

Water Quality Management in the Philippines

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Abstract

The Philippines is an archipelagic country consisting of 7,107 islands. It has an area of 300,000 square kilometers wherein 65 percent of its towns are coastal. It is politically divided into 17 regions and abundantly endowed with water resources. It has 18 major river basins, 421 principal rivers, about 79 natural lakes, and extensive coastline that stretches 17,460 km. As of 2005, the Environmental Management Bureau (EMB) has classified 62 percent of the 525 water bodies according to their intended beneficial usage. Of these, only five are Class AA, which are intended for public water supply. Most of the water bodies are classified as Class C, intended for fishery, recreation, and supply for manufacturing processes.

Rapid inventory of pollution sources revealed that domestic wastes are the major source of pollution (33%), followed by livestock (29%) and industrial sources (27%). Non-point sources of pollution account for 11 percent of the organic load contribution to water bodies.

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Introduction

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The Environmental Management Bureau is a line bureau of the Department of Environment and Natural Resources (DENR) mandated to implement on a nationwide scale the five (5) major environmental laws. This report will present the major programs and projects on water quality management currently implemented by the bureau in tune with the mission/vision of the Philippine Clean Water Act (RA 9275 of 2004).

- **IMPLEMENTATION OF PHILIPPINE CLEAN WATER ACT OF 2004**

The Philippine Clean Water Act of 2004 (Republic Act 9275) aims to protect the country's water bodies from pollution from land-based sources. It provides for a comprehensive and integrated strategy to prevent and minimize pollution through a multi-sectoral and participatory approach involving all stakeholders.

The DENR is the lead agency that is mandated explicitly by the Clean Water Act to take the lead role in ensuring the implementation of the law. It has been tasked to develop policies and guidelines in support to the implementation of the CWA.

• **SURVEY AND CLASSIFICATION OF MAJOR RIVERS AND COASTAL WATER BODIES.**

Water Classification is a very important component in water quality management as effluent standards are interpreted with respect to it.

The EMB has classified additional 34 water bodies in 2006 bringing to 567 the total of water bodies that have been classified in terms of best usage and water quality to be maintained. To date, there are now 270 classified principal rivers or rivers with drainage areas of not less than 40 sq. km. This accounts to 64.13% of the country's 421 principal rivers identified by the National Water Resources Board.

According to DAO 34 series of 1990 or the revised water usage and classifications, water bodies are classified into nine (9) classes as follows:

Table 1.

Classification	Beneficial Use
For Fresh Surface Waters (rivers, lakes , reservoirs, etc.)	
Class AA : Public Water Supply	<ul style="list-style-type: none"> • Waters that require disinfection to meet the National Standards for Drinking Water (NSDW)
Class A : Public Water Supply	<ul style="list-style-type: none"> • Waters that require complete treatment to meet the NSDW
Class B : Recreational Water	<ul style="list-style-type: none"> • Waters for primary contact recreation (e.g. bathing , swimming, skin diving, etc.)
Class C	<ul style="list-style-type: none"> • Water for fishery production • Recreational Water Class II (boating etc.) • Industrial Water Supply Class I
Class D	<ul style="list-style-type: none"> • For agriculture, irrigation, livestock watering • Industrial Water Supply Class II
For Coastal and Marine Waters (as amended by DAO 97-23)	
Class SA	<ul style="list-style-type: none"> • Water suitable for fishery production • National marine parks and marine reserves • Coral reefs parks and reserves
Class SB	<ul style="list-style-type: none"> • Tourist zones and marine reserves • Recreational Water Class I • Fishery Class I for milkfish
Class SC	<ul style="list-style-type: none"> • Recreational Water Class II (e.g. boating) • Fishery Water Class II (commercial) • Marshy and/or mangrove areas declared as fish and wildlife sanctuaries
Class SD	<ul style="list-style-type: none"> • Industrial Water Supply Class II • Other coastal and marine waters

Activities Undertaken

- Data Collection / Survey of Beneficial Use of Water
- Identification of monitoring stations
- Collection of water samples using prescribed water sample containers (Surface, middle or bottom samples of water collected)
- Frequency of Sampling - Quarterly
- Sample preservation and Analysis
- Assessment of Data / Reporting
- Public Consultation
- Approval of the Secretary
- Publication

• **SAGIP ILOG PROGRAM / AMBIENT WATER QUALITY MONITORING**

The DENR-EMB conducts monitoring and surveillance of river water quality of major rivers in Metro Manila and selected rivers in the provinces .

The parameters commonly monitored in the rivers are temperature, pH, dissolved oxygen, biochemical oxygen demand, total suspended solids. The bacterial count is also monitored at the beach resorts.

Activities Undertaken

- Identification of monitoring stations (initial activity for new water bodies to be monitored)
- Collection of water samples using prescribed water sample containers (Surface, middle or bottom samples of water collected)
- Frequency of Sampling - Monthly
- Sample preservation and Analysis
- Assessment of Data / Reporting

• **INDUSTRIAL EFFLUENT AND COMPLIANCE MONITORING**

The DENR-EMB requires industrial and manufacturing establishments to install and operate efficient pollution control facilities/devices. For new plants, DENR sees to it that before it starts operation, it must have appropriate built-in anti-pollution facilities to prevent the emergence of new sources of pollution.

Series of industrial plants surveys, investigations and follow-up inspections are conducted by personnel of the DENR EMB Regional offices. Violators are penalized by a fine or by closure or both.

Compliance of industrial wastewater discharge is based on DAO 35. A specific set of effluent standards is set for every classification of the receiving body of water.

Activities undertaken:

- On-site inspection of peripheral areas prior to entry in the facility
- Facility tour (inspection of production areas, storage areas and treatment facility, location of sources of pollution, sample collection)
- Analysis of wastewater sample
- Assessment of Findings and Reporting

- **BEACH WATCH**

The Beach Watch Program is one of the priority programs activities of the EMB-DENR as part of advocacy for good water quality.

The program aims to establish baseline data and provide the latest / updated information on the present quality of the bathing beaches. It also aims to inform the resort / facility owners to institute measures to improve the quality of their respective bathing beaches

Activities undertaken :

1. Monthly on site measurement of physical parameters such as pH, temperature including field observations
2. Monthly sample collection for Total Coliform and Fecal Coliform
3. Sample Preservation and Laboratory Analysis
4. Data Assessment / Reporting

Water Quality Management Area

- Designation of a WQMA will pave the way for the local stakeholders to institute measures and identify programs to effectively manage the water body in their respective area.
- The Governing Board of a WQMA shall formulate strategies to coordinate policies/regulations/local legislation necessary for the effective implementation of the Philippine Clean Water Act.
- The DENR Regional Office will chair the Governing Board.

Activities Undertaken:

- Gathering of relevant information/data by the EMB Regional Office (e.g. maps, major threats to water quality, sources of pollution, common interests in water quality development programs, socio-economic data, stakeholders' support in the form of LGU resolutions)
- Evaluation of the data and information (based on criteria set for boundary setting and other important factors like development plans of LGUs, etc.)
- Convening of key stakeholders (identification of stakeholders, conduct of information dissemination activities, conduct of key stakeholder consultation activities)
- Conduct of public consultations (identification of participants in the public consultation, information dissemination activities, actual public consultations)
- Recommendation of WQMA designation and composition of the WQMA Governing Board to the DENR Secretary

- Designation of the WQMA by the DENR Secretary (publication of a DENR Administrative Order in a nationally-circulated newspaper)
- Inform LGUs, NGAs, business, civil society/NGOs, GOCCs and water utility sectors to submit nominations in the GB
- Once, a WQMA and its GB are established, each WQMA is required to develop a WQMA Action Plan and each member-LGU is required to set an LGU Compliance Scheme

Proposed WQMA :

- Meycauayan – Marilao River system / Region 3
- Iloilo River / Region 6
- Sarangani Bay / Region 12

Industrial Ecowatch

A public disclosure program where the industrial and commercial establishments/firms are rated with corresponding color in accordance with their environmental performance

Priority industries have been identified for initial ecowatch rating (Softdrinks, Bottling, Beverages, Pulp and Paper Mill, Sugar Industry, Canning, Cement Plant, Fish Processing, Power Plant).

Table 2.

Performance Indicator	Broad Category	Color Code
Efforts beyond legal requirements	Excellent	GOLD
	Outstanding	SILVER
Efforts level sufficient to comply	Very Good	GREEN
	Good	BLUE
Effort not sufficient for compliance	Bad	RED
No effort to comply	Very Bad	BLACK

References

DENR Administrative Order No.34, Series of 1990 “Revised water usage and classification Water Quality Criteria “

DENR Administrative Order No. 35, Series of 1990” Revised Effluent Regulations of 1990, Revising and Amending The effluent Regulations of 1982”

Implementing Rules and Regulations of Republic Act No. 9275 “The Philippine Clean Water Act of 2004”