

Summary of the Terminal Evaluation (Form for a small-scale project)

1. Outline of the Project

Country: Kingdom of Thailand

Project Title: Project to Develop the Recycling System for Local Communities in Songkhla Province

Issue/Sector: Environmental management

Cooperation Scheme: JICA Partnership Program

Division in Charge: Environmental Management Team II, Group II, Global Environment Department

Total Cost (at the time of evaluation): approx. 140 million yen

Period of Cooperation

9 October 2002 - 8 October 2005

Partner Country's Implementing Organization(s): Prince of Songkla University (PSU)

Supporting Organization(s) in Japan: Bunkyo University; Waste Policy Institute (WPI)

1-1 Background to the Project

In the Kingdom of Thailand, municipal solid waste was traditionally managed under the centralized structure, or more specifically, under the joint jurisdiction of the Ministry of Natural Resources and Environment (MNRE) and the Ministry of Interior (MOI). The problem is that the government is having difficulty in coping with rapidly increasing waste in Bangkok and other major cities. The major factors include a traditionally low level of environmental awareness of the residents, budgetary restraints, and lack of experience on the part of the government sector. In addition, social constraints such as

the existence of slums and difficulties in modernizing the conventional waste management industry make the waste problem more serious. The situation is no less serious in regional cities, including Hat Yai City in Songkhla Province, the target of this Project. Although the city has been making efforts to improve its unsanitary landfill with external direct investment, this process is falling behind schedule due in large part to the lack of funds and constraints on the reform of the social system.

Under these circumstances surrounding Hat Yai City and neighboring *Tambon* (a local administrative unit smaller than a city), Prince of Songkla University (PSU), the counterpart organization in the Project, is pursuing the possibility of solving the waste problem by establishing a system of recycling kitchen and other types of waste that builds on the separation of waste at the source by local residents. The idea is to stabilize and reduce waste by recycling.

Bunkyo University, the commissioned organization in the Project, has experience in conducting studies in the Bangkok Metropolitan Area and joint research with the Faculty of Environmental Management of PSU. Through these experiences, Bunkyo University concludes that the Japanese system of separate collection of waste that builds on community-based organizations provides an effective solution for *Tambon*, a community-based administrative unit. The university also believes that the most feasible option is a joint recycling program that applies the Japanese system and covers the regional hub city of Hat Yai and its neighboring *Tambon*.

PSU lacks experience and expertise in conducting recycling programs. PSU rather focuses on environmental science and has only a few researchers in social science who are capable of industrial conversion of the existing waste collection industry or of designing of resource recovery systems.

This Project is a combination of joint research between the two universities and transfer of the Japanese experience and expertise in building recycling systems. The idea is to restart the deadlocked process of reforming the waste management administration in Thailand. The two universities concluded a contract agreement in October 2002 and launched the Project under the JICA Partnership Program for a period of three years.

(1) Overall Goal

To make progress toward waste reduction and stabilization in the pilot project areas

(2) Project Purpose

To establish a recycling system in the pilot project areas

(3) Outputs

1. Specified recyclables will be collected separately in the pilot project areas.
2. Collected recyclables will be sorted out for recovery and composting in the model plant.
3. Recovered materials will be utilized appropriately.

NB: For details of the inputs and activities of the Project, see the Terminal Evaluation Report.

2. Evaluation Results

(1) Relevance

The Evaluation Team considers the Project highly relevant as a whole. The municipalities to which the model communities belong are facing a waste management problem. The remaining capacity of the landfill for these municipalities is low, highlighting the importance of reducing waste to extend its remaining life years. The situation is similar in other parts of Thailand. The Eighth National Social and Economic Development Plan calls for increasing the national recycling rate to 10 percent by 2001 and to 15 percent by 2006. The Project significantly helps Thailand in achieving these targets. In addition, the JICA Country Program for Thailand has identified environmental conservation as one of the five focus sectors. In sum, the

Project is relevant to the needs and policy of Thailand and with Japan's assistance policy toward the country.

(2) Effectiveness

The Project is considered effective in that it has already achieved both the Verifiable Indicator of "the collection of separated recyclables more than once a month" and the three Outputs toward attaining the Project Purpose in the Project Design Matrix (PDM).

On the down side, the amount of recyclables collected is significantly smaller than originally planned. This highlights the need to consider the collected amount as well as the collection frequency in judging whether the Project Purpose of establishing a recycling system in the pilot project areas has been achieved. The effectiveness of the Project should be evaluated anew after monitoring the amount of recyclables collected in the remainder of the project period.

(3) Efficiency

The Evaluation Team concludes that although the Project has achieved a certain level of efficiency, there is room for improvement.

Timing of the project inputs. Thai stakeholders noted some delays in the construction of the model plant for recovering recyclables and composting and in the assignment of a Japanese expert in charge of progress management of the pilot project. These delays, however, were due in large part to external factors, including the unexpected implementation of an environmental impact assessment of the facility, and deteriorating public order when the expert was about to enter the country.

Amounts of project inputs. The Thai stakeholders were generally satisfied with the number of Japanese experts. The capacity of the model plant for recovering recyclables and composting is still disproportionately large for the amount of recyclables transported to the facility because the residents remain rather reluctant to sort out recyclables for recovery and composting. More efforts should be made to increase these recycling rates until the Project is completed.

Quality of the project inputs. The Thai stakeholders are satisfied with the guidance by the Japanese experts and the equipment provided. They have the impression that these inputs have contributed to the smooth implementation of the Project.

(4) Impact

The Evaluation Team concludes that some progress will be made toward the achievement of the Overall Goal in light of the strong commitment shown by the core members of the pilot communities. Still, efforts should be continued even after the project termination to maintain the plant for recyclable recovery and composting and expand the separate collection system to cover the whole communities. These efforts are necessary to achieve the verifiable indicators for the Overall Goal in the PDM, including reducing both the proportion of foreign objects in collected recyclables and the amount of waste to be transported to the landfill. Hat Yai City has begun to provide the separate collection service to other communities that have not launched a pilot project of their own but somehow have been inspired by the outcomes of the pilot project. This represents another positive effect of the Project.

(5) Sustainability

On the positive side, some members of the community committees in the pilot model sites are proactively involved in separate collection of waste and eager to seek support from other members. Officials in charge of waste management at the three municipalities were inspired by the pilot projects. They are now eager to disseminate the recycling initiative at the grassroots level in the pilot model sites to other areas of their municipalities.

To reduce waste, continued efforts should be made to reduce the volume of waste by composting kitchen waste among other types of separated waste. The model plant that was constructed in the Project requires the Thai side to bear the maintenance costs in the future. To expand the area for separate collection of waste, it may be necessary to construct a new plant, which will entail the issue of cost-sharing. In short, it remains to be seen who will take the ownership of this recycling program. Hat Yai City will most likely take over the model plant for recovering recyclables and composting.

Whether the municipalities that were involved but not among the direct counterparts will proactively engage in the management of the plant will hold the key to the sustainability of the recycling program, which is unclear at the moment.

3. Remarks (recommendations, lessons learned, etc.)

3-1 Recommendations

(1) Short-term recommendations (by the completion of the cooperation period)

- Standardize the source separation system to achieve more efficiency and solicit cooperation from the local residents
- Formulate an action plan to expand the pilot projects for more spillover effects of the Project
- Further involve municipalities in developing the collection system as waste collection service is public in nature
- Transfer the management of the model plant for recovering recyclables and composting and encourage its ownership by the Thai side

(2) Long-term recommendations (after the completion of the cooperation period)

- Continue the self-sustained process of capacity development of the Thai side to ensure the sustainability of the program after the completion of the Project
- Study the implications on the sector that have been responsible for the collection of recyclables, in addition to the concept that the government sector should establish a recycling system.

3-2 Lessons Learned

(1) In pilot projects for the delivery of such public services as solid waste management by local governments, it is important to involve them at the early stages of the project process and conduct promotional activities through them in order to gain cooperation from local residents.

(2) The construction of the sorting and composting plant was a time-consuming process. It took longer than expected to complete a series of steps including site selection, designing, permit acquisition, bidding and contracting, and equipment and materials procurement for the facility. Consequently, the pilot projects were launched behind schedule. This in turn made some people in the pilot communities lose their interest in the Project. In a similar project in the future, the preparation and construction of the project facilities should preferably be completed as soon as possible so as to maintain the interest of the residents in the project.