

Country Name	<b>Strengthening Environmental Management and Linkages among Central, Regional, Provincial and Local Levels</b>
Kingdom of Thailand	

**I. Project Outline**

Background	<p>Thailand has been making efforts to mitigate environmental stresses since the 1980s, while the administrative power over natural resources and environment management was gradually transferred to Local Administrations (LAs) by the Decentralization Act 1999. At the regional level, Regional Environmental Offices (REOs) were responsible for preparing Regional Environmental Quality Management Plans (R-EQMP), and there were concerns over delays in preparation, quality and effectiveness of the plans as well as the implementation of the plans due to insufficient technical and financial capacities of related organizations. The Eighth Regional Environmental Office (REO8) was in charge of five provinces in environmentally sensitive areas, and it was necessary to strengthen environmental management in the areas.</p>												
Objectives of the Project	<p>Through developing a model for an environmental management mechanism in the R-EQMP of REO8, promoting public awareness on environmental management issues utilizing guidelines based on the R-EQMP of REO8, and identifying and sharing recommendations and lessons learned for promotion of Regional and Provincial EQMPs (P-EQMPs), the project aimed at developing capacity of REO8 and the five PONREs* in environmental management, thereby promoting continuous execution of Plan-Do-Check-Action (PDCA) cycle of R-EQMP of REO8 as well as improving environmental management in Thailand through the replication of the model to other REOs.</p> <p>*PONRE: Provincial Office of Natural Resources and Environment</p> <ol style="list-style-type: none"> <li>Overall Goal: <ol style="list-style-type: none"> <li>For the purpose of improving comprehensive environmental management, PDCA cycle of R-EQMP of REO8, such as participatory planning, implementation, monitoring, evaluation, revising plan, is continuously executed through linkages among the central, regional, provincial, and local levels under REO8's jurisdiction.</li> <li>Environmental management in Thailand is improved through the replication of the model to other REOs.</li> </ol> </li> <li>Project Purpose: <p>Capacity of REO8 and five PONREs on environmental management particularly in planning, implementation, monitoring/evaluation of R-EQMP is developed through the process of REO8 R-EQMP and pilot project implementation.</p> </li> </ol>												
Activities of the Project	<ol style="list-style-type: none"> <li>Project Site: Bangkok, and five provinces in the jurisdiction of REO8 (Ratchaburi, Kanchanaburi, Samut Songkram, Petchaburi and Prachub Kirikhan)</li> <li>Main Activities: <ol style="list-style-type: none"> <li>Analysis of existing environmental conditions, local resources and stakeholders in REO8, Formulation of the REO8 R-EQMP (2013) with coordination with the Central Regional EQMP (2013-2016), etc.</li> <li>Identification of major environmental management issues as well as tools and resources for raising the awareness of the public, Development of simplified guidelines for public awareness to be utilized by LAs), etc.</li> <li>Selection of regionally cross-cutting environmental management issues, Design and implementation of pilot project(s), Conduct of workshops to share progress and lessons learned of pilot projects, etc.</li> </ol> </li> <li>Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Thai Side</td> </tr> <tr> <td>1) Experts: (short-term) 10 persons</td> <td>1) Staff allocated: 31 persons</td> </tr> <tr> <td>2) Trainees received: 44 persons (in Japan)</td> <td>2) Facilities: Office space</td> </tr> <tr> <td>3) Equipment: Computers, printers, GIS software, etc.</td> <td>3) Local expenses: Expenses for the office space</td> </tr> <tr> <td>4) Local expenses</td> <td></td> </tr> </table> </li> </ol>			Japanese Side	Thai Side	1) Experts: (short-term) 10 persons	1) Staff allocated: 31 persons	2) Trainees received: 44 persons (in Japan)	2) Facilities: Office space	3) Equipment: Computers, printers, GIS software, etc.	3) Local expenses: Expenses for the office space	4) Local expenses	
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Project Period	December 2012 – December 2015	Project Cost	(ex-ante) 280 million yen, (actual) 244 million yen										
Implementing Agency	<p>Office of National Environment Board (ONEB) under the Office of Natural Resources and Environmental Policy and Planning (ONEP), Ministry of Natural Resources and Environment (MNRE)</p> <p>Eighth Regional Environmental Office (REO8)</p> <p>Five Provincial Offices of Natural Resource and Environment (PONRE) under REO8's jurisdiction (Ratchaburi, Kanchanaburi, Samut Songkram, Petchaburi and Prachub Kirikhan)</p>												
Cooperation Agency in Japan	Oriental Consultants Global Co., Ltd.												

**II. Result of the Evaluation**

<Special Perspectives Considered in the Ex-Post Evaluation>

- Indicators 2 and 3 of Project Purpose are those to examine the status to be completed during the project and the status at the project completion is not necessarily expected to continue after the project completion. Therefore, the continuous status of the Project Purpose at the time of ex-post evaluation will be examined mainly based on the utilization of the products of the project.

**1 Relevance**

<Consistency with the Development Policy of Thailand at the Time of Ex-Ante Evaluation and Project Completion>

At the time of the ex-ante evaluation and the project completion, in the 11th National Economic and Social Development Plan (2012-2016), management of natural resources and environment toward sustainability was one of the six strategies.

<Consistency with the Development Needs of Thailand at the Time of Ex-Ante Evaluation and Project Completion>

REOs were expected to provide technical advice to PONREs and LAs, and the capacity of officials needs to be further and continuously improved. No change in the needs was observed at the time of project completion.

<Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>

According to the Japan’s Economic Cooperation Program for the Kingdom of Thailand (2006), one of the two priority areas in Japanese assistance policy in Thailand in terms of technical cooperation was response to issues that emerge with maturing of society, including measures for environmental management.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the project completion. The planning process of R-EQMP and P-EQMP was clarified, and the minutes of discussions were developed and compiled into the Technical Planning Manual for R-EQMP and distributed. The R-EQMP (2013-2016) was completed and published in January 2015, and the progress of R-EQMP and P-EQMP was released to the public to some extent. The technical services and support provided by REO8 to PONREs and by PONREs to LAs were improved.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued to the time of ex-post evaluation. In the two pilot sites, the activities introduced by the project have still been continued, and positive effects have been clearly observed in Tha Yang Sub-District Municipalities (SDMs). In addition, REO8 and PONREs have been continuously providing improved technical services to LAs and the public, including regular water quality monitoring (by REO8), pollution inspection (jointly by REO8 and PONREs) and awareness raising campaigns (by PONREs). Moreover, those participated in the training in Japan have taken more leading roles in sharing knowledge and experience as lecturers in seminars and initiating new environmental activities such as waste segregation in community and production of materials for awareness raising and environmental education. . However, due to the change in the planning process of environmental management plan by the Thai government, the R-EQMP for the following period was not formulated in REO8 and other REOs. Instead, the Regional Strategic Plan for Natural Resources and Environmental Management (NREM) was formulated at a cluster level (among REO 8 and other four REOs), so that the regional planning is integrated to cover wider regional areas. At the provincial level, the P-EQMPs still serve as a framework for environmental management.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved. Although the R-EQMP for the following period (2017-2021), which was expected to be formulated reflecting the evaluation results of the R-EQMP (2013-2016), was not formulated due to the change of the planning process as mentioned above, it is described in the Regional Strategic Plan that a review and analysis of the implementation progress of the R-EQMP in the region was carried out at the planning stage. Therefore, it is considered that a certain part of the results of the R-EQMP has been referred to in the planning of the Regional Strategic Plan, as well as the application of PDCA cycle during the planning stage. Several environmental activities were initiated by REO8, five PONREs and LAs after the project, such as introduction of Quantum GIS (QGIS) software and production of awareness raising materials. After the Project completion, ONEP and REO8 had distributed the R-EQMP and shared the outputs of the project to the other REOs and relevant agencies such as LAs in REO8 jurisdiction. Even though no seminar or meeting targeting on distributing the outcomes of the R-EQMP were organized by ONEP, REO8 had shared knowledge and experiences to other REOs during REOs meeting for establishing the Regional Strategic Plan for Natural Resources and Environmental Management as their mandate. Therefore, the dissemination of the project outcomes to other REOs is limited .. However, the general concept of PDCA cycle is widely recognized and utilized as common tools for successful project management at all REOs.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Capacity of REO8 and five PONREs on environmental management particularly in planning, implementation, monitoring/evaluation of Regional EQMP is developed through the process of REO8 Regional EQMP and pilot project implementation.	(Indicator 1) Through implementing pilot projects, problems at the project site are improved.	Status of the Achievement: achieved (continued) (Project Completion) • The project selected two environmental issues, namely solid waste management and community-based environmental management as a pilot case in Tha Yang and Pak Tho SDMs. The project achieved most of major expected results. (Ex-post Evaluation) • In Tha Yang SDM, through the Action Plan formulated during the project, the amount of waste has decreased from 36 ton/day in 2015 to 25 ton/day in 2019, and the garbage collection rate achieved 100%. In Pak Tho SDM, some activities of the pilot project have been continued, such as production of organic compost and oil separation tanks.
	(Indicator 2) Process of planning of Regional and Provincial EQMP are clarified and the minutes of discussion during the planning process are developed.	Status of the Achievement: achieved (partially continued) (Project Completion) • The planning process of R-EQMP and P-EQMP was clarified and the minutes of discussions were developed and compiled into the Technical Planning Manual for R-EQMP. It was published and distributed not only to REO8 and PONREs but also to other 15 REOs. (Ex-post Evaluation) • The process for developing the subsequent R-EQMP for 2017-2021 was changed from regional planning where each REO developed its own R-EQMP to a cluster system where all REOs are geographically grouped into four clusters in all Thailand. REO8 and four other REOs developed one single “Regional Strategic Plan for NREM for Central/East/West Regions (2017-2021)”. Therefore, the manual was not directly utilized in developing the subsequent regional plan but used as a reference by individual.

	(Indicator 3) Progress and results of Regional EQMP of REO8 and Provincial EQMP are published to the public.	Status of the Achievement: partially achieved (partially continued) (Project Completion) • The R-EQMP (2013-2016) was completed in October 2014 and was published in January 2015. The results of the R-EQMP were utilized in the formulation and implementation of the P-EQMP as a framework for environmental management in the region. However, monitoring and evaluation activities of the R-EQMP and P-EQMP were not sufficiently conducted, although the progress of R-EQMP and P-EQMP was released to the public to some extent through regular meetings and newsletters. (Ex-post Evaluation) • As the “Regional Strategic Plan for NREM for Central/East/West Regions (2017-2021)” has been formulated, the R-EQMP is not utilized as expected but still serves as a framework for environment management in the region, and in principle, the R-EQMP and the P-EQMP have been continuously utilized by REO8 and the five PONREs, based on their organization mandate <sup>1</sup> .		
	(Indicator 4) Quality of technical services which REO8 and PONREs provided to LAs and the public are improved, such as water quality improvement or solid waste management.	Status of the Achievement: achieved (continued) (Project Completion) • The application of the skills and knowledge learned through the project was observed by the improved technical services and support provided by REO8 to PONREs and by PONREs to LAs, not only in responding to water quality improvement and solid waste management issues but also in the overall activities related to environmental management in the jurisdiction of REO8. (Ex-post Evaluation) • REO8 conducts regular water quality monitoring and frequent ad-hoc on-site inspections. REO8 also implements a coordination role with other stakeholders in a smooth and professional manner. PONRE officials are frequently invited to participate in relevant activities organized by LAs such as knowledge sharing and giving lectures on 3Rs (Reduce, Reuse, Recycle).		
(Overall Goal) 1) For the purpose of improving comprehensive environmental management, PDCA cycle of Regional EQMP of REO8, such as participatory planning, implementation, monitoring, evaluation, revising plan, is continuously executed through linkages among the central, regional, provincial, and local levels under REO8’s jurisdiction. 2) Environmental management in Thailand is improved through the replication of the model to other REOs.	(Indicator 1-1) Reflecting the evaluation results of the Regional EQMP (2012-2016), the Regional EQMP (2017-2021) is developed and being implemented.	(Ex-post evaluation) partially achieved • Due to the change of planning process, the R-EQMP (2017-2021) was not formulated. However, review and analysis of the implementation progress of the R-EQMP in the region was carried out in the form of questionnaire survey by REO8 at the planning stage of the current Regional Strategic Plan to reflect the results of R-EQMP (2012-2016).		
	(Indicator 1-2) Improved and increased environmental activities initiated by REO8 and LAs.		(Ex-post evaluation) achieved Activities were initiated by REO8, five PONREs and LAs after the project. Examples of environmental activities initiated by REO8 and five PONREs are as follows:	
			REO8	The staff have been sharing knowledge and teaching other stakeholders to utilize QGIS.
			Samut Songkram and Ratchaburi PONRE	The QGIS software introduced by JICA experts are utilized in environmental conservation planning.
			Ratchaburi PONRE	A new set of user-friendly brochures and awareness raising materials was produced and distributed to schools and the public.
			Petchaburi PONRE	Increased numbers of seminars and training have been organized in the province, with PONRE officers as lecturers
Prachub Kirikhan PONRE			PONRE officers who participated in training in Japan have been working with LAs to improve disposal sites in the province	
Tha Yang SDM	More activities in solid waste management have been implemented following JICA experts’ recommendations.			
(Indicator 2-1) The outcome of the Regional EQMP of REO8 is shared among other regions.	(Ex-post evaluation) partially achieved • The outcome of the R-EQMP is shared among officials concerned, although the dissemination activities have not been officially conducted as planned. After the project completion, ONEP did not organize any relevant activities to share the outcome of the R-EQMP, and outcome sharing activities were implemented in a rather informal way, as opportunities to share individual experience among officials, mostly during the formulation of the “Regional Strategic Plan for NREM for Central/East/West Regions (2017-2021)”.			
(Indicator 2-2) PDCA cycle of Regional EQMP in other REOs is strengthened.	(Ex-post evaluation) partially achieved • The dissemination of the project outcomes to other REOs has been limited. However, the general concept of PDCA cycle is widely recognized as common tools for successful project management and is utilized as one of organizational key performance indicators (KPI) of all REOs, although the extent of the contribution of the project is not clear.			

Source: Terminal Evaluation Report, Completion Report, Questionnaires and interviews to ONEP, REO8 and PONREs

### 3 Efficiency

<sup>1</sup> At the provincial level, only Petchaburi PONRE and Prachuab Kirikhan PONRE are legally required to formulate annual P-EQMP as the two provinces are designated as environmental protected areas.

Both the project cost and the project period were within the plan (ratio against the plan: 87% and 100%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

#### 4 Sustainability

##### <Policy Aspect>

In the Policy and Prospective Plan for Enhancement and Conservation of National Environmental Quality (2017-2036), formulation of relevant mid-term master plans and action plans for natural resources and environmental management is mentioned. However, while it is stipulated that formulation of National EQMP and P-EMPQ is legally obligated, the formulation of R-EQMP is not legally required, and the formulation/implementation process of the EQMP has been changed from time to time.

##### <Institutional Aspect>

At ONEP, the current organization structure and manpower are sufficient for formulation and dissemination of environment plans, although actual implementation depends on budget allocation and implementing agencies, as the role of ONEP is mainly planning. At REO8, there is a chronic shortage of manpower, especially of skilled staff in its planning section currently as one person resigned and one is newly assigned. At PONREs, the environment section is responsible for planning, implementing and monitoring & evaluation of the P-EQMP, as well as other related tasks in their provinces such as environmental quality promotion and pollution control, and the current manpower is rather limited to promote environmental management comprehensively, although the situations vary in each PONRE, depending on area size, issues, and the number of staff members.

##### <Technical Aspect>

Quite a large part of the staff members involved in the project are still working at REO8 and the five PONREs, and those participated in the project have sufficient knowledge and technical level to carry out their work, adopting and utilizing the knowledge gained through the project in their daily work. The staff at MNRE, REO, and PONREs have good coordination skill, one of the most important skills in environmental management because there are always many stakeholders involved. As for other technical skills, there are opportunities and mechanisms to improve the capacity of the staff, e.g., internal knowledge management sessions, external training courses/seminars/workshops, MNRE's manuals to formulate P-EQMP and other operation manuals/guidelines. Nevertheless, knowledge and skills obtained during the project tend to belong to individuals and cannot be easily transferred to others, thus continuous learning and capacity development are still necessary as well as sharing of knowledge and skills among staff.

##### <Financial Aspect>

Each relevant organization receive annual budget to carry out the tasks as outlined in their mandate, although the budget for implementation of environmental management activities comes from several sources depending on the nature of the projects/activities, such as provincial development budget, LAs' own revenue and contributions by the private sector (CSR activities), etc. The budget is sufficient only to implement regular duties but not sufficient to implement some additional works to improve environment. The budget allocated through P-EQMP to LAs is the supporting budget from ONEP, which is to be transferred to the selected LAs to invest only in construction of wastewater treatment or municipal solid waste management facilities<sup>2</sup>, but not for other issues and not for every LA.

Budget allocated for environmental management through P-EQMP  
(Unit: Thousand Baht)

Year	2015	2016	2017	2018
ONEP	688,229	3,106,581	1,740,939	1,989,648

##### <Evaluation Result>

In light of the above, some difficulties have been observed in terms of the policy, institutional, technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

#### 5 Summary of the Evaluation

The project achieved the Project Purpose of capacity development of REO8 and five PONREs on environmental management. At the time of the ex-post evaluation, due to the change in the planning process of environmental management plan, the R-EQMP for the following period was not formulated in REO8<sup>3</sup>, although REO8 and PONREs have been continuously providing improved technical services to LAs and the public. Therefore, the project effects have been partially continued. The Overall Goal of improving comprehensive environmental management through PDCA cycle in REO8 and in Thailand has been partially achieved as the concept of PDCA cycle is recognized, although dissemination of the results of the project has not been actively implemented. As to the sustainability, some difficulties have been observed in the policy, institutional, technical and financial aspects, because the policy of the environmental management plan has been changed. As to the efficiently, both the project cost and the project period were within the plan. Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

#### Recommendations for Implementing Agency:

- It is recommended that ONEP and REO8 further utilize the knowledge and experiences acquired through the project, by capacity development of concerned staff as well as securing budget. Although the process and requirement for current planning at the regional level has changed, there are certain outputs that can be utilized, including the Public Awareness Guidelines and the Technical Planning Manual for R-EQMP. Moreover, it is desirable that the successful model for pilot implementation of the improvement of solid waste management system is recognized and further replicated in other SDMs.

#### Lessons learned for JICA:

- At the project formulation stage, JICA should pay more attention to the delay that may affect the project contents or planned outputs. In this case, the period of the R-EQMP developed by the project was reduced one year, from 2012-2016 to 2013-2016, while the R-EQMP developed by the project was finalized and publicized as late as in 2015.

<sup>2</sup> Interested LAs have to work with PONREs to incorporate a project proposal in the annual P-EQMP to request for the supporting budget from ONEP. The selection criteria are very strict and there are not many LAs applying and receiving the budget annually.

<sup>3</sup> With the change in the planning process of environmental management plan, no REOs formulate the R-EQMP.

- In the project design, JICA should consider emphasizing more on sustainable/transferable outputs and activities, rather than a plan itself which is effective only in a certain timing. In this case, the utilization of the knowledge, experience, skills, and manuals derived from the process of developing the R-EQMP could have been more emphasized and disseminated to other related organizations. Although the initiative of the implementing agency is essential, it may be effective if JICA expert team plays a more active role in dissemination and facilitation among related organizations, especially coordination among those at the different levels. Also it may be effective to select two or more targeted agencies so that exchange of experiences can be promoted among the target agencies.
- The R-EQMP developed by the project was not fully utilized due to the change in planning process. At the project implementation stage, when unexpected changes occur, JICA and the JICA expert team, together with the counterparts, should carefully consider how to tackle with the changes properly. JICA side should be flexible to modify the Project Design Matrix (PDM, a matrix to describe the project framework) and come up with new outputs that are more appropriate. Revision of PDM will provide opportunities to have a common understanding of the situation and the project among those involved in the project
- It is preferable to define specific indicators so that objective judgment can be made at the time of evaluation, for example, with clarification of the actual status that can be considered as “improved”.



Hazardous waste collection spot at Hua Thung – Thung Prao Pattana Community, Tha Yang SDM, Petchaburi Province (former pilot site), with garbage bin distributed during the project



Kid-friendly awareness raising materials produced by the officials of Ratchaburi PONRE after attending the training in Japan