<table>
<thead>
<tr>
<th>Action Taken/Status</th>
<th>Description</th>
</tr>
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<tr>
<td>A. For Approval/Signature</td>
<td>F. For Compliance</td>
</tr>
<tr>
<td>B. For Appropriate Action</td>
<td>G. Pls. Prepare Only</td>
</tr>
<tr>
<td>C. For Notation/Comments</td>
<td>H. Pls. Note and Return</td>
</tr>
<tr>
<td>D. For Recommendation</td>
<td>I. Pls. File</td>
</tr>
<tr>
<td>E. For Information</td>
<td>J. RUSH/URGENT</td>
</tr>
</tbody>
</table>

**DISPOSITION FORM**

**SUBJECT:** Memo dated 07/10 re: Joint Coordinating Committee Meeting for the JICA-funded project on Establishment of LMM system in T. Ciriaco & R. Calbayog and D.I. Cagayan.

**Document Date:** 07/10/2010

**Document No.:** 1320107-24-15

**To For:** RUSH

**From:** NSWMC/S

**Date:** 07/10/2010
MEMORANDUM

FOR : Assistant Secretary for Foreign Assisted and Special Projects Office

FROM : Officer in Charge
National Solid Waste Management Commission Secretariat

SUBJECT : Joint Coordinating Committee Meeting for the Japan International Cooperation Agency (JICA) funded project “Establishment of Solid Waste Management System in Three Cities of Davao, Calbayog, and Sagay

DATE : 7 JUL 2010

This refers to the Japan International Cooperation Agency (JICA) funded project “Establishment of Solid Waste Management System in Three Cities of Davao, Calbayog, and Sagay. The JICA has dispatched a terminal evaluation mission for the said project to determine the present status and assess its progress of implementation and sustainability.

A Joint Coordinating Committee Meeting will be conducted on July 29, 2010, 10am - 12nn at the AQTC Training Room to discuss findings of the said terminal evaluation (copy of the report is attached). In this regard, we would like to request you or your representative to join the said meeting.

For your information and appropriate action

[Signature]
EMELITA C. AGUINALDO
Officer-in-Charge

Waste No More! Waste No Time!
Joint Terminal Evaluation Report

for

the Project on Establishment of
Ecological Solid Waste Management System
in Three Cities in the Philippines

July 2010

Joint Terminal Evaluation Team
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATP</td>
<td>Affordability to Pay</td>
</tr>
<tr>
<td>CAS</td>
<td>Country Assistance Strategy</td>
</tr>
<tr>
<td>CENRO</td>
<td>City Environment and Natural Resources Office*</td>
</tr>
<tr>
<td>CSSDO</td>
<td>City Social Services and Development Office</td>
</tr>
<tr>
<td>CSWMB</td>
<td>City Solid Waste Management Board</td>
</tr>
<tr>
<td>CSWMO</td>
<td>City Solid Waste Management Office</td>
</tr>
<tr>
<td>C/P</td>
<td>Counterpart</td>
</tr>
<tr>
<td>DAO</td>
<td>Department Administrative Order</td>
</tr>
<tr>
<td>DENR</td>
<td>Department of Environment and Natural Resources</td>
</tr>
<tr>
<td>DepED</td>
<td>Department of Education</td>
</tr>
<tr>
<td>ECC</td>
<td>Environmental Compliance Certificate</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>EMB</td>
<td>Environmental Management Bureau</td>
</tr>
<tr>
<td>ESWM</td>
<td>Ecological Solid Waste Management</td>
</tr>
<tr>
<td>IEC</td>
<td>Information, Education and Communication</td>
</tr>
<tr>
<td>IEE</td>
<td>Initial Environmental Examination</td>
</tr>
<tr>
<td>IRA</td>
<td>Internal Revenue Allotment</td>
</tr>
<tr>
<td>JCC</td>
<td>Joint Coordinating Committee</td>
</tr>
<tr>
<td>JFY</td>
<td>Japanese Fiscal Year</td>
</tr>
<tr>
<td>JICA</td>
<td>Japan International Cooperation Agency</td>
</tr>
<tr>
<td>LGU</td>
<td>Local Government Unit</td>
</tr>
<tr>
<td>MGB</td>
<td>Mines and Geosciences Bureau</td>
</tr>
<tr>
<td>M/M</td>
<td>Minutes of Meeting</td>
</tr>
<tr>
<td>MTPDP</td>
<td>Medium-Term Philippine Development Plan</td>
</tr>
<tr>
<td>NSWMC</td>
<td>National Solid Waste Management Commission</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-governmental Organization</td>
</tr>
<tr>
<td>ODA</td>
<td>Official Development Assistance</td>
</tr>
<tr>
<td>PENRO</td>
<td>Provincial Environment and Natural Resources Office</td>
</tr>
<tr>
<td>PDM</td>
<td>Project Design Matrix</td>
</tr>
<tr>
<td>PO</td>
<td>Plan of Operation</td>
</tr>
<tr>
<td>RA</td>
<td>Republic Act</td>
</tr>
<tr>
<td>R/D</td>
<td>Record of Discussion</td>
</tr>
<tr>
<td>REC</td>
<td>Regional Ecology Center</td>
</tr>
<tr>
<td>SWM</td>
<td>Solid Waste Management</td>
</tr>
<tr>
<td>TWG</td>
<td>Technical Working Group</td>
</tr>
<tr>
<td>WACS</td>
<td>Waste Amount and Composition Survey</td>
</tr>
<tr>
<td>WD</td>
<td>Waste Diversion</td>
</tr>
<tr>
<td>WDR</td>
<td>Waste Diversion Rate</td>
</tr>
<tr>
<td>WTP</td>
<td>Willingness to Pay</td>
</tr>
</tbody>
</table>

*CENRO, in this project, is the office which provides solid waste management services in case of Davao and monitors the environment in case of Sagay.*
Chapter 1. Outline of the Terminal Evaluation Study

1.1. Background of the Review Study

In the Philippines, inadequate solid waste management is a social concern that threatens public health and sanitation not only in the Manila Metropolitan area but also in the local cities. In order to address the issue, the Government of the Philippines enacted Ecological Solid Waste Management Act (RA 9003) in 2001, which sets forth the implementing responsibility of local government units (LGUs), provisions of ecologically sustainable Solid Waste Management (SWM) and establishment of the National Solid Waste Management Commission (NSWMC) under the Office of the President to promote the Act.

The Japan International Cooperation Agency (JICA), the official entity implementing technical assistance of Japan, dispatched experts to NSWMC for strengthening its administrative capability on SWM and prepared a technical guideline on SWM design and operation, and a guideline for safe closure of disposal sites; and accepted the counterparts as participants in study programs held in Japan as well. Consequently, the administrative capability of NSWMC on SWM had been enhanced.

However, the total number of Local Government Units (LGUs) that had completed the shift to sanitary final disposal and implementing the suitable operation and maintenance were actually less than 10% among approximately 1,600 LGUs existing in the country. The reasons were considered to include financial and technical constraints of the LGUs to establish necessary facilities, insufficient understanding of the LGUs about SWM required by RA9003, and shortages of human resources or institutional arrangement for proper SWM.

Under the above mentioned circumstances of SWM in the Philippines, implementation of a Technical Cooperation Project was agreed between the Philippine and Japanese governments to establish a practical SWM system based on the principle of RA9003, which aimed at the utilization and proper management of waste, and to strengthen the capacity of LGU’s human resources in charge of SWM. The project started in October 2007, with the project period of three years.

Six Japanese experts including a chief advisor specialized in SWM and five experts of waste diversion planning, final disposal planning, financial analysis, environmental education and environmental and social consideration have been dispatched and worked to establish a SWM system following RA9003 in selected target cities, namely Sagay, Calbayog and Davao. Further, they aimed at capacity development of NSWMC for the enforcement of RA9003 by applying the experience in the three cities.

1.2. Objectives of the Terminal Evaluation Study

The objectives of the terminal evaluation study are as follows.

- To review the progress of the project and evaluate the achievement in accordance with the five evaluation criteria (relevance, effectiveness, efficiency, impact and sustainability)
- To draw the factors to promote/impede the effects
• To consider the necessary actions to be taken and make recommendations for the project
• To draw lessons that can be applied to other similar ongoing and future projects of JICA
• To summarize the result of the evaluation study in a joint evaluation report

1.3. Members of the Terminal Evaluation Team

The terminal evaluation was executed by the terminal evaluation study team (hereinafter referred to as “the Team”) consisting of the following members.

From the Philippines Side

• 
• 

From the Japanese Side

• Mr. Shiro Amano (Leader), Senior Advisor, JICA
• Ms. Naoko Yago (Evaluation Management), JICA Philippine Office
• Ms. Noriko Otsuki (Evaluation Analysis), Kokusai Kogyo Co., Ltd.
• Mr. Komei Kawauchi (Solid Waste Management), Ex Corporation
• Ms. Sealdi Calo (Evaluation Coordinator), JICA Philippine Office

1.4. Schedule of the Evaluation Study

The terminal evaluation study was executed in the following schedule.

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Activity</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 12</td>
<td>Mon</td>
<td>Meeting at JICA Philippine Office</td>
<td>Manila</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interview to JICA Experts</td>
<td>Manila</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meeting with deputy executive director of NSWMC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interview to NSWMC C/Ps</td>
<td></td>
</tr>
<tr>
<td>July 13</td>
<td>Tue</td>
<td>Moving to Davao</td>
<td>Davao</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interview to C/Ps</td>
<td></td>
</tr>
<tr>
<td>July 14</td>
<td>Wed</td>
<td>Visit to the pilot MRF and new final disposal site</td>
<td>Davao</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Return to Manila</td>
<td></td>
</tr>
<tr>
<td>July 15</td>
<td>Thu</td>
<td>Moving to Sagay</td>
<td>Sagay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interview to C/Ps</td>
<td></td>
</tr>
<tr>
<td>July 16</td>
<td>Fri</td>
<td>Visit to the pilot MRF, new final disposal site, existing dump site and a new MRF</td>
<td>Sagay</td>
</tr>
</tbody>
</table>
1.5. Methodology of Terminal Evaluation

1.5.1. PDM and PO Referred to for Terminal Evaluation

A Project Design Matrix (PDM) is a summary table of the project and to be used as a management tool to plan and monitor the project. A Plan of Operation (PO) is a document accompanying the PDM to show a time schedule of each planned activity.

In this project, the PDM and PO were prepared and revised as follows.

- PDM (ver.0) and PO (ver.0) at the signing of the Record of Discussion (R/D)
- PDMs (ver.1) at the 1st JCC on December 12, 2007, for three cities respectively
- PDMs (ver.2) at the 2nd JCC on September 22, 2008
- PDM (ver.3) at the 4th JCC on June 25, 2009 and POs (ver.1) prepared following PDM (ver.3) for three cities respectively

Accordingly, the terminal evaluation was carried out based on the PDM (ver.3) and POs (ver.1).

1.5.2. Points for the Evaluation

Achievement and Implementation Process of the Project

The achievement levels in terms of Inputs, Activities, Outputs, and Project Purpose were evaluated by observing the actual progress of the Project in reference to the PDM (ver.3) and POs (ver.1). The implementation process of the Project was also assessed from such viewpoints as monitoring and communication.
**Evaluation Criteria**

In addition to verification of achievement level and implementation process of the Project, the terminal evaluation study evaluated the Project from the following five evaluation criteria.

1. **Relevance:** Relevance of the Project is reviewed by the validity of the Project Purpose and Overall Goal in connection with the government development policy and the needs of the target groups.

2. **Effectiveness:** Effectiveness is assessed by examining to what extent the Project has achieved its Project Purpose, clarifying the relationship between the Project Purpose and Outputs.

3. **Efficiency:** Efficiency of the Project implementation is analyzed with emphasis on the relationship between Outputs and Inputs in terms of timing, quality and quantity.

4. **Impact:** Impact of the Project is assessed in terms of positive/negative, and intended/unintended influence caused by the Project.

5. **Sustainability:** Sustainability of the Project is assessed in terms of institutional, financial and technical aspects by examining the extent to which the achievements of the Project will be sustained after the Project is completed.

**1.5.3. Methodology of the Evaluation Study**

Considering the points for the evaluation mentioned above, the team first prepared an Evaluation Grid, which is the table to show questions to be answered and information to be collected to evaluate the project. Based on the Evaluation Grid, the team worked out questionnaires for the C/Ps and the Japanese experts. The questionnaires were distributed and collected prior to the visit of the Team to the Philippines.

In the Philippines, the study was mostly carried out by interviewing the C/Ps and the Japanese experts using the questionnaires. Information was also collected from relevant stakeholders such as barangay officials and school principals working for SWM. The Team also observed the existing and/or proposed landfill sites, pilot Material Recovery Facilities (MRFs) and the equipment provided for project implementation.

The information collected was analyzed and compiled into the Evaluation Grid, which served as a foundation of the study result. The team developed the Evaluation Report based on the Evaluation Grid to be attached to the Minutes of Meetings.

**Chapter 2. Outline of the Project**

The project has been carried out since October 2007 and 2 years and 9 months have passed at the time of terminal evaluation. The expected Overall Goal, Project Purpose and Outputs written in the PDM (ver.3) are as follows:
2.1. **Overall Goal**

Knowledge and experience of ecological solid waste management (SWM) in the three cities are replicated in other LGUs.

2.2. **Project Purpose**

Ecological SWM system is established in the three cities.

2.3. **Output**

1. Capacity of LGUs on SWM planning is strengthened.
2. Solid waste diversion system is improved.
3. Final disposal system is improved.
4. Guidebooks and manuals are developed as a tool for planning and implementation of SWM based on the experience of the three cities.

**Chapter 3. Achievement and Implementation Process**

3.1. **Inputs**

3.1.1. **Inputs from the Japanese side**

(1) Total Expenses

The Japanese side allocated and appropriated the budget necessary for the project implementation as shown below.

<table>
<thead>
<tr>
<th>JFY*</th>
<th>2007**</th>
<th>2008</th>
<th>2009</th>
<th>2010***</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost for Project Implementation (Thousand Yen)</td>
<td>60,182</td>
<td>140,153</td>
<td>107,510</td>
<td>22,209</td>
<td>330,054</td>
</tr>
</tbody>
</table>

* JFY (Japanese fiscal year): April – March
** From October 2007 to March 2008.
*** Prospect from April 2010 to October 2010

(2) Dispatch of Japanese experts

The following experts were dispatched and assigned. For details, please refer to Annex 4.

- Chief Advisor / Solid Waste Management
- Waste Diversion
- Final Disposal
- Information, Education and Communication (IEC)
• Financial Analysis
• Environmental and Social Consideration / Coordinator

(3) Cost for Local Project Activities

The cost borne by the Japanese side for project activities in the Philippines, e.g. domestic transportation, report printing and telecommunication, is as follows.

Table 3: Cost for Local Activities Borne by the Japanese Side

<table>
<thead>
<tr>
<th>JFY*</th>
<th>2007**</th>
<th>JFY2008</th>
<th>JFY2009</th>
<th>JFY2010***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost for Local Project Activities (Thousand Yen)</td>
<td>2,718</td>
<td>4,660</td>
<td>6,568</td>
<td>2,655</td>
</tr>
</tbody>
</table>

* JFY (Japanese fiscal year) : April – March
** From October 2007 to March 2008.
*** Prospect from April 2010 to October 2010

(4) Counterpart Training in Japan

The counterpart training in Japan was carried out twice: from October 27 to November 15 2008 and from October 5 to 24, 2009. In total, 12 C/Ps, including two C/Ps from each city in each training, participated. The details are shown in Annex 4.

(5) Provision of Equipment

The provided equipment by the Project is detailed in Annex 4 such as IEC campaign materials, environmental monitoring equipment, MRF and its equipment, etc.

(6) Sub-contracting Works

Some of the works were contracted out by the Project. The details are shown in Annex 4.

3.1.2. Inputs from the Philippine Side

(1) Counterpart Personnel

Counterpart personnel has been allocated in the three cities to each category of the project activities, namely SWM planning, waste diversion, financial analysis, sanitary landfill construction and operation, environmental and social consideration, and formed a task team.

NSWMC assigned three officers as coordinators for the activities in the three cities. They were also involved in the preparation of the guidebooks. One of them, however, will leave NSWMC in September 2010 and is handing over her duty to a newly appointed officer.

Annex 5 listed all the C/P members.

(2) Expenses Necessary for the Project Implementation

The local expenses, including cost for such items as personnel, a driver and fuel for the donated vehicle, and the approval of ECC were incurred by the city. The cost for the construction of sanitary landfills in
Sagay and Calbayog are being inputted at the time of terminal evaluation along with the progress of construction. The costs for their operation and the closure of existing dump sites in two cities are also to be borne by the concerned LGUs, but the cost secured at present is just enough to cover the cost for present dumping of existing dump sites. It has been requested to the city authorities since the time when the request for the budget of 2009 was made during the previous city administration based on the cost estimates in the ESWM plan. The request is being submitted to the new city administration.

3.2. Achievement of the Project

The level of achievement of project purpose, outputs and overall goal are evaluated by applying the objectively verifiable indicators shown in PDM (ver.3).

3.2.1. Overall Goal

“Knowledge and experience of ecological solid waste management (SWM) in the three cities are replicated in other LGUs.”

There is found a promising factor for the achievement of the overall goal.

**Indicators 1: The number of seminars and workshops held at regional or national level by the NSWMC for other LGUs.**

**Indicator 2: The number of participating LGUs in the abovementioned seminars and workshops.**

The seminars aiming at the dissemination of the knowledge and experience of the project were already held twice and 10 LGUs attended. NSWMC developed a plan by itself to have a comprehensive capacity development program for the guidebooks to be widely used. The program consists of 7 sessions, each of which targets the LGUs in two to three regions all over the country except for ARMM, from July to December 2010. In total, 500 LGUs will participate.

**Indicator 3: The number of approved ESWM plans.**

Also, NSWMC has approved 20 ESWM Plans so far including those of Sagay and Calbayog. There are another 13 Plans which were reviewed by the technical working group and are to be approved by NSWMC.

3.2.2. Project Purpose

“Ecological SWM system is established in the three cities.”

The Team concluded that the project purpose is partly achieved and the prospect of its full achievement within the project period is low due to the insufficient achievement of Indicator 3.

**Indicator 1: ESWM Plan is reviewed annually. (for Sagay and Calbayog)**

The ESWM Plan was reviewed once so far when the annual report 2009 was prepared in February 2010 in Sagay and Calbayog.
Indicator 2: Waste Diversion Rate is improved as compared with the baseline. (for all Cities)

There is no concrete evidence of the increase of WDR, but the project has still contributed to increase waste diversion.

The WDR in three cities are summarized in the table below.

Table 4: WDR in Three Cities in 2008 and 2009

<table>
<thead>
<tr>
<th></th>
<th>2008 (baseline)</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sagay</td>
<td>21.1 %</td>
<td>19.9 %</td>
</tr>
<tr>
<td>Calbayog</td>
<td>25.2 %</td>
<td>20.7 %</td>
</tr>
<tr>
<td>Davao</td>
<td>Not available</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Source: Progress Reports No.4 and No.5, Annual Reports of Sagay and Calbayog

In Sagay and Calbayog, WDR of 2009 was not improved compared with the baseline. It is difficult, however, to conclude whether WDR is improved or not from such data due to the following reasons:

- Comparison was made in a relatively short period since the data available are those of only two years.
- Data collection methodologies in 2008 and 2009 are different. Therefore, data comparison is inappropriate.
- The final disposal amount is increased probably resulting from the increase of population receiving waste collection service and/or the increase of the unit generation amount per capita per day.
- The sudden increase of waste disposal amount in Sagay is also partly attributed to the newly opened large shopping mall.

The information on WDR in Davao was not made available to the Team.

Nevertheless, the pilot MRFs are receiving waste from the barangays where they are located (20 kg/day in Sagay, 41 kg/day in Calbayog and 308 kg/day in Davao from January to June 2010), which indicates that part of waste generated in the barangays is diverted from final disposal.

Therefore, the amount of waste diverted is considered to have an upward trend even though it can not be proved in numeric value of WDR.

Indicator 3: New sanitary landfills are operated in compliance with RA9003. (for Sagay and Calbayog)

At the time of terminal evaluation, landfill operation is not started. It is likely that the operation of the new sanitary landfill will start in Calbayog by the end of August 2010 and in Sagay in September 2010. The 1.5-month training for operation and maintenance before the end of the project period is much less than the original six-month training planned in the PO (ver.1). The training period is considered to be insufficient for effective technology transfer. Therefore, it is not anticipated that the new final disposal sites are fully operated in such a manner to satisfy RA9003 at the end of the project.

Further, from a viewpoint of a final disposal system as a whole, the existing dump sites should be safely closed and properly maintained in accordance with RA9003 as is specified in 3-1 of the
objectively verifiable indicator of the Output 3. Because of the time and financial constraints, it is almost impossible to complete safe closure of the existing dump sites in Sagay and Calbayog within the project period.

3.2.3. Outputs

Output 1. “Capacity of LGUs on SWM planning is strengthened.”

The level of achievement of Output 1 is satisfactory as all the five indicators are verified as below, although sufficient information is not available for the Team for some of the indicators.

Indicator 1.1: The developed ESWM Plan is approved by the city council. (Sagay & Calbayog)

The ESWM Plans were approved by city councils in June 2009 in Sagay and in March 2009 in Calbayog.

Indicator 1.2: Workshops and seminars are held at least 7 times. (All cities)

In each city, the workshops were held four times internally to exchange information of the project progress and opinions for smooth implementation, while the technical seminars were held twice to widely present the project achievements not only within the cities but also the third parties including neighboring LGUs, and share project experiences. In all, six seminars and two workshops were held so far in each city. The third technical seminars are to be held in September 2010 in the three cities.

Indicator 1.3: Cost on SWM is grasped in detail. (All cities)

The details of the cost on SWM in Sagay and Calbayog is analyzed and reported in the SWM Plans and that in Davao is shown in the recommendation report by the Japanese experts.

Indicator 1.4: Fee collection options are proposed to the city SWM Board. (Sagay & Calbayog)

The proposal for fee collection was worked out for Sagay and Calbayog. It is not yet proposed to the City SWM Board in either city.

In Sagay, as soon as the new members of City SWM Board are nominated by the new mayor, the proposal of the fee collection options will be submitted to the Board. The first Board meeting with new members is expected to be held in August 2010.

In Calbayog, the fee options is to be proposed to the new city mayor in the first week of August 2010, whereby types and amount of fees (waste collection fee for households and for business entities and tipping fee for other LGUs) will be considered. Upon his general understanding, the amendment of the current city ordinance on fee collection system will be proposed to the City SWM Board.

Indicator 1.5: Basic managerial indicators such as collection efficiency, unit figures per various operations are collected and analyzed annually. (All cities)

In Sagay and Calbayog, basic managerial indicators such as collection service population, estimated waste collection amount and composted waste amount are collected and analyzed in the ESWM Plans and Annual Reports 2009. Annual Report 2009 of Calbayog also shows waste diversion rate.
Basic managerial indicators of SWM in Davao were collected and analyzed during the early part of the project. The Team, however, does not have information regarding whether such managerial indicators are collected and analyzed annually in Davao and cannot verify Indicator 1.5.

Output 2. “Solid Waste Diversion System is improved.”

The Team concluded that Output 2 is achieved sufficiently, although not all data are available for the Team.

**Indicator 2.1: WDR is monitored periodically. (All cities)**

In Sagay and Calbayog, WDR was monitored when the ESWM Plans and the Annual Reports 2009 were prepared. The critical parameter to calculate WDR is the recycled waste amount. As junkshop surveys to acquire data of recycled waste amount are planned to be done twice a year in Sagay and monthly in Calbayog, WDR is considered to be monitored at the same frequency.

In Davao, Indicator 2.1 cannot be evaluated since no information is available about WDR monitoring.

**Indicator 2.2: The amount and type of materials collected at the pilot MRF are recorded and reported monthly. (All cities)**

In all the cities, the amount and type of materials collected at the pilot MRF are recorded at the time of their reception.

In Sagay, however, they are not compiled or reported monthly because the size of waste was not suitable to be measured by the scale, and the workers at the MRF were not educated enough to do so. A newly hired person has educational background and is expected to manage waste measurement and reporting.

In Calbayog, a monthly report has been submitted by the facility manager to the C/P in charge of waste diversion. The content of the monthly reports is partly insufficient, but reporting has been improving thanks to the instruction from the C/P to the facility manager.

In Davao, the report is prepared in a comprehensive manner containing such information as the number of visitors, biodegradable waste collected and processed, total recyclable waste amount, income by selling recyclables, problems encountered and recommended actions to be made. The monthly report is submitted to the project team, barangay authority and CENRO.

**Indicator 2.3: The number of barangays where IEC campaign on 3Rs activities is carried out according to the IEC campaign plan. (All cities)**

The main feature of the IEC campaign plan and the actual achievement are summarized as below.

**Table 5: Achievement Status of IEC Campaign Activities**

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
</table>

13
<table>
<thead>
<tr>
<th></th>
<th>Planned</th>
<th>Actual</th>
<th>Planned</th>
<th>Actual (as of time of visit of the terminal evaluation team)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sagay</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of barangays targeted</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>0 (to be started in August)</td>
</tr>
<tr>
<td>No. of schools whose teachers are trained</td>
<td>7</td>
<td>7</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td><strong>Calbayog</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of barangays targeted</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>0 (Just started)</td>
</tr>
<tr>
<td>No. of schools whose teachers are trained</td>
<td>8</td>
<td>8</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td><strong>Davao</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of barangays targeted</td>
<td>10</td>
<td>5</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>No. of schools whose teachers are trained</td>
<td>25</td>
<td>25</td>
<td>24</td>
<td>0 (Just started)</td>
</tr>
</tbody>
</table>

As shown above, the IEC campaign in 2009 was almost carried out according to the IEC campaign plan. Most of IEC campaign in 2010 has started very recently as planned.

**Output 3. “Final Disposal System is improved.” for Sagay and Calbayog Cities**

The achievement level of Output 3 is lower than expected.

**Indicator 3.1: The current dump site is closed in accordance with the safe closure guidebook. (Sagay & Calbayog)**

The current dump sites in Sagay and Calbayog are still in use and not closed yet.

The detailed design of the landfill closure in Sagay and Calbayog was completed and presented in the 2nd technical seminar and the 4th workshop. The design was drawn in accordance with the guidebook of safe closure. As the new landfills are under construction, the current dump sites are still used.

The implementation status of safe closure is described on Page 15. Due to the time and financial constraint, it is very unlikely that the closure work is completed within the project period in both cities.

**Indicator 3.2: On-site training for sanitary landfill management is conducted using the operation and maintenance manual. (Sagay & Calbayog)**

In both Sagay and Calbayog, the operation and maintenance manual of the sanitary landfill was drafted during the 3rd year of the project. Its contents were presented at the 2nd technical seminar. At the time of the terminal evaluation study, however, the on-site training for sanitary landfill management has not yet started as the new sanitary landfill is under construction.

Also, to start training, both cities need to institutionalize the operation system, as described on Page 15 in the section in “Implementation Status of Activities”.

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Output 4. “Guidebooks and manuals are developed as a tool for planning and implementation of SWM based on the experience of the three cities.”

Output 4 was sufficiently achieved.

**Indicator 4.1: The number of technical working group meetings held.**

NSWMC organized a technical working group for each guidebook. Each technical working group was composed of three officers of NSWMC. The group meetings were held 5 times since October to December 2009.

**Indicator 4.2: The number of LGUs who participated in the consulting seminar.**

In total, 22 LGUs participated in the consulting seminars.

In December 2009, NSWMC held a technical seminar for the consultation about the draft guidebooks with the three cities (Sagay, Calbayog and Davao), LGUs in the national capital region, and other relevant organizations. The number of LGUs who attended was 6.

At the 2nd technical seminar in the three cities where other LGUs also attended, the members of the technical working groups of NSWMC made a presentation about the guidebooks. There were participants from 5 LGUs in Sagay, 2 LGUs in Calbayog, and 9 LGUs in Davao.

**Indicator 4.3: The necessary procedure for the Department Administrative Order is initiated by the NSWMC to reflect the contents of the manuals/guidebooks produced.**

The guidebooks were submitted to Technical Working Group (TWG), and as of the terminal evaluation, review result from the TWG is expected. NSWMC Secretariat estimates one month for the guidebooks to be approved by TWG, but it should be noted that TWG is held twice a month and there may be other priority issues to be discussed at TWG. Any practical difficulty to proceed to the approval of NSWMC Resolution is not observed, but it may take time as NSWMC is held only once a month.

### 3.3. Implementation Process

#### 3.3.1. Implementation Status of Activities

The activities in three cities, which were to produce Ouputs 1, 2 and 3, have been carried out by three phases, namely study phase, planning phase and implementation phase. Most of the activities went as planned with partial delays, except for activities related to final disposal in the implementation phase. As for Output 4, the activity schedule was push forward when PO ver.1 was prepared due to NSWMC’s request. The activities were then completed by March 2010.

The implementation status of the delayed activities related to final disposal is as follows.

**Sagay**

**Construction of the New Sanitary Landfill:** It is behind the schedule due to the delayed ECC approval and prolonged process of loan disbursement from Land Bank of the Philippines (LBP). The
total completion of construction will be at the end of September 2010.

**Operation and Maintenance Training for the Sanitary Landfill:** The basic of the operation and maintenance at the sanitary landfill was instructed to the C/Ps during the manual preparation by bringing forward its schedule. To allow on-site technical transfer during the project period, it is planned to accept waste at the new site from the beginning of September when the first waste cell, leachate circulation facility and retention pond become ready to use.

**Safe Closure of the Existing Dump Site:** The closure has started by applying soil covering to more than a half of the area without disturbing the current waste dump operation. The remaining work, which can start only after the start of the new landfill, will need three to four months.

**Calbayog**

**Construction of the New Sanitary Landfill:** It is behind the schedule due to the delayed loan contract with Development Bank of the Philippines and slow process of loan disbursement during the election. The total completion of construction will be in the middle of August 2010.

**Operation and Maintenance Training for the Sanitary Landfill:** The basic of the operation and maintenance at the sanitary landfill was instructed to the C/Ps during the manual preparation by bringing forward its schedule. The on-site training can be started at the end of August after the completion of construction.

**Safe Closure of the Existing Dump Site:** A portion of covering earth was hauled to the site. Four to five-month work will start after the opening of the new sanitary landfill.

### 3.3.2. Particular Features in the Implementation Process

The monitoring of the progress of the project has been carried out using such materials and/or occasions as the PO, plan of the coming half year described in the progress reports, verbal or written communication, weekly reports prepared by the local consultants dispatched to three cities, and seminars/worksshops/JCCs. JCCs in particular functioned well to monitor and assist the project progress and gave an opportunity to discuss various issues of SWM not only among the project participants but also with attendants from EMB, FASPO and NEDA.

It was observed, however, that the use of PDM as a tool of project monitoring was limited. The status of some indicators in the PDM was not clearly described in the progress reports. Some of the means of verification such as SWM account report and monthly report of Sagay’s MRF were not prepared. If some indicators and/or means of verification appeared inappropriate, they should have substituted with other proper ones.

The project has also monitored the performance of SWM. The indicators used to SWM monitoring include waste generation amount, waste collection amount, waste diverted, MRF operation and environmental monitoring in and around the new sanitary landfills. Most of these monitoring data are shown in the ESWM Plans and Annual Reports of SWM.

The communication between the C/Ps and the Japanese experts has been well maintained, which enabled to provide moderately adequate opportunities of technology transfer. The assignment of the Japanese experts was, however, allocated to four cities (Sagay, Calbayog, Davao and Manila) and their visit was on a one-week one-city basis. Some of the Japanese experts and the C/Ps regretted the
short and less frequent time to work together.

The initiative of the C/Ps was observed at every stage of the project. With guidance of the Japanese experts, the C/Ps have proceeded most of the activities and exercised their ownership in plan formation, MRF operation, sanitary landfill construction, IEC campaign and presentation at seminars and workshops. NSWMC also took initiative in JCCs and the preparation and presentation of the guidebooks.

Chapter 4. Evaluation by Five Evaluation Criteria

4.1. Relevance

It is concluded that the project remains highly relevant in terms of the policy of Philippines, the needs of the C/Ps and Japanese ODA policy.

In respect of the consistency with the Philippine policy, the Medium-Term Philippine Development Plan (MTPDP2004-2010) highlights solid waste management as one of target issues of the environment sector. And the MTPDP also stated the importance to support the LGUs for the full implementation of RA9003.

Under RA9003, all the LGUs need to establish an ESWM System but most of them have difficulties to do so with their capacity. The target three cities were not exceptional, but they had started their attempts towards RA9003 by issuing city ordinances and, in Calbayog and Davao, even drafting their SWM Plan. Also, as they were located in different regions in the Philippines, they were considered to be influential for many other LGUs nearby.

In respect of the consistency with the Japanese policy, environmental issues are one of the priority areas according to the “Assistance Plan for the Philippines” (by the Ministry of Foreign Affairs in Japan). Furthermore, the Country Assistance Strategy (CAS) for the Philippines (Working Paper of ODA Taskforce of Philippines) also mentioned that solid waste management is one of the target areas for assistance.

4.2. Effectiveness

It is considered that effectiveness is not fully ensured at the time of the terminal evaluation.

The project is intended to be effective for the Project Purpose “establishment of ecological SWM system” by producing three outputs, i.e. enhanced capacity for SWM Plan implementation, increased WDR and improved final disposal system.

The ESWM Plans are implemented in Sagay and Calbayog, and review of the plans is shown in their Annual Reports. There are evidences of increased waste diversion at the pilot MRFs in three cities and the Team found other several factors that can increase WDR during the remaining period of the plans. The improvement of the final disposal system, however, cannot be adequately observed. As the construction of the new final disposal sites are not completed yet, it is unlikely that sufficient on-site training for operation and maintenance is provided and the existing dump sites are safely
closed within the project period.

The delayed construction of the final disposal sites are attributed to such external factors as below.

- The delayed approval of ECC (Sagay) and delayed loan agreement with DBP (Calbayog) took time to start the construction of landfills.
- Natural disasters worsened the financial condition of the country and impede the appropriation of IRA for landfill construction in Sagay.
- The national election caused delays in the procedure of request for loan disbursement, hence slowed down construction.
- A number of uncertainties in the request process for loan disbursement from LBP further delayed construction.

Further, the project effectiveness was negatively influenced by Important Assumptions. In regard to Important Assumption 2, the waste collection fee options have not been even proposed yet because it is the matter of the new city administration of Sagay and Calbayog, which assumed the offices in July 2010. As for Important Assumption 3, the understanding and support of the city mayors should be built in a similar manner as before the change of the mayors. Also, it should be noted that there is a concern that can be another influencing factor for the operation and maintenance of the sanitary landfills in Sagay and Calbayog. The two cities need to establish management teams and mobilize resources including personnel, machinery and budget necessary for adequate operation and maintenance.

Nevertheless, the Team recognized the project effectiveness in capacity development through the activities already carried out for the three cities and NSWMC. Most of the C/P members are considered to have had a certain level of technical expertise at the beginning of the project, and further capacity development was attained by additional knowledge and technical skills.

4.3. Efficiency

Efficiency of the Project is evaluated as moderate.

According to the interview survey, the amount and timing of inputs from both Japanese and Philippine sides are moderately satisfactory and efficiently used to produce the project outputs. The project efficiency, however, was restricted to a certain extent as the assignment of the Japanese experts had to be allocated to four cities (Sagay, Calbayog, Davao and Manila) and careful technical transfer was difficult in some occasions. Also, the delayed input from Sagay and Calbayog for landfill construction affected project efficiency.

Some of the features and status of inputs are described below.

Inputs from the Japanese Side

**Human resources (Japanese experts):** The input of the Japanese experts and its timing are generally adequate. Their stay was, however, on a one-city one-week basis, which was not long enough in some cases. Careful assignment scheduling and utilization of local consultants were effective to make up for the intermittent visit of the Japanese experts.

**Trainings in Japan:** In total, 12 C/P members participated in the trainings in Japan. Although one
of them left the project, all the other training participants highly appreciated the training opportunity and their technical expertise and experience attained through the trainings in Japan turned to be effective for project implementation.

**Equipment and facility:** Most of the equipment from the Japanese side was provided as planned and effectively utilized for the project activities. The equipment for IEC campaign provided to Davao seems to be not enough, limiting the efficient implementation of IEC campaign. The combustible gas detectors provided to Sagay and Calbayog, which are not used yet, should be utilized when the new sanitary landfills become operational.

**Inputs from the Philippines Side**

**Human resources (C/Ps):** The three cities adequately assigned the C/Ps members necessary for the project activities. The technical background of the C/Ps in Davao, however, was not sufficient at the commencement of the project, as they did not have any formal training in solid waste management.

**Local cost:** The local cost to be borne by the C/P necessary for the project operation was mostly secured for the daily activities; however, the cost for final disposal is yet to be allocated. The cost for the construction of new sanitary landfills was borne by the concerned LGUs, but the delay of disbursement slowed down the construction work.

4.4. Impact

The Team recognized that there are several impacts towards the overall goal and other unexpected impacts.

There are evidences showing that the LGUs other than the target three cities have increased their interest in proper implementation of SWM as a result of being influenced by the project. Further dissemination of knowledge and experience of the project is planned by NSWMc, which has developed a capacity development program for the LGUs utilizing the guidebooks prepared in the project.

Influential external factors shown in PDM are, however, not met yet. Practical utilization of the guidebooks by the LGUs requires technical assistance to them given by the National Ecology Center and Regional Ecology Centers, both of which needs enhancement by augmenting the number of technical personnel. Such technical assistance for the LGUs should go along with operational financial assistance, budget for which is still on request. The potential of the issuance of DAO where the guidebooks are reflected is high, although it will need some time.

Other unexpected impacts are as below.

- In Sagay, the awareness of the C/Ps and city residents has been further raised through the project, and achieved to such a level as all the 12 barangays in the waste collection service area have MRFs even though some are very primitive.
- Both Sagay and Calbayog plan to implement a "no segregation, no collection" policy when the new sanitary landfill becomes operational and intend to continue advocacy activities.
- Sta. Margarita, a neighboring LGU of Calbayog, considers using the sanitary landfill
in Calbayog. If Calbayog decides to receive waste from Sta. Margarita, the project will turn out to contribute to the ecological SWM in Sta. Margarita. Receiving waste from other LGUs may shorten the service life of the sanitary landfill, but such a negative impact can be minimized by setting the tipping fee at an appropriate level.

- If proper operation and maintenance is not provided, there is a possibility that sanitary landfill will have negative impact to the environment.
- If proper consideration and livelihood assistance is not given to waste pickers working on the existing dump sites, then social negative impact is anticipated when the dump sites are closed.
- Although the EMB Regional Offices are not directly involved in this project, the EMB’s SWM coordinators have been invited to the technical seminars and the SWM coordinator of Mindanao has even participated in the project as a C/P in the later stage. It is thus considered that the project stimulated the knowledge and concerns about SWM at the EMB Regional Offices in the three regions.
- Sufficient information about the project is provided whenever enquired by mass media, students and researchers from both Japan and the Philippines. The understanding about the project, as well as the SWM issues of the country as a whole, is considered to have grown.

4.5. Sustainability

The Team considers that overall sustainability of the Project is moderate for the reasons described below.

In the Light of NSWMC

Sustainability of the project effect given to NSWMC is considered to be high. What the project attempted is consistent with the mandate of NSWMC, and NSWMC has institutional, technical and financial capacity to continue to disseminate the guidebooks.

In the Light of the Target Cities

Sagay: The sustainability of the project effect given to Sagay has been growing, but institutional and financial sustainability needs further efforts.

The technical capability of the C/Ps in Sagay required for proper SWM has reached to such level towards their capability revise the plan every three years as required by RA9003, except for technology for operation and maintenance of sanitary final disposal and safe closure of the dump site.

There is, however, a concern in the institutional aspect. In the absence of an office or personnel exclusively in charge of SWM, it is required to promote knowledge sharing among the C/P members and others involved in the project and to establish an SWM office in future. In fact, the city started to consider the establishment of the SWM office.

Financial sustainability largely depends on the establishment of the waste collection fee system. The primary consensus on the fee charging system was reached during the previous city administration and the new mayor has a basic policy to support a beneficiary-pay-principle. Therefore, the approval of the fee charging system can be expected, but there are still remaining issues with regards to the
level of fee amount and ensuring fair implementation.

**Calbayog:** The sustainability of the project effect given to Calbayog has reached to an adequate level. The city, however, requires to pay attention to the institutional and financial sustainability.

The C/Ps have been making an intense effort to implement the project and to put their ESWM Plan into action. CSWMO, dedicated to providing SWM services, has acquired technical expertise and experience adequately enough to revise the ESWM Plan every three years.

However, the problem of technical staff shortage in CSWMO is significant. It needs urgently increase technically skilled personnel for continuous implementation of sanitary final disposal and establishment of segregated waste collection. Also, it is recommended that anticipated outsourcing of final disposal operation as well as current outsourcing of waste collection should keep ensuring consistency with the city’s ESWM Plan.

Further, there is a concern about financial sustainability: introduction of the new fee charging system is inevitable. It will be a favorable indication that the city has already implemented the fee charging system for business establishments. The city plans to have public consultation to determine appropriate fee level and to make the system implemented in a fair manner.

**Davao:** The sustainability of the project effect given to Davao has reached to a certain level, but to ensure sustainability, it is strongly required to build a collaborative relationship among city offices, barangays and the general public.

It is a potential factor for sustainability that the CPDO, a focal office in policy implementation of the city, has cooperatively shown its commitment and implemented the IEC campaign. CSSDO and DepED also expressed their strong motivation to continue IEC campaign and the recognition of their responsibility for awareness raising and waste education. However, encouraging the public to practice waste segregation can be fully sustainable only when it is accompanied by the introduction of segregated collection.

**Chapter 5. Results of the Evaluation**

**5.1. Conclusions**

From the findings of the joint evaluation study as shown in the previous chapters, the Team concludes that the Project Purpose has been partly achieved at the time of the Terminal Evaluation.

The primary reason for that is because construction of the new sanitary landfills and safe closure of the existing dump sites are not complete at the time of terminal evaluation and will not be likely to complete by the end of the project period. The improvement of waste disposal system aimed by the Project includes both structural and operational aspects.

There are several impeding factors as below that are considered as outside control of the Project and prevented the Project from carrying out such improvement:

- The delayed approval of ECC (Sagay) and delayed loan agreement with DBP
(Calbayog) took time to start the construction of landfills.

- Natural disasters worsened the financial condition of the country and impede the appropriation of IRA for landfill construction in Sagay.
- The national election caused delays in the procedure of request for loan disbursement, hence slowed down construction.
- A number of uncertainties in the request process for loan disbursement from LBP further delayed construction.

As a result, the Project Purpose has not been satisfactorily achieved. Further, it will not be successfully achieved within the project period since it is uncertain when budget for the remaining work is allocated by the Philippines side. Under these circumstances, the Team suggests to terminate the Project according to the original schedule.

In order to achieve the Project Purpose, however, once the new administration both in Sagay and Calbayog secures the required budget and other resources for the remaining work of the Project, it is desirable that further assistance or follow-up activities should be considered by JICA to help ensure proper operation and maintenance of the new landfills as well as safe closure of the existing dump sites.

5.2. Recommendations

Promotion of Project Activities

- In order to smoothly start the on-site operation and maintenance training for the new sanitary landfills, an operational body should be urgently decided and established in Sagay and Calbayog.

- It is recommended that appropriate staff of Sagai be invited to the on-site training for operation and maintenance to be conducted at the new sanitary landfill in Calbayog since the start of operation at the new landfill in Sagai may not take place within the project period. Also, the lessons from the on-site training should be reflected into the contents of the landfill operation manuals in order to ensure proper and concrete operational procedures.

- It can not be expected to complete the safe closure of the existing dump sites within the project period. Sincere effort of Sagay and Calbayog to secure budget and to complete safe closure is expected.

- By the end of project termination, consideration plan for the waste pickers working at the existing dump sites in Sagay and Calbayog should be properly formulated.

- Cost analysis is inevitable for effective and efficient SWM service provision. Although the SWM account report, which is listed in the PDM as a means of verification for Indicator 1-3, is not produced, cost structure should be still shown in other materials such as Annual Reports. Sagay and Calbayog should be definitely required to develop a cost accounting system when the fee collection system started to ensure accountability and transparency.

- In order to resolve the above mentioned concerns, strong support and the decision making of the new city administration is essential. It is therefore strongly recommended to attain further understanding about the project from the new decision makers in the target cities. It will then ensure the continuous implementation of the ESWM Plans and sustainability of the project.
Enforcement of RA9003

- Ten years have passed since RA9003 was enacted. NSWMC has been making every effort to fulfill its mandates, but has been encountering a number of challenges. The Team considers it is the time for NSWMC together with other relevant organizations to carefully review in detail the progress and degree of enforcement of RA9003 so that, critical constraints and ineffective aspects of the enforcement structure are identified. NSWMC then needs to develop a new strategy to further promote enforcing RA9003. In such a new strategy, adequate resources mobilization mechanism shall be addressed to have more functional enforcement structure.

5.3. Lessons Learnt

- Appropriate measures should be implemented to mitigate effects of major risks, such as important assumptions being unfulfilled. In case a project requires a substantial amount of investment to be shouldered by the counterpart organization such as cost of construction of a new landfill, it is quite possible that such investment is not fulfilled according to the schedule. While the counterpart organization should be strongly encouraged to meet its obligation under the project, the project activities also need to be adjusted to minimize the magnitude of negative impact.