



TRAINING MANUAL 5 ISWM PROJECT DESIGN AND MANAGEMENT

MODULE 5-2: ISWM PROJECT DESIGN

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GTZ-ERM-GKW



ISWM Project Design

This module addresses ISWM project design. The overall approach is that solid waste management project design should address the range of technical and non-technical issues associated with effective waste management. The model for doing this is “integrated solid waste management”, which is defined as “an optimised system of waste management practices for a given jurisdiction, based on the sound evaluation of site-specific environmental, energy, economic and socio-political considerations and which includes one or more waste management options”. Implicit in this definition is that some waste management options will involve the application of technology and some will involve the application of enhanced management frameworks (for example, improved legal frameworks or cost recovery).

It is intended that delivery of this module will be undertaken in such a way as to encourage interaction and discussion among training participants, and between the participants and the instructor. Throughout, the instructor should introduce subject matter and should ask participants how they would apply the concepts that have been introduced, what experiences they have had with similar initiatives to those that are discussed and how they might be improved in light of experience, and relevant examples they may have that illustrate points made from their own experience.



OBJECTIVE

The Objective Of This Module Is To Strengthen METAP Region Capacities In:

- The ISWM project cycle process
- The content of ISWM project design
- Consideration of national level ISWM project design
- Consideration of local level ISWM project design
- When/how to use internal, external and international expertise
- “Bankable” ISWM projects



In This Module:

This is an introductory slide that identifies the objective of the module to enhance capacities in the METAP region related to:

- The ISWM Project Cycle Process. The project cycle is a useful concept to apply to ISWM projects. When seen from the perspective of the project cycle, a project extends over long periods of time and involves different types of activity.
- The Content of ISWM Project Design. ISWM project design needs to address all components of a solid waste management system. Precisely what these components will be will depend on the nature of the project, and particularly on whether the project is national or local in scope.
- Consideration of National Level ISWM Project Design. National level ISWM initiatives typically include strategic actions to address policy, legal and institutional frameworks, financing and cost recovery frameworks, and private sector participation opportunities. National level initiatives may also focus on development of national ISWM strategy.
- Consideration of Local Level ISWM Project Design. Local level ISWM projects focus on the delivery of waste management services under the specific circumstances of the local community. “Local” can mean an individual municipality, or several municipalities acting together, or a sub-national entity (e.g. governorate in Egypt or wilaya in Algeria) with responsibility for waste management operations.
- When/How To Use Internal, External and International Expertise. The decision of what expertise to use can be key to the success of an ISWM project.
- “Bankable” Projects. A “bankable” ISWM project is a project capable of winning the investment necessary to implement it. And the key to a “bankable” project is good project design!

This module focuses on management approaches to ISWM project design. Technical aspects of project design are the subject of Training Manual 1: ISWM Planning Procedures and Processes, developed under the METAP Regional Solid Waste Management Project.



UNDERSTANDING ISWM PROJECT DESIGN

ISWM Project Design:

- The activities necessary to define ISWM needs and to “map” the actions necessary to address those needs

ISWM Project Design Includes:

- « Process » actions that are undertaken within the context of the “Project Cycle”
- « Thematic » actions that address the substance of a project

Effective project design must address both.

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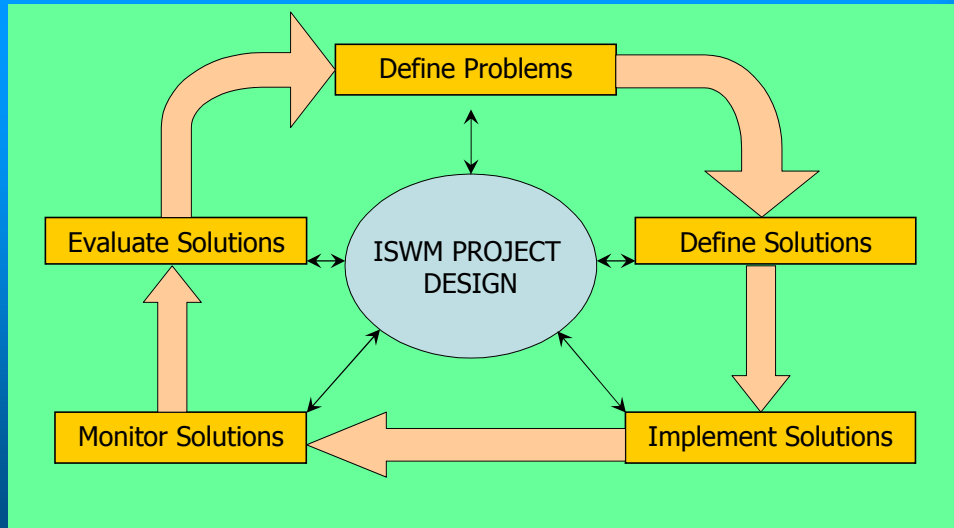
Understanding ISWM Project Design

ISWM project design involves putting together the suite of actions that are necessary to effectively solve solid waste management problems in ways that are consistent with ISWM principles. Some solid waste management problems can be easily resolved, others can be highly complex and require actions over many years by very many different stakeholders. Regardless of the specific issues at hand, however, the ISWM project designer must keep in mind that:

1. An ISWM project design must have a time component. The actual amount of time that a project design should allocate to an ISWM project will depend on the complexity of the project. Regardless of the complexity of the project, however, a similar suite of “process” actions will be appropriate over time, and the sequence in which these actions are undertaken will be the same in all cases. These types of “process action” are organised into a project design framework known as the Project Cycle.
2. An ISWM project design must also have a thematic component. This component concerns the substantive issues that the project must address. The way in which the substantive issues are addressed in project design will depend on the nature of the project: in complex projects, it may be necessary to address a wide array of substantive issues many of which may be inter-related; in less complex projects, the range of substantive issues to be addressed will be smaller.

This module first addresses process actions undertaken within the framework of the Project Cycle. The module then addresses thematic actions associated with ISWM projects.

ISWM PROJECT DESIGN AND THE PROJECT CYCLE



ISWM Project Design and the Project Cycle

The project cycle is comprised of discrete elements that describe work. The point of entry into the project cycle is the top element of the diagram: “Define Problems”. From this point, each element follows logically from the element that preceded it. The consequence of “Evaluate Solutions” is that – hopefully – evaluation will demonstrate that the solutions that have been implemented have resulted in positive change; however, outstanding problems may remain, and new problems may have arisen – and so the project cycle begins again with the definition of new problems. The project cycle recurs in this way over time. For ISWM projects, the project cycle is typically measured over several years.

ISWM project design must address each project cycle element. For each project cycle element, project design must answer:

- What will be done and what standards will it be done to?
- When will it be done and how will it be done?
- Who will do it and how will they know they should do it?
- What will it cost and how will it be paid for?
- What will the consequences of action be, and how can negative consequences be mitigated?

ISWM projects are complex. Many actions are required and several different institutions may have responsibilities; not all actions can be taken at the same time, and so priorities must be established. Coordination of actions and institutions therefore becomes important; so does the setting of priorities and determining appropriate timing.

Although ISWM solutions may be defined at one point in time, they may be implemented over very different time periods. Consequently, project design must strike a balance between specificity and flexibility. Actions to be undertaken in the short term will need to be closely defined and specified. Actions to be taken further in the future should be articulated in project design, but may need to be refined in light of changing circumstances closer to the time when they will be implemented; project design needs to allow flexibility to accommodate this need.

Define Problems

ISWM Problems May Be Defined In Terms Of:

- Existing waste management system performance
- A desired future waste management system or objectives
- Compliance with policy or regulatory requirements or direction
- A combination of these factors

Define Problems

It is essential to **clearly** define the problems associated with an existing waste management system. This achieves two objectives:

1. It establishes why time and resources should be spent on the existing system. Time and resources are scarce; if they are to be spent on waste management systems it must be clear why they are necessary and why they should be spent on waste management rather than on other sectors that might also require attention. Frequently, it is obvious to some that a waste management system should be improved, but not at all obvious to others.
2. It establishes the nature of the solutions that need to be developed.

The definition of problems begins with documenting the existing waste management system. Without adequately documenting the existing system, it is not possible to adequately define either problems, options for solutions, or – later - to determine progress towards solving problems.

If waste management problems are defined simply in terms of *existing waste management system performance* the solutions that are developed will focus on improvement of things as they exist. Problems defined in terms of *a desired future waste management system or objectives* are more complex, and point to more ambitious solutions. Problems defined in terms of *compliance with policy or regulatory requirements or direction* can be very precisely articulated, but solutions may or may not be easily expressed. For example, problems identified at a local level in terms of whether or not a particular standard is met can be simply expressed in terms of failure to meet the standard. On the other hand, problems identified at a local level in terms of failure to adopt particular types of waste management system called for in a national policy or strategy may be harder to express precisely, even though it is clear that the existing waste management system does not meet the requirements that are called for. Frequently, existing waste management problems in the METAP region may be defined in terms of some combination of these factors.

Define Solutions

The Definition Of Solutions Typically Requires:

- Definition of Options
- Selection of Preferred Option
- Design of Implementation Framework

Define Solutions

Regardless of how problems are defined, the definition of solutions begins with the *definition of options*. There is seldom only one possible solution to a problem, and as waste management problems become more complex the possible number of solutions grows. The purpose of defining options is therefore to allow the range of stakeholders associated with a waste management decision to understand the broad consequences of acting in different ways. Defining options for solving waste management problems needs to address, at a minimum:

- Potential technical solutions.
- Potential stakeholder roles and responsibilities associated with the technical solutions.
- Potential financing and cost recovery scenarios linked to the stakeholder roles and responsibilities and technical solutions.

Depending on the circumstances, additional factors may also need to be considered.

In many cases, the universe of possible options for solving waste management problems may be very large, particularly when problems are defined in terms of new types of waste management system or new objectives. However, the identification of a large number of options is not necessarily helpful in the process of defining solutions, since too many options serves to confuse people. Three or four options are generally sufficient; these options should be developed based on proven technologies implemented with a minimum of complexity.

The *selection of a preferred option* is often a difficult decision. A “least cost” solution may not bring the range of benefits desired; the “technically preferred” solution may incur very high capital and operating costs; the “publicly-preferred” solution may in practice be very complex to implement. Consultation with stakeholders is important to ensure that options are in fact feasible and that solutions represent an appropriate balance between the various considerations brought forward.

Following the selection of a preferred option, it is necessary to *design the implementation framework* for that option, including timing of implementation actions and criteria against which to monitor implementation and evaluate results.

Implement Solutions

Implementation Of Solutions Is Characterised By:

- Phased timing of initiatives
- Flexibility
- Uncertainty

Implement Solutions

Project design should anticipate a *phased timing of initiatives* in projects within the timing schedule. The timing of financing must be scheduled with the implementation of the initiatives for which the financing is intended, for example, and legal and institutional strengthening should be timed to complement the initiatives that will be governed by them.

While project design must anticipate and incorporate a phased timing of initiatives, mechanisms to provide *flexibility* in timing of initiatives should also be incorporated into project design. Inevitably, and despite best efforts, not everything will proceed smoothly according to an established timing schedule. The project design keys to providing for implementation flexibility in ISWM projects are to ensure that:

- Appropriate mechanisms are in place for managing for flexibility
- The consequences of changes in implementation timing of one component are carried through to other components that may be affected as a consequence.

An implementation committee representing the various key ISWM stakeholders is an appropriate mechanism for managing for *flexibility*. This allows for changes in implementation to be communicated to other stakeholders so that they can make adjustments to their own activities, as appropriate.

The consequence of an implementation change in one component of an ISWM project frequently impacts other components. While these types of situation may seem straightforward to resolve they can quickly become complicated when different agencies are involved. Coordination and communication become critical to effectively addressing these issues; project design should anticipate these types of issue and ensure adequate coordination and communication among stakeholders.

The implementation of solutions will be characterised by *uncertainty*. Although the precise nature of the uncertainties that arise cannot be known beforehand, project design can create schedules and contingencies to accommodate uncertainties.

Monitor Solutions

Monitoring Solutions Provides A Basis To:

- Determine whether a solution is being implemented as intended
- Communicate evolving needs to stakeholders

Monitor Solutions

Monitoring is a very important component of project design, and one that frequently is either not addressed at the time of project design or ignored at the time of implementation of solutions. Partly, this problem seems to arise because monitoring carries with it the possibility of causing embarrassment to an implementing entity if monitoring suggests that implementation has not been smooth. Partly, this problem arises because agencies may feel that monitoring is a “frill” activity and that any available resources should be put to more “substantive” use. And partly this problem with monitoring arises – perhaps – because agencies like to use the argument of monitoring being a “frill” as a way of avoiding the embarrassment they may feel if in fact monitoring did expose implementation problems.

The purpose of monitoring is to provide feedback to implementing agencies on whether initiatives are being implemented as intended; it is not a policing function, although if monitoring information is inappropriately used it clearly can be turned into this. Project design can address this issue by positioning monitoring as a technical assistance support to implementing agencies. Monitoring information should flow to the entities and individuals responsible for implementation, and not to others. Managers should be expected to act on the monitoring information they receive, and their accountabilities in these regards should relate to the appropriateness of the actions taken in response to monitoring information. Effective monitoring thus becomes an aid to implementation, rather than a threat to be avoided.

In this context, monitoring also provides opportunity to engage stakeholders since many ISWM actions may be taken by one entity or individual, but may also rely on appropriate actions by other entities/individuals; for example, recycling initiatives by local government entities depend on private sector markets for materials. Monitoring can identify where and how individuals and entities can enhance their work together to improve waste management performance.

Monitoring should be kept simple. Project design should provide for quantitative data to be periodically collected on key indicators that describe the extent to which implementation is being undertaken as intended. These can then be compared to the criteria established in the “Define Solutions” step (see Slide 4). This approach will quickly make apparent where decision-makers can take action to enhance waste management performance, as appropriate.

Evaluate Solutions

Evaluation Of Solutions Enables:

- **Determination of whether solutions are achieving desired results**
- **Evolution of solutions in response to changing circumstances**
- **Identification of new or remaining needs**

Evaluate Solution

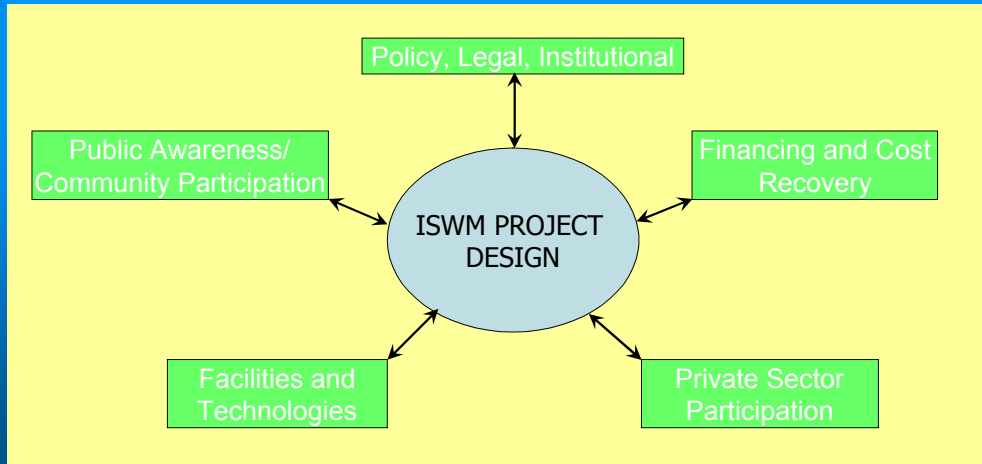
Project design should incorporate an evaluation framework. Evaluation is often confused with monitoring. Whereas monitoring is concerned with the extent to which solutions are in fact being implemented as intended, evaluation is concerned with whether those solutions are achieving the results that are intended. This determination should be undertaken against criteria established in “Design Solutions” (Slide 4). Although the data and information necessary for evaluation of ISWM solutions is different to the data requiring for monitoring implementation of solutions, it is often possible to gather the two sets of data together.

The *determination of whether ISWM solutions are achieving intended results* is seldom straightforward; frequently, some intended results will be achieved but others may not be. Evaluation should therefore be carefully undertaken to provide a clear analysis of the desired results that have been achieved and those that remain.

Evaluation should be undertaken on a more infrequent basis than monitoring, since solutions must be operational for a period of time before it is possible to evaluate their impact on achieving desired results. However, evaluation should not necessarily wait until the implementation of a solution has been completed; periodic evaluation offers the opportunity to identify opportunities or needs to adjust the implementation of solutions and in this way achieve an *evolution of solutions in response to changing circumstances*.

The outputs of evaluation should relate to the *identification of new or remaining needs*. These can then be carried forward into the “define problems” and a new project cycle.

THEMATIC CONSIDERATIONS IN ISWM PROJECT DESIGN



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Thematic Considerations in ISWM Project Design

There are five types of thematic consideration that may be relevant in ISWM project design:

- Policy, legal and institutional frameworks and considerations.
- Financing and cost recovery frameworks and considerations.
- Private sector participation opportunities and constraints.
- Facility and technology requirements.
- Public awareness and community participation opportunities and requirements.

In most ISWM projects, each thematic category should be considered to some degree; however, the extent to which any thematic category should be considered will depend on the specific objectives of the project.

The following slides considers each of these thematic considerations in turn.

Policy, Legal, Institutional

Policy, Legal and Institutional Contexts Frame ISWM Projects:

- Projects should be consistent with policy
- Projects must respect legal constraints
- Projects will be delivered through institutions

Policy, legal and institutional frameworks can all be changed to facilitate solutions

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Policy, Legal and Institutional

ISWM projects must be implemented within appropriate policy, legal and institutional frameworks. ISWM policy establishes a vision of what is intended to be achieved in the solid waste management sector; *projects should be consistent with policy*. Policy can be articulated at either or both the national and local levels. Strategy may also be developed; strategy addresses how policy objectives will be achieved, and who will undertake what actions. ISWM project design should ensure that there is an adequate policy framework to support the initiatives that are intended to be undertaken, and that the policy framework provides for collaborative working relationships between the various key stakeholders.

ISWM projects must be undertaken within the *prevailing legal framework*. At the national level, framework legislation can be prepared for the solid waste management sector, and specific decrees or similar instruments can be developed within this legislation to give effect to legal priorities within the sector; in particular, environmental standards should be established by decree or similar legal instrument at the national level. At the local level, local regulatory instruments can be used to give effect to aspects of solid waste management relevant to local entities. ISWM legal issues will also need to consider private sector participation and cost recovery frameworks.

Solid waste management *initiatives are delivered through institutions* at both the national and local levels. At the national level, entities responsible for environment and local government are generally the most important institutions in METAP countries, although countries may also have other institutions with key roles to play at the national level. At the local level, individual municipalities have traditionally been responsible for solid waste management, but some countries have introduced (in different ways) the concept of “regionalized” local entities that provide waste management services (often waste management facilities) for several individual municipal units. At both the national and local levels, ISWM capacities may be weak.

Often in the METAP region, existing policy, legal and institutional frameworks at both the national and local level are inadequate to support desired ISWM projects. ISWM project designers should therefore include project components to draft new policy, legal instruments or institutions as necessary to facilitate solutions; these issues can often be addressed in parallel with implementation of more substantive actions.

Financing and Cost Recovery

Project Design Must Reflect What Is Affordable:

- What are the financial and operational costs of a desired ISWM initiative, and how will they be met?
- Distribute costs over time and stakeholders to keep public sector expenditures affordable
- Link financing and cost recovery to policy, legal and institutional frameworks

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Financing and Cost Recovery

ISWM approaches bring many benefits, and these can be quantified through various economic tools. However, although benefits will accrue broadly within an economy, they are only achievable to the extent that they are financially affordable. Financial affordability therefore becomes a key criterion regarding the feasibility of new ISWM initiatives. The following options may be considered:

▪ **Capital Financing** Options for capital financing include budgeted allocations from central government, loans from national development/municipal financing banks (in those countries that have them), external concessionary loans or donations. In many cases, the availability of capital funds is contingent preparation of “bankable projects” (see Slide 22) and the creation of a revenue stream through cost recovery frameworks (see below). Private sector participation may offer opportunities for ISWM financing.

▪ **Cost Recovery** Traditional waste management cost recovery mechanisms that rely on collection of local taxes may be inadequate as a result of poor tax collection efficiency. One alternative is to collect the cost of waste management services as part of a utility payment (e.g. electricity or water). User pay systems can be introduced or enhanced for industrial and commercial waste generators. Product producers may be deemed to have waste management responsibilities and may be charged money at the national level to pay for the management of their products when they become wastes, and this money might be used – at least in part – to offset local waste management costs. New sources of revenues - e.g. a “waste fee” payable by tourists, who generate much larger volumes of waste on a per capita basis than local people – may also be justifiable. Frequently, efficiencies can also be found in existing waste collection systems that can be used to offset new costs.

ISWM costs to government will vary widely according to how initiatives are implemented and who pays. In some cases, policy and institutional decisions alone may be sufficient to reduce costs that might otherwise be incurred; for example, recycling objectives might be met through policy and institutional decisions to enhance the role of the informal sector rather than through creation of a new recycling facility.

Private Sector Participation (PSP)

PSP Can Bring Benefits, But Must Be Carefully Designed:

- **Key Benefits:** Financing, ISWM skills, simplification of local government role
- **Key Issues:** May not be least cost option, contracting and management complexity, integration with existing solid waste management sector workers

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Private Sector Participation (PSP)

PSP in the solid waste management sector of the METAP region has traditionally been limited to the contract collection of waste. It has become clear, however, that wider participation of the private sector in the solid waste management sector may offer many advantages:

- Private sector financing (repaid over time through effective cost recovery) may provide a viable source of finance for desired ISWM initiatives.
- Private sector skills to manage and operate solid waste management systems may exceed those of the local public sector.
- The simplification of the local government role to one of private sector regulator and contract administrator eliminates the problem of local government both operating and regulating its own service.

However, ISWM project design should also consider whether local private sector capacity exists to perform this type of PSP role, and the time and cost involved of attracting and paying for an international PSP. The process of contracting and subsequently managing a PSP at this level is complex and will require capacity development at the local and, perhaps, national level. Also, implementation of new PSP arrangements may need to be designed in such a way as to include the participation of local workers who might otherwise be displaced by the PSP; the PSP operator can absorb many workers, for example, and their operations should be integrated with the local informal sector.

Facilities and Technologies

Project Design Should Integrate Facilities/Technologies With:

- **Administrative frameworks**
- **Operational capacities**
- **Local social and economic contexts**
- **Each other**

Facilities and Technologies

Facilities and technologies are the most visible component of an ISWM system, and the most costly, but they cannot be effective unless they are appropriately linked to other aspects of the ISWM system and to each other. For the ISWM project designer, the challenge is to integrate technology into what will become a well managed and affordable ISWM system.

The adoption of facilities and technologies should be compatible with local *administrative* frameworks and should be designed to achieve policy objectives within an appropriate legal framework at the national and/or local levels, as appropriate. Local public sector entities will be responsible for the effective operation of ISWM facilities and technologies either themselves, or through PSP as appropriate. The financing and cost recovery frameworks associated with facilities and technologies should be explicit, fair and locally affordable. Project design also needs to ensure that adequate *operational capacity* at all levels is either available or will be developed to ensure facilities and technologies are adequately operated.

ISWM facilities and technologies should also be integrated into *local social and economic contexts*. Integration of facilities and technologies into the social context of countries may pose a particular challenge to predict; for example, the olive pits generated by the quantity of olives consumed in one METAP country caused considerable and repeated damage in waste processing equipment provided by a northern European supplier where olives are not widely consumed. The challenge of integrating facilities and technology into local economic conditions is linked to broad structural differences between METAP country economies and the economies of the supplying countries, usually northern. Generally, the high cost of labour in northern economies has resulted in a wide variety of capital intensive ISWM equipment that is sustained by energy inputs that are inexpensive relative to the economy and an elaborate maintenance and spare parts availability. These conditions do not exist in METAP countries.

It is very important that ISWM facilities and technologies are *integrated with each other* within a waste management system. This begins with a clear understanding of waste flows: how much waste is being generated, how much waste is being generated by different sectors and what is the composition of the waste that is generated? With good data of this kind it becomes possible to determine the type and size of appropriate ISWM facilities and equipment.

Public Awareness/Community Participation (PA/CP)

PA/CP Support Effective ISWM:

- PA/CP informs project design
- PA/CP ensures that community needs are met
- PA/CP can be an effective monitor of performance

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Public Awareness/ Community Participation (PA/CP)

ISWM projects serve communities, and it follows that they must therefore be responsive to community requirements. PA/CP activities support decision-makers and technical staff in ensuring that solid waste management initiatives are responsive to communities. ISWM project designers should incorporate PA/CP into projects at three levels:

- In the process of *project design* itself. PA/CP initiatives should be incorporated into the process of project design in order to ensure that the scope, implementation mechanisms and other aspects of a project are acceptable at the local community level.
- Project design should ensure that *as ISWM initiatives are implemented* the community is informed of the progress of initiatives and has the opportunity to comment on initiatives.
- The community can be an effective *monitor* of waste management performance if a mechanism is provided through which the community can communicate waste management problems

Communicating effectively with the public is often best done by an entity not directly associated with ISWM decision making, since the credibility of public communications may be suspect if it is undertaken by the ISWM decision-making entity. Non-governmental organisations may be effective in this role, as they are widely perceived by the public to be knowledgeable, but unbiased.

LINKING THE ISWM PROJECT CYCLE AND THEMATIC ISWM CONSIDERATIONS

- Phase projects over time
- Match project implementation to capacity and resources
- Consider establishment of a project implementation unit
- Focus on results

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Linking The ISWM Project Cycle And Thematic ISWM Considerations

The ISWM project cycle and ISWM thematic considerations are both integral to effective ISWM project design. ISWM thematic considerations should be analysed and implemented, as appropriate, through the project cycle over time. Thus it is important to *phase projects over time* according to priorities. Project design should therefore be structured to accommodate activities being undertaken at different times and being at different points in the project cycle during the course of a project.

The most significant constraints to project implementation may be absorptive *capacity and resources*, particularly financing. Absorptive capacity refers to the rate at which the community and institutions can accommodate change. If different initiatives are undertaken too rapidly one after the other the community – or important stakeholders within it – may become resistant to the changes being implemented. If the community – or stakeholders within it, such as the commercial sector – are to contribute in new ways to cost recovery it is important that enhanced waste management be visible before new cost recovery measures are introduced. If this is not done, the community may interpret the new cost recovery regime as simply a new form of taxation without visible benefits, and resistance is likely to follow.

The complexity of ISWM projects at both the national and local levels has often resulted in project designers including the *establishment of a Project Implementation Unit (PIU)* within the project design. The job of the PIU is to coordinate implementation of the project; as components are implemented, so the management of those components is divested to the institutions who will be responsible for the management of each component over the long term. To be effective, the PIU must be seen as a credible and effective entity by all of the stakeholders involved in the project.

ISWM project design should ensure that a *focus on results* is maintained in all stages of project implementation. The results intended from all initiatives should be clearly articulated, and monitorable against pre-established criteria. By maintaining a focus on results, activities will continue to be defined in terms of whether desired results are being achieved. This will ensure that activities evolve in response to changing needs.



ISWM PROJECT DESIGN AT THE NATIONAL LEVEL

ISWM Project Design At The National Level Should Focus On:

- Establishing national and local priorities
- Policy, legal and institutional frameworks
- Financing and cost recovery
- Private sector participation
- Public awareness/community participation
- Targetted local level investment

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ISWM Project Design At The National Level

At the national level, ISWM project design should provide for the establishment of *national ISWM priorities* and, within this context, *local level priorities* that will contribute to achievement of national level objectives. Within this, national level ISWM projects should target the establishment of the national management and administrative frameworks within which national priorities will be achieved. At the level of *policy, legal and institutional frameworks* this means establishing the broad policy objectives, strategies and framework legislation for solid waste management (together with implementing decrees) and clarifying institutional roles and responsibilities at the national and local levels, including provision for collaborative local municipal institutions to address waste management priorities on behalf of their member municipalities.

At the level of *financing and cost recovery*, project design at the national level should result in articulating the capacity of the national government to finance ISWM investments and should identify external and other opportunities to access financing. Project design should make provision for national level barriers to the application of new cost recovery mechanisms to be identified and removed and should ensure legal provisions in support of desired cost recovery mechanisms. Project design should also incorporate the identification of economic instruments that can be used to achieve desired ISWM.

At the level of *private sector participation (PSP)*, ISWM project design should ensure that possible PSP roles are identified together with the costs and benefits of PSP. Project design should also ensure that guidance is provided on how local entities should prepare for and implement a PSP initiative.

At the level of *public awareness/community participation (PA/CP)*, project design should itself incorporate PA/CP activities and should provide for the inclusion of PA/CP activities in both national and local level ISWM projects.

National-level ISWM project design should also incorporate an investment component through which to address the highest priority *local level ISWM investment* needs in support of identified national objectives. The design of this component should be undertaken to catalyse subsequent wider action at the local level.

ISWM PROJECT DESIGN AT THE LOCAL LEVEL

Local Level ISWM Project Design Should Focus On Operationalising ISWM:

- Identification and implementation of ISWM systems
- Identification and implementation of administrative and management frameworks

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ISWM Project Design At The Local Level

ISWM project design at the local level should focus on implementation of ISWM systems. This should be done to meet local priorities in the context of the national administrative and management frameworks, including the range of items identified on Slide 16.

Specifically, local level ISWM project design should provide for:

- Definition of local ISWM priorities.
- Identification of the facilities and technologies that will address these needs.
- Identification of the local administrative and management frameworks through which to create effective ISWM systems, and provide for the effective management of desired facilities and technologies. In particular, local policy, legal and institutional frameworks should be created, project financing should be identified (if it has not already been established), adequate cost recovery frameworks should be established, opportunities for private sector participation should be defined, and ways through which public awareness and community participation will be achieved should be defined.

Initial priorities of local level ISWM project design should include the closure/rehabilitation of uncontrolled dumps and the separation of the function of waste management service delivery from the monitoring and regulation or service delivery.



WHEN TO USE INTERNAL, EXTERNAL AND INTERNATIONAL EXPERTISE

Different Types Of Resource Are Appropriate In Different Circumstances:

- Use internal resources for day-to-day activities and for managing contracted expertise
- Use external, domestic resources to assist in ISWM activities for which there is a well-established body of local/regional experience
- Use international/domestic partnerships to assist in ISWM activities that apply international experience to local circumstances

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Using Internal, External and International Resources

The design of ISWM projects should include identification of the type of expertise required to undertake the project. Different types of expertise can appropriately be used to undertake different types of work. To the extent feasible, ISWM should identify that the following types of expertise be used to undertake ISWM projects:

▪Internal resources within national or local entities should be used for day-to-day ISWM activities and for contracting and managing contracted expertise. Across the METAP region, responsible entities are already fully occupied in addressing current waste management problems. It is reasonable that management of these entities place responsibility on internal expertise to define ISWM requirements and to contract appropriate expertise to assist in ISWM implementation; it may be unrealistic to expect internal expertise to prepare projects, however.

▪External domestic resources may assist in project preparation and project execution where there is a well-established body of relevant local or regional experience to draw from. Contracted expertise provides a level of technical specialisation and a breadth of experience that is generally not available within public sector entities.

▪International expertise can assist in ISWM initiatives where there is an inadequate basis of local or regional experience and where, therefore, international ISWM experience is to be applied to the local situation. International expertise should be complemented with local expertise within a team framework, however, to ensure that local conditions are reflected in recommendations and/or implementation activities.



HOW TO USE INTERNAL, EXTERNAL AND INTERNATIONAL EXPERTISE

Internal, External and International Expertise Works Best When:

- All parties are accountable within their areas of responsibility
- Transparent tendering and contracting procedures are used
- All parties work to specific Terms of Reference/ Bidding Documents

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How To Use Internal, External and International Expertise

Project design should require that all ISWM project activities be undertaken in ways that reflect: (i) accountability; (ii) transparent tendering and contracting procedures; (iii) application of well-defined Terms of Reference; and (iv) timely payment and fulfillment of other contractual obligations by the contracting agency.

Accountability means that those who are responsible for achieving results are answerable for the actions they take and the results they achieve. In contractual relationships, the accountabilities of the contractor should be clearly spelled out, with negative consequences to the contractor if they do not perform as required under contract. Contracting agencies must meet their obligations in a timely manner if contractors are to deliver high quality goods and services in a timely manner; in particular, payments must be made within contractually agreed timeframes and contracts should include penalties for failure on the part of contracting agencies to meet their obligations.

Transparent tendering and contracting procedures will ensure competition in the marketplace and fair market-based offers for the provision of goods and services. Conversely, the private sector will not respond if it considers tendering or contracting procedures are biased or subject to arbitrary or capricious selection. Selection criteria and the contracting process should be spelled out in advance, and should be adhered to.

Terms of Reference are essential for defining the work to be undertaken in the provision of ISWM services. Terms of Reference should articulate a clear and defined scope of work that provides the private sector with a firm basis for quoting on the work to be undertaken. Terms of Reference can also be prepared for internal staff responsible for undertaking project activities. This may be particularly helpful where the management of an ISWM project is under the direction of a Steering Committee whose members are drawn from a variety of agencies with ISWM responsibilities. Similarly, precise and clearly articulated bidding documents are essential for effective private sector bidding to supply ISWM goods. Precision and clarity in Terms of Reference/Bidding Documents should be carried into similarly clear and unambiguous contract documents. If any of these documents are prepared in more than one language, it is essential to ensure a high quality of translation to ensure that the documents in fact state the same things in all languages, and to identify which language is authoritative in case of dispute.

PRINCIPLES TO APPLY IN ISWM PROJECT DESIGN

Principles To Apply In ISWM Project Design:

- Ensure adequate policy, legal and institutional frameworks including “polluter pay”, “user pay”
- Apply cost recovery measures
- Introduce PSP where feasible
- Include PA/CP in project design
- Close uncontrolled dumps, collect waste from all urban areas as first steps
- Use proven treatment/disposal technologies

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Principles to Apply in ISWM Design

Although the specific elements of an ISWM project design will vary according to specific national or local circumstances, ISWM projects should generally target the achievement of generically similar actions. *Adequate policy, legal and institutional frameworks* are essential for effective ISWM projects, and these should include provision for the application of the “polluter pay” (including producer responsibility) and “user pay” principles; institutional frameworks should reflect the principle of separation of institutional functions and particularly the separation of the service delivery role from the role of regulating service delivery at the local level. Legal frameworks should provide for waste avoidance/minimisation strategies and ISWM environmental standards. *Cost recovery measures* should also be introduced, consistent with ability to pay considerations. Opportunity should be provided for *private sector participation (PSP)* where this makes financial and technical sense, but while PSP can bring many improvements in solid waste management it is not free and it is not a panacea. *Public awareness and community participation* should be encouraged in the design of ISWM projects, and during the implementation of projects.

ISWM service priorities should include the *closure and rehabilitation of uncontrolled dumps* and the *extension of waste collection services* to all urban areas. Waste treatment and disposal *technologies should be proven* in the METAP regional context; proper ISWM project design will make recovery of value from waste feasible, and this should be integrated with informal sector activities.



ISWM LESSONS LEARNED

Experience In The Region And Elsewhere Provides Valuable ISWM Lessons Learned:

- **National Level** Rapid change is possible with political will; policy/legal support for ISWM facilitates local actions
- **Local Level** Separation of service delivery from service regulatory functions enhances service performance; joint municipal facilities are feasible; effective technology application requires careful planning; cost recovery facilitates operations

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ISWM Lessons Learned

Important ISWM lessons have been learned in the METAP Region. At the *National Level*, it has become clear that rapid change is possible if there is political will in support of ISWM. Several countries have already (2004) made important commitments to upgrading their solid waste management systems. It is also clear that appropriate policy and legal support for ISWM at the national level greatly facilitates effective actions at the local level.

At the *local level*, the separation of the service delivery function from the regulation of service delivery by local waste management service providers can itself result in significant improvements in solid waste management services. Some countries have demonstrated that joint municipal facilities are feasible, and national governments can require municipalities to collaborate in the establishment of solid waste management facilities. A wide variety of solid waste management technologies have been implemented across the region; effective technology application requires careful planning, however, if the objectives of technology application are to be achieved. Local cost recovery initiatives have been found to facilitate solid waste operations as a result of money generated that can be reinvested in the solid waste management system.

A series of case studies taken from the METAP region has been developed through the METAP RSWMP and are available as Regional Guidelines on Integrated Solid Waste Management - Volume 6: Case Studies d



BANKABLE PROJECTS

Bankable ISWM Projects Are Projects That:

- Provide a clear definition of what needs to be done, why and what the results will be
- Define how tasks will be done, who will do them and with what results
- Address the full range of issues necessary to ensure a successful result
- Relate results to benefits, costs and revenues
- Demonstrate credible design and implementation frameworks

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ISWM Project Design: Bankable Projects

The goal of effective ISWM project design is to prepare “bankable” projects – that is, projects that a financing institution will have confidence to invest in. While different agencies may have different requirements in the presentation of project design information all will look for the items addressed on this slide. Different institutions may also require specific project design tools such as a “Logical Framework Analysis”, “Risk Management Strategy”, “Work Breakdown Structure” or other such tools or formats, and these can be readily developed if project design has incorporated the items identified on this slide.

Clearly, it is necessary to adequately *define what needs to be done, why and what the results will be*; failure to establish these points will certainly result in failure to win financial support for a project. It should never be assumed that either the reason for undertaking an ISWM initiative is self-evident, or that the results of a project are self-evident: both should be spelled out. It is then necessary to *detail the tasks that will be undertaken, who will do them and with what results* relative to the result intended for the project; in this context it is important to demonstrate the capacity of the individuals that will undertake the work. Project design should ensure that the *full range of issues* necessary to ensure a successful result are addressed; if important issues are not addressed, project success is highly uncertain. Results desired from an ISWM project should be related to *benefits, costs and revenues* in order to ensure that the project is affordable in the short and long terms. *Credible design and implementation frameworks* should be identified so that there is reasonable assurance that planned initiatives will be effectively implemented. ISWM project design is complex. Large projects are likely to require at least several months to design. Many development agencies provide technical assistance in support of ISWM project design.

Generally, all international funding/financing agencies will require ISWM project design to include social and environmental impact assessment/ recommendations in addition to technical and financial assessments/recommendations. The purpose of social and environment impact assessments is to ensure that in achieving planned social and environmental benefits ISWM projects do not at the same time cause significant unintended social or environmental impacts that compromise the planned benefits.



CONCLUSION

This Module Has Presented Key Considerations In ISWM Project Design:

- The ISWM Project Cycle
- Thematic components of ISWM projects
- Typical elements of ISWM projects at a national and a local level
- When and how to use internal, external and international expertise
- Bankable projects

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Conclusion

ISWM project design is about putting in place a process to define and implement ISWM solutions. The better the understanding of the designer regarding the issues to be resolved, the better the project design is likely to be. Extensive materials are available through the METAP Regional Solid Waste Management Project (RSWMP) to assist in understanding ISWM issues that may arise in any country or at the local level. ISWM project designers are encouraged to refer to the METAP RSWMP Regional Guidelines for this purpose.

Effective ISWM project design takes a broad view of the solid waste management sector. It places high priority on ensuring that the policy, legal and institutional frameworks required for effective sector performance are in place and functioning as a pre-requisite to technology applications. The project cycle provides an appropriate framework for defining project evolution over time, and thematic aspects of project design will be reflected in the project cycle as projects are implemented. ISWM initiatives at the national level should focus on ensuring the policy and legal context of the sector (including finance/cost recovery, PSP and PA/CP) are adequately addressed and to provide a sustainable basis for local level actions. Local level ISWM initiatives should focus on operationalising waste management systems. At different times different types of expertise may be used in support of ISWM projects. When properly designed, ISWM projects are bankable projects: their need and objectives are clear, the way they will be implemented and when will be logical, and their costs and revenues will be clearly spelled out.