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**Republika Kosova-Republic of Kosovo**  
*Qëveria - Vlada - Government*

**MINISTRIA E MJEDISIT DHE PLANIFIKIMIT HAPËSINOR**  
**MINISTARSTVO SREDINE I PROSTORNOG PLANIRANJA**  
**MINISTRY OF ENVIRONMENT AND SPATIAL PLANNING**

**STRATEGY OF THE REPUBLIC OF KOSOVO**  
**ON WASTE MANAGEMENT**

**2013-2022**

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The Strategy of the Republic of Kosovo on Waste Management was drafted by:  
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**VISION: 2013 - 2022**

**Reducing**

**Reuse**

**Recycling**

**Energy  
Production**

**Disposal**



### Minister's speech

The Strategy of the Republic of Kosovo on Waste Management will have a key role in developing sustainable waste management. Through this strategy we intend to establish policies that would provide a planning framework, which will set out the targets according to the Action Plan on Waste Management and local plans, as the most important instruments for the implementation of policies and achievement of objectives on waste management, as components of the economic development.

Houses, businesses and various industries produce waste everyday, which may cause adverse effects on human health and the environment. The appropriate waste management will need commitment and resolve from every one of us. And as individuals and organisations we are becoming increasingly aware of our impact on the environment, and the need to look after the precious resources and protecting the environment and the human health.

We live in a time of rapid change and therefore we aim to implement the best practices of the regional and EU countries. So far we have achieved to draft the legislation on waste, which is well aligned with the EU legislation.

Now, we must make efforts to implement the law and monitor the status of the waste management.

The concentration will be primarily on the implementation of the principle of waste management according to the priority, namely avoiding waste creation as much as possible, aiming at development of projects for waste reusing and recycling, because in this way we will reduce the necessary spaces for the waste disposal and simultaneously reduce the pollution of the environment from waste.

There is still much to be done in Kosovo as regards to the waste management. We should continue to remove, prevent and reduce the waste quantity. Above all, we have to recognise that everything we use and throw away is a resource which has a value, a value that we should try to preserve and use again wherever possible.

The solution of the problems related to waste management requires the inclusion of all participants and coherent planning in order to avoid the duplication of the attempts of participants.

I believe that this Strategy sets realistic, ambitious and sustainable objectives, and that it gives clear signals that allows us to make plans, take decisions invest in proper and efficient management of waste in order to ensure cleaner environment for the future generations.

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The Strategy on Waste Management was prepared by the Ministry of Environment and Spatial Planning (MESP) in cooperation with the aforementioned.

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## Abbreviations

KAP	Kosovo Agency for Privatization
KEMP	Kosovo Agency for Medical Products
KEPA	Kosovo Environment Protection Agency
MAFRD	Ministry of Agriculture, Forestry and Rural Development
BAT	Best Available Technology
BE	European Union
Cd	Cadmium
GIZ	Gesellschaft für Technische Zusammenarbeit
JICA	Japan International Cooperation Agency
IPPC	Integrated Pollution Prevention and Control
EC	European Commission
KEC	Kosovo Energy Corporation
KFOR	NATO peace forces in Kosovo
KLMC	Kosovo Landfill Management Company
MESP	Ministry of Environment and Spatial Planning
MH	Ministry of Health
Mton	Million tonnes
Pb	Lead
PBB	Poli Bifenil Bromur
PCB	Poli Klorur Bifenil
PCT	Poli Klorur Trefenil
MIP	Mitrovica Industrial Park
SRKWM	Strategy of the Republic of Kosovo on Waste Management
PRKWM	Plan of the Republic of Kosovo on Waste Management
TC	Termocentral
TCA	Termocentral A
TCB	Termocentral B
KPF	Kosovo Protection Force
AI	Administrative Instruction
KB	Budget of Republic Kosova

## INTRODUCTION

The current situation of the waste management in the Republic of Kosovo is very difficult. According to the report on state of the environment and report on the situation in Kosovo on waste, the amount of waste increases continuously, while the waste management and infrastructure are far from being desirable. The Kosovo Strategy for Environmental Protection (2013-2022) foresees the objectives and measures for the improvement of the condition and waste management. The Section 8 and 9 of the Law on Waste Nr. 04/L-060, obliges the drafting of the Strategy of the Republic on Waste Management, which contains the description and evaluation of the current situation of waste management; basic aims and measures for waste management; measures that should be taken for the management of hazardous and non-hazardous waste; processing and treatment of waste in compliance with the principles for environmental protection; preservation and safe disposal of waste; provision of technical, production and administrative standards, aimed at achieving the goals for waste management, etc.

The Strategy drafted by the MESP, in cooperation with other competent ministries and authorities shall cover a period of ten years and shall be approved by the Government of the Republic of Kosovo, upon proposal of Minister. The Strategy shall be reviewed at least every five years, while the Action Plan on Waste Management, which is based on the strategy, shall be drafted for five-year period.

The lack of the functional system for waste management has had negative effects in the environment; water, air, land and human health. The groundwater is the most endangered from the waste, including the hazardous waste, accumulated in the premises of different production companies.

Large quantities of chemicals and industrial and mining leftovers with high content of heavy metals were inherited from the pre-war Kosovo industry of the socialist time, which were never treated. Due to un-cotemporary processing technologies, which failed to enable sufficient use of raw materials, there are huge amounts of mining waste in the landfills, which are actually causing great damages to the environment where they are located, by polluting the air, land, surface water and groundwater. Researches, financial resources and technological equipments are needed for their renovation.

Importing large amounts of food products, old machinery and used vehicles has produced large amount of waste in Kosovo. Post-war emergency aids have brought certain amounts of medicaments, pesticides and expendable products whose deadline have expired, and as such, have become hazardous waste. An efficient and immediate solution for the waste management is necessary, not only to protect the human health, but also the environment in general.

The pollution of environment caused by improper waste management is one of the greatest challenges in relation to the environmental protection in Kosovo. In addition to the need to harmonize the national laws with the EU laws, the country must change the actual situation, in which there is a lack of enforcement of laws and defined policies. The competences of many institutions have not yet been clearly explained. For this reason, the strategy aims to improve the competences and determine the main objectives, measures and projects that Republic of Kosovo should fulfil throughout the ten year period. The strategy through its objectives and action plan on waste aims to improve the actual situation in waste management by creating a proper and modern concept for waste management.

## 1. OBJECTIVES OF STRATEGY

### 1.1 Objectives and scope of strategy

The main objective of the Strategy is to create measures, based on which the Republic of Kosovo would have to reduce the amount of waste that currently creates as well create a sustainable system on management.

The Strategy on Waste Management sets guidelines and goals in the field of waste management for the period of ten years (2013-2022), in accordance with the legislation on waste management and economic opportunities, focusing on:

- Reduction of waste generation, reduction of the amount of waste at source and reduction of the amount of waste to be disposed;
- Development of infrastructure for the establishment of an integrated approach for waste management (Decrease - reuse - recycling-land filling) thus creating the conditions for effective functioning of the system;
- Reduction of risk from waste;
- Contribution to increasing employment in the country;
- Capacity building for waste management;
- Improvement of the waste service (improvement of the actual system, expansion of the collection zones, examination and harmonization of capacities for waste disposal);
- Education of public, training of officials.
- Completion of legislation and instructions on waste.

The following measures shall be implemented as regards to the management of hazardous waste:

- Exact determination and inventory of the hazardous waste;
- Management of inherited hazardous waste, which are under the competence of the Government;
- Encouraging the use of the economic instruments;
- The raising of the responsibility of the producers of products and waste generated from their products. Producers shall be responsible for their products;
- Impact of consumer demand in favour of cleaner products and processes that create less waste.

The legal basis for the Strategy is Law on Waste No. 04/L-060. The Strategy was prepared in accordance with all ongoing activities planned by the authorities for waste management in the Republic of Kosovo. The strategy is a document that includes the central and local administrative levels and various governmental and non-governmental sectors in the field of water, mining, health, veterinary, spatial planning, construction, industry etc.

Based on the assessment of current situation and vision for creating a sustainable system for waste management in our country, the Strategy will determine the objectives and measures, which aim the implementation of objectives by year 2022.

## **1.2 Basic principles**

The strategy shall regulate the management of various types of waste in the territory of the Republic of Kosovo, from its creation to its final disposal. The main goal is to establish a sustainable system for waste management, which will be in accordance with the standards and requirements of the EU and national legislation on waste.

### **a. The principle of waste management according to priority**

- Avoiding and reducing waste production and minimizing the risks from waste;
- If reduction at source is not possible then the waste should be reused or recycled;
- Generating energy from waste;
- Waste which cannot be reused in a rational manner must be disposed in the most environmentally acceptable manner.

### **b. Using the best available technology in relation to environmental expenditures and acceptability**

Emissions from waste treatment facilities and landfills shall be reduced as much as possible, and in a manner which is considered to be the most efficient in the technical and economic aspects. The emissions shall be reduced in accordance with the EU standards (supply of modern machinery for treatment and maintenance of landfills).

### **c. Responsibility of the producer**

The producers, whose production creates waste, shall be responsible to use the most appropriate and environmentally friendly techniques.

Waste producers are required to cover the costs of all preventive measures for the pollution of the environment as well waste treatment and disposal. The operators shall also bear the responsibility of the producer for the waste management.

### **d. Independence and approximation**

An integrated network of facilities and installations for waste treatment, recycling and disposal should be created, in accordance with the requirements in the legislation on waste of the Republic of Kosovo for the purpose of reducing the cost for waste management. Of-site treatment should be provided in special cases if the waste cannot be treated on-site.

### **e. Supporting activities which promote the approximation and membership in EU**

Activities and appropriate measures should be developed in the field of waste management for the purpose of harmonization of the environmental policies with the EU and approximation of the legislation with the Acquis Communautaire.

### **f. Avoiding weaknesses of hitherto policies and practices on waste management**

Based on the identified deficiencies, it is very important to change the practices and policies in the field of waste management; control and improve the regulations and procedures; strictly respect the principles and standards and establish a network of necessary facilities and equipments for a more efficient waste management system.

**g. Polluter pays**

Those who cause pollution to the environment should bear the total costs for waste management, including preventive measures and elimination of damage caused by their activities.

**h. The right of access to information, public participation in decision-making**

Every interested person who lives in the Republic of Kosovo has the right to access information and participate in the decision-making.

**i. Role in education and awareness raising**

An importance should be given to the education of citizens through organization of different social and public activities, such as creation of training programs and organization of activities for raising the awareness of the community.

**j. Preparing for an open market**

The management of other segments of society for waste management, through economic instruments in accordance with the environment and sustainable development framework, as well preparing the public for an open and free market should be encouraged.

**k. Step by step access**

The situation in waste management should be improved by taking step by step measures in certain phases through monitoring, supervision and verification of job performance and qualitative services.

### **1.3 Legal framework**

The Republic of Kosovo is undergoing an intensive phase of designing and revision of the legislation on waste management based on the EU guidelines and regulations.

The legal basis for the Strategy is Law on Waste No. 04/L-060. The Strategy was prepared in accordance with all ongoing activities planned by the authorities for waste management in the Republic of Kosovo. Law on Waste Management is the basic act which specifies the general rules, which are applied for the essential issues related to the waste.

In addition to the Law on Waste, administrative instructions foreseen with law were issued. The following laws are also closely related to these sectors: Law on Environmental Protection, Law on Construction, Law on Strategic Environmental Assessment, Law on Environmental Impact Assessment, Law on Water, Law on Chemicals, Law on Spatial Planning, Law on Integrated Prevention and Control of Pollution, Law on Biocide Products, Law on Air Protection against Pollution, Law on Nature Protection, Law on Public Enterprises, Law on Local Self-Government, Law on the activities of service providers of water, sewage and waste, etc.

#### 1.4 European trends in waste management

The foundations of the EU policy on waste management are included in the European Council Resolution on the Strategy for Waste Management (97/C76/01), which is based on the Directive for Waste (74/442/EEC), amended by the directive (2006/12/EC) and (2008/98 EC) as well other EU regulations on waste management.

Efforts are being made in EU to respect the following principles:

- *Adopting a common definition of waste in all member states*

The definition of waste stipulated in the Section 3, Item 1 of the Directive on Waste 2008/98-EC is mandatory for all Member States and applies to all wastes irrespective of whether they are destined for disposal or recovery operations. In addition, a list of waste known as the European Waste Catalogue provides a common terminology for various types of waste.

- *Encouragement of clean products and use of cleaner products*

By encouraging the development, manufacturing and consumption of clean products, it should be possible to reduce the environmental impact. This can be done through improved use of resources, reduction of emissions from manufacturing, and waste management.

- *Encouraging the use of economic instruments*

This approach aims to influence environmental performance through market mechanisms:

- Application of tariffs for the creation, collection, treatment, preservation, transportation and disposal of waste;
- Tradable permits for the emissions during the creation of waste;
- Subventions for recycling of waste;
- Import duties on waste whose treatment requires additional costs.

- *Regulate the shipment of waste*

Control and monitoring system for cross-border shipment of waste should be regulated, while EU Member States should be forced to imply the monitoring and controlling system at the national level, ensure high level of environmental protection and human health, and ensure the implementation of principles for waste management set in the EU Directives and Regulation 1013/2006/EC on cross-border shipment of hazardous waste.

- *Environmental protection and the internal market*

Environmental legislation seeks to create a balance between the need for a high level of environmental protection and the need for an appropriate level of

regulation to ensure the functioning of the internal market. This is to allow economic operators to act within the EU, while at the same time a harmonized field of action is specified for waste through the creation of common rules. Therefore, the legitimate wishes of the member states are fully adhered to the definition and implementation of waste management policies and measures at national level. This particularly concerns the regular shipment of waste.

The internal market is largely self-regulated depending on the requirements of the free market. There are 36 functional private companies operating in Kosovo, which mainly deal with the collection, separation in types, physical processing and exporting of metal, paper and plastic waste.

The position of the European Commission in relation to the environmental protection, and the new initiative related to waste for the first decade of XXI century, are included in the sixth action plan on the environment- *Environment 2010: "Our Future-Our Choice"*, which was approved in 2001.

Although it does not deviate from the current approach, the program makes a special emphasis on the need to make significant improvements in the Member States regarding the implementation of existing measures. Local authorities are often those who bear the burden of implementing the EU legislation in the field of waste.

As regards the candidate countries, the high consumption and lifestyle change would probably cause an additional burden to the current system of waste management and municipal infrastructure. Therefore, priority should be given not only to improve existing systems of waste management, but also investments in initiatives aimed at waste reduction, recycling, and improving of infrastructure.

The objectives of waste management policy of the EU, as foreseen in the program, are as following:

- Reduction of waste generation in relation to economic growth and achieving a significant reduction in the overall volume of created waste.
- For wastes that are still generated, to achieve a situation where:
  - Less hazardous waste for the environment and the human health;
  - Waste trading for an economic benefit especially from the process of recycling or their return to the environment in a useful form (e.g. composting) or into un-harmful waste.
  - the amount of waste that needs to be disposed to be reduced to a minimum value and be disposed in a safer manner,
  - Waste intended for disposal should be treated as closely as possible to the place of its generation

As regards to the management of hazardous waste in the EU, it is required to make:

- Identification of hazardous substances and materials generated from different sector;
- Determination of objectives and priorities for waste prevention;
- Encouraging the use of economic instruments;
- Application of the responsibility of the producers - Producers are responsible for their products;

- Impact of consumer demand in favour of products and processes that create less waste.

Waste management indicators for some selected EU countries and Republic of Kosovo are presented in Tables 1, 2 and 3.

Table 1: The amount of waste in three EU countries and Republic of Kosovo

	Austria	Denmark	Slovenia	Croatia	Kosovo
<b>Number of inhabitants (m)</b>	8.1	5.4	2	4.45	2.3
<b>Total amount of waste (million tonnes/ day)</b>	48.6	13.0	8.4	12.6	2.504
<b>Amount of municipal waste (million tonnes) per year</b>	3.1	3.1	0.8	1.2	~ 0,4
<b>Annual amount of municipal waste per capita (kg)</b>	383	574	400	270	192

Table 2: Treatment and disposal of waste in three EU countries and Kosovo

	Austria	Denmark	Slovenia	Croatia	Kosovo
Waste collected for recycling	34.3%	14%	10%	10%	9%
Waste collected for biological treatment	21.7%	-	12%	1%	1%
Waste collected for incineration	14.7%	81%	-	-	-
Waste collected for land filling	28.5%	5%	73%	89%	90%

Source: the data in Tables 1 and 2 for Kosovo are calculated and based on a report on the state of waste in Kosovo in 2008.

Because of the generally poor reliability and comparability of waste statistics, the figures presented here are merely indicative.

**Table 2-a: The disposal of municipal solid waste in the European Union**

Country	Total estimated MSW production (in M t)	% land filled	% incinerated
Austria <sup>1</sup>	2.78 (1996)	32	16
Belgium <sup>2</sup>	4.00 (1997)	42	35
Denmark <sup>3</sup>	2.77 (1996)	15	56
Finland <sup>4</sup>	3.10 (1990)	77	2
France <sup>2</sup>	33.00 (1997)	60	30
Germany <sup>2</sup>	40.00 (1993)	62	28
Greece <sup>4</sup>	3.20 (1992)	93	0
Ireland <sup>5</sup>	1.85 (1995)	100	0
Italy <sup>2</sup>	26.0 (1997)	85	8
Luxembourg <sup>5</sup>	0.30 (1995)	24	48
Portugal <sup>5</sup>	3.60 (1995)	86	0
Spain <sup>6</sup>	15.20 (1997)	85	8
Sweden <sup>2</sup>	3.60 (1996)	31	39
The Netherlands <sup>2</sup>	14.20 (1997)	69	20
United Kingdom	40.00 (1997) <sup>7</sup>	858	88
<b>European Union</b>	<b>133.55 (1996)<sup>9</sup></b>	<b>71</b>	<b>18</b>
<b>Kosovo</b>	<b>0.38471(2010)</b>	<b>90</b>	<b>0</b>

A report prepared by IPTS, the incineration of waste in Europe: issues and perspectives (1999)

1 Source: Austrian Environment Ministry, January 22, 1999

2 Source: Energy from waste plants: datebook of European sites, Juniper Consultancy, November 1997; for NL, Different statistics co-exist (e.g. 52% land filled and 31% incinerated)

3 Sources: Ministry of Environment and Energy, DK

4 Estimations adapted from Eurostat, 1997

5 Sources: European Environmental Agency, Waste Topic Centre, 1998

6 Source: Mr Martinez de Hurtado Gil, Spanish Ministry of the Environment, 20 January, 1999

7 Source: see footnote 2; estimated 25 Mt from household waste only

8 ENDS Daily, 1998

9 Data on MSW production from APME, 1998, not the sum of the column (193.23 Mt); % calculated from the table.

**Table 3: prices of processing, incineration and disposal of municipal waste in several European countries and Kosovo**

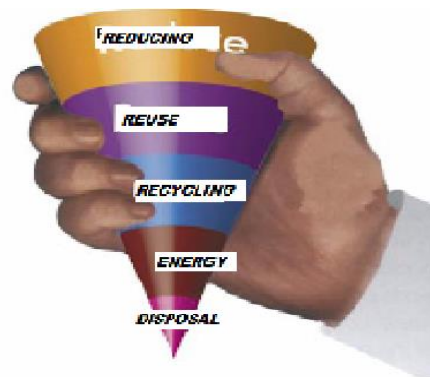
Country	The cost of thermal processing €/t	Cost of disposal €/t
<b>Austria</b>	100-250	60-130
<b>Czech Republic</b>	36-71	32
<b>Denmark</b>	55-105	60-110
<b>Italy</b>	70-90	90-110

<b>Hungary</b>	45	10-20
<b>Netherlands</b>	80-150	110-130
<b>Germany</b>	50-400	15-200
<b>Portugal</b>	26-98	125-386
<b>Spain</b>	34-59	
<b>Sweden</b>	30-60	50-100
<b>Switzerland</b>	127	20-60
<b>Kosovo</b>	-	6-7

### 1.5 Waste management - vision and priorities

The waste management was given a special focus in the Strategy for Environmental Protection of the Republic of Kosovo.

*Vision for the waste management in the Republic of Kosovo is based on the concept - creating less waste for disposal.*



In order to achieve this concept based on the waste management hierarchy, the following actions should be taken: reduction of waste generation at source and of posed risk; recycling and (mechanical, biological, energy) up to the re-use and exploitation of the waste leftovers. It is necessary to work in education and preparation of each involved participant, and cooperate with citizens starting from the idea up to the full realization of the management.

For the purpose of implementing and realizing the Strategy, the following priorities are foreseen:

- Harmonisation of the national legislation with the EU legislation and ensuring its implementation;
- Education, training and raising awareness on environmental protection and waste management;
- Reduction of waste production at source;
- Increasing the percentage of collection and disposal of controlled waste;
- Rehabilitation of areas polluted by waste;
- Prevention of various diseases and epidemics from the negative impact of waste to the environment;
- Reduction of emissions to water, air and soil from waste activities

- Use of waste for energy production,
- Use of waste for recycling,
- Construction of buildings and installations for waste treatment;
- Actual improvement of services for collection and expansion of collection zones;
- Improvement of functional waste landfill sites,
- Monitoring of waste management system.
- Improvement of monitoring of the activities on waste management;
- Increase of the financial means for collection of payments from families, institutions for the waste collection service.

## 2. CURRENT SITUATION

### 2.1 Assessment of the situation, problems and obstacles

Kosovo is facing evident problems as regards to waste management. Delays in finding a solution for all types of waste have brought the current situation, which is deficient in the aspect of management and difficult in the financial aspect. An extraordinary challenge is the creation of a good waste management system at the local level that would organize the collection of waste in their territories. The legislation and allocation of competences was one of the problems. The hazardous, industrial, organic and inherited waste from the past requires a quick solution.

In general, the actual state in waste management in Kosovo is worrying. For this reason, priority should be given to suitable solutions of all problems related to waste management.

The amount of generated waste is increasing, while existing infrastructure is not sufficient and is not in compliance with the EU standards. The greatest difficulties are:

- Insufficient awareness of the waste generators for proper waste management;
- Insufficient education of community, public and employees of the companies in charge for waste management;
- Insufficient knowledge about the practices for waste management and trends that are currently implemented in the EU;
- Lack of collection of waste from all zones and settlements of the Republic of Kosovo;
- Lack of machinery and equipment for waste management;
- Unclear definition of responsibilities and competences for waste management;
- Low collection of financial means for the waste collection service;
- Low collection of financial means for the realization of projects for waste management (treatment, recycling, payment of the services in the landfills);
- Creation of illegal municipal waste landfills;
- Lack of organization and classification system for the separation of municipal waste;
- Failure to implement the legislation on environment and waste;
- Lack of data for the information system for waste management;
- Lack of project documents, undefined identity of ownership of existing facilities and infrastructure;

- Failure to implement the "polluter pays" principle;
- Difficulties in the operation of regional system – non-functioning and difficulties in the regional waste management system.

Public awareness about the need to avoid waste generation is considered a priority in any modern waste management system. There is a lack of initiative for recycling; therefore an appropriate system for special waste separation and collection is needed.

The old municipal waste landfills were rehabilitated or closed with the support of the MESP, EAR, Danida, GIZ and other donors.

The industrial landfills present a big problem, especially landfills created for different mining, metallurgical and chemical activities, which comprise a considerable area. The amount of such waste is estimated to be 60 million tons in Trepca only. These wastes contain significant quantities of heavy metals. These landfills are constantly source of pollution of air, water and land.

Ash dumps of KEK-Obiliq/Obilić and landfill of Ferronikeli-Glogovac/Glogovac pose significant problems, so-called "hot spots" which are red signal to human health and national flora and fauna. Other wild landfills, leftover chemicals from factories in the previous time, are repacked and temporarily stored in certain spots in Kosovo which pose a permanent danger to the environment.

Medical waste is also one of the problems. For this reason, the Government of the Republic of Kosovo has invested in sterilization of infectious hospital waste in seven (7) regional hospital centres.

Special wastes: batteries, used tires, animal waste, appliances and various apparatus, unused cars and used oils, are not adequately treated.

Municipal waste is managed by municipalities in accordance with the Law on Waste (Law 04/L-060). They can be organized in regions, depending on the provision of services from the respective municipality.

<b>Region/municipality</b>	<b>Number of inhabitants according to the Statistical Office</b>	<b>Number of villages according to the Law on Administrative Boundaries</b>
<b>Region of Prishtinë/Priština</b>	<b>469472</b>	
1. Glogoc/Glogovac	58579	34
2. Fushë Kosova/Kosovo Polje	34718	13
3. Lipjan/Lipljane	57474	58
4. Obiliq/Obilić	21548	17
5. Podujevë/Podujevo	87933	77
6. Prishtinë/Priština	198214	40
7. Graçanicë/Gračanica	11006	15
<b>Region of Pejë/Peć</b>	<b>311822</b>	

8. Deçan/Deçani	38984	28
9. Gjakovë/Djakovica	94158	68
10. Istog/Istok	39294	45
11. Klinë/Klina	37585	42
12. Pejë/Peć	95723	69
13. Junik	6078	1
<b>Region of Mitrovicë/Mitrovica</b>	<b>209649</b>	
14. Mitrovica (south)	71601	37
15. Leposaviq/Leposavić	- (16,850)	46
16. Skënderaj	51317	51
17. Vushtrri/Vučitrn	69881	63
18. Zubin Potok	- (14,800)	27
19. Zveçan/Zveçane	- (16,850)	17
20. Mitrovicë/Mitrovica (north)	-	2
<b>Region of Prizren</b>	<b>386628</b>	
21. Dragash/Dragaš	33584	38
22. Rahovec/Orahovac	55053	33
23. Prizren	178112	71
24. Suharekë/Suva Reka	59702	41
25. Malishevë/Mališeva	54664	38
26. Mamushë/Mamuša	5513	0
<b>Region of Gjilan/Gnjilane</b>	<b>187417</b>	
27. Gjilan/Gnjilane	90015	41
28. Viti/Vitina	46959	38
29. Kamenicë/Kamenica	35600	56
30. Novobërdë/Novo Brdo	6720	23
31. Ranillugë/Ranilug	3785	12
32. Partesh/Parteš	1787	2
33. Klokot/Klokot	2551	3
<b>Region of Ferizaj/Uroševac</b>	<b>185734</b>	

34. Ferizaj/Uroševac	108690	44
35. Kaçanik/Kaçanik	33454	29
36. Shtimja/Štimlje	27288	20
37. Shtërpçë/Štrpce	6913	14
38. Hani i Elezit	9389	10
<b>TOTAL NUMBER</b>	<b>1.733.870</b>	<b>1263</b>

The collection of tax for waste collection service is low and as such does not meet the needs to establish a financially sustainable system for municipal waste management. The taxes for the collection and disposal of municipal waste are collected from 30% to 65%. According to the JICA project, the monthly average of tax collection in the region of Prizren is 46.7%. In the city of Prizren, the service is provided almost 100% while only 45% is paid.

Moreover, lack of environmental funds and other financial instruments, insufficient application of legislation on waste has brought an unstable condition to the waste management.

## **2.2 Participants in the waste management**

The following structures are involved in the waste management:

Assembly of the Republic of Kosovo, Government of the Republic of Kosovo, municipalities, regional public companies, private operators, businesses and other participants. Management system and their main tasks arising from legal provisions are presented as follows:

### **2.2.1 Administrative structure**

*Assembly of the Republic of Kosovo:*

- Issuance of Law on Environment, Waste and other relevant provisions;
- Issuance of the strategy on environmental protection;
- Giving recommendations and monitoring the implementation of laws by the assembly's committees etc.

*Government of the Republic of Kosovo:*

- Approval of the Strategy on Waste Management;
- Issuance of governmental administrative instructions;

*Ministry of Environment and Spatial Planning (MESP):*

- Drafting legislation;

- Drafting the Strategy on Waste Management and Action Plan on Waste Management in the Republic of Kosovo;
- Preparing the programs for monitoring;
- Drafting reports on the state of waste,
- Issuing environmental consents – activities based on the assessment of environmental impact;
- Issuing permits for waste management;
- Issuing permits for export, import and transit of waste;
- Inspective supervision of law and sub-legal acts;
- Management of hazardous waste.

*Local Government - Municipalities:*

- Issuance of local plans on waste management
- Determination of location for the municipal waste management needs etc according to the spatial plan;
- Determination of fees for collection and disposal of municipal waste;
- Collection and reporting of records;
- Supervision of the implementation of the Consumer Card;
- Determination and supervision of the implementation of standards of services for contracted companies for waste collection.

*Kosovo Landfill Management Company – (KLMC)*

- Management of sanitary landfills of municipal waste.

*Regional companies*

- Collection services, transfer and disposal of waste from settlements to the sanitary landfills.

*Private sector – licences companies*

- Provision of services for waste stipulated by the municipality;
- Collection, treatment, recycling, transport and disposal of different types of waste.

## **2.3 Waste cycle**

The circulation of waste from where it is created until the final process, namely the procedures involving the collection, transportation, reuse, treatment and final disposal is known as "waste cycle."

Waste cycle depends from the ownership of waste, location from which it is produced, duties and responsibilities of the responsible entities for waste management.

Wastes are classified into main groups according to European Waste Catalogue (European Catalogue list attached to the Law on Waste).

The waste based on the features can be classified into:

- non-hazardous waste,
- hazardous waste
- and inert.

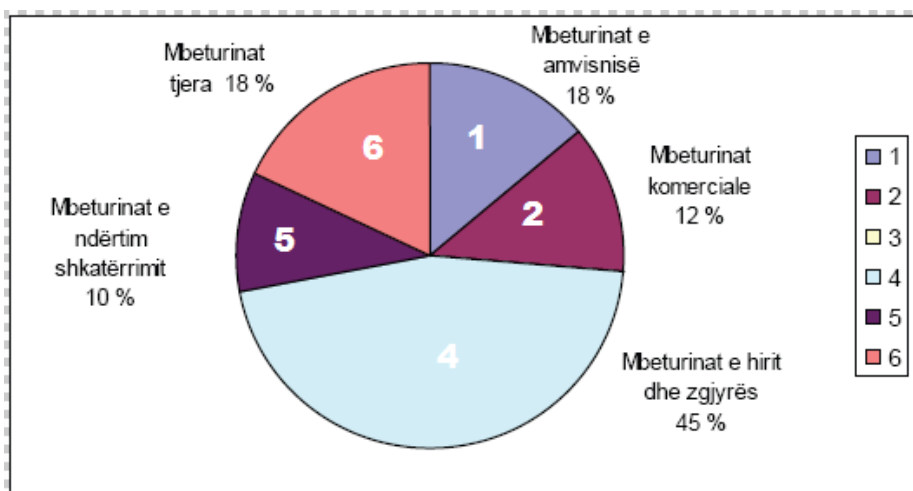
Based on the source, the waste is divided into:

- municipal waste;
- industrial waste;
- special waste;
- medical waste.

The report on state of waste 2008/2009 based on the data of Kosovo Environmental Protection Agency contains the following data.

Table 4: daily and annual amount of waste per capita

Types of waste	Daily average in kg/ capita	Annual amount kg/ capita	Annual amount in tons
Household waste	0.277	101	232541
Commercial waste	0.250	91.25	209875
Medical waste	0.0024	0.876	2014.5
Ash and dross waste	0.907	331	761426.5
Construction/demolition waste	0.200	73	167900
Other waste (packaging) plastics, tires, pesticides, electronics, wood etc.	0.360	131.4	302220
Mining waste	?	?	?
<b>Total</b>	<b>2,0</b>	<b>729</b>	<b>1675977</b>



Mbeturinat sipas llojeve

Moreover, for the strategy it is useful to reflect the data obtained from the analysis of physical composition of municipal waste in the municipality of Prizren. This analysis was conducted by JICA experts, within the project 'capacity building for waste management towards a healthy society'.

The total quantity of waste used to study the composition of the waste and targeted waste is shown in the table below.

Tab, 4-a-: Analysis of targeted waste.

No.	Types of generation sources	Summer			Winter (including ash)			-Winter (without including ash)		
		Selecte d point 1	Mixed point	Total analyze d	Mixed point 1	Mixed point	Total analyze d	Mixed point 1	Mixed point	Total analyze d
1.	Households in the urban zones	54.2	103.0	<b>157.3</b>	128.3	98.3	<b>226.6</b>	96.1	98.3	<b>194.4</b>
2.	Households in the rural zones	96.3	20.9	<b>117.2</b>	79.1	0.0	<b>79.1</b>	59.4	0.0	<b>59.4</b>
3	Restaurants	276.6	40.4	<b>317.0</b>	245.1	0.0	<b>245.1</b>	245.1	0.0	<b>245.1</b>
4	Other premises	362.4	0.0	<b>362.4</b>	57.4	0.0	<b>57.4</b>	31.3	0.0	<b>31.3</b>
5	Arboriculture	-	-	-	50.8	0.0	<b>50.8</b>	50.8	0.0	<b>50.8</b>
6	Trade centres	-	-	-	298.5	111.8	<b>410.4</b>	298.5	111.8	<b>410.4</b>
7	Offices	21.6	0.0	<b>21.6</b>	12.8	0.0	<b>12.8</b>	8.2	0.0	<b>8.2</b>
8	Schools	93.3	2.8	<b>96.1</b>	1,679.3	0.0	<b>1,679.3</b>	31.3	0.0	<b>31.3</b>
9	Hotels	7.5	0.0	<b>7.5</b>	9.2	0.0	<b>9.2</b>	9.2	0.0	<b>9.2</b>
10	Market stalls	587.5	0.0	<b>587.5</b>	212.2	0.0	<b>212.2</b>	209.4	0.0	<b>209.4</b>
11	Roads & Squares	14.7	67.9	<b>82.6</b>	-	-	-	-	-	-
	General total	1514.2	234.9	<b>1749.1</b>	2,772.7	210.2	<b>2,982.8</b>	1,039.3	210.2	<b>1,249.4</b>
	Total collected			66.2%			52.1%			31.6%

For purposes of this strategy, these records are considered current and may be used for comparisons in calculations for municipal waste in the entire territory of Kosovo.

### 2.3.1 Municipal waste

Republic of Kosovo lacks full data on creation, collection and treatment of waste. The service for collection of municipal waste is provided to approximately 42% (year 2007) respectively 39% (year 2008) of the population. Prishtinë/Priştina region covers the highest percentage of population with 64% (in 2007) respectively 52% (in 2008), while the lowest is in Mitrovicë/Mitrovica region with only 29% (2007-2008). In urban areas

(cities) waste collection service is provided to almost 100% of the population, while the rural areas are currently covered by this service with only around 35% of the population, but there is tendency of increase.

Based on the information of JICA project, the waste collection service in the municipality of Prizren in the urban zones is 87.2% and 73.5% in the rural zones. The services are mainly offered through contracts. Based on the 2011 census, the municipality of Prizren has 93,511 inhabitants and 16,970 households, 12,733 of which have contracts with the company Ekoregjioni, respectively 75, 0%. The percentage of contracts in the rural zones (villages) is 88, 0 % ( 18 villages). It means that there are some households that refuse to make contracts even though the service is offered. It can be ascertained that in some areas the waste is thrown away in an illegal manner in both urban and rural zones including the villages that are not covered with the service.

There has been an increase of the amount of disposed waste in all regional and municipal landfills, based on the comparison of data on the waste disposal in 2007, 2008 and 2009.

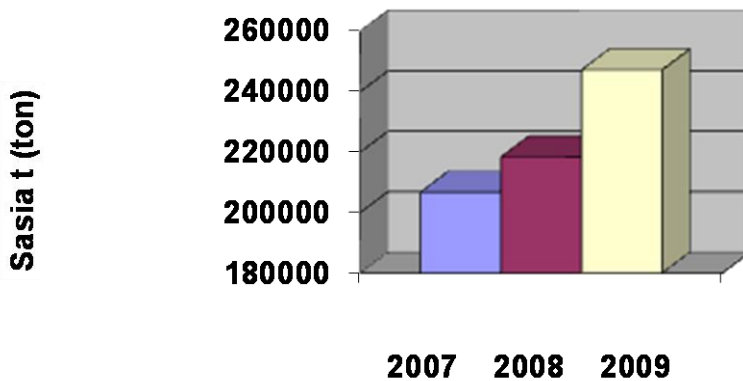


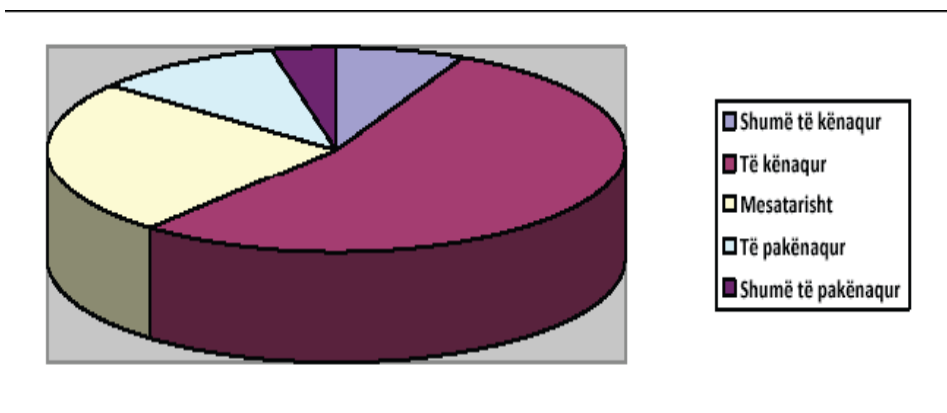
Figure 1: The amount of waste in three years in a row (according to KEPA)

It can be concluded that the amount of generated waste was higher during 2009. This increase has resulted from the increase of the amount of collected and disposed waste as well expansion of the service.

The services for collection of municipal waste are performed frequently by almost all municipalities. The municipal waste is collected at least one time during a day in cities, while in rural areas is done based on the need and agreement.

Based on the survey realized by the WWRO, it is estimated that 61.2% of respondents have declared to be very satisfied or not satisfied with the waste collection service, while 14.3% result to be unsatisfied or very unsatisfied with these services fig 2.

Fig. 2. Consumers' satisfaction with the waste collection service



Around 90-95% of urban population of Kosovo are included in the waste collection system. All services are of the low standard due to the lack of adequate objects and equipments from the public companies. 20-35 of the rural zones are covered by this service.



The price of the taxes for waste collection is 4€ per family in a month and the percentage of the payment of monthly services is 40-50%.

Based on the information obtained from the public enterprises in relation to equipments and machineries used for waste collection, it is estimated that around 80% of vehicles are older than 10 years.

Table: 4-c. The amount of waste generated and disposed in the controlled and illegal landfills during 2008, 2009 and 2010.

Tab, 4-c.

Year	General amount of municipal waste in Kosovo [ton]	Disposed waste in the controlled landfills	Waste disposed in the illegal landfills
2008	384710	218402 t (56.77 %)	166.308 (43.23 %)
2009	384710	247206 t (64.26 %)	137504 (35.74 %)
2010	384710	255546 t (66.43 %)	129164 (33.57 %)

The table above shows that % of the municipal waste collection and disposal at the country level is improving, respectively the amount of generated waste for disposal is increasing.

### 2.3.2. Construction and demolition waste

The Republic of Kosovo has been experiencing a construction boom which has increased the amount of waste originating from the construction and demolition of residential buildings and other objects. Disposal and collection of construction waste in inadequate places have deteriorated the situation in this sector. The disposal of such waste in the arable land and along the rivers is especially worrisome.

The locations for the treatment and disposal of construction and demolition waste should be determined. After being classified from other waste, the inert waste can be used for filling and rehabilitation of holes and ditches. Except landscape degradation, the construction waste poses negative impact on the environment, especially in ecosystems, particularly when they are disposed mixed with other municipal waste.

The Government of Kosovo is taking into consideration an option for using the C&D waste for the bonification of land. The cooperation with the MAFRD will be needed to carry out a feasibility study for the bonification of land in each municipality.

The Government will work with municipalities to:

- take measures to avoid the waste generation from the construction planning phase;
- review the ways to extend the life of useful buildings and its components;
- provide assistance in the use of the recyclable materials in the construction of new buildings, and

- Give advice on the toxicity of materials and their impact in the human health following the construction or demolition of a construction object.

The construction and demolition waste in Kosovo amounts to 167,900 t/year.

The Government of Kosovo is looking at the possibility of decommissioning the TermoCentral Kosovo A, which will start sometime around 2017 according to the Energy Strategy of the Republic of Kosovo for the period 2009-2018. Large amount of waste will be created due to the demolition of the TC Kosova A, which will be treated and disposed through a special project.

### **2.3.3. Industrial waste**

Industrial waste includes all waste generated by the development of activities for the production of industrial products.

In the past the exploitation of mine and metallurgy were developed in the Republic of Kosovo. With time passing the industrial and technical capacities have been out dated and turned into waste. Waste is also generated from the process of production of various products. There are no exact data about the amount and type of industrial waste.

The amount of industrial waste has decreased significantly since 1999. Some industrial waste landfills were rehabilitated to some extent. All industrial waste generated in Kosovo represent a serious threat to the environment and human health, if not managed and handled safely.

Currently, there is an inventory, but it is not fully available, with industrial waste and hazardous industrial waste that were produced until 1999.

#### **Waste in the Kosovo Corporation Energy-KCE**

The ash waste is generated for the production of electricity at power plants in Obiliq/Obilić KEC. The following types of waste are generated: sterols, ash, slit of ash, oils, scoria (dross), furnace dust, chemical materials (chemicals, phenol, etc.) tires (tapes, other tires), metals (metallic parts), PCB oils for transformers.

The ash landfill of PP Kosovo A, together with wastelands and lagoon, covers an area of 234 ha. In average, both PP (Power Plants) Kosovo A and B, produce over one million tones ash a year. From this quantity, about 700.000 tonnes are disposed in ash landfill, while the rest, 300.000 tonnes gets disposed into the air. During the following years and until 2017 according to the strategy for energy in addition to the construction of termocentral "Kosova e re", the TC-Kosova A will be decommissioned in the meantime and due to this huge amounts of waste will be created.

#### **The waste in the industrial company - TREPÇA**

The waste is created due to mining, metallurgical and chemical activities in the industrial company -"Trepça", respectively resulting from the process of exploitation, acquisition and finalization of the raw material. It is worth mentioning that the content of heavy metals in these wastes is relatively high, due to the low degree of metal use during these processes.

The generated dumps, disposed material, state of the landfill, surface of the landfill and amount of remained waste is presented in the Table 5.

Table 5. Industrial landfills of Trepca

Location	Disposed material	State of landfill	Surface of landfill in ha	Amount, t
Mitrovicë/Mitrovica - PIM	Phosphogypsum	Not active	10	4x10 <sup>5</sup>
Mitrovicë/Mitrovica-PIM	Pyrite, pirotine	Not active	9	5x10 <sup>5</sup>
Mitrovicë/Mitrovica-PIM	Precipitation from neutral cleaning	Not active	10	5X10 <sup>5</sup>
Mitrovicë/Mitrovica-PIM	Jarosite	Not active	5,4	1,2x10 <sup>5</sup>
Leposaviq	Precipitation	Not active	6,5	2,6 x10 <sup>6</sup>
Leposaviq	Precipitation	Active	8-10	3,6x10 <sup>6</sup>
Zveçan	Precipitation	Not active	26	8,5x10 <sup>6</sup>
Zveçan	Precipitation	Not active	50	12x 10 <sup>6</sup>
Kelmend	Precipitation	Active	8-10	3,6x10 <sup>6</sup>
Graçanicë	Precipitation	Not active	40	11x10 <sup>6</sup>
Badovc	Precipitation	Active	18	7,7x10 <sup>6</sup>
Artanë	Precipitation	Not active	4	1,8x10 <sup>6</sup>
Zveçan	Dross Pb	Not active	4-6	2,5x10 <sup>6</sup>
Zveçan	Ash	Not active	10-15	10x10 <sup>3</sup>

#### 2.3.4. Agricultural and food waste

The agricultural and food industry waste includes the products originating from slaughterhouses, animal bones and dead farm animals and animal manure. For the production and processing of dairy products, meat, flour, various beverages and alcoholic drinks etc, an amount of waste is created after their consuming of the food product or after expiry of the term of use.

There are also large quantities of imported food products, which after the expiry of deadline or due to poor packaging become waste.

There are no data about the waste generated from the sector of agriculture and food industry.

### 2.3.5. Hazardous waste

Kosovo has no appropriate infrastructure for treatment/disposal of hazardous waste. No object/landfill has been built so far in the Republic of Kosovo for preservation or disposal of hazardous waste.

Many substances in different aggregate forms remained for a long period of time unused in equipments, machineries, depots etc. Many of these chemical substances were expired or degraded and changed their chemical structure. Due to this they became substances with high hazard potential for the environment and the human health.

Companies which produce this type of waste have developed until now activities for the repacking of hazardous waste for the purpose of reducing the risk from such substances. The reduction of risk was done mainly with the support of the donations and KFOR and KSF activities.

There are no full data about the amount of hazardous waste.

A project entitled "Inventory of hazardous waste in Kosovo" will be needed. Such project would enable:

- assessment of the actual situation with regards to the hazardous waste in Kosovo;
- Information of the producers, operators and other participants in the field of management of hazardous waste;
- Registration of hazardous waste;
- National inventory of hazardous waste in Kosovo;



- Proposals to initiate legislative policies and administrative measures;

All persons who wish to transfer hazardous waste to other countries must first apply for an export permit, as an appropriate solution. After issuance of the permit, all subsequent movements of waste authorized under this permit shall be notified to Authority in respective countries.

Government shall remain committed to create conditions for temporary storage before the treatment or prior to export to the storage facilities.

### 2.3.6. Packaging and packaging waste

Republic of Kosovo is a major importer of many goods and products that are packed with one or more packages and create large quantities of waste. The measures are scarce and applicable legislation in solving this problem is not implemented. Reusing and recycling is done with own initiatives of some private companies, but is not organized at the cycle waste system.

There is lack of data on the generated amount of these wastes.

### 2.3.7. End of life vehicles and other wastes

Some private companies treat the end of life vehicles in two manners: collecting them as scrap metal for further sale, which are mainly exported in the countries in region, or dismantling them for the spare parts.

There are no data about their exact number and amount.

### 2.3.8. Tires

The used (second hand) vehicle tires are also imported or collected for reprocessing through their re-dressing.

Vehicles' tires are not classified as hazardous waste, but some types do contain hazardous and soluble components. Uncontrolled burning of tires releases harmful emissions to the environment such as for example dioxin. The tires are mainly incinerated in the primitive furnace for processing quicklime.

The amount of the waste tires and the exact number of the tires import is not clear.

There were 206,352 vehicles registered in the Republic of Kosovo in 2008.

The average number of tires per vehicle is 5.

Actually, there are 1,031,760 tires in use.

Supposing the average life of one tire is 5 year, namely 10.000km/year having into consideration that tires expire after 50.000 passed km.

The number of imported tires in a year is:  $1,031,760/5 = 206,352$  tires/year.

The average weight for new tires = 23 kg/rubber; (vehicles -8kg/rubber, trucks including those with 4+4 tires - 11 kg/rubber, big trucks 52 kg/rubber).

The average weight of used tires = 18.5 kg

The vehicle tires thrown away yearly:  $18.5 \times 206,352 = 3,817$  t

Expired tires from the old vehicles:  $5,000$  vehicles / year  $\times$   $5$  pieces / year =  $25,000$  tires

The total amount of disposed end of life vehicle tires is approximately 462.5 t

4280 tons waste tires are generated yearly

Tab: 5-a, composition of tires:

(% weight )	Rubber	Steel	Textile
Vehicle tires	86%	10%	4%
Truck tires	85%	15%	<0.5%
Amount of waste [tons]	~ 3638	~ 535	~ 107
Total [tons]	4280		

The amounts were calculated from the staff of DMK.

Currently, there are no companies in Kosovo for grinding of tires and separation of rubber, steeled and textile.

### 2.3.9. Electrical and Electronic waste

Electrical and electronic equipment after their use are transformed into waste, and due to the lack of their reusing and recycling pose a problem to the environment, because they contain hazardous components. There are no data for their quantity, but it is known that their quantity is steadily increasing, having into consideration the import of used and new equipments.

### 2.3.10. Waste from polluted water processing

Republic of Kosovo does not have a plant for treatment of waste water or polluted water. In general, this type of water pollutes the rivers, underground and surface water. 25% of the waste water is solid material which needs to be separated and treated. The plant for treatment of waste water was functionalized in Skenderaj during 2012.

Based on the best data available from tab 5-b, the total wastewater discharge in 2004 in Kosovo was about 1,200 l / s, or 110,000 m<sup>3</sup> / d. BOD and discharge of solid materials was 8.500 kg / d, respectively 29.000 kg / d.

**Tab. 5-b, discharge of waste water in Kosovo**

Municipality		Leakage (l/s)	NBO (mg/l)	Solids (mg/l)
Viti/Vitina	Municipality	4	130	190
Vushtrri/Vučitrn	Municipality	25	130	190
Glogovac/Glogovac	Municipality	2	130	190
Gjilan/Gnjilane	Municipality	29	130	190
Deçan/Deçane	Municipality	37	130	190
Dragash/Dragash	Municipality	19	130	190
Gjakovë/Djakovica	Municipality/metallurgy	30 17	130 15	240 250
Istog/Istok	Municipality	8	130	190
Kaçanik/Kaçanik	Municipality /construction material	5 18	130 10	190 150
Klinë/Klina	Municipality	10	130	190
Kamenicë/Kamenica	Municipality /non-metals	4 16	130 15	190 1,000
Mitrovicë/Mitrovica	Municipality / metallurgy	65 363	120 15	290 275
Leposaviq/Leposavić	Municipality / metallurgy	1 44	130 15	240 410
Lipjan/Lipljane	Municipality /non-metals	4 48	130 20	190 1,000

Rahovec/Orahovac	Municipality	11	130	190
Pejë/Peć	Municipality	116	170	190
Podujevë/Podujevo	Municipality	16	130	190
Prizren	Municipality /energy plants	106 - 27	140 - 20	190 - 250
Prishtinë/Prishtina	Municipality /energy plants, metallurgy	186	140 - 20	190 - 275
Skenderaj	Municipality	3	130	190
Suharekë/Suva Reka	Municipality	11	130	240
<b>Total</b>		<b>110,000 m<sup>3</sup>/d</b>	<b>8,500 kg/d</b>	<b>29,000 kg/d</b>

Study on the strategy for treatment of waste water

Kemwater Services Oy

Jun 2004

### 2.3.11. Oil waste

Waste oils and used oils represent major pollution of soil and water, because they are discharged and are used for heating and fuel to produce steam in various industrial plants. In our country, used oils are collected to be reused or burned for heat energy production and there is no recycling centre yet.

### 2.3.12. Consumed and disposed batteries

There are different types of batteries, constructed by different types of material and filled out with various electrolytes.

Most of the metals and electrolytes of the batteries are highly toxic and cancerous. Consumed batteries require a special treatment. There are no accurate data on the import and production of batteries within a year in Kosovo, as well an exact number of their waste. In our country there is sufficient capacity for the recycling of batteries such as lead in the unit of "Trepca" -Zvecan and some private unlicensed centres throughout Kosovo.



### 2.3.13. Medical waste

Medical wastes are considered to be hazardous, because during operation and contact, if in direct contact, the human health and environment may be threatened. This type of waste doesn't undergo any proper treatment process. According to the monitoring in the field and available information, these wastes are not collected, transported or are partly treated as required by EU standards.

Seven plants have been built for sterilization of medical and infectious waste in main hospital centres of Kosovo. There are four furnaces for incineration of medical waste, e.g. expired medicaments which partially meets the appropriate conditions. 2014.5 tons of medical waste is generated yearly in Kosovo.

## 2.4 Procedures for waste management

Waste management is a complex activity that exerts a major influence in all branches of economy, production and consumption. For the overall waste management in the Republic of Kosovo on the basis of hierarchical concept-the following steps are important for the reduction, treatment and disposal of waste:

Reducing waste generation and reduction of risk from waste:

- Education for the awareness raising of community;
  - Encouraging of clean production and producing;
  - Subsidization of waste management sector;
  - Developing plans for waste management.
- Collection and transportation of waste
  - Separated waste;
  - Waste treatment
    - Recycling and use;
    - Mechanical treatment;
    - Biological treatment;
    - Thermal treatment;
    - Chemical treatment
  - Final disposal of waste leftovers  
Disposal of waste in sanitary landfills

### 2.4.1 Disposal

In the context of waste management, the disposal remains a last option, but necessary for waste treatment in Kosovo, which needs to apply technical standards in order to protect the environment.

Table 6: Sanitary landfills in the Republic of Kosovo

Sanitary landfills :	Region	Type of landfill	Surface in ha	No. of inhabitants	Time period
Prishtinë	Prishtinë, F. Kosovo, Lipjan Obiliq, Glogoc,	Regional	40	724.251	15
Gjilan	Gjilan, Kamenicë, Viti, Ferizaj, Novobërdë	Regional	24	242.195	15
Prizren	Prizren, Suharekë Malishevë, Rahovec, Gjakova	Regional	24	316.728	15
Podujevë	Podujevë	Municipal	5	131.300	15
Mitrovicë	Mitrovicë, Vushtrri, Skenderaj	Regional	7	250.000	15
Pejë	Pejë, Deçan, Klinë, Istog	Regional	3.6	250.000	
Sharr	Sharr	Municipal	1.2	27.000	16
Ferizaj	Ferizaj, Shtime, Kaçanik, Shtërpcë, Hani i Elezit	Transfer station		210.120	
Zveçan	Zveçan	Municipal			15
<i>Total</i>				<i>2.151.159</i>	

Source: Report on the state of waste 2008 KEPA, 2009

## 2.5 Facilities and equipment for waste management

There are no exact figures on how many companies or waste treatment facilities exist in the Republic of Kosovo. The collectors and exporters of various metals and alloys, plastics and its processing, paper, batteries, tires, oils and glass dominate in the waste market. 36 companies have been identified dealing with the waste management and export outside the country.

## 2.6 Renovation of landfills and hot spots

### 2.6.1 *Municipal waste landfills*

During years 2007, 2008 and 2009, the investments were oriented in the rehabilitation of several landfills and final closure of old municipal and industrial waste landfills. Based on the Kosovo Environmental Action Plan 2006-2010, the Ministry of Environment and Spatial Planning, during 2007 has invested in the rehabilitation of three municipal landfills in Kaçanik, Prizren and Gjakovë, while during 2008 the landfills in Lipjan, Prizren and Gjilan were rehabilitated. Following the assessment of the situation of old municipal waste landfills, the European Commission in cooperation with the Ministry of Environment and Spatial Planning has closed old municipal waste landfills: Prishtinë, Lipjan, Fushe Kosove, Kaçanik, Gjakove, Klinë, Podujeve and Ferizaj.

### ***2.6.2. Disposal of waste from extractive industry, mines and other industrial waste***

The purpose of the municipal waste management is respect of the legal provisions of AI for administration of landfills, which is related to the EC Directive (99/31/EC) on the manner of management of municipal waste landfills. The deadlines determined in the Directive cannot be implemented but every initiative for reduction of municipal biodegradable waste would be considered a success of the Government and local institutions.

EAR and UNDP have made donations for the rehabilitation of industrial landfills such as the landfill of Artana, Kelmendi and Graçanicë. Advancement of the system for disposal of industrial waste should stimulate activities for commercial exploitation of disposed waste, which can be valorised due to the high content of metals on them. However, places considered as, hot spots" should be treated and regulated in order to eliminate and reduce the risks to environment and the human health.

## **3. MEASURES AND OBJECTIVES**

### **3.1 Measures for realization of strategy objectives**

Strategy objectives are in accordance with the basic principles of hierarchy of the waste management in order to gradually reduce the negative impact of waste on the environment and human health by creating conditions for reduction of waste at source, reduction of the risks caused from waste, reuse, incineration for power production, recycling and reduction of the amount of waste for disposal.

#### **1. Reduction of waste generation and reduction of waste quantities at source and reduction of the quantities of waste to be disposed:**

- a) Reduction of waste generation and waste reduction at the source, through education and training, economic instruments, waste management plans, implementation of regulations, integration of the IPPC directive, the investment in modern technology, etc.
- b) Special collection (selection by type) of waste at source,
- c) Organization of sub-systems for special collection of waste and reusing of significant different kinds of waste (packaging waste, end of life vehicles, electric and electronic waste, etc.)

#### **2. Development of infrastructure for an integrated approach in waste management, etc.:**

- a) The harmonization of local legislation with the EU legislation;
- b) Building of a system for information and integration in the EU information system;

- c) Construction of facilities and installations (facilities for mechanical-biological treatment of waste, incineration facilities and energy production, facilities for composting, land filling etc.),
- d) capacity building for municipal waste management service,
- e) Capacity building for waste management especially of municipal officials.

### **3. Reducing the risk from waste**

- a) Using the best practices for waste management,
- b) Improvement of the situation of existing or their closure,
- c) Using the existing power plants and other industrial capacity for hazardous waste disposal.

### **4. Increasing of employment**

- a) Development of local industry and businesses,
- b) Improvement of the current level of organization in the local industry,
- c) Technical capacity building for the collection and treatment of municipal waste.

### **5. Training of personnel, officials and public**

An efficient management of waste is a very complex process that requires a harmonized action of the state administration, regional and local units, scholars, experts, associations, businesses, media and public in general. This challenge will be overcome more easily if all parties are properly informed and encouraged to participate in the decision-making processes in the field of waste management, by taking the following measures:

The following measures are needed for their implementation:

- Act according to the principle -education through the whole life,
- Creating new approaches to education and training in the field of waste management,
- Creating awareness of responsibility for waste management from local to central level up to the global sphere,
- Ensuring that waste problems are recognized as our own problems
- Measures to ensure accurate, complete and timely information,
- Promote the principles and priorities in waste management,
- Promote the partnership of all participants and use of all available resources,

### **3.2 Objectives with timetable for waste management**

Quantitative objectives with timetable for realization of strategic goals of this strategy are presented in the Table 7.

Table 7. Quantitative objectives for the realization of strategic goals

Goals	Percentage (%)/ year			
	2010	2013	2016	2020
Municipal waste collection	50	70	80	90
The amount of separated municipal waste	0	20	30	50
Amount of treated waste	10	20	35	40
The amount of waste disposed in landfills	90	80	65	60
The amount of biodegradable waste disposed with municipal waste.	95	85	70	40

It is foreseen that by the year 2021, 90% of the people in the Republic of Kosovo will be included in the organized collection of waste, as well the percentage of municipal waste destined for further treatment and recycling would be increased to 40%.

Table 8. Objectives for recycling and reusing of special waste

Waste	Last deadline	Proportion (% mass)	
		Re-use	Recycling
Packaging Waste	2018 2022	40-65	40-55
End of life vehicles	2018 2021	60-70	90-95
Electric and electronic waste kg/capita/year	2018 2021	70-80	80-90
Waste from tire	2018 2022	30-70	20-30
Oil waste	2018 2022	40-60	-

One of the aims for municipal waste management is the promotion of recycling of municipal solid waste according to JICA project, separation of recyclable waste, and composition of organic waste as a form of recycling should begin in Prizren. Recycling 5.0% of organic waste until 2021 (currently 0.00%) in the urban zones. Recycling of 20.0% of kitchen waste until 2021 (currently 1.0%) and recycling of 50.0% of market waste until 2021 (currently 0.05).

The municipal waste will be accumulated for the purpose of recycling according to the dynamic in the table 8-a.

Table 8-a. Allocation of waste for recycling

Type of material for recycling	Targeted collection [%]	Actual collection [%]	Targeted year
Metal	80	62.1	2021
Paper	30	18.7	2021
Plastics	30	13.0	2021
Bottle/glass	20	7.8	2021

An overview of objectives from the EU legislation for waste treatment and recycling is given in the table 8-b.

Tab 8-b

TARGETS IN EU WASTE LEGISLATION				
		min recovery	min recycling	collection rate
Packaging	2008	60%	55%	
Cars	2015	95%	85%	100%
Electronics	2006	70%	50%	Min. 4kg per inhabitant per year
Batteries	2011		50% to 75% (efficiency)	
	2012			25%
	2016			45%
Tyres	2006	0 landfill of tires		
Bio waste diverted from landfills	2006	Reduction 75 % of the 1995 level		
	2009	Reduction 50 % of the 1995 level		
	2016	Reduction 35 % of the 1995 level		
Municipal waste	2015	Separate collection: at least paper /metal/plastic/glass		
	2020	50% recycling of municipal waste		
Construction & Demolition waste	2020	70% recycling/material recovery of construction and demolition waste		

Through the establishment of economic and political relations and support of the EU we aim to realize several projects for treatment of hazardous projects for which there are no material and technical possibilities to be treated in Kosovo.

### 3.3. Measures for realization of objectives

Waste management is of particular interest for our country, therefore in order to achieve the objectives of this strategy, the general and special measures were defined.

#### 3.3.1 General objectives

##### a) Identification and assessment of the current situation in the field of waste management

- To proceed with systematic research in order to gain a general overview of the current situation in the field of waste management, special attention should be paid to study the types and quantity of hazardous waste and the way how these wastes are managed; to calculate the amount of waste which is not included in the existing system of waste management.

- Prepare a detailed overview of available equipment for waste management with special emphasis on capacity, disposed hazardous waste and actions needed to harmonize our regulations with EU.
- an overview of power plants and industrial waste, which can be treated, including information on types and potential capacity for waste treatment (cement factories, brick, power plants, etc)
- Monitoring the situation and amount of waste disposed in landfills, with an environmental impact assessment, determined by the current situation as measuring the pollution of soil, air and water at all sites where hazardous wastes are dumped with or without permission,
- Continued identification of needs for improvement of landfills, including determining the opportunities for reusing of waste or landfill closure.

**b) Improvement of information and reporting practices for waste:**

- Provide all necessary resources (people, equipment) for data collection and reporting on the state of waste, including education and training of all persons who are obliged to provide data.
- Creating the database as defined by the Law on Waste, the database must provide any information as necessary to meet international obligations and relevant information on EU;
- Development of a modern information system that will be able to provide reliable and timely data, under which it will be possible to produce regular reports on the state of waste management.
- Development of indicators to monitor the situation in the field of waste and the creation of number of priorities for indicators.
- Improve the quality, quantity and comparability of waste information and data.

**c) Harmonization of legislation on waste with the EU legislation:**

- Designing the plan for implementation of EU regulations (especially as regards to the time limit for the implementation of individual tasks). The plan should contain detailed tasks of the participants in waste management,
- Education of experts for the implementation of EU regulations on waste and realization of plan.

**d) Development of education system, reporting and communication in the field of waste management**

- Drafting and improving the education system to enable participation in waste management system, through appropriate programs in school, outside school, through various media or workshops.
- Development of programs and methods in the field of education, information and communication, and their implementation;
- Encouragement and stimulation of waste treatment;
- Promoting a positive approach, democratic dialogue and partnership with interested parties (group work, participation), in order to build trust and reach

agreement on resolving the issues of waste management and sustainable development.

**e) Contribution to employment**

- Encouraging the development of local industry and business related to production of municipal equipment for waste management and hence stimulating the creation of new jobs,
- Support of the private sector for waste management especially their recycling.
- Provide support for scientific and professional research and encouraging professional associations in undertaking activities aimed at improving waste management system.

### 3.3.2 Special measures

#### **Measure 1: Avoiding and reducing the amount of waste**

**a) Education of community, public, training of officials in the institutions to resolve problems in the field of waste management**

Priority and importance will also be given to issues of waste management in curriculums and educational programs. Although environmental protection and the environment in general are part of the existing curricula, no special emphasis was given to the waste management issues or promotion of social change. Attitudes and behaviours related to waste management among young people, students are crucial for the future. Experience in other European countries also shows that pupils and students can exert considerable influence on the attitudes and behaviours of their parents and other members of the society.

Programs and activities aimed at raising awareness of the current level, based on the approach to include development, research and practical activities. The following points are necessary for continuous improvement of education and training:

- Provision of basic information through media;
- Creation of a public focal point for communication;
- Creation of websites for education and information,
- Publication of information, environmental messages and recommendations aimed at educating and encouraging citizens to use best practices in waste management,
- Creation of promotional and educational materials;
- Preparation and implementation of promotional campaigns for individual programs for types of waste.
- Cooperation with public, creating and maintaining a permanent communication between all participants.

The following activities should be developed for awareness raising of the public:

1. Activities:

- Articles in newspapers
- Press releases
- Speeches
- Participation of the municipal staff in the RTV programs
- Notices of the public service

2. Giving public lectures in:

- schools,
- universities,
- clubs,
- groups of interest / NGOs,
- Public events.

3. Simple pages in the internet,

4. Competitions and exhibitions,

5. Training of the workforce in factories and institutions,

6. House to house awareness visits,

7. Establishment of the councils of neighbours for information and building communication with regards to the state of health, environment and waste.

*Suggestions taken by: the Strategic Planning Guide for Municipal Solid Waste Manage of the World Bank*

**b) The implementation and expansion of projects and clean production practices**

- Encourage the implementation of projects and practices that include clean production (or prevent and reduce waste and emissions) in the industry and service sector by offering incentives;

**c) Start of separation of waste and recycling**

- Creation of functional systems for the collection and recycling of waste by type (glass, paper, plastic, scrap vehicles, electric and electronic waste, tires, metals, garden waste etc.), in order to gradually reduce the amount of municipal waste disposed in landfills, according to the timely manner objectives for waste management, Item 3.2.

**d) Developing programs and legislation in line with EU guidelines**

- Developing appropriate programs and legislation that would regulate the reuse of waste packaging, construction, electrical and electronic waste, vehicles and other specific waste with emphasis on expenditures and finances.
- Implementation of the Law on IPPC and full harmonization with the EU directive on IPPC

**e) Reducing the impact of waste in protected areas**

- Specific measures should be implemented in protected areas.

**Measure 2: Developing the infrastructure for an integrated waste management system (reduction, reusing and disposal)**

**a) Developing programs and standards for building of objects and equipments, and their inclusion into spatial plans:**

- Drafting of a plan for the improvement of existing network of equipments and objects for collection, preservation, reusing, pre-treatment, treatment, recycling and disposal of waste, determination of waste, priorities, implementers, financing manners and deadlines based on the analysis of state and strategic aims,
- As regards to determination of locations, priority should be given to the more favourable locations that are already part of the waste management system,
- Specifying the requirements and conditions for issuing permits for facilities and equipment under EU regulations, specifying the specific requirements for the distribution of permits for specific types of equipment (Inert waste landfills, municipal waste landfills, landfills (repositories) of hazardous waste, composting facilities, etc.) and provision of their monitoring and control.

**b) Management of non-hazardous waste**

- Planning, designing, construction and establishment of waste management system at the country level, mainly for municipal and non hazardous waste, based on consultations between local authorities and government through creation of new landfills or improving the existing ones.
- Expansion of facilities for pre-treatment and separation of the first raw materials, composting, bio-gas etc.
- Building centres for the division and classification of municipal waste,
- Expansion or selection of sites for construction of sanitary landfills for municipal waste,
- Planning of sites for construction of landfills and construction/demolition waste,
- Establishment of the law on public enterprises and the implementation of the legal basis for waste management,
- Capital investment for rehabilitation of sanitary landfill for municipal waste,
- Defining the powers and responsibilities for municipal waste management at central and local level,
- Continuous supervision and control of the system for municipal waste management by the municipal inspectors.

**c) Management of hazardous waste**

- Planning, designing and construction of the centre for storage and temporary preservation,
- Foreseeing 1-5 sites as centres for management of hazardous waste with thermal and physical-chemical treatment in Kosovo. The sites will be determined following comprehensive analysis of the amount of hazardous waste, types and manners of management and following analysis and inspection of each proposed site.

### Measure 3: Decrease of risk from waste

#### a) Improvement of landfills and their rehabilitation

- Continuation of systematic activities aimed at improving the landfills and rehabilitation of polluted sites in accordance with EU standards,
- Drafting legislation and guidelines on rehabilitation for the use or closure of landfills.

## 4. DEVELOPMENT DIRECTIONS

### 4.1 Waste management concept

The main idea and purpose of the concept for waste management is to reduce the amount of waste destined for permanent disposal. The realization of such concept will be realized with the establishment of the sound environmental system for waste management which would;

-maintain the urban environment and public health in all municipalities,  
-motivate investments to promote the economic development of each municipality of Kosovo,

A sound environmental system for waste management which would promote the 3R waste and solve the problems as follows:

- **Avoidance** of waste generation, which results in reducing the large amount of waste and harmful effects of waste at the source, so that the total amount of waste destined for subsequent phases of waste management is smaller,
- **Use** of waste that cannot be minimized in order to use the material for power generation, raw materials in accordance with the technical, environmental and economic possibilities; This phase begins with a special collection of waste according to types,
- **Recycling** of waste should be continuously encouraged in order to achieve the forecasted aims for recycling and use of waste as raw material.
- **Thermal treatment of waste** - use of waste as fuel and incineration for power generation,
- **Disposal** of waste in controlled and organized landfills (in existing landfills), which will be done only following the attempts for reduction, reuse, recycling of waste. Appropriate collection, treatment and disposal without causing negative effects to the environment and human health

Table xx provides a simplified overview of the advantages and draw-backs of the main

Waste management options.

**Table xx: Rough comparison of the relative merits of the various waste management options**

Option	Advantages	Deficiencies
<b>Prevention</b>	<ul style="list-style-type: none"> <li>• Protection of natural resources.</li> <li>• Avoidance of need for waste management</li> </ul> Long sustainability	<ul style="list-style-type: none"> <li>• Difficulties to be achieved/realized.</li> </ul>
<b>Reuse and recycling</b>	<ul style="list-style-type: none"> <li>• Allows to maximize the benefits from the aspect of the use of material from waste,</li> <li>• Helps in reduction of need for extraction of materials</li> </ul>	<ul style="list-style-type: none"> <li>• In long-term period, the reused and recycled materials become waste</li> <li>• Reusing and recycling require energy and generate waste.</li> <li>• There should be a cost/profit from the evaluation to ensure balance of profits (Remains positive).</li> </ul>
<b>Thermal treatment</b>	<ul style="list-style-type: none"> <li>• Avoids the use of other fuels,</li> <li>• Decreases the amount of materials to be disposed</li> </ul>	<ul style="list-style-type: none"> <li>• Often accomplished with low efficiency,</li> </ul> May generate hazardous waste.
<b>Final disposal</b>	<ul style="list-style-type: none"> <li>• If done appropriately can reduce the possibility for the waste to cause damages to the human health and the environment</li> </ul>	<ul style="list-style-type: none"> <li>• No profit for sustainable development ,</li> <li>• Very costly.</li> </ul>

Development of the concept for waste management will be achieved step by step according to the vision of this strategy. The aimed years of this development is from 2013 up to 2022. This time period is divided into to phases:

**First phase 2013-2017- construction and stabilization of the waste management system.**

**Second phase 2018-2022- development of a system for achievement of aims**

#### 4.2 Activities for management of special waste

The management of special waste is enabled by the legislation approximated with the standards and instructions foreseen in the EU legislation. This waste can be mainly reused or recycled and can be valorised for the market.

Efforts will be made to regulate the responsibilities and obligations in the institutional framework in order to achieve financial sustainability for the waste management.

#### 4.2.1. Municipal waste

Municipal plans will be prepared also for the creation of the network of centres for collection and classification of waste into waste types. This should be done, since the amount of waste in some municipalities is small, due to the small number of inhabitants. The building of such big well equipped centres would lack reasonability. Therefore, transfer stations for waste can be built in some municipalities which can be expanded later on, depending on the requests.

The volume waste can be collected in these centres (vehicle tires, household furnishings, appliances etc). The citizens are free to deliver their waste every working day to the centres.

The respective municipality should ensure and determine the locations for the centre for collection and classification of waste as well transfer stations of waste. In order to achieve a sustainable management, apart from the principle “polluter pays”, the creation of waste should be minimized and their treatment should be done in compliance with the principle of hierarchy for waste management. To achieve this, the following actions should be taken:

a) institutional enforcement:

- Drafting and harmonization of national legislation with EU legislation,
- Adoption of an action plan for waste management and local plans for waste management in municipalities and for industrial/economic operators,
- The locations of objects and equipments for municipal waste management should be determined in the municipal development plan,
- Creation of educational programs for targeted groups in the form of an annual comprehensive campaign,
- Financial support for the expansion of municipal waste services,
- Stimulation of reusing and recycling through regulations and concessions,
- Definition of the determination of taxes for provision of services for collection and disposal of waste for recycling.
- Environmental education and increasing the environment education.

b) Strengthening of the technical system

The following actions should be taken to accomplish major tasks aimed at improving the overall waste management system:

- Improvement of the system for municipal waste collection,
- Expansion of service zones,
- Organization of centres for waste management (collection, treatment, recycling, transport),
- Organizing the network of transfer stations,
- Organizing the network of collection points for hazardous and special waste,
- The closure of waste landfills based on the plan for waste management,
- Improvement of state in existing landfills,
- Cleaning of public spaces,
- Cleaning of illegal points,
- Building sites for composting of biodegradable waste,

- Encouraging the use of biomass and bio-gas,

#### **4.2.2. Construction and demolition waste**

Improvement of management of construction and demolition waste will be determined by following instructions:

- Education and information of all participants in the management of construction and demolition waste,
- Prohibition of construction and demolition waste disposal in sanitary landfills, the arable land near the settlements, nature,
- Establishing full control over the construction waste region from the place of waste generation to the final place,
- Reuse of all types of construction waste for up to 80% of the total amount until 2021,
- Encouraging the use of construction materials that are environmentally friendly,
- Inspection of all construction and demolition waste landfills,
- Opening construction and demolition waste landfills according to the legal competence of the municipality, where appropriate,
- Determination of locations for disposal of waste which will be generated from the decommissioning of the PP Kosova A.

#### **4.2.3 Industrial and mining waste**

Improvement of the management of industrial and mining waste will be determined by the following instructions:

- Assessment of the amount of waste by type of waste,
- Advancements in the technological process in order to reduce the quantities and harmful features of waste,
- Separation of waste for recycling and reusing,
- The use of various wastes from industry,
- Rehabilitation of industrial landfills,
- Treatment or disposal of hazardous waste from hazardous chemical waste,
- Construction of warehouses for preservation of hazardous waste,
- Export of waste for the reusing or disposal purposes.

#### **4.2.4 Biodegradable waste**

In order to reduce the waste disposal and for the purpose of the use of all biodegradable organic waste such as waste from the sector of agro – economy, food industry and meat processing in Kosovo, the production of compost and other manners of treatment of biodegradable waste should be encouraged in order to generate power in the form of gas, briquette and gaseous substances for incineration. The demands for compost in Kosovo are high.

Competent subjects will begin improving the management of biodegradable waste on the basis of these guidelines:

- Encouraging the prevention or reduction of biodegradable waste,

- Development of system for collection and treatment of biodegradable waste,
- Construction of facilities and equipments and use of other materials for the processing of biodegradable waste,
- Encouraging the operators to produce the compost from the kitchen waste and other biodegradable waste.

#### **4.2.5 Hazardous waste**

The following guidelines are designed to improve the management of hazardous waste by:

- Creating and organizing a system for collection and transport of hazardous waste,
- Creating a system for collection and transport of hazardous waste,
- Developing an unique system of information,
- Taking organizational and financial measures for building the necessary infrastructure,

Apart from the known hierarchy of general principles (avoidance of waste generation, responsibilities and obligations), in order to achieve system for management of hazardous waste, the following instruments should be implemented:

- Education and training as well as the right of public to have access to information and participation,
- Minimizing the creation and reducing the amount of hazardous waste on creation site,
- Exporting very hazardous waste for treatment and disposal
- Stimulating companies to implement programs for reusing and recycling.

#### **4.2.6 Packaging and packaging waste**

The following guidelines are designed to improve the management of packaging waste in line with the strategy for the management of packaging waste:

- Reduction of packaging waste generation,
- Changing the design that aims the reduction of packaging waste,
- Promoting the reusing and recycling by companies,
- Prohibition of certain disposal of packaging waste,
- The introduction of tax on waste for manufacturers and importers, in order to create the necessary funds to organize the collection, treatment and reusing of packaging waste.



Centre for collection and classification of waste into types.

#### **4.2.7 End-of-life vehicles and their waste**

The following guidelines are designed to improve the management of waste from vehicles:

- the introduction of tax on the import and production of vehicles to cover the cost of administration / treatment after turned into waste
- encouraging citizens and owners to bring the vehicles to the collection points or dismantling at the end of life of their vehicles,
- organization of the system for collecting and transporting waste to vehicle treatment sites,
- Trains and aircraft tools should also be included in the system for management of waste vehicles,
- Reusing of useful parts from waste vehicles and their returning into production cycle.

#### **4.2.8 Tire waste**

The following guidelines are designed to improve the management of tire waste:

- establishing a separate payment for the import and production of tires with purpose of establishing a system for their collection, treatment and reusing,
- encouraging the reuse of waste tires for other purposes, for the manufacturing of sections of other products, production of other materials,
- Enabling thermal treatment when waste can not be used for other purposes (power generation, conversion into synthetic gas or oil).

In order to stimulate the recycling of tires in the Republic of Kosovo, an environmental contribution would be needed (providing a legal provision), in order to make the consumer pay an ECO-contribute for every new and old imported tire.

Currently, there are no companies in Kosovo, which have invested in machinery for grinding and separating of tire, steel and textile. Metal can be exported for recycling. Ground tires or rubber powder which can be exported, or processed in various rubber products such as filler for asphalt etc. Textile can be disposed to municipal waste landfills or burned in industrial furnaces. Such project would be the right solution for tire waste. The capacity of the factory should be harmonized in the capacities able to recycle tires in Kosovo.

Creating a system for the collection and transport of used tires will need to be supported by MESP.

#### **4.2.9 Electric and electrical waste**

The goal is to create a system for management of electric and electronic waste that will result in the annual collection of at least four kilograms of electrical and electronic household waste per capita. The following guidelines are designed to improve the management of electrical and electronic waste:

- collection and transport of electric and electrical waste in collection and dismantling points for this type of waste,
- Encourage the operators to separate, reuse and recycle waste,
- export of electric and electrical waste which can not be treated in Kosovo,
- Encouraging emptying and storing, as well as proper treatment of the components containing harmful substances

#### **4.2.10 Waste from waste water processing**

Sludge from the processing of wastewater will be managed in accordance with European practice. Since 2011, there would sludge created from the plant for treatment of waste water in the municipality of Skenderaj.

Sludge generated in plants for wastewater (25%) treatment can be used for:

1. agriculture,
2. composting,
3. incinerations in the cement factory, power plants etc.,
4. covering of waste landfills,
- 5.

The total amount of sludge that can be created from wastewater in Kosova based on the data (the total outlet of wastewater in 2004 in Kosova is around 1,200 l/s , or 110,000 m<sup>3</sup>/d), is 25,700m<sup>3</sup> /d.

#### **4.2.11 Animal, food industry and meat processing waste**

Due to the lack of data for this type of waste, it is necessary to conduct a study in order to define the sources of this waste, the amount of waste, give proposals for the manner

of management and proposals for micro-locations for burying and disposal of this waste.

Technical capacity building for treatment of animal waste from slaughter processes waste and dead animals.

Cooperation with MAFRD, Kosovo Veterinary and Food Agency for the realization of twinning project for building of a factory for waste processing during slaughter of animals, birds, wreck debris and waste from the food industry and meat processing.

The project for building of a plant for treatment of waste from meat processing is ongoing. The project is financed by the European Commission through the twinning mechanism.

#### **4.2.12 Used oils and oil waste**

The following guidelines are designed to improve the management of oil waste:

- Encouraging the recycling of oil waste (minerals and food),
- The process of controlled thermal treatment of oil waste in existing factories,
- Imposing a special tax for production of oils and their import in order to cover the cost for treatment of their waste,
- Improving the system for separated collection of used oils in each municipality,
- Encouraging measures in plants to facilitate cooperation for combustion of oil waste for power production or increasing of existing capacities,
- Collection of oil separately for the reusing and recycling purpose.

#### **4.2.13. Batteries and used accumulators**

The following guidelines are designed to improve the management of batteries and used accumulators:

- Prohibition of the sale of batteries containing heavy metals (Hg, Cd)
- Promotion of the recycling of accumulators Pb in the equipments in Kosovo,
- Imposing a special tax for import and production in order to cover the cost for treatment of their waste,
- Creating a system for management of waste batteries and used accumulators in whole territory of the Republic of Kosovo. In this regard it is necessary:
  - encouraging customers to deliver spent batteries and accumulators at collection points,
  - Encouraging the use of rechargeable batteries through financial and tax policies.
  - Encouraging export of batteries due to the lack of conditions for their treatment in Kosovo.

#### **4.2.16. Medical waste**

Based on the experiences of other countries, it is assumed that public hospital institutions create waste approximately 2kg per bed in a day (75 - 90% - inert waste). In this amount are included wastes that are similar to municipal waste (household,

cleaning, and administration) and clean medical waste (which may be the non-hazardous waste and hazardous waste). Medical hazardous waste may be infectious, anatomical, cytostatic, toxic etc.

The assessment of the medical waste generation (105-25%) is based on the following assumptions:

- medical waste 0.6 kg/bed/per day
- Hazardous medical waste 0.2-0.8 kg/bed/per day.

There are 4065 hospital beds in Kosovo.

It is supposed that the number of hospital beds in the private sector is 10% of the beds in the public sector.

**Table 11. The amount of hospital waste generated in the Republic of Kosovo**

Type of waste	Number of beds	The amount of waste kg/beds/day	The amount of waste	
			kg/day	t/yearly
Materials that can be recycled	4,472	1,2	6,439	2,350
Medical waste	4,472	0,6	2,683	979
Hazardous medical waste	4,472	0,2	894	326
<b>Total</b>			<b>10,016</b>	<b>3,655</b>

- creation of a system for medical waste management,
- training of a medical-professional staff for the implementation of EU standards for waste management,
- Construction of plants for medical waste management especially the infectious ones.

#### 4.4 Responsible for implementation of planned activities

The duties of the participants in the field of waste management is as follows

Participant	Role/activity
Ministry of Environment and Spatial Planning (MESP)	<ul style="list-style-type: none"> <li>• Drafting a strategy for waste management;</li> <li>• Environmental action plan;</li> <li>• Issuing licenses for waste management and keeping of records;</li> <li>• Implementing international agreements on waste management;</li> <li>• Supervising the implementation of the strategy</li> <li>• Coordinating and encouraging the implementation of measures set out in the Strategy</li> </ul>

Kosovo Environmental Protection Agency	<ul style="list-style-type: none"> <li>• Monitors the state of local and regional landfills for municipal waste,</li> <li>• Collects and analyzes data for local and regional landfills,</li> <li>• Collects and processes data for hazardous, non-hazardous and inert waste, etc</li> <li>• Developing data base and information system for waste management;</li> <li>• Develops and prepares reports for state and waste management and reports on the state, forecasts and developments for the effects associated with waste.</li> <li>• Provides and warns of the danger to the public from the waste landfill and the possibility of contamination of underground and surface water.</li> </ul>
Local government-municipalities	<ul style="list-style-type: none"> <li>• Develops local plans for waste management;</li> <li>• Develops annual reports on waste management which are submitted to the Ministry;</li> <li>• Regulates, implements and organizes the management of waste in their territory;</li> <li>• Determination of standards for municipal waste services;</li> <li>• Participates in issuing decisions for construction of facilities for waste treatment;</li> <li>• Performs other tasks as prescribed by law and acts for waste management;</li> <li>• Imposes the tariffs for collection services and disposal of municipal waste by waste management companies.</li> </ul>
Water and Waste Regulatory Office	<ul style="list-style-type: none"> <li>• Licensing of public companies for collection and disposal of waste,</li> </ul>
Kosovo Landfill Management Company	<ul style="list-style-type: none"> <li>• Operation of sanitary landfills</li> </ul>
Regional public companies for waste	<ul style="list-style-type: none"> <li>• Collection and transportation of waste</li> <li>• Drafting an operational plan for collecting and transporting municipal waste,</li> <li>• Collection and transportation of waste</li> <li>• Increasing the quality of infrastructure for municipal waste collection,</li> <li>• Expansion of service in areas that are not covered by municipal waste collection service,</li> <li>• Report on the types and quantity of collected waste,</li> <li>• Organizing the delivery of waste to licensed companies for final treatment / disposal of waste</li> </ul>

Waste producers-households	<ul style="list-style-type: none"> <li>• Disposal of waste properly</li> <li>• Buying products that can be recycled and those that create less waste</li> <li>• Active participant in activities that aim to improve waste management system</li> </ul>
Importers and exporters	<ul style="list-style-type: none"> <li>• Getting a permit for waste export</li> <li>• Getting a permit for importing products that create small amounts of waste and those that can be easily recycled</li> <li>• The import of hazardous waste is prohibited</li> <li>• Properly labelled products</li> <li>• Ensuring the separation and treatment of waste generated by their production,</li> <li>• Sending data on their exported and imported and transit waste in accordance with the law,</li> </ul>
Companies for waste treatment	<ul style="list-style-type: none"> <li>• Necessary permits for conduct of their activities</li> <li>• Using best available technology for waste treatment</li> <li>• Submitting reports to the competent authorities about the type and amount of waste that are recycled or processed,</li> </ul>

## **5. EVALUATION OF INVESTMENTS AND SOURCES OF FINANCES**

The assessment of financial needs for the implementation of the strategy and sources of financing for waste management will be done according to the principle “polluter pays”. In addition to the generation of taxes from the municipal waste collection service, other means would be used for the realization of different projects, namely the means from the budget of the Republic of Kosovo, budget of municipalities, different donations and functioning of economic instruments such as taxes on import, products and other services.

The planning should be aimed at making great changes and investments which would be necessary to implement this strategy and meet some of the demands of the local and European existing legislation (especially the directive for landfills). The planning for building and functioning of the waste management objects and provision of services should cover a period of ten years (2013-2022).

The expenditures of the waste collection disposed from the households, businesses and institutions are mainly covered by the cost calculated for the receiving/providing of the service for collection, transfer and disposal of municipal waste.

The necessary means for the realization of strategy include financial means for the construction of infrastructure for waste management system and means to cover the expenditures for operation.

The assessment of financial means needed for the realization of projects in the entire territory of the Republic of Kosovo for the time period from 2013-2022 is presented in the specifications presented below:

#### A). The estimated cost of planned action

##### 1. General measures

- Feasibility study for drafting and creation of the economic instruments related to the waste management. (at the level of the Republic of Kosovo);
- Drafting municipal plans for management of waste by municipalities;
- Creating a program for managing certain types of municipal waste;
- Establishment of information system for waste management;
- Drafting and completion of the legislation on waste in compliance with the EU acquis.

Calculated cost: \_\_\_\_\_ € 2.0 m

##### 2. Reduction of waste generation

- Development of curricula and educational programs on environment related to the waste for all levels (kindergartens, schools, colleges, universities)
- Encouraging of the production of ecological products and their consumption (removal of PE plastic bags, production and use of biodegradable materials);
- Decrease of the amount of packaged goods.

Calculated cost: \_\_\_\_\_ € 3.0 m

##### 3. Network of centres for management - treatment of biodegradable waste (composting)

- Biodegradable waste - production of compost;
- Building of a plant for treatment of waste from animal slaughtering and meat processing;
- Biodegradable waste - gas production;
- Biodegradable waste - briquette production;

Calculated cost: \_\_\_\_\_ € 8.2 m

##### 4. Machinery and equipment for waste collection

- Purchase of trucks for collection and transfer of municipal waste,
- Purchase of various containers for municipal waste,
- Purchase and instalment of different bins for special and hazardous waste.

Calculated cost \_\_\_\_\_ € 25.0 m

**5. Network of centres for collection and classification of waste into types**

- Building of 20 transfer stations and centres for receipt and classification of waste into types.

Calculated cost: € 10.0 mil

**6. Construction of centre for treatment of municipal waste  
Plants for mechanical-biological treatment of municipal waste**

- Plants for separation and treatment of municipal waste (locations of municipal landfills)

- Building of a centre for treatment of municipal waste

Calculated cost: € 30.0 mil

**7. Expansion of sanitary landfills and their maintenance**

- Expansion of the space in the landfill in Sharr;
- Construction of the new landfill or expansion of the existing landfills in the region of Peja;
- Study and research of the situation in the regional landfill in Mitrovicë/Mitrovica.

Calculated cost: € 4.15 m

**8. Improvement of the situation in the landfill**

- Improvement of technical conditions in the landfill of the region Prishtina – Obiliq;
- Improvement of the management of municipal waste landfills and treatment of polluted water in the landfill -Landovicë, Gjilan, Podujevë, Prishtinë.

Calculated cost: € 5,5 m

**Total 3-8 (Municipal waste) € 87.85mil**

**9. Menaging of hazardous waste**

- Cleaning of waste and chemical dissolution from the former metal industry -Peja;
- Cleaning of the river Lepenc from the asbestos waste-Hani i Elezit;
- Cleaning of the waste from the textile industry- former Shartex- Sharr;
- Treatment of diluted pesticides- in the waste landfill in Podujeva;
- Cleaning of waste from textile industry - former Emin Durak- Gjakova;
- Waste from the factory of accumulators in Peja;
- Waste from the former factory of leather shoes in Peja;
- Waste from the factory of batteries- Gjilan;
- Destruction of waste with PCB/PCT.

Calculated cost: € 7.0 mil

**10. Network of centres for collection of construction -demolition waste**

- Construction of objects and equipments for treatment of waste 12-centers for treatment of construction – demolition waste.

Calculated cost: € 9.0 m

#### 11. Elimination of illegal landfills and polluted areas

- Cleaning of waste from the illegal disposal in the municipalities of Kosovo.

Calculated cost: € 10.0 m

#### 12. Rehabilitation of areas polluted with industrial and mining waste

- Cleaning of areas contaminated with industrial chemicals and mines

Calculated cost: € 20.0 m

**Total 9-12** € 46.0 ml

According to this strategy, the total estimated needed amount is 133.85 million euro, which is dedicated according to the above presented structure.

### B) Strategy Financing (2012 - 2021)

All financing sources shall be identified to enable the effective implementation of planned projects within the waste management system.

No more than half of the total funds will be provided from public revenues, the rest will be provided by other sources.

Due to the relatively low prices of services fees in the field of waste management, will be very important to plan their gradual and continued growth to cover the real costs in the sector.

Key actions necessary to implement the strategy and leading agencies involved with the terms for development of projects are summarized below in Table 11. They form the core of the strategy, along with the action plan on waste management.

Financing plan for the implementation of Strategy will depend on the following sources:

- Government sources - income from the central government, municipal government sources, public service fees, other fees to the environment and environmental taxes;

Supporting the private sector - eg industry funding for their costs of pollution and public-private partnerships to finance environmental and services infrastructure;

- **International financing** - borrowing from overseas banks, loans and grants from donors GO and international NGOs, as well as loans from international development agencies.

No matter how hard decision-making will be, there is no escape from the fact that the projects in the areas of critical environmental problems will take some-million investments. It is known that such funds are limited for each transition country such as the Republic of Kosova. Although, at first sight, it may seem daunting to funding sources, it should be remembered that these are critical/necessary investments and should be done at a stage, while Kosova will meet EU regulations and international environmental standards.

No more than half of the total funds will be provided from public revenues, the rest will be provided by other sources.

Due to the relatively low prices of services fees in the field of waste management, will be very important to plan their gradual and continued growth to cover the real costs in the sector.

Spending assessment is to provide an indication of the size of needed investment in the medium and long term. This strategy does not take into account the criteria for "willingness to pay" as well as "capability to pay", these will be decided in the Government of the Republic of Kosova.

Implementation of projects under this strategy is summarized in the following objectives:

Objective 1: General measures to strengthen the waste management and monitoring system;

Objective 2: Investment in areas of critical problems and waste infrastructure;

Objective 3: Increase the level of awareness, and Information

**Table: 11 - The implementation of the projects according to investment and leading agencies for implementation and project costs**

Objective 1: General measures to strengthen the waste management and monitoring system; Objective 2: Investment in areas of critical problems and waste infrastructure; Objective 3: Increase the level of awareness, and Information					
No. / Measures	The purpose of investments (in A) -Actions	leading agency	period	Estimated Cost [€]	Suggested Resources
1. Handling - Infrastructure	Network of centers for the collection and treatment of waste from the construction , demolition, (10)	Government MESP Municipalities	2014-2017 2018-2022	4,5mln 4,5mln 9,0 mln	40%,Donors 30% BK 30% Municipalities
2. Storage infrastructure	Sanitary landfill expansion and maintenance (7)	Government MESP Municipalities	2014-2016 2017-2020	3.5mil 0.65mil 4.15 mln	30% Donor 70% BK
3.Treatment and Infrastructure	Management centers network - treating biodegradable waste (3)	Government KFVA MESP	2013-2017 2018-2022	3.5mln 4.7 mln 8.2 mln	80% Donor 20% BK
4.Infrastructure Management	Improvement of municipal waste landfills (8)	MED MESP KLMC	2014-2017 2018-2019	4,0 mln 1.5 mln 5,5mln	70% Donor 30% BK
5. Collection-Infrastructure	Supplies machinery and equipment for the collection and transport of municipal waste (4)	Government MLGA Municipalities	2013-2017 2018-2022	6.5mln 18.5 mln 25.0mil	50% Donor 30% Municipality 20% BK

6. Waste management reduction	Elimination of illegal landfills and contaminated sites -clean of illegal waste disposal sites in the municipalities of Kosovo (11)	Government MLGA Municipalities	2013-2017 2018-2022	5.0 mln 5.0 mln 10.0 mln	80% Municipality 20% BK
7. Treatment and Infrastructure	Construction of waste treatment center (6)	Government Municipalities MLGA	2018-2022	30.0 mln	70% Donor 30% BK
8. Collection-Infrastructure	Network of centers (TS) for the collection and classification of waste types (5)	Government Municipalities MLGA	2014-2017 2018 - 2022	2.0 mln 8.0 mln 10.0 mln	40% Donor 30% BK 30% Municipality
9 . Education, awareness	Reduction of waste generation (2)	Municipalities MESP MEST	2013- 2019	3,0 mln	80% KB 20% Municipality
10. Establishment of planning, legislation system	General measures (1)	MESP Municipality	2014- 2017	2,0 mln	50% KB 50% Municipality
11. Cleaning, treatment, management	Hazardous Waste Management (9)	Government APK MED MESP	2015- 2022	7.0 mln	20% BK 80% <b>KAP</b>
12. Cleaning, treatment, rehabilitation management	Rehabilitation of contaminated sites with industrial waste and mining (12)	Government APK MED MESP	2015- 2019	20.0 mln	10% KB 20% Donor 70% <b>KAP</b>
<b>Total cost</b>				133.85 mln €.	

Table: 12 Distribution of investment for 10 years and 2 periods

	Period I					Period II					Serial number Cap.5A kg/period I+II	Suggested financing source		
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		KB [kg]	Com/KAP [kg]	Donor [kg]
<b>Year</b>	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021				
<b>Investment [€]</b>		0.50	0.50	0.50	0.50	-	-	-	-	-	1- 2.0	1.0	1.0/-	-
	0.30	0.50	0.50	0.50	0.50	0.20	0.50	-	-	-	2- 3.0	2.4	0.6/-	-
	0.70	0.70	0.70	0.70	0.70	0.94	0.94	0.94	0.94	0.94	3- 3.5+4.7	1.64	-/-	6.57
	1.30	1.30	1.30	1.30	1.30	3.70	3.70	3.70	3.70	3.70	4- 6.5+18.5	5.0	7.5/-	12.5
	-	0.50	0.50	0.50	0.50	1.60	1.60	1.60	1.60	1.60	5- 2.0+8	3.0	3.0/-	4.0
	-	-	-	-	-	6.0	6.0	6.0	6.0	6.0	6- 30	9.0	-/-	21.0
	-	1.1666	1.1666	1.1666	0.1625	0.1625	0.1625	0.1625	-	-	7- 3.4998+0.6 5	2.905	-/-	1.245
	-	1.0	1.0	1.0	1.0	0.75	0.75	-	-	-	8- 4.0+1.5	1.65	-/-	3.85
	-	-	0.875	0.875	0.875	0.875	0.875	0.875	0.875	0.875	9- 7.0	1.4	-/5.6	-
	-	1.125	1.125	1.125	1.125	0.90	0.90	0.90	0.90	0.90	10- 4.5+4.5	2.7	2.7/-	3.6
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	11- 10.0	2.0	8.0/-	-	
-	-	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	12- 20.0	2.0	-/14	4.0	
<b>Investment/ years [€]</b>	3.30	7,7916	11.1666	11.1666	10.1625	18.6275	18.92275	17.6775	17.515	17.515	Total	34.695	22.80/19.60	56.765
<b>Investment /period I/II [€]</b>	43.5873 mln. (32.56%)					90.25775 mln. (67.44%)					Total	133.85 mln.		
<b>Total [€]</b>	~133.85 mln.										25.92 %	(17.20/14.6 4)%	42.24%	

## 6. CONCLUSIONS

Strategy on Waste Management in the Republic of Kosovo is based on the general principles of waste management of the EU, and is a realistic framework for introducing more sustainable practices in waste management.

Goals and measures for waste management in Kosovo are in accordance with current practice in the EU, taking into account several characteristics that are specific to the Republic of Kosovo. Objectives for priorities are aligned with EU directives.

The concept - use reduction, incineration, recycling - disposal applicable to all types of waste- is proposed. Some programs were proposed also for non-hazardous and hazardous waste, especially for the special waste.

The vision for waste management in Kosovo, based on the proposed concept includes the following:

- Integrated approach for waste management,
- organization of centres for waste management, building of plants for treatment of waste and proper management of existing landfills,
- safe removal of waste that cannot be managed differently,
- increase of recycling and composting,
- reduction of the amount of hazardous waste,
- protection of underground and surface water against waste,
- monitoring and controlling of the waste management system,
- engagement of capital from the foreign countries for waste management,
- Educating the public, training the officials in order to increase their knowledge on waste management.
- Higher participation of public in the decision-making process,

An estimated 133.85 million Euros are required for the implementation of the strategy over the next 10 years. The sources of financing planned for this purpose are: budget of the Republic of Kosovo 25.92%, municipal budgets 17.20%, foreign donations 42.24%, and other sources 14.64%, psh KAP.

Based on this strategy and in accordance with Article 9 of the Law on Waste, and in line with EU practices, the Government of the Republic of Kosovo shall adopt the Plan on Waste Management in the Republic of Kosovo.

The approval of the Strategy and Plan in the Republic of Kosovo is of particular importance, because of the fact that these documents foresee changes enabling gradual resolution of current problems and improvement of the current system, towards sustainable waste management.

This Strategy shall be approved by the Government of the Republic of Kosovo.

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