



## TRAINING MANUAL 5 ISWM PROJECT DESIGN AND MANAGEMENT

### MODULE 5-3: FEASIBILITY STUDIES

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GTZ-ERM-GKW



#### **ISWM Project Design**

This module addresses ISWM feasibility studies. The module integrates feasibility studies with the broader planning framework within which they fall and identifies why they are undertaken and who they are undertaken for. The different components of feasibility studies are described and the expertise necessary to prepare them is identified.

*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 Capacities For Undertaking ISWM Feasibility Studies:

- What ISWM feasibility studies are
- How feasibility studies relate to ISWM planning
- Who should prepare feasibility studies and who they are for
- Components of feasibility studies
- The expertise necessary to prepare feasibility studies

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### Objective

This slide identifies the objective of the module: to strengthen capacities for undertaking ISWM feasibility studies.

The module falls into two broad components. The initial slides provide context and background to ISWM feasibility studies in order that participants understand their purpose. The majority of the module focuses on the components of feasibility studies. The module finishes with some comments on the type of expertise necessary to undertake ISWM feasibility studies, and some conclusions regarding the importance of feasibility studies to effective ISWM projects and programmes.



## WHAT ARE FEASIBILITY STUDIES?

### Feasibility Studies Are Used To Justify Investment of Resources In ISWM:

- They specifically address the most appropriate way to implement desired actions
- They address all the actions necessary to implement a desired ISWM course of action

ISWM feasibility studies are a tool through which to access investment resources.

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### What Are Feasibility Studies?

The central purpose of an ISWM feasibility study is to justify the commitment of resources (specifically, capital financing) to achieve ISWM objectives. Implementation of ISWM actions does not necessarily involve capital financing, and those that are focussed on private sector participation may place responsibility for capital financing on the private sector. In these instances, implementation of actions need not include a public sector investment component and need not include a feasibility study; other types of study may be required, however, particularly to ensure appropriate arrangements within a private sector participation context.

In many instances, however, a public sector *investment project* may be central to achieving the objectives of an ISWM initiative; for example, if waste management facility investments are required to give effect to an action plan. In these instances, a feasibility study will be essential to establish that what is intended to be done is in fact viable over the long term.

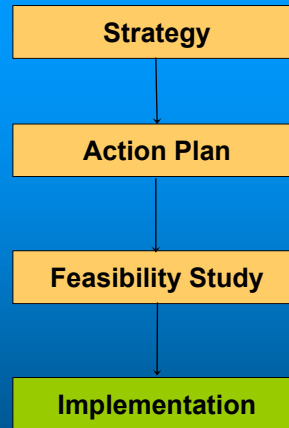
A feasibility study must address all aspects of an ISWM initiative in order to establish the overall feasibility of a proposed initiative. Thus, an ISWM project must be feasible from technical, legal/institutional, social, environmental and financial perspectives if it is to be feasible. A project that fails to demonstrate viability from these various perspectives represents an unacceptable risk to the entity that is requested to invest in the project. If technical aspects of a project are not considered viable (e.g. structures do not meet adequate design standards) capital investments are clearly at risk; if legal/institutional frameworks are not adequately in place, ISWM system performance will suffer and objectives may not be met; if social and environmental aspects of the project are not adequately addressed, the project may cause social or environmental disruptions that also may threaten the viability of the project; if the initiative cannot be sustained financially it will deteriorate over time. A feasibility study therefore demonstrates how all these issues will be addressed in project implementation. Demonstration in a feasibility study that these issues will be adequately addressed provides an investor with confidence that the project will be successful over the long term and is, therefore, worthy of investment.

## FEASIBILITY STUDIES AND STRATEGIC ACTION PLANS

*Strategy* defines the overall ISWM vision and framework for achieving the vision

*Action Plans* define specific options that will be pursued over a 2-5 year period to move towards strategy objectives

*Feasibility Studies* detail measures and interventions to achieve implementation of an action plan



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### **Feasibility Studies and Strategic Action Plans**

Feasibility studies fit within the strategic action planning framework presented in Modules 1 – 7 of this training manual. The three levels – strategy, action plan, feasibility study – represent a continuum from the general to the specific. *Strategy* defines overall vision: it establishes broad ISWM objectives and the overall framework through which these objectives will be achieved. *Action plans* define what will be done over a 2-5 year period in pursuit of achieving strategy objectives. *Feasibility studies* define the implementation frame through which investments in support of action plans will be achieved and managed; critically, feasibility studies provide a level of detail on measures and interventions sufficient to justify investment in an ISWM initiative by an investment institution. Ideally, therefore, feasibility studies will support implementation of actions defined through the strategic planning process.

Feasibility studies may also catalyse the strategic planning process. This may occur, for example, where there is a political imperative to quickly invest in the solid waste management sector, or where an international agency has a mandate to invest in the sector, but not necessarily to undertake planning in the sector. In these instances feasibility studies may be preceded by the preparation of an overall ISWM “concept” that is agreed to by key stakeholders and which provides a context for the feasibility study. This does not replace the need for a strategic planning process; instead, it provides an impetus to implement the strategic planning process so as to ensure an appropriate long term context for actions proposed through a feasibility study, and a basis for the evolution of those actions over time.



## WHO SHOULD PREPARE FEASIBILITY STUDIES AND WHO ARE THEY FOR?

### ISWM Feasibility Studies Should Be Prepared By Entities Responsible For Waste Management At The Local Level

- Municipalities
- “Regional” waste management entities

### ISWM Feasibility Studies Should Be Prepared For Investment Agencies:

- Banks
- International Agencies

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### Who Should Prepare Feasibility Studies And Who Are They For?

Feasibility studies should be prepared by the entity with responsibility for waste management at the local level. Generally, this will be either a local municipality (e.g. a city) or a “regional” waste management entity (e.g. a Common Service Council or similar entity in Jordan or Palestine, Governorate in Egypt or Wilaya in Algeria).

The audience for an ISWM feasibility study is the entity that will be asked to finance the investments that are being sought. Generally in the METAP RSWMP region, these entities will be either banks or international development agencies. Different agencies have different specific requirements and different formats for feasibility studies. However, in all cases the feasibility of an ISWM project rests on being able to demonstrate that a proposed project will achieve the goals that are established for it and that the cost of meeting those goals is commensurate with the benefits that will be achieved. Different agencies have different measures by which they judge whether a project is “feasible”, so it becomes essential to know what criteria an agency will apply before preparing and submitting an ISWM project feasibility study and, in knowing these criteria, to ensure that a project is designed in such a way as to adequately address these criteria.



## COMPONENTS OF AN ISWM FEASIBILITY STUDY

ISWM Feasibility Studies Typically Have The Following Components:

- Project Objective and Justification
- Design Basis and Design Criteria
- Technical Project Measures
- Legal, Institutional and Public Measures
- Technical Assistance Measures
- Private Sector Roles
- Transitional Arrangements
- Social and Environmental Impact Assessment
- Implementation Schedule
- Financing and Cost Recovery

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### **Components of an ISWM Feasibility Study**

The specific components of an ISWM feasibility study will depend on the scope of the envisaged project. Broadly across the METAP RSWMP region, ISWM investment needs include improved solid waste storage and collection, new or enhanced recycling and treatment capacity, and new disposal facilities. Investments of these types require that each of the items in the slide be addressed in the feasibility study since failure to implement any one of them appropriately represents a serious risk to the viability of an ISWM project. The balance of this module will address each of these components of an ISWM feasibility study.



## PROJECT CONTEXT, OBJECTIVE AND JUSTIFICATION

### Identify Why The Project Is Needed:

- Describe the current waste management system
- Identify problems with the current system
- Identify what the core problems are that the project will solve
- Identify the objective of the project with respect to the core problems
- Identify the specific results that will be achieved
- Identify the key beneficiary groups

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### Project Context, Objective and Justification

The first step in the preparation of a feasibility study is to clearly establish why the project is necessary and the results it will achieve. If the project has been identified and conceived as a result of a strategic planning process (as described in other modules in this training manual) the need for the project and the results desired of it will have been previously defined and the data necessary to support the definition of the project will be readily available as a result of the work undertaken in the strategic planning process. In addition, the strategic planning process will have achieved broad stakeholder support regarding the strategic and shorter term objectives of waste management interventions.

As described in Slide 4, however, sometimes an ISWM feasibility study may be undertaken without having first undertaken a strategic planning process through which a specific project has been identified. In these instances, the completion of the first step of a feasibility study will need to start with the gathering of data and information from which to specify each of the items in this slide. This does not replace the need for strategic ISWM planning, since the feasibility study will in any event be focussed on investments to solve immediate priority problems. However, in this instance the feasibility study may catalyse the strategic planning process and will serve to raise a range of issues that will require longer term, strategic approaches to address.

The presentation of project context, objective and justification should be both descriptive and analytic. To the maximum degree possible, data and information should be quantitative; if quantitative information is not directly available it may be possible to develop the required data, or to present quantified estimates (the basis for which should be fully explained). Analysis of data and information should lead to the identification of: specific core problems that the project will address; consequent identification of specific results that the project will achieve to address these problems; and the key beneficiary groups. Many agencies require that this information be placed into a “logical framework analysis” matrix (also referred to as a “log-frame” or LFA); this is simply a way of summarising and relating core problems to results intended from a project and the monitoring that will be undertaken to track achievement of intended results.



## PROJECT DESIGN BASIS AND DESIGN CRITERIA

### The Project Design Basis And Design Criteria Should Be Set Out:

- Establish current and future population, and industrial/commercial activity
- Establish current and projected future waste generation, composition and sectoral origin
- Identify options for waste avoidance/reduction, treatment/composting and disposal
- Identify assumptions

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### Project Design Basis And Design Criteria

Again, if the need for the feasibility study has been determined as a result of a strategic planning process the data and information necessary to document the project design basis and design criteria will be readily available. If the feasibility study has not been preceded by a strategic planning process it will be necessary to undertake the work required to develop these data. This step is very important: a high quality ISWM project requires good data that underpin project design. Unfortunately, good waste management data is often not readily available, and data that is available may be dated and unreliable. Work should be undertaken to develop the necessary data for the feasibility study.

This step begins with detailing how much waste is generated, what the waste materials/ products are, who is generating them and how waste generation patterns will change over a minimum of 10 years. Generally across the METAP RSWMP region, waste generation is growing (and growing rapidly in cities) as a function of population growth, industrial/commercial development and increasing access to consumer/disposable products. Policy measures to address this are discussed in the “Policy, Legal and Institutional” Regional Guideline developed through the METAP RSWMP and in Aid To Implementation PLI 1: Model ISWM Policy associated with that Guideline. Policy measures to reduce waste generation should be integral to any feasibility study, since they are the least cost approach to managing waste and can profoundly influence waste generation over time, which in turn will impact waste management investment requirements.

The “Policy, Legal and Institutional” Regional Guideline also introduces the “waste management hierarchy” of preferred waste management approaches. ISWM feasibility studies should normally include environmentally sound and affordable waste disposal since disposal must be a part of any ISWM system, although it is not a preferred waste management strategy. ISWM feasibility studies should seek to maximise recovery of value from wastes (e.g. recycling and composting); for example, about half of Damascus is served by an ISWM system that achieves the recycling/composting of approximately 60 percent of the waste generated.

Waste management data is frequently imperfect. It is therefore important to note all assumptions in the feasibility study so that the basis for all assumptions is clear.





## TECHNICAL PROJECT MEASURES

**Technical Project Measures Are The Specific Technical Activities That Will Be Implemented Through The Project**

- **Identify the specific infrastructure and activities that will be supported by the project**
- **Provide engineering designs for facilities on which to base cost estimates**
- **Provide equipment lists and costs**

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### **Technical Project Measures**

Technical project measures comprise the facilities and equipment that will be implemented through the project. These should be detailed in the Feasibility Study.

Engineering design of the facilities to be implemented through the project will need to be undertaken to a sufficient level of detail that implementation costs can be estimated. Design of facilities should take account of local regulatory standards or, in the absence of appropriate local standards, international norms and standards published by agencies such as the World Bank, United Nations and others as appropriate. If financing is to be sought on a bilateral basis, it is possible that the financing agency may require certain standards to be included in ISWM facility design (and in construction and operation). Environmental standards (in particular) adopted for ISWM facilities can have a dramatic impact on the capital and operating cost of the facility, but may be necessary to ensure that public health and the environment are adequately protected and that the facility performs as it should.

Equipment and related costs should also be identified. Some equipment may be available through local vendors, other equipment through international vendors. All identified equipment should meet minimum performance standards, be appropriately sized and be appropriate to local conditions (e.g. able to operate at high ambient dust and temperature levels). Maintenance should be within local capacities to manage and spare parts should be readily available and affordable.



## LEGAL, INSTITUTIONAL & PUBLIC MEASURES

### Feasibility Studies Should Address Needs For:

- An adequate legal framework to support project actions and subsequent implementation
- Appropriate institutional arrangements through which to manage ISWM project actions and subsequent implementation
- Demonstrated public support of project measures

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### **Legal, Institutional and Public Measures**

Feasibility studies should incorporate recommendations for strengthened legal frameworks, as necessary to support implementation of project activities and implementation of subsequent ISWM initiatives. The key elements of strengthened legal frameworks should be set out, including clear identification of institutional roles and responsibilities, environmental and other standards, the governance structure for private sector participation (if necessary) and the financial management framework. Linkage to national waste management policy and strategy (if it exists) should be specifically identified in order to show the congruence of the project proposed in the feasibility study with national priorities.

Recommendations for strengthened institutional arrangements should also be set out in the feasibility study. Modifications of existing institutions may be recommended, or design and implementation of new institutions. Institutional arrangements under a private sector delivery of waste management services is likely to be very different as compared to arrangements under public sector service delivery.

The feasibility study should demonstrate public support of proposed project measures and actions. Normally, this will be achieved as part of the work to prepare a strategic action plan or, when one has not been developed, in the preparation of the feasibility study itself.



## TECHNICAL ASSISTANCE MEASURES

### Technical Assistance Measures Provide Management Support To ISWM System Implementation:

- Legal and institutional frameworks
- Project implementation/supervision
- Cost recovery and financial management
- Public awareness
- Capacity building
- Other

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### Technical Assistance Measures

Feasibility studies should identify the technical assistance measures that will be supported by project financing. There is a wide range of technical assistance measures that may be appropriate in support of an ISWM project, depending on the nature of the project and on the local needs and capacities. This slide identifies some of the more usual requirements in this regard.

Individual components of ISWM systems should be supported by adequate legal and institutional frameworks, and these should be designed so as to achieve progressively larger quantities of waste at higher levels of the waste management hierarchy (see Slide 8). These issues are complex, and ISWM feasibility studies in the METAP RSWMP region should generally make provision for international TA to assist in development of appropriate frameworks.

ISWM project implementation can be complex and may require skill sets that are not well developed locally. TA associated with project implementation and supervision can not only help ensure effective project implementation, but also be an important capacity development initiative as well.

Cost recovery and financial management frameworks associated with waste management are not well developed in the METAP RSWMP region, but are key to solid waste management systems that are sustainable over the long term. In many cases TA may facilitate implementation of new cost recovery measures to support waste management investments, and this should be addressed in ISWM feasibility studies.

Public awareness and capacity building may also be critical to ensuring project success. Local entities may be mobilised to participate in or deliver public awareness and related activities; capacity building may be undertaken in the context of the above TA activities, or other activities as required by the project.

Technical assistance measures should be defined in the feasibility study, and terms of reference and budgets for the required TA should be prepared, together with detailed descriptions of how TA will be delivered and how TA will be integrated with other project activities.



## PRIVATE SECTOR ROLES

### The Feasibility Study Should Detail Private Sector Roles:

- What services the private sector will deliver and how
- Tendering and contractual arrangement that will govern private sector activities
- Minimum performance standards that private sector operations must meet
- Public sector monitoring of private sector operations
- Identification of risks in private operations

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### **Private Sector Roles**

Private sector participation in delivery of waste management operations can bring many benefits, but must be properly implemented if those benefits are to be achieved. An ISWM feasibility study therefore needs to address what the private sector will do, how it will do it and how its performance will be monitored and managed.

The definition of the services that the private sector will provide should address not only the provision of services, but also the relationship of the private sector to facilities and equipment that may be owned or provided by the public sector. There are a variety of options in this regard, any of which might be appropriate. The feasibility study should include assessment of these options and a justification for the recommended approach.

The effectiveness of private sector operations is linked to tendering and contractual arrangements. Normally, a feasibility study should identify tendering arrangements that are open and transparent and should make reference, as appropriate, to the tendering procedures of the institution to whom the feasibility study is directed; the scope of tendering should also be identified (e.g. local, regional or international). Final contractual arrangements will be determined in negotiation with a successful bidder; however, an ISWM feasibility study should include draft contract documents sufficient to demonstrate the form of contract, the major financial and technical terms of the contract and the key performance and environmental standards the contract will require the successful bidder to meet.

The feasibility study should also include the identification of the monitoring framework through which the public sector will ensure adequate performance by the private sector. The draft contract, see above, should include reference to penalties that will be applied in the event that private sector performance does not meet identified standards.

The risks that private sector operations carry should also be identified, together with actions to mitigate these risks.



## TRANSITIONAL ARRANGEMENTS

### Feasibility Studies Should Address Change To A New Waste Management System:

- **Public awareness**
- **New legal and institutional frameworks**
- **Reallocation of staff**
- **Closure of dump sites**
- **Introduction of new financing or cost recovery**

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### Transitional Arrangements

The way that change to a new waste management system is managed is important to stakeholder acceptance of the new system and transitional arrangements should therefore be included in ISWM feasibility studies. A first step in achieving change is to ensure that affected stakeholders are aware of the changes that will be made, and their role in the new waste management system. The Regional Guideline on “Public Awareness and Community Participation” developed through the METAP RSWMP addresses public awareness approaches and actions.

New legal and institutional frameworks may be required to provide legitimacy and a clear management structure for new waste management initiatives and both are necessary to ensure a smooth transition to a new waste management system. Feasibility studies should normally reflect that new legal and institutional frameworks should be introduced before the actions governed by them are introduced.

Publicly operated waste management systems in the METAP RSWMP region may be characterised by high staff levels and low productivity. Issues are likely to arise regarding what to do with “surplus” public sector staff under enhanced ISWM arrangements, particularly under private sector operations. Some staff may be transferred to the private sector operator. It may also be possible to retain staff not transferred to the private operator and reassign them to other positions within the local government structure, and some staff may be retained by the public entity to replace other staff who retire.

The introduction of new waste management systems may involve development of new, environmentally appropriate waste disposal sites. Existing uncontrolled dumps should therefore be closed, and transitional arrangements should include actions in this regard. It will also be important to ensure that individuals and organisations stop using the dumps. In many cases, existing dumps will have been used for many years and there may be a tendency for individuals and organisations to continue using them after they have been officially closed. Communications and compliance strategies should be outlined in the feasibility study that address these issues.

New waste management systems may require new sources of financing and cost recovery to ensure their viability. It is extremely important that new levels of financing/cost recovery are not only legal and affordable, but also that are introduced after (or parallel with) improvements in waste management services. Financial initiatives that are introduced before improvements in service are visible are likely to be resisted by the public (as has happened in parts of Egypt) and this can lead to unwillingness to accept either the new waste management system or the charges associated with it.

Feasibility studies should identify how these issues will be addressed, and what agency will address them.



## SOCIAL AND ENVIRONMENTAL IMPACT ASSESSMENT (SEIA)

SEIA Ensures That The Planned Benefits Of ISWM Projects Are Not Compromised By Unplanned Negative Impacts:

- Identify potential negative social and environmental impacts of project
- Identify measures to mitigate negative impacts
- Include mitigation measures in project design

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### **Social And Environmental Impact Assessment (SEIA)**

ISWM financing agencies increasingly require SEIA as part of ISWM feasibility studies based on their experience that although new waste management projects can bring many benefits, they can also bring serious unintended consequences if SEIA is not undertaken. SEIA is a technique that ensures that potential unintended consequences of waste management projects are identified and addressed as part of project design.

The central requirement of a waste management SEIA is to identify the potential negative consequences of the project together with project measures (“mitigation measures”) that prevent those consequences or reduce their impact to acceptable levels. The need for SEIA has often been doubted by waste management project proponents on the basis that projects are planned to address priority issues/problems and that therefore SEIA is unnecessary. However, project actions may have consequences that fall beyond the direct scope of the project and which may not therefore be adequately addressed by the project; these consequences may then cause serious problems elsewhere in society, the economy or the environment. Examples in the METAP RSWMP region include new waste management arrangements in Cairo that unintentionally threatened to displace thousands of people engaged in recycling activity and new waste disposal facilities in Tunis that failed to adequately address management of leachate (which has high potential to contaminate groundwater).

Mitigation measures identified through SEIA should be incorporated in the overall project design and, as appropriate, they should be reflected in clauses in draft contracts included in feasibility studies (Slide 12). The SEIA itself should be included in the feasibility study and should demonstrate that after inclusion of mitigating measures the project does not run an unacceptable risk of causing significant negative social or environmental impacts.



## IMPLEMENTATION SCHEDULE

### The Implementation Schedule Should Address:

- Overall project schedule
- Links to other relevant actions by other agencies/donors/lenders
- Assessment of risks that may impact implementation

The implementation schedule should identify the results intended from each major activity and the entity responsible for undertaking the activity.

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### **Implementation Schedule**

ISWM feasibility studies should include an implementation schedule. All actions associated with the proposed project should be included on an implementation schedule. This should identify timing for: detailed design of facilities, preparation of terms of reference and procurement of equipment/services, construction and commissioning of facilities, periods of technical assistance, land acquisition and introduction of new legal, institutional and financing/cost recovery frameworks.

Parallel activities may be undertaken by other agencies, donors or lenders that are relevant to the proposed project. Specific interactions between the proposed project and other parallel activities should be identified in the implementation schedule.

The impact of major project risks on project implementation should be identified, and measures for minimising major risks should be identified together with measures for ensuring as far as feasible that risks that threaten one activity are prevented from threatening other activities.

In addition to identification of activity timing, the implementation schedule should identify the results that are intended for each major activity, and the entity that will be responsible for implementing each activity and for achieving intended results.



## FINANCING AND COST RECOVERY

The Financing Of The Proposed Project Should Be Presented, Including:

- Investment cost for each component
- Local and foreign costs
- Contingency costs
- Taxes, customs, levies
- Time schedule of investment costs
- Interest
- Recurrent costs including amortised capital cost

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### **Financing And Cost Recovery**

The feasibility study should present a full profile of project financing and cost recovery. This slide presents the financing component; the next slide presents the cost recovery component.

The investment cost of each project component should be identified together with the investment cost for the project as a whole. Investment costs should be broken out to show for each item the percentage that will be a local cost and the percentage that will be an international cost. Physical and price contingencies should be identified; physical contingencies allow for the price of items/services to be higher than anticipated, and price contingencies make provision for inflation. Taxes, customs, levies and other charges imposed by government on the cost of an item should be shown for all goods and services to be procured. A time schedule of investment costs should be developed to identify the quarterly application of investments and a parallel schedule should be prepared that identifies when investment funds will be received; based on this, analysis should be performed to calculate the amount of interest that will accrue between receipt of funds and expenditure of funds. All costs should be presented in both local currency and the currency of the agency for whom the feasibility study is intended.

Recurrent costs should also be shown on an annual basis. Recurrent costs should include labour, operating and maintenance costs, and the amortised annual capital costs calculated on the basis of the anticipated life of facilities/equipment and assuming that replacement capital costs (e.g. for new equipment) will be met from the resources of the local waste management entity or its operator, as appropriate. Recurrent costs should be shown for each investment component, and for the project as a whole.





## FINANCING AND COST RECOVERY (2)

Cost Recovery Associated With The Proposed Project Should Be Shown, Including:

- Cost recovery components and their contribution to total cost recovery
- Cash flow over time
- New user or other charges that will be introduced in support of cost recovery
- Justification that new user/other charges will be affordable to those who will pay them

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### **Financing and Cost Recovery Cont.**

This slide presents ISWM cost recovery components that should be presented in a feasibility study.

Cost recovery is the term used to describe the way in which the costs of a waste management service are paid for. The feasibility study should identify all components of cost recovery associated with the proposed project including, but not necessarily limited to: central government subvention, local government subvention, user fees, licence fees/charges, revenues (e.g. from recycling, composting or tip fees); and any other components of cost recovery that may be implemented. The contribution of each component of the cost recovery framework should be quantified. The cost recovery framework should demonstrate that cost recovery will equal the recurrent cost of the project (including amortised capital costs). Projected cost recovery deficits and surpluses should be explained and justified; i.e. if cost recovery is below the projected recurrent cost, how will the shortfall be paid for, and if cost recovery exceeds projected recurrent costs how will the surplus be managed. Projected cash flow over the first 5 years of the project should be shown on a quarterly basis. Cost recovery components that are based on central and local government subvention should reflect that actual reality of the timing of those contributions and the likelihood that those funds will in fact be available (for example, theoretically available funds will not in fact be available if tax collection efficiencies are low).

New user or other charges should be identified and discussed regarding the rationale for the new charges and the basis of the levels that have been established for them. All new charges should be justified in terms of their affordability to those who will pay them as well as in terms of their need to pay for the waste management system.



## PREPARING ISWM FEASIBILITY STUDIES

### Preparation Of ISWM Feasibility Studies Requires A High Level Of Expertise:

- Specialist consulting expertise usually required
- Consider whether local consultants possess required experience
- Consider benefits of international consultant in partnership with local expertise
- Consider cost and time required

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### **Preparing ISWM Feasibility Studies**

Preparation of ISWM feasibility studies is complex and requires a high level of specialist expertise. Accordingly, a consulting team should normally be retained to prepare an ISWM feasibility study. In principle, local consultants can be used to prepare ISWM feasibility studies; however, local consultants in the METAP RSWMP region do not generally have wide ISWM experience. It may therefore be preferable for local consultants to partner with international expertise to undertake required ISWM feasibility studies. Over time, and as local ISWM capacities are developed, local consultants may assume greater roles.

ISWM feasibility studies require significant time to prepare. ISWM feasibility studies for projects that have been well defined through a strategic planning process, which have broad stakeholder support and which do not involve significant levels of public or institutional debate (for example, over the site of a future waste management facility) may be completed at a level of effort of 15-25 person months of professional time over about a 5 month calendar period. The larger and more complex the project the longer it will take to complete and the more person months will be required.



## CONCLUSIONS

### ISWM Feasibility Studies:

- Are undertaken in support of specific proposed projects defined (preferably) through a strategic funding action planning process
- Address technical, social, environmental and financial components of projects, each of which must be acceptable for a project to be “feasible”
- Require significant time, resources and expertise to complete

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### Conclusions

This module has presented an overview of ISWM feasibility studies. The intended result of an ISWM feasibility study is (typically) agreement by an funding agency to advance the investment capital necessary to implement the project. Agencies that invest in ISWM projects may place conditionalities on the use of the money they provide. These conditionalities are designed from the perspective of the funding agency to protect the monies advanced for the project and to maximise the likelihood of project success. The conditionalities that a funding agency places on money provided for an ISWM project are strongly influenced by the feasibility study; if the funding agency believes that there are gaps in the feasibility study it may require things to be done to address those gaps as part of an agreement to provide investment finance. In addition, financing may be provided in *tranches* whereby the agency must be satisfied that initial monies have been properly invested before advancing subsequent monies; the determination of whether money has been properly invested may be determined by the funding agency in terms of whether the actions identified in the feasibility study have been undertaken or not. In this sense, the feasibility study is important not only to ensure that project design is sufficient to access financing, but is also important as the tool by which the agency determines whether investments in the project are being properly managed by the implementing entity. For both the funding agency and the implementing entity, therefore, ISWM feasibility studies are an invaluable tool for designing and implementing waste management projects that work.