

Republic of the Philippines

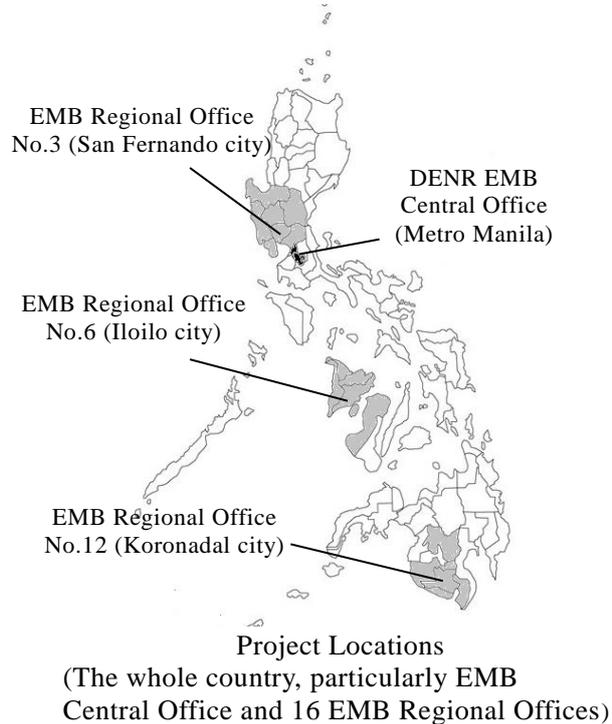
Ex-Post Evaluation of Japanese Technical Cooperation Project  
“Capacity Development Project on Water Quality Management”

External Evaluator: Miku Watanabe, IMG Inc.

0. Summary

The Capacity Development Project on Water Quality Management (herein after referred to as “the Project”) aims at strengthening the overall capacity of the Environmental Management Bureau (herein after referred to as “EMB”) for water quality management required to implement the priority actions mandated under the Clean Water Act (herein after referred to as “CWA”) implementing rules and regulations. This project has been highly relevant to the Philippines’ development plan, development needs as well as Japan’s Official Development Assistance (herein after referred to as “ODA”) policy; therefore, its relevance is high. Through the Project, the Integrated Water Quality Management Framework has been formulated, and EMB Central Office’s capacity of supporting Regional Offices and the Regional Offices’ water quality management capacity were enhanced; therefore, the Project Purpose has been successfully achieved (The Central Office and Regional Office are hereinafter referred to as “CO” and “RO,” respectively). Since 11 of 16 ROs are at the stage of formulating the Action Plan and have yet to implement it, the Overall Goal has been achieved at a limited level; however, EMB ROs are equipped with Water Quality Management Section’s staff who have administrative and technical know-how, and the cooperation with other relevant agencies has been established. Therefore, effectiveness/impact is fair. Although the Project period was within the plan, the Project cost exceeded the plan. Therefore, the Project’s efficiency is fair. No major problems that affect the Project’s sustainability have been observed in the policy backgrounds or in the institutional, technical and financial aspects of the implementing agency. Therefore, the sustainability of the Project’s effects is high. In light of the above, this Project is evaluated to be satisfactory.

## 1. Project Description



Marilao River in the Province of Bulacan, which was designated as a Water Quality Management Area

### 1.1 Background

In the Philippines, water quality has been deteriorating due to population growth and the concentration of industries caused by economic development. The lack of well-maintained environmental infrastructures such as urban drainage systems and industrial waste disposal plants have made severe impacts especially on public health, and the fishing and tourism industries. In addressing the water pollution, the CWA was enacted in 2004 followed by its implementing rules and regulations in 2005. The Act stipulates the development of policy frameworks and supporting technical guidelines, the designation of Water Quality Management Areas (herein after referred to as “WQMA”), and the formulation of the WQMA Action Plan conducted in partnership with stakeholders with conflicting interests (Local Government Units [herein after referred to as “LGUs”], government agencies, commercial and industrial entities, Non-Governmental Organizations [herein after referred to as “NGOs”], local community groups, etc.) The development of EMB’s overall water quality management capacity including technical and policy aspects was a pressing issue in order for EMB as the implementing agency of the CWA to carry out its new duties and responsibilities required by the CWA. In this context, the Government of the Philippines requested the Government of Japan to undertake a technical cooperation project to develop the capacity of EMB. In response to the request, the Record of Discussion to launch the Project were signed on October 24, 2005.

## 1.2 Project Outline

Overall Goal		Under initiatives 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 <sup>1</sup> .
Project Objective		Capabilities of EMB Central and Regional Offices to implement priority actions mandated under the CWA Implementing Rules and Regulations are strengthened.
Outputs	Output 1	Integrated policy framework for Water Quality Management based on the CWA is established and supported by adequate procedural guidelines and training for EMB staff.
	Output 2	Capacity of EMB Central Office to lead and support the Regional Offices is strengthened.
	Output 3	Capability of EMB Regional Offices to establish and support WQMAs and related institutions is strengthened in 3 pilot regions <sup>2</sup> .
	Output 4	Overall capability of EMB Regional Offices in water quality management is strengthened in 3 pilot regions.
Inputs		<p>Japanese Side:</p> <ol style="list-style-type: none"> <li>1. Experts: 9 for Short-Term experts</li> <li>2. Local consultant: 459.1 Man/Month (M/M)</li> <li>3. Training in Japan: 4 Participants</li> <li>4. Equipment Approx. 81 million yen</li> </ol> <p>Philippine Side:</p> <ol style="list-style-type: none"> <li>1. 26 Counterpart Personnel (C/P)</li> <li>2. Project Implementation Cost Maintenance fee of equipment, Utilities, C/P's travel expenses (gasoline, airfare) for attending Project activities</li> </ol>
Total cost		758 million yen
Period of Cooperation		January 2006 – January 2011
Implementing Agency		The Environmental Management Bureau, The Department of Environment and Natural Resources (DENR)

<sup>1</sup> WQMA Governing Board consists of members of LGUs in WQMA, government agencies, industries and commercial entities, with DENR representatives (EMB regional directors in many cases) serving as the chair of the Board. The Technical Secretariat of the Board, consisting of EMB Regional officers, provides technical support for the Board.

<sup>2</sup> The three pilot regions are RO 3 (Marilao-Meycauayan-Obando River System WQMA in Luzon), RO 6 (Iloilo-Batiano River System in Visayas), and RO 12 (Sarangani Bay WQMA in Mindanao).

Cooperation Agency in Japan	N/A
Related Projects	Long-term Expert “Environment Policy Advisor”

### 1.3 Outline of the Terminal Evaluation

The results of the terminal evaluation carried out in November 2010 are presented below.

#### 1.3.1 Achievement of Overall Goal at the time of the Terminal Evaluation

Using the procedural guidelines developed under the Project, EMB has been carrying out the classification of water bodies and the designation of WQMA. EMB CO has identified 16 priority water bodies as candidate sites for WQMA. EMB has set a policy to establish at least one WQMA for each region and has allocated funds for such regions that already designated WQMA. It was expected that WQMA implementation would be facilitated in non-pilot regions in a broader scale when water quality management funds become available. (The rating for the Project’s impact was moderate.)

#### 1.3.2 Achievement of Project Objective at the time of the Terminal Evaluation

Through the Project activities, almost all the procedural guidelines and operational manuals for the implementation of the CWA have been formulated and piloted in pilot regions. Three pilot regions have carried out WQMA related activities based on the WQMA Action Plan in cooperation with LGUs and other relevant stakeholders. The results of the study conducted during the Project in 2006 and 2010 demonstrated the improvement of EMB CO’s and RO’s capacity in institutional, organizational and individual aspects compared with those in the Project’s outset. The Project Purpose has been thus achieved.

#### 1.3.3 Recommendations at the time of the Terminal Evaluation

Five recommendations of the terminal evaluation and the status at the ex-post evaluation were described as below.

<b>Recommendations From the Terminal Evaluation</b>	<b>Status At the Ex-Post Evaluation</b>
The remaining tasks of technical assistance should be completed in order to fully accomplish the Project’s objectives during the Project period.	Planned technical assistance was completed during the Project period. The Project Purpose has been achieved by the Project completion.

EMB should make their best effort to expedite the approval process of the procedural guidelines and manuals developed under the Project.	While there are some guidelines pending approval at the time of ex-post evaluation, EMB has taken appropriate actions within its capacity including the timely revisions and reviews of guidelines.
EMB and Japan International Cooperation Agency (herein after referred to as JICA) should closely monitor activities of WQMA Governing Board in 3 pilot regions and extend support if necessary.	After the Project completion, DENR and JICA have been carrying out the Project Implementation Review Meeting 2-3 times every year and monitoring the activities of WQMA Governing Boards.
EMB should make their best effort to increase efficiency through restructuring the operations of Regional Offices and increase the number of staff.	EMB Regional Offices have conducted WQMA related activities in close coordination with staff in other sections. To address work overload of existing staff, the increase of ROs' personnel is expected during 2014.

## 2. Outline of the Evaluation Study

### 2.1 External Evaluator

Miku Watanabe, IMG Inc.

### 2.2 Duration of Evaluation Study

Duration of the Study: September 2013 – July 2014

Duration of the Field Study: November 3-19, 2013, and February 2-11, 2014

### 2.3 Constraints during the Evaluation Study

The Project sites are situated across the whole country, which are EMB CO in Metro Manila and the 16 EMB ROs. Due to time constraints, the evaluator made visits to EMB CO, 3 pilot ROs (i.e., Region 3, 6, and 12), and 1 non-pilot RO<sup>3</sup>. Information regarding the rest of the ROs was collected from interviews with EMB staff and documents or data provided by EMB CO.

<sup>3</sup> One non-pilot RO (Region 1) was selected after consultation with the implementing agency using the criteria of carrying out exemplary WQMA activities and demonstrating good practices.

### 3. Results of the Evaluation (Overall Rating: B<sup>4</sup>)

#### 3.1 Relevance (Rating: ③<sup>5</sup>)

##### 3.1.1 Relevance to the Development Plan of the Philippines

In the Mid-Term Philippine Development Plan (2004-2010) at the time of the ex-ante evaluation, the Environment and Natural Resources Sector aims to “create a healthier environment for the population” (Thrust No.4) as one of the five major thrusts. As a specific strategy to achieve the thrust, it pursues ensuring “clean water resources for the entire country through full implementation of the Clean Water Act.” In the Philippine Development Plan (2011-2016) at the time of the Project completion, the Environment and Natural Resources Sector continues to pursue the “improved environmental quality for a cleaner and healthier environment” as its major goal with reducing “water pollution to improve water quality in priority rivers and other economically and ecologically important water bodies” as one of the strategies. The Project Purpose and Outputs aim at formulating policy and guidelines to implement the CWA and strengthening the water quality management capacity of EMB, which are aligned with the development plans of the Philippines.

##### 3.1.2 Relevance to the Development Needs of the Philippines

In the Philippines, the quality of water has been deteriorating while the demand for water has been increasing. There was a strong need for the integrated and comprehensive management of water resources in order to achieve socioeconomic development and to strengthen international competitiveness. The implementation of the CWA aims at the improvement of water quality through enhanced self-help activities of LGUs, local communities and commercial industries. In implementing the CWA, it was necessary to establish a comprehensive institutional mechanism for the formulation of policy and a system of water quality management by EMB as well as for the implementation of the CWA at the field level. The need of the integrated water resources management and the capacity development of EMB has been recognized in the Mid-Term Philippine Development Plan (2004-2010) and the Philippine Development Plan (2011-2016). The needs for the establishment of the implementing structure for the CWA and the capacity development of EMB in the country have been high throughout the Project period, and the relevance to the development needs had been maintained.

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<sup>4</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

<sup>5</sup> ③: High, ② Fair, ① Low

### 3.1.3 Relevance to Japan's ODA Policy

The Japan Country Assistance Program for the Philippines (2000), at the time of the Project's ex-ante evaluation, set the assistance for the environmental protection and disaster prevention measures as one of the five priority areas of Japan's ODA. The Second Environment Sectoral Assistance Study Report (2001) by JICA underscored assistance in the development of environmental management technology as well as an importance of "capacity development" in such areas as implementing laws and regulations on the management of natural resources. The capacity development of EMB on the implementation of the CWA provided by the Project was in line with Japan's ODA policy.

This Project has been highly relevant to the Philippines' development plan, development needs, as well as Japan's ODA policy. Therefore, its relevance is high.

## 3.2 Effectiveness and Impact<sup>6</sup> (Rating: ②)

### 3.2.1 Effectiveness

#### 3.2.1.1 Project Output

Four Outputs and the level of achievement for each Output are described below.

##### 1) Output 1

Output 1 is "Integrated policy framework for water quality management based on the CWA and is established and supported by adequate procedural guidelines and training for EMB staff." (Please refer to Attachment 1: Indicators for Outputs, the Project Purpose, and the Overall Goal and Levels of Achievement for indicators for each Output.)

On Indicator 1 for Output 1, EMB has formulated the draft Integrated Policy Framework in 2007, which specified water quality goals, the period of compliance, water pollution control strategies and techniques, water quality information and education program, and human resource development program. EMB submitted the draft framework to DENR for approval<sup>7</sup>. As general procedures for approving policy frameworks and guidelines, after the finalization of a draft by EMB, documents are reviewed and approved in turn by DENR's policy technical working group, the DENR Executive Committee which is composed of DENR and EMB officials, and the Secretary of DENR.

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<sup>6</sup> Sub-rating for Effectiveness and Impact is given with consideration of the assessment of "3.2.1. Effectiveness" and "3.2.2. Impact." Since the Project's Effectiveness was assessed to be ③(High) and Impact was ②(Fair), the sub-rating for Effectiveness and Impact was ②(Fair).

<sup>7</sup> The draft policy framework which was formulated during the Project period specified all the items listed on the indicator 1 of Output 1; however, the approved framework does not include the water quality goals/targets and the period of compliance since they are specified in "the Procedural guideline for facilitating WQMA action planning by WQMA Boards and follow-on compliance planning by LGU" and the CWA Implementing Rules and Regulations, respectively.

The approval of the Integrated Water Quality Management Framework and supporting procedural guidelines required longer time than originally expected because of delays due to time required for DENR's review process as well as events such as appointments of a new Secretary and elections. The policy framework was approved as a DENR Administrative Order (DAO) 2013-008 on February 17, 2013, and published in the national newspaper. The method of announcement was appropriate since the framework was made available to the public using the medium of newspaper. Although the Integrated Water Quality Management Framework had not been published during the Project period, it is evaluated that Indicator 1 has been achieved since the draft policy framework was formulated with appropriate contents in 2007 and EMB has taken appropriate actions within its capacity including the timely revisions and reviews of guidelines.

Regarding the publication and dissemination of the supporting procedural guidelines on Indicator 2, all the draft supporting guidelines or manuals have been formulated by 2008 (Please refer to Attachment 2: CWA Supporting Guidelines and Manuals). EMB CO submitted draft guidelines to DENR after multiple revisions and consultations with ROs overseeing a variety of environmental challenges and water bodies at the Orientations/Workshops and EMB Management Meetings<sup>8</sup>. The Water Quality Monitoring Manual 1, 2 and Procedural Manual for Designating WQMAs were approved in 2008 and 2009, respectively. EMB CO distributed these manuals and required all the ROs to enforce adherence to the manuals accordingly. Following the guidance of EMB CO, ROs started water quality monitoring and the designation of WQMA based on the manuals. EMB CO also introduced other supporting guidelines and implementing procedures of the CWA to ROs using the case studies and experiences of 3 pilot regions at the Orientations/Workshops. The method of publication and dissemination were appropriate since ROs received DENR's approved guidelines from EMB CO and were trained on them at the Orientations/Workshops. Although not all the supporting guidelines have been approved during the Project period, it is evaluated that Indicator 2 has been achieved since the draft guidelines and manuals were formulated by 2008 and the guidelines were introduced to ROs including non-pilot regions at the Orientations/Workshops during the Project.

Regarding the orientation-training programs on the policy framework and supporting procedures on Indicator 3, the Orientations/Workshops were organized once a year, a total of 5 times, during the Project period. All the 16 ROs attended every workshop and the accumulated total of 870 participants (1-4 workshops) completed the

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<sup>8</sup> According to Project Design Matrix (PDM), the once-a-year training program for EMB personnel is called Orientation/Workshop.

training<sup>9</sup>. The implementing procedures of the CWA were introduced to ROs with case studies of pilot activities in 3 pilot regions at the Orientations/Workshops. The content of training was appropriate since ROs started carrying out the implementing procedures of the CWA such as designating WQMA and formulating WQMA Action Plans after attending the Orientations/Workshops. Indicator 3 was assessed to be achieved based on the five Orientations/Workshops organized between 2007 and 2010.

Output 1 has thus been achieved by the time of the Project completion.

## 2) Output 2

Output 2 is “Capacity of EMB Central Office to lead and support the Regional Offices is strengthened.”

Regarding the management system on Indicator 1, the water quality model based on the Water Quality Analysis Simulation Program (hereafter referred to as WASP) has been developed and operationalized at 3 pilot regions using the existing water quality data. Staffs of EMB CO and pilot ROs have been trained on the operating procedures for the water quality model and the methods of data input. The water quality model was effectively utilized for the formulation of the WQMA Action Plan in 3 pilot regions. The databases of water quality and pollution sources with the Geographical Information System (hereafter referred to as GIS) and an internet-based information network have been established and became operationalized. In 2007, the first national water quality status report presenting water quality data on the country’s water bodies between 2001 and 2005 was published. A project proposal stating the basic principal and implementing procedures was developed for extending support to the non-pilot regions. Considering the above, Indicator 1 has been achieved.

Regarding the provision of equipment on Indicator 2, the Project has provided water monitoring and sampling equipment as well as laboratory equipment to EMB CO<sup>10</sup>. Since the staffs of EMB CO and central laboratory were already familiar with the procured equipment, the training focused on reviewing the methods of operation, maintenance, and management of the procured equipment. Staff of the Water Quality Management Section of EMB CO conducted field sampling and water monitoring using the procured equipment while the central laboratory carried out water quality examinations with the equipment provided by the Project. Staff of EMB CO received

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<sup>9</sup> Training date, period, and the number of participants are as follows. The first session: 4 days in Feb-Mar 2007 (184 participants), The second session: 10 days from Nov 2007 to Mar 2008 (231 participants), The third session: 1 day on March 17, 2009 (231 participants), The fourth session: period unknown, Feb 2010 (224 participants), The fifth session: 4 days in Nov-Dec 2010 (the number of participants unknown)

<sup>10</sup> Using the equipment provided by the Project, the central laboratory conducted water quality examinations and verified the test results submitted from ROs (once a year for each RO) as a reference laboratory.

training on procured equipment and conducted water quality monitoring using the equipment; therefore, Indicator 2 was achieved.

Regarding the coordination by EMB CO on Indicator 3, EMB CO shared information including the implementation procedures of the CWA-related guidelines and the progress of the Project activities with ROs through public consultations, WQMA meetings, and annual Orientations/Workshops. EMB CO provided assistance on the issues specific to each region at least 4 times a year through monitoring of the CWA implementing activities (e.g., classification of water bodies, designation of WQMA), request to mayors of LGUs for cooperation in WQMA activities, and attendance in meetings with local stakeholders to call for participation in WQMA. Considering the above, Indicator 3 was achieved.

Output 2 has therefore been achieved by the time of the Project completion.

### 3) Output 3

Output 3 is “Capability of EMB Regional Offices to establish and support WQMAs and related institutions is strengthened in 3 pilot regions.”

Regarding the designation of WQMA on Indicator 1, 4 WQMAs, including those in 3 pilot regions, have been designated by 2009. Further, WQMAs in 3 pilot regions formulated the Action Plan within the same year. Therefore, Indicator 1 was achieved.

On the management structures of WQMA described in Indicator 2, 3 pilot regions established WQMA Governing Boards and Multi-sectoral action groups consisting of local stakeholders including LGUs and industrial and commercial entities by the Project completion. According to each Governing Board’s rule, WQMA Governing Boards functioned as per its stated purpose by convening regularly. Each WQMA Governing Board set up the Technical Secretariat consisting of EMB RO officers. WQMA Governing Boards in all the 3 pilot regions adopted the reporting system in which the meeting minutes drafted by the Secretariat are circulated among the members for review and approved at the next regular meeting. The area water quality management fund was not established or operationalized by the end of the Project completion due to delays in review and approval of the Procedural Guideline for Managing the National and Area Water Quality Management Fund; however, the fund management system was virtually functional since EMB ROs have been collecting the pollution charges according to the waste load calculated by the quantity of discharge and the effluent concentration as specified in the CWA. Therefore, Indicator 2 is assessed to be achieved.

Output 3 has thus been achieved by the time of the Project completion.

#### 4) Output 4

Output 4 is “Overall capability of EMB Regional Offices in water quality management is strengthened in 3 pilot regions.”

On the database on pollution sources and pollution charges stated in Indicator 1, each pilot RO conducted the site surveys of major pollution sources in WQMA and compiled the collected data on point and non-point sources in the database by the Project completion<sup>11</sup>. EMB ROs have issued discharge permits to industrial and commercial entities that are major polluters and required these companies to submit self-monitoring reports. Regarding the system for assessment, collection and accounting of pollution charges, the Procedural Guideline for Pollution Load and Charge Computation in Support of the Discharge Permit System was pending approval at the time of Project completion. During the Project period, ROs developed a computation table for calculating the pollution load and pollution charges based on the existing effluent standards, linked the table with the developed databases on pollution sources, and carried out assessment, collection and accounting of pollution charges<sup>12</sup>. Similarly, economic incentives including tax relief were not provided since the Guideline for the Enforcement of Water Quality Management Projects under RA 9275 (Reward/Incentive system) was pending approval; however, using the existing policy frameworks (e.g., Eco Watch Program, the Philippine Environmental Partnership Program), EMB provided incentives such as a 2-year exemption from legal sanctions and relaxation of self-monitoring requirements for industrial and commercial entities that improved the quality of discharges. Considering the above, Indicator 1 was assessed as achieved.

On Indicator 2, pilot ROs developed the regional water quality status report following the Guideline for the Preparation of the Regional and National Water Quality Status Reports for Public Information and Advocacy. EMB CO published the reports on EMB’s website in 2007. Indicator 2 was achieved.

Regarding the classification of water bodies on Indicator 3, the EMB CO intended to prioritize the classification of sea-coast and lakes that had not been classified in an appropriate method. As a result, the Albay Gulf (Region 5), Toledo-Balamban Coastal Area (Region 7) and Macajalar Bay (Region 10) were classified as priority water bodies according to the Procedural Guideline for Classifying Inland and Marine Water Bodies and Groundwater. Therefore, Indicator 3 was therefore achieved.

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<sup>11</sup> The discharge permit is a system that requires operators of facilities that discharge effluents (e.g., wastewater treatment facility, commercial and industrial establishments) to comply with the effluent standards into a particular water body and to the report on self-monitoring results. The pollution charges are imposed on the facilities that discharge effluents according to waste load calculated based on the quantity of discharge and the effluent concentration.

<sup>12</sup> CWA stipulates to apply the existing effluent standards (DENR AO 1990/1995-35) as tentative standards during the transitional period until the new effluent standards are established.

On Indicator 4, 3 pilot ROs formulated the WQMA Action Plan using the water quality model developed and set up by the Project. The water quality data including the results of water monitoring and information on pollution sources are managed in the database developed by the Project, which are utilized for information-sharing and reporting among EMB CO and ROs throughout the country. Indicator 4 was thus achieved.

Regarding the regional laboratory on indicator 5, the Project provided the necessary water monitoring and testing equipment for EMB regional laboratories in 3 pilot regions. EMB central laboratory provided training on the usage of provided equipment for the staff of regional laboratories (2-3 staff per laboratory including ones in 3 pilot regions) in the DENR Inter laboratory Comparison Exercise which was held annually. After the exercise, staff of pilot regions' laboratories started joint water quality monitoring with partner laboratories and information sharing on the methods of water quality testing, which resulted in the strengthened linkage with partner laboratories<sup>13</sup>. Indicator 5 was therefore achieved.

On Indicator 6, the Project provided field sampling and monitoring equipment to 3 pilot ROs. The staff of the Water Quality Management Section in ROs received training on the usage of the provided equipment and water testing techniques. After the training, each pilot RO carried out continuous water quality monitoring using the equipment provided by the Project. Indicator 6 was therefore achieved.

On Indicator 7, water quality management training was organized for the staff of ROs' Water Quality Management Section (2-3 staff per RO) as a part of annual Orientations/Workshops during the Project period. At the training, participants were introduced to the operational procedures of newly formulated guidelines and experiences of 3 pilot regions on the designation of WQMA. After the training, ROs started carrying out the designation of WQMA and the formulation of the Action Plan, which facilitated the compliance of the CWA guidelines<sup>14</sup>. Considering the above, Indicator 7 was achieved.

Output 4 has been thus achieved by the time of the Project completion.

### 3.2.1.2 Achievement of Project Purpose

The Project Purpose is that "Capabilities of EMB Central and Regional Offices to implement priority actions mandated under the CWA Implementing Rules and Regulations are strengthened." Two indicators of the Project Purpose and the level of achievement for each indicator are described below.

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<sup>13</sup> Partner laboratories refer to the private water testing facility recognized by DENR.

<sup>14</sup> Please refer to Table 1 on the page 15 for the timing of WQMA designation and the formulation status of action plan.

1) Indicator 1

Indicator 1 is “EMB Central Office and 3 pilot ROs assisted by the Project are efficiently and effectively implementing their mandates under the Clean Water Act Implementing Rules and Regulations through: Adequate water quality management procedures in conformity with the CWA requirements; Water quality management section’s staff trained in water quality management procedures; Adequate equipment and information systems; Linkages with related water quality management agencies and concerned stakeholders.”

During the Project, EMB formulated the Integrated Water Quality Management Framework and supporting procedural guidelines for the CWA implementation and piloted the designation of WQMA and the formulation of Action Plans based on the developed guidelines. Staffs of EMB CO and pilot ROs received the opportunities for practical training through the pilot activities and enhanced the capacity of implementing their mandates under the CWA rules and regulations. As for the organizational aspects, the Technical Secretariats with well-trained staff of Water Quality Management Section (Approx. 2 staffs per RO) were established in each WQMA Governing Board of 3 pilot regions. EMB’s leadership in organizing the WQMA Governing Boards clarified the objective to address water quality issues in partnership with the regional stakeholders, which led to the participation of groups with conflicting interests including LGUs, government agencies, and industrial and commercial entities. Through the regular meetings, the linkages with related water quality management agencies and concerned stakeholders have been strengthened. In cooperation with local stakeholders, continuous water monitoring has been conducted using the equipment provided by the Project. The internet-based database on the results of water quality monitoring which links EMB CO and ROs were operational, which enabled EMB CO to monitor the results of the water quality testing and pollution source surveys carried out by all the ROs. Considering the above, Indicator 1 was achieved.

2) Indicator 2

Indicator 2 is “Capacity of the staff in charge of water quality management in non-pilot ROs is strengthened through: Participation in the learning process such as Orientations/Workshops to be conducted in the Project; Adequate understanding on the procedures and guidelines on the CWA enforcement; Familiarization with the experiences of 3 pilot regions on the WQMA designation and action planning through various types of communication.”

During the Project period, staffs of the Water Quality Management Section from all the ROs including non-pilot ROs attended the annual Orientations/Workshops (the

accumulated total of 870 persons). At Orientations/Workshops, in order to promote the understanding on the procedures and guidelines on the CWA enforcement, the procedural guidelines for the CWA implementation developed by the Project were introduced to the participants with the case studies and lessons learned from the WQMA designation in 3 pilot regions. The capacity of the staff in charge of water quality management in non-pilot ROs has been strengthened since, by applying the lessons learned from the training sessions, all 16 ROs began activities related to the WQMA designation based on the Procedural Manual for Designating WQMAs and the Water Quality Monitoring Manual during the Project. Considering the above, Indicator 2 was achieved.

Therefore, the Project Purpose has been achieved. The achievement of the Project Purpose was produced due to 4 Outputs generated by the Project.

### 3.2.2 Impact

#### 3.2.2.1 Achievement of Overall Goal

The Overall Goal, which is expected to be achieved within 3-5 years from the Project completion is that “Under initiatives 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.” The present ex-post evaluation study assessed the achievement level of the Overall Goal, particularly the implementing status of the Action Plans stated in the PDM, focusing on the functions and roles of EMB CO and 3 pilot ROs, which primarily received capacity development by the Project and are specified as the “Means of Verification” in the PDM.

The three Indicators of the Overall Goal measure the implementation status of the Action Plan in addition to the presence of adequate EMB staff and the level of cooperation with other relevant agencies. Before the implementation of the Action Plans, EMB needed to conduct a series of CWA-related activities such as water monitoring and the establishment of the WQMA Governing Boards after the designation of WQMA; however, the PDM does not include the indicators to evaluate the attainment level of activities that precede the implementation of the Action Plans. Therefore, the degree of attainment until the achievement of the Overall Goal could not be assessed using the indicators set in the PDM.

The three indicators and the achievement levels of each indicator are discussed below.

1) Indicator 1

Indicator 1 is that “water quality improvement Action Plans are being implemented by WQMA boards and LGUs, and industrial and commercial entities are complying with discharge permit systems and water quality/effluent standards, with resulting improvement in ambient water quality<sup>15</sup>.” EMB CO set the target to designate at least 1 WQMA in each region by 2013. As a result, each of the 15 EMB ROs (all ROs but Region 7) designated at least 1 WQMA, and 17 WQMAs in total were established by February 2014<sup>16</sup>. WQMA Governing Boards have been holding regular meetings in each region and discussing ways to identify water quality issues and to formulate Action Plans to address the issues. Seven of 16 ROs have formulated at least 1 WQMA Action Plan, of which 5 ROs have started the implementation of the plan given EMB CO’s approval of the plan (Please refer to Table 1 below.).

Table 1 Year of WQMA Designation and Status of Action Plan Formulation

EMB Regional Office	Name of WQMA	Year of WQMA Designation As of Feb 2014	Status of Action Plan Formulation As of Feb 2014
NCR <sup>17</sup>	San Juan River System	2012	Under planning
CAR <sup>18</sup>	Balili River	2013	Approved
Region 1	Sinocalan-Dagupan River System	2011	Approved
Region 2	Pinacanauan de Tuguegarao River	2013	Under planning
Region 3	Marilao-Meycauayan-Obando River System	2008	Approved
Region 4A	Imus-Ylang-ylang-Rio Grande Rivers	2013	Under planning
Region 4B	Calapan River	2013	Under planning
Region 5	Lake Buhi Watershed	2013	Under planning
Region 6	Tigum-Aganan Watershed	2006	Approved
	Iloilo-Batiano River System	2009	Approved
	Jalaur River	Under review	—

<sup>15</sup> Ambient water quality is a term for environmental water quality. The Philippines follows the Water Quality Criteria (DAO 34, series of 1990).

<sup>16</sup> WQMA related activities in RO 7 were slightly delayed due to the resignation of core staff members of the Water Quality Management Section. Nevertheless, the proposal for the designation of WQMA has been submitted by November 2013. According to the EMB CO, the proposal will shortly receive the DENR’s approval.

<sup>17</sup> NCR stands for National Capital Region.

<sup>18</sup> CAR stands for Cordillera Administrative Region.

Region 7	Butuanon River	Under review	—
Region 8	Ormoc Bay	2013	Under planning
Region 9	Tumaga River	2013	Under review
Region 10	Cagayan de Oro River Basin and Adjacent Rivers	2013	Under planning
Region 11	Davao River	2013	Under review
Region 12	Silway River	2010	Approved
	Sarangani Bay	2009	Approved
Region 13	Taguibo River	2012	Under planning

Source: Documents provided by EMB CO

The discharge permit system has been implemented and the accumulated total of 21,402 permits was issued between 2007 and 2012 (4,303 permits in 2012) to the major industrial and commercial entities that discharge effluent into water bodies<sup>19</sup>. By obtaining the discharge permit, industrial and commercial entities are required to conduct self-monitoring on discharges while EMB ROs monitor their status of compliance with the effluent standards every month. According to EMB CO and pilot ROs, the cases of improvement in ambient or environmental water quality have been observed in pilot regions.

Although the industries' compliance with the effluent standards has been promoted by the discharge permit system, 11 of 16 ROs are at the stage of formulating the Action Plan and have yet to implement it. Therefore, the level of achievement of Indicator 1 is low.

## 2) Indicator 2

Indicator 2 is "DENR EMB enforcing legal requirements of the CWA, and have adequate staff equipped with administrative and technical know-how to perform water quality management functions." EMB made multiple revisions on the CWA-related guidelines so that they can fulfill legal requirements of the CWA. All ROs designated WQMA based on the Procedural Manual for Designating WQMAs and carried out water monitoring in partnership with LGUs and partner laboratories according to the Water Quality Monitoring Manual. It is evaluated that EMB has adequate staff equipped with administrative and technical know-how to perform water quality management functions since CWA-related activities are being implemented. Indicator 2 was thus achieved.

<sup>19</sup> The discharge permits are renewed yearly. EMB aims at the annual increase of 5% on the number of permits issued in the previous year.

### 3) Indicator 3

Indicator 3 is “cooperation with other agencies involved in water quality management is established.” EMB, LGUs and partner laboratories are jointly conducting water monitoring for the designation of WQMA and the identification of pollution sources. Scientific data from water sampling and analysis at a number of sampling points covering broad areas over an extended period of time enhanced the stakeholders’ understanding of water quality issues specific to the areas and characteristics of pollution sources, which led to the cooperation in addressing the water quality issues. Public consultation and Orientations/Workshops organized as a part of the Project activities served as opportunities for government agencies (including EMB), LGUs, and industrial and commercial entities to regularly gather and discuss water quality issues and water management plans. Considering the above, it is assessed that cooperation with other agencies involved in water quality management has been established; therefore, Indicator 3 was achieved.

As discussed above, while Indicator 2 and 3 have been largely achieved, Indicator 1 has not been achieved due to the insufficient implementation status of the Action Plans. Therefore, the Overall Goal has been achieved at a limited level.

#### 3.2.2.2 Other Impacts

In regards to other impacts of the Project, it was confirmed that the supporting guidelines developed by the Project were utilized by other donors when they assisted in ROs’ activities of water quality management, which leads to the implementation of water quality activities relevant to CWA with consistency across the country. For example, the World Bank assisted RO 12 and CAR in the designation of WQMAs under the Water and Sanitation Program and the Third Sewerage Project, respectively. By utilizing the Procedural Manual for Designating WQMAs, RO 12 designated the Silway River WQMA and CAR designated the San Juan River System WQMA. These cases indicate that the Outputs of the Project would be expanded and disseminated by EMB in the future.

The implementation of the Project has generated positive impacts; therefore, effectiveness/impact of the Project is fair. The Important Assumptions listed on the PDM have been fulfilled, and the factors that could hinder the achievement of the Overall Goal have not been observed.

### 3.3 Efficiency (Rating: ②)

#### 3.3.1 Inputs

The following table presents the planned and actual inputs of the Project.

<b>Inputs</b>	<b>Planned Inputs</b>	<b>Actual Inputs</b>
(1) Experts	<ul style="list-style-type: none"> <li>• 7 areas</li> <li>More areas to be added if necessary</li> </ul>	<ul style="list-style-type: none"> <li>• 9 Experts (9 areas<sup>20</sup>)</li> </ul>
(2) Local Consultant	(not stated)	459.1 Man/Month (M/M)
(3) Trainees received	(not stated)	4 C/P
(4) Equipment	<ul style="list-style-type: none"> <li>• Field sampling/monitoring equipment, vehicle, etc.</li> <li>• Laboratory equipment</li> <li>• Information management system equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Field sampling/monitoring equipment, vehicle, etc.</li> <li>• Laboratory equipment</li> <li>• Information management system equipment</li> </ul>
Total Project Cost	Approx. 690 million yen	Approx. 758 million yen
Philippine side Operational Expenses	Administrative costs, maintenance and operational expenses	Administrative costs, maintenance and operational expenses

##### 3.3.1.1 Elements of Inputs

The Inputs from the Japanese side were carried out mostly as scheduled while the assignment of C/P and the operational expenses for the Project activities were provided as planned. The equipment provision was deemed appropriate since the needs for water sampling and testing equipment was high in EMB CO and 3 pilot ROs. The provided equipment was mostly in use for water monitoring and analysis at the time of the ex-post evaluation study.

The Project hired local consultants to support EMB's tasks. The local consultants provided assistance primarily in the formulation of the CWA supporting guidelines and the development of databases. The local consultants also contributed to the dissemination of the CWA supporting guidelines to ROs by preparing the documents and presentations for Orientations/Workshops using maps generated by GIS and graphic charts. The assignment of local consultants promoted the completion of the Project activities in a

<sup>20</sup> The 9 areas are Team Leader/ Policy and Planning Specialist, Water Quality Management Specialist, Organizational and Institutional Specialist, Water Quality Monitoring, Pollution Source Control, Water Quality Information System, Water Quality Modeling, Wastewater Management and Coordinator. (The Project Completion Report Phase 2 Page E-1)

timely manner. Regarding the division of tasks, while local consultants developed drafts of guidelines following the CWA legal requirements, EMB reviewed and revised them from the technical and administrative perspectives and DENR reviewed them based on the sector strategy or plans and provided final approval. Since the roles and responsibilities of local consultants were clearly differentiated from those of DENR or EMB, there was no such case that local consultants assumed the tasks that should have been completed by EMB as a part of their capacity development. Therefore, the input of local consultants was appropriate.

#### 3.3.1.2 Project Cost

The actual project cost of 758 million yen was higher than the planned cost of 690 million yen (Approx. 110% of the planned cost). This is primarily due to the additional services (9.1 M/M in 2008) by local consultants to make additional revisions on the drafts of the Water Quality Guideline and General Effluent Standards and the Procedural Guideline for Managing the National Water Quality Fund. This additional input was assessed to be appropriate since the CWA supporting guidelines were developed to be practical and suitable for the EMB's organizational structures and water quality environments.

#### 3.3.1.3 Period of Cooperation

The period of cooperation was 5 years as planned (100% of the planned cooperation period).

Although the Project period was within the plan, the Project cost exceeded the plan. Therefore, the Project efficiency is fair.

### 3.4 Sustainability (Rating: ③)

#### 3.4.1 Related Policy towards the Project

In the Philippine Development Plan (2011-2016), the Government of the Philippines aims at the "improved environmental quality for a cleaner and healthier environment" as its major goal in the Environment and Natural Resources Sector and laid out to "reduce water pollution to improve water quality in priority rivers and other economically and ecologically important water bodies" through the establishment of WQMA and the WQMA Governing Boards as a major strategy. Since it is EMB's mandate to implement the environmental laws including the CWA, EMB is required to implement the CWA throughout the country for achieving the improvement of environment for the future. Therefore, the policy aspects of the Sustainability is assured.

### 3.4.2 Institutional Aspects of the Implementing Agency

Upon the designation of WQMAs, the Technical Secretariat and WQMA Governing Boards were established in each WQMA with the participation and cooperation with local stakeholders including LGUs, government agencies, industrial and commercial entities, NGOs and local community groups. With the EMB regional director serving as the chair of the Governing Board, the board continuously organizes the regular meeting. The activities of water quality management such as joint water monitoring have been carried out in cooperation with EMB staff and Governing Board members. The results of water monitoring are presented at WQMA Governing Board meetings and shared with EMB CO and other ROs through the databases. The implementing structure of the CWA has been strengthened since the activities of water quality management have been promoted according to the CWA implementing rules and regulations and the system of information sharing and reporting between EMB CO and ROs and among local stakeholders have been established and made functional.

In order to address the overloaded work that are common in government agencies, some pilot ROs carried out the implementation of the CWA with the assistance of other sections during the Project period. The Government of the Philippines has been taking measures to address the overload of government agencies' personnel since 2004<sup>21</sup>. EMB has started the recruitment of staff and is expected to increase personnel in each of the 16 ROs within 2014.

### 3.4.3 Technical Aspects of the Implementing Agency

As a part of WQMA activities, EMB ROs have been conducting monthly water quality monitoring in cooperation with LGUs and partner laboratories. Although the second national and regional water quality status report has not been published, EMB has been continuously carrying out the monitoring on water quality status throughout the country and compiling the status of WQMA activities as a WQMA report every year. All the ROs have issued the discharge permits (4,303 permits in 2012) to the major pollution sources, required them to submit the self-monitoring reports and monitored their activities to comply with the effluent standards. EMB ROs have been carrying out several tasks of the CWA implementation including classifying major water bodies, issuing discharge permits, designating WQMAs, and formulating Action Plans based on the CWA supporting guidelines. EMB CO has been supporting the ROs' CWA implementation by providing them with the capacity development training and participating in the WQMA meetings after the Project completion<sup>22</sup>. As discussed above, EMB has developed

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<sup>21</sup> The measures (Rationalization Plan) are based on Executive Order No. 366.

<sup>22</sup> Examples of the seminar/workshops on CWA implementation organized by EMB CO are as below. (1)

adequate technical capacity to implement priority actions mandated under the CWA, which has been maintained after the Project completion.

#### 3.4.4 Financial Aspects of the Implementing Agency

EMB has been allocating budgets to all the ROs for the designation of WQMA and related activities since 2011. EMB distributed 50 million pesos to each EMB RO in 2011 while it distributed 100 million pesos in 2012 and 84 million pesos in 2013 to each WQMA. Additionally, 3 pilot regions together received 100 million pesos every year from 2009 to 2011. Since all the ROs, except for Region 7, designated at least 1 WQMA in each region and discharge permits have been issued throughout the country (4,303 permits in 2012), it is evaluated that EMB CO and ROs received the appropriate amount of budget for the implementation of the CWA at the time of the ex-post evaluation study. EMB central laboratory and regional laboratories appropriately maintained and operated the procured equipment, all of which was mostly in use for water monitoring and analysis at the time of ex-post evaluation study. According to interviews with EMB CO and ROs, an adequate budget was disbursed for the operation and maintenance of equipment. According to DENR, the EMB's general budget has been on the increase for the last few years. In particular, while DENR's budget (23.9 billion pesos) in the Fiscal Year 2014 remains almost the same as last year, EMB's budget in the Fiscal Year 2014 marked 1.3 billion pesos, which was a 19.8% increase from the previous year. Furthermore, since the implementation of the CWA is EMB's mandate, EMB is expected to actively promote the implementation of the CWA, for instance, aiming to designate 16 new WQMAs within 2014. Considering the above, it is expected that the budget of EMB CO and ROs for the implementation of the CWA will be secured.

No major problems have been observed in the policy backgrounds or the institutional, technical, and financial aspects of the implementing agency. Therefore, the Sustainability of the Project's effects is high.

## 4. Conclusion, Lessons Learned and Recommendations

### 4.1 Conclusion

The Project aims at strengthening EMB's overall capacity for water quality management required to implement the priority actions mandated under the CWA

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Workshop on database management and reporting system, May 8-11, 2012, (2) Workshop on the Integrated Water Quality Management Framework, application of effluent standards, water quality management funds, cooperation with local relevant stakeholders, the formulation of Action Plans and LGU Compliance Plan ,September 10-13, 2013, (3) Workshop on the improvement of water quality management information system, November 19-22, 2013. In addition, EMB CO provides advice to ROs individually at EMB management meetings and other workshops.

implementing rules and regulations. This project has been highly relevant to the Philippines' development plan, development needs as well as Japan's ODA policy; therefore, its relevance is high. Through the Project, the Integrated Water Quality Management Framework has been formulated, and the EMB CO's capacity of supporting ROs and the ROs' water quality management capacity were enhanced; therefore, the Project Purpose has been successfully achieved. Since 11 of 16 ROs are at the stage of formulating the Action Plan and have yet to implement it, the Overall Goal has been achieved at a limited level; however, EMB ROs are equipped with Water Quality Management Section's staff who have administrative and technical know-how, and the cooperation with other relevant agencies has been established. Therefore, effectiveness/impact is fair. Although the Project period was within the plan, the Project cost exceeded the plan. Therefore, the Project's efficiency is fair. No major problems that affect the Project's sustainability have been observed in the policy backgrounds or in the institutional, technical and financial aspects of the implementing agency. Therefore, the sustainability of the Project's effects is high. In light of the above, this Project is evaluated to be satisfactory.

## 4.2 Recommendations

### 4.2.1 Recommendations to the Implementing Agency

The following recommendations are generated based on the analysis of the contributing factors for the designation of WQMAs and the establishment of the WQMA Governing Boards. For the further expansion of WQMA related activities throughout the country, it is advisable that EMB CO supervises and assists ROs in implementing the recommendations as priority tasks.

#### (1) Establishment of Partnership between EMB ROs and LGUs prior to the Designation of WQMA

In designating WQMA, the CWA stipulates water quality monitoring for at least 10 consecutive months. Prior to the designation of WQMAs in 3 pilot regions, EMB CO requested the mayors of LGUs cooperation in WQMA activities and EMB 3 pilot ROs conducted joint water sampling and monitoring activities with LGUs Task Forces. The joint monitoring activities facilitated the establishment of the partnership between EMB and LGUs and promoted the understanding on WQMA activities before the designation of WQMAs. When deemed necessary, EMB CO attended meetings organized by EMB ROs to call for LGUs' participation in WQMAs. This type of EMB CO's involvement in ROs' WQMA activities promoted better understanding about the objectives and activities of the WQMA Governing Boards prior to the WQMA designation and developed the partnership

with LGUs. The establishment of partnerships with LGUs at the early stages of WQMA-related activities is important for the smooth implementation of the following activities by WQMA Governing Boards, especially the formulation and implementation of the Action Plans.

(2) Development of Shared Understanding of Water Quality Issues Identified by the Results of Continuous Water Quality Monitoring

The participation of regional stakeholders with varied interests including LGUs, industrial and commercial entities, and local community groups was essential for the WQMA designation. Although some stakeholders hesitated to join the WQMA Governing Board at first, EMB's activities, especially holding regular consultative discussions based on the results of continuous water quality monitoring and developing shared understanding toward water quality issues among stakeholders, were effective in increasing stakeholders' participation. To identify pollution sources in WQMAs, EMB conducted the data collection at a number of sampling points covering diverse areas for an extended period of time and the comparative analysis of water quality test results with neighboring areas within WQMAs. The identification of pollution sources based on continuous water quality monitoring and scientific data helped regional stakeholders with varied interests to understand water quality issues that need to be addressed in the areas and clarify each organization's scope of responsibilities. Regular discussions among stakeholders led to the consideration and implementation of specific measures to improve water quality by each organization. In order to secure regional stakeholders' cooperation for overcoming water quality management issues, it is important for EMB to share the results of continuous water quality monitoring and to develop a shared understanding of water quality issues in the areas among the stakeholders.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

The lessons learned produced by the Project are presented as follows.

(1) Two-Way Communication between the Central Office and Regional Offices of the Implementing Agency

The Project successfully disseminated the CWA-related supporting guidelines to all the ROs. In addition to the effective utilization of communication channels between EMB CO and ROs, EMB's efforts to reflect RO's views and ideas on the guidelines based on

consultations with ROs on a number of occasions contributed to the nation-wide dissemination of the guidelines. Based on a number of consultations with ROs, the EMB went through multiple revisions on the guidelines (e.g., method of setting WQMA boundary by focusing on polluted areas), which resulted in the completion of practical guidelines. For JICA's similar projects that aim at disseminating the outputs of the pilot activities to the whole country, it is important to set opportunities to attend to non-pilot areas' voices, particularly, whether or not the lessons learned gathered from the pilot areas are applicable to other areas with different conditions and sizes, and reflect their views flexibly into the procedures and guidelines.

## (2) Establishment of Mechanism to Promote Cooperation and Participation of Stakeholders with Varied Interests

One of the keys to maintain sustainability of the Project was determined by how well the implementing agency develops partnership with stakeholders with varied interests (government agencies, LGUs, commercial and industrial entities, NGOs, community groups, etc.) and leads the activities for the improvement of water quality. A contributing factor for the achievement of the Project's outputs and the high sustainability is that the agency which is responsible for regulating discharge of polluted water and supervising water quality management activities serves as the Secretariat of the WQMA Governing Boards, which brought about the binding effects towards the implementation of specific measures for the achievement of water quality goals by stakeholders with different positions and objectives. Further, the establishment of WQMA Governing Boards reinforced the advantages of the regional mechanism to consolidate the individual efforts and efficiently address the water quality issues as a whole area. The advantages of establishing WQMA Governing Boards were recognized by stakeholders, which promoted building partnerships among stakeholders and enhancing coordination of activities. For JICA's similar projects that require the establishment of partnerships among stakeholders with varied interests, it is advisable that an agency which regulates and supervises stakeholders' activities takes the lead role in coordinating stakeholders, visualizes the advantages of stakeholders' cooperation and participation, and places a mechanism to promote their cooperation and participation.

## (3) Securement of Budget until the Achievement of the Overall Goal

The study confirmed that the Project's effects have been disseminated in the whole country, for example, WQMA has been designated in all ROs except for Region 7 within 2 years after the Project completion. In addition to the implementing agency's setting feasible timeline and clear targets, securing a necessary budget to achieve the Overall

Goal could be considered as a factor that promoted the development of the Project's impacts. To ensure the continuance of the Project's effects after the Project completion, since the planning stage of the Project, JICA and DENR, which formulates the budget plan for the implementing agency, have been continuously holding discussions to secure a budget during the project period and even after the Project completion for the achievement of the Overall Goal. For JICA's similar projects that have the Overall Goal to disseminate the Project's effects from the pilot regional offices to the whole country, it is essential that JICA and the implementing agency (and/or agencies that formulate the budget for the entities carrying out policies) discuss the prospect of securing a necessary budget for the activities to accomplish the Overall Goal at the planning stage and during the Project period.

(4) Formulation of Indicators that Measure the Level of Accomplishment until the Achievement of the Overall Goal

Before "the implementation of the WQMA Action Plan" which is one of the indicators of the Overall Goal, EMB ROs were required to carry out a series of activities starting with water quality monitoring for at least 10 consecutive months for the WQMA designation, the identification of polluted water bodies and pollution sources, discussions with major stakeholders and the organization of consultation meetings followed by the designation of WQMA and the establishment of WQMA Governing Board. Nevertheless, the PDM did not specify the Overall Goal's indicators that measure the achievement level of the activities for the CWA implementation prior to "the implementation of the WQMA Action Plan." Due to the lack of the specific indicators for these activities, the achievement level of the Overall Goal could not be assessed properly even though EMB ROs including the non-pilot regions have been carrying out a number of activities related to the CWA implementation. It is necessary that JICA, the Japanese experts and implementing agency discuss and verify if the Overall Goal and its indicators can appropriately measure the level of continuity and achievement of the Project's effects. It is also important to clarify the roadmap from the Project's completion to the achievement of the Overall Goal during the Project's period and revisit indicators of the Overall Goal on the PDM to measure appropriately the achievement levels of the Overall Goal if necessary.

Attachment 1: Indicators for Outputs, the Project Purpose, and the Overall Goal and Levels of Achievement for Indicators for each Output

	<b>Outputs and Indicators</b>	<b>Status of Achievement</b>
<b>Output 1</b>	Integrated policy framework for water quality management based on the CWA is established and supported by adequate procedural guidelines and training for EMB staff.	Achieved
<b>Output 1 Indicators</b>	1. Publication of the policy framework that clearly specifies: <ul style="list-style-type: none"> <li>• water quality goals and targets,</li> <li>• period of compliance,</li> <li>• water pollution control strategies and techniques,</li> <li>• water quality information and education program,</li> <li>• human resource development program.</li> </ul>	Achieved
	2. Publication and dissemination of the supporting procedural guidelines	Achieved
	3. Completed orientation-training programs on the policy framework and supporting procedures.	Achieved
<b>Output 2</b>	Capacity of EMB Central Office to lead and support the Regional Offices is strengthened.	Achieved
<b>Output 2 Indicators</b>	1. Management system in place, evidenced by: <ul style="list-style-type: none"> <li>• Water quality model being set up and running in the pilot regions</li> <li>• Operational water quality and pollution source databases with geo-referencing capability (GIS)</li> <li>• Establishment of an Internet-based information and communication network</li> <li>• Publication of the first national water quality status report</li> <li>• Project proposals developed to generate additional assistance for the non-pilot regions</li> </ul>	Achieved
	2. CO Water Quality Management Section's staff provided with equipment and trained.	Achieved
	3. CO effectively coordinating the implementation of CWA administrative and technical procedures in the 3 pilots.	Achieved
<b>Output 3</b>	Capability of EMB Regional Offices to establish and support WQMA and related institutions is strengthened in 3 pilot regions.	Achieved

<b>Output 3 Indicators</b>	1. At least one WQMA in each pilot region is established, with action plan prepared.	Achieved
	2. The WQMAs established have functional: <ul style="list-style-type: none"> <li>• Governing Boards</li> <li>• Technical Secretariats</li> <li>• Multi-sectoral action groups</li> <li>• Area fund management system</li> <li>• Reporting system</li> </ul>	Achieved
<b>Output 4</b>	Overall capability of EMB Regional Offices in water quality management is strengthened in 3 pilot regions.	Achieved
<b>Output 4 Indicators</b>	1. Major point pollution sources in pilot regions are complying with the discharge permitting/charge system, including the self-monitoring reporting system, and supported by: <ul style="list-style-type: none"> <li>• Database of point and non-point sources,</li> <li>• Functional system for assessment, collection and accounting of pollution charges</li> <li>• Reward/incentive system</li> </ul>	Achieved
	2. First regional water quality status report for each of the 3 pilot regions published.	Achieved
	3. Principal/priority water bodies in pilot regions classified (or re-classified as needed).	Achieved
	4. Calibrated water quality model and database in regions are operational, linked to central information system, and are used for water quality status reporting.	Achieved
	5. Equipment of EMB regional laboratories in pilot regions upgraded, and linkage with partner laboratories established.	Achieved
	6. Water sampling and monitoring equipment for regional Water Quality Management Section's staff procured and staff trained.	Achieved
	7. Water Quality Management training courses for EMB RO staff completed.	Achieved

	<b>Project Purpose and Indicators</b>	<b>Status of Achievement</b>
<b>Project Purpose</b>	Capabilities of EMB Central and Regional Offices to implement priority actions mandated under the CWA Implementing Rules and Regulations are strengthened.	Achieved

<b>Project Purpose Indicators</b>	<p>1. EMB Central Office and 3 pilot ROs assisted by the Project are efficiently and effectively implementing their mandates under the Clean Water Act IRR through:</p> <ul style="list-style-type: none"> <li>• Adequate water quality management procedures in conformity with CWA requirements;</li> <li>• Water quality management section's staff trained in water quality management procedures;</li> <li>• Adequate equipment and information systems;</li> <li>• Linkages with related water quality management agencies and concerned stakeholders.</li> </ul>	Achieved
	<p>2. Capacity of the staff in charge of water quality management in non-pilot ROs is strengthened through:</p> <ul style="list-style-type: none"> <li>• Participation in the learning process such as Orientation/Workshop to be conducted in the Project;</li> <li>• Adequate understanding on the procedures and guidelines on the CWA enforcement;</li> <li>• Familiarization with the experiences of 3 pilot regions on the WQMA designation and action planning through various types of communication.</li> </ul>	Achieved

	<b>Overall Goal and Indicators</b>	<b>Status of Achievement</b>
<b>Overall Goal</b>	Under initiatives 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.	Partly underachieved
<b>Indicators</b>	1. Water quality improvement Action Plans are being implemented by WQMA boards and LGUs, and industrial and commercial entities are complying with discharge permitting system and water quality/effluent standards, with resulting improvement in ambient water quality	Partly underachieved
	2. DENR EMB enforcing legal requirements of the CWA, and have adequate staff equipped with administrative and technical know-how to perform water quality management functions.	Achieved
	3. Cooperation with other agencies involved in water quality management is established.	Achieved

## Attachment 2: CWA Supporting Guidelines and Manuals

	Name of the Procedural Guidelines of CWA	Timing of Draft Completion	Timing of Official Approval	Approval Number
1	Procedural Manual for Designating WQMA	March 2007	2009	DENR Memorandum Circular 2009-15
2	Guideline for the Endorsement of Water Quality Management Projects under RA9275 (Reward/Incentive System)	March 2008	2013	DENR Administrative Order 2013-17
3	Water Quality Guideline and General Effluent Standards	March 2007	-	Under review
4	Procedural Guideline for Classifying Inland and Marine Water Bodies and Groundwater	March 2007	-	Under review
5	Procedural Guideline for Facilitating WQMA Action Planning by WQMA Boards and Follow-on Compliance Planning by LGUs	March 2007	2013	EMB Memorandum Circular 2013-006
6	Procedural Guideline for Pollution Load and Charge Computation in Support of the Discharge Permit System	March 2007	-	Under review
7	Procedural Guideline for Managing the National Water Quality Management Fund	March 2007	2012	DENR Administrative Order 2012-06
8	Procedural Guideline for Managing the Area Water Quality Management Fund	March 2007	2013	DENR Administrative Order 2013-15
9	Procedural Guideline for Categorization of Industries, including Point and Non-Point Sources of Water Pollution	March 2007		Under review
10	Water Quality Monitoring Manual Vol 1, 2	March 2007	2008	EMB Memorandum Circular 2008-08
11	Guideline for the preparing of the Regional and National Water Quality Status Reports for Public Information and Advocacy	March 2007	(No data)	EMB Memorandum Circular
12	Integrated Water Quality Management Framework	March 2007	2013	DENR Administrative Order 2013-08