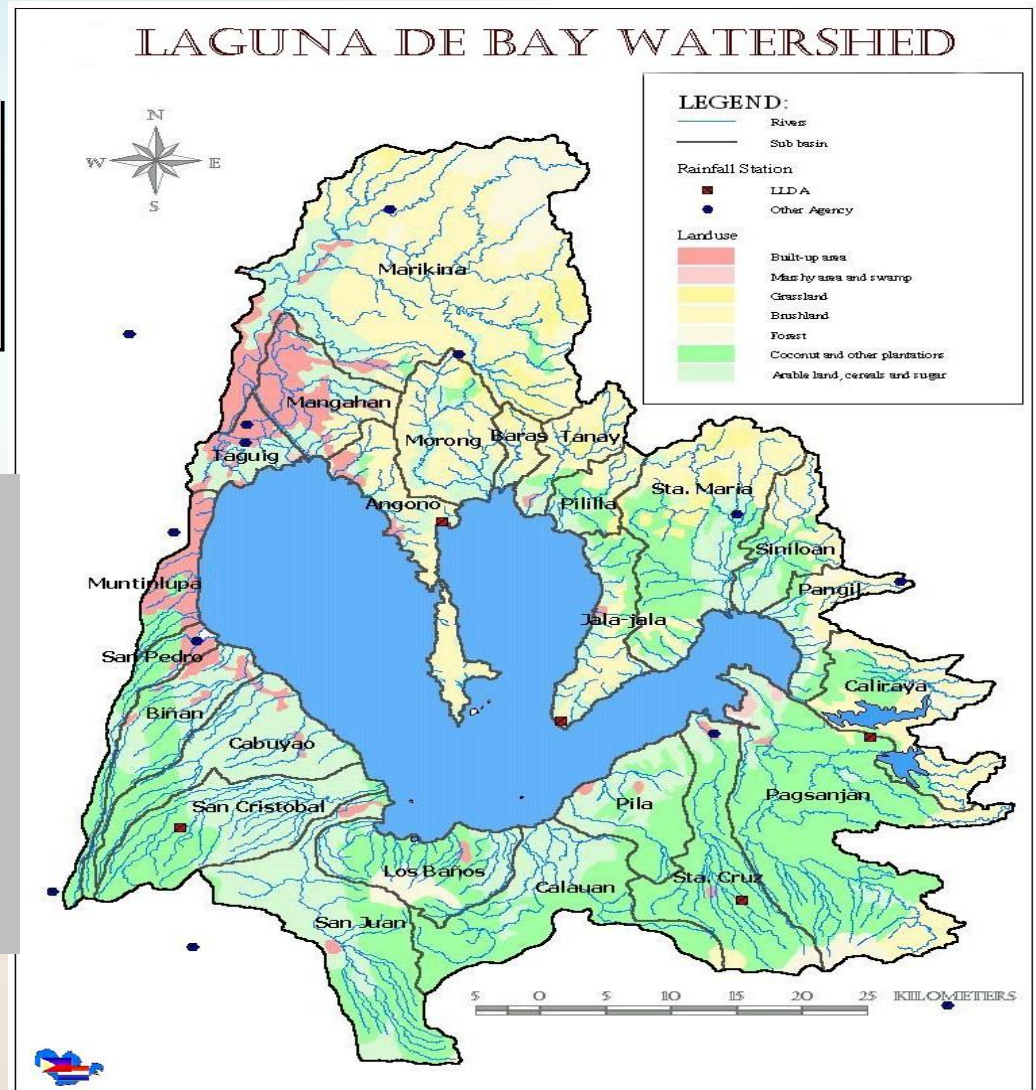
- Rampant dumping of garbage
- Flooding
- Shoreland reclamations/encroachment
- Forest denudation
- Quarrying
- Water pollution
  - Decline in fish harvest/Fish kills
  - Unsuitability of water for irrigation
  - Hazard of water for recreation
  - More costly water treatment
- Air pollution
- Rapid siltation
- Loss of biodiversity



# RIVER REHABILITATION PROGRAM

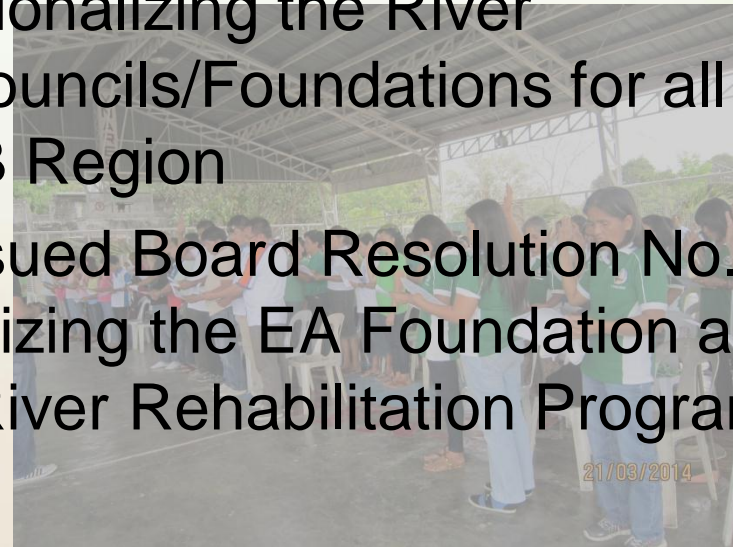
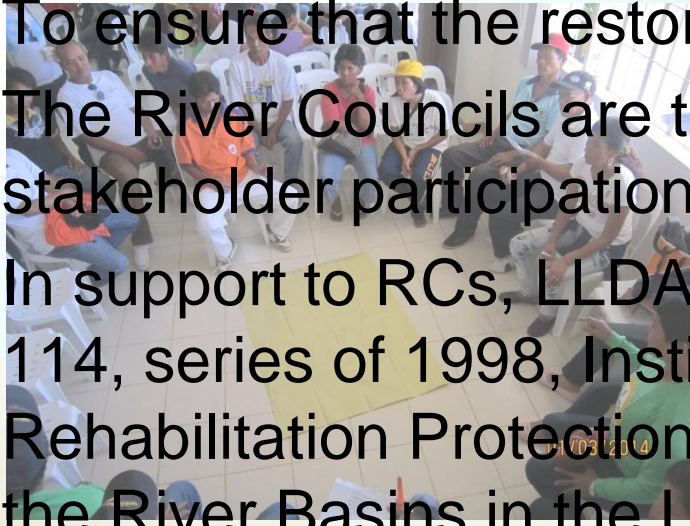
## Basin Approach to Water Resources Management

- Geographic Focus is the watershed
- Participation and partnership
- Strong science and sound management



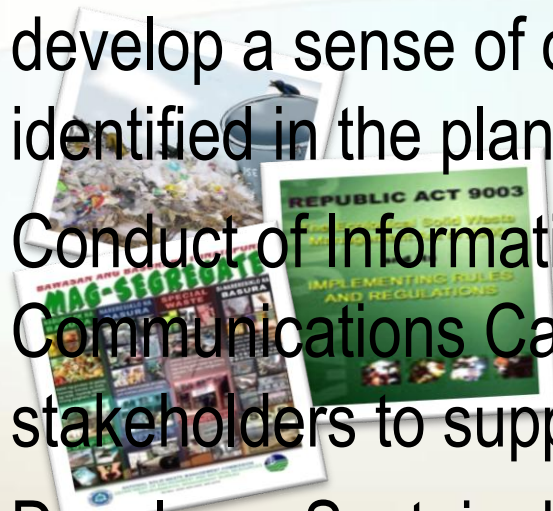
# Organization of River Councils and Environmental Army

- To ensure that the restoration effort is sustained
- The River Councils are the mechanisms that ensure stakeholder participation and community involvement
- In support to RCs, LLDA issued Board Resolution No. 114, series of 1998, Institutionalizing the River Rehabilitation Protection Councils/Foundations for all of the River Basins in the LDB Region
- In support to EAs, LLDA issued Board Resolution No. 325, series of 2007, recognizing the EA Foundation as official partner of LLDA in River Rehabilitation Program



# Functions of RCs/EAs

- Formulate environmentally sound Micro-watershed Plans (formulated in a participative manner in order to develop a sense of ownership for the activities identified in the plan)
- Conduct of Information, Education and Communications Campaign (ultimately to engage stakeholders to support the restoration effort)
- Develop a Sustainable Funding Mechanism (for the success of any river restoration effort will ultimately depend on a sound financial foundation)



# Activities of RCs/EAs

## River Clean-up



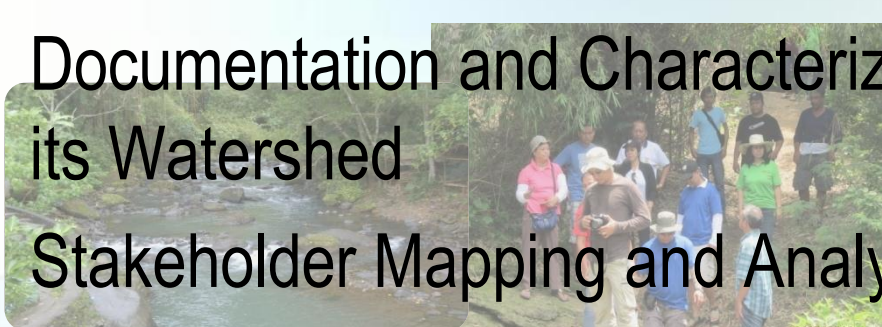
## Tree Planting

## Recruitment and Strengthening Seminars



# Adopt – A – River Project

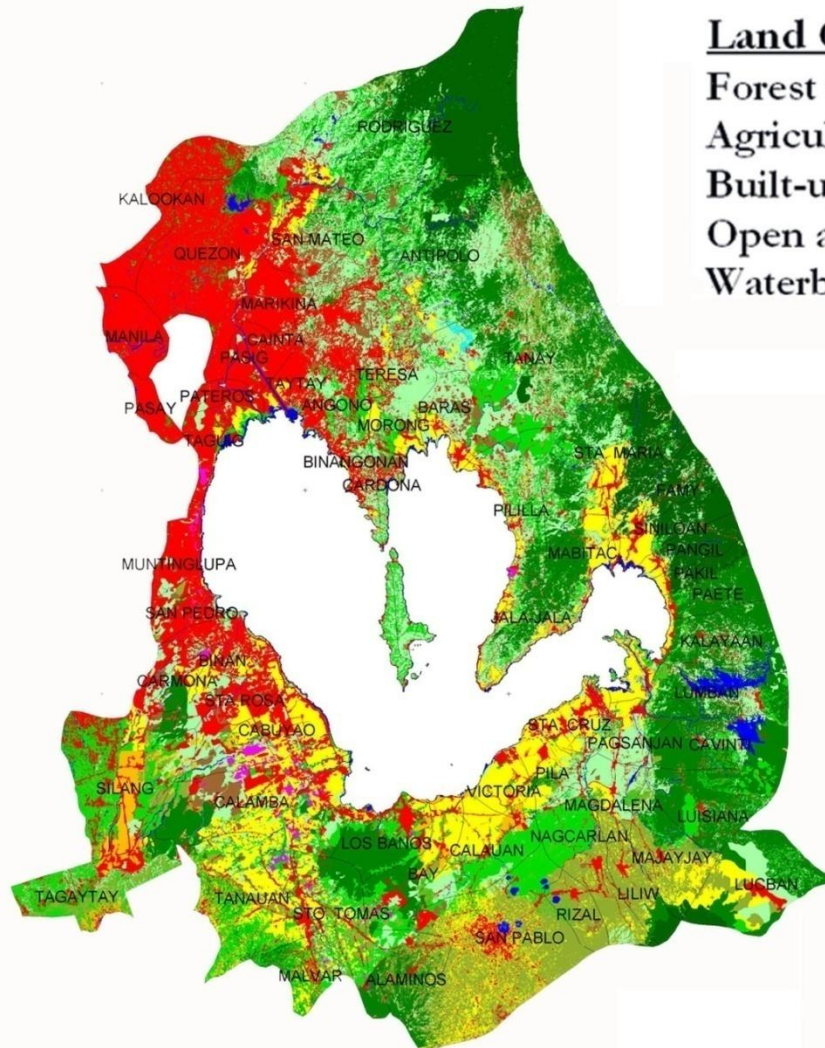
- Documentation and Characterization of the River and its Watershed
- Stakeholder Mapping and Analysis
- Participative Environmental Action Planning
- Identification of Priority Interventions
- Signing of Memorandum of Agreement
- Implementation of the Action Plan



# National Greening Program (NGP)

- Executive Order 26 dated February 24, 2011, aims to plant 1.5 billion seedlings in 1.5 million hectares of public lands in a span of five years
- EO 26 aims to reduce poverty, promote food security, environmental stability and biodiversity
- Mobilize National Government Agencies, government employees, students and other stakeholders
- ***The LLDA Board of Directors committed One Million seedlings within the Laguna de Bay Region***

# One Million Trees within the LDB Region



## Land Cover Map:

Forest Cover	-	24%
Agriculture	-	20%
Built-up areas	-	21%
Open areas	-	33%
Waterbodies	-	2%

### LEGEND:

2002-2003	
	WATERBODIES
	SECONDARY FOREST
	BARELAND
	PRIMARY FOREST
	BUILTUP_ROAD
	INDUSTRIAL
	AGRICULTURE
	BRUSHLAND
	GRASSLAND
	COCONUT PLANTATION
	RICEFIELD
	POULTRY/PIGGERY

Based on a SPOT 5 Image  
Unsupervised Classification  
Processed by DARUMA consultant  
Thru the Carbonshed Project



# Tree Planting, Bamboo Training and MOA Signing



Bamboo Training



MOA Signing



Tree Planting Activities

# Fisheries and Aquatic Resources Management Councils (FARMCs)

- Republic Act 8550 also known as “The Philippine Fisheries Code of 1996” with the Bureau of Fisheries and Aquatic Resources (BFAR) of the Department of Agriculture as the lead agency
- MOA between LLDA and BFAR, for LLDA to take the lead in the organization of FARMCs specifically within the Laguna de Bay Region
- LLDA Board Resolution No. 137, Series of June, 2000 was issued for the organization of FARMCs



# Activities of FARMCs



Election of Officers



Fishwarden Deputation/Para-Legal Training



Operation against Illegal Fishing



Lake Seeding

# Eco-Industrial Exchange Network (Eco-Index), Inc.

## VISION:

A dynamic leader in industrial ecology and economic excellence strengthening the network among stakeholders in CALABARZON Region

## MISSION:

An organization that is capable of implementing environmental initiatives and resolving issues in the most economical and efficient ways



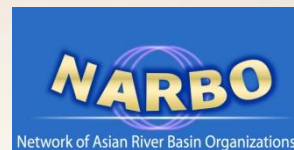
# Eco-Index Goals

- Promote linkage among Industrial Estates (IEs) and other sectors in the CALABARZON area
- Capability building of its member Industrial Estates with each locators therein
- Produce a publication containing e-Database on wastegenerated by each locator



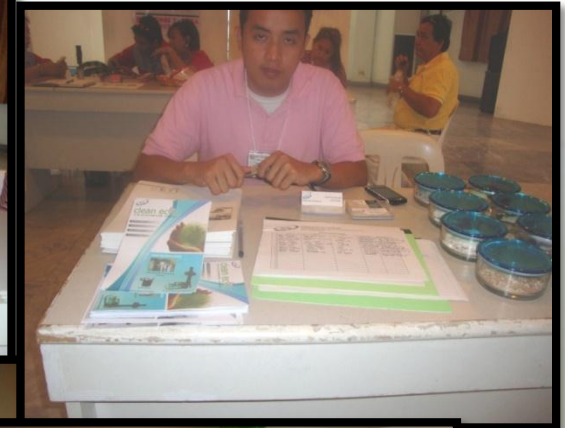
# Eco-Index Activities

## Planning Workshop cum Team Building



# Eco-Index Activities

## Exhibitors during the Eco-index Resource Recovery Event



# Eco-Index Activities



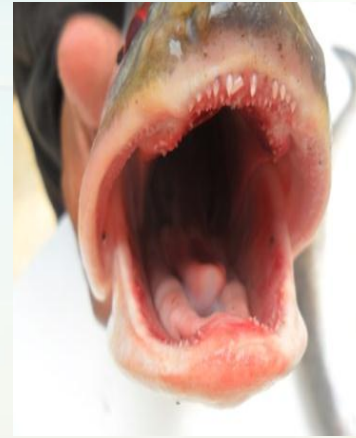
**Tree Planting Activities**

**Seminars/Pollution Control Officers Training**



# Knife Fish Project

## The Clown Knife Fish (*Chitala* sp.)



# Knife Fish Project

## Impacts and Threats

- Alarming impact on indigenous species (considering that the knife fish is a carnivorous species)
- Economic operation of aquaculture in the lake

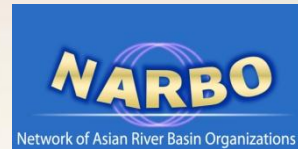
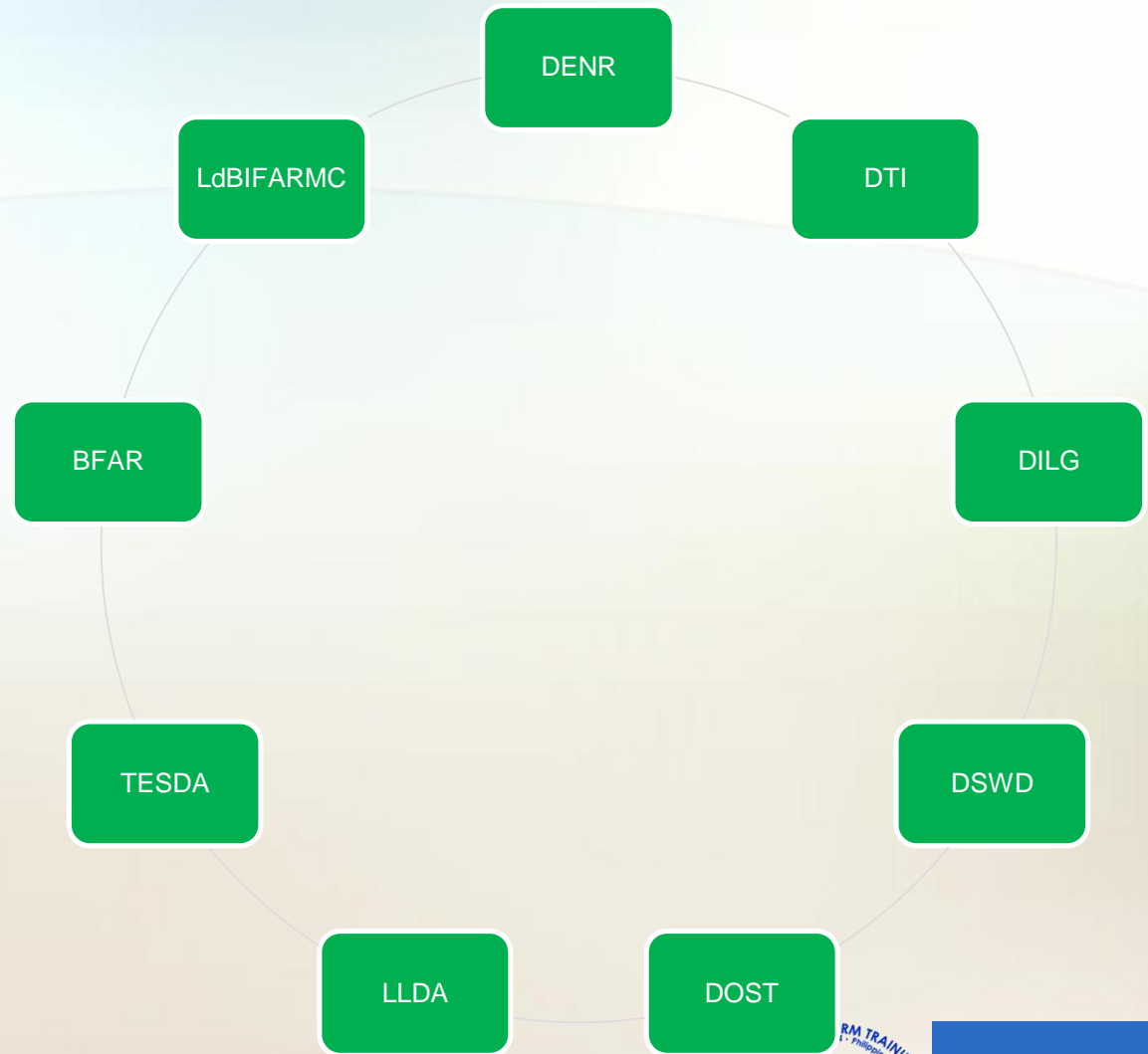
## Economic Valuation

- 1 kilo Knife fish consume 7 kilos of fish
- Estimated cost is P 1,050.00 (BFAR 2013)



# What has been done?

Creation of the Inter-Agency Technical Working Group on the Containment of Knife Fish Infestation in Laguna de Bay



# National Forum and MOA Signing on the Containment of Knife Fish Infestation in Laguna de Bai held on June 14, 2013 at Taguig City University, Upper Bicutan, Taguig City



# Knife Fish Project

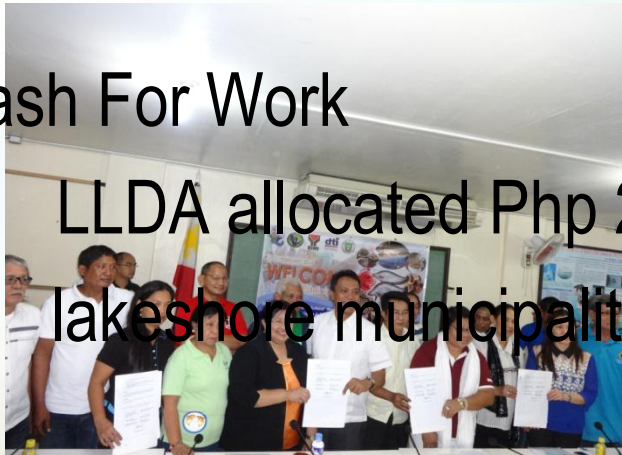
- Creation of the National Knife fish Research and Development Committee
- IEC Component (distribution of IEC Materials and a video on Knife fish is ready for mass production)
- Survey of 100 fisherfolks and Households on their knowledge and practices about knife fish
- Creation of livelihood opportunities Committee
- MOA Signing with the Lakeshore Municipalities within the LDB Region



# Livelihood Project on Knife Fish

## Project Components:

- Cash For Work



LLDA allocated Php 2.1 Million intended for 21 lakeshore municipalities within the LDB Region

- Establishment of mini processing plants for the utilization of knife fish into Value Added Products



# Summary/Lessons Learned

- Community participation and involvement in all aspects in project planning and implementation is crucial to the success of the project
- Commitment of the Local Government Units insofar as implementation of various laws and regulations approved by the LLDA Board and by their respective approved Ordinances
- Active involvement of different National Agencies and industries as partners of LLDA towards the protection and rehabilitation of the Lake and its tributaries
- Sustained IEM Campaigns to a wider number of people to solicit their participation and involvement in various rehabilitation efforts
- Continuous mentoring and provision of trainings/seminars to different organizations involved in various river rehabilitation activities



Thank you!!!

