## CONTENTS

### STEP 6 - PREPARING THE ACTION PLAN

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Finalisation of the Strategy represents the major decision making milestone for the Strategic MSWM Plan. Key stakeholders will have defined and agreed the main strategic issues affecting MSWM, and political leaders will have bought in to the measures outlined in the Strategy document.

Step 6 evaluates in detail the actions required to translate the Strategy into practice. The major effort during Step 6 will be to concentrate on identifying and evaluating available options for each of the components of the Strategy, using Steps 4A-E as a guide to the content of the Action Plan.

The Action Plan should set out in detail the steps to be taken in implementing each component of the overall strategy over the first five years, who should take those actions and when. This should be complemented by an Immediate Action Plan setting out, in detail, the actions required during the first one to two years.

The Action Plan should set out measures to be taken over a 5-year period. This should be complemented with an Immediate Action Plan, detailing actions required over the first 1-2 years.
The Action Plan is likely to include the identification of priority investment projects. An important part of Step 6 is the preparation of an Investment Plan. Not all of the proposed improvements may yet be developed to the stage where an external support agency or a commercial lender will be prepared to lend money to finance investment. Pilot projects provide an important method of testing new concepts prior to full-scale implementation across the city or metropolitan area.

**How is Step 6 organised?**

- **Section 6.3** presents some concepts and examples to help prepare the Action Plan.
- **Section 6.4** presents typical scope and content of a pre-feasibility study.
- **Section 6.5** addresses development of an Investment Plan.
- **Section 6.6** addresses preparation of an Immediate Action Plan.
- **Section 6.7** addresses the critical issue of securing political approval, funding and budgets for implementation of the Strategic MSWM Plan.

**What is the output from Step 6?**

The outputs of Step 6 are an Action Plan (establishing required actions over the first five years), an Immediate Action Plan (detailing actions over the first 1-2 years), and an Investment Plan.

These outputs, combined with the Strategy, will form the Strategic MSWM Plan for the city or metropolitan area.

**How long will it take to complete Step 6?**

The Action Plan is likely to take 6-9 months to complete. Detailed implementation planning, including detailed feasibility studies and pilot projects for selected options should proceed following political approval, and are likely to take a further 1-2 years to complete.

**Who should use this step?**

- The MSWM Department
- Municipal Planners
- Working Group Members
- Steering Group Members
- Facilitators/Consultants

**Who should else should read Step 6 for information?**

All those interested.
6.2 Key Messages of this Step

‘Key Messages’

Some difficult decisions will need to be made during Step 6. A Strategic MSWM Plan can have major political, institutional, technical and financial implications, all of which must have been addressed clearly and effectively if the plan is to be agreed, adopted and implemented.

The major task in Step 6 will be to fully evaluate the range of options available to meet the requirements of the Strategy, using Steps 4A-E as a guide to content.

Options should be assessed to the pre-feasibility stage. More detailed feasibility studies will be required prior to implementation of most investment projects identified in the Action Plan.

The Action Plan should set out measures to be taken over a 5-year period. This should be complemented with an Immediate Action Plan, detailing actions required over the first 1-2 years.

Avoid over-ambition. Actions should be carefully phased over time and include sufficient time for detailed feasibility study, the formal development planning process, political approval and securing investment and operating budgets.

The Investment Plan should detail the specific equipment, vehicles and infrastructure required. A schedule of costs should be prepared, and backed up by a financial assessment setting out the detailed investment, operation and maintenance costs, and how these costs are to be sustained over time.

Progressing immediate actions will help to ensure that the momentum established during the planning process is not lost, and demonstrate a commitment on the part of the municipality to improvement of MSWM services.

Test innovative ideas in pilot projects prior to full-scale implementation.
6.3 PREPARING THE ACTION PLAN

Much of the detailed work in planning for MSWM will be carried out during Step 6 in the planning process. This work should be informed by detailed identification and evaluation of options that was undertaken during Step 4 and build-on the requirements of the agreed Strategy (Step 5).

The Action Plan should be developed to cover all of the major areas of content (see Steps 4A-E). Although these areas can be conceptually separated, in practice these individual stands need to be combined into a rational and appropriate plan.

Some major areas of attention likely to be required during the Action Plan are set out in Box 6.1 below. An example showing how an Action Plan can be divided into separate work streams is provided in Box 6.2, and two further case studies indicating major outputs of an Action Plan set out in Box 6.3 and Box 6.4.

Preparation of an integrated Action Plan, addressing each of the 9 operating subsystems of MSWM is also conceptually illustrated in Figure 6.1.

Box 6.1 Major Areas of Attention during Action Planning

<table>
<thead>
<tr>
<th>Institutional Options (Step 4A)</th>
<th>Waste Collection and Recycling Options (Step 4B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional framework</td>
<td>Improving service performance</td>
</tr>
<tr>
<td>Improving organisation and</td>
<td>Extending service coverage</td>
</tr>
<tr>
<td>management</td>
<td>Supporting recycling</td>
</tr>
<tr>
<td>Involving the private sector</td>
<td>Collecting infectious and hazardous wastes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Waste Treatment and Disposal Options (Step 4C)</th>
<th>Cost Recovery and Financial Management (Step 4D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste treatment and disposal technologies</td>
<td>Improving financial planning</td>
</tr>
<tr>
<td>Improving existing sites</td>
<td>Assessing affordability and willingness to pay</td>
</tr>
<tr>
<td>Future sites</td>
<td>Investment needs</td>
</tr>
<tr>
<td>Strategic, technical, environmental and aspects</td>
<td>Improving cost recovery</td>
</tr>
<tr>
<td></td>
<td>Improving accounting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Public Awareness and Participation (Step 4E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promoting public awareness</td>
</tr>
<tr>
<td>Encouraging community participation</td>
</tr>
</tbody>
</table>

The major task in Step 6 will be to fully evaluate the range of options available to meet the requirements of the Strategy. Options should be developed for each operating subsystem, institutional strengthening, financial management and public awareness and participation.
Some difficult decisions will need to be made during preparation of the Action Plan. The Plan can have major political, institutional, technical and financial implications, all of which must have been addressed clearly and effectively if it is to be agreed, adopted and implemented.

**Box 6.2 Case Study 1: Chennai, India**

The Action Plan developed in this study set out recommendations for the management of MSW in the Madras Municipal Area (MMA) in some detail for the period 1996 to 2001 and in outline to 2011.

The Action Plan was summarised in two series of tables, which are reproduced in Annex 6.1.

- **Technical Action Programme**: including service coverage, waste storage and primary collection, street sweeping and bulk waste clearance, secondary collection, transfer stations, transport systems, treatment, disposal and vehicle maintenance.
- **Institutional Strengthening Action Programme**: addressing responsibilities and arrangements for all bodies involved in waste management, private-sector involvement, development of legislation and policy, arrangements for licensing of facilities and the development of training programmes.


**Box 6.3 Case Study 2: Trabzon and Rize, Turkey**

The overall strategy was based upon the development of a single landfill site serving both Trabzon and Rize provinces with a transfer station at both of the cities. The planning period for the overall strategy was selected as 10 years from 1997 to 2007.

The key components of the Action Plan can be summarised as follows:

- Development of institutional systems for control and management of the solid waste transfer, treatment and disposal service;
- Development of a new regional sanitary landfill with adequate capacity to cater for municipal waste arising within the study area over the ten year planning period;
- Transfer loading facilities and bulk transportation to cater for the main and remote population centres to minimise the requirement for increased travelling distance for refuse collection vehicles;
- Pilot composting scheme to gain experience with waste composting and minimise the demand for sanitary landfill facilities;
- Closure and remediation of existing dump sites to eliminate current unsatisfactory practices and minimise the potential for further pollution from the sites;
- Complementary improvements in collection systems and support facilities: planning of collection rounds, standardisation of equipment, extension to rural areas, workshop and maintenance facilities.

The implementation of the strategy also had to be coordinated with a separate Action Plan to implement the National Solid Waste Management Strategy for Turkey. However, implementation of the regional strategy was seen as an urgent and necessary requirement, hence the selection of an ambitious 30-month time frame. Annex 6.2 reproduces the Action Plan for implementation of the waste management strategy to illustrate actions required, responsibilities, milestones and interactions.

**Box 6.4 Case Study 3: Ujang Pandang (KMUP), Indonesia**

In this study, a formal Action Plan was not developed although a phased implementation schedule was proposed over four time periods. The schedule was presented in the following style of format.

<table>
<thead>
<tr>
<th>Phase I</th>
<th>Phase II</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995-2000</td>
<td>2001-2005</td>
</tr>
<tr>
<td>2006-2010</td>
<td>2011-2015</td>
</tr>
</tbody>
</table>

Collection  
Intermediate Treatment  
Final Disposal  
Street Sweeping and Ditch Cleansing  
Privatisation and Other Activity  
Organisation  
Fee Collection  
Campaign

The details of the schedule are reproduced in Annex 6.3 of this Planning Guide.


**Figure 6.1 Constructing an Integrated Action Plan**

The Strategy will have been developed through a participation-led exercise in Step 5. During Step 6 the emphasis will shift more towards maintaining close dialogue with key decision-makers. The Steering Committee should take responsibility of directing overall activities, with the Working Group responsible for closely overseeing the process of options analysis.
Care should be taken to ensure that other key stakeholders are also involved during this process, and further participatory workshops can be held as an input to key decision-making points. These Workshops may be structured in a similar manner to those carried out during development of the Strategy.

The Action Plan should involve further stakeholder consultation and participation events to ensure that stakeholders continue to provide input and support to the measures being proposed.

It is essential to ensure that the Action Plan is realistic and can be implemented in practice. The work carried out prior to Step 6 should, however, ensure that there is a firm understanding of key ‘pressure points’ in the MSWM system, and major areas for action.

Avoid over-ambition. Actions should be carefully phased over time and include sufficient time for detailed planning, political approval and securing investment and operating budgets.

6.4 **Pre-Feasibility Study**

Preparation of an Action Plan will involve pre-feasibility studies of short-listed technical options. Pre-feasibility studies should be sufficiently detailed to allow decisions to be made on options to be pursued. More detailed feasibility studies will, however, be required to pursue the selected options into implementation.

Preparation of well-focused pre-feasibility studies is one of the most challenging aspects of waste management planning. Wide ranging decisions will need to be made, perhaps most controversially, the location of future landfill sites.

A model terms of reference for a landfill pre-feasibility study is provided in Annex 4C.4. An outline scope for such a pre-feasibility study is provided in Box 6.5.

The exact steps depend on the procurement procedure selected. For example, conventional procurement in the past always involved detailed design by a consultant and construction to that design by a contractor. If the design, build and operate (DBO) or build, operate and transfer (BOT) model for private-sector participation is to be used, then the focus is on preparing conceptual designs and performance specifications to be incorporated into tender documents.

Options should be assessed to the pre-feasibility stage. More detailed feasibility studies will be required prior to implementation of most investment projects identified in the Action Plan.
Box 6.5  Outline Scope for a Landfill Pre-Feasibility Study

- Public consultation
- Finalisation of information on waste quantities and facility capacity
- Finalisation of site selection, probably from a shortlist of perhaps three sites (the output from the pre-feasibility study, as part of the overall planning process)
- Environmental scoping or EIA, in accordance with requirements set down by the national government and/or the ESA. A standard ToR for an EIA is included in Annex 4C.4.
- Outline design and performance specifications, including
  - Site investigations
  - Site layout, access and acquisition
  - Conceptual design (e.g., of a landfill site) and performance specifications
  - Support facility specifications
  - Transportation system specifications
  - Conceptual design and specifications for transfer station(s) if required
- Financial and economic analysis, including affordability analysis
- Arrangements for ownership and operation, including options for private sector participation
- Consideration of requirements for closure and restoration of existing dump sites (if considered appropriate within the project scope)
- Compiling the feasibility report
- Preparing the terms of reference for the next stage

6.5  PREPARING AN INVESTMENT PLAN

Economic appraisal of alternative strategies is an important tool to assist in selecting preferred options for an Action Plan (see Step 4D). Economic analysis should be followed by a financial appraisal of the selected strategy.

The financial appraisal therefore establishes the financial viability of the action plan and is a crucial stage in the solid waste management planning process since it determines the magnitude of charges which the users must pay in order to finance a given strategy and level of service.

A financial appraisal establishes the revenue requirement necessary to cover operating costs and debt service liabilities, and to make a contribution towards asset replacement and service expansion costs out of internally generated resources.

A full review of financial planning and appraisal is provided in Step 4E and it is not intended to repeat that level of detail here. Instead, Box 6.6 below presents a summary of the main issues that need to be covered in a financial analysis for the Action Plan.
An Investment Plan should detail the specific equipment, vehicles and infrastructure required. A schedule of costs should be prepared, and backed up by a financial assessment setting out the detailed investment, operation and maintenance costs, and how these costs are to be sustained over time.

In many cases, implementation of all or part of the short-term Action Plan will be identified either as a project in its own right or as part of a larger investment. If funding is sought from an External Support Agency (ESA), then there may well be formal requirements for the detailed preparation and financial analysis of the project before it can be approved. Many ESAs may be able to assist in sourcing of grant funds for technical assistance for project preparation.

During preparation of the Action Plan, it is necessary to identify the first priority project or projects for investment. If funding from an ESA is being sought, then negotiations should be started as soon as possible in relation to the exact detail and scope of the project to be funded. Technically, this would include the siting, feasibility study, environmental impact assessment, design and construction of major facilities, procurement of equipment and vehicles, and technical assistance for institutional strengthening.

The feasibility study will generally focus on providing sufficient detail to allow both the government and an external support agency (ESA) to agree terms for a project loan. Once the loan is put in place there will typically be a number of additional steps, including detailed design and implementation and initial operations of the project.

Box 6.6 Key Issues in Financial Appraisal of an Action Plan

1. Arrangements for Financial Management
   This stage sets the scene for the appraisal by establishing the financial objectives for the action plan which will satisfy financing institutions. The key consideration in financial management is that the strategy is self-sustaining in financial terms in the long run. The objectives will be influenced by:
   • the extent to which costs must be recovered during the life of the scheme;
   • the level of future investment funding arrangements (and thus the debt service obligation); and
   • the level of direct municipal contributions to the service out of revenue.

2. Capital and Recurrent Financing Requirements (Cash Flows)
   The next stage involves identification of the finance requirements of the system, both capital and recurrent (operational plus debt service expenditures). The analysis will calculate average incremental costs (AIC). The financial AIC represents the charge per tonne of waste which would completely recover all costs and generate a return on investment equal to the average cost of capital. This forms a useful tool when formulating policy objectives on cost recovery, possible tariff structures and charge levels. The analysis should project future costs and revenues after taking into account the effects of inflation.
### Key Issues in Financial Appraisal of an Action Plan (continued)

3. **Sources of Capital Funds, Investment Funds and Financing Plan**
   - The financing plan summarises the total investment requirements, the proposed sources of investment finance, loan drawdown and debt servicing schedules. The key stages in preparing the financing plan, are as follows:
   - estimation of the total investment requirements - total funds needed over the implementation period ie capital costs adjusted for price contingencies plus provision for interest incurred during implementation;
   - identification of the sources of investment funds - principally national or state government loans or local government grants, commercial loans and international finance agency loans;
   - preparation of the financing plan - which will form part of the integrated financial model. This allows the effects of changes to the proposed investment financing structure to be observed directly in the sources and uses of funds table, and reflected in the profile of debt coverage ratios.

4. **Sources of Revenue**
   - Sources of revenue consist primarily of municipal transfer from general revenue, eg that obtained by taxation, or through user-charges. Whilst the latter source may be more desirable in terms of the ability to influence, it is rare that user charges can be introduced quickly or that all recipients of the service will be able to pay a direct charge. A **Sources of Funds statement** should be drawn up to provide an overview of the total funding arrangements and cash position of the strategy over time, and to assist in assessing the financial implications of alternative investment or recurrent funding structures.

5. **Cost Recovery and Cross-Subsidies**
   - The cost of providing the SWM service may be recovered either indirectly through some form of taxation, or directly through user charges. The system should be selected to maximise recovery of costs within the constraints of the legal and administrative system. As noted in 4 above, it is not always possible to levy a user charge and it is likely that a mix of revenue sources will be used. In addition, where some sections of the municipality cannot pay for the SWM service, the service regulator will need to consider the use of cross-subsidy of the service such that more affluent sectors pay sufficient charges to ensure city-wide service provision.

6. **PREPARING AN IMMEDIATE ACTION PLAN**

An Immediate Action Plan is an important vehicle through which to maintain the momentum of the Strategic MSWM Plan. The Immediate Action Plan should mobilise stakeholders into action, combining preparatory work for major infrastructure and service developments with areas that can be progressed with limited resources or finances. An example of an Implementation Action Plan, prepared during field testing of this Guide in Vietnam, is presented in Annex 6.1.

Progressing immediate actions will help to ensure that the momentum established during the planning process is not lost, and demonstrate a commitment on the part of the municipality to improvement of MSWM services.
Pilot projects are an important method of testing out new innovative methods before full-scale implementation. Pilot projects will allow new systems to be tested, and practical experiences gained to feed into the design of the wider scheme. Care should be taken to ensure that pilot projects are sustained, and expectations of local communities are not raised unnecessarily.

Test innovative ideas in pilot projects prior to full-scale implementation.

Examples of testing innovative ideas might include demonstration of the range of new collection systems in one zone of the city, or the pilot testing of an innovative approach to composting or recycling, which could take place at a central ‘ecology centre’ alongside, for example, a sanitary landfill site. Typically, the landfill could be funded through loan financing from an ESA, while the pilot testing could be of interest to a bilateral agency for grant funding.

6.7 OBTAINING THE NECESSARY APPROVALS FOR THE STRATEGIC MSWM PLAN

In the Strategic Planning process we have now almost reached the end point as we have completed both components of the Strategic MSWM Plan: the Strategy and the Action Plan.

Now there is one more important hurdle to take before implementation activities can start: Final Consensus on and approval of the Strategic Plan.

Throughout this Planning Guide, the need to integrate stakeholders in the Strategic Planning process and the need for consensus and ownership of the Strategic Plan has been emphasised many times. The Strategic Plan has to be accepted and supported by the stakeholders. Furthermore, the provision of a budget has to be agreed on by the relevant financing bodies.

A participatory workshop should be held to discuss and gain input into the Action Plan. As many of the necessary actions are spread widely across stakeholder groups, this Workshop is vital to ensuring the necessary commitment from these stakeholders. The final consultation meeting should be held after at least an initial review of the overall Strategy and the Action Plan by the Steering Committee.

A further participatory workshop should be held to present and discuss draft Action Planning proposals. This represents the final opportunity to enlist the opinions and support of stakeholders in implementation of the Strategic MSWM Plan.

Inputs from the stakeholders at the final consultation workshop, and approval and endorsement of the Strategic Plan by the Steering Committee, are necessary but generally only preliminary steps in the overall approval process. The final
version of the Strategic MSWM Plan needs to be prepared and published, perhaps initially as a version for public comment. In parallel, the Steering Committee will need to walk the Strategic Plan through the various local decision-making and approval processes, which may include, for example:

- Approval by the Mayor or Mayors;
- Approval by the City Council(s);
- Approval by the Regional/ National Authorities;
- Approval (and negotiation) of funding and allocation of budgets by the municipalities, national governments and ESAs (where necessary)

These processes vary widely from country to country and no precise guidance can be given.

Whatever the country, some process of political approval and obtaining of the necessary budgets for implementation will be necessary. To avoid delays and loss of the credibility of the planning process as a whole, it is essential to:

- ensure one or more “champions” to guide the Strategic Plan through the process;
- prepare and plan for this essential step well in advance; and
- implement in parallel key immediate actions

It is possible that one or more of the actions identified in the Action Plan also relate to ongoing consultation and approvals. This is particularly the case where cooperation between municipalities, or reassignment of responsibilities between municipalities, is proposed as part of the plans for institutional strengthening plan.

The planning phase of the Strategic Plan development is, in principle, finalised at this point. The Working Group can now move on to implementation as discussed in Step 7 of the Planning Guide.