

Republic of the Philippines
Department of Environment and
Natural Resources
Environmental Management Bureau

**CAPACITY DEVELOPMENT PROJECT
ON WATER QUALITY MANAGEMENT
(PHASE II)**

PROJECT COMPLETION REPORT

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JAPAN INTERNATIONAL COOPERATION AGENCY

**REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
ENVIRONMENTAL MANAGEMENT BUREAU**

**CAPACITY DEVELOPMENT PROJECT
ON WATER QUALITY MANAGEMENT**

Phase II

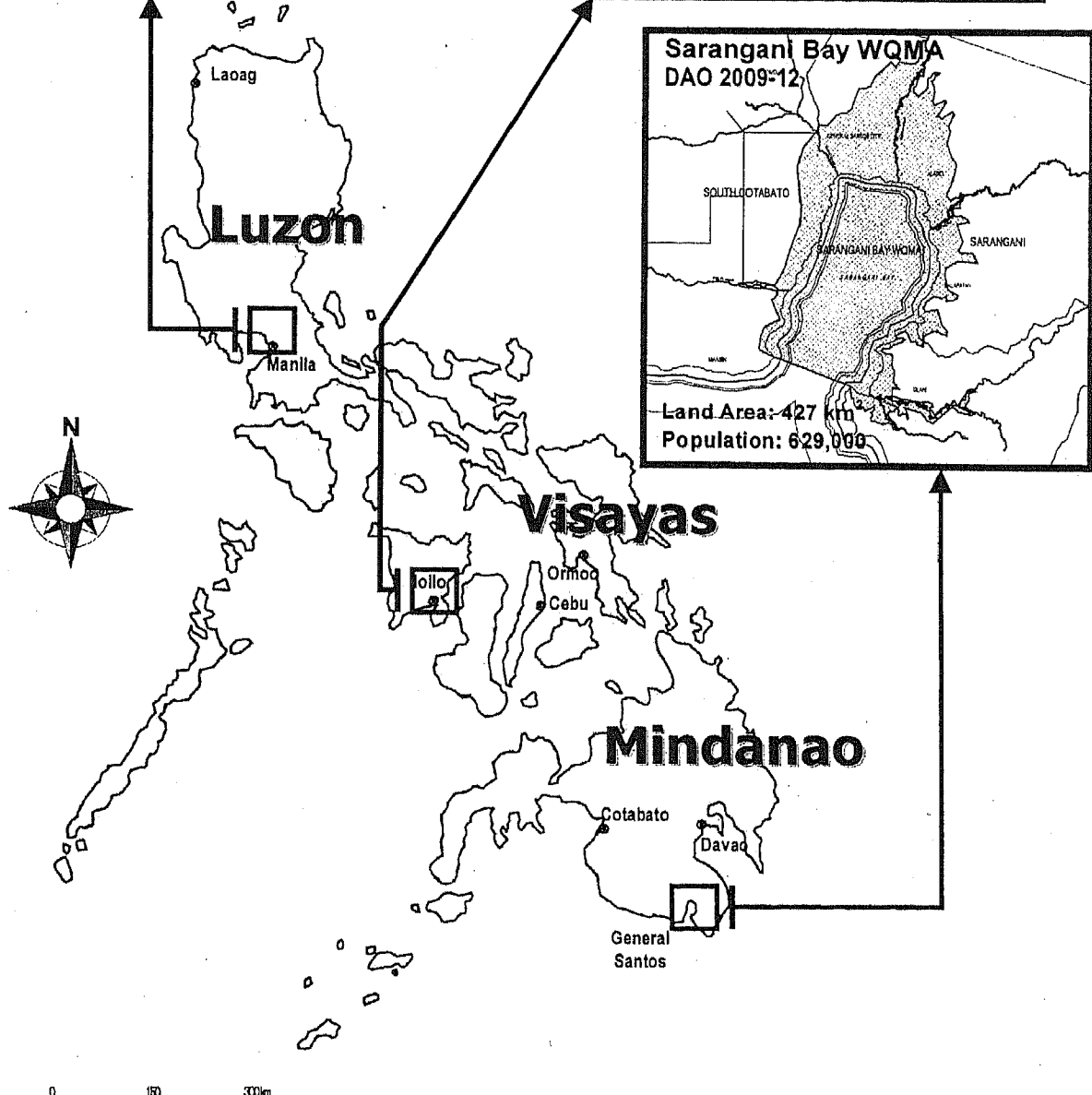
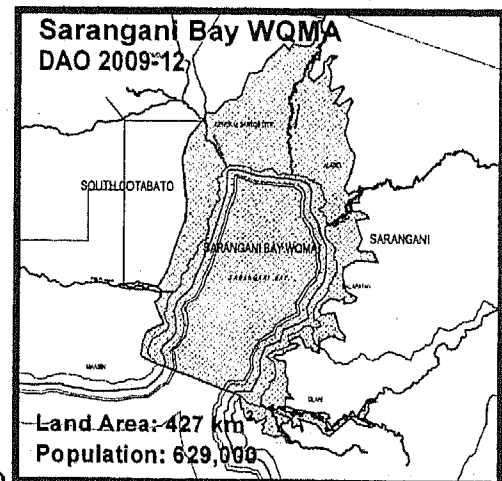
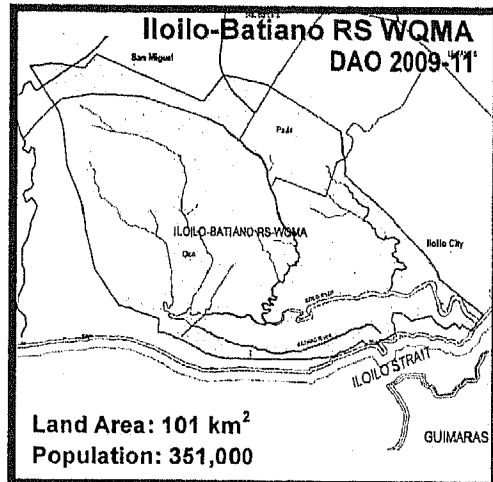
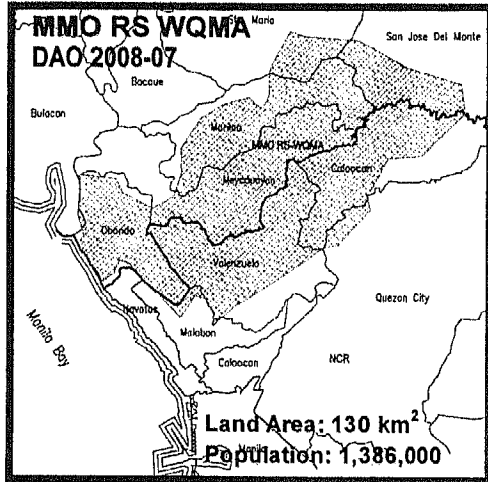
Project Completion Report

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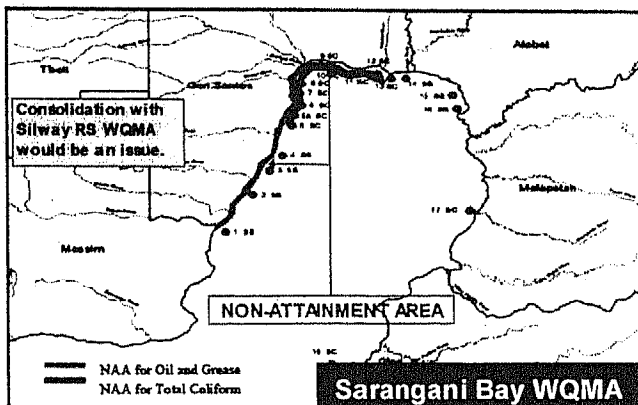
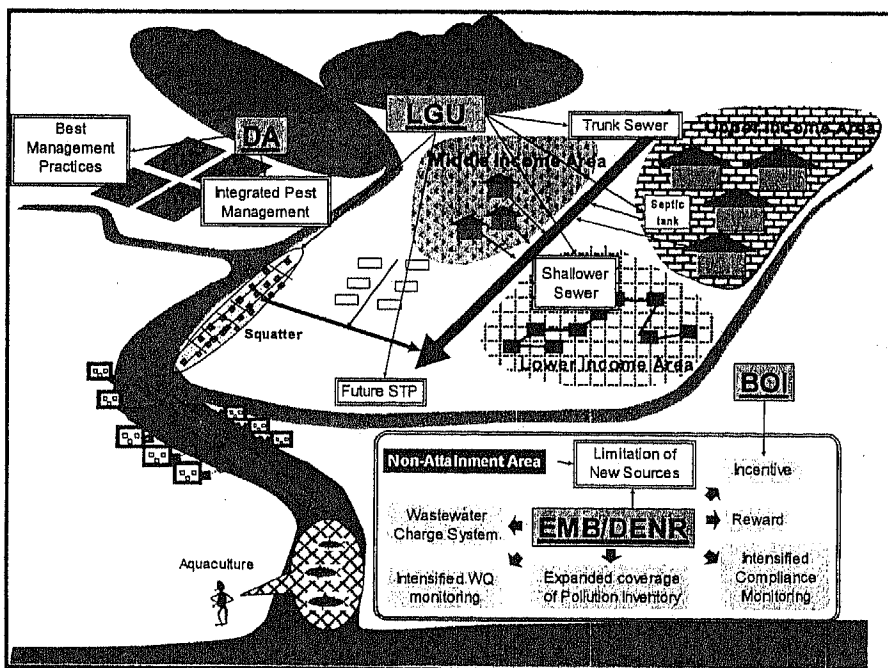
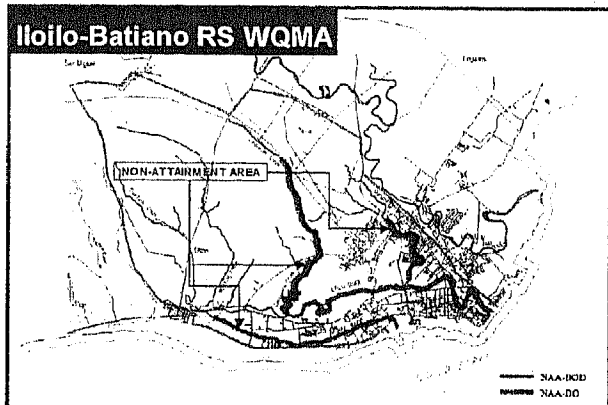
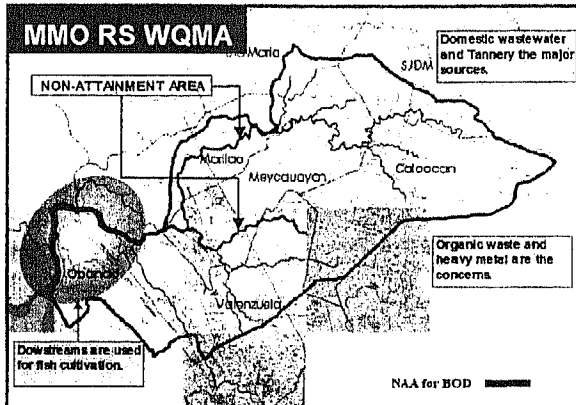
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Water Quality Management Areas



A prerequisite of WQMA Action Plan is cooperation among various government bodies.

Summary

Chapter 1 Project Outline

Strengthening capacity of the Environmental Management Bureau in performing the unprecedented tasks assigned to it by enactment of the CWA is an imminent need.

The desire to promote economic prosperity has led to the unsustainable exploitation of the environment in the Philippines where concerted efforts by relevant authorities are significantly constrained by limited funds for adequate sanitation, urban drainage, and proper solid waste management. Despite 30 years of persistent efforts of the environmental authority, effective and efficient intervention for improved water quality environment has yet to be realized. A dramatic shift in water quality management policy took place in 2003, in which various schemes of incentive mechanisms were introduced into the set of policy instruments to maximize economic efficiency and effectiveness of pollution control actions. This was further consolidated by enacting the Clean Water Act (CWA: RA9275) in May 2004. The CWA sets forth provisions for various new tools and instruments for improvement of water quality including WQMA, NAA, MBI, etc.

Strengthening capacity of the Environmental Management Bureau, DENR in performing the unprecedented tasks assigned to it by enactment of the CWA is an imminent need, which would be materialized by translating the provisions in the CWA into workable procedural and technical guidelines; providing training opportunity for the implementation of the guidelines by the EMB staff and implementing major activities on a pilot basis by applying the guidelines. This would ensure that the constraints of EMB in undertaking tasks are minimized and thus the spirit of the CWA is materialized through integrated intervention for pollution control.

Capacity Development Project on Water Quality Management was designed to strengthen capabilities of Central and Regional EMB offices to implement 40 priority activities mandated to the DENR by the CWA and its Implementing Rules and Regulations.

The project was designed to strengthen capabilities of the Central and Regional EMB offices to implement priority actions mandated to the DENR by the CWA and its Implementing Rules and Regulations. Four (4) outputs of the project are:

- 1) Establishing an integrated policy framework for WQM based on the CWA supported by adequate procedural guidelines and training for EMB staff;
- 2) Strengthening capacity of EMB Central Office to lead and support the Regional Offices;
- 3) Strengthening capability of EMB Regional Offices to establish and support WQMAs and related institutions in 3 pilot regions; and
- 4) Strengthening overall capability of EMB Regional Offices in water quality management in 3 pilot regions.

The overall goal of the project is: "Under the initiative of the WQMA Governing Boards, Industries, commercial entities, LGUs and other public organizations take necessary actions for achieving the water quality goal established in the WQMA Action Plans."

Chapter 2 Approach and Methodology

Recognizing the emerging new roles of the EMB by the CWA, the JICA TAT adopted a step-by-step procedure to ensure confidence building and instill fundamentals and essentials of water quality management fully complying with the CWA IRR.

Capacity development of the EMB CO was materialized through various occasions such as Strategic Planning for project management, Task Planning and Designing, Execution, Monitoring and Controlling and Project Review.

Capacity Development of the EMB ROs generally followed the procedures adopted for the central office with some variations. However, unlike the case of the Central Office, the capacity development of the ROs was more prominently characterized by the approach of On-the-Job Training (OJT) that was a well-established and well-used intervention designed to enhance individual skills and capabilities.

Capacity Development is the primary purpose of the Project. The Project targeted and supported capacity development processes of the EMB Central and Regional Offices under the new paradigm created by the CWA to accelerate 1) the departure from command and control regulation to regulatory pluralism and 2) the trends towards devolution and decentralization of environmental decision making. As compared to the previous period wherein attempts were made to manage the nation's water quality primarily through monitoring, assigning classification and enforcing effluent standards, the regulations under the CWA are characterized by plural governance mechanisms for regional water quality issues.

The Central Office is tasked to formulate integrated policies in a more coordinated and harmonized manner that would help the gradual transition. The Project was designed to assist the Central Office in establishing an integrated policy framework for water quality management that is supported by adequate procedural guidelines and training for EMB staff. It is further designed to strengthen the capacity of the Central Office to lead and support the Regional Offices in using water quality model, operationalizing water quality and pollution source database, and publishing the national water quality status report. Capacity Development of the EMB CO was materialized through various occasions such as Strategic Planning for project management, Task Planning and Designing, Execution, Monitoring and Controlling and Project Review. This step-by-step procedure ensured confidence building and instilled fundamentals and essentials of water quality management fully complying with the CWA IRR.

Capacity Development of the EMB ROs generally followed the procedures adopted for the central office with some variations. However, unlike the case of the Central Office, the capacity development of the ROs was more prominently characterized by the approach of On-the-Job Training (OJT) that was a well-established and well-used intervention designed to enhance individual skills and capabilities. OJT was particularly applied in pilot testing of the guidelines that were prepared during Phase I of the Project. The advantages of OJT included: 1) a training was to be performed for real in the workplace; 2) the trainees would have immediate feedback; and 3) learning was immediately relevant to the work of the section. One of the critical issues in adopting OJT was that important decisions in preparing Action Plans and preparing other instruments would be made by the managerial staff of EMB ROs. Mid-class officers and entry-level officers who are the future leaders would not be given with sufficient opportunity to involve in decision-making. Therefore, participation of mid-class and entry-level officers to the orientation and workshops was judged essential to train them as future leaders in water quality management. They were compelled to make decisions in the case studies of various water quality management instruments.

EMB directors designated focal persons at the Central Office and the Regional Offices in the pilot regions. Their roles in the meetings were not only participation but are also vital to pronounce the official position of EMB on the proposed water quality management approach. They were compelled, sometimes, to bear the brunt of opposition.

The major element of the planning process of the project management was the grouping of activities because there were a total of forty activities. The grouping narrowed down the 40 activities and numerous sub-activities into a few packages of activities, or groups, having a common objective and methodology.

On the basis of the grouping, the EMB CO translated the priority activities into the TORs for services rendered by local consultants. A total of 459.1 man-months of local consultants were mobilized to leverage the past experience and knowledge on local policy, institutional and management systems.

EMB directors designated focal persons at the Central Office and the Regional Offices in the pilot regions for Phases I and II. The focal persons were seen as the target group of the capacity development so that they were always readily accessible to project information and participated in various meetings. Their roles in the meetings were not only participation but are also vital to pronounce the official position of EMB on the proposed water quality management approach. They were, sometimes, compelled to bear the brunt of opposition. Designation of focal persons, accordingly, had two notable attributes to capacity development: 1) the focal persons were compelled to behave proactively in internal meetings in the Project to prepare for TWG meetings and Public Consultations; and 2) the focal persons enhanced their specialization by being assigned with a particular area of water quality management.

The major element of the planning process of the project management was the grouping of activities because there were a total of forty activities to generate the intended project outputs as identified in the Project Document.

With full recognition of the nature of the activities, implication over the project objectives and an interrelationship among them, the activities were categorized into groups to enhance manageability of the activities by the limited number of EMB personnel. However, the readers of the report are reminded that the project framework remained output-oriented which were stated in terms of capacity building results for the EMB CO and ROs. Monitoring of the activity groups was therefore rendered in relation to the capacity building outputs expected from the project.

The grouping narrowed down the forty activities and numerous sub-activities into a few packages of activities, or groups, having a common objective and methodology. In Phase I of the Project, grouping was done to have nine (9) major groups. During Phase I, a total of 17 priority activities were completed. As a result, 23 activities remained in the project portfolio. They were subsequently categorized into 6 groups to facilitate project management by pooling the activities that have related expertise requirements in Phase II.

On the basis of the grouping in the planning sessions, the EMB CO in cooperation with the JICA TAT translated the priority activities into the Terms of References for services rendered by local consultants. On the basis of the TORs, the JICA TAT solicited bidders, procured and entered into contracts with respective service providers in Phase II; while such procurement arrangement was performed through the JICA Philippine Office in Phase I. A total of 459.1 man-months of local consultants were mobilized throughout Phases I and II. The arrangement was made to leverage the past experience and knowledge on local policy, institutional and management systems. It maximized the project benefit through enhanced capacity of EMB and concomitant capacity development of local consultants who are also key players in delivering good public services in the country.

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Project milestones, for instance kick-off meetings, Technical Working Group meetings and Public Consultations, were used to determine whether or not the project is on schedule by presenting them in a common format over the course of the Project. It was also used to inform major events of the Project to the Focal Persons of CO, all ROs including Non-Pilot Regions, and local consultants so as to ensure coordination among them. It was not a static management tool, but it was flexibly modified in one way or another in order to accommodate one or more scheduled events. This was in case a particular event was running behind schedule or in other cases because a succeeding event's timing had to be changed.

Other significant dimensions of project management included a) flexibility principle in project implementation; b) partnership with DENR executive level; c) continued commitment of the Central Office to manage and lead; and d) communication with a wide range of stakeholders.

Chapter 3 Project Accomplishments

All priority activities identified in the Project Document were accomplished in the five-year period of the Project. The chapter presents the main features of the deliverables of the project activities.

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Output 1 of the Project is to establish an integrated policy framework for water quality management on the CWA, prepare supporting procedural guidelines and provide training for EMB staff. There are basically three types of activities under this output: policy formulation, development of procedural guidelines/manuals, and training. The policy activity produced an integrated water quality management framework to guide CWA IRR implementation. Within such framework, procedural guidelines for specific provisions of the CWA IRR were prepared, covering: market-based instruments, water classification, WQMA

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1. Integrated Water Quality Management Framework and its Implementation Activities
2. Procedural Manual for Designation of Water Quality Management Area
3. Procedural Guidelines for Designation of Non-Attainment Areas
4. Policy Regulatory MBI Framework on WQM
5. Guidelines on Incentives
6. Guidelines on Rewards
7. Procedural Guidelines on Effluent Quota
8. Procedural Manual on Classification/Reclassification of Surface Fresh Waters, Coastal and Marine Waters
9. Procedural Guidelines for Water Quality Management Area Action Planning and LGU Compliance Scheme
10. Reference Manual on Water Quality Management Area

designation and area planning, identification of non-attainment areas, industry categorization, compliance monitoring and enforcement. The training activity on procedures/systems for water quality management included local training and training/study tours in Japan. There were fourteen (14) activities in total to generate the output.

- Action Planning and LGU Compliance Scheme
11. Implementing Rules and Regulations of the Wastewater Charge System and Discharge Permits under Republic Act 9275
 12. Implementing Guidelines on the Operationalization of the National Water Quality Management Fund under Republic Act 9275
 13. Implementing Guidelines on the Operationalization of the Area Water Quality Management Fund under Republic Act 9275
 14. Significant Effluent Quality Parameters per Sector integrated into the General Effluent Standards
 15. Water Quality Monitoring Manual Volume I - Manual on Ambient Water Quality Monitoring
 16. Water Quality Monitoring Manual Volume II - Manual on Effluent Quality Monitoring
 17. Guidelines for Area Cooperation Arrangement for Water Quality Monitoring
 18. The concept of regulatory flexibility are embedded and/or reflected in various guidelines developed under the Project.
 19. Procedural Guidelines for Establishing Effluent Standards including General and Industry-Specific Standards
 20. Procedural Guidelines for prioritization of polluters for compliance inspection
 21. Operation Manual of Compliance Inspection
 22. Revised Guidelines in the Accreditation of Pollution Control Officers
 23. Water Quality Guidelines
 24. General Effluent Standards
 25. Industry Specific Effluent Standards for Alcohol Distillery
 26. Industry Specific Effluent Standards for Manufacturer of Pulp (Abaca),
 27. Industry Specific Effluent Standards for Manufacturer of paper and paper products,
 28. Industry Specific Effluent Standards for Sugar Milling, and Refining
 29. Industry Specific Effluent Standards for Hotel and Restaurant sub-sector.
 30. Philippines Effluent Management Strategy
 31. Orientation and workshop conducted for the EMB CO and all the EMB RO at the end of each year.
 32. Ten guidelines were integrated and harmonized from legal viewpoints .

Output 2 of the Project is to strengthen the capacity of the EMB Central Office to lead and support the Regional Offices. There are ten (10) activities under the output for strengthening coordination between CO and ROs for CWA IRR implementation; water quality modeling; public information; development of database systems and data network; preparation of water quality status report; management of the national WQM fund; support for training programs of the EMB CO laboratory; management system training for CO staff, and initiatives for mobilizing additional resources from other donors to support non-pilot regions.

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1. Through the EMB's management conferences, updating information on the Project was done.
2. Appropriate water quality modeling technique developed and tested.
3. WQMA Water Quality Status Reports for MMO RS WQMA
4. WQMA Water Quality Status Reports for IB RS WQMA
5. WQMA Water Quality Status Reports for Sarangani Bay WQMA
6. Materials for National Awareness Campaign
7. Initial water quality and pollution source database management system
8. Internet-based WQM information and communication system to link the EMB CO with the-ROs
9. A water quality and pollution source database with reporting system for use by ROs linking between CO and ROs
10. Guidelines for the Preparing of the Regional and National Water Quality Status Reports for Public Information and Advocacy
11. National Water Quality Status Report 2001-2005
12. Operations Manual on National Water Quality Management Fund
13. A set of equipment for WQMS staff and the Central Laboratory.
14. Training through participatory development of the systems along with the Orientation and Workshop opportunity for the staff of EMB CO
15. Draft Project proposal along with planning workshops. One of the meetings included the Seminar on Implementation of the Philippines CWA of 2004 and Capacity Development Project on WQM

Output 3 of the Project is to establish and support WQMA and strengthen related institutions in 3 pilot regions. The main activities are patterned after the steps specified for establishing area-based management systems under the CWA. The steps cover the designation of WQMA, setting up area management bodies, formulating area-based action plans and LGU-based compliance plans, managing area water quality funds, and initiating collaborative water quality monitoring arrangements. A prominent accomplishment under output 3, among others, is the formal designation of the WQMA in the three pilot regions.

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1. Marilao-Meycauayan-Obando (MMO) River System WQMA in Region III,
2. Iloilo-Batiano River System WQMA in Region VI
3. Sarangani Bay WQMA in Region XII
4. Creation of the Governing Boards of MMO RS WQMA,
5. Creation of the Governing Boards of IB RS WQMA
6. Creation of the Governing Boards of Sarangani Bay WQMA
7. Initial Ten Year Action Plan for Iloilo-Batiano River System Water Quality Management Area
8. Initial Ten Year Action Plan for Marilao-Meycauayan-Obando River System Water Quality Management Area
9. Initial Ten Year Action Plan for Sarangani Bay Water Quality Management Area
10. Operations Manual on Area Water Quality Management Fund
11. Multi-sectoral Monitoring Groups created for MMO RS WQMA
12. Multi-sectoral Monitoring Groups created for IB RS WQMA
13. Multi-sectoral Monitoring Groups created for Sarangani Bay WQMA

Output 4 of the Project is to strengthen the overall capability of EMB Regional Offices in water quality management in 3 pilot regions. The eleven (11) activities for generating the output are designed to support ROs in the pilot regions to implement the procedures and support systems developed under Outputs 1 and 2. Using these guidelines and systems, regional strengthening activities supported by the JICA TAT include the identification of non-attainment areas, classification of water bodies and their monitoring, implementation of the discharge permitting and wastewater charge system, accounting of revenues from permitting and wastewater charges, conduct of pollution source inventories, use of such inventories for area planning and prioritizing regulatory operations, data surveys and database development including use of water quality models for analysis.

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1. Delineated Non-Attainment Areas within MMO RS WQMA,
2. Delineated Non-Attainment Areas within IB RS WQMA
3. Delineated Non-Attainment Areas within Sarangani Bay WQMA.
4. Initial Classification for Albay Gulf (Wet Season)
5. Initial Classification for Toledo-Balamban Coastal Water (Wet Season)
6. Initial Classification for Macajalar Bay (Wet Season)
7. The complete staff work for implementation of the discharge permitting and wastewater charge system supported by case studies and solutions for CO staff
8. Technical paper on procurement procedure for WQMA governing board operationalization of the water quality management funds
9. General loan provision procedure for WQMA governing board
10. List of Industries within the three WQMA with categorization
11. Water Quality Modeling was applied in 1) Identifying NAA, 2) Preparing 10-year WQMA Action Plans 3) Classification of Water bodies
12. Recommendations on the Pollution Source Prioritization and Compliance Inspections
13. Enhanced database developed under the Project operational
14. A set of laboratory instrument and equipment for Region III
15. A set of laboratory instrument and equipment for Region VI
16. A set of laboratory instrument and equipment for Region XII
17. Region III: Water Quality Status Report 2001-2005
18. Region VI: Water Quality Status Report 2001-2005
19. Region XII: Water Quality Status Report 2001-2005
20. Regional cross visit was conducted taking advantage of Orientation and Workshop convened in Metro Manila to visit some locations in MMO RS WQMA and wastewater treatment facilities operating in Metro Manila.

Chapter 4 Assessment and Challenges Ahead

The section of the report presents the assessment of the capacity development attained on the basis of questionnaires administered by the JICA TAT.

Overall, the results clearly showed that both CO and ROs have been capacitated in all aspects since the Project commencement in 2006. In most cases of the institutional aspect, the delay of approval of draft guidelines, standards and manuals appears to be a hindering factor for enhancement of capacity of EMB. On the other hand, it is noteworthy that EMB's capability is significantly increased in terms of coordination with other NGAs and between EMB CO and ROs. From the viewpoint of the organizational aspect, the ROs in the Pilot Regions, in general, appeared to be capacitated more than those in non Pilot Regions. The experience as technical secretariat of the WQMA GB worked as a strong driving force to enhance the capacity complemented with increased sense of ownership and leadership. As for the individual aspect, orientation and workshops significantly contributed to their changes in capacity in performing their tasks.

In retrospect, the external support provided to the DENR was critical to the success of the Project since JICA was able to provide a wide range of

The section of the report presents the assessment of the capacity development attained on the basis of questionnaires administered by the JICA TAT. The questionnaire surveys were conducted during the Project to inquire the perception of respondents on capacity in 2006 and 2010. The questionnaire formats were designed to quantify, as far as possible, the capacity development attained by assigning five ratings from 1 with the lowest to 5 with the highest appreciation of the achievement. The respondents were the counterpart staff of the Project.

Overall the results clearly showed that both CO and ROs have been capacitated in all aspects since the Project commencement in 2006. In most cases of the institutional aspect, the delay of approval of draft guidelines, standards and manuals appears to be a hindering factor for enhancement of capacity of EMB. On the other hand, it is noteworthy that EMB's capability is significantly increased in terms of coordination with other NGAs and between EMB CO and ROs through a lot of meetings convened for developing the guidelines and other policy documents. From the viewpoint of the organizational aspect, the ROs in the Pilot Regions, in general, appeared to be capacitated more than those in non Pilot Regions. It indicated that provision of equipment and materials had been imminent and is critical needs at the regional offices for them to undertake their mandates. And further, as shown in the case of Pilot Regions, experience as Technical Secretariat of the WQMA GB worked as a strong driving force to enhance the capacity complemented with increased sense of ownership and leadership. As for the individual aspect, orientation and workshops, the venue to disseminate project experiences over the country, significantly contributed to their changes in capacity in performing their tasks.

In spite of the above-mentioned enhancement of capacity, use of Water Quality Modeling remained a challenge for both the organizational and individual aspects of EMB. Even though the methodology of scientific analysis of water quality using modeling technique has been established through the activities on action planning and classification of marine and coastal waters, there are very few officers of EMB who can properly operate the modeling technique. Three technical options were considered: 1) Assign and/or train one or more modeling expert(s) at each of RO; 2) Create a modeling section in the CO or regions; 3) Mobilize external resources for special tasks such as Action Planning etc. The third option appears to be technically and financially less favorable. However, it is viewed as the most feasible option in the short run.

In retrospect, the external support provided to the DENR was critical to the success of the Project since JICA was able to provide a wide range of technical, planning and managerial expertise on the basis of its international experiences on water quality and water resource management in Asia and

technical, planning and managerial expertise on the basis of its international experiences on water quality and water resource management in Asia and elsewhere in the world.

The challenges ahead include:

- 1) Approval of the Guidelines to ensure project sustainability;*
- 2) Continued support to the GBs to ensure project sustainability;*
- 3) Assistance to Non-pilot regions.*

elsewhere in the world. It facilitated the mobilization of regional efforts and resources to overcome institutional and organizational barriers as demonstrated in the Designation of the Marilao-Meycauyan-Obando River Systems as a WQMA in Region III. Without the combined resources, implementation of the Project would proceed at a significantly slower pace with disparate interventions dependent on the availability of Government funds; and would not fully benefit from the experience gained from other water-related projects worldwide.

The project has developed a wide range of documents that are expectedly approved by appropriate policy instruments such as DAO, EO or MC. Ten (10) guidelines and manuals have been already officially approved or published. The other documents are at their very final stage of development. The endorsements of the IWQMF and the guidelines on WQMA fund management, among others, are indispensable to involve all stakeholders in WQMA activities and scale up WQMA to other water bodies and WQMAs. Other policy and technical documents produced under the Project are also at the final stage for approval. The approvals of the documents are the preconditions for full implementation of the water quality management under the CWA.

Further, in order to ensure the sustainability of the GB activities, recommendations were made to the EMB CO and ROs to monitor specific aspects of GB activities such as enhancement of regional cooperation for sustainable resource allocation, endorsement of the action plans by the relevant LGUs, and adequate man-resource allocation to the regional offices.

To assist the non-pilot regions, a questionnaire administered during the orientation and workshop also identified priority waterbodies for future WQMA designation and seven priority waterbodies for classification. The EMB CO has come up with twelve (12) proposed waterbodies. Adequate planning for WQMA designation is required to maximize efficiency of financial resource use because some of the proposed waterbodies appear to be oversized as a WQMA from a managerial aspect.