



TRAINING MANUAL 4 Private Sector Participation

Module 4-4: Choice of the Appropriate Contract Model PSP for the Implementation of Waste Management Facilities

Prepared by the International Consortium
GTZ-ERM-GKW

This Training Module is part of the

TRAINING MANUAL 4: ISWM Private Sector Participation for Waste Management Services

This training Module has been prepared in support of capacity development of waste management service delivery through Private Sector Participation (PSP), Category 2 – “Choice of the Appropriate Contract Model” and forms the third module of this Section.

It focuses on the different options and key aspects of PSP for the implementation of waste management facilities.

Note: A general discussion of advantages and disadvantages of different contract options is provided in Module 4-2 whereas PSP for waste collection services is discussed in Module 4-3.



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- I Key Characteristics of PSP for WM Facilities
- II Assignment of Responsibility for Implementation of Facilities
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- V Traditional Approach Versus DBO Approach
- VI Involving Financing via the Private Sector
- VII Summary and Conclusion



- I Key characteristics of PSP for WM facilities
to describe the key characteristics that distinguish PSP for WM facilities from PSP for waste collection services
- II Assignment of responsibility for implementation of facilities
to discuss different options for potential contracting authorities on municipal or governorate/ central level
- III Preparation and implementation process
to outline the stages and time consuming process for preparation and implementation of waste management facilities
- IV Capacity of facilities
to identify advantages and disadvantages of centralised facilities
- V Traditional versus DBO approach
to discuss and compare two major contractual approaches for project implementation
- VI Involving financing via the private sector
to explain characteristics and required pre-conditions for the most challenging PSP approach
- VII Summary and Conclusion
to summarise lessons learned and identify major conclusions

I. Key Characteristics of PSP for WM Facilities (1)

- WM facilities cover sanitary landfills, transfer stations and treatment facilities
 - Extensive period for project preparation and implementation
 - Site selection and conduction of EIA
 - Long project lifespan (10- 20 years) = long contract period
 - Extensive capital investment, financing is crucial
 - Potential for involvement of International Financing Institutes (procedures, guarantees, contract models)
- Implementation is hardly reversible and
PSP involves high risk and long term liabilities

Using the term “Waste Management Facilities”, a major focus is placed on sanitary landfills as this is the prevailing technical option for waste disposal. However, it could also include transfer stations and treatment facilities such as composting plants.

Key characteristics related to WM Facilities are:

- The preparation and implementation of projects require a long time and are very costly: *a typical duration is 5 years from first studies to start of operation of a sanitary landfill!*
- Site selection and implementation of waste treatment facilities and sanitary landfills usually is the subject of an EIA and related approval procedures. *Note: the best PSP approach might fail if an inappropriate site has been selected!*
- Waste management facilities have a long lifespan (usually 10- 20 years) and thus require long contract and deprecation periods. *Note the contractual relationship has to consider this long period and the need to include options for adjustments as may be required*
- Financing is a major issue. *Often neither the public side, nor a private contractor is capable (or willing) to provide the required financing of facilities.*
- International Financing Institutes (especially development banks) are often required to provide loans for the establishment of the facilities. *However these institutions also request that the project is developed in a certain manner and fulfils several conditions before they provide financing. (e.g. application of defined contract models and procurement procedures).*

These characteristics lead to projects that are hardly reversible and PSP involves a high risk and long term liabilities.

I. Key Characteristics of PSP for WM Facilities (2)



Reduced Reversibility compared to service contracts

- Collection contracts can be terminated rapidly including rehabilitation of damages
- Termination of a long term disposal contract is complicated and no one can dig out a landfill



Long term risks and liabilities

- Sanitary landfills involve long term risks and liabilities for after care, rehabilitation, monitoring
- Leachate treatment could be an ongoing task for 30 years
- All risks and liabilities need to be considered in the contract with the private entity



Key Characteristics of PSP for WM Facilities

Reduced Reversibility compared to service contracts

- Collection contracts can be terminated rapidly including rehabilitation of damages
 - *a new contractor can be identified within a short period or services might be provided again via the public sector*
- Termination of a long term disposal contract is complicated (especially if the private sector has financed the facility as well)
 - *closure of a unsuitable recycling or composting plant might be easy but no one can dig out a landfill*

Long term risks and liabilities

- Sanitary landfills involve long term risks and liabilities for after care, rehabilitation and monitoring
 - *who will be responsible to conduct and finance these tasks?*
- Leachate treatment might be an ongoing task for 30 years
- All risks and liabilities need to be considered in the contract with the private entity
 - *identification of risks and assignment of liabilities, appropriate mechanisms need to be identified and implemented*



The following photos illustrate these key characteristics of WM Facilities:

Transfer Station in Amman (without PSP):

Note: the facility has to be in line with the overall logistics for service delivery. (Interface between collection and transfer vehicles, capacity etc)

Sorting Facility before composting in Cairo - operated by a private contractor

Note: separation of recyclable materials might be further source of income but is at least minimising the costs for disposal

Operation equipment for a sanitary landfill in Egypt - designed constructed operated and financed by an international private sector operator.

Note: initial investment for construction and supply of equipment is considerable

Leachate Pond of a Landfill in Tunisia (operated by a private Operator)

Note: leachate treatment will be a long term task which will be required even after termination of the contract.

II. Assignment of Responsibility for Implementation of Facilities



Municipal Level:

- Responsible Authorities for Waste Management
- Suitable interface with Waste Collection Services
- Limited catchment area / waste quantity
- Lack of required capabilities for preparation, implementation and contract management



Governorate or Central Level:

- Enlarged catchment area
- Critical Interface with local authorities and need for inter-municipal cooperation
- Mechanism for cost recovery

Assignment of Responsibility for Implementation of Facilities:

Before discussing the implementation of PSP, the responsible authority which could also be the contracting authority for waste management facilities needs to be identified. The responsibility for the implementation of waste management facilities in the region is sometimes not clearly defined.

In some countries cities/municipalities are in charge of operation of WM in general which also includes the implementation of waste management facilities:

- An advantage of this approach is that the interface with the waste collection services is managed by the same authority and can be handled in a good manner.
- However, especially in the case of smaller cities/ municipalities the catchment area for waste collection is limited and could thus lead to an insufficient waste quantity
- In addition there might be a lack of required capabilities for preparation, implementation and contract management on the municipal level.

Note: these type of projects only occur every 10-20 years.

In other countries, responsibility is with the regional (e.g. governorate) or central level:

- The catchment area would be enlarged and waste quantities increased
- The main advantage of this option is that the staff capabilities are usually more suitable for the implementation and contract management
- However, this approach leads to a critical interface with the local authorities related to siting, cost recovery and logistics. *Where should the facility be located/ who is paying for waste transfer / how can the existing collection systems be adjusted?*
- There might be a need for inter-municipal cooperation.

However, taking into consideration the required capabilities, it is obvious that smaller municipalities without additional support often will not be able to develop such a project.

III. Preparation and Implementation Process

Task	Preparation and Implementation Period (years)					
Pre- Feasibility Study	0.5					
Feasibility Study		0.5-1				
Site Selection		0.5-1				
Design Phase and				0.5-1		
Construction Phase						1-2



Preparation and implementation of a waste management facility

The preparation and implementation of a waste management facility such as a landfill or a waste treatment plant is a comprehensive project involving several steps.

Typical steps that are related to a capital investment project are as follows:

- Elaboration of Pre- Feasibility Study (*first assessment of project and project compounds*)
- Elaboration of Feasibility Study (*according to the requirements of a Bank, including basic design, cost estimation, assessment of cost recovery, project financing, environmental and social impacts etc.*)
- Site Selection. *Note: selection and identification of a suitable site should be undertaken at an early stage e.g. during the feasibility study*
- Implementation of Measures ensuring institutional strengthening and cost recovery (*institutional support to the project implementation agency, i.e. introduction or improvement of fee collection*)
- Design Phase and Permitting (*including approval procedures according to national requirements*)
- Procurement (according to national requirements and requirements of the financing bank)
- Construction (*Construction of major facilities usually requires more than one year*)
- Start of Operation (Operation period itself might cover 15-20 years)

Due to the complexity of such a process a detailed description suitable for all kind of projects can not be provided. However, this simple table illustrates typical implementation periods of 4-5 years.