

Annex P

SWM Execution Unit of OPAMSS

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P SWM Execution Unit of OPAMSS

The provision of a solid waste management public service, in a universal, continuous, sustainable way, and in a best level and at economical prices, requires having the following:

- a project that establishes the goals and objectives to be achieved in time;
- the political decision for carrying it out; and
- an operative structure that carries it out.

The respective project for AMSS will be the **Master Plan of the Regional Solid Waste Study for AMSS** that has the following goals and objectives:

P.1 Main Objective

To establish a sustainable Solid Waste Management System for target year 2010 in AMSS.

The Master Plan aims at:

- promoting the citizens' well-being and public health;
- implementing a sustainable SWM; and
- contributing for the environmental conservation.

In order to reach these goals and objectives, it is necessary that the municipal authorities that conforms COAMSS, should make the political decision of establishing a **Regional Solid Waste Program for AMSS** whose serious objective would be the implementation of the Master Plan. The programming of this plan has duration of ten years (2000-2010).

The development of said Program requires having a formal and permanent structure that supports the municipalities so that they can make it effective.

For such a purpose, the creation of an **Execution Unit of Solid Waste Management of OPAMSS (UE-OPAMSS)** is proposed, and whose aims would be the following:

- To act as a specialized body for supporting the provision of the solid waste management service for AMSS
- To participate in the urban development planning of AMSS in its areas of jurisdiction
- To coordinate the activities of technical support and international financing
- To provide the necessary technical support to the municipalities of AMSS, so that the provision of solid waste management services can reach the goals and objectives established in the Master Plan.
- To promote the formation of Communal Associations for Cleansing in the neighborhoods of AMSS.

- To have consent among public and municipal interests, private activities and the communities in SW generation reduction programs and recycling
- To verify the compliance with the norms, ordinances, laws and regulatory framework.
- To advise the municipalities in the selection of the most convenient modality for the participation by private sector in the provision of services.

P.2 Functional Structure

The functional structure proposed for the SWM Execution Unit of OPAMSS is as presented in the figure below.

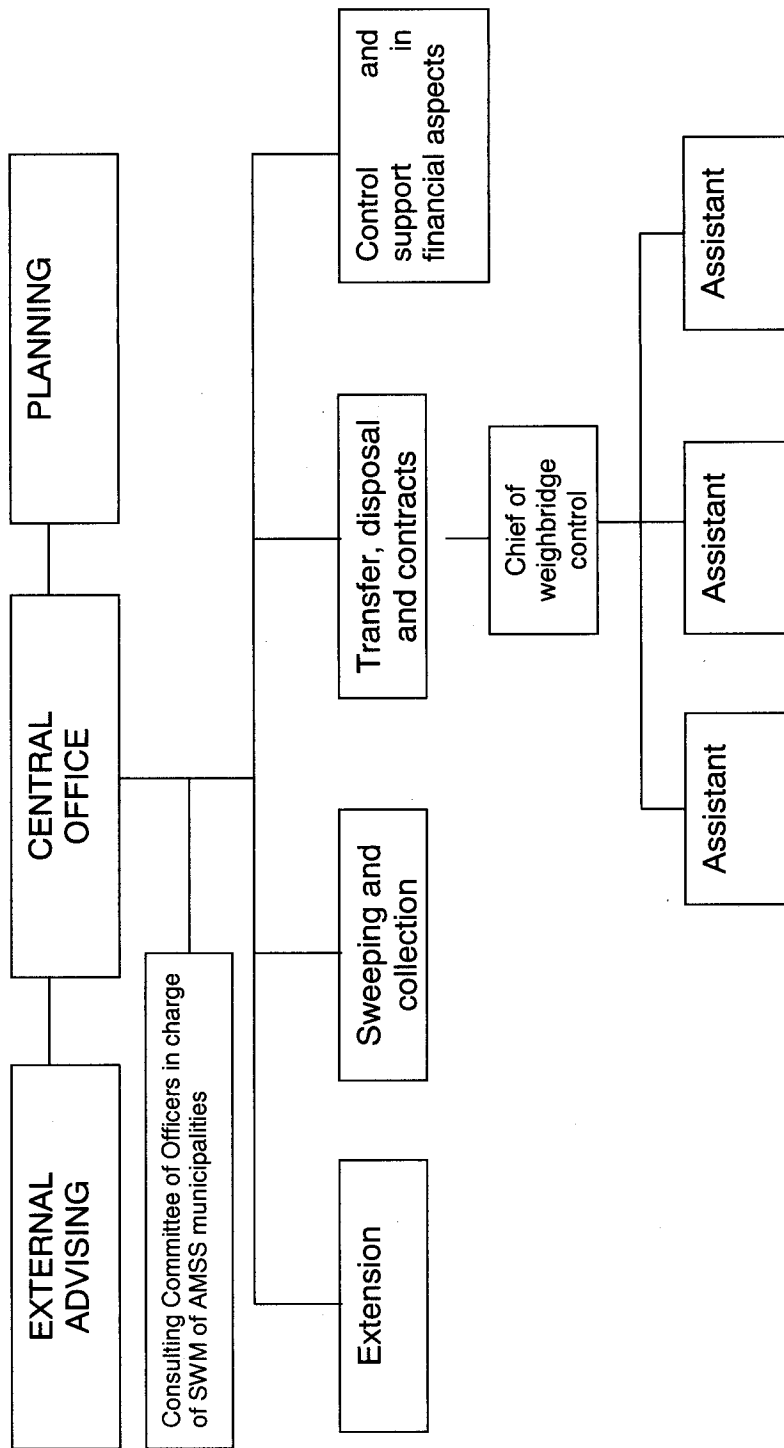


Figure P-1: Functional Structure of SWM Execution Unit of OPAMSS

P.3 Description of Functions

P.3.1 Central Office

It constitutes the executive body of the Execution Unit and will be in charge of a professional sanitary engineer or an administrator, with a minimum five-year experience in solid waste management. It will be the entity that responds on the conduction and steering of the Program and will also represent the Execution Unit. It will depend directly from OPAMSS Executive Direction.

Function

- Steering duties
- Representation
- Control

Responsibilities

- Direct the activities of the Execution Unit
- Represent the Execution Unit
- Control the program to be developed in accordance with the Master Plan
- Coordinate the activities of the Execution Unit

P.3.2 Planning and Development

It generates the medium and long-term technical project of the Execution Unit and it designs their development. The Central Office will be in charge of it.

Function:

- Analysis
- Planning
- Designing
- Support
- Control and supervision.

Responsibilities:

- To participate in the analysis and decisions on the urban development of the city (PLAMADUR and PLAMATRAMS)
- To monitor population's growth, new *colonias* and neighborhoods
- To monitor the variations in MSW production and features
- To plan the services expansion
- To supervise engineering, architecture and landscape designs

- To elaborate operative budgets, costs analysis, technical specifications, execution timetables

P.3.3 External Consulting

With the initial purpose of consolidating the Execution Unit and developing its human and technical resources, having an external consulting for a minimum of two years becomes necessary. The efforts devoted to improve the service on the basis of foreign help in terms of equipment and vehicles have shown limited results. This is mainly due to the lack of experienced and motivated human resources to assist the planning, operation and monitoring of the services activities, as well as the operation, maintenance and repair of damaged equipment for the collection and final disposal.

Hence, by considering the possibility of PPS in the rendering of collection, transfer and sweeping services, this does not mean that the public sector is exempted from its responsibility. On the contrary, having a professional and trained staff to plan, supervise and monitor the quality of the contracted service and achieve economical prices will be more necessary. A professional civil or sanitary engineer with a minimum international experience of fifteen years will be in charge of it.

Function:

- Consulting
- Training

Responsibilities:

- To train the officials about services
- To advise in the areas of planning, development, operations, monitoring, supervision and control of contracts.

P.3.4 Consulting Committee of Municipal Officers

The officers in charge of SWM services in the 14 municipalities of AMSS will create a consulting committee with the purpose of coordinating the activities they carry out in a regional manner.

Function:

- Evaluate the development of the Regional Management System (sanitary landfills and transfer stations)
- Acknowledge, analyze and transfer individual experiences in rendering the services
- Request support from the Execution Unit for specific aspects

P.3.5 Extension

It promotes, establishes and maintains the public participation and collaboration in the activities of the Execution Unit. Organized public participation is of vital importance in order to achieve the sustainable development of the service.

It is necessary to promote a prideful attitude and self-esteem in the entire population in general, but very especially among downtown pedestrians and in marginal, low-income urban areas. Little will be achieved with the application of the best engineering and administration practices if population does not participate nor collaborate by all means. 50% of the success depends on public participation. A health promoter with five-year experience will be in charge of it.

Function:

- Organization
- Formulation and design
- Implementation
- Evaluation

Areas of consulting:

- Creation and conduction of educational campaigns
- Evaluation of educational activities
- Organization of the community (by means of the creation of Communal Cleansing Associations)

P.3.6 Collection and Sweeping

It has the mission of advising the municipalities in the management of the services they render, so that they meet the qualified and efficient conditions at economical and environmentally acceptable prices. It will coordinate and control the activities of storage, collection, sweeping (manual and mechanical), haulage and maintenance and repair of equipment and vehicles. It will be under the conduction of a civil or sanitary engineer with at least five-year experience in solid waste management.

It will also analyze the participation of micro-enterprises in the provision of services.

Micro-enterprises can cover the collection services in marginal, low-income areas where it is difficult to use collection vehicles due to urban layout and slopes reasons. These micro-enterprises should be organized with the participation of residents of the place where such service is provided. There are many successful experiences in Latin America (Peru, Bolivia and Colombia). The system uses non-conventional low-cost tools and vehicles. In general, they are in charge of the service by means of a regulated concession; i.e., a fee rate is established and the concessionaire charges it to the user directly.

The sweeping service can also be endowed to this modality of PPS. It is convenient that the micro-enterprises are formed with legal status in order to be subject to credit.

This section will be in charge of the promotion and relationships with the collection and sweeping micro-enterprises. The institution would place the necessary containers and be in charge of haulage and final disposal, as well as of the promotion, planning and technical assistance.

Function:

- Analysis
- Promote
- Organize
- Plan
- Support
- Supervise

Areas of consulting:

- design of service areas and collection and sweeping routes (manual and mechanical)
- program to place sidewalk dustbins
- performance control of equipment and personnel, according to the service quality parameters and performance indicators and measures of personnel training
- participation of micro-enterprises in collection, sweeping and recycling, taking into considering the following aspects among others:
 - ◆ Analyze the feasibility to create a micro-enterprise within a certain area
 - ◆ Promote such creation and their acceptance
 - ◆ Support the organization
 - ◆ Plan their service and operation
 - ◆ Provide technical assistance
 - ◆ Coordinate the provision of the collection service
 - ◆ Supervise the service quality
- Control on maintenance and repair of the equipment and vehicles. It has the responsibility of achieving the highest operational productivity of the equipment and machinery, through the application of preventive maintenance programs.

P.3.7 Transfer, Final Disposal and Contracts

To inspect and audit whether the operation of transfer station(s) (T/S) comply with the established service quality norms and with the management and environmental impact plan, as well as to keep the corresponding registrations.

To ensure that the disposal of municipal SW at the sanitary landfill in Nejapa and/or another sanitary landfill is environmentally acceptable by means of the correct operation of the service. It will be in charge of a civil or sanitary engineer with five-year experience.

The weights of the SW that enter Nejapa sanitary landfill will be controlled by full-time municipal officials.

Advising through the entire process for contract-out to the private sector and administration of the corresponding contracts.

Function:

- Control
- Record
- Verify
- Inform
- Evaluate

Areas of consulting:

- Control of the transfer station(s) operations and data recording and management.
- Control and verification of environmental quality norms in T/S.
- Ensure that all municipal SW that enter the sanitary landfill are being disposed of in accordance with the design and technical specifications.
- Prevent the entrance of prohibited solid or liquids wastes.
- Registration of entering vehicles with the following information:
 - ◆ Day, hour of entrance and departure
 - ◆ Vehicle plate number and type
 - ◆ Waste source and type
 - ◆ weight of the vehicle (full and empty)
 - ◆ weight of the wastes
 - ◆ Area of the sanitary landfill where the wastes were disposed of
 - ◆ Amount billed by the final disposal service
- Daily registration of the total wastes entered and the covering material (m³).
- Daily registration of the time used by types of machinery and equipment, personnel and materials in during waste handling, and extraction, transport and placement works of covering material.
- Weekly registration of the landfill progress (total volume occupied)
- Registration of the rainfall
- Control on the flow of leachate generated and its volume of the same that are re-injected in the mass of wastes.
- Control every three months about the efficiency of leachate treatment.
- Daily control of the registration of the flow, temperature, speed and methane concentration in biogas.

- Supervision of construction and maintenance of the physical infrastructure and gardening
- Report on the result of the operations and their costs

Contract administration

- Selection of the most convenient PPS modality
- Documents for pre-qualification, bid and contract
- Pre-qualification process
- Evaluation and selection of qualified companies
- Bid process
- Contracting process
- Performance control according to the contract specifications
- Application of fines established for poor performance
- Quantification of the services provided
- Verification of invoices presented
- Order of payment
- Conflicts on the contract clauses application
- Arbitration
- Termination of the contract

P.3.8 Support in Financial Aspects

Advice for the control of the activities linked to the economy and finances of the SWM services; analysis and confirmation of the financial position.

Advice for the generation of municipal income through identification and classification of customers; calculation of the volume produced by ICI (Institutional, Commercial and Industrial) customers to achieve a fair and equitable allocation of service costs; billing and collection for the SWM services provided.

Advice and processing of whatever information is required which will be used to support and assist the municipalities in AMSS.

Function:

- Processing
- Producing
- Assisting

Areas of consulting:

- Processing the information on SMW

- Preparation of reports, surveys, statistics, etc.

Table P-1: Required Personnel for the Execution Unit

Position	Qualification	Number
Central Office	Civil or sanitary engineer Seven (7) year experience in SWM	1
Planning and Development	In charge of the Central Office	---
External consulting	Civil or sanitary engineer Fifteen (15) year international experience in SWM	1
Extension	Public health promoter Five (5) year experience	1
Collection and sweeping	Civil or sanitary engineer Five (5) year experience in SWM Sweeping and collection	1
Transfer, final disposal and contracts	Civil or sanitary engineer Five (5) year experience in SWM Transfer, sanitary landfills and contracts	1
Administration and Finances	Administrator Seven (7) year experience	1
Weighbridge control	Administrative experience 1 chief and 3 assistants	4