

8. LGU 10-Year Solid Waste Management Plans

8.1 Introduction

One of the major emphases of this project involved capacity building of Local Government Units. The project team conducted activities to define the needs for capacity building for LGUs, leading to the selection of 8 LGUs who would receive direct technical assistance, and in particular capacity building, from the project team. The following activities were conducted:

- Guidance on solid waste management technologies;
- Development of a solid waste management planning tool;
- Preparation of an annotated outline for the 10-year plans;
- Assistance in the preparation of 10-year plans;
- Conduct of waste analysis and characterization studies; and
- Development of community-based solid waste management projects.

8.2 Capacity Building for Local Government Units

An emphasis throughout the project was Capacity Building of LGUs, particularly related to its responsibility under RA 9003, which requires every LGU to prepare a solid waste management plan; to promote the segregated collection of recyclables, bio-degradables, and residual waste; to establish community-based facilities to sort the recyclables, process and transfer to markets, compost the bio-degradables to produce a soil amendment; and to plan for disposal of waste at well designed and managed disposal facilities.

Efforts during the first part of the project were focused on identifying the needs of the LGUs in these areas, and to define general subject areas in which assistance could be provided during the second part of the project. These activities relate particularly to the preparation of the 10-year solid waste management plans and to the CBSWM projects that are on going and are expected to continue after the completion of this project.

8.2.1 Preliminary Activities

Activities conducted early in the project served to introduce the project to the communities and to determine their needs, as well as to establish the process for working with the LGUs selected to receive direct technical assistance. These are described in Section 2 of the Capacity Building for Local Government Units Report No: 8 but are briefly described below:

- **LGU Surveys and Meetings**
These were held with 17 LGUs in Metro Manila who completed a survey that was designed to assess the status of activities related to the implementation of RA 9003, following which areas were identified in which technical assistance was needed:
 - Meeting the requirements of RA 9003
 - Preparation of the 10-year plan
 - Establishment of user fees
 - Provision of collection service for the commercial sector by the municipality
 - Definition of responsibility for final disposal of the waste
- **LGU Selection for Technical Assistance**
Direct assistance related to the preparation of 10-year solid waste management (SWM) plans was provided to eight LGUs Makati, Malabon, Manila, Muntinlupa, Navotas, Pasig, Quezon City, and Valenzuela, selected through a competitive tendering process
- **Technical Working Group**
Technical Working Groups were formed to assist the LGUs in the various aspects of the project.

8.2.2 Resource Documents

Two resource documents were prepared:

- **Guidance on SWM Technologies** – The guidance document was prepared to assist LGUs in making suitable choices for future facilities and practices needed as part of their SWM plans. The document presents experiences in many countries around the world, covering key aspects of solid waste management from waste generation and characterization, to collection, treatment and disposal systems. Available on the web site www.nswmc.ph.org
- **Metro Manila SWM Planning Tool** – A computer-based model was developed to assist LGUs in the development of SWM plans, and especially to determine the types, number and associated costs for new facilities needed in meeting required RA 9003 targets. Provided with training directly to the LGUs.

8.3 Ten-Year Solid Waste Management Plans

The Consultants have assisted the LGUs in the preparation of their solid waste management plans. An example of a Ten Year Plan is given in Report No. 8, *Capacity Building for Local Government Units*, and Annex 3.

- **Annotated Outline** – In cooperation with the NSWMC, a comprehensive annotated outline was prepared for the preparation of the SWM plans. See Annex 1 *Capacity Building for Local Government Units*. Report No. 8
- **Seminar/Workshop for Preparation of SWM Plans** – A comprehensive seminar/workshop was organized and conducted by the Consultants, in March 2003 in Antipolo. . See Annex 2 *Capacity Building for Local Government Units*. Report No. 8
 - **Seminar** – to provide an overview on the components of the SWM plans and on solid waste management practices to all of the LGUs in Metro Manila, selected LGUs from regions outside of Metro Manila, and representatives from regional and national agencies.

- *Workshops* – conducted over three days covered a wide range of waste management topics: with Write-shops to provide assistance to the LGUs in preparing elements of their plans, and for the LGUs to present conceptual plans that they had prepared on the final day.
- *Preparation of SWM Plans* – assistance provided to the LGUs in the preparation of their solid waste management plans.
- *Waste Analysis and Characterization Studies (WACS)* – Technical assistance provided in the planning and conduct of WACS. Detailed information about the entire waste characterization program is provided in the *Waste Analysis and Characterization Study Report No: 3*.

8.4 Community-Based Solid Waste Management Projects

Due to the importance of community-based recycling in enabling communities to meet the mandates of RA 9003, a significant part of the Project involved providing assistance to the LGUs in the implementation of community-based recycling projects. The LGUs selected for assistance in the project received:

- technical assistance in terms of project formulation, design and implementation, and
- financial assistance through the issuance by ADB of funds set aside in the project for this purpose.

The processes are described in more detail in Section 5 of the *Capacity Building for Local Government Units Report No. 8*.

Through this assistance, the LGUs are enabled to implement, expand, or enhance community-based recycling activities, e.g., segregated collection, recycling, and composting. The project may include equipment, supplies, personnel, operations and maintenance, IEC, etc., and may be allocated to one or more than one barangay. As part of this TA, the ADB set aside a special fund, consisting of US\$200,000, to be used by selected LGUs for the design and implementation of community-based solid waste management projects.

Selection criteria included:

- Technical and financial sustainability
- Could serve as a model for other communities in Metro Manila
- Low technology
- Low cost
- Supported by community and barangay leaders

Every effort was made to promote a variety of approaches to provide a broad base for evaluation. As of the writing of the Final Report, the projects are in the process of being implemented.

The following process steps were developed to expedite the identification of projects for implementation, the preparation of proposals, and the approval of the projects.

- Identification of potential projects
- Site visits to potential project sites
- Presentation of guidelines to LGUs at the Workshop on the Preparation of 10-year Solid Waste Management Plans held in Antipolo (see Table L-1)
- Discussions with each of the LGUs at the Workshop to identify potential projects
- Submittal by LGUs of concept documents
- Review of concept documents
- Submittal by LGUs of proposals
- Review of proposals and submittal to ADB for approval

Table L-1 CBSWM Project Funding Guidelines Provided to LGUs

Source of fund: Asian Development Bank	
Amount available:	<ul style="list-style-type: none"> Maximum of US\$25,000 available to each of the 8 LGUs participating in the Project
Use of funds:	To implement, expand, enhance community-based recycling activities, e.g., segregated collection, recycling, and composting. Funds may be used for equipment, supplies, personnel, operations & maintenance, IEC, etc and may be allocated to more than one community/barangay.
Important considerations:	<ul style="list-style-type: none"> Can be implemented in short term (2-3 months) Community support Barangay captain/council support Available site Segregated collection (if project is for a MRF or composting facility)
Procedure:	<ul style="list-style-type: none"> Discussion between LGU representatives and ADB project team to identify community-based projects Preparation of concept document – brief description and cost estimate (1 to 2 pages) Submittal of proposed project concept to DENR for approval Preparation of proposal (3 to 5 pages) – description, cost estimate, implementation schedule. Supported by documentation of barangay council support and availability of site, and submittal of supporting financial information. Submittal of proposed project to ADB for approval Preparation of disbursement plan Implementation

The LGUs were requested to submit a concise concept paper that would explain the general idea of the project. In addition, the LGUs were given guidelines in terms of amounts of funds available to them. In order to treat every LGU in the same manner, the available funds were divided into eight parts such that each LGU would be eligible to receive approximately US\$25,000. Once the concept paper was submitted and approved or revised by the project team, the LGUs were requested to submit a formal proposal. In general, the formal proposal consisted of a technical description and a cost estimate. Upon receipt of the formal proposals, the project team reviewed the proposals and either requested clarification from the proponents or made a recommendation to the ADB. Five projects were approved by the ADB for funding with a summary of them presented in Table L-2 with the approved budgets for the projects in Annex 4 *Capacity Building for Local Government Units*. Report No. 8.

Table L-2. Status and Description of CBSWM Projects

LGU	Status	Description of Project
Makati	Project approved	Design and implementation of two types of mobile material recovery facilities
Muntinlupa	Project approved	Improvements to the existing materials recovery facility
Pasig	Project approved	Improvements to the composting, recycling, and livelihood operations in Brgy. Ugong
Quezon City	Project approved	Improvements to the recycling and composting operations in Brgy. Holy Spirit
Valenzuela	Project approved	Implementation of segregated collection system, and recycling and composting operations in Brgy. Mapulang Lupa

The consultants continued to provide technical assistance to the LGUs during the implementation of their projects. This work included site visits to the projects to examine progress and suggest improvements; advice to the LGUs via telephone, e-mail, and during meetings; and other assistance as needed. In addition, the consultants assisted the ADB in administering the projects through the review of invoices and monitoring of progress.

The projects, described more fully in Section 5.2 of *Capacity Building for Local Government Units*. Report No. 8, were:

Makati

The City of Makati faces one major problem in the implementation of its resource recovery and reduction program for solid waste management. It has limited available land. Facing this constraint or challenge, Makati is developing mobile materials recovery facilities for the City's Resource Recovery and Reduction Program.

The project involves the development of two types of "mobile MRF's" to be used in the two districts in Makati: 1 van and 10 pushcarts, these are designed to collect paper, plastic, metal and glass.

The objectives of the project:

- provide a tool that will be used for the recovery of recyclable wastes by a minimum of 5% yearly;
- provide a prototype mobile MRF that can be adopted for solid waste resource recovery program; and
- push the barangay through the provision of infrastructure support, to implement, enforce and sustain their solid waste resource recovery and reduction program, most specially segregation at source.

Muntinlupa

The project being implemented by Muntinlupa includes: (i) expansion of the present MRF, (ii) shredding of buko (coconut) shells, where the by-products will be used by the City Plan Nursery and the local DA office for urban farming, and (iii) information, education and communications (IEC) support.

The objectives of the project are:

- To broaden the recycling program for the present nine areas/communities in two barangays
- To increase waste diversion through composting

The expected benefits of the project include: reduction of waste for final disposal, reduction of truck/trip for garbage collection, and landfill savings.

Pasig

Pasig is implementing a project to improve its community-based solid waste management system in Brgy. Ugong. The project includes: (i) improvement of the composting operation; (ii) implementation of a livelihood project using the compost produced for gardening; (iii) improvements to the recycling operation to increase efficiency in packing and storing recyclable materials; (iv) enhancements to the Doy Pack livelihood project; and (v) public awareness activities.

The objectives of the project are:

- At the composting facility; reduce moisture content; improve compost quality, and expand operations
- Implement a livelihood project with the produced compost used to grow vegetables for the community.
- Increase efficiency at the recycling center and expand operations
- Enhance the existing livelihood project using Doy Packs to produce bags, folders, and other items for sale
- Increase recycling through public education

Quezon City

The project being implemented by Quezon City is to improve and expand the existing materials recovery and composting facility in Brgy. Holy Spirit.

The objectives of the project are:

- To provide and implement a waste management system in accordance with the provision of RA 9003.
- To implement waste segregation in every source of waste within the barangay.

- Improve the efficiency of waste processing in the facility for composting, recycling and urban farming.

The improvements to the system will include:

- Procurement of materials and equipment: shredder, rotary compostors, rotary screen, composter bin
- Increase in the area of composting
- Addition of a greenhouse eco-center structure
- Conduct of an IEC campaign

Valenzuela

Valenzuela is implementing a community-based ecological solid waste management project in Brgy. Mapulang Lupa. The project involves social mobilization, training of personnel, implementation of segregated collection, and establishment of a materials recovery facility and windrow composting operation.

The objectives of the project are:

- For the community to adopt segregation of waste at source, recycling, reuse and backyard composting.
- To establish a materials recovery facility and windrow composting operation.
- To form a Technical Working Group with representatives from each purok, and to train them on implementation and monitoring of the project.
- To train Eco-aides in the proper handling of waste.
- To establish linkage with junk shops and industries for the marketing of the recyclables.
- To establish a monitoring scheme on project implementation.