KOSOVO ENVIRONMENTAL PROTECTION AGENCY

The State of Waste in Kosovo 2008 Report

Prishtinë, 2009

THE STATE OF WASTE IN KOSOVO 2008 / REPORT

Editor :
Ministry of Environment and Spatial Planning
Kosovo Environmental Protection Agency

Editor team

MSc. Tafë Veselaj- KEPA
MSc. Afrim Berisha- KEPA
MSc. Mimoza Hyseni- KEPA
Ibrahim Balaj- MESP
Bajram Kafexholli-KEPA

Other contributors:

Rizah Hajdari-KEPA
Enver Tahiri-MESP
Sabit Restelica- KEPA
Ajet Mahmuti- KEPA
Tone Gashi-KEPA
Mr.sc. Florije Tahiri- MESP
Lindita Xhema- MESP
Mr.sc. Sami Behrami-KEPA
Perparim Gashi- KEPA
Ardiana Pllana- KEPA

Lector:
Tone Buzhala-Gashi

Designed by:
Design house

Cover page:
Ylber Sherifi

Printed by:
Design house

Foreword

Waste management is one of most important issues for Sustainable Environmental Management. So far, the Ministry of Environment and Spatial Planning has established the needed legal structure for waste management (the Law on waste and a series of administrative instructions that regulate this field). Also, based on its legal responsibilities the MESP has started preparation of the Strategic Plan for Waste Management. Apart the fact that the role of MESP was focused on legislative preparation activities, it has done continual efforts for improving the waste management system. In this course, the MESP achieved to properly address the issue while closely have cooperated with other institutions and organizations. We are aware that waste management can not be carried out only by a single institution and that joint actions are needed by us (MESP), lawmaking institutions, executive institutions, regulatory office, local governments, waste collection companies and landfill management companies. It is obvious that local governments have a key role in this field, but also it is very obvious that an essential role have donors, civil society and business community. We have to admit that we are not satisfied with current waste management system. Difficulties and problems are evident in all system's components as in waste collection, selection, storage, and that these problems are evident in management process of all types of wastes as: household waste, industrial waste, hazardous waste etc. Therefore for organizing an appropriate waste management system, a functional coordination of all abovementioned factors is required. We have to change our general public approach and perception toward waste management. It has to be realized that not everything is to be thrown away, not everything is a "Waste", not everything is to be "buried into landfill". We have to follow the practice of developed countries that wastes are a real potential resource for economical development, an opportunity to create new jobs, an opportunity to save natural resources. We aim to pay more attention to more environmentally accepted options for waste management such as: prevention measures, minimize waste generation, reuse, recycle, and using wastes as energy resource. Thus, applying the proper waste management system we contribute to achieve our main objective, environmental protection.

Mahir Yağcilar, Minister
Ministry of Environment and Spatial Planning.

Acknowledgements

Dear readers, fellow workers and partners. In your hands you have a report that contains basic information about the state of waste in Kosovo. This report is drafted by Kosovo Environmental Protection Agency, in the course of fulfilling its tasks and responsibilities that this institution has for reporting for different environmental sectors. Preparation of this report is supported from other Departments (Divisions / Sectors) of the Ministry of Environment and Spatial Planning, in particular by the Division for Waste Management, Department of Environmental Protection. A great contribution on the data collection we got from the Kosovo Landfill Management Company (KLMC), the Water and Waste Regulatory Office (WWRO), regional waste companies as well as other institutions. We believe that increase of cooperation among responsible institutions and organizations for waste management, would significantly improve the process of data collection, exchange, elaboration and reporting for the state in this important environmental sector. Therefore, KEPA extends its appreciations and acknowledgements to all governmental and nongovernmental organizations, economical operators, donors, experts and companies for showing their willingness and cooperation for completing this report. In particular we acknowledge the GTZ for financial support for this report and for their permanent support to KEPA activities.

Dr. Ilir Morina
Kryeshef Ekzekutiv i AKMM-së

Index of Acronyms

EAR	European Agency for Reconstruction
KEPA	Kosovo Environmental Protection Agency
KTA	Kosovo Trust Agency
EU	European Union
DANIDA	Danish International Development Agency
SOK	Statistical office of Kosovo
GTZ	German Technical Cooperation
KHMI	Kosovo Hydro Meteorological Institute
KFOR	NATO Peacekeeping Force
KLMC	Kosovo Landfill Management Company
MESP	Ministry of Environment and Spatial Planning
Ni-Cd	Nickel Cadmium
PuE	Public Enterprise
OSCE	Organisation for Security and Cooperation in Europe
PBB	Polybrominated Biphenyl
PCB	Polychlorinated Biphenyl
PCT	Polychlorinated Terphenyls
PET	Polyethylene (plastic products
MIP	Mitrovica Industrial Park
KEAP	Kosovo Environmental Action Plan
KSPWM	Kosovo Strategic Plan for Waste Managemet
MCFM	Municipal Centre for Family Medicine
PP	Power Plant
PPA	Power Plant Kosovo A
PPB	Power Plant Kosovo B
KPC	Kosovo Protection Corps
AI	Administrative Instruction
UNMIK	United Nations Mission in Kosovo
WWRO	Waste and Water Regulatory Office

Index of Tables

Table 1: Number of population in years in Kosovo 1948-2006
Table 2: Population structure according to age in Kosovo 1981-2006
Table 3. Kosovo Population according to regions and municipalities
Table 4: Objectives, measures and activities from the KEAP
Table 5. List of priority projects for waste in KEAP
Table 6: EU waste directives and their transposal at Kosovo national Legislation
Table 7: Data on regional waste companies
Table 8: Background of organized waste collection in Kosovo
Table 9: The main waste groups according to the European Waste Catalogue
Table 10: The coverage of population with waste collection services according to municipalities and regions for the period 2007-2008
Table 11: Daily and annual amount of waste per capita
Table 12: Quantity of hazardous waste according to the type, location and municipality.
Table 13: Quantity (tonne/year) of medical waste in Kosovo, according to health institutions and locations
Table 14: Quantity of expired drugs in Kosovo
Table 15: Quantity of Produced ash in KEK's power plants according to the years
Table 16: Contents of ash in % according to its components
Table 17: Quantity of municipal waste in sanitary regional and municipal landfills for 2007, expressed in tonnes
Table 18: Quantity of municipal waste in sanitary regional and municipal landfills for 2008, expressed in tonnes
Table 19: Quantity of waste deposition per capita (kg/year) according to regions
Table 20: Daily average of municipal waste in Kosovo (kg/capita)
Table 21: Sanitary landfills, their capacity and surface
Table 22: Industrial landfills, quantity and surface
Table 23: Waste Hot- spots according to municipalities and locations
Table 24. Some of companies that deals with waste treatment in Kosovo
Table 25: Quantity of treated waste, according to the types
Table 26: Tariffs (Euro/month) for solid waste collections for households, according to the regional companies
Table 27: Tariffs (Euro/month) for solid waste collections for commercial/industrial consumers, according to the regional companies
Table 28: Tariffs (Euro/month) for solid waste collections for institutions, according to the regional companies
Table 29: Rate of payment for waste collections and customers' view
Table 30: Infrastructure for waste collection according to the companies
Table 31: Completed projects for rehabilitation of old landfills
Table 32: Planed projects for rehabilitation and closure of landfills
Table 33: Investments for construction of sanitary landfills in Kosovo

Index of Figures

Figure 1: Wastes according to the types in Kosovo (%)
Figure 2: Fractions of municipal wastes (%)
Figure 3: Percentage of waste collection types. Prishtina region
Figure 4: Percentage of waste collection types. Other regions
Figure 5: Percentage of waste collection types. Average for Kosovo
Figure 6. The rate of satisfaction of customers with waste collection services
Figure 7: The rate of waste collections services comparing to other public services
Figure 8: Quantity of municipal waste disposal in sanitary landfill for 2008
Figure 9: Quantity of municipal waste disposal in sanitary landfill according to the years (2006-2008)
Figure 10: Quantity of municipal waste per capita (kg/year) according to regions
Figure 11: Annual average of waste generation in Kosovo (Kg/capita)
Figure 12: Industrial Landfills according go the surface (ha)
Figure 13: Hierarchy of waste management
Figure 14: Types of treated waste in Kosovo (tonnes/month)

Index of Maps

Map 1: Spread of regional waste companies
Map 2: Spread of incinerators for medical waste incineration
Map 3: Spread of regional landfills
Map 4: Landfills
Map 5: Potential hotspots of wastes, hazardous wastes and other hotspots
Map 6: Waste treatment points in Kosovo

CONTENTS

1. INTRODUCTION
   - 1.1. General characteristics of Kosovo
     - 1.1.1. Geographical position
     - 1.1.2. Relief
     - 1.1.3. Climate
     - 1.1.4. Population structure
   - 1.2. Legal and strategic framework for waste
     - 1.2.1. Laws and Administrative Instructions for waste
     - 1.2.2. Kosovo Environmental Strategy
     - 1.2.3. Kosovo Strategic Plan for Waste Management
     - 1.2.4. Kosovo Environmental Action Plan
     - 1.2.5. EU waste directives
   - 1.3. Institutional Structure
     - 1.3.1. MESP
     - 1.3.2. KEPA
     - 1.3.3. Local Government
     - 1.3.4. WWRO
     - 1.3.5. KLMC
     - 1.3.6. Regional companies
     - 1.3.7. Private sector
2. Waste
   - 2.1. Waste definitions and notions
   - 2.2. Background of waste management
   - 2.3. Classification and waste types
   - 2.4. Municipal waste
   - 2.5. Industrial waste
   - 2.6. Medical waste and expired drugs
   - 2.7. Ash
   - 2.8. Construction waste
   - 2.9. Other waste types
3. STATE AND WASTE MANAGEMENT
   - 3.1. Waste generation in municipalities
   - 3.2. Landfills
     - 3.2.1. Old landfills of municipal waste
     - 3.2.2. Sanitary regional and municipal landfills
       - 3.2.2.1. Regional landfill in Gjilan
       - 3.2.2.2. Municipal landfill in Podujevë
       - 3.2.2.3. Regional landfill in Prizren

3.2.2.4. Regional landfill in Prishtinë
3.2.2.5. Regional landfill in Pejë
3.2.2.6. Regional landfill in Mitrovicë
3.2.2.7. Municipal landfill in Sharr
3.2.2.8. Transfer station in Ferizaj
3.2.2.9. Municipal landfill in Fushë Kosovë
3.2.2.10. Municipal landfill in Zveçan

3.3. Industrial landfills
3.4. Waste hotspots

4. WASTE TREATMENT
4.1. Concept of waste treatment
4.2. Waste recycling
4.3. Reducing
4.4. Reusing

5. GENERAL ASPECTS
5.1. Tariffs for waste management
5.2. Infrastructure for waste collection
5.3. Projects and investments in waste sector

6. CONCLUSIONS AND RECOMMENDATIONS
7. REFERENCES

1. INTRODUCTION

The environmental reporting in Kosovo is a task and a responsibility of KEPA [1], as stipulated by the Law on Environment Protection.
Except the general report on the State of the Environment, KEPA's reporting activities include producing reports for particular environmental sectors. One of the sector reports is the report on the state of waste in Kosovo.

This report includes data collected in the field by KEPA teams, data provided by regional companies, KLMS, WWRO, as well as data from other governmental and non governmental organizations. This report includes data taken from Waste Laws and Administrative Instruction, data from projects and donors in this field. Also, relevant data published in other publications and reports are considered and included in this report.

The data presented in this report, mainly refers to the period 2007-2008, but in some cases, due to the lack of newest data and/or for comparative purposes are used data from earlier period than 2007.

The report is organised in chapters and each of chapters considers a specific aspect. In the first part (introduction), except some general data for Kosovo the legal and institutional framework for waste management is presented. In the second chapter are presented general data on waste as definitions, notions, background of waste management in Kosovo and waste classification.

In the third chapter the state of waste is described, including waste generation and the state of landfills.
The next chapter considers the waste treatment where the manners of waste treatment and its application in Kosovo is considered.
This report includes a chapter that treats general aspects of waste management, including tariffs, infrastructure, projects and investments in waste sector. The final chapter of this report outline conclusions and recommendations for future developments in waste management sector

[1] Law on Environmental Protection (Nr.03/L-025)

1.1. GENERAL CHARACTERISTICS OF KOSOVO

1.1.1. Geographical position

Kosovo has central geographical position in Balkan Peninsula. It lies between coordinates 41°50'58" and 43°51'42" of northern geographical amplitude and between 20°01'30" and 21°48'02" of eastern geographical longitude. Kosovo covers a surface of 10.887 km², with 2.1 million inhabitants (estimation in 1991) with average population density from 192 inhabitants in km². It is bordered with Albania (southwest), Macedonia (southeast), Serbia (east, north and northeast), and with Montenegro (west). The total length of Kosovo border is 700.7 km.

1.1.2. Relief

Kosovo is a country characterised with mountains, valleys and plains. It is consisted by Kosovo Plain (510 – 570 m asl) and Dukagjini Plain (350 – 450 m asl). In morphologic aspects, it represents a real mosaic of hollows with different dimensions, bordered with medium and high mountains. The average altitude above sea level of Kosovo is 810 m, the lowest peak is 270 m while the highest peak is 2656 m (Gjeravica). Regarding hypsometric aspects, its total surface under 300 m asl is 16.4 km² (0.2 %); up to 1000 m includes 8754 km² (80.7 %), from 1000 to 2000 m 1872.3 km² (17 %) and over 2000 m about 250.6 km² (2.3 %). The main forms of relief in Kosovo are mountains (63 %) and hollows (37%).

1.1.3. Climate

The climate is mid-continental and dominated by the Adriatic-Mediterranean influencing the Dukagjini Plain and along the Drini i Bardhë basin. There are also minor impacts characterised by the changeable climate of the Adriatic-Aegean in the Kosovo Plain. The annual average rains is 596 mm. The annual average temperature is 10 ^{O}C, ranging from the lowest of -27.2 ^{O}C and the highest at 39.2 ^{O}C (KHMI, 2008). Main climate macro factors that impact Kosovo climate are: its position toward land mass (Euro-Asia and Africa), water mass (Atlantic Ocean and Mediterranean Sea), Air mass (tropical and arctic – maritime or continental), position of baric systems (maximum of Azores and minimum of Island). Main local factors that impact the Kosovo climate are: relief, water, terrain and plants.

1.1.4. Population structure

For a long period of time (over 25 years) Kosovo is facing with the lack of statistical data for population, thus the determination of population number is done mainly based on estimations and predictions.
Even though lots of population migration, pressures and violently displacement have taken place over the last century the population growth was continually positive. During the period of 58 years (1948-2006) the population growth is increased for about 188.5%.

Table 1: Number of population in years in Kosovo 1948-2006

Year	Number of inhabitants	Comments
1948	727820	Census
1961	963988	Census
1971	1243693	Census
1981	1584440	Census
1991	1956196	Estimation
2002	1985000	Estimation SOK
2006	2100000	Estimation SOK

Kosovo population is relatively young. In 2006 about 38 % of population were below 19 years old; 56 % from 20-64, and over 65 years old 6% of population.

.

Table 2: Population structure (%) according to the age in Kosovo 1981-2006[2&3]

	1981	1991	2001	2006
0-19 years	52	48	41	38
20-64 years	43	47	54.1	56
Over 65 years	5	5	5.9	6

According to OSCE data, Kosovo has about 2.363.000 inhabitants.

[2] Bulletin 17, SOK, 1991-2001, Trends and Demography of Albanian Population in Ex. Yugoslavia Economical Institute 1997, 2006,
[3] Kosovo in numbers 2006, SOK, Prishtinë 2007.

Table 3. Kosovo population according to regions and municipalities[4]

Region/Municipality	Total
Prishtina Region	**892,506**
1. Drenas	55,000
2. Fushë Kosovë	40,416
3. Lypjan	74,643
4. Kastriot	30,000
5. Besianë	117,040
6. Prishtinë	545,477
7. Shtimje	29,930
Peja Region	**383,494**
8. Deçan	41,499
9. Gjakovë	127,007
10. Burim	43,985
11. Klinë	46,003
12. Pejë	125,000
Mitrovica Region	**316,957**
13. Mitrovicë	113,145
14. Albanik	16,850
15. Skenderaj	65,312
16. Vushtrri	90,000
17. Zubin Potok	14,800
18. Zveçan	16,850
Prizren Region	**423,797**
19. Sharr	34,562
20. Rahovec	65,896
21. Prizren	236,039
22. Therandë	87,300
Gjilan Region	**366,442**
23. Gjilan	90,870
24. Kaçanik	43,004
25. Dardanë	64,000
26. Artanë	13,633
27. Shtërpce	11,187
28. Ferizaj	96,993
29. Viti	46,815
Total Number	**2,363,885**

[4] OSCE, 2004

1.2. LEGAL AND STRATEGIC FRAMEWORK FOR WASTE

1.2.1. Waste laws and administrative instructions

The basic law that regulates waste management in Kosovo is the waste Law, Nr 02/L-30.

The purpose of this Law is to Protect the environment and human health from pollution and risk from waste through environmentally sound waste management by establishing conditions for prevention and reduction of waste production and its harmfulness, in particular by:

- the development of clean technologies and their efficient use,
- the development and use of products designed to make the smallest possible contribution, by the nature of their manufacture, use or final disposal, to decreasing the amount or harmfulness of waste and pollution hazards,
- the development of appropriate techniques for the final disposal of dangerous substances contained in waste destined for recovery;
- the recovery of waste by means of recycling, re-use or any other process with a view to extracting secondary raw materials,
- the use of waste as a source of energy; and
- the restoration of areas polluted by waste.

In addition to the waste law, the following administrative instructions regulate specific areas on waste management:

- Administration of used oil waste
- Construction and demolition waste
- Batteries and used accumulators
- Administration of end life vehicles and their wastes
- Packaging and packaging wastes
- Proprietor and operator competences for waste treatment;
- Administration of landfills
- Administration of hazardous waste
- Conditions for the location for landfills
- Administration of electric and electronic equipment wastes
- Liquidation of waste from medical products
- Administration of medical waste
- Import, export and transit of waste

- Administration of PCBs and PCTs
- Mandatory fines
- Removal of waste from public areas

Administrative instruction that are under drafting process

- Old / used tires
- Licence for waste administration
- Administration of waste that contain asbestos

1.2.2. Kosovo Environmental Strategy

The Environmental Strategy for Kosovo represents and important document for overall long term development in Kosovo. The strategy is drafted through inter-ministerial cooperation and with the support of other institutions. Regarding the waste management, the strategy indicates the following strategic orientations[5]:

- Establishment of the infrastructure for waste management.
- Gradual reduction of waste at the source before disposal and energetic uses of the waste or reuse.
- Gradual reduction of waste hazard.
- Gradual increase of inclusion of the population in the waste treatment system.

Strategic priorities for waste administration:

- Completing of legal norms for waste management based on EU Directives.
- Establishment of infrastructure for waste management.
- Establishment of central database and information on state of waste
- management.
- Drafting of programs for construction of infrastructure premises in harmony
- with spatial plans.
- Arrangement and closing of old landfills.
- Use of existing industrial capacities for treatment of hazardous waste.

[5] Environmental Strategy for Kosovo , MESP 2003

1.2.3. Kosovo Strategic Plan for Waste management

Pursuant to the waste Law, the Ministry of Environment and Spatial Planning, in cooperation with other ministries and competent authorities drafts the Strategic Plan for Waste Management. The strategic plan which include the 10 years period of time, shell be approved by the Kosovo Government. This plan should be reviewed at least each five years.

The Strategic Plan for Waste Management should contain:

- Assessment of the current state of waste management;
- Main goals and measures for waste management;
- Measures for hazardous waste management;
- Directions for waste treatment in line with environmental protection principles and administrative principles;
- Directions for waste disposal;
- Directions for ensuring favourable technical conditions, to meet the goals for waste administration.

1.2.4. Kosovo Environmental Action Plan 2006-2010

In the Kosovo Environmental Action Plan 2006-2010, the chapter for waste management, indicates the objectives, measures, activities and priority projects for the period 2006-2010.

Table: 4: Objectives, measures and activities from the KEAP[6]

Objectives	**To develop a financially and environmentally sustainable system for environment and waste management that will respond to present and future needs of the citizens and the economy**
Measures	• Approving policy documents for waste management • Adoption of necessary by-laws and full harmonization with EU legislation • Introduction of sound economic instruments • Institutional strengthening for waste management in central and local level
Activities	Development of Strategic Plan for waste management
	Development of local plans for waste management
	Approval of 18 regulations for different waste streams, deriving from the law and enforcement of existing legislation

[6] KEAP 2006-2010, MESP 2005

	Optimizing the collection system for municipal waste
	Pilot projects on: • waste collection • oil collection • separation of special types of waste (paper/cardboard. Plastic/PET - composting) (municipal waste) • recuperation
	Improvement and expansion of waste management infrastructure
	Construction of infrastructure for hazardous waste: • Collection points; • storage facilities;
	Further remediation of existing „hot spots“
	Capacity building for human resources especially in the field of inspection
	Development of waste information system
	Rehabilitation of old landfills

Table 5. List of priority projects for waste in KEAP[7]

Nr:	Project	Budget (EUR)
1.	Rehabilitation of the Ash Landfill in Kosovo A Power Plant	3.700.000
2.	Building of a Temporary Storage Facility for Hazardous Waste	760,000
3.	Pilot Project on Rehabilitation of Old Municipal Landfills	133,950
4.	Expansion of the Infrastructure for Rural Household Waste Collection (A pilot project for one rural municipality of Kosovo)	139,305
5.	Re-use of Organic Waste – Support to Local Initiatives for Composting and the setting-up of a Composting Plant	1,254,910
6.	Central sterilisation plant for all infectious waste	Undefined
TOTAL		**5,988,165**

[7] KEAP 2006-2011, MESP 2005

1.2.5. EU waste directives

At European Union the waste administration is regulated through directives. The table 6, presents data that show the aim of the directive, year of promulgation, and their transposal at Kosovo National legislation. The progress monitoring report, drafted by Regional Environmental Centre (REC) in 2008, estimates that Kosovo has achieved a good progress in transposing the EU waste directives at National legislation[8].

Table 6: EU waste directives and their transposal at Kosovo National Legislation

Nr.	Name of the Directive	Year of promulgation	Aim of the directive	Harmonization of National Legislation (%)[9]
1	Waste directive (2006/12/EC)	April 05, 2006	Environment and health protection from the hazards that may be caused by waste collection, transport, treatment and landfill	95 %
2	Directive on hazardous wastes (91/689/EC)	December 12, 1991	Unification of EU member states' laws for hazardous waste management	85 %
3	Directive on packaging waste (94/62/EC)	December 15, 1994	Minimize the packaging waste and promote the re-use and recycling	88 %
4	Directive on the landfill of waste (99/31/EC)	July 16, 1999	Prevention and reducing of landfill negative impacts into environment	77 %
5	Directive on the incineration of waste (2000/76/EC)	December 28, 2000	Prevention and limiting negative effects into environment, in particular air, water and soil protection from the waste incineration emissions	69 %

[8] Progress monitoring report, REC 2008
[9] Progress monitoring report, REC 2008

6	Directive on the supervision and control of shipments of waste within, into and out of the European Community (259/93/EC)	February 01, 1993	It transposes provisions of the Basel Convention on the control of transboundary movements of hazardous waste and their disposal .	No estimation
7	Directive on the disposal of Polychlorinated biphenyls (PCBs) and Polychlorinated Terphenyls (PCT) (96/59/EC)	September 16, 1996	The directive obliges member states to compile inventories of equipment containing PCB and of mixtures containing more than 0.005%PCB whose volume is in excess of 5 litres	No estimation

1.3. INSTITUTIONAL STRUCTURE

1.3.1. Ministry of Environment and Spatial Planning

MESP is responsible for environmental policy, the application of laws and supervision of activities for Environmental Protection and Spatial Planning. This includes water, air, soil and biodiversity.
In the sector of waste administration, according to the waste law, the Ministry of Environment and Spatial Planning carry out the following activities:

- Compiles the Strategic Plan for Waste Management;
- Issue licences for waste management and keep records and registers;
- Approves local plans for waste management;
- Implement international agreements for waste management;
- Approve schemes for recovery of administrative costs associated with waste management[10].

1.3.2. Kosovo Environmental Protection Agency - KEPA

As an environmental executive institution, in the field of waste sector KEPA is responsible for:

- Regional and municipal landfill monitoring;
- Collecting and processing data for regional and municipal landfills

[10] Waste Law / nr.02L-30

- Collecting and processing data for hazardous and other types of wastes;
- Establishing database and information system for waste management;
- Drafting reports on the state of waste management, predictions and developments in waste sector;
- Predicting and warning inhabitants about the risk from the landfills, and for the threats to ground and surface water;

1.3.3. Local governments - Municipalities

According to the waste Law, the municipalities as local governments, in the sector of waste management have the following tasks and responsibilities:

- Compile local plans for waste management;
- Compile six month report on waste management and submit it to the Ministry, on the first quarter of the following year;
- Regulate, implement and organize municipality waste management in their territory;
- Take part in issuing decisions for building waste management facilities;
- Accomplish any other tasks envisaged under this Law, and other Acts for waste management.
- Determine tariffs for services of municipality waste collection and disposal for enterprises for waste management[11].

1.3.4. The water and waste regulatory office – WWRO

Water and Waste Regulatory Office ("WWRO") is the independent economic regulator for water and solid waste services in Kosovo. The WWRO role is to ensure non-discrimination and provision of qualitative, efficient, and reliable services at a fair and reasonable price for customers with respect for environment and public health.

WWRO powers and responsibilities includes:
- License public enterprises that provide solid waste collection services, and solid waste disposal services:
- Set and approve service tariffs for regulated services, ensuring that tariffs are fair and reasonable and enable financial viability of service providers;

[11] Waste Law / nr.02L-30

- Monitor and enforce compliance with service standards for licensed service providers;
- Supervise and enforce Customers` Charter which contains all rights and obligations for both, service providers and customer;
- Supervise and enforce disconnection regime and unlawful connections;
- Establish and support Customers` Consultative Committees in each service area - seven regions of Kosovo[12].

1.3.5. Kosovo Landfill Management Company - KLMC

KLMC is a national public enterprise for landfill management[13]. It is a legal licensed operator for sanitary landfill management in the Republic of Kosovo. Currently, under the management of KLMC are the landfills in Gjilan, Prizren, Ferizaj, Prishtinë and Podujevë. KLMC is registered as a Joint-Stock-Company

1.3.6. Regional Companies

The waste collection, transport and disposal up to the landfill is done by seven regional companies. According to the law for public enterprises, these companies are defined as local public enterprises[14]
Data on regional companies or as differently said regional services are presented in table 7

Table 7: Data on regional waste companies[15]

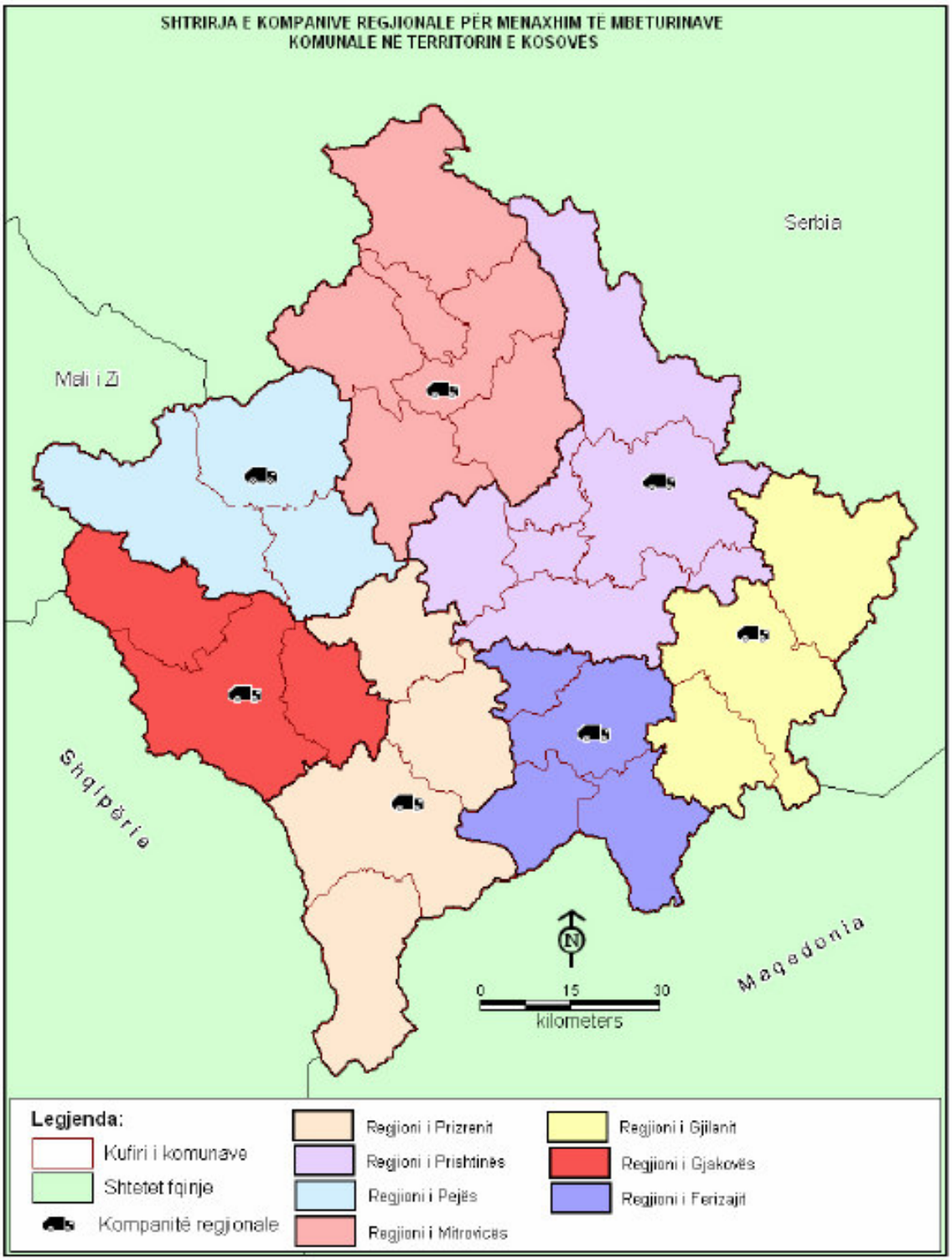
Nr	Company	Region	Adress	Contact: tel/fax/e-mail
1	Pastrimi	Prishtinë	*Rr.Bill Klinton p.n, 10000, Prishtinë*	Tel: (038) 525 191 Fax: (038) 525 191 krm_pastrimi@yahoo.com
2	Ekoregjioni	Prizren	*Rr.Tahir Sinani Nr.59 20000, Prizren*	Tel: (029) 244 260 Fax: (029) 244 753 krm_ecoregjioni@yahoo.com
3	Ambienti	Peje	*Rr.Fatmir Uka Nr.24 30000, Pejë*	Tel: (039) 434 729 krm_ambienti@yahoo.com

[12] http://www.wwro-ks.org/English/
[13] Law on Public Enterprises 03/L-087
[14] Law on Public Enterprises 03/L-087
[15] KLMC

4	Uniteti	Mitrovicë	*Rr. Vëllezërit Dragaj p.n. 40000, Mitrovicë*	Tel: (028) 533 983 ext. 109 Fax: (028) 533 211 krm_uniteti@yahoo.com
5	Çabrati	Gjakove	*Rr.Mazllom Lakuci p.n 50000 Gjakovë*	Tel: (0390) 324 884 Fax: (0390) 321 588 krm_cabrati@yahoo.com
6	Higjiena	Gjilan	*Rr. Adem Jashari nr.111, 60000, Gjilan*	Tel: (0280) 320 040 & 323 040 Fax: (0280) 324 040 krm_higjiena@yahoo.com
7	Pastërtia	Ferizaj	*Rr.Enver Topall nr.44 70000, Ferizaj*	Tel: (0290) 327 501 Fax: (0290) 327 501 krm_pastertia@yahoo.com

1.3.7. Private Sector

Responsibilities and obligations of all persons who deal with waste management, whether from public or private sector are stipulated in the waste law. In Kosovo operates a number of enterprises that deal with waste collection, treatment, recycling and transport.



Map 1: Spread of regional waste companies

2. WASTE

2.1. Waste definitions and notions

Waste - any substance or object belonging to a category of waste which the holder discards or intends or is required to discard.

Residue - is that part of a waste, object or substance remaining after the recovery of waste, components or elements of waste that no longer have any value.

Waste Management - means collection, transport, broking and dealing, holding, treatment, recovery and disposal of waste including supervision of such operations as well as aftercare of the disposal sites.

Recycling - to subject waste to any process or treatment to make it re-usable in whole or in part.

Waste Treatment - includes physical, chemical, biological, thermal processes, including sorting, that change the characteristics of the waste in order to reduce its volume or harmful nature, facilitate its handling or enhance recycling.

Waste collection - is the systematic activity of gathering, sorting and/or mixing of waste, for the purpose of transport.

Hazardous Waste - waste has at least one of the following characteristics, as set out below: explosive; oxidizing; flammable; irritant; harmful; toxic; carcinogenic; corrosive; infectious; teratogenic; mutagenic; release toxic gases in contact with water, air or an acid; capable of yielding another 'hazardous' substance; ecotoxic.

Non-hazardous Waste - are wastes that do not pose any risk to the environment and human health and do not possess the characteristics of hazardous waste.

Inert Waste - is waste that does not undergo any significant physical, chemical or biological transformation in the places where it is disposed. Inert waste will not dissolve burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and / or groundwater.

Municipal waste - is waste from households as well as waste from other activities which, because of its nature or composition is similar to household waste.
Commercial waste - waste from premises used wholly or mainly for the purposes of a trade or business or for the purposes of sport, recreation, education, or entertainment but does not include household or industrial waste.

Industrial waste - are wastes produced from manufacturing or industrial activities or processes, handicraft and other production activities.

Composting - is a controlled biological process used to facilitate decomposition of organic waste by micro-organisms in the presence of oxygen, the result of which is compost.

Wastes from food – wastes from meat consume, fruits, vegetables, wastes from cooking

Unprocessed wastes – includes flammable and inflammable wastes, materials that remains from activities of institutions, commercial activities, etc. Flammable waste includes waste from paper, plastic, cardboard, textile, kindling etc. Inflammable wastes consist mainly from materials like glass, aluminium, iron and other non ferrous materials.

Construction and demolition wastes – includes wastes produced during construction, re-modelling, reparation of individual and collective housing buildings, trade buildings etc. Mains components of these wastes are: rocks, beton, bricks, ferrous components, lead components, electrical components etc.

Agriculture wastes – involves wastes that are produced during different agricultural activities as: use of pesticides, vine production, processing and production of agricultural and farming activities.

Infectious wastes – involves wastes with high risk potential of infection if working or operating with them. They may harm the health of citizens and environment. These waste gets generated from hospitals and other health institutions, dead animals, butcheries etc.

Special wastes – includes radioactive wastes, used containers of pressed gases, wastes that contain high concentration of toxic heavy metals (arsenic, lead etc), expired chemical products.

Chemical and pharmaceutical wastes – includes chemical and pharmaceutical products within their packaging.

Incineration - thermal treatment of wastes. It is a complicated process, because the furnaces used for incineration should meet certain standards for environmental protection. It is an expensive and economically not favourable process but a needed one.

Glass waste – mainly packaging waste that may be successfully recycled

Plastic waste – biologically not degradable wastes, mostly created for packaging purposes

Organic waste – biologically degradable waste through aerobe or anaerobe process. In this group of wastes are included organic wastes classified as wastes from food, agricultural waste, paper etc

2.2. BACKGROUND OF WASTE MANAGEMENT IN KOSOVO

The contemporary waste management in Kosovo has started relatively late, even though the waste collection dates since 1947. At the beginning provided services are carried out by primitive tools like primitive carriages, while later one, this services are advanced with technical equipments, tractors and trucks. As time is passed, the service quality and the waste management in general is improved. Nowadays, even though lots of investments from foreign donors, the waste management infrastructure is not completed.
In the following table it is presented a brief chronology of first institutional organized activities in the sector of waste management.

Table 8: Background of organized waste collection in Kosovo[16]

Municipality	Year of foundation	Name of Enterprise	Nr. Of employees
Prizren	**1947**	Housing Cooperative for Public Hygiene	**19**
Gjakovë	**1951**	City Cleaning Organisation "Ereniku"	**..**
Rahovec	**1953**	"Komunalja"	**10**
Gjilan	**1961**	Municipal Organisation "Pastërtia"	**..**
Dragash	**1968**	Municipal Enterprise For Construction, Water Supply and Hygiene	**12**
Malishevë	**1999**	"Komunalja"	**11**

[16] The State of Waste in Kosovo, MESP 2005

2.3. WASTE CLASSIFICATION

According to the Waste Law the waste types are[17]:

- Municipal Waste,
- Commercial Waste,
- Industrial Waste,

Another Classification is made based on waste exposition and hazardness

According to this classification wastes are grouped in:

- Inert Waste,
- Non-hazardous Waste,
- Hazardous Waste,

According to the waste law, Kosovo adopted the waste classification based on European Waste Catalogue. This catalogue is a list where are included all hazardous wastes, non-hazardous wastes and inert wastes. This list alleviate waste classification, administration and data recording of all types of waste.
Waste classification according to the European Waste Catalogue includes 20 main groups that are presented in table 9.

Table 9: Main waste groups according to the European Waste Catalogue

Nr.	List of Waste
01	Wastes resulting from exploration, mining, dressing and further treatment of minerals and quarry
02	Wastes from agricultural, horticultural, hunting, fishing and aquacultural primary production, food preparation and processing
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture.
04	Wastes from the leather, fur and textile industries
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal
06	Wastes from inorganic chemical processes.
07	Wastes from organic chemical processes.

[17] Waste Law nr.02/L-30

08	Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks
09	Wastes from the photographic industry
10	Inorganic wastes from thermal processes
11	Inorganic metal-containing wastes from metal treatment and the coating of metals, and non-ferrous hydrometallurgy
12	Wastes from shaping and surface treatment of metals and plastics
13	Oil wastes (except edible oils, 05 and 12)
14	Wastes from organic substances used as solvents (except 07 and 08)
15	Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified
16	Wastes not otherwise specified in the list
17	Construction and demolition wastes (including road construction)
18	Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)
19	Wastes from waste treatment facilities, off-site waste water treatment plants and the water industry
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions

The detailed waste classification based on European Waste Catalogue is attached to the waste law as Annex 1

Depending on the base of classification, whether the content, origin or any other characteristic, there are other waste classifications and lists attached as annexes to the waste law.

2.4. MUNICIPAL WASTE

The waste management system in Kosovo does not offers reliable data on waste generation, collection, treatment and disposal. In average, In Kosovo the service of waste collection is provided to 42 % of Kosovo population in 2007 respectively 39 % in 2008. The Prishtina region covers the highest percentage of population with the waste collection service with 64% in 2007 and 52% in 2008, while the Mitrovica region has the lowest percentage with 29% (2007-2008). In urban areas (cities) the waste collection service is provided to 90% of population, while in rural areas is covered only 10% of population. Detailed data on the ratio of provided service for waste collection according to companies and regions are showed in table 10.

Table 10 : The coverage of population provided with waste collection services according to municipalities and regions for the period 2007-2008 expressed in %[18]

Nr.	**Company**	**Region**	**Year**	
			2007	**2008**
1	Ambienti	Pejë	44%	29%
2	Çabrati	Gjakovë	51%	53%
3	Ekoregjioni	Prizren	32%	39%
4	Higjiena	Gjilan	44%	26%
5	Pastërtia	Ferizaj	33%	35%
6	Pastrimi	Prishtinë	64%	52%
7	Uniteti	Mitrovicë	29%	29%

Data on annual and daily average values for municipal waste are presented in table 11. While the figure 1 shows that municipal wastes represent 18% of total amount of waste generated in Kosovo

Table 11: Daily and annual amount of waste per capita[19]

Type of waste	**Daily average in kg / capita**	**Annual amount Kg./ capita**	**Annual amount in tonnes**
Household	0.277	101	232541
Commercial	0.250	91.25	209875
Medical	0.0024	0.876	2014.5
Ash and grime	0.907	331	761426.5
Construction / demolition	0.200	73	167900
Other: packaging, plastic, tires, pesticides, electronic wood etc.	0.360	131.4	302220
Total	**2.05**	**729**	**1675977**

[18] WWRO, 2009.
[19] The State of Environment Report, 2008

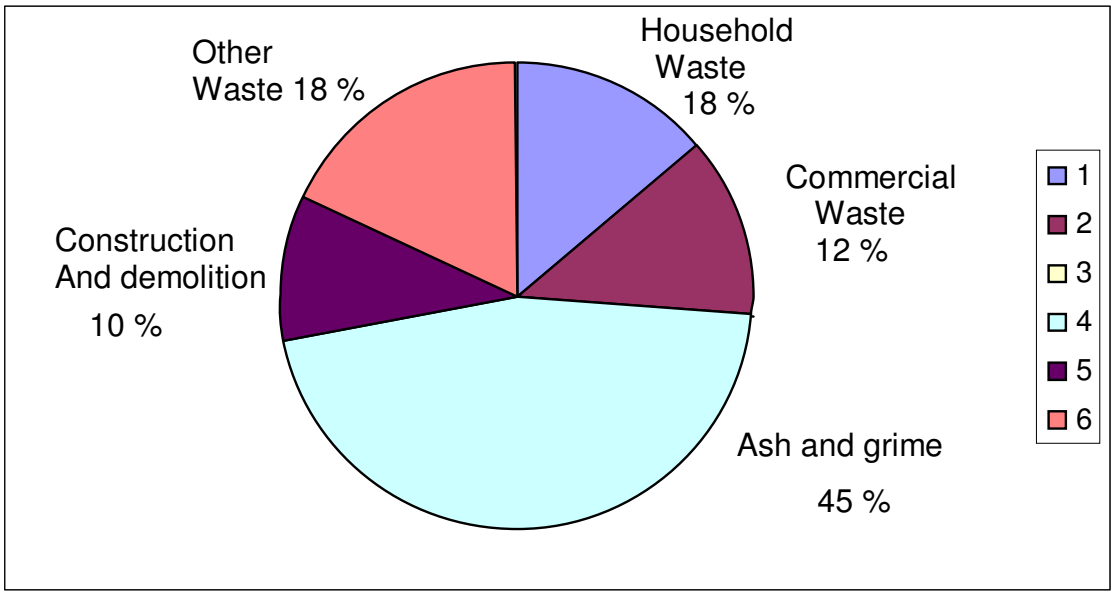


Figure 1: Wastes according to the type in Kosovo (%)



Figure 2: Fractions of municipal wastes (%)

In the figure 2 are showed data of municipal waste fractions, whereas may be concluded that organic waste represents the highest amount (35.3%), while the lowest amount represent hazardous waste (1.2%).
Data from the figures 3, 4 and 5, show that the highest amount of waste is collected by the service "door to door", while the lowest amount of waste is collected through waste collection through collective dwellings. This difference on waste collection between ("door to door" and Collective dwellings) is more expressed in other regions comparing to Prishtina region.

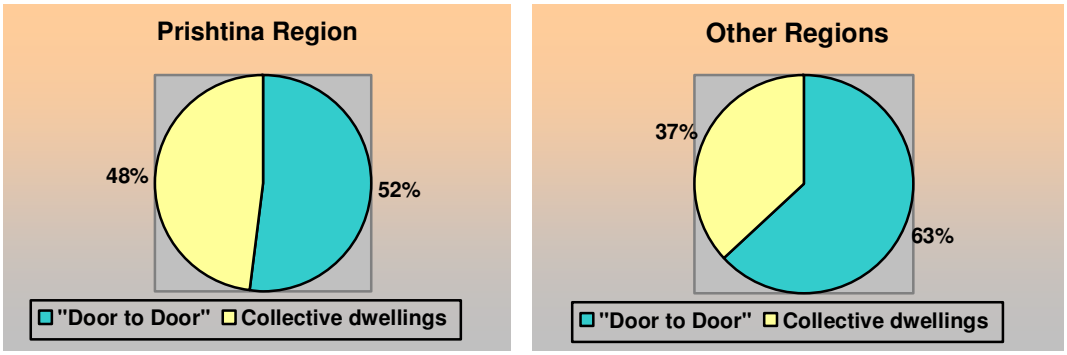


Figure 3 and 4: Percentage of waste collection types. Prishtina / Other regions[20]

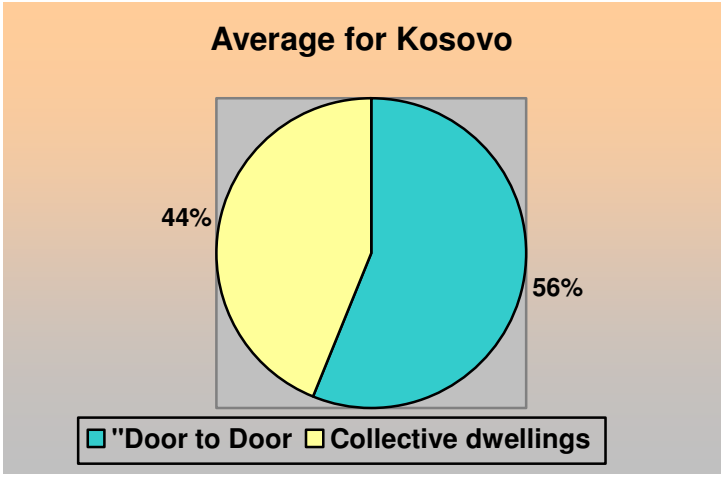


Figure 5: Percentage of Waste Collection types, Average for Kosovo[21]

[20] Questionnaire on municipal waste SOK 2007
[21] Questionnaire on municipal waste SOK 2007

By a survey realized by WWRO, resulted that 61.2% of respondents declared that they are very satisfied or satisfied with waste collection services, meanwhile 14.3% resulted to be unsatisfied or very unsatisfied (figure 6). The survey results show that the ration of waste collection services is in better situation comparing to other services such as telephone services and central heating, but evaluated less than water supply and canalization (wastewater collection system), figure 7.

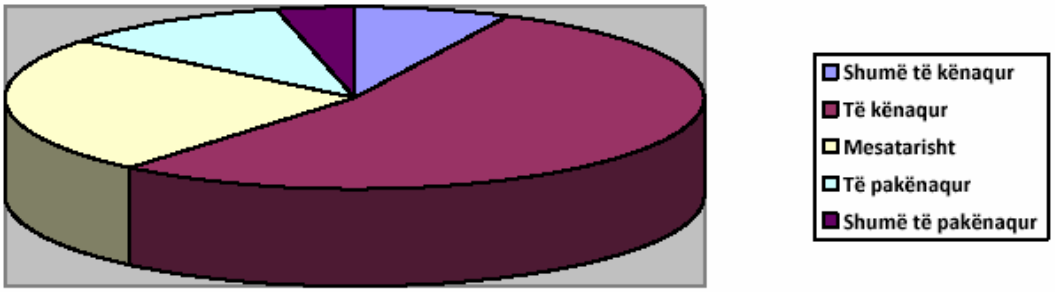


Figure 6. Ratio of satisfaction of costumers with waste collection services[22]

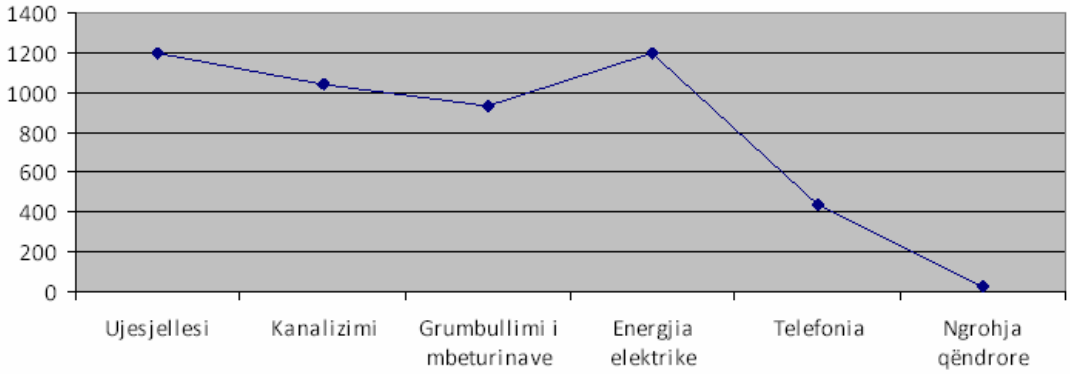


Figure 7: The relation of waste collection services comparing to other services[23]

[22] Survey on the consumers view on public services for water and waste in Kosovo – **WWRO**, 2008
[23] Same as above

2.5. INDUSTRIAL HAZARDOUS WASTE

Many substances in different aggregate forms remained for a long period of time through different equipments, machineries, depots etc. Overtime, many of these substances expired for the use, by being degraded, changing their chemical structure and became substances with high hazardness potential.
Many activities are undertaken so far to avoid the risk from these substances, mainly activities based on donations from KFOR and KPC.
The industrial hazardous waste result from industrial production activities and other industrial activities.
The following table show some data about the types of these wastes, locations of disposal and their amount up to 2006

Table 12:Quantity of hazardous waste according to the type, locality and municipality[24]

TYPE OF WASTE	AMOUNT/UNIT	LOCATION	MUNICIPALITY
Waste and solid chemical substances	49045 m^3	Kosova A	Obiliq
Waste and solid chemical substances	186 tonnes	Kosova A	Obiliq
Radioactive sources	34 unit	Kosova A	Obiliq
Waste and solid chemical substances	25505 m^3	Trepça Foundry	Mitrovicë
Calcium hypochlorite	6.5 tonnes	Shipol	Mitrovicë
Waste and liquid chemical substances	6300 tonnes and 165 barrels	Metallurgy	Mitrovicë
Waste and liquid chemical substances	600 litre	Metallurgy	Mitrovicë
Waste and liquid chemical substances	2000 litre	Chemical Industry	Mitrovicë
Waste and solid chemical substances	10 tonnes	First tunnel	Mitrovicë
Radioactive sources	3 barrels	First tunnel	Mitrovicë
Waste and solid chemical substances	8500 kg	Industrial Park	Mitrovicë
Waste and liquid chemical substances	42900 litre	Industrial Park	Mitrovicë
Oils, PCB	4 electrical transformations	Lead Plant	Zveçan
Waste and solid chemical substances	136 tonnes	Lead Plant	Zveçan
Different dissolutions	2 tonnes	Metallic - Janjevë	Lipjan
Waste and solid chemical substances	7.0 m^3	Metallic - Janjevë	Lipjan
Waste of photo films	3000 kg	IMK-Plant	Ferizaj
X ray	3 pcs	IMK-Plant	Ferizaj

[24] Raport i gjendjes së mjedisit 2008

Waste and liquid chemical substances	20 tonnes	Plant of tools	Ferizaj
Photo films waste	2.5 tonnes	Plant of tools	Ferizaj
Textile paints, chemical substances	9100 kg	Sharr-Tex	Sharr
Waste and solid chemical substances	4370 kg	Sharr-Tex	Sharr
Used oils	1200 litre	"Adi"	Lipjan
Radioactive waste	184 rings of americium	Youth Palace	Prishtinë
Waste and solid chemical substances	85 tonnes	Mine-Trepçë	Leposavic
Solid chemical waste	22.2 tonnes	Shoe and leather factory	Pejë
Waste and liquid chemical substances	17340 litre	Factory of vehicles spare parts	Pejë
Waste and solid chemical substances	200 kg	Factory of vehicles spare parts	Pejë
Waste and solid chemical substances	6180 kg	Sharr-Tex	Sharr
Waste and liquid chemical substances	3265 litre	Sharr-Tex	Sharr
Solid chemical substances	231.8 kg	Laboratory in Kishnicë	Prishtinë
Plastic barrels with acid	9 barrels	Laboratory in Kishnicë	Prishtinë
Unknown plastic boxes	9 barrels	Laboratory in Kishnicë	Prishtinë
Bottled substances without label	15 pcs	Laboratory in Kishnicë	Prishtinë
Waste and solid chemical substances	5 tonnes	Textile factory	Gjakovë

2.6. MEDICAL WASTES AND EXPIRED DRUGS

Medical wastes are considered to be hazardous waste, because during operation and working on them, if in direct contact, the human health and environment may be threatened. These types of waste generates in hospitals and other health facilities. These kind of waste doesn't undergo any proper treatment process as well as other types of wastes. According to the information provided, these wastes are not collected, transported or disposed in the appropriate way as required by legal standards.

In Kosovo operate centres that posses incinerators for hospital waste incineration. In those installations undergo about 20-30% of medical wastes, while the rest of waste is put in the containers of municipal wastes. For waste incineration in Kosovo operate four advanced but simple one grade incinerators which are located in: Prishtinë, Mitrovicë, Gjakovë and Pejë.

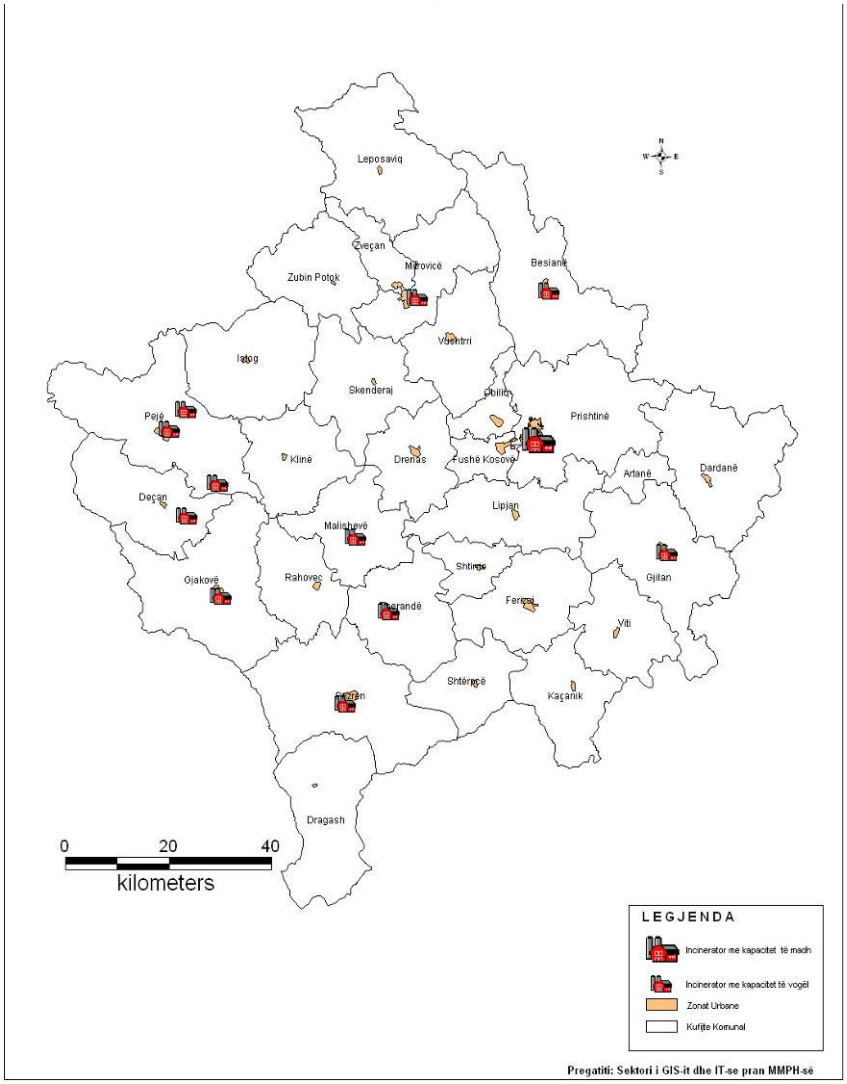
According to the data from hospitals and other health institutions, In Kosovo are generated about 5500 kg within a day, and/or 2.014.500 kg a year. Estimated in kg per capita the value is 0.0023 kg/capita/day.

Hospitals have started to advance the collection system of medical waste by providing special containers dedicated for these types of waste, but the situation is out of control in private sector.

Table 13: Quantity (tonnes/year) of medical waste in Kosovo according to health institutions and locations [25]

Amount tonnes/year	Health institution	Location
5 tonnes/ year	CFM (Centre of Family Medicine)	Therandë
5 tonnes/ year	QKMF	Gjakovë
14.2 tonnes/ year	QKMF	Sharr
2 tonnes/ year	QKMF	Deçan
60 tonnes/ year	QKMF	Prishtinë
27 tonnes/ year	QKMF	Pejë
5.5 tonnes/ year	QKMF	Gjilan
14 tonnes/ year	QKMF	Vushtrri
2 tonnes/ year	QKMF	Burim
8 tonnes/ year	QKMF	Prizren
22 tonnes/ year	QKMF	Mitrovicë
24 tonnes/ year	QKMF	Viti

[25] The state of Environment Report 2008



Map 2: Spread of Incinerators for medical waste incineration in Kosovo

Expired drugs – After the war Kosovo inherited a considerable amount of expired drugs that for years were accumulated in pharmacies and in the single factory for drug production in Kosovo. Also, after the war in Kosovo happened an intense import of drugs either as humanitarian aid or import for profit. These drugs are entered in Kosovo, without any control of their quality, quantity and in some cases have entered expired drugs for on or two months.

Drugs are mainly emplaced in state drug magazines, in customs magazines, in "Farmakos" – Prizren, in company "Agani" and in central magazine that is under the supervision of Ministry of Health. Also a considerable amount of expired drugs is found in magazines of Kosovo hospitals facilities.

There are evident about 100 tonnes of expired drugs which are to be treated or destroyed with specific methods. Efforts are made to destroy the expired drugs by using KEK thermal plants, but even though an agreement was made, it does not happened.

Table 14: Quantity of expired drugs in Kosovo [26]

Amount	Health institution/ company	Location
200 kg	Central Pharmacy	Prishtinë
2 tonnes	Centre of Family Medicine	Ferizaj
200 kg	"Genti-Farm" (pharmacy)	Qagllavicë
10 tonnes	Centre of Family Medicine	Shtime
15 tonnes	Magazine of "Farmakos"	Prizren
5 tonnes	Centre of Family Medicine	Dardane
3 tonnes	Centre of Family Medicine	Shtërpcë
5 tonnes	QMF (Shtëpia e shëndetit)	Prizren
5269 pcs ampoules	Magazine of "Agani" Company	Prishtinë
8729 pcs antibiotic	Magazine of "Agani" Company	Prishtinë
1236 pcs tablets	Magazine of "Agani" Company	Prishtinë
4581 pcs syrup	Magazine of "Agani" Company	Prishtinë
98555 pcs plastic	Magazine of "Agani" Company	Prishtinë
7243 copë qajra	Magazine of "Agani" Company	Prishtinë
143 pcs insecticides	Magazine of "Agani" Company	Prishtinë
10 tonnes	Central Magazine for special list drugs	Milloshevë

[26] The state of Environment Report 2008

2.7. ASH WASTE

The ash landfill of PP Kosovo A, together with wastelands and lagoon, covers an area of 234 ha. With the project for cleaning-up and land re-cultivation financed by World Bank and Dutch Government, implemented by KEK, it is planned the stabilisation, re-shaping and closure of the ash landfill. It is expected the project implementation to start in 2009. An other important component of this project is re-cultivation of south wasteland (south to current lignite mine), re-cultivation of wasteland in west of Bardh and in Vasilevë. Also KEK will be supported to transform its ash transport, by changing from its actual ash transport with conveyor-belts to hydraulic system, and to transport the ash into the empty area (used mine) of Eastern Mirash. Ash transport from PP Kosovo B, since 2006 is made by tubes, in hydraulic form, and it is disposed in empty areas of Eastern Mirash.
In average, both PP (Power Plants) Kosovo A and B, Produce over one million tonnes ash a year. From this quantity, about 700.00 tonnes are disposed in ash landfill, while the rest, 300.000 tonnes gets disposed into the air.

Table 15: Quantity of produced ash in KEK power plants according to the years[27]

	2006	2007	2008
Ash quantity produced in KEK power plants (year/tonnes)	1048136 t	1161455 t	1161171 t

Table 16: Contents of ash in % according to its components

Ash analyses	%
SiO2	38
Al_2O_3	6.8
Fe_2O_3	5.4
CaO	35
MgO	18
SO_3	8.3

Quantity of slag produced during 2008 in "New Co Ferronickel is 730 000 tonnes[28]

[27] KEK
[28] The state of Environment Report "New Co Ferronickel"



Ash waste in New Co Ferronickel

2.8. CONSTRUCTION / DEMOLITION WASTE

After the war, Kosovo faced with increase of construction waste, resulted by housing and other objects demolition. Disposal and collection of construction waste in inadequate places have deteriorated the waste management sector. In particular it is worrying the agricultural land loss and placement of this waste along rivers. Except landscape degradation, the construction waste have negative impact into the environment, in particular in ecosystems. The problem become more significant if these waste are mixed with other types of urban wastes. No exact data about the quantity and the land covered by construction waste so far, but by the field visits from KEPA teams, it is noticed that these wastes are evident in many locations in Kosovo. As illustration we present few pictures with construction / demolition wastes.



Construction / Demolition waste in Suharekë and Deçan

2.9. OTHER WASTE TYPES

End of life vehicles (ELV)– includes all those types of vehicles out of use. Collection of the end of life vehicles is made by some of the private companies.
These 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 to reuse for the spare parts. Aiming the pollution prevention and pollution reduction by the end of life vehicles and their wastes, MESP has issued the Administrative Instruction nr. 02 / 2009 for management of the end of life vehicles and their wastes.
Except prevention and reduction of environment pollution, this administrative instruction aims to:

- Achieving high level for reusing, recycling and other forms of recovery of end of life vehicles and their components.
- Establishing a system for collection, transportation and treatment of ELV and their components. Prevention and reduction of environment pollution from end of life vehicles and their wastes (hereinafter: ELV).
- Determination of conditions for storage of ELV and their components.
- The economic operator involved in the life cycle of vehicles especially their directly selling involved in the treatment of ELV to function on environment protection.

Another legal measure for prevention and reduction of environmental pollution from the end of life vehicles is the Governmental Decision dated 19 June 2009, which obliges all companies that collects the end of life vehicles and other metals to move at least one km away from motorways, and that all businesses that deals with trade of spare parts from end of life vehicles; with collection, treatment and storage from end of life vehicles demolition to emplace these materials in inside buildings and to meet all environmental criteria, including the aesthetic aspects.



A collection point of end of life vehicles

Used tires – Vehicle's tires are not classified as hazardous waste, but some types do contain hazardous and soluble components. Typically, after 40.000 km. vehicle tires should be replaced, so in Kosovo there are many thousands. Uncontrolled burning of tires releases harmful emissions to the environment such as for example dioxin. Through controlled incineration at temperature above 1000 ^{0}C, which is achieved in cement manufacturing furnaces, the SO^2 released is linked with cement and in this way it becomes harmless. However, inefficient burning of these wastes (like in some cases used in processing quicklime) does present an environmental and health hazard.
The used (second hand) vehicle tires are also imported or collected for reprocessing, and some recycling companies produce different rubber products.
The final destruction of used tires is not managed in an organised manner by the institutions, and it is carried out by individuals or businesses with little or no regard to the environment.
Tires burning in the settlements, in open environment, causes serious environmental problem and direct threats to the health of citizens.



A collection point of waste tires

Waste Oils – Used oil is considered to be a very problematic, which is the most potentially contaminant of land and water in Kosovo. Oils are disposed everywhere, in streets, yards, workshops, they are used as heating material in the workshops etc. In our country there is no collection and treatment of the used oils.
Factory of "Silcapor" in Kaçanik uses the used oil to lubricate the shapes. Also we do not have a clear situation about the presence of the oils and waste with content of PCB, PCT, and PBB, known with high risk potential for health and environment. Within one year period, in Kosovo are produced about 1.749.700 litres, without calculating the oil quantity of the KFOR and vehicles of other international missions in Kosovo.



Oil packaging waste at "Ballkani i Suharekes"

Consumed and disposed batteries

Wastes of high risk to the environment are batteries which can be found everywhere in Kosovo. 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 known with high toxic and cancer attributes.
Some of the vehicle batteries are collected in the scrap metal collection places, but a large quantity of them and other types of batteries are disposed without any criteria. Consumed batteries are a waste which requires a special treatment.
The method of their treatment presents a continuous contamination and with high risk potential .The recycling of vehicle batteries is made in “Trepçë” –Zveçan.

3. STATE AND WASTE MANAGEMENT

3.1. Waste generation

As it is shown from the data in the table 17, the largest waste quantity during the year 2007 is disposed in the Prishtina's landfill (61.644.35 tonnes), while the lowest quantity is disposed in the Lypjan's landfill (5.228 tonnes).
Data presented in the table 18, show that the largest quantity during 2008 is disposed in the Prishtina's landfill (80.185.06 tonnes), while the lowest quantity is disposed in the Peja's landfill (21.667 tonnes).
By comparing the data on disposed waste quantity in sanitary landfills for years 2007 and 2008, it is indicated that in all regional and municipal landfills the quantity of disposed waste is increased. Consequently it might be concluded that the quantity of waste generation is increased during 2008, what resulted with the largest amount of waste in landfills.

Table 17. Quantity of municipal waste in sanitary regional and municipal landfills for 2007, expresses in tonnes[29]

Nr.	Sanitary landfill	January	February	March	April	May	June	July	August	Sept	October	Nov	Dec	Total in tonnes
1	Prishtinë	3,665.45	4,273.73	5,032.07	5,017.46	5,239.63	4,854.54	4,938.13	5,264.28	5,005.82	6,256	6,413	5,703.9	61,664.35
2	Gjilan	6,542.97	5,668.02	2,959.12	4,515.92	4,359.10	3,451.13	3,915.47	4,251.47	3,858.33	4,186	3,585	3,342.09	49,940.08
3	Prizren	2,160.90	1,662.70	2,051.45	2,503.50	2,980.40	2,890	3,407	3,975	3,501	2,546	3,033	2,054.29	32,755.92
4	Podujevë	628.60	529.70	359.56	306.50	481.70	408.78	361.40	931.92	601.70	599.05	591.15	493.27	6.239.33
6	Pejë	1341.5	1200.4	1371	1463.5	1574.6	1279.2	1642.9	1887.6	1628.5	1685.4	1582.7	1603.4	18,260.70
7	Sharr	322	301	343	350	427	434	560	616	420	427	410	407	4,242.00
8	Mitrovicë													28,420
9.	Lypjan													5.228
	Total	14.661.42	13.632.55	12.116.20	14.156.88	15.062.43	13.317.65	14.824.90	16.962.27	15.015.35	15.699.45	15.614.85	13.603.95	**206,750.38**

Table 18. Quantity of municipal waste in sanitary regional and municipal landfills for 2008, expresses in tonnes[30]

Nr.	Sanitary landfill	January	February	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Total in tonnes
1	Prishtinë*	5,904.90	5,826.06	6,250.23	6,665.96	6,377.97	7,032.28	7,712.59	7,247.91	6,114.45	7,423.37	6,351.12	7,278.22	**80,185.06**
2	Gjilan*	3,761.95	3,458.24	3,921.32	4,292.87	4,193.99	4,193.99	5,019.77	5,409.19	5,260.02	5,334.07	4,060.22	3,818.44	**52,120.75**
3	Prizren*	2,745.79	2,668.20	2,797.85	3,390.01	3,370.20	3,180.02	3,950.10	4,153.40	4,097.90	3,762.70	3,113.40	3,344.56	**40,574.13**
4	Podujevë*	340.89	50.79	213.37	375.06	227.33	299.00	318.23	398.64	372.74	422.58	406.79	437.22	**3,862.64**
6	Pejë**	1,664	1,415	1,464	1,544	1,590	1,685	2,237	2,225	2,225	2,227	1,601	1,800	**21,677**
7	Sharr													
8	Mitrovicë**	2,461	2,587	2,171	2,447	2,719	2,477	2,823	3,118	2,836	2,740	2,677	2,672	**31.727**
9	Ferizaj*	1,531.20	1,447.00	1,368.75	1,605.40	1,656.81	1,638.00	1,852.62	1,938.12	1,958.13	1,969.26	1,478.60	1,507.23	**19,951.12**
	Total	18.409.73	17.452.29	18.186.52	20.320.30	20.135.30	20.505.29	23.913.31	24.490.26	22.864.24	23.878.98	19.688.13	20.857.67	**218.402.43**

[29] *KLMC 2008, **WWRO 2008
[30] *KLMC 2009, **WWRO 2009

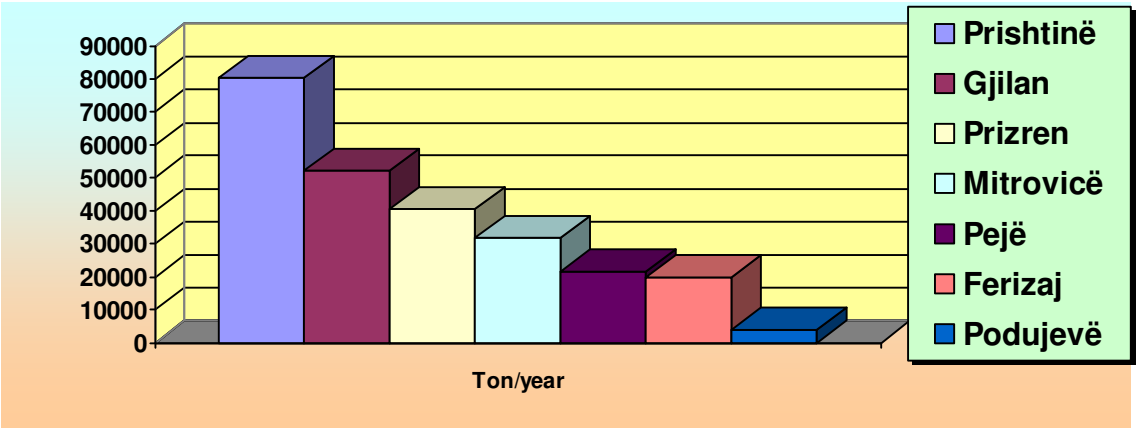


Figure 8: Quantity of municipal waste disposal in sanitary landfill for 2008

In figure 8 is indicated that the largest quantity of collected waste during 2008 is disposed in Prishtina's and Gjilan's landfills, while the lowest quantity is disposed in Podijeva's and Ferizaj's landfills

In the figure 9 is showed that during period 2006-2008, the quantity of waste disposed in landfills is progressively increased. It can be concluded that it is noted a progress in waste collection system.

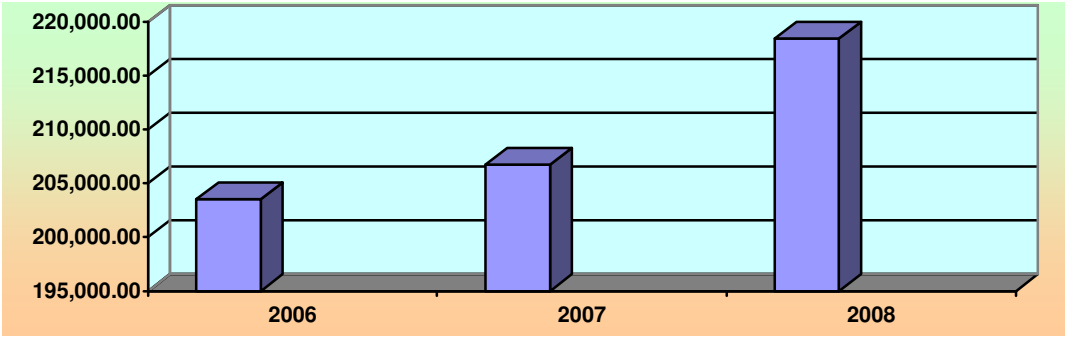


Figure 9: Quantity of municipal waste in sanitary landfill according to the years (2006-2008)

Table 19: Quantity of waste disposal per capita (kg/year) according to regions[31]

Nr	Region	Waste quantity/ tonne	Number of inhabitants[32]	Waste quantity per capita (kg/year)
1.	Prishtinë	84,047.70	892,506	94
2.	Prizren	40,574.13	423,797	96
3.	Pejë	21,677	383,494	56
4.	Mitrovicë	31.727	316,975	100
5.	Gjilan	52,120.75	366,442	142
Average		**46.029**		**97.6**

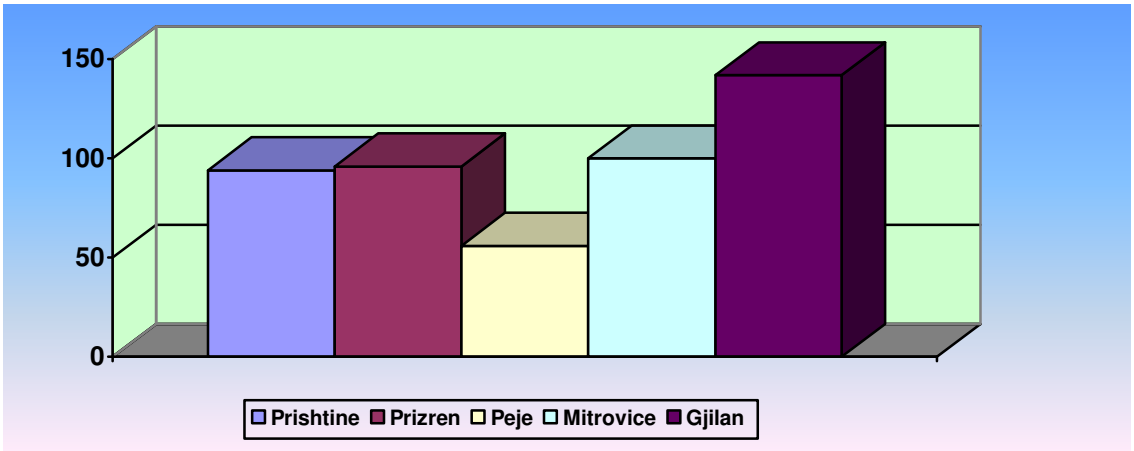


Figure 10: Quantity of waste disposal per capita (kg/year) according to regions

In the table 19 is shown that based on overall quantity of collected waste in landfill, the annual average quantity per capita is 97.6 kg. The largest waste quantity disposed (counted per capita) is evidenced in Gjilan's region (142 kg), while the lowest quantity in Peja region (56 kg).
In the table 20 is showed that the average of municipal waste quantity per capita in Kosovo is 0.4 kg a day. In prishtina region this quantity is 0.9 kg, while for other regions the average is 0.3 kg.

[31] Data on waste quantity are received by KLMC and WWRO, while the number of population from OSCE report 2004
[32] OSCE 2004

© Kosovo Environmental Protection Agency

Table 20: Daily average of disposed municipal waste in Kosovo (kg/capita) [33]

Region	Collected quantity (1000 tonne)	Nr of population[34]	Daily average (kg/capita)
Prishtina Region	182	500 000	0.9
Other regions	148	1 600 000	0.3
Total	330	2 100 000	0.4

Data presented in figure 11, show that annual average of disposed waste per capita is 157 kg (Country). In Prishtina region this average is 332 kg, while other regions 95 kg.

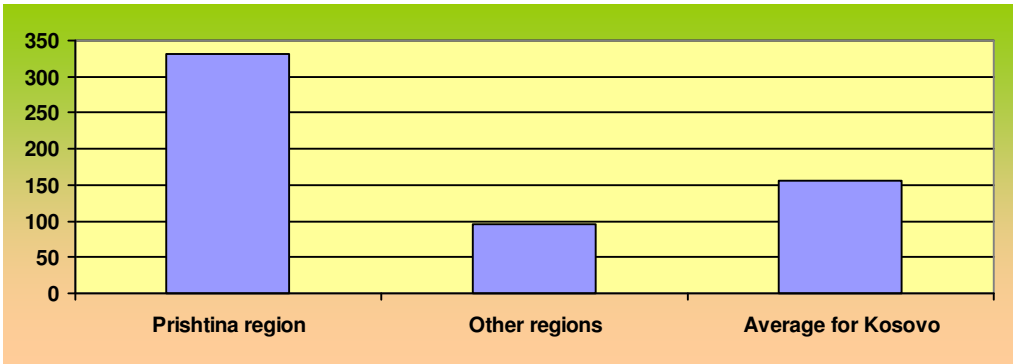


Figure 10: Annual average of waste generation in Kosovo (kg/capita)[35]

The overall percentage of waste disposal in licensed landfills for 2007 and 2008 is 89 %, respectively 83 %.

[33] Questionnaire on municipal waste; SOK 2007
[34] Calculation of population number by SOK
[35] Questionnaire on municipal waste; SOK 2007

3.2. LANDFILLS

3.2.1. Old landfills of municipal waste

Out of 29 municipalities in Kosovo, historically 26 have been open surface landfills. Many do not fulfil minimum standards. For this reason, today the Kosovar institutions and society are facing major problems and challenges. These landfills are also often adjacent to residential areas and rivers as for example in Lypjan the distance from the river is just 10-20m in places. Most of these landfills pose a permanent risk to the environment, particularly to underground waters. To make matters worse, all types of waste are disposed including organics, plastic, metals, oils, acids, batteries and hospital waste.

The disposal of waste in these old landfills is unplanned. In many instances before the war, the compaction and covering of waste was not carried out. Thus, even though some have now been rehabilitated and covered in the simplest way (with support from the EAR), they continue to pollute the environment. They also cannot be used as an energy source because any gases have long since been dissipated into the atmosphere.

The problem of the landfills is further compounded because many do not have an adequate drainage system, thus threatening the ground water, and in particular water from wells that is used for drinking water from the inhabitants living in nearby areas.



Old landfill in Prishtina

When the waste in landfills is burned, it causes offensive odours. Scavengers are also a common sight collecting cans, paper, plastic and metals for income generation.
Most of these landfills have now been closed, but because of the lack of new regional sites, it means they have started to be used again. An example would be the 'closed' landfills in Lypjan, Prizren, Besianë and Prishtina. Landfills that are not used and have been abandoned are in Gjilan, Dardanë, Artanë, Viti, Ferizaj, Klinë and Besianë. Those rehabilitated by the EAR are in Kastrioti,Deçani, Peja, Shtime and Vushtrri. The first step taken by a municipality towards closing a landfill was in Theranda. This was financed by the municipal assembly in cooperation with the PuE 'Komunalja' and supported by GTZ as part of their waste management programme.

3.2.2. SANITARY REGIONAL AND MUNICIPAL LANDFILLS

3.2.2.1. Regional landfill in Gjilan

The municipalities that deposit the waste in this landfill are: Gjilan, Kamenicë, Viti, Novobërdë, Kaçanik, Shtimje and Ferizaj. The size of the landfill is 24 ha and the lifespan of the landfill is 15 years. Its total capacity is 1.200 000 m^3, while monthly capacity is 4 000 t. The state of this landfill is not satisfying. The pumping system is out of order and consequently surface water and landfill waste water get mixed.



Regional landfill in Gjilan

3.2.2.2. Municipal landfill -Podujevë

Serves to the localities of Podujevë; Its size is five ha. Its lifespan is 15 years;
Total capacity 925 000 m^3; Monthly capacity 2000 t.
Due to the mixture of surface water with landfill waste water the state of the landfill is environmentally unfavourable.



Municipal landfill in Podujevë

3.2.2.3. Regional Landfill-Prizren

This landfill serves to the municipalities of Prizren, Rahovec, Malishevë and Suharekë. Its size is 25 ha. Its lifespan is 15 years. Total capacity 2.600 000 m^3, while monthly capacity 3500 tonnes. In this landfill the water pumping system is out of order and the water from the landfill and surface water may get mixed, causing an environmental threat. The waste compression is not carried out in line with standards.

© Kosovo Environmental Protection Agency



Regional landfill -Prizren

3.2.2.4. Regional landfill-Prishtinë (Mirash)

This landfill serves to the municipalities: Prishtinë, Obiliq, Lipjan. Fushë Kosovë and Drenas (Gllogoc). Its size is 40 ha; Lifespan 15 years; Total capacity 3.500 000 m^3; monthly 6 000 tonnes. During monitoring visits in this landfill is noted that due to non professional management the state of the landfill is worrying. The pumps for water flow treatment are not put into function for at least 6 months, that resulted with mixture of waters. In this landfill is evidenced a heavy odour that indicates for a high potential environmental risk and preconditions for spread of diseases and epidemics.



Regional Landfill if Prishtina

3.2.2.5. Regional landfill-Pejë

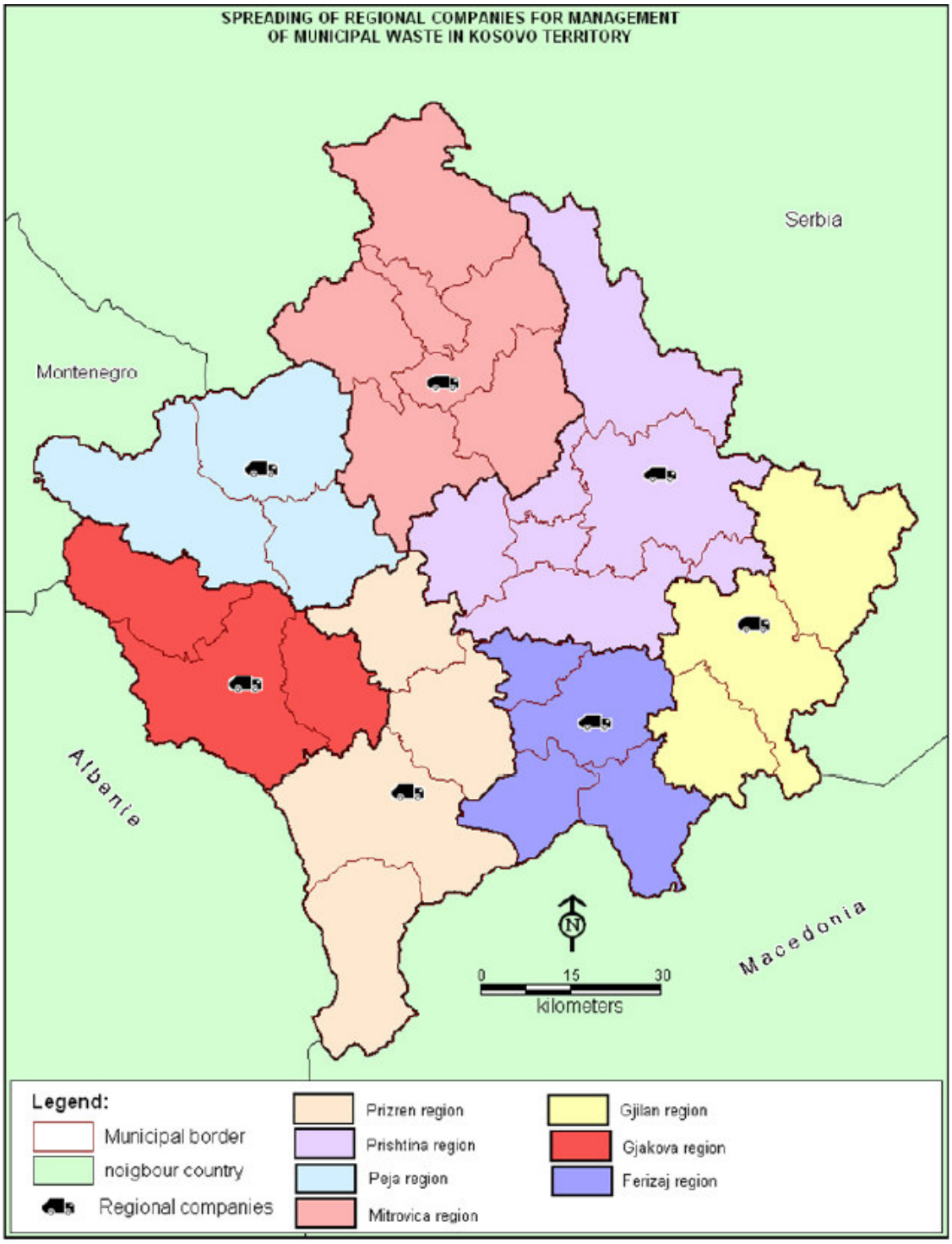
This landfill serves to the municipalities: Pejë, Deçan, Klinë and Istog. Land fill size 3.6 ha; Total capacity 1.500 000 m^3; monthly capacity 2 400 tonnes. The current state and management is not satisfying. Same as in other landfills the surface waster and water from landfill get mixed.



Regional landfill Pejë

3.2.2.6. Regional landfill-Mitrovicë

This landfill serves to the municipalities: Mitrovicë, Vushtrri, Zubin Potok and Skenderaj. Landfill's size 7 ha; Its capacity is planned to serve to 250 000 inhabitants; lifespan 15 years; total capacity 2.000 000 m^3; monthly capacity 2 400 t. This landfill is located adjacent to the Gërmovë village; its rehabilitation is made by the support of DANIDA. The landfill includes about 7 hectares and may be used for next 10 years. By regionalisation of public enterprises this landfill is planed to include with services municipalities Vushtrri, Zubin Potok and Skenderaj. At the moment, in regular bases this landfill is used only by Mitrovica and Vushtrri municipalities, while municipalities Zubin Potok and Skenderaj use it temporarily.



Map 3. Spreading of regional companies

3.2.2.7. Municipal landfill Sharr

This landfill serve to Sharr (Dragash) municipality; landfill size 12 ha; lifespan 15 years; total capacity 50000 m^3; monthly capacity 20 tonnes. Even though it is supposed this landfill to meet the minimal standards, the situation is not as planned, because half of its area is not covered with insulation layer, and there is not any waste water treatment.



Landfill in Sharr

3.2.2.8. Transfer station - Ferizaj

Municipalities eligible to use this transfer station: Ferizaj, Shtimje, Kaçanik and Hani i Elezit. Its total capacity 50 000 m^3; monthly capacity 2 500 tonnes

3.2.2.9. Municipal landfill - Fushë Kosovë

As in other landfills, the state of this landfill is not satisfying. It represents a permanent potential risk for environment and health of population that live in surrounding areas. In particular a high risk for the population represent the landfill's waste water.



Landfill in Fushë Kosovë

3.2.2.10. Municipal landfill in Zveçan

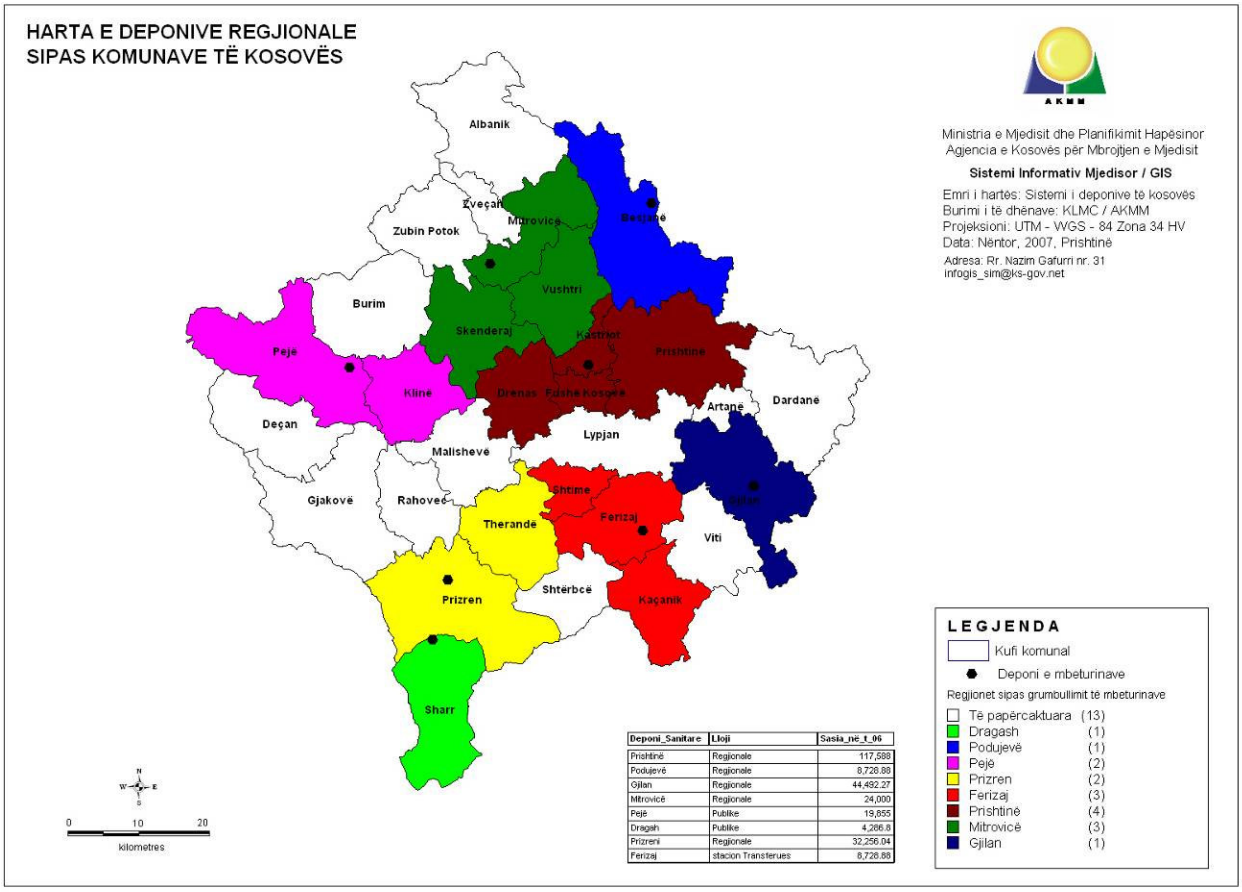
The landfill in Zvecan started its operation in 2003. It is constructed as EAR donation; its surface is 3.5 ha or 35.000 m^2 of useable space, while the total surface of the landfill is 4 ha. The landfill is supposed to be used by municipalities Zveçan, Albanik and Mitrovicë. But for the moment it is used only by Zveçan and Mitrovicë, while Albanik still uses the old landfill. The landfill is planned to be used for 12 years. It is managed by Public Enterprise of Zveçan, which disposes from 800 to 1.000 tonnes or 1.500 m^3 within a month .



. Municipal landfill in Zveçan

Table 21: Sanitary landfills, their capacity and surface

Sanitary landfill	Municipalities covered with service	Type of landfill	surface(ha)	Nr of Inhabitants	Lifespan
Prishtinë	Prishtinë, Lipjan, Obiliq, Gllogoc, Fushë- Kosovë.	Regional	40	724.251	15
Gjilan	Gjilan, Viti, Ferizaj, Kamenicë,Novobërdë	Regional	24	242.195	15
Prizren	Prizren, Suharekë, Malishevë, Rahovec, Gjakovë	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, Kaçanik Shtime, Shtërpcë, Hani i Elezit	Transfer station		210.120	
Zveçan	Zveçan	Municipal			15



Map 4: Map of regional landfills

3.3. Industrial landfills

Many industrial hazardous substances have remained disposed throughout magazines of industrial enterprises that produced or used those substances. In most of cases, the enterprises that disposes these substances do not show interest or do not have means for treatment or reduce of hazard from these substances.
In the table 22 are showed data on the surface and quantity of waste in some of industrial landfill.

Table 22: Industrial landfills, quantity and surface

Nr.	**Location**	**Landfill surface / ha**	**Quantity / million tonne**
1	Wasteland in Mitrovica Industrial Parl	35	1.52
2	Wasteland in Zvecan (Gornje polje)	50	12
3	Wasteland in Leposaviq (Bostaniste)	10	3.6
4	Wasteland in Kizhnica (Badovc)	18	7.7
5	Wasteland in Stan-terg (Zarkov potok)	10	3.6
6	Ash and grime landfill in KEK	160	42
	Total	**283**	**70.4**

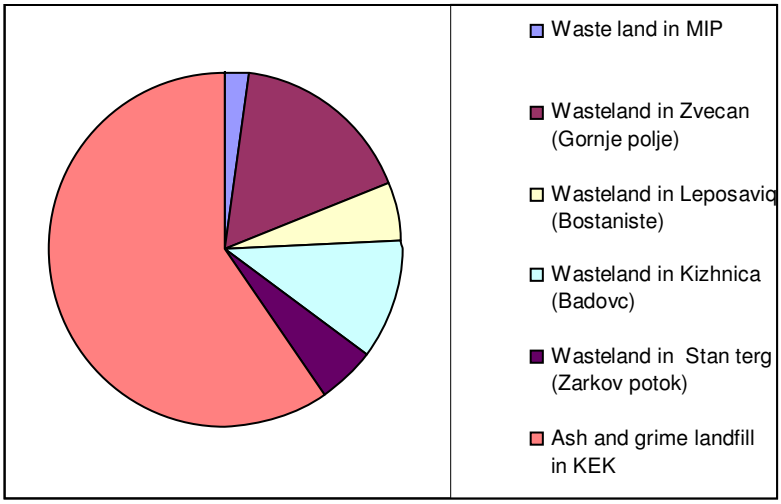


Figure 12: Industrial landfills according to the surface (ha)



Industrial landfill in Kishnicë

3.4. WASTE AND HAZARDOUS SUBSTANTCES' HOT-SPOTS

Depending on the environmental sector on which the hot-spot perception is defined, in the environmental terminology exists a range of definitions about "Hot –Spots". One of the definitions states that hot-spots involves locations with high concentration of contaminants. Hot-spots may be also chemically contaminated lands from mines industry, activities with wastes and other pollutants that may affect ground water, land and air. About 110 hot-spots are evidenced in Kosovo, as locations contaminated with heavy metals, chemical products, used oils and other contaminants.

Table 23: Waste Hot-spots according to municipalities and locations

Nr.	Municipality/ Location	Hot-spots		
		Municipal waste landfills	Landfills with wastes from factories	Landfills with other materials
1.	Prishtinë	1	1	1
2.	Prizren	2	-	1
3.	Gjilan	1	-	2
4.	Pejë	1	-	6
5.	Gjakovë	1	-	4
6.	Ferizaj	-	1	-
7.	Podujevë	2	-	3
8.	Fushë Kosovë	2	1	2
9.	Lipjan	2	-	1

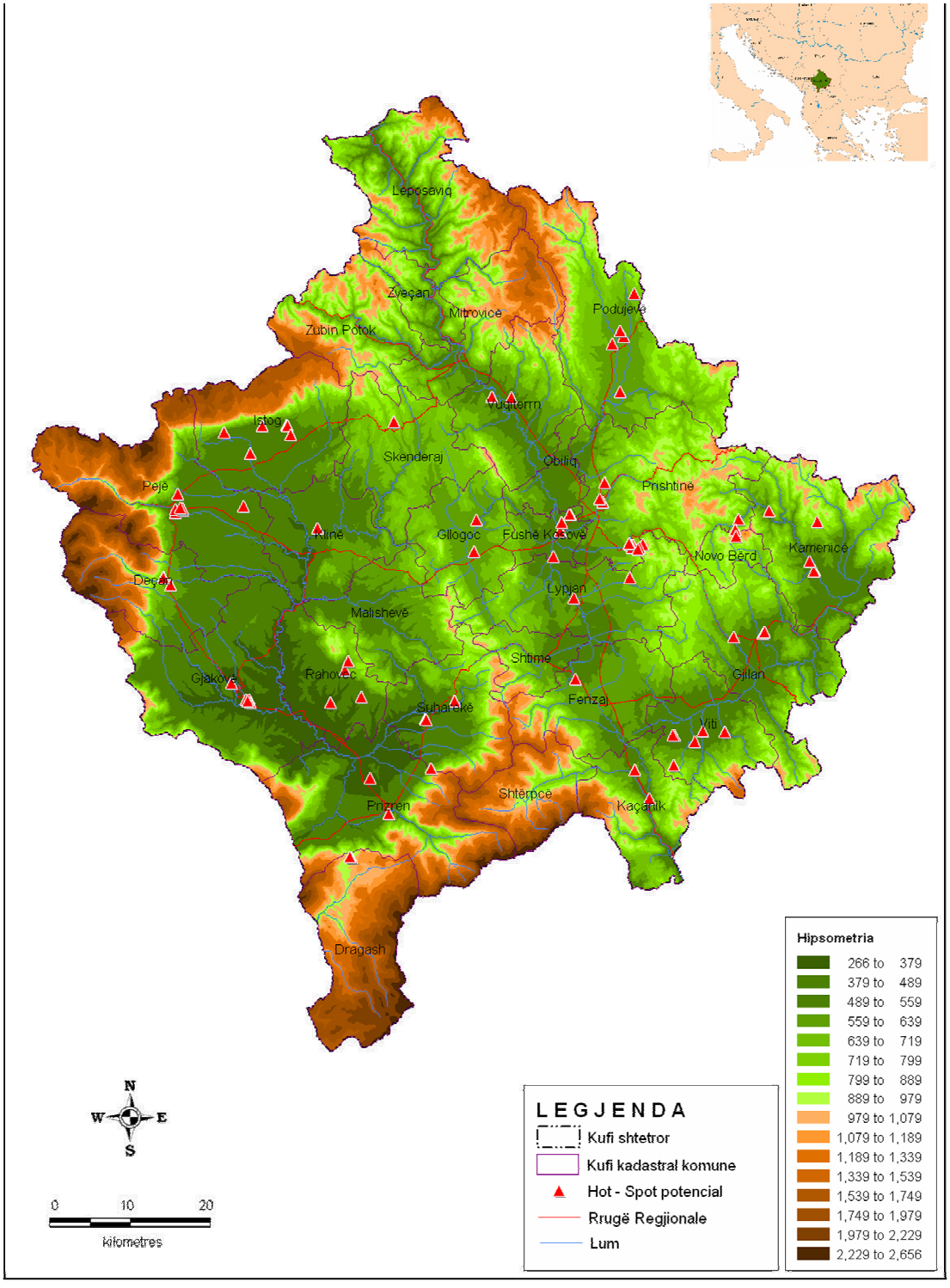
© Kosovo Environmental Protection Agency

10.	Therandë	1	-	2
11.	Drenas	1	-	1
12.	Vushtrri	-	2	-
13.	Kaçanik	1	-	2
14.	Graçanicë-Kishnicë	-	8	-
15.	Skenderaj	-	1	-
16.	Artanë	-	4	-
17.	Istog	1	4	1
18.	Malishevë	-	-	-
19.	Rahovec	1	1	3
20.	Deçan		4	-
21.	Viti	1	2	2
22.	Kamenicë	3	-	3
23.	Klinë	-	-	-
24.	Dragash	2	1	-
25.	Suharekë	-	1	-
26.	Obiliq	-	2	2
27.	Mitrovicë	-	2	11

In this table are included data for the localities of sanitary landfills and covered (closed) municipal landfills.
In the list of landfills with wastes from factories are included locations were production factories are concentrated, or the factories that have operated (produced) in the past. While in "other landfills" are included location as mines landfills, different farms, agriculture-pesticides magazines, agriculture cooperatives, industrial landfills etc.



Potential waste hot-spots in Drenas and Ferizaj



Map 5. Potential hotspots of wastes, hazardous wastes and other hotspots

4. WASTE TREATMENT

4.1. The concept of waste treatment

One cannot speak about a real waste treatment in Kosovo. The to date initiatives and efforts have been resultless. The developed world have practiced the contemporary concept on waste treatment which should be a short term objective for Kosovo and must start its implementation. The waste treatment in Kosovo is on its very first steps of development, still at the level of self initiatives, but with its symbolic and importance. Parallel with development of first steps on waste treatment, it is under development a good ground for successful waste management. Part of management system for waste management in Kosovo are WWRO, KLMC and Public Enterprises. Urban areas that represents 40% of settlements in Kosovo are covered with about 90%, while rural areas are very little covered with waste collection services, about 10%.

Waste treatment is a complicated and expensive process. It impacts significantly on the decrease of the quantity of waste remained for landfill. No large projects that deals with waste treatment are undergoing in Kosovo, but there are evident small private initiatives in few localities that is encouraging for the future.

In this case we may emphasize plastic recycling in Rahovec and Mitrovicë, paper collection in Xërxë, Lipjan, Fushë Kosovë, Prizren, Prishtinë; glass bottles in Pejë; glass collection and recycling in Therandë; different metals in many centres in Kosovo (Prishtinë, Ferizaj, Lipjan, Mitrovicë, Gjakovë, Pejë, Janjevë, Podujevë etc).

Recently there are evidenced initiatives for composting in few centres in Kosovo, where we emphasize the centre in Klinë

The Ministry activities are focused on establishing appropriate legal, strategic and institutional infrastructure on prevention, collection, separation, treatment (recycling, reusing, composting) and landfill of wastes.

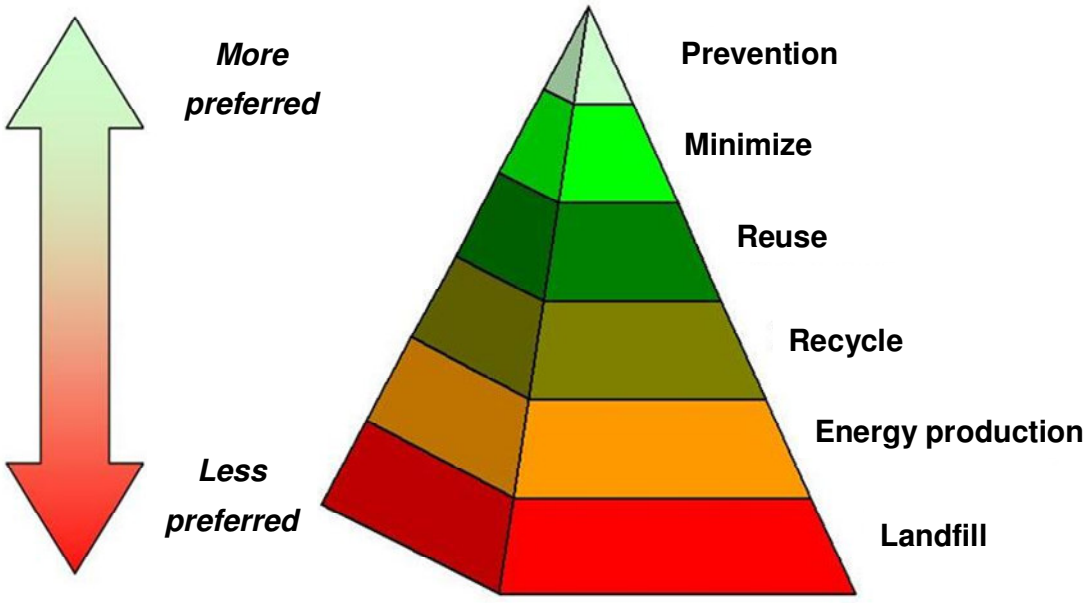


Figure 13: Hierarchy of waste management

4.1.1. Recycling

It is a process with technical, ecological and economical effects. Its values consists on the drastic decrease of the quantity of municipal and industrial wastes that in other circumstances ends up at the landfill. Recycling have significant positive effects as it enables the landfills to have a longer lifespan, decrease the intensity of natural resources use, save time and energy.
According to the analyses of municipal waste it is concluded that 35 – 45% of them are organic waste. It means there is a good opportunity for composting and fermentation of organic waste as easy processes but with multiple benefits. There are 35 enterprises in Kosovo that deals with recycling of materials such as paper, metals, batteries, tins, organic waste, tires, plastics etc.

4.1.2. Reduction at the source

Waste represents a complex and heterogenic material that gets created during daily activities of people, at work, house, public surfaces (areas), schools, industry, markets and other activities. Reduction at the source, means rational use of natural resources, well planned production, reduce unnecessary production, energy efficiency etc. All

© Kosovo Environmental Protection Agency

producers must review the opportunity of reuse and/or recycling of products packaging.

4.1.3. Re use

Many products are designed so as to be able do be used several times. The reuse of plastic bags or glass jars are good examples.
There are good reasons for reuse of products:

- Save energy and raw material
- Decrease storage costs
- Decrease costs for business and consumers

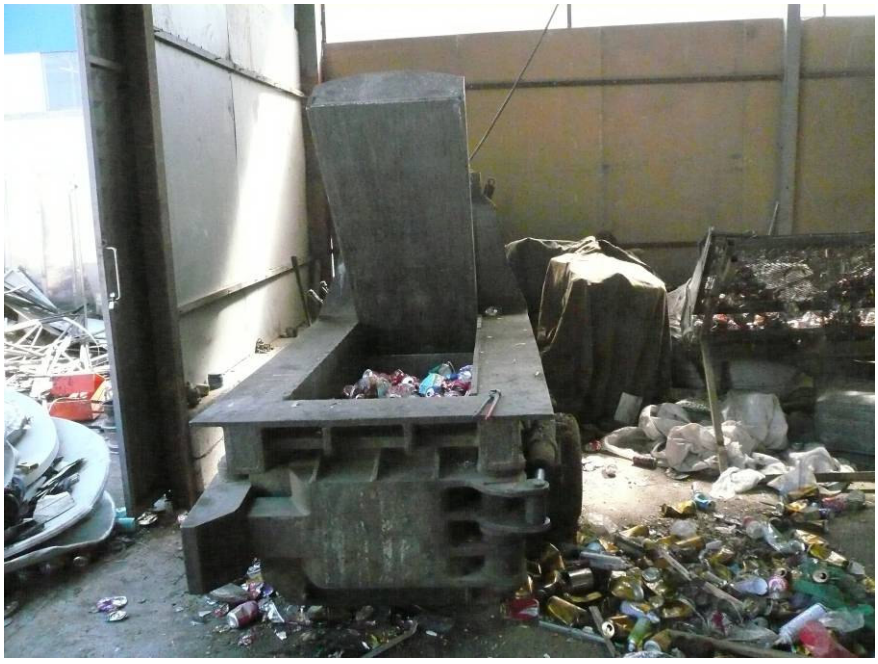
In table 24 are presented data on waste treatment manners from some companies/enterprises, the type of material they recycle, quantity and their market

Table 24. Some of companies / enterprises that deals with waste treatment in Kosovo[36]

Company/Enterprise	Type of material	quantity	Treatment	Market
Factory of paper and cardboard in Lipjan	Paper	300 t/month	Recycling	Kosovo
Uniteti-Mitrovicë	Paper	15 t/ month	Collection	Kosovo
Celina- Xërxë, Rahovec	Paper	450 t/ month	Collection	Macedonia, Croatia
Val-Karton- Prishtinë	Paper	100 t/ month	Collection	Serbia, Bulgaria
Metal Company-Fushë-Kosovë	Paper	75 t/ month	Collection	Serbia, Macedonia
Scrap-iron-Pejë	Iron, aluminium, paper, brass, plastic, battery	150 t/ month	Collection	Macedonia, Germany, Montenegro
SekKos- Prishtinë	Iron, aluminium, brass, battery	20 t/ month	Collection	Slovenia, Germany
Katër Vëllezërit-Skenderaj	Iron	t/ month	Collection	Kosovo
Ariani- Skenderaj	Iron, aluminium, brass, battery	20 t/ month	Collection	Macedonia, Greece
Gratis- Mitrovicë	Iron	300 t/ month	Collection	Greece
Qëndresa- Kamenicë	Iron	5 t/ month	Collection	Kosovo
Bosfor- Gjilan	Iron, aluminium, brass, battery	10 t/ month	Collection	Macedonia, Greece
Rival-Livoç i Epërm Podujevë	Iron, aluminium, brass, battery	/ t/ month	Collection	Macedonia, Greece

[36] The State of Waste in Kosovo, MESP2005

Scrap-iron -Gjilan	Iron, aluminium, brass, battery	/ t/ month	Collection	Macedonia, Greece
Scrap-iron -Livoç i Poshtëm-Podujeve	Iron, aluminium, brass, battery	/ t/ month	Collection	Macedonia, Greece
Evropa Dekor- Podujevë	Aluminium, brass	0.9 t/ month	Collection	Kosovo
Metalurgu-Mitrovicë	Iron, aluminium, copper	10.2 t/ month	Collection	Kosovo
Tiki-Niti-Prishtinë	Iron, aluminium, brass, battery	2500 t/ month	Collection	Macedonia, Greece Italy
Profil Metali-Prizren	Iron, aluminium copper	9 t/ month	Collection	Kosovo
Agroklina-Drsnik Klinë	Fruits, vegetables, wood, manure	300.000 l within a cycle	Composting	Kosovo
Factory of beer -Pejë	Barley bran	50000/1 boilin within a day	Collection	Kosovo
Fisi Comerc-Radivoc Viti	Used tires	550 pcs/ mont	Re-overlay	Kosovo
Riveshje e gomave-Vllashnje-Prizren	Used tires	4 T/ month	Re-overlay	Kosovo
Ekoplast- Rahovec	Plastic	100 T/ month	Recycling	Kosovo
18 Nëntori- Rahovec	Plastic	8 T/ month	Recycling	Kosovo
Pista- Rahovec	Plastic	20 T/ month	Recycling	Kosovo



Waste collection for recycling

© Kosovo Environmental Protection Agency

By the data showed in the table 25 and figure 14 may be concluded that the biggest waste quantity treated in Kosovo is from metal origin, and the lowest recycled quantity is from used tires.

Table 25 : Quantity of waste treatment in Kosovo in tonnes, according to the types.

Type of material	Quantity t/month
Metal	3018.9
Paper	940
Plastic	128
Organic waste	52.5
Tires	4

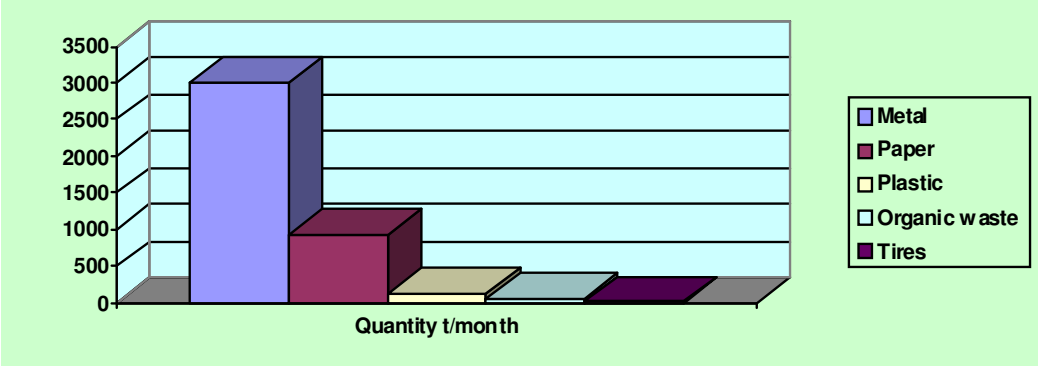
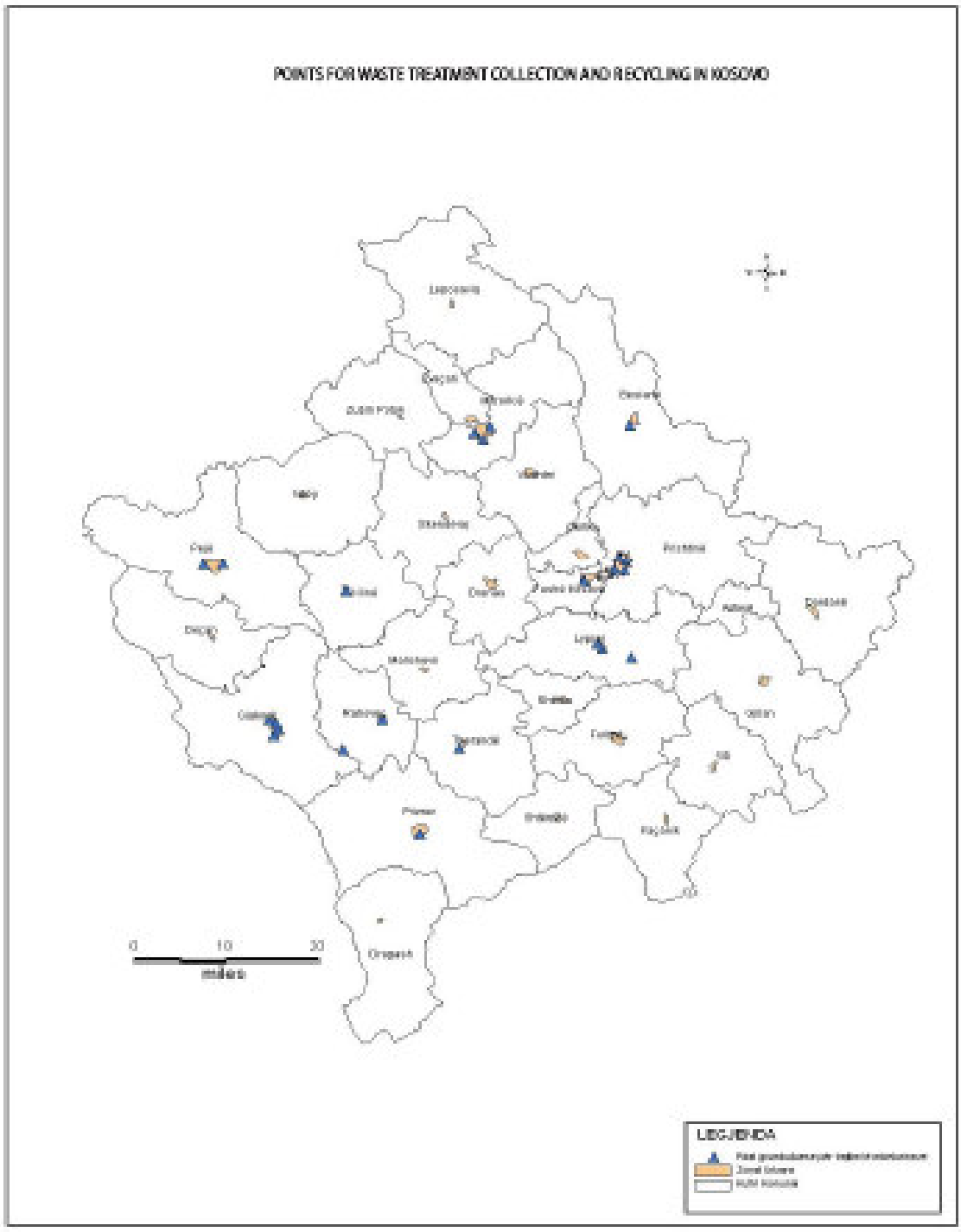


Figure 14 : Types of treated waste in Kosovo (tonne/month)



Map 6: Waste treatment points in Kosovo

5. GENERAL ASPECTS

5.1. Tariffs for municipal waste management

Tariffs for waste collection services providers are set by the Water and Waste Regulatory Office, based on the UNMIK regulation on activities of water and waste service providers (regulation nr 2004/49) and in compliance with the article 26 of the regulation on tariffs for waste collection service providers in Kosovo (Regulation of WWRO, R 02/GM, dated January 26, 2005). Tariffs are set based on the consumer categories and based on provided services. The tariffs may be changed depending on the services that a specific company offers.

Table 26: Tariffs (euro/month) for household waste collection according to the regional companies[37]

Nr.	Company	Region	Type of services	
			"Door to door" (Euro/month)	**Collective containers** (Euro/month)
1	Ambienti	Pejë	3.04	3.04
2	Çabrati	Gjakovë	3.74	3.74
3	Eko-Regjioni	Prizren	3.65	3.65
4	Higjiena	Gjilan	3.74	3.74
5	Pastërtia	Ferizaj	3.74	3.74
6	Pastrimi	Prishtinë	3.92	3.92
7	Uniteti	Mitrovicë	3.04	3.04

From the data showed in table 26 is indicated higher tariff for waste collection for household costumer, for both provided services door to door and collective containers, made by company "Pastrimi" Prishtine, and lower tariffs for services provided by companies "Ambienti" Pejë and "Uniteti" Mitrovicë.

[37] WWRO - 2009

Table 27: Tariffs for waste collection for commercial / industrial customers according to regional companies[38]

Company	Region	The manner of service providing						
			Service provided for collective containers (euro/month)			Service provided for special containers (euro/emptying)		
		Zone	Subcateg.1 Small artisan or service activity	Subcateg. 2 Small and medium commercial and service activity	Subcateg . 3 Large commercial, service and production activity	Subcateg.1 Small artisan or service activity	Subcateg. 2 Small and medium commercial and service activity	Subcateg . 3 Large commercial, service and production activity
						Container volume		
						1.1 m³	5.0 m³	7.0 m³
Ambienti	Pejë	I	4.40	7.77	13.82	10.00	n/sh	35.00
		II	4.40	7.77	13.82			
Çabrati	Gjakovë	I	3.74	18.00	n/sh	9.50	n/sh	35.00
		II	2.78	9.70	n/sh			
Eko-Regjioni	Prizren	I	4.20	9.87	17.35	9.00	n/sh	35.00
		II	6.33	ska	ska			
Higjiena	Gjilan	I	4.35	7.83	14.78	9.00	n/sh	n/sh
		II	6.09	9.57	16.25			
Pastërtia	Ferizaj	I	6.09	8.58	15.00	10.00	n/sh	n/sh
		II	n/sh	n/sh	n/sh			
Pastrimi	Prishtinë	I	7.00	10.00	17.25	9.0	n/sh	35
		II	5.00	6.00	11.00			
Uniteti	Mitrovicë	I	5.00	9.00	15.00	9.0	30	35
		II	4.50	6.00	12.50			

In the table 27 are showed data on waste collection tariffs for commercial and industrial costumers. These tariffs vary depending on the provided services and service area. The highest tariffs for service provided with collective container for two areas are those provided by the company "Pastrimi" Prishtinë, while lowest tariffs are those provided by "Ambienti"Pejë.

Companies "Pastërtia"Ferizaj and "Ambientit" Pejë, have the highest tariffs for service providing for special containers.

[38] WWRO - 2009

Table 28: Tariffs for waste collection for Institutions [39]

Company	Region	The manner of service providing					
		Service provided for collective containers (euro/month)			Service provided for special containers (euro/emptying)		
		Subcategory 1 Offices of political parties. Post offices. Represent of associations. Religious institutions and similar	**Subcategory 2** Associations. Medical centres. Kindergartens, sport houses. Cinemas. Theatres. Libraries and similar	**Subcategory 3** Schools. Post offices. Hospitals. Ministries. Municipal assemblies. Financial institutions. Student centres. Print houses. Courts. Bus & train stations and similar	**Subcategory 1** Offices of political parties. Post offices. Represent of associations. Religious institutions and similar	**Subcategory 2** Associations. Medical centres. Kindergartens, sport houses. Cinemas. Theatres. Libraries and similar	**Subcategory 3** Schools. Post offices. Hospitals. Ministries. Municipal assemblies. Financial institutions. Student centres. Print houses. Courts. Bus & train stations and similar
					Container volume		
					1.1 m³	**5.0 m³**	**7.0 m³**
Ambienti	Pejë	3.04	n/sh	n/sh	10.00	n/sh	35.00
Çabrati	Gjakovë	3.74	n/sh	n/sh	n/sh	n/sh	n/sh
Eko-Regjioni	Prizren	3.65	n/sh	n/sh	9.00	n/sh	n/sh
Higjiena	Gjilan	3.74	n/sh	n/sh	9.00	n/sh	n/sh
Pastërtia	Ferizaj	3.74	n/sh	n/sh	n/sh	30.00	n/sh
Pastrimi	Prishtinë	3.92	n/sh	n/sh	9.00	n/sh	35.00
Uniteti	Mitrovicë	3.04	n/sh	n/sh	9.00	30.00	35.00

[39] WWRO - 2009

In the table 28 are showed data on waste collection services for institutional costumers. Tariffs for this category differs depending from the service and from the area. Higher tariffs for service provided are for collective containers for two areas are from the company "Pastrimi" Prishtinë, while company Ambienti" Pejë, has the highest tariffs for service provided with special containers.

Table 29: Rate of payment for waste collection service and consumers view[40]

Payment for waste collection %	
Regularly	64.6 %
Periodically	25.0 %
Never	10.4 %
Number of respondents	948
How do consumers consider the tariffs for waste collection %	
Very high	1.72 %
High	28.49 %
Adequate	66.77 %
Low	2.04 %
I don't know	0.97 %
Number of respondents	930

On the table 29 are presented data about the rate of payment for waste collection services, and reasons for not paying for water and waste services. As it is shown on the table, about 64.5 % of respondents responded that they do pay regularly bills for waste collection service, while 10.4% of them responded that they never pay for services. As a reason for not paying, most of respondents (61.3%) responded they have lack of financial means. 28.5% of respondents are justified that they are not happy with the services, and 5.2% of respondents are not happy with the way they receive the bills.

[40] Report from the survey on consumers view about public services for water and waste in Kosovo. WWRO - 2008

In the other hand 66.7% of respondents consider that tariffs for waste collection services are adequate, while 28.4% of respondents, found these tariffs very high.

5.2. Infrastructure for waste collection

The most important segment for waste management is the infrastructure for waste collection. In the table 30 are presented data on infrastructure for waste collection that have regional companies. The company "Pastrimi" that operates in Prishtinë has a more completed infrastructure as for the number of trucks for transport as well as for the number of containers with different volumes.
The company "Çabrati", that operates on Gjakova region and the company "Pastërtia" that operates in Ferizaj have the poorer infrastructure for waste collection.

Table 30: Infrastructure for waste collection according go the companies[41]

Nr.	Company	Region	Nr of transport trucks	Nr of Containers 1.1 m^3	Nr of containers 5. 0 m^3	Nr of containers 7. 0 m^3
1	Ambienti	Pejë	16	1130	16	28
2	Çabrati	Gjakovë	5	146	-	22
3	Eko-Regjioni	Prizren	17	1070	12	47
4	Higjiena	Gjilan	11	1291	16	-
5	Pastërtia	Ferizaj	8	738	78	-
6	Pastrimi	Prishtinë	56	2400	-	135
7	Unitetit	Mitrovicë	15	890	30	117

[41] Regional waste companies, 2009

5.3. PROJECTS AND INVESTMENTS IN WASTE MANAGEMENT SECTOR

Kosovo inherited an immense problem after the war. Having in regard the situation on the infrastructure for waste management, the need for investments become a necessity. The biggest investor was EAR who in the infrastructure for waste management invested over 20.000.000 euro. During years 2007, 2008 and 2009 investments are oriented in rehabilitation of several landfills and final closure of old landfills of municipal and industrial wastes. Following the Kosovo Environmental Action Plan 2006-2010, the Ministry of Environment and Spatial Planning, during 2007 has invested in rehabilitation of three municipal landfills in Kaçanik, Prizren and Gjakovë, while during 2008 landfills in Lipjan, Prizren and Gjilan are rehabilitated. For 2009, the ministry of Environment and Spatial Planning in cooperation with the European Commission planned to rehabilitate and close 8 old landfills of municipal wastes. Data for implemented and planed projects for rehabilitation of old landfills are presented in tables 31 and 32. MESP plans that in near future to establish seven centres for sterilisation of infective hospital wastes; to implement project for the hazardous waste (construct magazine for temporary storage of hazardous waste).

Table 31: Completed projects for rehabilitation of old landfills 2004-2008[42]

	Project name	Project status	Donator	Year of project realisation
1	Rehabilitation of landfill in Suharekë	Completed	GTZ and municipality of Suharekë	2004
2	Rehabilitation of landfill in Prizren	Completed	MMPH	2007
3	Rehabilitation of landfill in Gjakovë	Completed	MMPH	2007
4	Rehabilitation of landfill in Kaçanik	Completed	MMPH	2007
5	Rehabilitation of landfill in Ferizaj	Completed	MMPH	2008
6	Rehabilitation of landfill in Gjilan	Uncompleted	MMPH	2008-2009
7	Rehabilitation of landfill in Lipjan	Completed	MMPH	2008

[42] MESP - 2009

Table 32: Planned projects for rehabilitation and closure of old landfills 2009[43]

	Name of landfill	Project status	Donator
1	Rehabilitation of landfill in Prishtinë	Preparation of technical documentation / under development	European Commission
2	Rehabilitation of landfill in Podujevë	-	European Commission
3	Rehabilitation of landfill in Fushë Kosovë	-	European Commission
4	Rehabilitation of landfill in Klinë	-	European Commission
5	Closure of landfill in Ferizaj	-	European Commission
6	Closure of landfill in Gjakovë	-	European Commission
7	Closure of landfill in Kaçanik	-	European Commission
8	Closure of landfill in Lipjan	-	European Commission
9	Rehabilitation of landfill in Rahovec	-	MESP
10	Rehabilitation of landfill in Kamenicë	-	MESP
11	Rehabilitation of landfill in Viti	-	MESP

Sanitary landfills in Kosovo are mainly constructed thanks to donations from EAR, COOP, DANIDA and from consolidated budget of Kosovo. Detailed data on these investments are showed in table 33.

[43] MESP - 2009

Table 33: Investments for construction of sanitary landfills in Kosovo[44]

Sanitary landfill	Type of landfill	Donator	Cost for construction
Prishtinë	Regional	EAR	3.6 mil. €
Gjilan	Regional	EAR	2.6 mil. €
Prizren	Regional	EAR	2.6 mil. €
Podujevë	Regional	EAR	1.2 mil. €
Mitrovicë	Regional	DANIDA	---
Pejë	Regional	COOP	---
Sharr	Municipal	EAR	---
Ferizaj	Transfer station	EAR	900.000€
Zveçan	Municipal	EAR	---

[44] KLMC - 2009

6. CONCLUSIONS AND RECOMMENDATIONS

6.1. Conclusions

- The report identifies that the system for waste management is not effective and needs immediate improvements ;
- The collection of municipal waste at national level is about 50 %;
- The state of Landfills in Kosovo is out of desirable standards;
- A number of wild landfills (dumping sites) is evident;
- It is evident lack of monitoring system for the state of waste management;
- Lack of effective mechanisms for encouraging waste separation, and recycling;
- Lack of projects for waste recycling;
- Low collection of payment for waste collection services;
- No database for water, air and soil pollution from wastes (used oils, industrial wastes, hazardous wastes);
- Insufficient cooperation between relevant institutions;
- Investments in the sector of waste management are needed;
- Partial harmonisation of national legislation with EU directives on waste sector;

6.2. Recommendations

- Prepare the Strategic Plan for Waste Management;
- Strengthen the waste management institutions;
- Clarify competencies and responsibilities among institutions;
- Complete and implement the legal base for waste management;
- Promote waste recycling
- Awareness raising about putting wastes in the right places (containers) and about paying for waste collection services;
- Strengthen local institutions on waste management;
- Forbid waste dumping in illegal landfills (dumping sites)
- Compile programmes for reducing the risk from hazardous wastes;
- Strengthen the companies that deal with waste management;
- Consolidate the waste information system

© Kosovo Environmental Protection Agency

7. References

1. Questionnaire on municipal waste management; Statistical Office of Kosovo; *2008*
2. The State of Uncontrolled landfills in Kosovo - *KLMC, 2008*
3. Waste, Packaging and Environment -*REC, 2002*
4. Study on Landfill Benchmarking Method -*IPA, 2007*
5. Kosovo Environmental Action Plan 2006-2010, *MESP/REC, 2006*
6. Progress Monitoring Report, *REC, 2008*.
7. State of Environment Report 2006/2007- *KEPA 2008*
8. State of Waste in Kosovo 2003/2004- *MESP, 2005*
9. Kosovo Environmental Strategy, *MESP 2003*
10. Waste Treatment – Reducing the Risk for Health and Environment -*Ilir Morina, REC Bulletin 2005*
11. Annual Performance Report 2007- *WWRO, 2008*
12. Report from the Survey on the Customers' View About Water and Waste Public Services in Kosovo - WWRO*, 2008*
13. Order of Service Tariffs- *ZRRUM, 2007*
14. Waste Law (nr. 02/L-30)
15. Law on Environment Protection

© Kosovo Environmental Protection Agency

THE STATE OF WASTE IN KOSOVO 2008 / REPORT

Editor :
Ministry of Environment and Spatial Planning
Kosovo Environmental Protection Agency

Editor team

MSc. Tafë Veselaj- KEPA
MSc. Afrim Berisha- KEPA
MSc. Mimoza Hyseni- KEPA
Ibrahim Balaj- MESP
Bajram Kafexholli-KEPA

Other contributors:

Rizah Hajdari-KEPA
Enver Tahiri-MESP
Sabit Restelica- KEPA
Ajet Mahmuti- KEPA
Tone Gashi-KEPA
Mr.sc. Florije Tahiri- MESP
Lindita Xhema- MESP
Mr.sc. Sami Behrami-KEPA
Perparim Gashi- KEPA
Ardiana Pllana- KEPA

Lector:
Tone Buzhala-Gashi

Designed by:
Design house

Cover design and illustration:
Ylber Sherifi

Printed by:
Design house

® Copy right KEPA

Cataloging in edition - (CIP)
The National and University Library of Kosovo

This report " The State of Waste in Kosovo – 2008" shell be distributed for free. Copies of this report may be found in the offices of Kosovo Environmental Protection Agency. The report is available at www.ks-gov.net/akmm

Kosovo Environmental Protection Agency
Str.. "Bill Clinton" Nr. 18 Prishtinë
Tel. +381 38/ 227- 026; +381 38/227-027;
Tel/Fax. +381 38 211 685
E-mail: kepa@ks-gov.net

© Kosovo Environmental Protection Agency