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13 FEB 2013

DENR ADMINISTRATIVE ORDER
No. 2013- 08

SUBJECT: **ADOPTION OF THE INTEGRATED WATER QUALITY MANAGEMENT FRAMEWORK**

Pursuant to Section 19 (b) of RA 9275 otherwise known as the Philippine Clean Water Act of 2004 and Rule 19.2 of DENR Administrative Order No. 2005-10 or the Implementing Rules and Regulations of RA 9275, and to provide a cohesive direction in integrating all the existing frameworks on water quality involving pollution from all sources and water quality related initiatives prepared by all government agencies and other stakeholders, the attached Integrated Water Quality Management Framework (IWQMF) is hereby adopted and promulgated for the guidance of all concerned.

Section 1. Basic Policy. It is the policy of the State to pursue economic growth in a manner consistent with the protection, preservation and revival of the country's fresh, brackish and marine waters by formulating an integrated water quality management framework through proper delegation and effective coordination of functions and activities.

Sec. 2. Objective. This Order aims to provide a coherent direction towards water quality protection and improvement through a set of water quality management strategies, formulating an implementation plan, and presenting a mechanism for institutional and organizational capacity and coordination that will build consensus among implementers and stakeholders.

Sec. 3. Scope and Coverage. The IWQMF applies to all natural and man-made bodies of fresh, brackish, and saline waters, and includes, but is not limited to, aquifers, groundwater, springs, creeks, streams, rivers, ponds, lagoons, water reservoirs, lakes, bays, estuarine, coastal and marine waters.

Sec. 4. Lead Office. The Environmental Management Bureau shall take the lead in the implementation of the IWQMF in coordination with concerned DENR Offices, other government agencies and stakeholders. It shall ensure that the IWQMF shall be disseminated to all concerned for its proper implementation.

Sec. 6. Effectivity. This Order shall take effect fifteen (15) days after its publication in a newspaper of general circulation and its registration with the Office of the National Administrative Registry (ONAR).

RAMON J. P. PAJE
Secretary

Republic of the Philippines
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
SENR034495

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Department of Environment and Natural Resources

INTEGRATED WATER QUALITY MANAGEMENT FRAMEWORK

2013

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PREFACE

The Philippine Clean Water Act (RA 9275) was enacted in 2004 and its IRR (DAO 2005-10) was promulgated a year after to provide for a policy that will ensure pursuit of economic growth consistent with the protection, preservation, and revival of the quality of the country's fresh and brackish waters. The Department of Environment and Natural Resources (DENR) is mandated to lead in the implementation of the activities under the Act.

One of the provisions of RA 9275 and its IRR is the formulation of an Integrated Water Quality Management Framework (IWQMF), a policy guideline that will integrate existing frameworks and regulations prepared by other government agencies pertaining to water quality management. The IWQMF is envisaged to provide a cohesive direction for all water quality-related initiatives of various government agencies in the country.

In 2006, the draft IWQMF was developed by the Environmental Management Bureau (EMB) under the Japan International Cooperation Agency (JICA)-assisted Capacity Development Project on Water Quality Management (CDPWQM). It underwent series of reviews and consultations but the final document still had to undergo improvement and revisions. The draft IWQMF was then reviewed further by the DENR Undersecretary for Planning and Policy who recommended its updating since it had been overtaken by recent developments.

This updated IWQMF incorporates the new frameworks and regulations that have arisen since its inception in 2006 as well as the results of additional stakeholders meetings and key informant interviews conducted to solicit current and relevant information from key agencies on water quality-related projects. In addition, this updated IWQMF highlights the importance of multi-stakeholder collaboration by providing appropriate tasks under the overarching aimed at supporting the three-pronged approach to water quality management outlined in this IWQMF.

The detailed implementation activities are given in a separate document, the IWQMF Implementation Plan, where the planned tasks and activities and their corresponding timeframe of implementation are laid out. The IWQMF Implementation Plan is to serve as guide for other agencies and organizations in formulating and implementing their water quality-related projects and initiatives in support of the IWQMF.

Central to the IWQMF is that the mission to protect our waters and the environment lies not only on the DENR and other government agencies but on the individual and collective efforts of our citizens as well. We are hopeful that hand in hand, we can achieve the goals of this IWQMF and the Philippine Clean Water Act.

RAMON JESUS P. PAJE
DENR Secretary

ACRONYMS

AWQMF	:	Area Water Quality Management Fund
BAI	:	Bureau of Animal Industry
BFAR	:	Bureau of Fisheries and Aquatic Resources
BLGD	:	Bureau of Local Government Development
BOI	:	Board of Investments
BPI	:	Bureau of Plant Industry
BRS	:	Bureau of Research and Standards
BSWM	:	Bureau of Soils and Water Management
CCC	:	Climate Change Commission
CMMO	:	Coastal and Marine Management Office
CWA	:	Philippine Clean Water Act 2004
DA	:	Department of Agriculture
DAO	:	DENR Administrative Order
DENR	:	Department of Environment and Natural Resources
DepED	:	Department of Education
DILG	:	Department of the Interior and Local Government
DND	:	Department of National Defense
DOH	:	Department of Health
DOST	:	Department of Science and Technology
DOT	:	Department of Tourism
DOTC	:	Department of Transportation and Communications
DPWH	:	Department of Public Works and Highways
DTI	:	Department of Trade and Industry
EMB	:	Environmental Management Bureau
EO	:	Executive Order
FPA	:	Fertilizer and Pesticides Authority
HLURB	:	Housing and Land Use Regulatory Board
HRD	:	Human Resource Development
IASC	:	Inter-Agency Steering Committee
ICM	:	Integrated Coastal Management
IEC	:	Information, Education, and Communication
IRR	:	Implementing Rules and Regulations
IWQMF	:	Integrated Water Quality Management Framework
IWRM	:	Integrated Water Resources Management
LCP	:	League of Cities of The Philippines
LGA	:	Local Government Academy
LGU	:	Local Government Unit
LLDA	:	Laguna Lake Development Authority
LMP	:	League of Municipalities of the Philippines
LPP	:	League of Provinces of the Philippines
LWUA	:	Local Water Utilities Administration
MC	:	Memorandum Circular
MGB	:	Mines and Geosciences Bureau

NAMRIA	:	National Mapping and Resource Information Authority
NAPC	:	National Anti-Poverty Commission
NEDA	:	National Economic and Development Authority
NGO	:	Non-Government Organization
NIA	:	National Irrigation Administration
NSWMC	:	National Solid Waste Management Commission
NWRB	:	National Water Resources Board
NWQMF	:	National Water Quality Management Fund
PAB	:	Pollution Adjudication Board
PAWB	:	Protected Areas and Wildlife Bureau
PAWD	:	Philippine Association of Water Districts
PCAPI	:	Pollution Control Association of the Philippines, Inc.
PCAARD	:	Philippine Council for Agriculture, Aquatic, Forestry and Natural Resources Research and Development
PCCI	:	Philippine Chamber of Commerce and Industry
PCG	:	Philippine Coast Guard
PCW	:	Philippine Commission on Women
PD	:	Presidential Decree
PEZA	:	Philippine Economic Zone Authority
PNOC	:	Philippine National Oil Company
PPGD	:	Philippine Plan for Gender Responsive Development
PSSD	:	Philippine Strategy for Sustainable Development
PTA	:	Philippine Tourism Authority
RA	:	Republic Act
RBCO	:	River Basin Control Office
TWG	:	Technical Working Group
WQMA	:	Water Quality Management Area

1 LEGAL FRAMEWORK OF THE IWQMF

Republic Act (RA) 9275, the Philippine Clean Water Act of 2004 (CWA), declares that the State shall pursue a policy of economic growth in a manner consistent with the protection, preservation, and revival of the quality of our fresh, brackish, and marine waters. As such and following the principle of sustainable development, the State shall "formulate an Integrated Water Quality Management Framework through proper delegation and effective coordination of functions and activities."

Article 2, Section 4 of RA 9275 defines Integrated Water Quality Management Framework (IWQMF) as "the policy guideline integrating all the existing frameworks prepared by all government agencies on water quality involving pollution from all sources." Specifically, the IWQMF shall contain the following:

a) Water quality goals and targets
b) Period of compliance
c) Water pollution control strategies and techniques
d) Water quality information and education program
e) Human resources development program

Furthermore, Chapter 3, Section 19 of RA 9275 and Rule 19 of its Implementing Rules and Regulations (IRR) states that it is the responsibility of the Department of Environment and Natural Resources (DENR) as the lead agency to prepare an IWQMF, and to evaluate the same at the end of every five years or as the need arises. The IWQMF may contain, but not limited to, the following:

a) Assessment of policies and institutional arrangements and capacities relevant to water quality management including strategy for devolution to local government units (LGUs)
b) Management strategies
c) Sustainable financing strategies
d) Performance monitoring

2 CONTEXT OF THE IWQMF

Guidance for the updating of the IWQMF was provided by the CWA Vision and Guiding Principles, developed to support the overall policy of sustainable water quality management. Various legislative mechanisms in support of water quality management were also taken into consideration.

2.1 CWA Guiding Principles

The CWA adheres to several principles that include pollution prevention, realistic standards, balanced economic and regulatory instruments, participatory approach, cross-sectoral integration, and an open access to information.

The following principles are provided to guide the various agencies, institutions, and stakeholders in implementing the intentions of the CWA by defining the IWQMF to support the overall policy of sustainable water quality management.

- **Sustainable Development.** Integration of environmental considerations in decision making, proper resource pricing, property rights reform, conservation of biodiversity, rehabilitation of degraded ecosystem, strengthening of residual management (pollution control), control of population growth and human resources development, inducing growth in rural areas, promotion of environmental education and strengthening of citizens participation (Philippine Strategy for Sustainable Development).

- **Market-Based Instruments.** Application of a true value system and market-based instruments (Sec. 14, RA 9275), including social and environmental cost implications relative to their utilization, development and conservation of natural resources (Item f, Sec. 2, Art. 1, Declaration of Principles and Policies, RA 9275 and EO 192 s 1987).

- **Poverty and Environment Linkages.** Recognition of water quality management as an integral component of water resource management and thus water quality management issues cannot be separated from concerns about water sources and ecological protection, water supply, poverty alleviation, and better public health and quality of life (Declaration of Principles and Policies, Art. 1, Sec. 1 c), and that poverty is both a cause and a consequence of environmental degradation (Philippine Strategy for Sustainable Development).

- **Political Commitment for Enhanced Compliance.** Political commitment at the highest level is of primary importance to address issues of governance, enforcement, and transparency. Improving water quality management law enforcement and governance also requires better and effective collaboration across sectors and more stakeholder involvement.

ACKNOWLEDGMENT

The Integrated Water Quality Management Framework (IWQMF) 2012 has been formulated based on the results of workshops and focus group discussions (held from June to July 2012) by a Technical Working Group and other stakeholders. The valuable contribution and participation of the following government agencies and other stakeholders are greatly appreciated:

- Department of Environment and Natural Resources
  - Environmental Management Bureau
  - Laguna Lake Development Authority
  - Land Management Bureau
  - Legal Services
  - Mines and Geosciences Bureau
  - National Mapping and Resource Management Authority
  - National Solid Waste Management Commission
  - National Water Resources Board
  - Policy Studies Division
  - Protected Areas and Wildlife Bureau
  - River Basin Control Office
- Board of Investment, Department of Trade and Industry
- Bureau of Research and Standards, Department of Public Works and Highways
- Department of Agriculture
  - Bureau of Fisheries and Aquatic Resources
  - National Meat Inspection Service
- Department of Transportation and Communications
  - Philippine Coast Guard
  - Maritime Industry Authority
- Food and Drug Administration, Department of Health
- Housing and Land Use Regulatory Board
- Industrial Technology Development Institute, Department of Science and Technology
- League of Provinces of the Philippines
- Local Water Utilities Administration
- Manila Water Company, Inc.
- Maynilad Water Services, Inc.
- Metropolitan Manila Development Authority
- Metropolitan Waterworks and Sewerage System
- Philippine National Oil Company
- Innogy Solutions, Inc.

- **Public Participation and Local Responses to Water Quality Management Issues.** Encouragement of communities, industries and civil society to cooperate and participate in water quality management programs at the local and national levels (Items f, h, and j, Sec. 2, Art. 1, Declaration of Principles and Policies, RA 9275) and consideration of all users and developmental activities that could affect water quality management ensuring that all concerned sectors are able to respond to local issues, guided by regional and national objectives.

- **Access to Information.** Open access to information on water quality management including sources of pollution to all stakeholders (Item g, Sec. 2, Art. 1, Declaration of Principles and Policies, RA 9275) should be increased.

- **Integration with Climate Change.** Warming of the climate system is generally considered inevitable. The resultant impacts of climate change will be manifested with significant regional variation. However, vulnerability to climatic change would be more widespread and profound in the country, where capacity to manage disasters is lower which could impede progress towards achieving the Millennium Development Goals. Climate change impacts on water quality and have implications for water, wastewater, and stormwater utilities. Integration of water quality management with climate change will be considered and formulated wherever applicable and valid so as to address the global challenge.

2.2 Water Quality Related Frameworks and Legislations

The IWQMF integrates all existing frameworks in so far as these frameworks cover water quality pollution from various sources. Major frameworks that that have been integrated in or referred to by the IWQMF are:

1. Philippine Strategy for Sustainable Development, adopted in 1989 (Cabinet Resolution No. 37) – which aims to achieve economic growth with adequate protection of the country's biological resources and its diversity, vital ecosystem functions, and overall environmental quality.

2. Framework for Sustainable Philippine Archipelagic Development, unofficial document prepared by DENR in 2004 with the assistance of the United Nations Development Programme – which (a) calls for functional cooperation between government and relevant stakeholders to strengthen the existing terrestrial focus, national planning and policy framework; (b) recognizes that the people's welfare relies on management bodies incorporating institutional mechanisms that account for both the vast potential and sustainable use of the country's predominant maritime resources, environment and heritage; and, (c) promotes and recognizes the interaction of land, sea, air and people within the archipelagic setting.

3. Integrated Water Resources Management Plan Framework – as approved by the National Water Resources Board (NWRB), based on internationally accepted Integrated Water Resources Management (IWRM), which calls for a systematic, adaptive process conducted in collaboration with stakeholders for the sustainable development and management of water and related resources in the context of equity, social, economic, and environmental objectives.

4. Integrated Coastal Management (ICM) – an Executive Order (EO) 533 which aims to ensure the sustainable development of the country's coastal and marine environment and resources in a "ridge to reef" context. ICM projects and other initiatives developed in line with the National ICM Program are formulated and implemented by LGUs with the technical assistance of DENR.

Other area-specific or subject-specific laws and regulations are likewise integrated in or referred by the IWQMF. These include:

- Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (RA 6969) and its IRRs
- Code on Sanitation of the Philippines (PD 856) and its IRRs
- Philippine Sustainable Sanitation Roadmap
- National Sewerage and Septage Management Program
- Philippine Mining Act of 1995 (RA 7942) and its IRRs
- RA 4850 as amended by Presidential Decree (PD) 813 and EO 927 on the powers, functions, and jurisdiction of the Laguna Lake Development Authority (LLDA)
- Water Code of the Philippines (PD 1067) and its IRRs
- Philippine Fisheries Code of 1998 (RA 8550)
- Local Government Code of 1991 (RA 7160)
- Ecological Solid Waste Management Act of 2000 (RA 9003) and its IRRs
- Philippine Environmental Impact Statement System (PD 1586) and its IRRs
- Climate Change Act of 2009 (RA 9729) and its IRRs
- Disaster Risk Reduction and Management Act of 2010 (RA 10121) and its IRRs
- PD 198 (As amended by PD Nos. 768 and 1479, RA 9286, RA 9275)
- National Integrated Protected Areas System Act of 1992 (RA 7586)
- Promoting Sustainable Forest Management in the Philippines (EO 318)
- Declaring the River Basin Control Office under DENR as the lead government agency for the Integrated Planning, Management, Rehabilitation and Development of the Country's River Basins (EO 816)
- Prevention, Containment, Abatement, and Control of Marine Pollution (Philippine Coast Guard [PCG] Memorandum Circular [MC] 03-94/01-05)
- Prevention of Pollution by Garbage from Ship (PCG MC 02-05)
- Prevention of Pollution by Sewage from Ships (PCG MC 07-05)
- Rules Prohibiting the Dumping of Wastes and other Harmful Matters (PCG MC 01-06)

The 2011-2016 Philippine Development Plan, 2011-2028 National Climate Change Action Plan, 1995-2025 Philippine Plan for Gender Responsive Development (PPGD), and the River Basin Integrated Management and Development Framework Plan were likewise considered in the IWQMF. On an international scale, the United Nations Millennium Development Goals, the United Nations Framework Convention on Climate Change, and the International Convention for Prevention of Pollution from Ships (MARPOL 73/78) were also taken into account.

3 INTEGRATED WATER QUALITY MANAGEMENT FRAMEWORK

3.1 CWA Vision

The vision of the Philippines' national water quality management is to:

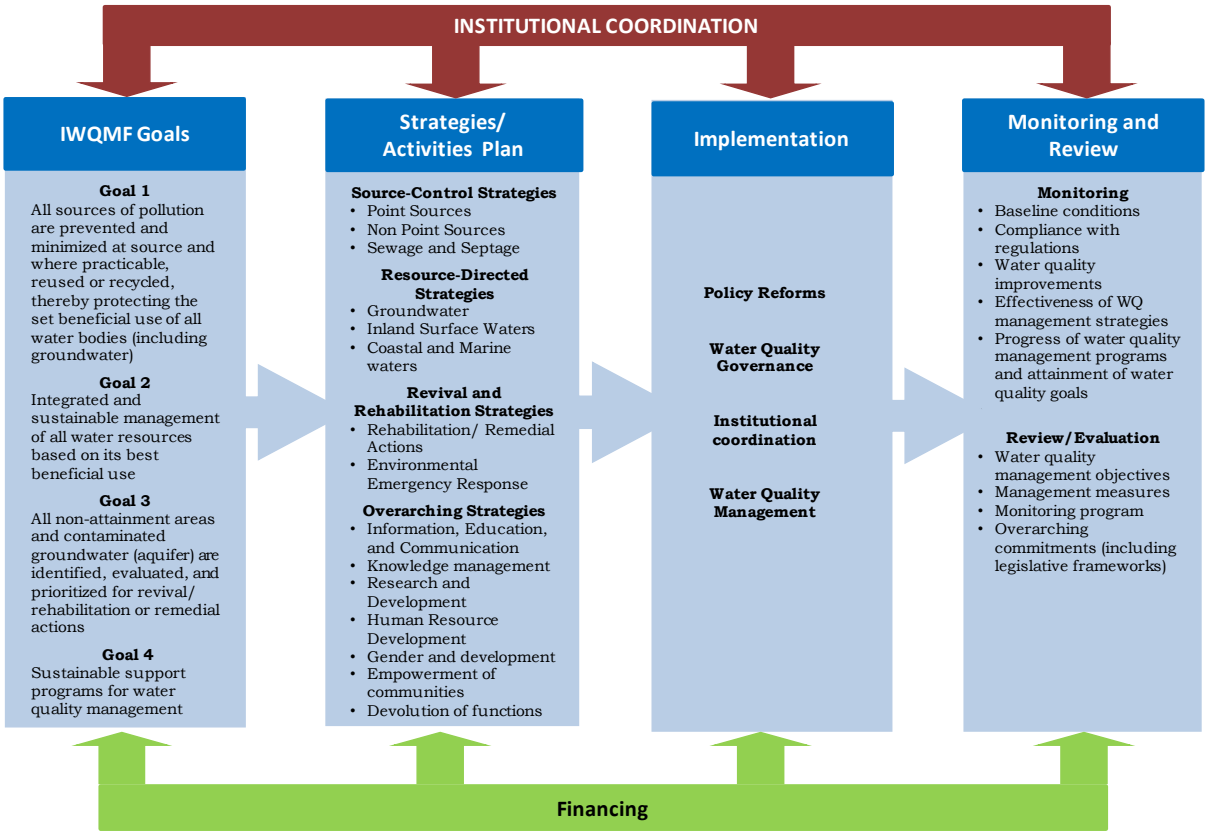
> "...pursue economic growth in a manner consistent with the protection, preservation and revival of the quality of our fresh, brackish and marine waters."

This vision is supported by the following policies and goals:

> "The State shall protect and advance the right of the people to a balance and healthful ecology in accord with the rhythm and harmony on nature." (Article II, Sec. 16, Philippine Constitution)
>
> "The State shall protect and promote the right to health and instill health consciousness among them." (Article II, Sec. 15, Philippine Constitution)
>
> "To achieve economic growth with adequate protection of the country's biological resources and its diversity, vital ecosystem functions, and over-all environmental quality" (Philippine Strategy for Sustainable Development)
>
> "Improved conservation, protection and rehabilitation of natural resources" (Goal 1, Conservation, Protection and Rehabilitation of the Environment and Natural Resources, 2011-2016 Philippine Development Plan)
>
> "Improved environmental quality for a cleaner and healthier environment (Goal 2, Conservation, Protection and Rehabilitation of the Environment and Natural Resources, 2011-2016 Philippine Development Plan)
>
> "Ensure environmental sustainability by integrating the principles of sustainable development into country policies and programs and reversing the loss of environmental resources" (United Nations Millennium Development Goals)
>
> "Reduce the proportion of the Philippine population that do not have access to safe drinking water to 13.2% by Year 2015 and to halve the proportion without access to basic sanitation during the same period" (Millennium Development Goals)

Pursuant to the Guiding Principles and the achievement of the Vision of the CWA, the succeeding diagram defines the IWQMF, which shall serve as the roadmap to pursue a national program on water quality management.

Figure 1. Integrated Water Quality Management Framework



The IWQMF illustrates a systematic process with the end-goal of protecting, preserving, and reviving the quality of our fresh, brackish, and marine waters. The arrows within the IWQMF show the interfaces of the management processes and emphasize the need for feedback and evaluation. A unique feature of the IWQMF is the inclusion of institutional coordination – stressing the need for communication, collaboration, and accountability within and among water quality management entities at every step of the process.

3.2 Purpose

The purpose of the IWQMF is to present a coherent direction towards water quality protection and improvement by providing a set of water quality management strategies, formulating an implementation plan, and presenting a mechanism for institutional and organizational capacity and coordination that will build consensus among implementers and stakeholders. The IWQMF will:

- Align new legislations, area development plans, Water Quality Management Area (WQMA) action plans and LGU Compliance Schemes with the water quality management goals of the CWA and other environmental regulations
- Provide guidance on the sustainable use and protection of water resources, particular through the WQMA
- Consolidate application of available instruments for water quality management including: (a) regulatory systems and procedures, (b) economic instruments based on the polluters-pay-principle, and (c) cooperation approaches and self-regulation policies
- Provide clear and complementary implementation mechanisms for multi-agency cooperation to meet the institutional requirements of the law

The IWQMF supports the IWRM Plan Framework approved by NWRB on the basis of the internationally accepted IWRM.

3.3 Coverage

The IWQMF applies to all natural and man-made bodies of fresh, brackish, and saline waters, and includes, but is not limited to, aquifers, groundwater, springs, creeks, streams, rivers, ponds, lagoons, water reservoirs, lakes, bays, estuarine, coastal and marine waters.

The IWQMF defines the following:

- Its purpose and goals
- Water quality management strategies, grouped into source-control, resource-directed, and revival and rehabilitation, supported by a set of overarching strategies
- Performance monitoring and review mechanism
- Institutional coordination mechanism that will ensure smooth implementation of its identified plans, programs, strategies, and activities

A separate document presents the IWQMF Implementation Plan, which details the strategies for achieving the goals of the IWQMF.

3.4 IWQMF Goals

Cognizant of the CWA mandate, the following are the goals for which the IWQMF aims to accomplish:

Goal 1 – All sources of pollution are prevented and minimized at source and where practicable, reused or recycled, thereby protecting the set beneficial use of all water bodies (including groundwater)

Goal 2 – Integrated and sustainable management of all water resources based on its best beneficial use

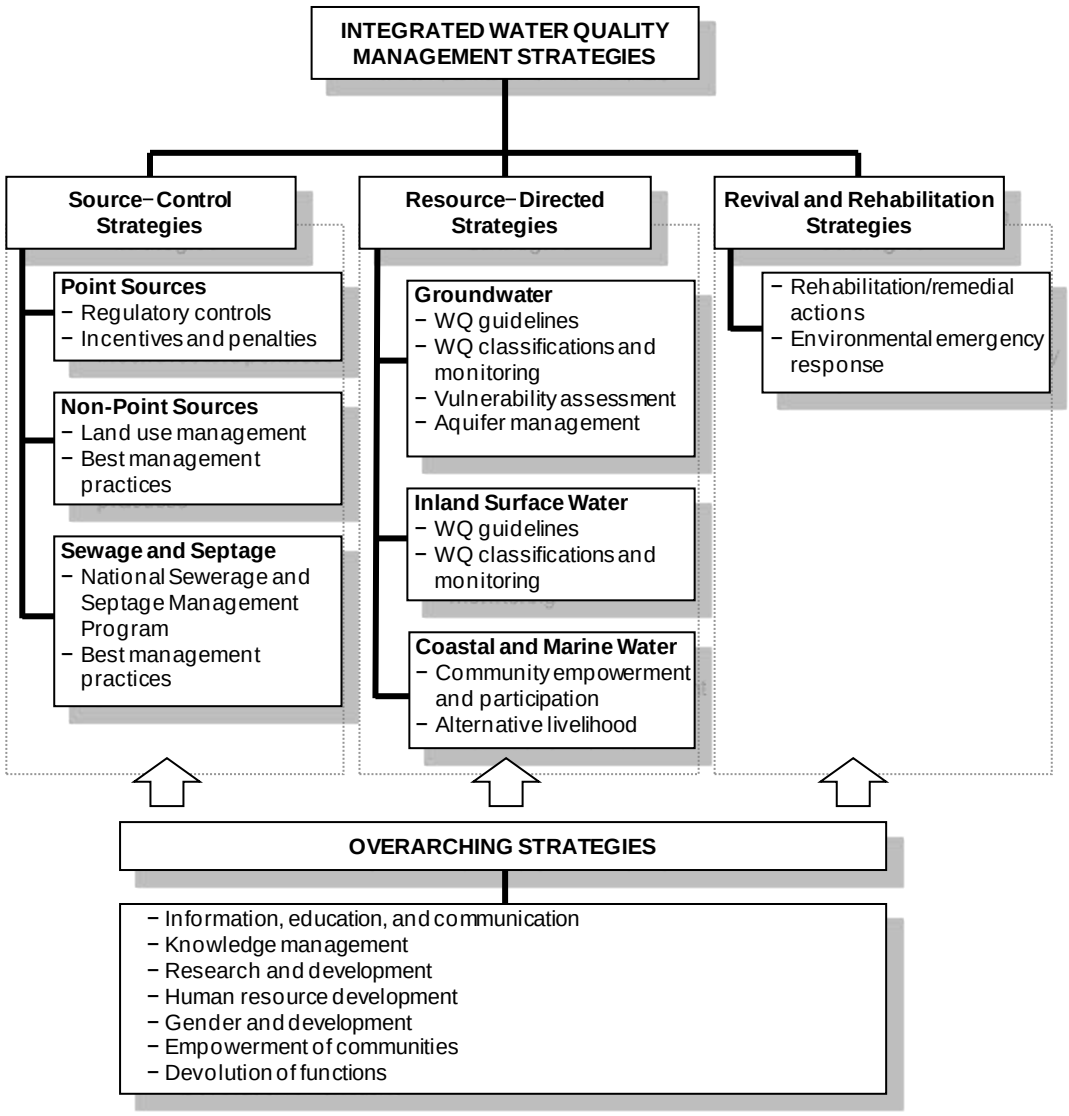
Goal 3 – All non-attainment areas and contaminated groundwater (aquifer) are identified, evaluated, and prioritized for revival/rehabilitation or remedial actions

Goal 4 – Sustainable support programs for water quality management

4 WATER QUALITY MANAGEMENT STRATEGIES

The IWQMF is a structured approach for sustainable water quality management and correspondingly, it requires the adoption of a three-pronged strategy source-control strategies, resource-directed strategies, and revival and rehabilitation strategies - to achieve its goals. These strategies are supported by a set of overarching strategies and their inter-relationships are shown in Figure 2.

Figure 2. Interrelationship of the Water Quality Management Strategies



1. **Source-Control Strategies –** Measures focusing on sources of pollution to prevent and minimize the impacts and the generation of wastes through source controls. These are specified further into:

    - Control of Point Sources
    - Management of Non-Point Sources
    - Management of Sewage and Septage

2. **Resource-Directed Strategies –** Strategies in managing water resources as an ecosystem and not just as a commodity and are grouped into:

    - Management and Protection of Groundwater
    - Management and Protection of Inland Surface Waters
    - Management and Protection of Coastal and Marine Waters

3. **Revival and Rehabilitation Strategies –** Strategies pointed to specific degraded resources and non-attainment areas that must be revived to support existing and proposed beneficial uses. These include:

    - Rehabilitation and/or Remedial Actions
    - Environmental Emergency Response

4. **Overarching Strategies –** Strategies that refer to a set of common actions and activities that ensure the success of the source, resource, and revival strategies. These strategies include:

    - Information, education, and communication (IEC)
    - Knowledge management
    - Research and development
    - Human resource development (HRD)
    - Gender and development
    - Empowerment of communities
    - Devolution of functions

Specific goals and core objectives for these strategies are presented in the following subsections taking into consideration the various legislations and programs that have already been issued and implemented after the enactment of the CWA and its IRR. Updated targets, implementation activities, agencies and offices involved, timeframe, and resources needed to achieve the objectives are contained in the IWQMF Implementation Plan.

4.1 Source-Control Strategies

Goal
All sources of pollution are prevented and minimized at source and where practicable, reused or recycled, thereby protecting the set beneficial use of all water bodies (including groundwater).

To protect the quality of our waters and maintain their beneficial use, the country will institute measures to prevent and minimize pollution from all sources.

Source-control strategies shall include regulatory controls through permits, licenses, and standards to regulate quality of waste discharges at the same time, encourage industry-government partnerships. Other strategies include providing financial and economic incentives to foster the adoption of best available and practicable technology to reduce pollution.

Strategy 1 Control of Point Sources

Point source means any identifiable source of pollution with specific point of discharge into a particular water body. This includes but not limited to effluent discharges from industrial, commercial and institutional establishments, including recreational facilities..

Specific Objectives

1. Strengthen regulatory controls on all establishments, including those owned and operated by local government units, while encouraging industry-government partnerships to enable them to reduce pollution discharges and comply with the regulatory requirements.

2. Enhance implementation of market-based instruments and other fiscal and non-fiscal incentives for water pollution reduction initiatives.

3. Reinforce mechanisms for enforcing fines and penalties for water pollution and for determining liabilities for water pollution damages with due consideration on sustainability.

Strategy 2 Management of Non-Point Sources

Non-point sources are any source of pollution not identifiable as point sources to include, but not limited to, run off from irrigation or rainwater which picks up pollutants from farms and urban areas. In view of the novelty of this issue and the apparent low level of awareness, the strategies are focused on increasing awareness and knowledge, designating roles and responsibilities, and developing capacities of various agencies involved in the management of non-point sources.

Specific Objectives

1. Establish institutional arrangement and infrastructure for non-point source management that is holistic, comprehensive, and WQMA-based.

2. Minimize impact of non-point sources of pollution by imposing regulatory controls, and providing appropriate incentives.

3. Implement an IEC program addressed to communities and non-point sources which identifies responsibilities and accountabilities for water pollution and proper water resource management.

Strategy 3 Management of Sewage and Septage

In sewage and septage management, the Philippines is far behind among the countries in the same development stage. Very few cities have sewage treatment facilities, greatly increasing the risk of diarrhea and other gastrointestinal diseases despite the fact that major sources of water pollution are domestic wastewater discharges, representing 33 percent, as more than 90 percent of inadequately treated domestic sewage are discharged into surface waters. Considering the serious concern to efficiently manage sewage and septage but taking into consideration the enormous investments needed to respond to the requirements of the law, a multi-pronged approach in sewage and septage management is the direction contained in the IWQMF. Implementation of the activities is also paced to match the priorities and resources available.

Specific Objectives

1. Enhance the ability of local implementers to build and operate wastewater treatment systems for urban and urbanizing centers and to develop and adopt local legislations to support the use of these treatment systems.

2. Monitor compliance of local government units and water utilities to Sections 7 and 8 of the CWA.

3. Promote the behavior change and supporting environment needed for systems to be effective and sustainable.

4.2 Resource-Directed Strategies

Goal
Integrated and sustainable management of all water resources based on its best beneficial use

To sustainably manage all water bodies, the country has to execute strategies focusing on water resource as an ecosystem. This includes establishing a classification system, establishing management goals for each resource, frequent and regular water quality monitoring and reporting, and empowering local

communities as vanguards of the water bodies. In addition, water quality protection and preservation cannot be carried out devoid of the knowledge of the nature, extent, current and future use, and vulnerability of water resources. Moreover, the relationship between groundwater and surface water must be understood to facilitate effective integrated management.

Strategy 1 Management and Protection of Groundwater

Groundwater means subsurface water that occurs beneath a water table in soils and rocks, or in geologic formations. It is a very valuable resource – almost all drinking waters are sourced from groundwater. However, it is vulnerable primarily because it cannot be easily seen – it takes a while before evidence of pollution is observed, unlike surface waters, and it has limited ability to purify itself. Groundwater pollution is oftentimes irreversible or would take considerable time and resources to revive to its original quality. Thus, protection efforts must be proactive and long-term. These efforts need to be based on long-term costs and benefits, not short-term demands and crises. The country needs to anticipate and address the problems before widespread degradation occurs.

Specific Objectives

1. Implement resource-directed measures to manage the impacts of development by establishing the groundwater quality guidelines according to its most beneficial uses.

2. Minimize the impacts of development to groundwater quality by imposing regulatory controls, providing appropriate incentives, and instituting groundwater quality monitoring system.

Strategy 2 Management and Protection of Inland and Surface Waters

The CWA has declared as one of its policies the formulation of holistic program on water quality management, underscoring the relationship of water quality management issues with concerns about water sources and ecological protection with due attention to management and protection of watersheds, access to safe water supply, protection of public health, and improvement of the quality of life. Corollary to this, a management strategy that considers the physical, chemical, and biological dimensions of rivers, lakes, and streams is pursued.

Specific Objectives

1. Manage and protect all inland surface waters according to their best beneficial use.

2. Enhance monitoring of ecological status of all principal rivers and other priority water bodies.

3. Ensure that the use of surface water and other water bodies are consistent with this IWQMF and the CWA

4. Support the WQMAs as local institutional mechanism for the management and protection of inland and surface waters

Strategy 3 Management and Protection of Coastal and Marine Waters

A wide variety of human activity can affect the coastal and marine environment. Population pressure, increasing demands for space and resources, and poor economic performances can all undermine the sustainable use of our coastal and marine waters. The CWA stresses the need for the protection of coastal and marine waters as well as the rational use and development of their living resources.

Specific Objectives

1. Implement the national ICM program in all coastal and marine areas, addressing the inter-linkages among associated watersheds, estuaries, wetlands, and coastal seas, by all relevant national and local agencies.

2. Manage and protect all coastal and marine waters according to their best beneficial use and ensure that the use of coastal and marine waters are consistent with this IWQMF and the CWA.

3. Where applicable, support the establishment and designation of Water Quality Management Areas among coastal municipalities and cities.

4.3 Revival and Rehabilitation Strategies

Goal
All non-attainment areas and contaminated groundwater (aquifers) are identified, evaluated, and prioritized for revival/rehabilitation or remedial actions

Revival/rehabilitation and remediation strategies are necessary where extreme pollution results in consistent exceedance to water quality criteria or where contamination of groundwater is occurring or has already occurred and there is high risk to cause hazards to human health and the ecosystem. Given the cost and the technical constraints associated with reviving water bodies or remediating groundwater, a system for prioritization has to be established considering the actual and expected uses of the water body or the groundwater, as well as its social and economic values.

Concomitantly, measures for establishing infrastructure and capacity to immediately respond to environmental emergencies such as huge chemical or oil spills and leaks are equally important. Timely emergency response is likewise vital to minimize, if not eliminate, damages caused by accidental spills and leaks. Gaps in responding to environmental emergencies exacerbate the cost and the technical requirements for rehabilitation or remediation.

Strategy 1 Rehabilitation and/or Remedial Actions

Considering the limited resources of the Philippines, rehabilitation and/or remedial actions for non-attainment areas and/or contaminated groundwater must be anchored on risk assessment, where the level of controls is defined based on the probability of exposure and the severity of impacts. Equally important is the need to define the responsible entities and the respective financial accountabilities for water bodies requiring rehabilitation and/or remedial actions.

Specific Objectives

1. Establish a system for identification and prioritization of water bodies requiring revival, rehabilitation, or remedial actions

2. Develop and implement revival, rehabilitation, and/or remedial programs for priority water bodies

3. Establish the legal and financial accountabilities of entities responsible for polluting and rehabilitating the water bodies.

4. Develop a system of establishing and managing a fund for revival, rehabilitation and remediation of contaminated water bodies.

5. Develop the WQMAs as supporting local mechanism for rehabilitation and remedial actions

Strategy 2 Environmental Emergency Response

Contamination of water and the immediate availability of appropriate emergency responses to chemical pollution and other events which result in contaminated water are becoming increasingly relevant in water quality management. There is a need to define the responsible entities and the emergency preparedness and response requirements during environmental emergencies.

Specific Objectives –

1. Provide timely response to accidental spills and leaks to water bodies to contain and/or confine the environmental impacts

2. Develop the capacity of WQMAs in environmental emergency response

4.4 Overarching Strategies

Goal
Sustainable support programs for water quality management

Overarching strategies are measures that augment in whole or in part any of the three major strategies. These strategies are the support for integrated water quality management and serve the purpose of coordinating regulatory actions and binding the three functional strategies together.

Strategy 1 Information, Education, and Communication

The IWQMF IEC program focuses on behavioral change, employing the use of rewards and incentives as mechanisms to effect change. IEC programs shall promote best management practices and provide professional development courses and materials for implementers to advance the understanding of the link between water quality and pollution and thereby increase awareness and actions in protecting water quality.

IEC for control of point sources and diffused sources of pollution shall be managed through education programs and campaigns on water use minimization.

Specific Objectives

1. Develop and implement continuing IEC program on CWA among all national agencies, directed to users and stakeholders of water bodies

2. Include IEC Programs on water quality management in all of the LGU development plans, for dissemination to their constituents

3. Harness the capability of the WQMA Governing Boards as instrument for IEC on the Clean Water Act to generate multi-sectoral support for the effective implementation of the CWA

Strategy 2 Knowledge Management

For effective coordination and institutional performance, water quality management must be essentially knowledge-driven. An effective water quality management should necessarily rely on a sound database about the physical, social, environmental, economic, and institutional parameters of the water ecosystem. The different stakeholders and sectors using land and water resources should be able to understand and assess the requirements of one another, as well as the limitations imposed by the overall environmental conditions.

Specific Objectives

1. Develop and operationalize integrated water quality information management system

2. Establish mechanisms for updating and timely sharing of water quality-related information

3. Ensure that local government units are provided water quality management information to guide them in their own water quality management policies and other initiatives.

Strategy 3 Research and Development

Research and development program on water quality shall be conducted to provide the science and tools necessary in developing sustainable solutions to water quality problems in order to protect human and ecosystem health.

Grants and funding shall be provided to the academia and government agencies to improve the scientific basis for decisions on national water quality management issues.

Specific Objectives

1. Establish and implement a National Research and Development Program for the Prevention and Control of Water Pollution

2. Establish a continuing collaborative program for research and development on water quality management and protection

3. Promote multi-stakeholder involvement in R & D activities

Strategy 4 Human Resource Development

HRD is critical in ensuring the sustainable implementation of the CWA. It creates an enabling context that involves capacitating the people who will implement the water quality management strategies. It also facilitates planning by those involved in implementing the CWA and evaluating the consequences of their decision-making.

Necessary elements in HRD are as follows:

- **Knowledge:** Those implementing the strategies in the IWQMF must know what the strategy entails and what must be done.
- **Skills:** Those implementing the strategies must have the skills to do what is required of them. This includes managerial and technical skills to evaluate situations and make decisions.
- **Will:** Institutions, organizations, and individuals involved must have the motivation to do what is required. In the absence of "will", enforcement becomes necessary.
- **Mandates:** People placed in positions of responsibility must have a mandate to act.

A training and development program shall be the major instrument necessary to create the capacity of the implementers to fulfill their responsibilities. The programs aim to accomplish the capacity needs of concerned agencies based on the functions and responsibilities identified in the CWA, the IRR, and the IWQMF. The successful implementation of this approach requires that staff involved in water quality management understands, implements, and practices the goals, strategies, action programs, and activities outlined in the IWQMF.

Specific Objectives

1. Build capacities of all agencies including LGUs and their concerned staff on water quality management and protection

2. Build national and local capacities, including that of the WQMA Governing Board and Multi-sectoral Group, for implementing revival/ rehabilitation measures, clean-up operations, and in providing timely emergency response to accidental spills and leaks

Strategy 5 Gender and Development

Pursuant to the PPGD for 1995-2025, the IWQMF shall be implemented to realize the vision for a gender responsive society where women and men equally contribute and benefit from water quality development.

Specific Objective – Enhance the equitable participation of women and men in the promotion of water quality management and give due recognition to their contributions.

Strategy 6 Empowerment of Communities

The IWQMF shall allow citizens to play a significant role in water quality management and shall provide regular opportunities for public involvement.

Specific Objective

1. Enhance and support the participation of communities in water quality protection and management.

2. Develop the capability of the WQMA Governing Boards for effective engagement of stakeholders in water quality management.

Strategy 7 Devolution of Functions

Phased devolution of the national authority to LGUs to administer some aspects of water quality management and regulation shall follow the requirements of the CWA in consonance with the Local Government Code.

Specific Objective –

3. Develop capacity of local government units in water quality management through training programs and involvement in planning and implementation of water quality management activities

4. Enhance compliance monitoring and inspections by coordinating with and capacitating members of the Multi-sectoral Group under the Water Quality Management Area Governing Boards.

5 FINANCING MECHANISM

There are five financing mechanisms for the implementation of the CWA. These are: (a) internal funds of both the national and local governments; (b) National and Area Water Quality Management Funds (NWQMF and AWQMF); (c) technical and financial assistance from local and international funding agencies; (d) credit facilities for various government and private projects; and (e) private investments from industries and businesses to comply with the regulations or to support various water quality management projects.

1. Internal Funds

Certain specific activities, such as regular water quality monitoring, may already be funded using the regular budget of each agency or LGU. However, concerned agencies and LGUs will need to ensure that there will be specific line items in their annual budgets for the implementation of the CWA once this IWQMF is approved for implementation.

2. National and Area Water Quality Management Funds

The NWQMF and AWQMF have been established through the CWA, with specific uses and purposes. The sources of the NWQMF include: (1) fines imposed and damages awarded to the government by the Pollution Adjudication Board (PAB); (2) proceeds of collections for permits issued by DENR under the CWA; and (3) donations, endowments, and grants in the form of contributions to the national government under the CWA. On the other hand, the sources of the AWQMF include: initially, (1) the fines incurred by the establishments located in rural areas before the effectivity of the CWA; and thereafter, (2) the fees collected under the wastewater charge system; and (3) donations, endowments, and grants for WQMA.

Specific activities lined-up in this IWQMF may be funded through the NWQMF; while activities included in the 10-year WQMA Action Plans as prepared by the Governing Boards of formally-created WQMAs may be funded through the AWQMF.

3. Technical and Financial Assistance from International Funding Agencies

Considering the resource needs of various implementing agencies to fulfill their mandates, technical assistance from various local and international funding agencies will be necessary. This will not only mean additional financing to the national and local government; but also institutional strengthening and capacity building of these agencies.

The Technical Working Groups (TWG), created through an EO adopting the IWQMF, are tasked to prepare project documents necessary for the implementation of certain activities in the IWQMF; while the Inter-Agency Steering Committee (IASC), likewise created through the EO, may endorse these project documents to appropriate institutions for consideration. Integration of various related activities into priority projects may be needed considering the numerous activities that require technical and financial support.

4. Credit Facilities

Environmental credit facilities need to be expanded to provide sources of funds particularly for industries, other private institutions and establishments, LGUs, and water districts that are implementing projects to comply with the CWA. These credit facilities may be accessed through government financing institutions that include the Development Bank of the Philippines Land Bank of the Philippines and the Philippine Veterans Bank.. Other credit facilities relevant to the CWA include those extended through the Local Water Utilities Administration (LWUA) and the Municipal Development Fund Office for Sewerage and/or Septage Management Facilities.

Policy-based loans may also be pursued by the government to ensure that the CWA is implemented to its fullest.

5. Private Investments

With the formalization of rewards and incentives system, investments from the private sector may become available and should be encouraged. These include investments in wastewater treatment facilities, sewerage treatment facilities, and the like. Public-private partnerships in these types of investments shall also be promoted.

6 MONITORING AND REVIEW

Priorities for implementing water quality improvements are assessed through monitoring and performance reviews. Regular monitoring provides assurance that the water quality management strategies are appropriate and are delivering outcomes. Performance reviews, on the other hand, allow for the incorporation of new or improved strategies in future actions and plans.

Monitoring is the primary mechanism for evaluating the implementation of the IWQMF management strategies and its effectiveness. It shall be undertaken to:

- Determine baseline conditions
- Ensure compliance with regulations
- Quantify water quality improvements
- Track the effectiveness of management strategies
- Provide a feedback process to guide adaptive management
- Determine progress towards water quality management objectives and attainment of water quality goals

Monitoring of performance shall be based on the timeframes provided in the Implementation Plan. Aspects of the IWQMF that shall be monitored include the water quality management objectives, the management measures used, and the overarching commitments (including legislative frameworks).

Review shall be undertaken every five years to identify opportunities and information gaps and provide information to ensure continual improvement of the IWQMF.

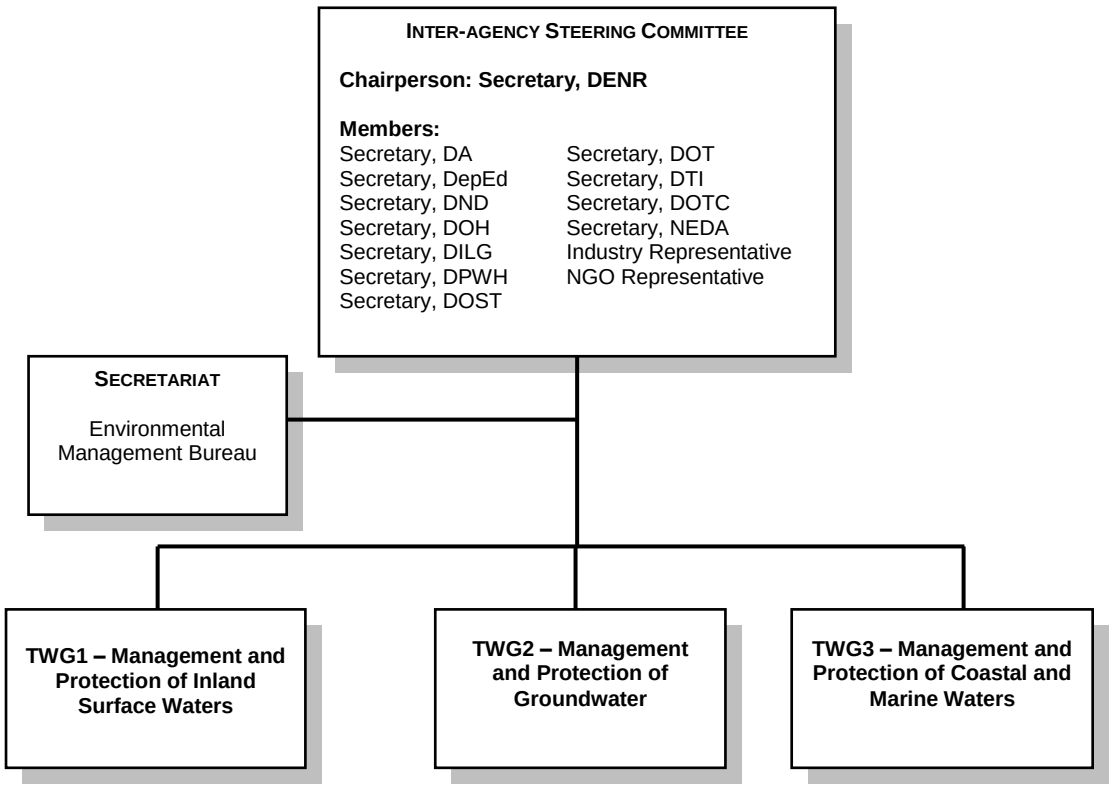
7 INSTITUTIONAL COORDINATION MECHANISM

The CWA declares as a matter of policy the need to 'formulate an integrated water quality management framework through proper delegation and effective coordination of functions and activities.'

While the DENR has been designated as the lead government agency tasked to implement and enforce the CWA and its IRR, there are at least 30 government agencies that are tasked directly through the CWA or indirectly through their own legal mandates to be involved in the implementation of the CWA. Thus, an institutional mechanism for the effective coordination of all activities identified in the IWQMF is hereby established.

There are two levels of institutional coordination arrangements:: an Inter-Agency Steering Committee (IASC) composed of the heads of key government agencies and a Technical Working Group (TWG) for each of the three major water bodies. A Secretariat provides technical, administrative, and logistics support to the IASC and TWG in the performance of its functions. Figure 3 shows the structure of institutional coordination.

Figure 3. Institutional Coordination Structure



1. Inter-Agency Steering Committee

The IASC is headed by the DENR Secretary as the Chairperson, with the heads of the following agencies as members:

1. Department of Agriculture (DA)
2. Department of Education (DepEd)
3. Department of National Defense (DND)
4. Department of Health (DOH)
5. Department of the Interior and Local Government (DILG)
6. Department of Public Works and Highways (DPWH)
7. Department of Science and Technology (DOST)
8. Department of Tourism (DOT)
9. Department of Trade and Industry (DTI)
10. Department of Transportation and Communications (DOTC)
11. National Economic Development Authority (NEDA)

Heads of departments and agencies may designate their representatives in the IASC who can make decisions on behalf of their respective heads.

Industry and business organizations as well as Non-Government Organization (NGO) / Peoples' Organization will have a representative each in the IASC, the selection of which shall be determined by IASC. The Environmental Management Bureau (EMB) shall act as the Secretariat for the IASC.

The IASC has the following functions:

1. Ensure that departmental or sectoral policy guidelines are consistent with the objectives of the CWA and with the IWQMF
2. Perform executive department oversight over the implementation of the CWA
3. Review and provide advice/guidance on legislative and similar proposals that may affect the objectives and implementation of the CWA
4. Report to the Joint Congress Oversight Committee the progress, issues, concerns, and needs concerning the implementation of the CWA
5. Provide directions to the TWG on the conduct of specific studies that may be necessary for the effective implementation of the CWA and accept recommendations deemed suitable for appropriate action of specific agencies concerned
6. Adopt and authorize an incentive scheme for the Chairs and members of the Technical Working Groups.
7. Measure and assess the performance of all the actors for both programs (outcome-based) and projects (output-based) to ensure that each agency concerned perform a part of the IWQMF and deliver their part at an appropriate time

2. Technical Working Group

The three TWG is composed of the Directors/Heads of the following agencies and organizations:

1. TWG1 – Management and Protection of Inland Surface Waters
   a. Chair: EMB – DENR

b. Members:
   i. Board of Investments (BOI) – DTI
   ii. Bureau of Animal Industry (BAI) – DA
   iii. Bureau of Local Government Development (BLGD) – DILG
   iv. Bureau of Plant Industry (BPI) – DA
   v. Bureau of Research and Standards (BRS) – DPWH
   vi. Bureau of Soils and Water Management (BSWM) – DA
   vii. Climate Change Commission (CCC)
   viii. Commission on Filipino Women (CFW)
   ix. DTI
   x. Forest Management Bureau – DENR
   xi. Fertilizer and Pesticides Authority (FPA) – DA
   xii. Housing and Land Use Regulatory Board (HLURB)
   xiii. LLDA
   xiv. Land Management Bureau – DENR
   xv. League of Cities of the Philippines (LCP)
   xvi. League of Municipalities of the Philippines (LMP)
   xvii. League of Provinces of the Philippines (LPP)
   xviii. Local Government Academy (LGA)
   xix. LWUA
   xx. Metropolitan Waterworks and Sewerage System
   xxi. Metro Manila Development Authority (MMDA)
   xxii. Mines and Geosciences Bureau (MGB) – DENR
   xxiii. National Anti-Poverty Commission (NAPC)
   xxiv. National Commission on Indigenous Peoples
   xxv. National Irrigation Administration (NIA) – DA
   xxvi. National Mapping and Resource Information Authority (NAMRIA) – DENR
   xxvii. National Meat Inspection Service – DA
   xxviii. Philippine National Oil Company (PNOC)
   xxix. National Power Corporation
   xxx. National Solid Waste Management Commission (NSWMC)
   xxxi. NWRB
   xxxii. Philippine Association of Water Districts (PAWD)
   xxxiii. Philippine Chamber of Commerce and Industry (PCCI)
   xxxiv. Philippine Economic Zone Authority (PEZA)
   xxxv. Pollution Control Association of the Philippines (PCAPI)
   xxxvi. Protected Areas and Wildlife Bureau (PAWB) – DENR
   xxxvii. River Basin Control Office (RBCO) – DENR
   xxxviii. Related inter-agency committees

2. TWG2 – Management and Protection of Groundwater
   a. Chair: NWRB – DENR
   b. Members:
      i. BOI – DTI
      ii. BAI – DA
      iii. BLGD – DILG
      iv. BPI – DA
      v. BRS – DPWH
      vi. BSWM – DA
      vii. DTI
      viii. EMB – DENR
      ix. FPA – DA
      x. HLURB
      xi. LCP
      xii. LGA

xiii. LMP
xiv. LPP
xv. LWUA
xvi. MGB – DENR
xvii. NAMRIA – DENR
xviii. NAPC
xix. NIA – DA
xx. NSWMC
xxi. PAWD
xxii. PCCI
xxiii. PEZA
xxiv. PCAPI
xxv. PNOC
xxvi. RBCO – DENR
xxvii. University of San Carlos Water Resources Center
xxviii. Related inter-agency committees

3. TWG3 – Management and Protection of Coastal and Marine Waters
   a. Chair: Coastal and Marine Management Office (CMMO) – DENR
   b. Members:
      i. BOI – DTI
      ii. Bureau of Fisheries and Aquatic Resources (BFAR) – DA
      iii. BLGD – DILG
      iv. CCC
      v. CFW
      vi. Coastal Zone and Freshwater Ecosystems Research Division– Ecosystems Research and Development Bureau
      vii. DTI
      viii. EMB – DENR
      ix. HLURB
      x. LCP
      xi. LGA
      xii. LMP
      xiii. LPP
      xiv. Maritime Industry Authority – DOTC
      xv. MGB – DENR
      xvi. NAMRIA – DENR
      xvii. NAPC
      xviii. NWRB
      xix. PAWB – DENR
      xx. PCAARRD - Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development
      xxi. PCAPI
      xxii. PCCI
      xxiii. PCG
      xxiv. PEZA
      xxv. Philippine Ports Authority
      xxvi. Philippine Tourism Authority (PTA) – DOT
      xxvii. PNOC
      xxviii. PNP-Maritime Command
      xxix. Silliman University Marine Laboratory
      xxx. Superintendent, Concerned Protected Area Management Board
      xxxi. University of the Philippines Marine Science Institute
      xxxii. Related inter-agency committees

Heads of agencies identified above may designate their representatives in the TWG on their behalf. These representatives should be authorized to speak and decide for their respective offices.

General functions of the TWG are:

1. Discuss and clarify the major issues pertaining to the assigned areas of concern of the CWA
2. Prepare issue papers and recommendations for consideration of the IASC
3. Prepare project documents for submission to international funding agencies for possible technical assistance
4. Conduct research or survey of other country best management practices as guide in formulating guidelines on the area of concern
5. Coordinate with EMB as Secretariat on its tasks, including the submission of outputs and on setting of meeting agenda for the IASC
6. Provide inputs to the report for the Joint Congressional Oversight Committee
7. Maintain records and submit to EMB (as Secretariat) the minutes of discussions
8. Prepare a summary report on its tasks at the completion stage

Specific functions may be added as may be deemed necessary.

3. Secretariat

The EMB, as the Secretariat, shall have the following functions and responsibilities:

1. Ensure that IASC members are adequately informed of the progress of implementation of the CWA
2. Coordinate the schedules of meetings and activities of TWGs and IASC
3. Prepare agenda and other documents needed during meetings and document meeting proceedings
4. Prepare reports for submission of IASC to the Joint Congressional Oversight Committee
5. Integrate findings of the TWGs for commonalities in plans and programs of specific water bodies.
6. Maintain all documents gathered and used by IASC and TWG including research information and data, and IASC and TWG minutes of meetings.