

Illegal Landfills in sixteen Municipalities of Kosovo

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Abstract: -The waste management system in Kosovo is in an unsatisfactory situation, which presents a major problem for Kosovo. Approximately, the population covered with waste collection services is around 50%. This means that a huge amount of waste is burned either through away near rivers or inappropriate places as illegal landfills. The Law on Waste obliges municipalities to issue a register of illegal landfills in their territory within a period of one year In 16 municipalities 1062 illegal landfills were identified. In Drenas municipality most of the illegal landfills with huge surface with more than 400 m². Based on the results we can conclude that huge amount of waste it is not going to the landfills but are thrown away by populations.

Key-Words: - Illegal landfills, Kosovo, municipalities, waste, KEPA, dumpsites

1 Introduction

Lifestyles due to growth of population welfare generate an increasingly household solid waste [1]. The waste management system in Kosovo is in an unsatisfactory situation, which presents a major problem for Kosovo. Approximately, the population covered with waste collection services is around 50%. Efficient municipal solid waste management systems require professional management, supported by an informed population and appropriate legislation and policies [2]. Thus solid waste management is one of the most challenging issues in urban cities, which are facing a serious pollution problem. Furthermore, most urban wastes are still disposed into landfills which have a finite capacity and were originally located relatively close to the urban areas [3]. This means that a huge amount of waste is burned either through away near rivers or inappropriate places as illegal landfills [4]. The Law on Waste obliges municipalities to issue a register of illegal

landfills in their territory within a period of one year (Art. 81). Municipal environmental inspectors are responsible for doing so (Art. 62). For this, they often cooperate with respectively are informed by staff from the Regional Waste Collection Companies.

The administrative supervision is with the Ministry of Environment and Spatial Planning (Art. 61) with its environmental inspectors. Here, the Kosovo Environmental Protection Agency (KEPA) is the national body the data is reported to (Art. 14, 1.7-1.8). KEPA is obliged to create a database on waste management and to compile reports. KEPA reports on it in their annual environmental report and also verifies reported dumpsites, however relying on the self-reporting of municipalities. Randomized own investigation are not carried out regularly. During 2013, KEPA has made identifying of all illegal landfills in the territory of Kosovo. Identification was made in 34 Kosovo municipalities, excluding Leposaviq,

ZubinPotok and Zvečan. In total there were identified 400 illegal landfills, with a total area of 301.18 hectares [4]. Lipjan is the municipality with greatest surface area of illegal landfills, while the Municipalities of Gjilan and Mamushë have smallest surface area of illegal waste landfill.

The main objective of this study was

- To establish a baseline assessment of illegal dumpsites of undisputed data quality for the 16 partaking municipalities.
- As illegal dumpsites are a major nuisance for citizens and visitors in Kosovo, the final data shall also be used as an awareness raising tool to trigger a change in policy, management and social behavior.
- To establish a process for data collection and monitoring that is owned and followed-up by the Government- Kosovo Environmental Protection Agency.

2 Methodology

In order to ensure a collection of reliable baseline data comparable across municipalities, experts from Kosovo Environmental Protection Agency, Municipalities and Regional Waste collection Companies was engaged on data collection, data collection methodology and monitoring system. For this assessment, the following were applied:

Scope: All roads in the 16 municipalities accessible by standard cars (i.e. not four-wheel drive) were assessed. This amounts to ca. 10,000 km in total. A routing were agreed on in advance to ensure an efficient assessment.

Data collection: The following data points of each dumpsite were collected:

- **Photoproof:** Each dumpsite was photographed. Panoramic or multiple pictures were taken where necessary.

- **Geo-reference:** Each dumpsite was geo-referenced by indication of Latitude and Longitude. The decimal second was indicated (e.g. 42°65'52,87").
- **Municipality:** The name of the municipality the dumpsite is found was indicated.
- **Amount:** Data collectors were indicated either:
 - o Small: 1-5 200l bags/wheelbarrows needed
 - o Medium: 5-20 200l bags/wheelbarrows
 - o Big: > 20 wheelbarrows, i.e. truck needed
- **Size:** Data collectors were indicated either:
 - o 1-49 m²; i.e. up to 7m x 7m or the like
 - o 50-400 m², i.e. up to 20 x 20 m or the like
 - o >400 m²
- **Fractions:** Data collectors were indicated one or more of the following:
 - o Household waste
 - o Inert/construction waste
 - o Industrial and hazardous waste
 - o Bulky waste
 - o Other (to be specified in comment section)

3 Data validation

The collected data were submitted in a way so that they are accessible by designated Kosovo Environmental Protection Agency and GIZ. The data points were validated in terms of fulfilling the definitions above and were ensured that there were no double entries or mismatches between geo-reference and picture. For each data point found void, a reason were provided [5].

The following municipalities were part of this research:

Drenas
 Ferizaj
 Fushë-Kosovë
 Graçanica
 Istog
 Kaçanik
 Klinë
 Lipjan
 Mitrovicë e Jugut
 Obiliq
 Peja
 Podujevë
 Prishtinë
 Shtime
 Skënderaj
 Vushtrri



Fig.1 Map of municipalities

4 Results

For a month 8 teams did investigation and identification of illegal landfills in 16 municipalities. In total 1062 illegal landfills were identified. Municipalities of Drenas (137), Peja (123) and Lipjan(105) were the municipalities that had most illegal dumpsites

whereas Municipalities of Shtimje (27), Graçanica (32) and Kaçanik (35) were municipalities that had the lowest number of illegal dumpsites. In the table 1 are presented are presented the total number of illegal landfill for all municipalities.

Tab.1 Number of illegal landfills per municipalities

No.	Municipality	Number of illegal landfills
1	Drenas	137
2	Graçanica	32
3	Obiliq	55
4	Ferizaj	61
5	Istog	82
6	Klina	57
7	FusheKosova	43
8	Kaçanik	35
9	Lipjan	105
10	Podujeve	41
11	Skenderaj	71
12	Mitrovicë	41
13	Prishtine	95
14	Vushtrri	57
15	Peja	123
16	Shtime	27
Total 1062		

As we can see from table 2 the amount of waste in most of the illegal landfills identified in this study is big or medium in

all municipalities. Only in Fushe Kosovo municipality the amount in these dumpsites were low.

Tab 2. Percentage of illegal landfill categorized by amount of waste

No.	Municipality	Small 1-5 200l bags	Medium 5-20 200l bags	Big > 20 bags
1	Drenas	10.2%	23.4%	66.4%
2	Graçanica	9.4%	62.5%	28.1%
3	Obiliq	21.8%	45.5%	32.7%
4	Ferizaj	6.6%	45.9%	47.5%
5	Istog	-	29.3%	70.7%
6	Klina	1.7%	50.9%	47.4%
7	FusheKosova	38.6%	53.3%	9.1%
8	Kaçanik	5.7%	48.6%	45.7%
9	Lipjan	15.2%	51.4%	33.3%
10	Podujeve	51.2%	43.9%	4.9%
11	Skenderaj	23.9%	54.9%	21.1%
12	Mitrovicë	22%	41.5%	36.6%
13	Prishtine	1.1%	16.8%	82.1%
14	Vushtrri	15.8%	54.4%	29.8%
15	Peja	4.5%	38.2%	57.3%
16	Shtime	3.8%	48.1%	48.1%

Dumpsites surface were mixed and varied from the lowest one to the biggest one. Drenas municipality most of the illegal landfills with

huge surface with more than 400 m², despite in Podujeva and Fushe Kosova most of them were small with 1 to 49 m² surface.

Tab 3. Percentage of illegal landfills categorized by surface

No.	Municipality	Small 1-5 200l bags	Medium 5-20 200l bags	Big > 20 bags
1	Drenas	12.4%	26.3%	61.3%
2	Graçanica	9.4%	62.5%	28.1%
3	Obiliq	56.4%	34.5%	9.1%
4	Ferizaj	27.9%	26.2%	45.9%
5	Istog	46.3%	35.4%	18.3%
6	Klina	10.5%	42.1%	47.4%
7	FusheKosova	44.2%	32.6%	23.3%
8	Kaçanik	17.1%	40%	42.9%
9	Lipjan	72.4%	11.4%	16.2%
10	Podujeve	46.3%	43.9%	9.8%
11	Skenderaj	23.9%	54.9%	21.1%
12	Mitrovicë	22%	43.9%	34.1%
13	Prishtine	14.7%	30.5%	54.7%
14	Vushtrri	43.9%	49.1%	7%

15	Peja	64%	24.7%	11.2%
16	Shtime	7.4%	48.1%	44.4%

Type of waste in these illegal landfills is mostly household waste and inter waste (construction waste).

Tab 4. Percentage of type of waste in illegal landfills.

No.	Municipality	Household waste	Inert waste
1	Drenas	43%	42.7%
2	Graçanica	40%	60%
3	Obiliq	42.4%	46.7%
4	Ferizaj	39.8%	40.7%
5	Istog	51.8%	22.6%
6	Klina	42.7%	56%
7	FusheKosova	33.7%	40%
8	Kaçanik	53.1%	46.9%
9	Lipjan	49.7%	43.8%
10	Podujeve	44.4%	49.4%
11	Skenderaj	65.6%	34.4%
12	Mitrovicë	62.1%	39.6%
13	Prishtine	36.4%	48.3%
14	Vushtrri	64.3%	31%
15	Peja	36.6%	34%
16	Shtime	54.1%	45.9%

5 Conclusion

Level of economic development and urban population density influences the generation of municipal waste in a country [6]. Based on the results we can conclude that huge amount of waste it is not going to the landfills but are thrown away by populations. Only half of population in Kosovo 90% in the cities and 20% in the villages are covered by waste collection services. This means that some people that do not have this service are throwing away their waste. Moreover, in Kosovo do not exist any location or any landfill for construction waste [7]. So this leads that people and businesses do not have any place to throw this type of waste, therefore they are throwing everywhere. Illegal

dump screationisa result of lack of management system about 50% of the territory in Kosovo. Their treatment is complicated and expensive as well as difficult to achieve with the existing infrastructure. Definitely, to achieve the good results about illegal dumpsite treatment is needed to involve wide institutions collaboration (government, municipality, operators and waste management company and technical expertise [8]. Rising environmental awareness is another key factor on waste management area. The integration of education for sustainable development (ESD) into all levels of education is a key priority in Kosovo's environmental action plan [9].

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References:

- [1] Humă, C., D. Chiriac, 2006, Aspecteglobale ale ecologizării urbane

- și implicații asupra calității vieții,
Calitate vieții, 14, nr. 1, 1-16.
- [2] Wilson E.J., F.R. McDougall, J. Willmore, 2001, Euro-trash: searching Europe for a more sustainable approach to waste management, Resources, Conservation and Recycling ,31, 327–346.
- [3] Kumar S., J.K.. Bhattacharyya, A.N. Vaidya , T. Chakrabarti, , S. Devotta, A.B. Akolkar ,2009, Assessment of the status of municipal solid waste management in metro cities, state capitals, class I cities, and class II towns in India: An insight, Waste Management ,29, 883–895.
- [4] State of waste and chemicals Report, 2014 http://ammk-rks.net/repository/docs/Raport_Waste_and_Chemicals_2014.pdf,
- [5] Guariso G., F. Michetti, F. Porta , S. Moore ,2009, Modelling the upgrade of an urban waste disposal system , Environmental Modelling& Software, 24 ,2009,1314–1322.
- [6] Rajeev et al.,2011, Management of urban solid waste: Vermicomposting a sustainable option, Resources, conservation and recycling, Vol. 55, Issue 7, Page 719- 729
- [7] Morina I. (2009), Entwicklung von Verfahren zur Rekultivierung der Aschedeponie des Braunkohlekraftwerks in Prishtina (Kosovo), Berliner Oekophysiologische und phyto medizinische Schriften, Der Andere Verlag Band 2.
- [8] Waste management Strategy. 2013, http://mmph-rks.org/repository/docs/Strategy_of_Republic_Kosova_for_WM_2013-2022_eng.945753.pdf
- [9] Mimoza Hyseni Spahiu, Bardha Korca, and Petra Lindemann-Matthies, 2014, [Environmental Education in High Schools in Kosovo—A teachers' perspective](#), International Journal Of Science Education Vol. 36 ,Iss. 16,