



Making Invisible Information Visible: Impacts of the Manila Bay Area Environmental Atlas

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Outline of presentation

- Features of the Manila Bay Area Environmental Atlas
- Impacts
- Challenges

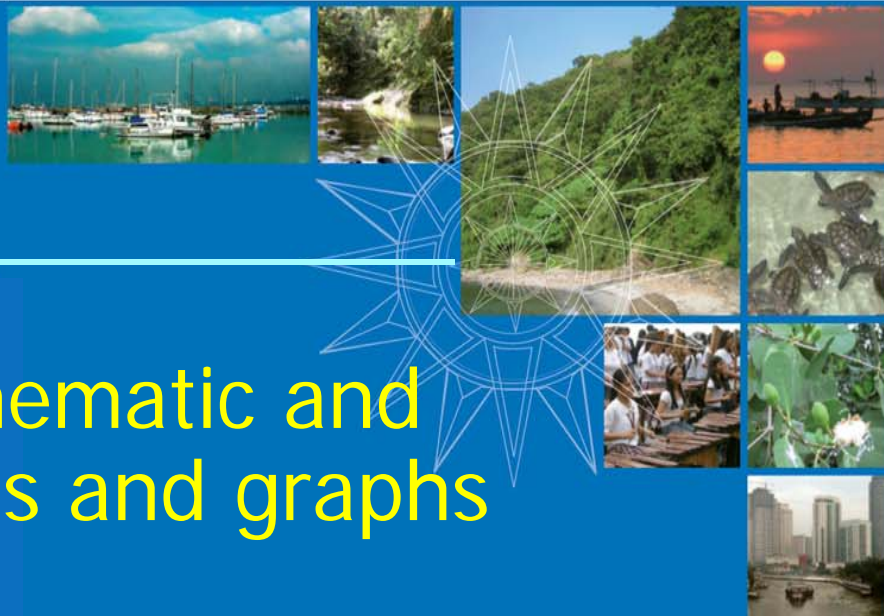


Objectives

- To enhance stakeholders' awareness and knowledge on various natural resources and 'engineered' structures and facilities, the current environmental status and impacts of different uses and users to the environment and to the people.
- To provide information for policy-making, planning, monitoring and overall management of the Manila Bay area



Manila Bay Area Environmental Atlas



- Collection of data in thematic and composite maps, tables and graphs
 - Physical
 - Biological
 - Socioeconomic
- Identifies environmental issues
- Printed and GIS format
- Prepared by the Manila Bay Area Information Network and PEMSEA



Features

- Maps



Features

- Maps
- Graphs

Figure 7. Total Volume of Groundwater Granted by Purpose (in lps).

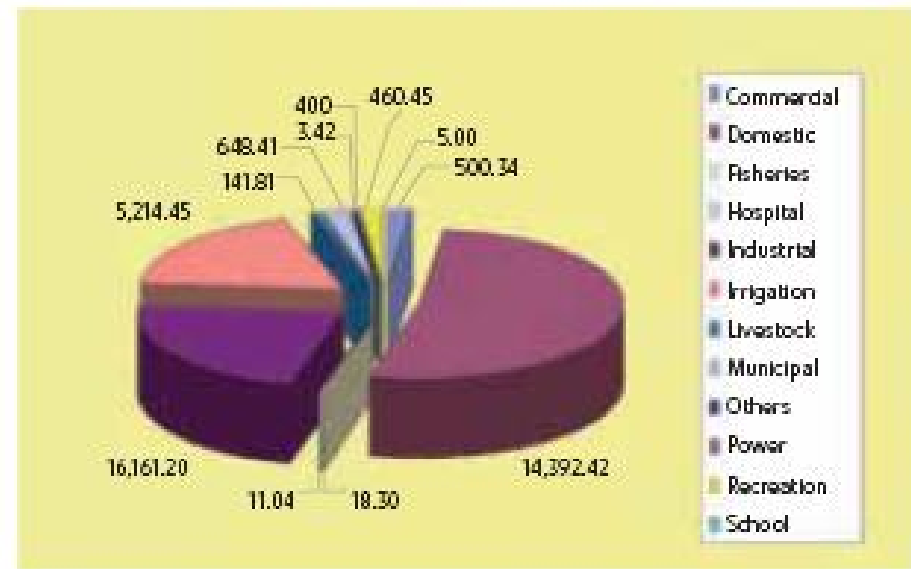
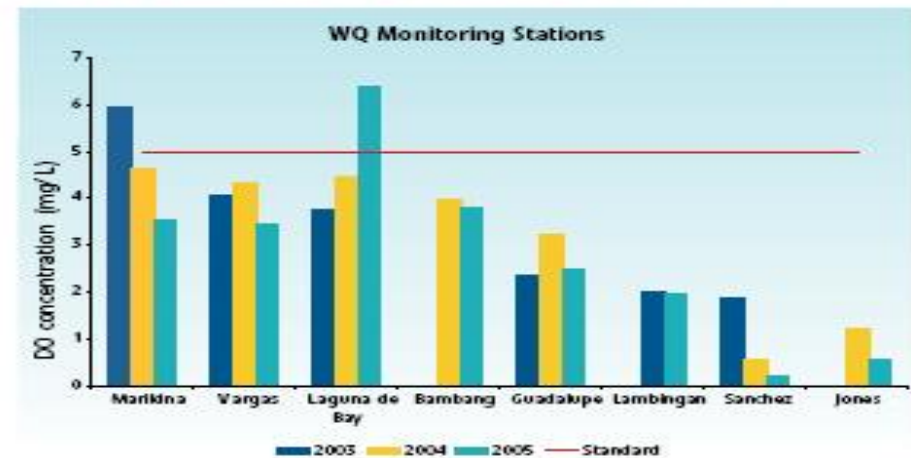


Figure 10. Dissolved Oxygen at Stations along Pasig River.



Note: Graph presents eight-month data averages from January to August for 2004 and 2005 and six-month data averages from February to July 2003.
Source: WQMS-EMB, 2005.

Features

- Maps
- Graphs
- Tables

Table 2. Use Value of Manila Bay's Resources.

Valuation Item	Net Value	Units
I. Major Bay-wide Use Values		
A. Offshore Fisheries	641,300,800	Average Peso/year
B. Aquaculture/Mariculture	5,069,555,488	Average Peso/year
C. Ports and Harbors	865,884,407	Average Peso/year
D. Tourism	1,969,329,315	Peso
II. Habitat Specific Values		
A. Mangrove Habitats		
<i>Direct Use Value</i>	7,880,794 <i>(managed)</i>	Average Peso/year
<i>Indirect Use Value</i>	161,266,291 <i>(managed)</i>	Average Peso/year
B. Coral Reefs		
		Low: 8,410 pesos/ ha/year
		High: 10,685 pesos/ ha/year
<i>Carabao Island</i>	398,010	Peso/year
C. Seagrasses and Seaweeds	No data yet	
D. Mudflats	Included in Mangrove valuation	
Total Use Value	8,715,615,105	

Source: PEMSEA and MBE MP, 2006.

IMPACTS



Improved management

Improved performance

Increased awareness and enhanced knowledge

Increased awareness and knowledge

- Local governments
- Libraries of various universities
- Funding institutions
- Government agencies
- Non-governmental organizations
- Private sector



Enhanced performance

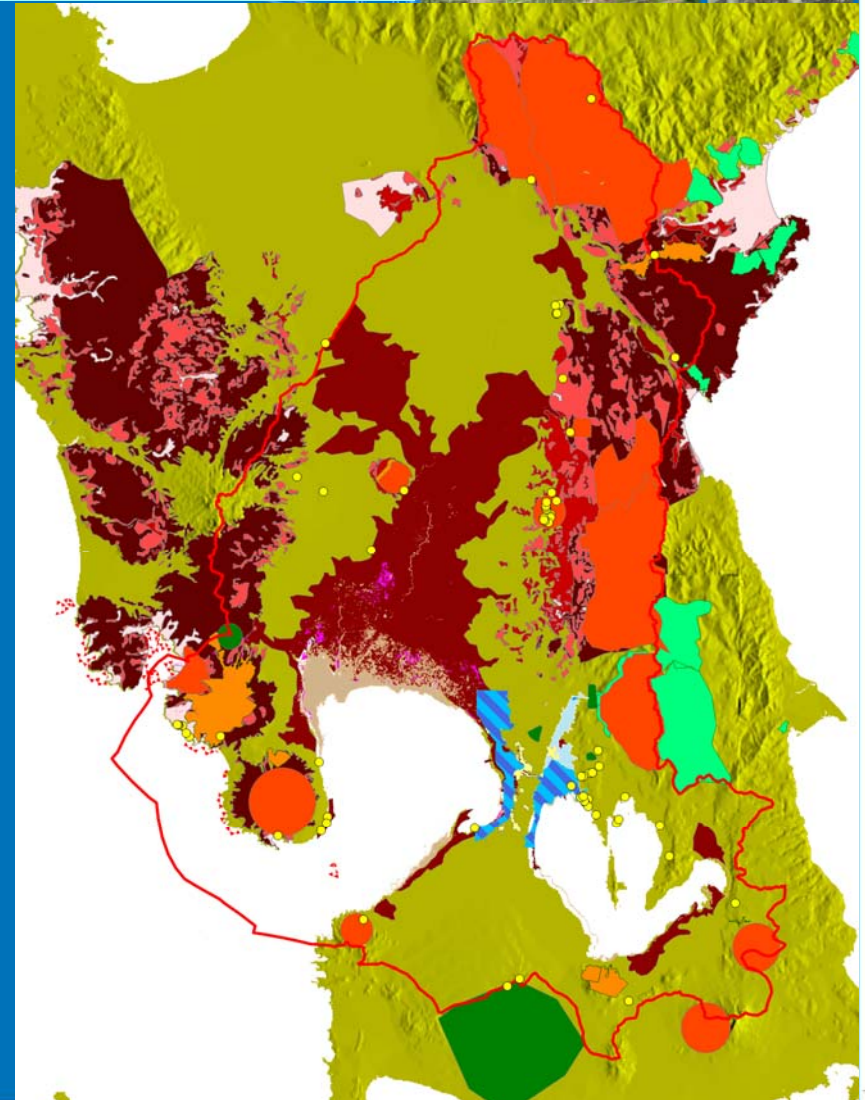
- Mapping of environmentally critical areas in support to the conduct of EIA

- Areas declared by law as national parks, watershed reserves, wildlife preserves, and sanctuaries
- Areas set aside as aesthetic, potential tourist spots
- Areas which constitute the habitat for any endangered or threatened species of indigenous Philippine Wildlife (flora and fauna)
- Areas of unique historic, archeological, geological, or scientific interests
- Areas which are traditionally occupied by cultural communities or tribes

Enhanced performance



- Mapping of environmentally critical areas in support to EIA process
 - Areas frequently visited and or hard-hit by natural calamities
 - Areas classified as prime agricultural lands
 - Recharge areas of aquifers
 - Water bodies
 - Mangrove Areas
 - Coral Reefs



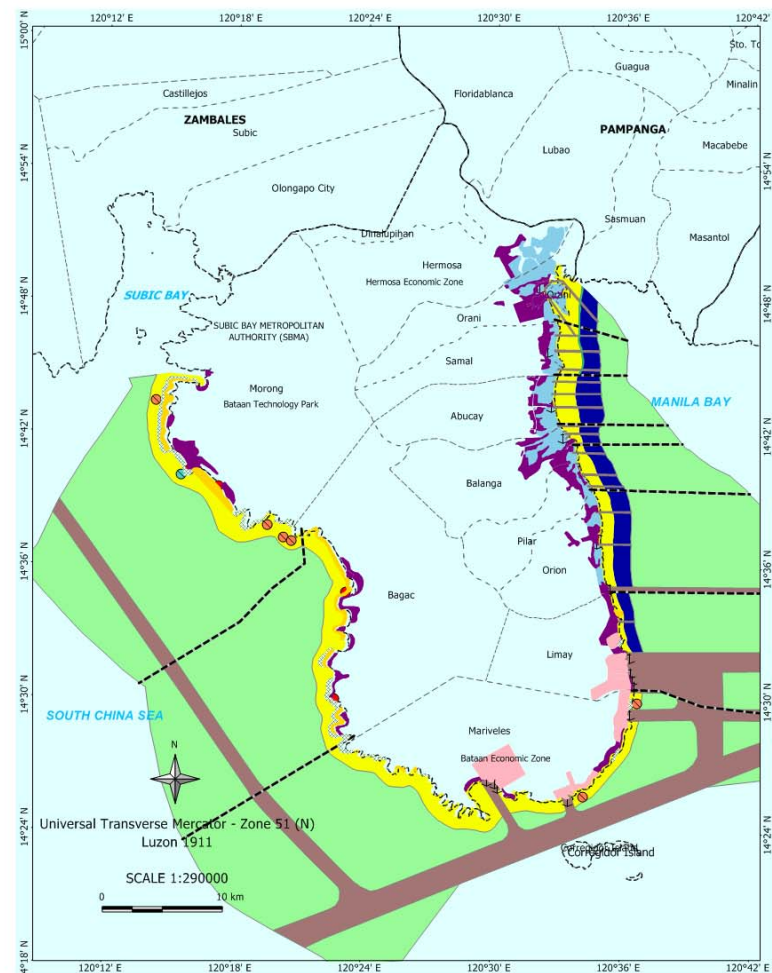
Enhanced performance

- Environmental assessment of Manila Bay and other water bodies in relation to aquaculture
- Assessment of the flooded areas during typhoon Ondoy



Improved planning

Bataan Integrated Land and Coastal Sea- use Zoning Scheme

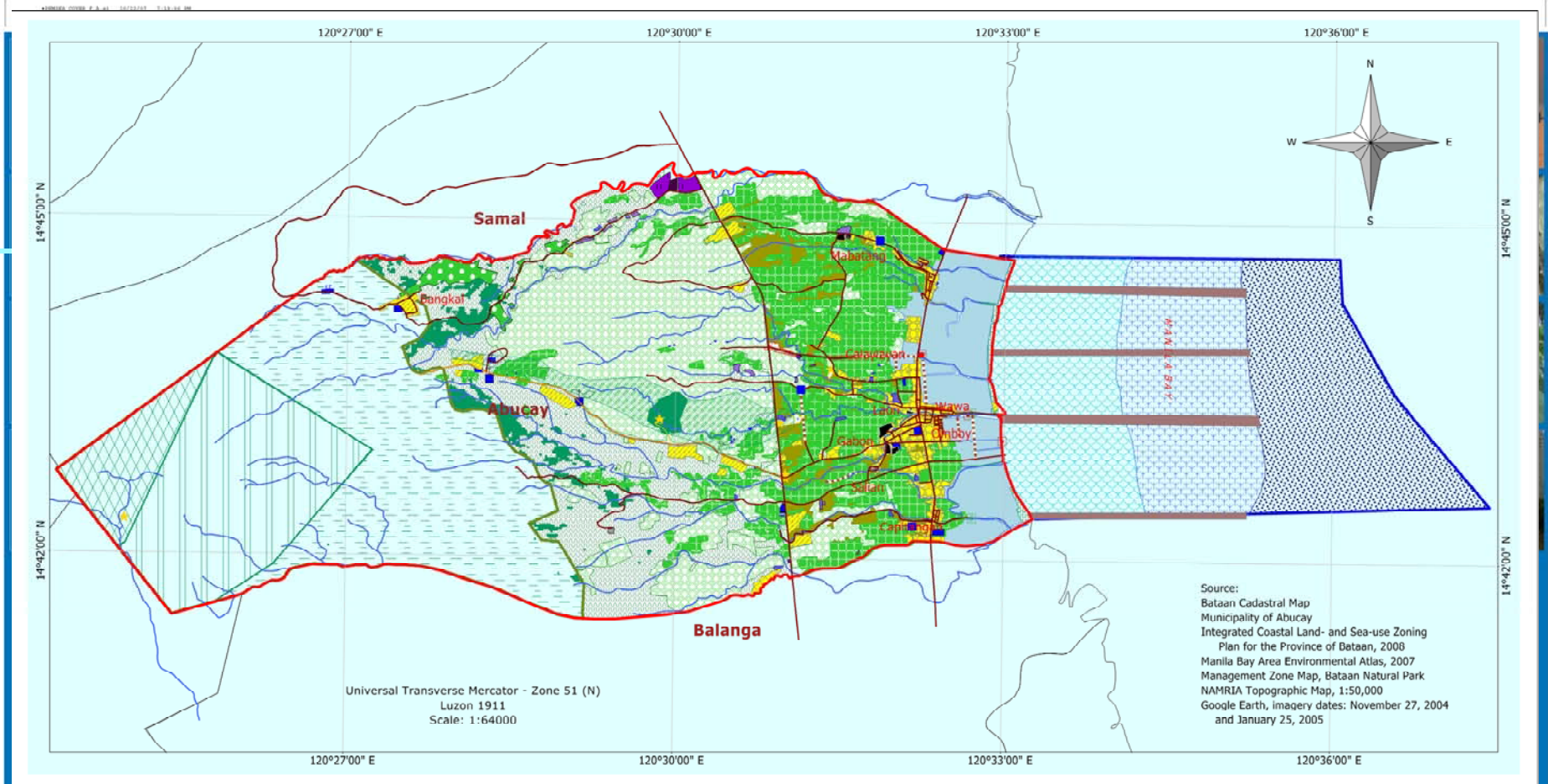


INTEGRATED LAND-, COASTAL- AND SEA-USE ZONING MAP - PROVINCE OF BATAAN

LEGEND			
Administrative Boundary	Land-, Coastal- and Sea-Use Zones	Land-Use Zones	Sea-Use Zones
--- Provincial	● Port	■ Agriculture	■ Coral Reef
- - - Municipal	● Port (minor)	■ Aquaculture	■ Seagrass
- - - Municipal Water Boundary	■ Fish Sanctuary	■ Built-up Areas	■ Shipping and Navigational Zone
— Manila Bay Area Boundary	■ Marine Sanctuary	■ Industrial Zone	■ Traditional Fishing
	◆ Turtle Sanctuary	■ Tourism Zone	■ Municipal Fishing
	◆ Seagrass	■ Mangrove	

Source: NAMRIA Topographic Map Scale 1:50000
Provincial Comprehensive Landuse Plan (CLUP)

Note: Administrative boundary should not be used for settlement of existing boundary conflicts.



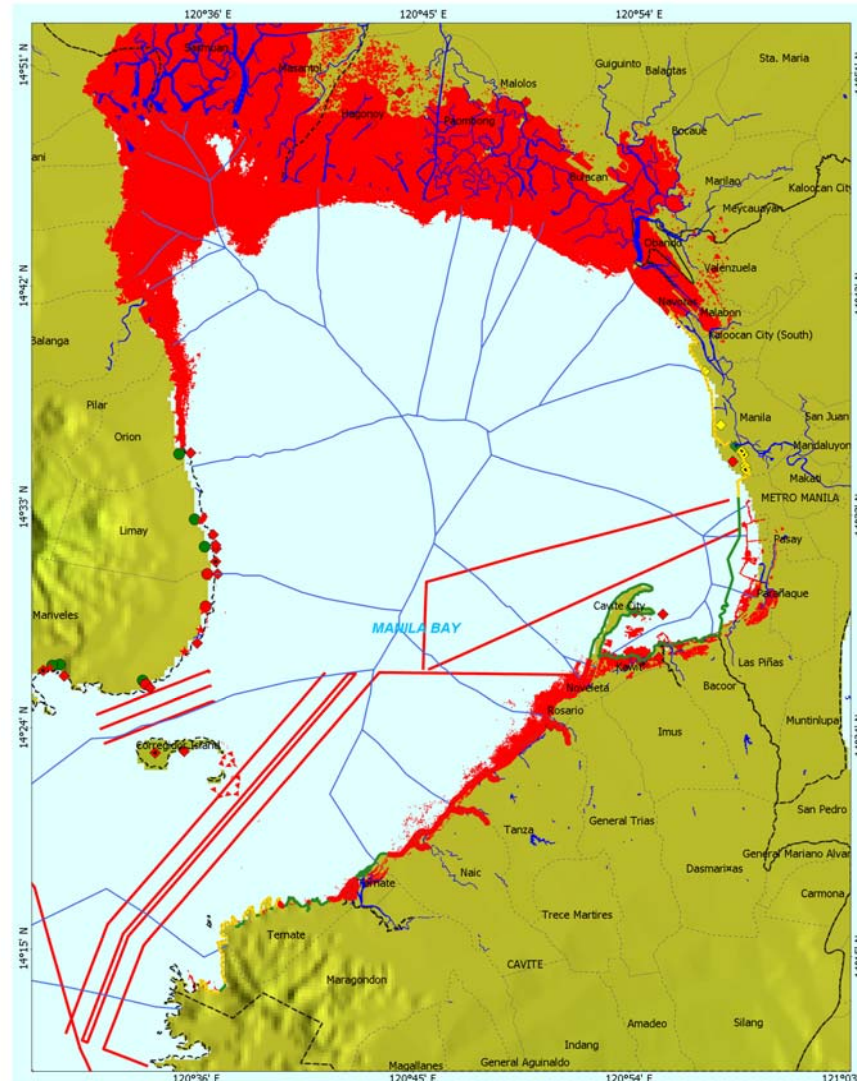
Municipality of Abucay Integrated Land- and Water-use Plan, 2009-2019

LEGEND					
Protection and Conservation zone Proposed multiple-use Sustainable-use Strict protection Forest protection zone Bataan Natural Park boundary Upland conservation area	Sibul Spring protected area Mangrove protection area River Waste Management Zone Municipal landfill	Agriculture zone Rice and vegetable farm Coconut farm Mango farm and other orchard Agroforestry farm Livestock farm Grassland/buffer zone	Freshwater aquaculture Brackishwater aquaculture Manila Bay conservation area Traditional fishing Mussel farming/aquaculture Municipal fishing	Built-up Zone Existing road network Proposed road network Navigational lane Existing fishport Proposed fishport R-1 housing	R-2 housing Socialized housing Existing Industrial Zone Proposed industrial area Existing commercial area Proposed commercial area
Existing government center Proposed gov't and health center Schools Proposed schools Church/chapel Existing memorial park Proposed memorial park	Tourism zone Ecotourism area Resort Tourism site Municipal boundary Water Land				

Integrated land- and water-use zoning in Abucay, Bataan

Improved planning of

Oil spill contingency planning



**AREAS SENSITIVE TO OIL SPILL
MANILA BAY**

LEGEND	
Administrative Boundary	
	Provincial
	Municipal
	Municipal Water
	River
Oil Spill Sensitivity Index	
	Low (Ports)
	Low (Historical Site)
	Low (Rocky Cliffs/Sea Wall/Wave Cut)
	Moderate (Manufacturing)
	Moderate (Historical Site)
	Moderate (Rocky Cliffs/Sea Wall/Wave Cut)
	High (Ports)
	High (Oil Refinery/Depot)
	High (Tourism/Recreational Sites)
	High (Historical Site)
	High (Sea Lanes)
	High (Coral Reefs)
	High (Mudflats/Mangrove/Aquaculture)



Note: Administrative boundary should not be used for settlement of existing boundary conflicts.

Identification of new projects

- Flood control project in Cavite
- Rehabilitation of the Laguna de Bay



Summary

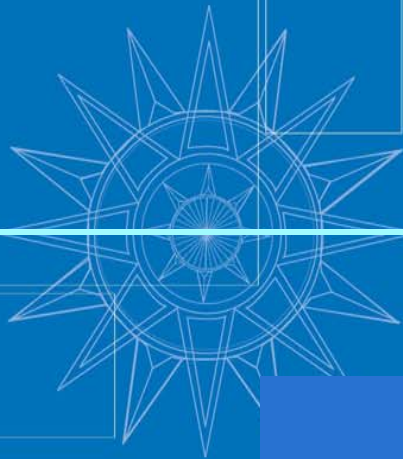
- The Manila Bay Area Environmental Atlas has been a useful input in various activities related to the management of Manila Bay Area
- It has increased awareness of stakeholders on the values and issues confronting the area
- It has facilitated planning process and policy formulation



Challenges

- Updating data and facilities regularly
- Distribution and communicating to wider audience
- Sustaining the Manila Bay Area Information Network





THANK YOU

MANILA BAY AREA
Environmental Atlas

