

# Guidelines for preparing Strategic Waste Management Plans for Municipalities in Turkey



Final version 2009-07-15 updated 2013-09-30

Authors

Nils Lundkvist  
Carl-Lennart Åstedt

## **Introduction**

A Strategic Waste Management Plan is an efficient way to discuss and present a long term vision of the waste management and waste handling of a municipality and a region. It is also an efficient way to present the short term methods to achieve targets defined in the vision.

## **Foreword/introduction for the mayor**

These guidelines have been produced to support political and technical achievements for a more sustainable environment in every local municipality in Turkey. When political targets exist and have been formulated there is a need to gain approval from the citizens by fulfilling the promised targets. Getting the approval of citizens and other stakeholders makes implementation easier and produces better results.

These guidelines will make it easier for the political level in the municipality's organisation to steer against the most important local targets on waste management.

The guidelines aim to provide municipal political organisations and administrations the tools to deal with several environmental issues in the municipality as well as to increase development of the municipality and to carry out and develop waste management. Examples of issues tackled include: using waste for production of electricity; using food-waste for production of bio-fuel; lowering the impact of waste management on the environment; reducing pollution of air and land.

Starting and organising the project in the right way is crucial for getting creative and realistic solutions to the municipalities' waste problems.

## **Foreword/introduction for the director, civil servants and all other interested readers**

The scope of these guidelines is to make it easier to reach national and local political targets for effective and sustainable waste management. They will give you tools to produce a structured plan for planning, realization and, last but not least, for follow-up and revising.

## Table of Contents

Introduction on Guidelines for the steps in the procedure for establishing the Strategic Waste Management Plan. ....	4
Waste management planning .....	4
Overall process for establishing and maintaining a Strategic Waste Management Plan.....	6
Chapter 1 .....	8
Legislation influencing waste management and waste handling.....	8
Chapter 1.1 National legislation .....	8
Chapter 1.2 Regional legislation .....	8
Chapter 1.3 Local “legislation” .....	9
Chapter 2 .....	9
Present situation of waste management in the domain of Strategic Waste Management Plans.....	9
Chapter 2.1 National situation .....	9
Chapter 2.2 Regional situation .....	10
Chapter 2.3 Local (Metropolitan) situation.....	10
Chapter 2.4 Local (Municipal) situation.....	11
Chapter 3 .....	11
Political and technical visions. ....	11
Chapter 3.1 Existing long term visions or targets .....	13
Chapter 3.2 New long term visions or targets .....	13
Chapter 3. 3 Existing short term local visions or targets .....	13
Chapter 3.4 New short term local visions and targets .....	13
Chapter 4 .....	14
Methods to reach short and long term targets.....	14
<i>Comments to methods</i> .....	15
Chapter 5 .....	17
Evaluation and follow-up of targets in chapters above.....	17
Chapter 5.1 “Technical methods” to evaluate and follow-up the targets... ..	17
Chapter 5.2 Time-table for evaluation and follow-up of the targets in Chapter 3.....	18
Chapter 5.3 Time-table for revision of the Strategic Waste Management Plan.....	19
Chapter 6 .....	19
Useful websites and publications.....	19
Chapter 6.1 Further information.....	19

# Introduction on Guidelines for the steps in the procedure for establishing the Strategic Waste Management Plan.

## Waste management planning

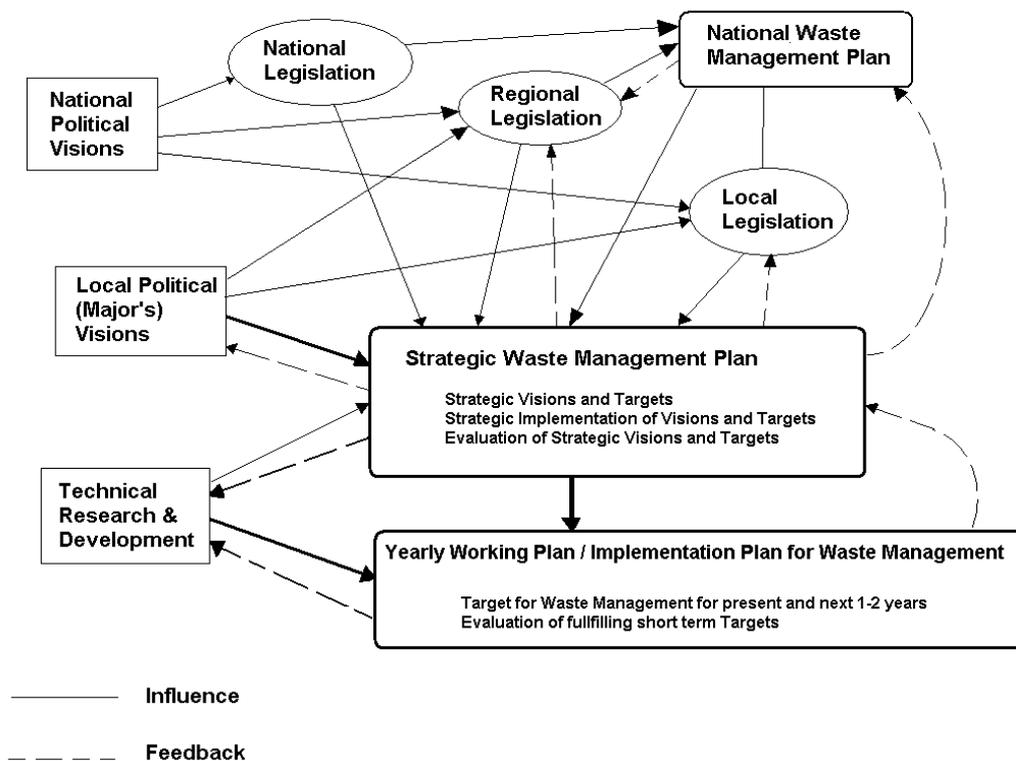
A Solid Waste Management Plan is an instrument for

- describing,
- planning and
- interaction between
  - Strategy and vision from politics, citizens, NGO's, civil servants, etc.
  - Legislations

and practical waste management as

- Collection
- Recycling
- Treatment

This guideline shows the steps and the content to establish the plan.

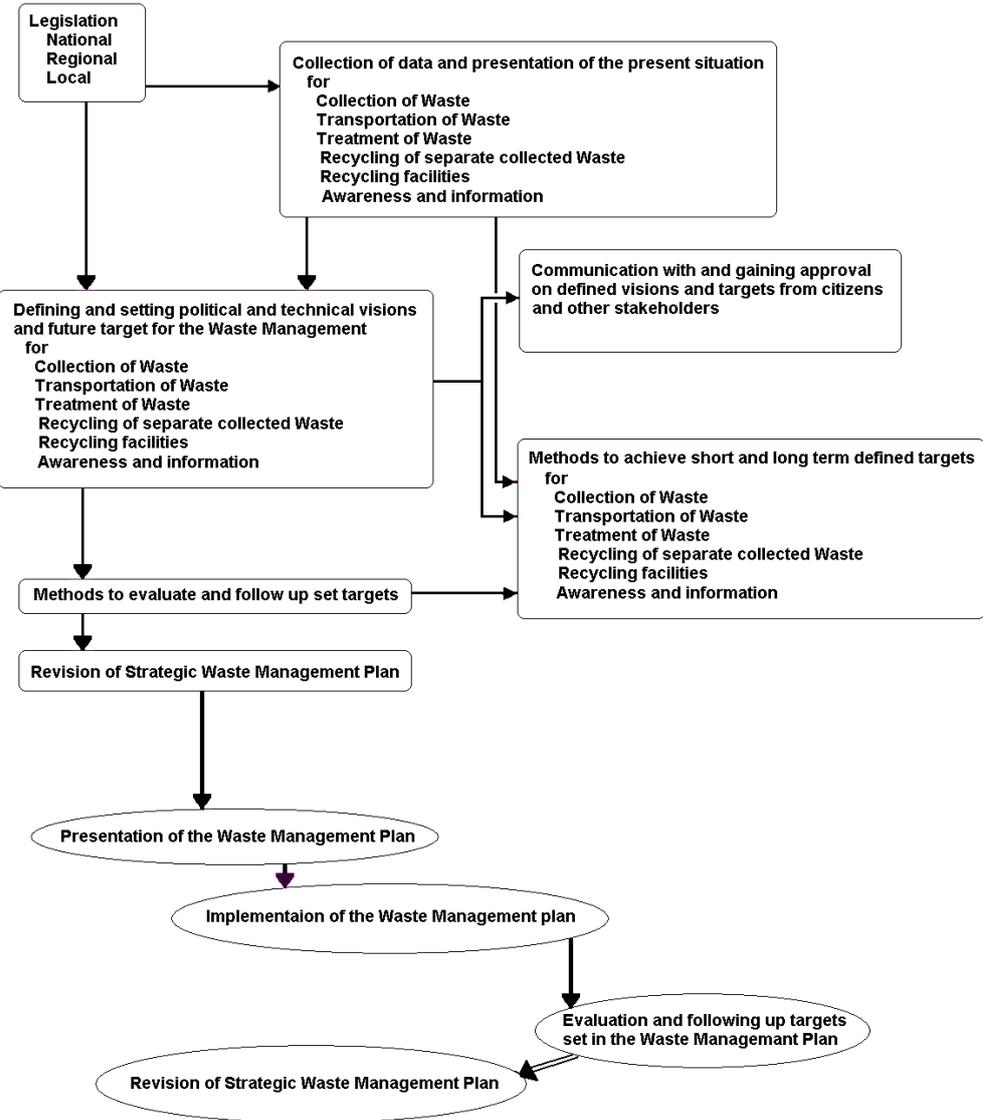


### ***Why waste management plans?***

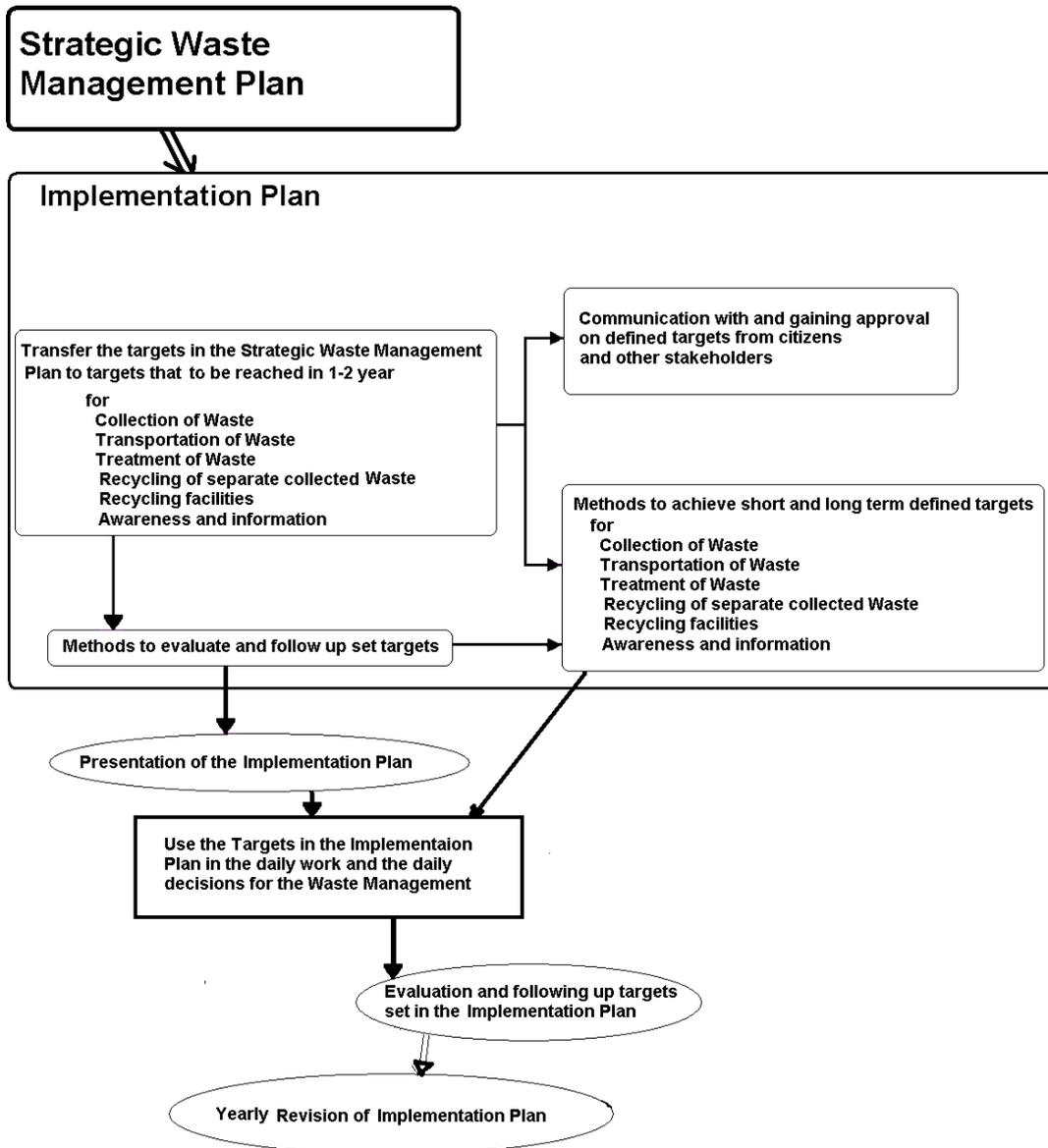
- Who is the target-group for the Strategic Waste Management Plan?  
(Example of target-group: The mayor, political decision-makers, waste management administration, citizens in the municipality etc.).
- The Strategic Waste Management Plan, the local waste management plans and the Yearly Working Plan/Implementation Plan have key roles in achieving sustainable waste management. The purpose of the plan is to be the framework for handling waste streams and waste treatment options today and in the future.
- Waste management plans are important tools for national as well as local levels to reach policies and targets in waste management. Therefore, and not least, it will support the ambitions of the mayor and the municipality in this field.
- Waste management plans are important tools to outline waste characteristics and sufficient capacity for managing waste.
- Waste management plans are important tools to define, follow-up and have control of realistic technical measures.
- Waste management plans are important and useful tools for dialogue with decision-makers on national level about the lack of national laws – legislation for local collection of waste and for regional treatment of waste.
- Waste management plans are important for outlining requirements for financing and investments in waste management that contribute to a sustainable future
- National legislation requires plans for municipalities with more than 50 000 citizens.

# Overall process for establishing and maintaining a Strategic Waste Management Plan

Diagram outlining the Strategic Waste Management Plan approach.



To obtain a tool for daily use, the waste administration needs to transfer the visions and policies in the Strategic Waste Management Plan into detailed targets in the form of a Working Plan/Implementation Plan for the administration. Generally the Working Plan/Implementation Plan has an operational life-time of one year. The Working Plan/Action Plan/Implementation Plan is normally revised ever year.



The following parts of the guidelines shows the different chapters that have to be discussed in the plan. It also gives examples of the content in the chapter. The short question in each chapter should be discussed, evaluated and answered as a preparation for filling in the content. The chapters can be used as a type of checklist but are not a complete list. More questions can of course be found, and must be discussed in the plan for some of the municipalities and for specific types of waste.

## Chapter 1

### Legislation influencing waste management and waste handling.

#### Chapter 1.1 National legislation

Describe national legislation that has an affect on national visions and policies for waste management. Just give the reference list of where to find the legislation and the name of the laws, by-laws, ordinances on recycling, producer responsibility, regulations on waste transportation, ordinances on building and running waste treatment plants etc.

Detailed and complete versions of laws, by-laws, ordinances on recycling, producer responsibility, regulations on waste transportation, ordinances on building and instruction running waste treatment plants etc. shall be presented as an appendix to the Strategic waste Management Plan. These appendixes are for readers that want to have more and complete information.

It can be of interest, in terms of understanding the Strategic Waste Management Plan, to define the most important visions and targets from the legislation. The Chapter on national legislation shall ***not be more than one page.***

#### ***Recommendation for fact-collection***

In Turkey there is a national waste management plan. You can get more information on this on the Ministry of Environment and Forestry website.

#### *Important questions when you study national legislation:*

- What are pointed out as being responsibilities of the local and regional level?
- Are there any time limits for the municipalities to bring forward waste planning material and documents?
- Find out if there are different steps defined for approval of the plan?
- How does the law about producer responsibility affect the local situation and planning?
- Is the national legislation enough for steering the waste in the best way? For example, does an administrative system exist to avoid misuse of sanitary landfills and are financial or technical regulations in place.

#### Chapter 1.2 Regional legislation

Describe the regional legislation that affects and sets regional visions and policies for waste management.

The metropolitan authority has the responsibility for waste treatment and for granting certain mandatory permits for waste management.

- What regional by-laws and ordinances exist?

Only give the reference list of where to find the legislation and the name of the laws, by-laws, and ordinances.

It can be of interest, in terms of understanding the Strategic Waste Management Plan, to define the most important visions and targets from the regional legislation. The Chapter on regional legislation shall **not be more than one page**.

*Important questions when you study the regional legislation:*

- What speeches, written documents or other documents exist that contain visions and policies?
- What a regional vision is the metropolitan mayor's vision of current and future waste management.
- What legal, political and civic legitimacy has these visions and policies?

### **Chapter 1.3 Local "legislation"**

- What local by-laws and ordinances exist?

Describe the municipal legislation that affects and sets municipal visions and policies for waste management.

Just give the reference list of where to find the legislation and the name of the laws, by-laws, and ordinances.

It can be of interest, in terms of understanding the Strategic Waste Management Plan, to define the most important visions and targets from the municipal legislation. The Chapter on local legislation shall **not be more than one page**.

*Important questions when you study the local legislation:*

- What speeches, written documents or other documents exist that contain visions and policies?
- What a municipal vision is the municipal mayor's vision of current and future waste management
- Are all responsibilities according to by-laws or directives from the city council clear and updated?
- What legal, political and civic legitimacy has these visions and policies?

## **Chapter 2**

### **Present situation of waste management in the domain of Strategic Waste Management Plans.**

#### **Chapter 2.1 National situation**

Give a short description of the present situation regarding how waste management is organized in the country.

The description shall include an overall sketch on the waste management organisation.

- Who is responsible for the different parts of waste management collection, transportation, treatment, recycling, legislation, education, information,

development, granting permits for collection, transportation, treatment, recycling, etc? (very short overall description, maximum 2-3 pages)

This description and sketch shall be divided into:

- ◇ **Municipal Solid Waste**
- ◇ **Commercial Waste**
- ◇ **Material recycling**

## **Chapter 2.2 Regional situation**

Give a short description of the present situation regarding how waste management is organised in the region and a short overall description of the influence on local waste management.

The description shall include an overall sketch on the waste management organisation.

- Who is responsible for the different parts of waste management collection, transportation, treatment, recycling, regional legislation, regional permits for collection, transportation, treatment, recycling, education, information, development etc? (very short overall description, maximum 2-3 pages)

This description and sketch shall be divided into:

- ◇ **Municipal Solid Waste**
- ◇ **Commercial Waste**
- ◇ **Material recycling**

## **Chapter 2.3 Local (Metropolitan) situation.**

Give an overall, but short, description of the present situation of the waste management system in the metropolitan area. The chapter shall give political, technical descriptions and statistics on volumes/quantities/type of waste, by which the waste is collected and transported, how and where the waste is treated.

The description shall include an overall sketch on the waste management organisation.

- Who is responsible for the different parts of waste management collection, transportation, treatment, recycling, metropolitan legislation, metropolitan permits for collection, transportation, treatment, recycling, and education, information, development etc? (very short overall description maximum 2-3 pages)

This description and sketch shall be divided into:

- ◇ **Municipal Solid Waste**
- ◇ **Commercial Waste**
- ◇ **Material recycling**

Detailed statistics, detailed technical descriptions etc. can be described in an appendix.

*Other important questions:*

- What is a suitable way of defining and categorisation the waste?

- What kind of waste is generated in the municipality? The survey should be on all important waste regardless of who is the producer. In a Strategic Waste Management Plan all types of waste must be identified and reported.
- Are present statistics and categorisations trustworthy?

### **Chapter 2.4 Local (Municipal) situation.**

Give an overall but short description of the present situation of the waste management system in the municipality. The chapter shall give political, technical description and statistics on volumes/quantities/type of waste, by whom the waste is collected and transported, how and where the waste is treated.

The description shall include an overall sketch on the waste management organisation.

- Who is responsible for the different parts of waste management collection, transportation, treatment, recycling, municipal legislation, municipal permissions for collection, transportation, treatment, recycling, and education, information, development etc? (very short overall description maximum 2-3 pages)

This description Sketch shall be divided into:

- ◇ **Municipal Solid Waste**
- ◇ **Commercial Waste**
- ◇ **Material recycling**

Detailed statistics, detailed technical descriptions etc. can be described in an appendix.

*Other important questions:*

- What is a suitable way of defining and categorisation the waste?
- What kind of waste is generated in the municipality? The survey should be on all important waste without regard for who is the producer. In a Strategic Waste Management Plan all types of waste must be identified and reported.
- Are present statistics and categorisation trustworthy?

## **Chapter 3**

### **Political and technical visions.**

Describe the existing political and technical decisions on targets for waste management and environment in the municipality. Also describe new local political visions and targets for future waste management.

The procedure to identify and define visions and targets at the local level involves studying national, regional and local legislation combined with input from the mayor and the mayor's office. Look for speeches, written documents or other documents existing that show visions and policies?

It is also of great importance that other stakeholders can give inputs to visions and targets established in the Strategic Waste Management Plan.

It would be a misuse of the organisation's resources to produce plans that can be described as a "desk product for the bookshelf". It would not be a useful steering document and would not support the prosperous development of a municipality.

There are some questions that might be very important for the mayor, the mayor's office and the waste administration to answer when starting the planning process:

- What are the 2-3 main municipal sustainability problems?
- What are the 2-3 main local waste management problems?
- What are the waste management problems on national, regional and/or municipal level?
- Can better handling of waste management solve other municipal problems/questions at the same time (e.g. solve waste problems and get biogas for busses and better air quality in the city and finally support climate issues at the same time.)? Finding waste management solutions that can solve more than one question is a creative and important challenge. Because of this, both internal and external stakeholders should be brought together at an early stage of the planning-process. With this strategy implementation of ideas could be easier. With the same motivation, we strongly advise involving and getting approval from other strategic partners in the municipality organization e.g. planning department, companies run by the municipality etc.
- Technical plants for collection, transportation, or treatment of waste mostly require a significant investment. The waste administration and mayor's administration may, at an early stage, need to consider if it is convenient to cooperate with other municipalities for technical solutions, areas for plants and financing the plant etc.
- The waste administration and the mayor's administration may define waste management problems that must be solved on a national level. The main advice is to start a process to give the mayor and the mayor's office more knowledge of the situation. This knowledge opens and gives the possibility to act for adjustments on national legislation and regulations.

As a complement, these visions can be defined through seminars or study visits.

#### *Comments to planning process and public consultation.*

It is important for every country and local municipality to have an organised system for collecting and publishing environmental data to enable assessment of actual environmental conditions, evaluation of environmental policies efficiency and dissemination of environmental information.

As the environment largely can be seen as part of the welfare system, it is important to create trust for the different technical systems established at the local level.

One important factor is to give citizens free access to environmental information. Raising awareness will also be part of a continuously ongoing education of all people in a society.

It is important to arrange a process that makes it possible to gather experiences from citizens and different organizations, industry and other municipalities as inputs for the planning procedure.

To engage non-governmental organisations (NGOs) at an early stage, it is important to find public comments on all major environmental-related policies and programs. In that way it

might additionally lead the way to a smoother environmental approval processes for establishing new technical plants.

The environmental impact assessments of a Strategic Waste Management Plan might be an important tool to create trust with NGOs.

To support the creation of a local environmental industry - that can be part of a solution for modern waste management – it is important to involve environmental industry representatives so that they are ready to implement solutions.

Farmers are also important stakeholders. They may be future receivers for recycled clean organic products in a circulation process between the city and the farmers.

The municipalities must of course find a fruitful way of interacting with regional organisations (e.g. metropolitan level) and others responsible for final treatment of waste.

### **Chapter 3.1 Existing long term visions or targets**

Define and write down long term political and technical visions as well as long term previously agreed political and technical decisions on targets for waste management and environment in the municipality. A long-term duration is 1-5 years for the first Strategic Waste Management Plan. For following Strategic Waste Management Plans “long-term” often means 2-10 years and sometimes longer as “long-term visions”.

### **Chapter 3.2 New long term visions or targets**

Define and write down visions of the future waste management of the municipality that have not already been presented. These visions emerge when the mayor, the citizens or any other stakeholders see a problem involving waste collection, waste treatment, waste handling or environment that has to be solved.

It is important that the targets are formulated in a realistic way taking local financing and technical aspects into consideration.

The long-term duration is 1-5 years for the first Strategic Waste Management Plan. For following Strategic Waste Management Plans “long-term” often means 2-10 years and sometimes longer as “long-term visions”.

### **Chapter 3.3 Existing short term local visions or targets**

Short term political and technical visions: Short term visions and targets already made through political and technical decisions regarding waste management and environment in the municipality. A short-term duration is from 1 year to a maximum 2-3 years.

### **Chapter 3.4 New short term local visions and targets**

To broaden knowledge of the present waste management situation and the above presented visions, it is possible to define questions and problems that still lack established targets. These questions can be defined through seminars and study tours to suitable cities within Turkey or even abroad:

- What kind of ambitions does the municipality wish to present to citizens?
- What kind of ambitions does the municipality wish to present to the national and regional waste administration?

- What kind of ambitions does the municipality wish to present to local industry?

## Chapter 4

### Methods to reach short and long term targets.

In this chapter the description shall include the steps needed to be taken, the necessary resources allocated and the final measures that need to be taken to achieve the targets presented as short-term and long-term targets.

The Strategic Waste Management Plan is, as the name implies, a strategic document. After presenting the methods to reach the targets in the Strategic Waste Management Plan, this plan has to be broken down to a yearly Working Plan/Action Plan/Implementation Plan. The yearly Working Plan/Action Plan/Implementation Plan is the tool for the waste management organisation in their daily work.

The Working Plan/Action Plan/Implementation Plan is the document which describes the detailed targets the waste management organisation has to reach during the next year. The targets have to be described and defined in a way that the organisation understands. The Working Plan/Action Plan/Implementation Plan also has to be written in a way that the organisation understands how to follow up the results of the work.

This description shall be divided into:

◇ **Developments and complements to reach targets presented in chapters above.**

For example:

- Tendering process
- Green procurement
- Recycling (methods and partners)
- Financing (tax, fee etc. both local and national)

◇ **“Technical methods” to achieve targets presented in chapters above.**

For example:

- Collection method (mechanised collection etc.)
- Transportation (non-fossil fuel etc.)
- Treatment methods and treatment plants (methods and partners)
- Information and communication (awareness)

## **Comments to methods**

To find methods for reaching the targets in the Strategic Waste Management Plan it is also important to co-operate within the municipalities own organisations e.g. urban planning organisation around demolition waste, infrastructure for transportation and building, water and sewage organisation for sludge etc.

For implementation of the Strategic waste Management Plan, co-operation and integration within the municipality's own organisation is an absolute necessity.

Here are some ideas to be considered:

- Land-Fills always need to be covered during and after operation to reduce different environmental problems. For instance, can soil and other materials from major construction and excavations projects within the cities be part of the land-fill operation and treatment? In that case this will influence land-fill structures and demolition waste handling.
- For creation of park areas, top-soil manure is essential. By treating food waste or municipal waste water sludge through digestion, the residue can be used for this purpose.
- Digesting food-waste or municipal waste water sludge produces bio-gas. This bio-gas can be cleaned and used as methane gas fuel for the municipal bus-fleet or car-fleet and be an important example of recycling. This can not be operational directly but could be planned and implemented during the Strategic Waste Management Plan duration.
- There is an opportunity for the municipality to work in a preventive way by local guidelines for building permissions or similar activities.
- Revised directives regarding permission for new buildings to take care of waste in a more sustainable way (e.g. areas for "not mixing waste"/separated collection of recycling materials.)

## **Create a sustainable financial system for the whole local waste system**

### ***On the national level - Tax on landfill waste***

On the national level it might be interesting to introduce a tax on waste disposed on landfill sites. The Strategic Waste Management Plan can include a recommendation for national implementation of a tax-legislation on land-filling.

*(In Sweden the rate is around 60 TYL per tonne of waste. The purpose of the tax is to make land filling a less attractive option and to increase the financial incentives to use waste treatment methods that are preferable from an environmental and natural resources perspective.)*

### ***Financial system on the local level***

To establish a system for financing of local waste management, it is necessary to consider the following aspects:

- Is it possible to arrange a local system for a waste-fee?
- Who pays the waste administration for collection and treatment of municipal solid waste?
- Who pays the waste administration or the waste collector for collection and treatment of commercial waste?

- Who pays for collection and treatment of recyclables such as paper, plastic, glass etc?
- How can the waste fee be collected? Is it possible to send out a waste handling bill or is it possible to combine the waste fee with the fee for water consumption?

A local study for Istanbul has shown that the efficiency of tax collection has decreased gradually in the Istanbul area since 1994. Solid waste collection cost recovering ratio of tax was 30 % in 2001 (*Finance and cost of collection service of municipal solid waste in Istanbul, KARADAG and SAKAR*).

The cost of solid waste collection is equal to 60 – 80 % of total integral solid waste management expenditures.

Methods to reduce the amount of waste for transportation, to create a more efficient transportation system, and future waste treatment systems with lower costs and even incomes are of course crucial for the financing of waste management.

### ***Awareness***

Education of staff and students and other important target groups are the first steps towards establishing long-term sustainable waste management.

Environmental education programmes, combined with information access via the internet and brochures, are ways to provide staff and citizens with knowledge and awareness of environmental issues. As a result of this, staff and citizens are able to make responsible choices that affect the environment and waste management. In this way, they can maintain and improve the quality of their own life and that of future generations. It must be taken for granted that the municipality should be seen as a good example.

Teaching about basic environmental and waste issues can begin at day-care centres and pre-schools. The national school curricula should offer support for continual teaching at compulsory schools and secondary level schools.

Environmental education for adults can be provided in courses administrated by local authorities, eventually in study courses arranged by local educational associations and at the workplace by enterprises. This education could mainly focus on the effects of lifestyles on the environment, public health and community development and the key role played by sustainable waste management.

### ***Statistics and data***

How to get more secure waste statistics for future revisions of the local Strategic Waste Management Plan?

- Weighing the waste when collected/at the transfer station/at the waste treatment plant continuously.
- Studies of the composition of the waste 1-2 times during the duration of the Strategic Waste Management Plan.
- Future identification and registration of collection-points and collection.

### ***Procurement of Waste Management services***

- Green procurement

Green procurement is an important tool to create change and establish markets for environmental friendly products. It is also an important signal to the citizens that the

municipality is at the forefront in waste management. Finally it can reduce costs both for municipal waste management and other areas in the municipal administration.

Six steps to start the “green procurement process”:

*Make an analysis*

Try to make an analysis of the whole lifecycle of all products and services that the organisation is using.

*Formulate targets for the procurement*

Integrate these targets with other targets for the organisation.

*Create a strategy*

This strategy must be formulated by the management team.

*Put demand on providers*

The providers should fulfil standards and the targets given for instance in accordance with international standards, ISO 9000.

*Engage everyone*

Educate everyone about the targets and the background for the procurement process.

Give reports of success and failures to all co-workers. Tell everyone how they can support the process for a more sustainable municipality.

*Verify the result*

Let an auditing firm or colleagues from another department go through the results and suggest changes and improvements.

## **Chapter 5**

### **Evaluation and follow-up of targets in chapters above.**

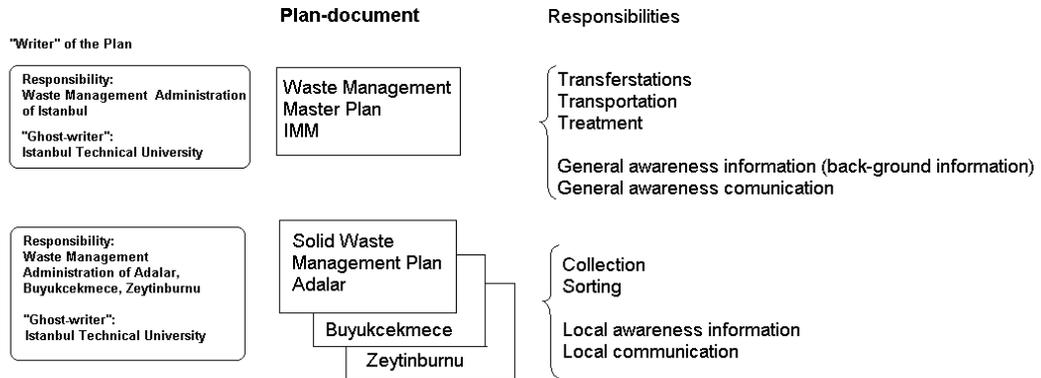
#### **Chapter 5.1 “Technical methods” to evaluate and follow-up the targets**

Describe a system to let the national level know the “hard facts” from municipalities?

For example as follows:

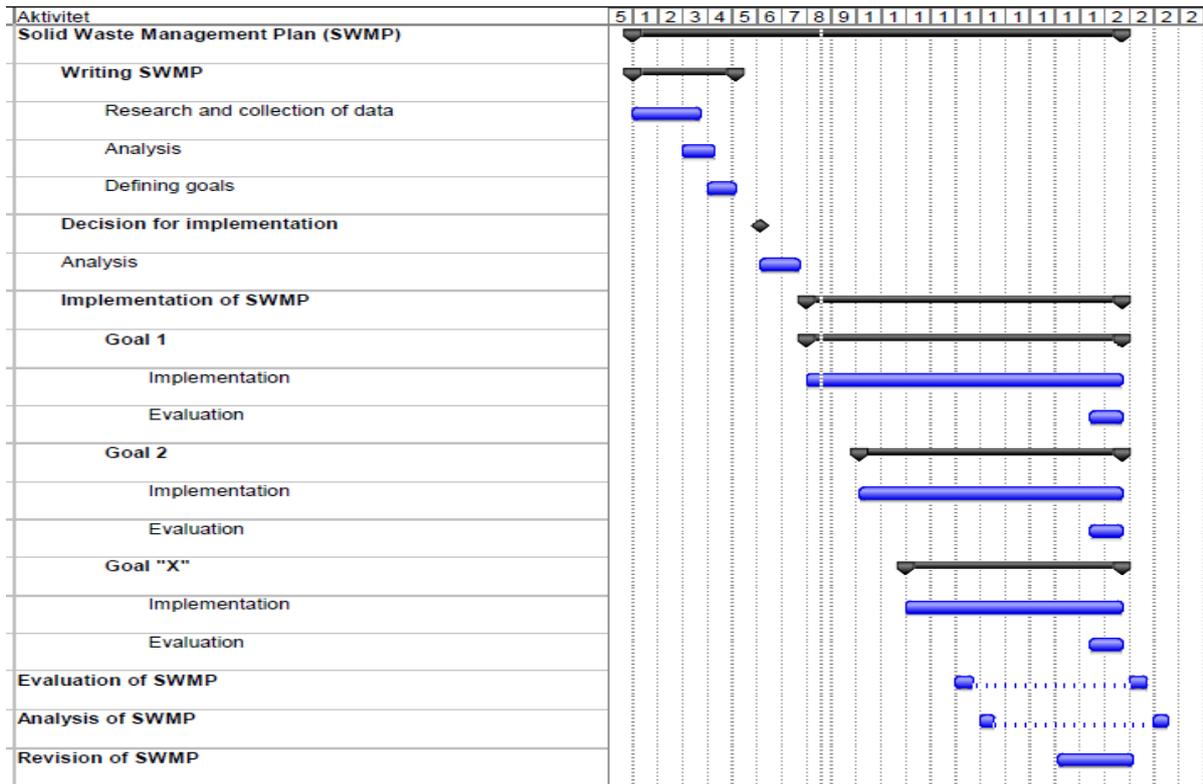
Diagram showing the procedure for writing the Strategic Waste Management Plan

**Preparing of Waste Management Plans for  
Istanbul Metropolitan Municipality  
Adalar Municipality  
Buyukcekmece Municipality  
Zeytinburnu Municipality**



**Chapter 5.2 Time-table for evaluation and follow-up of the targets in Chapter 3**

For example as this



## Chapter 5.3 Time-table for revision of the Strategic Waste Management Plan

For example as this

ID	Aktivitet	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Solid Waste Management Plan (SWMP)	[Timeline bar from 1 to 23]																						
25	Evaluation of SWMP																							
26	Goal achievement																							
27	Goal 1, statistics, data etc																							
28	Goal 2, statistics, data etc																							
29	Goal "X", statistics, data etc																							
30	Analysis of SWMP																							
31	Was the goals achievable, relevant etc. ?																							
32	Do the goals have to be adjusted ?																							
33	Revision of SWMP																							
34	Extending former goals ?																							
35	New goals due to new legislation, new political decisions, technical development etc.																							
36	Writing a new SWMP for the next 5-10 years																							

## Chapter 6

### Useful websites and publications.

#### Chapter 6.1 Further information

External information can be found on e.g.:

- EU: [http://ec.europa.eu/environment/waste/plans/pdf/wasteguide\\_final.pdf](http://ec.europa.eu/environment/waste/plans/pdf/wasteguide_final.pdf)
- Turkey's Ministry of Environment and Forestry
- National waste management plans and strategies