



WATER ENVIRONMENT AND MANAGEMENT FRAMEWORK IN THE PHILIPPINES

Vicente B. Tuddao, Jr Ph.D.
Erlinda Gonzales

Department of Environment and Natural Resources

Presented during the 9th WEPA Annual Conference and Seminar, Tokyo and Yokohama, Japan January 21-24, 2014

The Philippines is an archipelagic country surrounded with big bodies of water

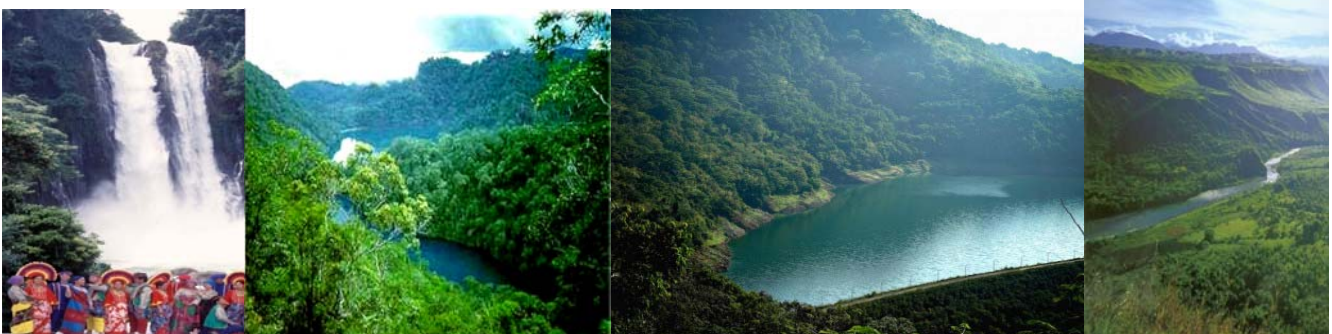


BACKGROUND :

TOTAL POPULATION:	100 Million
TOTAL LAND AREA:	300,000 km ²
TOTAL NUMBER OF ISLANDS:	7,107
CLIMATE:	TROPICAL HUMID
ANNUAL AVE. RAINFALL:	2,400 mm
ESTIMATED ANNUAL SURFACE AND GROUNDWATER WATER AVAILABILITY:	146 billion cubic meters

FRESH WATER RESOURCES OF THE COUNTRY

- 421 PRINCIPAL RIVER BASINS (DRAINAGE AREA > 40 SQ. KM.)
- 18 MAJOR RIVER BASINS (DRAINAGE AREA > 1,400 SQ. KM.)
- 72 LAKES
- EXTENSIVE GROUNDWATER AQUIFERS (50,000 SQ. KM.)



Pollution of water resources-surface water (rivers, lakes, coastal) and groundwater are mainly due to:

- Inadequate sewerage and sanitation facilities
- Improper solid wastes management
- Improper Agricultural Practices
- Improper Industrial waste disposal
- Deforestation
- Land Development



General Sources of Pollution of Water Bodies in the Philippines

Sources	Percentage Share
Domestic Wastewater	33%
Agricultural Wastewater	29%
Industrial Wastewater	27%
Non-Point Sources	11%
TOTAL	100%

The Philippine Environmental Management Framework: Guiding Principles

Precautionary Principle

- Evidence of damage
- Needs immediate action

Polluters Pay principle

- Payment for the wastewater discharge
- Strict monitoring

Users Pay Principle

- Payment for using water resources
- Preferential rights and tariff system

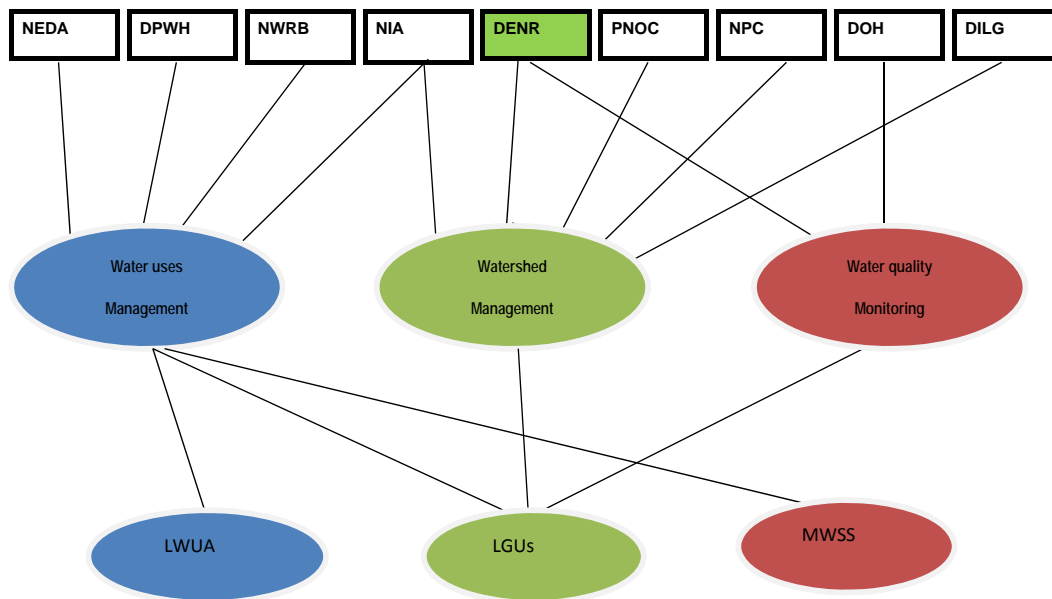
The Philippine Environmental Management Framework: Guiding Principles

Subsidiarity Principle

- Role of Stakeholders in decision making and planning
- Water Quality Management Board

The guiding principles are founded on good environmental governance through effective legal and institutional Framework

Major institutions involved in water governance in the Philippines



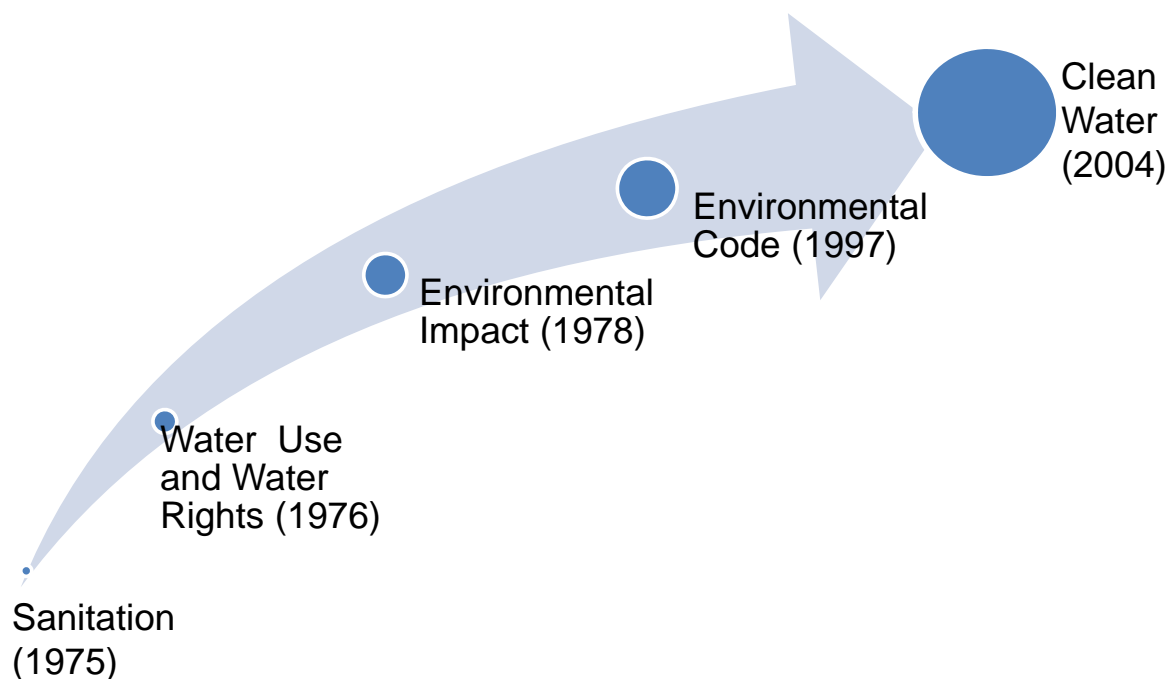
NEDA – National Economic and Development Authority
 DPWH –Department of Public Works and Highways
 NWRB- National Water Resources Board
 NIA- National Irrigation Authority
 LWUA-Local Water Utilities Administration
 LGUs-Local Government Units

DENR-Department of Environment and Natural Resources
 PNOC- Philippine National
 NPC- National Power Corporation
 DOH-Department of Health
 DILG- Department of Interior and Local Government
 MWSS- Metropolitan Waterworks and Sewerage System

Laws and Policies

- Sanitation Code of the Philippines (1975), Presidential Decree (P.D.) 856 of 1975
- Water code of the Philippines (1976) , Presidential Decree 1067
- Environmental Impact Statement System (1978), Presidential Decree (P.D.) 1586
- Environmental code (1997)
- Clean Water Act (2004)

Evolution of Water Quality Policies and Legislation in the Philippines



Classification of Inland Water Bodies

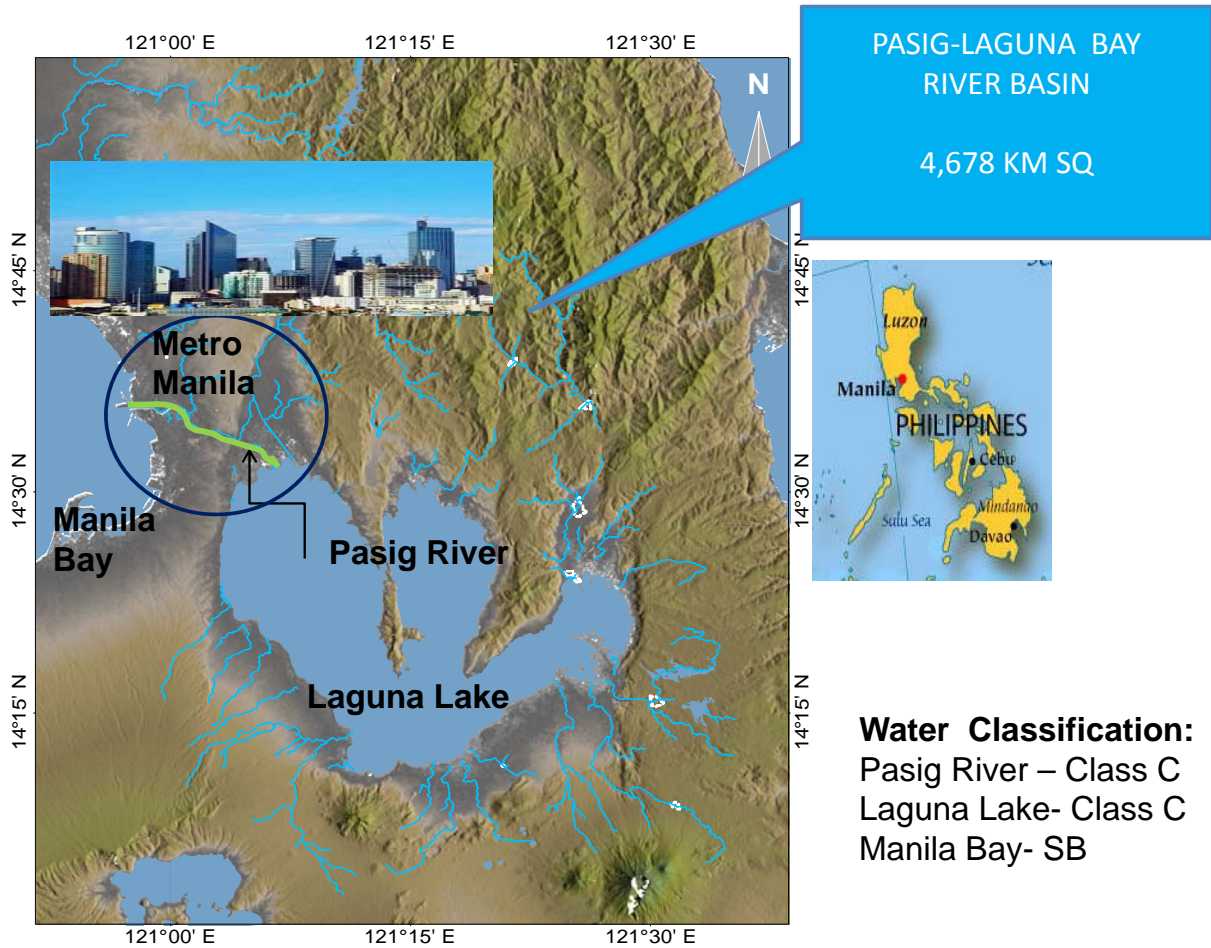
Classification	Best Usage
Class AA	Waters intended as public water supply requiring only disinfection to meet the Philippine National Standard for Safe Drinking Water (PNSDW)
Class A	Waters suitable as water supply requiring conventional treatment to meet the PNSDW
Class B	Waters intended for primary contact recreation (e.g. bathing, swimming, skin diving, etc.)
Class C	Waters for fishery, recreation/boating, and supply for manufacturing processes after treatment
Class D	Waters intended for agriculture, irrigation, livestock watering, etc.

Recent Developments in Water Environmental Management and Current/Future Challenge

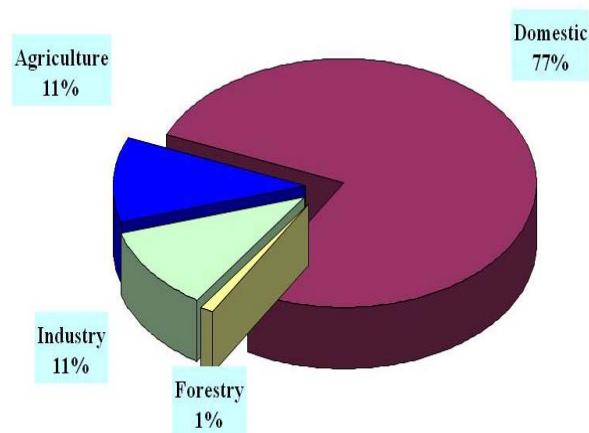
Recent Development:

- The Philippine Government now prioritizes on the mitigation of water quality deterioration in highly urbanized centers particularly Metro Manila using ecosystem approach.

- The Capital city of Metro Manila has a population of 15 million people;
- Highly urbanized centers are most vulnerable to water quality deterioration due to higher number of households, commerce and industries
- Untreated domestic wastewater contributes 77 % to the pollution loadings of major bodies of water in the city.
- Climate Change aggravates the water quality decline



Percentage Distribution of Pollution Sources Affecting Major Surface Water of Metro Manila (Pasig River and Laguna Lake)



Approaches:

- The government and the two private Water Service Utilities/Watern Concessionaires (Manila Water Company and the Maynilad Water Services, Inc.) are now fast tracking the completion of the installation of Domestic Wastewater Treatment facilities/plants in Metro Manila to achieve 100 percent coverage;

Approaches:

- Strict monitoring of the compliance of Industries to Clean Water Act on the provision of complete industrial wastewater treatment plants and imposing immediate sanctions and penalties to violators of the law.
- Implementation of Polluters Pay Principle (Developing market-based instruments, payment of fees on wastewater discharges)

Recent Development

- Strengthened partnership with the private sector/
business Groups in water environmental management
 - Principle of Corporate Social Responsibility
(shared responsibility, common vision)
 - Adopt a River/Esteros/Bodies of Water Program
(Now covers some 300 Corporate/Business Group
(BG) nationwide committed to support the government
in the river clean-up effort and restoration within time
frame at least one BG per river)

Recent Development

- Strengthened government monitoring system on the
compliance to Clean Water Act by the industries and
other stakeholders, through capacity building and
private and public investment, including the
implementation of strict Self-Monitoring System in
water environmental management

Future Challenges in the Water Environment

- Developing a systematized technical and operational approach to water environment monitoring ;
- The necessity to improve coordination and basic water environment data collection system for an efficient and effective flow of information;
- Inadequate institutional capacity-building;
- The need to address water quality decline through ecosystem approach;
- Inadequate financial support to the programs/projects of the water sector;
- Weak law enforcement
- Climate Change concern

Thank you