



TRAINING MANUAL 5 ISWM PROJECT DESIGN AND MANAGEMENT

MODULE 5-1: ISWM PROJECT DESIGN AND MANAGEMENT – AN OVERVIEW

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GTZ-ERM-GKW



ISWM Project Design And Management – An Overview

This module provides an overview of ISWM project design and management. 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).
- The structures and mechanisms through which project design is transitioned to project/programme implementation are critical to success. Considerations will need to be given to *system management* and *operations management*. Systems management addresses the performance of a waste management system as a whole, while operations management addresses the performance of the components of a waste management system. Both are essential to effective ISWM performance, and both should be conducted using *output-base* approaches that focus on achieving desired results and not simply on managing desired inputs.

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 OF THIS MODULE:

The Objective Of This Module Is To Present An Overview Of:

- ISWM Project Design
- ISWM System Management/Administration
- ISWM Operational Management

The purpose of the module is to present the key elements of ISWM project design and management

2



Objective Of This Module:

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- ISWM Project Design
- ISWM System Management/Administration
- ISWM Operational Management

Modules dedicated to each of these have been developed and are included in this training manual. This module provides an overview of each, and is intended for: (i) high level decision-makers who require a broad understanding of ISWM project design and management issues and approaches; and (ii) waste management policy analysts, planners and practitioners who require an introduction to ISWM project design and management issues and approaches, and who may then move to a deeper understanding of these through application of one or more of the other modules in this manual.

This module focuses on management approaches to ISWM project design, system management and operational management. The *project design* component of the module provides an overview of the key issues and actions that should be taken to frame an ISWM investment project; 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 (METAP RSWMP). The *ISWM system management/administration* and *operational management* components of the module address the overall management frameworks that should be adopted to ensure that investment projects achieve their design goals; technical aspects of management are addressed in Training Manuals 2, 3 and 4 developed under the METAP RSWMP and addressing, respectively, ISWM Technology Application, Finance and Cost Recovery, and ISWM Private Sector Participation.



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.

3



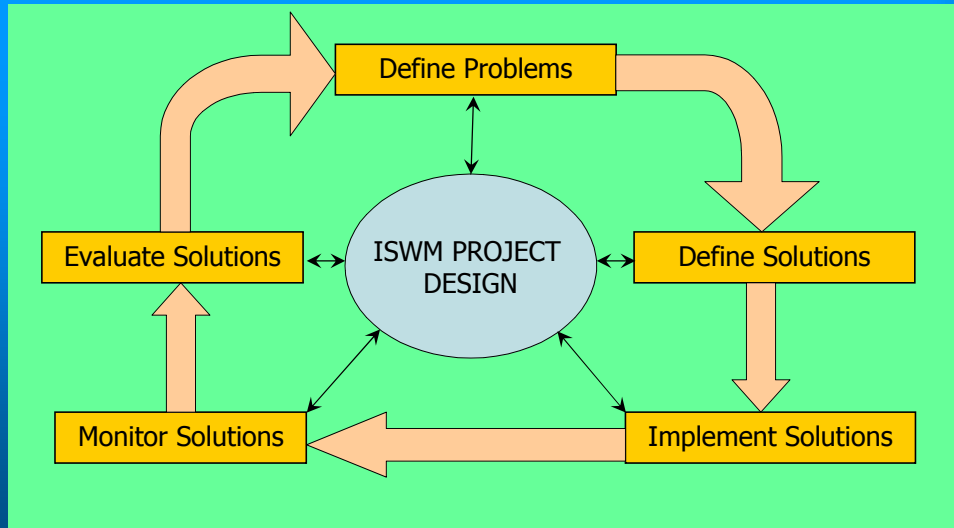
Understanding ISWM Project Design

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. ISWM projects may be undertaken at the national and/or at the local levels; specific considerations associated with each are considered later in this module (Slides 5 and 6). Initial considerations are applicable to both levels.

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.

ISWM PROJECT DESIGN AND THE PROJECT CYCLE



TRAINING MANUAL5 – MODULE 5-1



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.

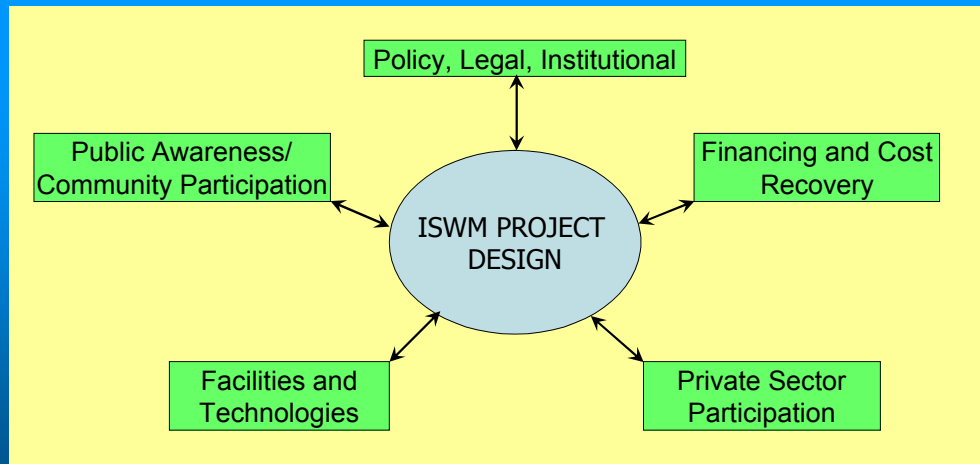
ISWM project design must address each project cycle element. For each project cycle element, project design must answer:

- 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. These must also be addressed in ISWM project design.

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 and project design needs to allow flexibility to accommodate this need.

ISWM PROJECT DESIGN: THEMATIC CONSIDERATIONS



5

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ISWM Project Design: Thematic Considerations

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

- Policy, legal and institutional frameworks. These address the overall management and administrative frameworks within which ISWM initiatives are undertaken. Project design should include development/strengthening of national policy and related implementation strategy, as appropriate, and should address local frameworks through which to guide, regulate and implement ISWM initiatives.
- Financing and cost recovery frameworks. Financing and cost recovery for waste management in the METAP region is generally poor. A key consideration is actually collecting monies that are owed; some countries have addressed this problem by including solid waste management tariffs as a separate item on electricity bills so that electrical power can be cut off if the solid waste tariff is not paid. Project design should ensure adequate financing and cost recovery mechanisms to support new ISWM initiatives.
- Private sector participation opportunities and constraints. Several countries in the METAP region (Lebanon, Egypt, Morocco) are moving rapidly to private sector delivery of waste management services. Project design should consider opportunities for private sector participation in ISWM projects, together with the type of private sector participation that might be appropriate (service contract, design-build-operate contract etc.)
- Facility and technology requirements. Upgraded facilities and technologies will be an important part of new ISWM initiatives in the region. These need to be selected within operator capacities to manage and to maintain, and based on their proven effectiveness.
- Public awareness and community participation opportunities and requirements. Communities are the ultimate beneficiaries of new ISWM initiatives. Project design should include opportunity for community inputs into the systems that are intended to be implemented for their benefit.

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.



ISWM PROJECT DESIGN: PRINCIPLES TO APPLY

At The National Level, Focus On :

Frameworks to guide local implementation

- (i) Policy, legal and institutional
- (ii) Financing and cost recovery
- (iii) Private sector participation
- (iv) Public awareness and community participation

Implementation should be phased over time

6



ISWM Project Design: Principles to Apply

The principles to apply in the design of ISWM projects depends on whether they are national or local in scope; projects that combine national and local levels will also combine the design principles they apply. Projects that focus at a national level should establish/strengthen the frameworks that guide local implementation. These begin with ISWM policy, legal and institutional frameworks. These frameworks should set out what is desired to be achieved (policy framework), the obligations of stakeholders in achieving what is desired (legal framework) and the broad organisational structure through which stakeholders will give effect to their obligations (institutional framework). ISWM projects that strengthen policy may also include the development/strengthening of national strategy that identifies in broad, non-binding terms how policy will be achieved.

Financing and cost recovery frameworks in support of ISWM are generally weak in the METAP region. National level activities can include making legal provision for the application of the polluter pay and user pay principles, providing local entities with powers to impose ISWM cost recovery tariffs, requiring application of full cost accounting for ISWM activities, and obliging manufacturers/importers/distributors of identified products to assume at least partial financial responsibility for those goods when they are discarded as waste.

Private sector participation (PSP) in ISWM can bring many benefits, including levels of investment finance and expertise that may be unavailable to local solid waste management entities. However, effective PSP requires legal and contractual frameworks that are attractive to the private sector while also reflecting national interests.

Enhanced public awareness and community participation in ISWM can enhance waste management performance through providing increased awareness among the public of waste management issues, and increased opportunity for community participation in waste management decision-making. Guidance can be provided at the national level regarding how local waste management entities address these issues.

National frameworks should provide for the phasing of initiatives over time. Enhanced waste management performance may require many actions by many different stakeholders, and these will need to be coordinated.



ISWM PROJECT DESIGN: PRINCIPLES TO APPLY Cont.

At The Local Level, Focus On:

- Development of Strategic Action Plans to identify and address local operational priorities
- Implementation of Strategic Action Plans

Institutional change can be the key to enhanced solid waste management performance.

7



ISWM Project Design: Principles to Apply Cont.

ISWM projects at the local level should focus on the operational priorities of local communities within the various frameworks established at the national level; in particular, local initiatives should be developed within, and should give effect, to national policy and national strategy. Local initiatives may best be defined and achieved through preparation of Strategic Action Plans that set priorities over a 15-20 year time frame and which also identify short term actions to begin implementation of initiatives to achieve the longer term goal. This approach reflects phased implementation of activities over time, an approach that allows the achievement of initial success in response to immediate priorities within the context of longer term objectives. Having established the long and short term planning framework, it is then important to implement the identified actions. Training Manual 1: ISWM Planning Procedures and Processes addresses strategic action planning in further detail.

One of the most powerful levers to enhanced ISWM performance can be to redesign the institutional framework through which ISWM services are implemented. Aspects of this are discussed further later in this module. The Training Manual 4: Private Sector Participation addresses this with respect to private sector involvement as a central institutional player in the financing and delivery of waste management services.



ISWM PROJECT DESIGN: 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

8



ISWM Project Design: 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. It is also clear that appropriate *policy and legal support* for ISWM at the national level greatly facilitates effective actions at the local level. Several countries have already (2004) made important commitments to upgrading their solid waste management systems. Among other national initiatives, Egypt has developed a national integrated solid waste management strategy that is presently guiding local actions, and Algeria and Tunisia have both established national programmes that guide local actions. Both Algeria and Tunisia have incorporated the “polluter pay” principle and waste minimisation into their legal frameworks.

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 (e.g. Jordan, Palestine) 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. In Syria, cost recovery is linked to property value, and in Jordan and Egypt to electricity consumption.



ISWM PROJECT DESIGN: 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

9



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.



ISWM SYSTEM MANAGEMENT: AN “OUTPUT-BASED” APPROACH

A Working Definition:

“Output-based approaches define effectiveness on the basis of results achieved, rather than activities undertaken or money spent”

10



ISWM System Management: An Output-Based Approach

“Output-based” approaches to ISWM focus on the “outputs achieved” rather than on the “inputs expended”, or in other words the results achieved by an ISWM programme and not simply the activities undertaken or the money spent. Clearly, the two are related: it is not possible to achieve desired results without undertaking appropriate activity and without budget expenditures. However, waste management operations in the METAP region frequently suffer from low productivity and poor quality service. In part this has arisen because solid waste management services are undertaken to fulfill a *function* without adequately focusing on *goals*. This leads to a situation in which the solution to problems becomes defined in terms of the need for more inputs – for example, more money, more people or more skills – rather than in terms of how service delivery can be redesigned to achieve desired goals through better use of available resources.

“Output-based” approaches begin by establishing clearly defined results whose achievement can be monitored and verified. Resources are keyed to intended results, and accountability for achieving these results (and not merely delivering services) becomes the measure for the commitment of new resources. Thus, quantitative waste management goals are set and monitored and focus is placed on achieving goals with maximum efficiency before considering new levels of inputs to achieve the goals. Over time, this approach leads to effective waste management systems that respond innovatively to new needs; a model of continual adaptation and efficiency replaces practices of inertia and inefficiency.

ISWM SYSTEM MANAGEMENT: WHAT ARE THE BENEFITS OF OUTPUT-BASED APPROACHES?

An Output-Based Management Approach To ISWM Brings The Following Benefits:

- **Accountability is explicitly linked to results, not simply actions**
- **Emphasis is placed on efficiency and innovation in achieving results**
- **It provides opportunity to benefit from private sector participation**

11

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ISWM System Management: What Are The Benefits Of Output-Based ISWM Management Approaches?

Traditionally, implementation of ISWM projects has been marked by a “disconnect” between project design that establishes goals and results desired, and project implementation that focuses on activities/processes necessary to achieve goals and results. In theory, a focus on activities/processes at the project implementation level should lead seamlessly to the efficient and timely achievement of results. In practice, this has frequently not happened as implementing entities have wrestled with day-to-day complexities that arise in ISWM projects. ISWM projects have often not met desired results in a timely or efficient manner. “Output-based” approaches to ISWM management are intended to address these problems.

The hallmark of output-based ISWM management approaches is that *accountability is explicitly linked to results, not simply actions*. For those responsible for managing and administering ISWM projects, it is therefore not sufficient to simply undertake actions because they may have been previously determined to be required. Rather, managers and administrators are required to think concretely about the results that the actions are intended to achieve, and therefore whether the consequence of the actions they undertake will be to achieve the results that are intended.

A consequence of this approach is that *emphasis is placed on efficiency and innovation in achieving results*. Because the measure of success is the achievement of results, a greater emphasis is placed on efficient and innovative means of achieving results. In METAP countries, where public sector funds for solid waste management are in short supply, this provides an appropriate basis for the most efficient use of the funds that are available.

Linked to this, “output-based” management approaches provide a framework for public sector ISWM system managers and administrators to consider *opportunity to benefit from private sector participation*. The focus in this respect is, again, the most efficient way of delivering public sector services. Where private sector delivery of ISWM services can be competitive with public sector activity, public sector ISWM system managers and administrators are encouraged to re-evaluate their relationship to the private sector and to think in terms of how private sector participation can be structured to achieve results more efficiently and effectively than may presently be the case with public sector service delivery.



ISWM SYSTEM MANAGEMENT: WHAT ARE “RESULTS“?

In Output-Based Management Systems, Results Are Measured At 3 Levels:

- **Outputs** Results achieved from activities targeted at a common objective; each output is made up of “progress results”
- **Outcomes** Results achieved as a consequence of combinations of outputs
- **Impacts** Results achieved as a consequence of a combination of outcomes

Results intended at each level should be established in advance of activity implementation

12



What Are “Results“?

“Results” are at the heart of “output-based” management approaches to ISWM. For management purposes, 3 levels of results can be defined to reflect the achievement of objectives associated with ISWM activities, ISWM projects or programs, and the linkage of ISWM to other policy or programme objectives of government. An additional level of results (“progress results”) can be defined at an operational level.

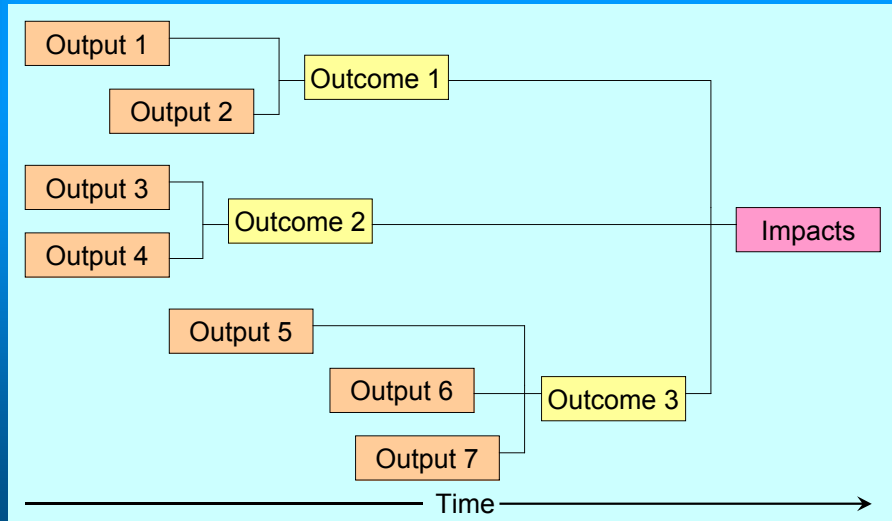
ISWM “outputs” are the results of activities targeted at common objectives. As part of an ISWM investment project, for example, each group of activities (for example siting, design, construction etc) associated with establishing a new landfill site would have an “*output*” that is scheduled to be achieved within a certain time frame.

ISWM “outcomes” are the results of combinations of outputs. In the establishment of a new landfill site as part of an ISWM investment project, the successful siting of the landfill might constitute one “output”, and the completion of design and construction might constitute other “outputs”. The “*outcome*” of achieving all these outputs is the establishment of the landfill.

ISWM “impacts” are the results of combinations of outcomes. Implementation of an ISWM investment project might entail not only a new landfill, but a compost plant and the creation of an appropriate legal, institutional and cost recovery framework. Achievement of each of these would be “outcomes”, which together create the desired ISWM system, the “*impacts*” of which may be defined to include creation of resources (for example, compost), protection of human health and the environment from the impacts of waste (for example, the landfill and the effective removal of waste from communities), increased employment (from people working in the ISWM system and from using resources created from the system) and reduced desertification (from application of the compost).

Intended results should be identified at each level before activities are initiated, since activities themselves should be specifically designed to achieve the stated results.

ISWM SYSTEM MANAGEMENT: RESULTS AT OUTPUT, OUTCOME AND IMPACT LEVELS



13

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ISWM System Management: Results At Output, Outcome and Impact Levels

This slide illustrates the linkage between outputs, outcomes and impacts.

The time element is important. Phased implementation of initiatives means that *outputs* are achieved over different time periods: some will be started before others, some will be undertaken in parallel and some will not be started until some outcomes have been achieved. This is appropriate, since it reflects the setting and execution of priorities, and may also reflect that it is not possible to achieve some output-level results until others have been achieved first; for example, design/construction of a landfill (which might be one output) requires that a site for the landfill (which might be another output) be established first.

Outcomes require the achievement of their associated output-level results. Some outcomes will be achieved sooner than others, and this is appropriate since it also reflects the setting and execution of priorities on a phased basis.

All *impacts* will be achieved only when all outcomes have been achieved, although some impacts may be achieved before that as a result of completion of some outcomes. Impact-level results are broad and may be subject to influences beyond the scope of an ISWM initiative. For example, if one of the impact-level results of an ISWM project is to assist in combating desertification as a result of the application of compost, there are factors beyond the ISWM project that will influence whether this in fact happens – for example, a change to wetter weather patterns or decisions by government agencies to combat desertification.



ISWM SYSTEM MANAGEMENT: KEY ISSUES IN MANAGING FOR RESULTS

Managing For Results Requires:

- Coordinating inputs to achieve desired outputs
- Managing risks and problems
- Maximising performance
- Monitoring and evaluation
- Flexibility to address new situations
- Stakeholder coordination
- Reporting

14

TRAINING MANUAL 5 – MODULE 5-1



ISWM System Management: Key Issues In Managing For Results

Implementation of ISWM projects and programmes requires the application of established management and administrative techniques to the ISWM system context. However, ISWM projects and programmes at either the national or at the local level are unlike many other types of project or programme in terms of the nature and diversity of stakeholders (including the public), the nature of the linkages between policy, finance, institutional and technical components, and the relationship of public awareness/behaviour to the viability of technical solutions. While ISWM system management and administration may therefore require the application of established techniques, the ways in which these are applied and the high importance of some these to project to programme success distinguishes ISWM from other types of project and programme.

This slide identifies major issues in managing for results in ISWM projects and programs. *Coordination of inputs to achieve desired results* is a critical ISWM system management function; waste management is typically the highest single municipal cost in METAP region countries (and in other countries), but management capacity frequently does not match the importance of this budget item. *Risks and problems* are largely predictable, and can be managed through appropriate foresight; events that are truly unpredictable are rare, and management accountability should include appropriate risk management strategies. Management strategies for *maximising performance* should be adopted, together with scheduled *monitoring and evaluation* of waste management system performance. *Flexibility to address new situations* requires a clear vision of desired goals and how to achieve them, but a willingness to accommodate and adapt to new circumstances that may be beyond the control of the waste management system, but which the waste management system needs to respond to. Waste management stakeholders have much to contribute to the design and implementation of ISWM projects and programmes, and *coordination of stakeholder inputs* is therefore important in ensuring that the contributions of stakeholders are reflected in an ISWM initiative. *Reporting* is a key management function in managing for results, since this communicates successes to others, and highlights where others can contribute to waste management successes.



ISWM SYSTEM MANAGEMENT: MAKING “OUTPUT BASED” MANAGEMENT APPROACHES WORK

“Output-Based” Management Approaches Need Institutional Support:

- Senior management must articulate support for the approach
- Minimum performance and environmental standards must be established
- Open and transparent private sector tendering is required

15



ISWM System Management: Making “Output-Based” Management Approaches Work

“Output-based” management offers benefits to ISWM system managers and administrators. Managers and administrators work within institutional frameworks and cultures, however, that have developed over many years and which may not be immediately amenable to change. Change to “output-based” management approaches may be difficult for institutions and may be resisted by individuals. In order to be effective, therefore, *senior management must articulate support for the approach* and should be seen to be participating in it.

The gains that can be achieved through “output-based” management approaches are intended to be achieved within the context of acceptable social and environmental standards, however: output-based management is an invitation to efficient and effective results, but not to any results. It is therefore important to identify performance and environmental standards within which “output-based” management approaches are implemented. As an example, it is relatively inexpensive to design/build a waste disposal site; it is more complex and more costly to design/build a waste disposal site that meets acceptable environmental standards, but clearly a new waste disposal site should meet minimum acceptable environmental standards. ISWM performance standards should also be established for waste management operations, and they can be established administratively to govern the implementation of “output-based” management approaches; for example, use of output-based management templates and approaches can be specifically required in support of ISWM system management.

Open and transparent private sector tendering is required in support of private sector participation in “output-based” management approaches. The private sector cannot afford to participate in tendering procedures that are less than open and transparent, and failure to maintain open and transparent tendering will result in failure to achieve results that are efficient and effective.



ISWM OPERATIONS MANAGEMENT: SETTING GOALS

Performance Goals Can Be Set For All Aspects Of Solid Waste Management:

- Service goals can relate to effectiveness of street sweeping, collection, recycling, treatment and disposal
- Financial goals can relate to maintaining or increasing service at lower cost
- Social and environmental goals can relate to improving the social and environmental benefits of waste management operations

16



ISWM Operation Management: Setting Goals

Performance goals can be established for waste management operations and for the financial, social and environmental context in which services are provided. Other categories of goals might also be relevant.

An initial challenge for many local waste management entities will be to establish an initial baseline against which operational goals can be established. Basic operational information on many aspects of waste management is frequently not collected or maintained, and this makes it difficult to establish goals relevant to the existing context. On the other hand, precise information may not be necessary to begin; initial operational goals can be about defining basic levels of acceptable service as much as trying to improve on service levels. Once basic service levels have been clearly established, goals can be revised to lead the effort to raise standards and performance in a step-wise manner starting with the highest priority issues to address.

Importantly, some goals may address community actions. Goals to reduce the amount of uncollected waste in the street, for example, may require action on the part of individuals not to throw litter onto the street, and action on the part of market vendors to use waste containers more frequently.

Goals in themselves will not improve solid waste management operations. However, goals supported by appropriate actions will. Once goals are set, appropriate operational actions in support of achieving the goal are necessary.



ISWM OPERATIONS MANAGEMENT: PUBLIC SECTOR OR PRIVATE SECTOR?

Output-Based Approaches To ISWM Operations Can Be Applied To Public Or Private Sector Service Delivery:

- In both cases, the focus is on establishing clearly defined goals that can be monitored.....
- But organisational considerations between public and private sectors need to be taken into account....
- And options are available with private sector service delivery that are not generally available with public sector service delivery

17



ISWM Operations Management: Public Sector Or Private Sector?

Output-based approaches to ISWM can be applied to public and private sector waste management operations. A first and key requirement in both cases is to *establish goals that can be monitored* based on current performance baselines, and a schedule for achieving those with interim targets as “milestones” along the way as necessary. Within a public-sector framework for delivery of waste management services, goals and schedules need to be included in the workplans and operational plans of waste management service delivery units. Within a private-sector framework for delivery of services, goals and schedules need to be included in contract documents.

Organisational issues relate to the abilities of public and private sector entities to be accountable for the goals that are established. While this is a significant challenge for public sector waste management organisations that have been focussed on delivery of services (but not necessarily focussed on achievement of service goals), it is a challenge that can be addressed and overcome. However, achieving solid waste management goals may be easier within private sector participation as a result of the incentive to perform created by a private sector contract that is appropriately monitored by the public sector.

A key advantage of using the private sector to meet waste management goals is that they have options that may not be available to the public sector. The private sector may have access to investment funds and to expertise that is not available to the public sector. The dependence of the private sector on meeting contract requirements may drive organisational and individual performance to higher levels than is realistic within public sector waste management service delivery organisations. The ability of the private sector to innovate within budget constraints may also be an important stimulus to achievement of waste management goals.



ISWM OPERATIONS MANAGEMENT: “OUTPUT-BASED” PRIVATE SECTOR CONTRACTS

“Output-Based” Private Sector Contracts For Solid Waste Management Should:

- Be goal-oriented
- Identify minimum acceptable standards
- Encourage innovation within budget constraints
- Link payments to achievement of goals

18

TRAINING MANUAL 5 – MODULE 5-1



ISWM Operations Management: “Output-Based” Private Sector Contracts

The structure of private sector contracts should be *goal oriented* and should reflect end-results (i.e. goals) that are desired, and not necessarily the means of achieving the end-results. For example, collection contracts might identify that collection of waste is required to maintain clean and sanitary conditions within a particular area and may define what is meant by “clean and sanitary conditions”, but need not specify the frequency of collection, the number or type of vehicles or the number of people employed to collect waste. Instead, the evaluation of bids based on this requirement would focus on the extent to which proposals would meet this requirement and the cost of doing so. In this example, maximum incentive would be provided to a bidder to develop an innovative solution to meet the requirement at least cost; in practice, a municipality may require a certain proportion of municipal staff to be taken on by the private sector contractor for social reasons, but already this would limit the ability of the selected private sector partner to innovate.

Critically, it is essential for *minimum acceptable standards* to be identified within which goals are intended to be achieved by the private sector partner. Private sector participation is an invitation to help society meet goals within the context of minimum social, environmental and other standards. Effective policing of these standards is required to ensure that private sector activity respect minimum social and environmental norms.

Contracts can be structured to *encourage innovation* and superior performance. For example, a contract for private sector participation in a composting facility may include provision for payment of a certain amount of money to ensure the financial viability of the facility in the event that revenues from compost sales are insufficient to cover operating costs – but may also allow the private sector partner to retain additional revenues if they can develop the market for compost and so increase the sale price for compost. Under this scenario, costs to the municipality are decreased if the operator successfully develops a compost market (because the subsidy on operations would no longer be needed), revenues to the private sector partner are enhanced (by sales of compost) and compost users are satisfied that the compost product is worth the higher price that is being charged.

In all cases, *payments* to the private sector should be made according to an agreed schedule – but only if the goals and requirements of contracts have been met.



ISWM OPERATIONS MANAGEMENT: ORGANISATIONAL ISSUES

Local Solid Waste Management Entities Can Facilitate Effective Output-Based ISWM Operations By:

- Adopting a policy of continual improvement based on achievement of goals
- Requiring solid waste management operations to report regularly against goals
- Separating the monitoring function from the service delivery function

19

TRAINING MANUAL 5 – MODULE 5-1



ISWM Operations: Organisational Issues

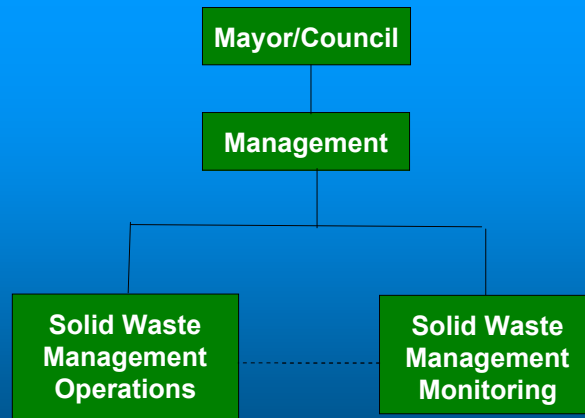
Implementation of output-based approaches to ISWM operations should be placed in the context of an organisational policy in support of *continual improvement*. This approach has two advantages:

1. Goals can be set to achieve long term objectives over time so that the process of achieving improved waste management performance is “evolutionary” within work units. Goals that are set too high initially risk being viewed as “revolutionary” and unattainable.
2. As operational improvements are made, and seen to have been made by stakeholders and the public, decision-makers are likely to be willing to allocate increased resources into what is increasingly viewed as an effective and successful waste management programme, thereby supporting further improvements.

Within waste management institutions there should be a requirement for *regular reporting* of waste management operations against goals that have been established, and the responsibility for this reporting should be defined in terms of the individual(s) responsible for submitting reports and the dates by which they should be submitted. This institutionalises the reporting function and ensures that the output-based approach is taken seriously by operational staff.

It is very important that *responsibility for monitoring be organisationally separated* from the responsibility of delivering services. If service deliverers are also responsible for the “objective” monitoring of performance against goals the credibility and adequacy of the monitoring are both suspect. The following slides address this issue from the perspective of a public local entity delivering services, and from the perspective of services being delivered by the private sector.

LOCAL LEVEL INSTITUTIONAL FRAMEWORK IN SUPPORT OF ISWM OUTPUT-BASED OPERATIONS: PUBLIC DELIVERY OF WASTE MANAGEMENT OPERATIONS



20

TRAINING MANUAL 5 – MODULE 5-1



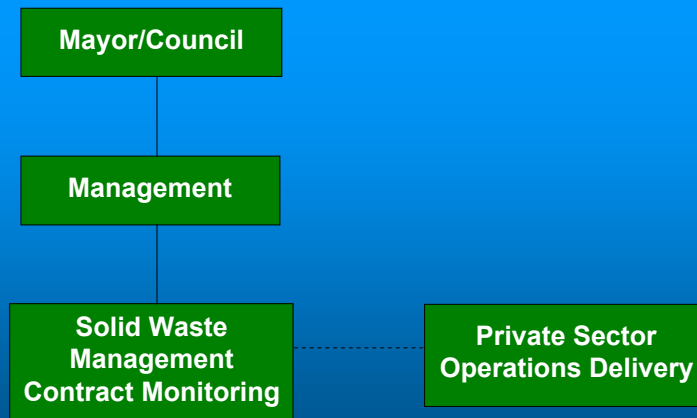
Local Level Institutional Framework In Support Of ISWM Output-Based Operations: Public Delivery Of Waste Management Operations

This slide addresses the structure and reporting functions within local solid waste management entities that deliver waste management services themselves. While there are different ways to structure the monitoring and reporting functions within local solid waste management entities, the main issue for these local entities is to ensure that the function of monitoring is organisationally separated from the function of service delivery. This maintains clear accountabilities: there are those who deliver services, and there are those who monitor the extent to which service goals are being achieved. If this type of institutional separation is not maintained the accountability of those responsible for service delivery becomes confused with the need for monitoring of the services they are also responsible for delivering, and senior decision-makers will not benefit from the independent view that emerges from a separately-defined monitoring function.

Although the functions of service delivery and monitoring should be separated, there should still be communication between service delivery and service monitoring (indicated in the slide by the dashed line). This is important in terms of ensuring feedback from the monitoring function to the operations function, and in terms of the monitoring function being aware of the conditions and constraints of service delivery. It is very important that the monitoring function is viewed as an assistance to service delivery, rather than a policing of service delivery. Where monitoring is an assistance to service delivery, monitoring becomes a support to the delivery function and will be valued by service deliverers. Where monitoring is a policing of service delivery it will be resented as a threat by service deliverers, and will need to be implemented by imposition rather than through acceptance.

As shown on the slide, a complete separation of these functions within the context of public delivery of ISWM services may not be feasible since reporting structures mean that at some point those delivering services and those undertaking monitoring report to the same individual. Nonetheless, maintaining separated functions and separated accountabilities to the extent possible will strengthen the monitoring function.

LOCAL LEVEL INSTITUTIONAL FRAMEWORK IN SUPPORT OF ISWM OUTPUT-BASED OPERATIONS: PRIVATE DELIVERY OF WASTE MANAGEMENT OPERATIONS



21

Local Level Institutional Framework In Support Of ISWM Output-Based Operations: Private Sector Delivery Of Waste Management Operations

This slide addresses the monitoring and reporting function of local level institutions in relation to the delivery of private sector operations by a private sector partner. In this case, the separation of the monitoring function from the service delivery function is complete and accountabilities are clear: the private sector partner is operating under contract to the local entity, and the job of the local entity is to ensure that the terms of the contract are filled. Monitoring by the local entity should therefore be oriented to the specific requirements of the contract, and payment to the private sector entity should be linked to satisfactory performance of all requirements of the contract.

CONCLUSIONS

Effective ISWM Project Design And Management Should Be Built On:

- Clear focus on results desired
- Addressing the administrative and management frameworks that support technology as well as technology application itself in project design
- Accountability and flexibility in systems and operational management

22

TRAINING MANUAL 5 – MODULE 5-1



Conclusions

Effective ISWM application begins with project design that is: (i) clearly focussed on achieving desired results; (ii) considers the most appropriate mix of technical and non-technical solutions appropriate to the local context; and (iii) considers the most appropriate roles for the range of relevant stakeholders. Projects may be national or local in scope, but in both cases a phased implementation of initiatives is desired in which initial actions are consolidated before subsequent actions are taken that include within them the lessons learned from earlier actions. Timing of implementation therefore becomes important: different project activities will be at different stages of implementation at different times.

Project design should pay particular attention to the management frameworks and mechanisms through which the transition from project design to project implementation is achieved. Effective *systems management* ensures that the ISWM system as a whole achieves its objectives, and that all actions contribute to broader desired results. Effective *operations management* ensures that discrete operational activities (technical and non-technical) are implemented effectively and achieve the results targetted for them; private sector involvement in service delivery can be a major benefit if it is correctly designed and implemented with respect to local conditions and if social and environmental standards are clearly spelled out and enforced. In all aspects of ISWM management, progress towards desired results should be monitored on the basis of quantifiable and verifiable indicators, and accountability for success should be unequivocally established.

Regional Guidelines and related aids to implementation have been developed through the METAP Regional Solid Waste Management Project (RSWMP), and these incorporate the collation of important "lessons learned" within the region that have already been gained; these are can be consulted for additional assistance in implementation of ISWM. Training modules on various aspects of ISWM have also been prepared through the METAP RSWMP and these can also be used to facilitate application of ISWM at the national and local levels.