



WASTE MANAGEMENT IN KOSOVO: CHALLENGES AND OPPORTUNITIES

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List of acronyms

DEMOS	Decentralization and Municipal Support Project
EU	European Union
GIZ	German Corporation for International Cooperation
GPS	Global Positioning System
HSI-K	Helvetas Swiss Intercooperation
KEDS	Kosovo Company for Energy Distribution Services
MESP	Ministry of Environment and Spatial Planning
MF	Ministry of Finance
MLGA	Ministry of Local Government Administration
MPA	Ministry of Public Administration
PE	Public Enterprise
PPP	Public-Private Partnership
PPRC	Public Procurement Regulatory Commission
RWC	Regional Waste Company
TAK	Tax Administration of Kosovo
WM	Waste Management

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1. INTRODUCTION

The analysis “Waste Management in Kosovo - Challenges and Opportunities” has been deemed as necessary in order to clarify the responsibilities of each of the stakeholders involved in this sector and also to identify the shortcomings as well as the steps that need to be taken in order to improve the situation.

Objectives of analysis:

- To clarify the responsibilities of each stakeholder involved in the waste sector;
- To identify the apparent problems in this sector;
- To provide recommendations for addressing the problems.

Methodology

For the purpose of identifying the challenges of this sector, five municipalities of Kosovo have been selected for analysis. These municipalities are different in terms of the number of inhabitants and the work progress in this sector.

In order to collect the necessary data for analysis, interviews were conducted in various forms with all stakeholders involved in the regulation of the waste management issue.

Constraints

In order to be fair to the readers, the difficulties encountered during the realization of the analysis should also be mentioned. Throughout the analysis it is noticed that the data from the Municipality of Prizren are incomplete and this is due to the hesitation of the officials (both of the municipality and the companies that provide waste service in this municipality) to share data with authors. Obtaining of data was also difficult with some other stakeholders, which has contributed to the prolongation of the time of conducting the analysis.

2. WASTE MANAGEMENT IN KOSOVO: LEGAL FRAMEWORK

The Legal Framework on Waste Management in Kosovo is partially harmonized with the relevant *EU Acquis* on the waste sector. Further attempts towards full harmonization are currently being undertaken by MESP, whereas the main purpose of the current applicable legal framework for waste management is to avoid and reduce, as much as possible, the waste generation, reuse of usable components from waste, prevention of adverse impacts of waste to the environment and human health, as well as ultimate environmentally-friendly storage of waste.

The primary law regulating the waste sector in Kosovo is the Law No. 04/L-060 on Waste ("**Law on Waste**"). Law on Waste is a *lex specialis* (eng: special law), meaning that where two laws govern the same or similar factual situation, a law governing a specific subject matter (*lex specialis*) overrides a law which only governs general matters (*lex generalis*). This doctrine of *lex specialis* is specifically important when the regulation of waste sector in Kosovo is explained in relation to other laws, especially those addressing the establishment, management and governance of Publicly Owned Enterprises (i.e. the Law on Publicly Owned Enterprises and the Law on Business Organizations).

Other laws that in some way affect the arrangement of waste sector include:

1. Law No. 03/L-040 on Local Self-Government ("**Law on Local Self-Government**");
2. Law No. 03/L-087 on Publicly Owned Enterprises, as amended by the Laws Amending the Law on Publicly Owned Enterprises No. 05/L-009 and No. 04/L-111 ("**Law on POEs**");
3. Law No. 02/L-123 on Business Organizations, as amended and supplemented by the Law No. 04/L-006 ("**LBO**");
4. Law No. 04/L-042 on Public Procurement in the Republic of Kosovo, as amended by the Laws no. 04/L-237 of 2014, 05/L-068 of 2016 and no. 05/L-092 of 2016 on amending and supplementing the Law on Public Procurement in Republic of Kosovo ("**PP Law**");
5. Law No.04/L-045 on Public-Private Partnership ("**PPP Law**");
6. Law No.04/L-024 on State Aid ("**Law on State Aid**");
7. Law No.03/L-025 on Environmental Protection ("**Law on Environmental Protection**");
8. Law No. 04/L-174 on Spatial Planning ("**Law on Spatial Planning**");
9. Other Laws which have limited impact on the waste management regulation include the Law on Construction, the Law on Strategic Environmental Assessment, the Law on Environmental Impact Assessment, the Law on Water, the Law on Chemicals, the Law on Integrated Prevention and Control of Pollution, the Law on Biocide Products, the Law on Air Protection against Pollution, the Law on Nature Protection and the Law on the activities of service providers of water, sewage and waste. The main components of these waste are: stone, concrete, brick, component iron, lead components, electrical components, etc.

Sub-legal acts:

1. Regulation on Waste Management, Municipality of Prizren;
2. Regulation on Waste Management, Municipality of Vushtrri/Vučitrn;
3. Regulation on Waste Management, Municipality of Skenderaj;

Documents and reports:

1. Request for clarifications on application of provisions of the Law on Waste, submitted by the Municipality of Gjakova/Đakovica to the Office of the Prime Minister of ;
2. Clarifications from the Legal Office of the Office of the Prime Minister of Kosovo, dated 31.03.2016 and addressed to the Municipality of Gjakova/Đakovica;
3. European Commission Progress Report on Kosovo 2016;
4. Communication between the Municipality of Gračanica/Graçanicë and the Kosovo Public Procurement Regulatory Committee ("KRPP").

Following the adoption of the Law on Waste, Municipalities have assumed additional responsibilities related to the waste management and administration, including additional obligations in relation to the waste fee collection as well as for choosing the operator model pursuant to the Law. In addition, the previous Law on Local Self-Government stipulated waste management as the full and exclusive competence of municipalities. Based on these competences, municipalities have the legal authorization to establish structures, mechanisms, as well as provide a separate budget to the best and most efficient waste sector management within their administrative territories.

In general, the provisions of the Law on Waste provide legal basis for liberalization of the waste sector by opening the market to private waste management operators, the Publicly Owned Enterprises are dominant and operational and de-facto provides waste management services to the Municipalities. Such Publicly Owned Enterprises established pursuant to the Law on POEs and the Law on Business Organizations, their main operations is waste collection and storage services.

- Regional Waste Company "Pastrimi", Prishtinë/Priština;
- Regional Waste Company "Ambienti", Pejë/Peć;
- Regional Waste Company "Pastërtia", Ferizaj/Uroševac;
- Regional Waste Company "Eco-Regjioni", Prizren;
- Regional Waste Company "EkoHigjiena", Gjiilan/Gnjilane;
- Regional Waste Company "Uniteti", Mitrovicë/Mitrovica;
- Regional Waste Company "Çabrat" Gjakovë/Đakovica;

Such companies are organized as Joint Stock Companies, where certain municipalities or a number of municipalities are shareholders. The factual existence of these Companies is as important as the new legal framework on waste and obligations to tender waste management services, considering that the Municipalities, as shareholders of these Companies, have certain obligations to either support their performance or force their voluntary liquidation. This Report does not in any way suggest that future actions of the Municipalities should be undertaken without addressing the future of these Regional Waste Companies, considering that they hold a significant number of assets and employ a significant number of personnel. Market liberalization and exposure of these companies to market

competition may, in fact, produce valuable results and increase in their corporate performance, as has been the case with the Municipality of Prizren and their Regional Waste Company “Eco-Regjioni”, as opposed to a difficult financial situation of the Regional Waste Company “Çabrat” operating in the Municipality of Gjakova/Đakovica.

As the new Law on Waste came into effect in the second half of 2012, the slow implementation of the Law has been noticed at the European Commission Progress Report for Kosovo (2016). The Progress Report, section on waste management, outlines that although the legal framework is partially aligned, the waste remains one of the most visible problems in Kosovo. The draft master plan has been finalized, defining the concept of prevention, reuse and recycling of waste. However, the Ministry of Environment and Spatial Planning should start the implementation and increase investment opportunities in this sector. Basic waste management definitions and concepts, such as recycling and recovery of different waste streams, are not sufficiently supported by current legislation, limiting opportunities for private sector involvement. The high number of illegal dumpsites needs to be addressed urgently. Most of landfills are at the end of their storage capacity and pose a considerable long-term environmental risk, especially groundwater contamination.

Previous to the publishing of the European Commission Progress Report for Kosovo (2016), an EU Funded Project “Development of the ENV.net in West Balkan and Turkey: giving citizens a voice to influence the EU integration environmental reform process”, issued a summary report comparing Kosovo Environmental Legislation with EU Environmental Legislation noting that “Kosovo Parliament approved the Law on waste which is in line with the EU Environment Directives and same time in line with Kosovo legislation”. The Law governs waste management, environmental management plans, rights and obligations of licensed persons operating with waste management, manner and conditions of waste collection, transport, treatment, processing, storage and final disposal, waste import, export and transit, monitoring, information system and financing. The Law is at early stage of implementation, but faced with different challenges, due the fact that Kosovo deals only with waste collection and not with waste management”.

The Ministry of Environment and Spatial Planning (MESP) considers that the Law on Waste should be fully implemented and that the waste management services shall be tendered by the Municipalities without any compromise. A number of Municipalities have already start working or are half-way through the process, whereas the Municipality of Prizren is leading in context of full implementation of the Law on Waste. In some Municipalities, the situation as reported may be easily in contradiction with the Law on Public Procurement, Law on Protection of Competition and the Law on State Aid. The issue of waste fee collection by the Municipalities and conditioning with provision of certain public services to citizens and businesses has shown progress, and when it comes to the legality, several Municipal Regulations passed the legality test at the Ministry of Local Self Governance. Issues remain open as to allocation of separate budgetary lines for waste fee and waste management service payment by the Municipalities, a matter that requires immediate attention from the Ministry of Finance. Detailed legal elaborations on these matters and opinions on steps forward are provided further in this Report.

2.1. Municipal competencies in waste management

According to the Law on Waste, Competent Authorities for waste management in Kosovo are the Ministry and the Municipalities¹. The competences of the Municipalities pursuant to the Law on Waste include:

- Establishment of waste management system under the principle of waste management hierarchies for their territory, the development of local waste management plans and establishment of conditions and care for its implementation;
- Competences related to the municipal waste management plan and its implementation;
- Drafting annual report on waste management and submitting the Report to the Ministry;
- Regulating the responsibilities and obligations to perform services for waste management, implement them and organize the waste management in their territories;
- Maintenance and care for public information system and reporting on works performed as prescribed by this Law, as well as other legal acts on waste management;
- Application of procurement procedures for the selection of licensed persons for collection, gathering, storage and transportation of solid waste, municipal waste, voluminous wastes, from construction and demolition of buildings and commercial buildings within their territories;
- Determination of fees and collection of fees for municipal services;
- Identification of contaminated sites on their territory and develop projects for their rehabilitation, which includes notes on the location, spatial geometric features, type of pollution and waste quantity, the deadlines for improving the situation and other important data for the implementation of projects.

In addition, pursuant to the Law on Local Self-Government, Municipalities shall have full and exclusive powers for the provision and maintenance of public services and utilities, including water supply, sewers and drains, wastewater treatment, waste management, local roads, local transport, and local heating schemes.²

Pursuant to the Law on Waste and the Law on Local Self-Government, the Municipalities shall issue sub-legal acts which regulate the functioning of the municipal competent authority and standards for waste management services³.

2.2. Selection of the operator model

The primary law governing the waste sector in Kosovo – the Law on Waste as a *lex specialis* explicitly provides that the Municipalities assume **responsibilities and duties to implement the provisions of the law**, including, inter alia, application of procurement procedures for the selection of licensed persons for collection, gathering, storage and transportation of solid waste, municipal waste, voluminous wastes, from construction and demolition of buildings and commercial buildings within their territories.

¹ Art. 15, Law No. 04/L-060 on Waste of the Republic of Kosovo.

² Art. 17, parag. 1, sub-parag. f of the Law No. 03/L-040 on Local Self-Government of the Republic of Kosovo.

³ Art. 15, parag. 7 of the Law No. 04/L-060 on Waste of the Republic of Kosovo.

Article 15, paragraph 1 of the Law on Waste, in fact is not a facultative clause which would allow the Municipalities to choose whether they want or not to apply the provisions of the Law on Waste on application of procurement procedures for the selection of licensed operators for waste management. The wording of the clause “Responsibilities and duties of municipalities to implement the provisions of this law are...” contains obligatory words “responsibility” and “duty”, thus creating obligations to the Municipality to completely implement the clause. The authentic language versions of the Law on Waste provide the following wording:

- Albanian: “Përgjegjësitë dhe detyrimet e komunës për zbatimin e dispozitave të këtij ligji janë...”
- Serbian: “Odgovornosti i obaveze opštine za sprovođenje odredaba ovog zakona su...”

In both authentic language versions of Albanian and Serbian, words “detyrime” and “obaveze” have the meaning of duties and/or obligations.

The only flexibility in relation to the application of Law on Waste is provided in Article 80 “Municipalities are obliged within one (1) year, from date of entry into force of this law to harmonize their acts, under the provisions of this Law”. As such period has ended in mid-2013, any deviation from application of the provisions of the Law on Waste is in fact a legal violation.

2.3. Status of Public Enterprises

The Publicly Owned Enterprises in Kosovo are established, organized and operate pursuant to the Law No. 03/L-087 on Publicly Owned Enterprises, as amended by the Laws No. 05/L-009 and No. 04/L-111 on amending the Law on Publicly Owned Enterprises (“Law on POEs”); and the Law No. 02/L-123 on Business Organizations, as amended and supplemented by the Law No. 04/L-006 (“LBO”).

The Scope of Application of the Law on POEs provides as follows “The present law shall provide a legal framework for the ownership of Publicly Owned Enterprises and for their corporate governance in accordance with internationally recognized principles of corporate governance for publicly owned enterprises”. Other provisions of the law of Kosovo – including, but not limited to - the Law on Business Organizations - governing joint stock companies, their directors, their management, their shareholders and the rights and obligations of each, shall fully apply to POEs, their directors, their management and their shareholders unless the present law specifically and explicitly provides otherwise”⁴.

As the scope of the law on POEs is very limited to the ownership and corporate governance of POEs, in relation to Municipalities, the Law provides that “Where a municipality is a shareholder of a Local POE, its shareholder rights shall be exercised by a Municipal Shareholder Committee, which shall consist of (i) a member appointed by the mayor and (ii) two other members appointed by the Municipal Assembly. To such end, the Municipal Shareholder Committee shall be entitled to act on behalf of the relevant Municipality and shall act in compliance with the Law on Business Organizations. Each Municipal Shareholder Committee shall, by a simple majority vote, determine how to exercise the municipality’s shareholder rights on any particular matter”⁵. Other provisions on the organization and

⁴ Art. 1, parag. 1.1 and 1.2 of the Law No. 03/L-087 on Publicly Owned Enterprises, as amended by the Laws Amending the Law on Publicly Owned Enterprises No. 05/L-009 and No. 04/L-111.

⁵ Art. 5, para. 5.2 of the Law No. 03/L-087 on Publicly Owned Enterprises, as amended by the Laws Amending the Law on Publicly Owned Enterprises No. 05/L-009 and No. 04/L-111.

functioning of POEs apply analogously from the Law on Business Organizations.

The very limited scope of the Law on POEs and its references to the Law on Business Organizations are clear indications that the legislator had the intention not to create certain advantages and/or special and exclusive rights for POEs, as such would evidently contradict with the principles of free market economy and obligations from the European Union accession process (application of EU Acquis) and accession obligations further elaborated in this Report. In fact, Article 13, paragraph 1 of the Law on POEs provides for equal legal conditions on operation of POEs and private enterprises, as follows:

“13.1 Except as specifically provided otherwise by the present law, every POE and its officers and directors shall be subject, without exception, to the same laws, regulations and sub-normative acts that govern privately owned business organizations [...]”

Considering that Regional Waste Companies established as POEs, pursuant to Article 13.1 of the Law on POEs, do not enjoy any privilege rights and in fact are treated equally in relation to any private enterprise, in order to further clarify the situation, the Municipality of Gjakova/Đakovica has addressed a request for clarifications (legal opinion) to the Office of Prime Minister related to application of provisions of the Law on Waste to POEs. In the coordinated answer received by the Legal Office of the Office of the Prime Minister, respectively by the legal offices of MESP and the Ministry of Economic Development (“MED”), the two questions raised by the Municipality received the following answer:

1. Are POEs – specifically Regional Waste Companies exempt from the Law on Waste, due to any special and exclusive rights? – No.
2. Do the provisions of the Law on Waste and obligations for public procurement of waste services apply to Regional Waste Companies? – Yes.

The Law No. 04/L-042 on Public Procurement in the Republic of Kosovo, as amended by the Laws no. 04/L-237 of 2014, 05/L-068 of 2016 and no. 05/L-092 of 2016 on amending and supplementing the Law on Public Procurement in Republic of Kosovo (“PP Law”) defines special or exclusive rights as the rights that arise from a grant or authorization made by a competent public authority pursuant to any legislative, regulatory or administrative provision that (i) has the effect of limiting to one or more entities the right or ability to engage in certain activities, and (ii) substantially affects the right or ability of other persons, undertakings, bodies or organizations to carry out such activity on the same territory under substantially equivalent conditions⁶.

However, even assuming any exclusive right would exist, the PP Law has very limited exclusions and they generally relate to (i) the performance of the contract under applicable law in Kosovo, requires the use of special security measures, or (ii) Government have agreed to classify the object of the contract as a secret⁷; or in cases of application of procurement rules of international financial institutions.

A communication between the Municipality of Gračanica/Graçanicë and the Public Procurement Regulatory Committee (“PPRC”) on requirements to conduct a procurement proceeding in engagement between two Public Entities (the Municipality of Gračanica/Graçanicë and the Regional Waste

⁶ Art 4, 1.58, PP Law

⁷ Art. 3, par. 1, PP Law

Company “Pastrimi”) clarified that cooperation between two public entities without a procurement procedure may occur based on a Memorandum of Understanding only if payments/monetary transactions are not involved.

In conclusion to this part of the Report, due to the equal legal status of POEs and private enterprises, lack of special/exclusive rights for POEs and obligations arising out of the Law on Waste and the Law on Public Procurement, it is mandatory for all Municipalities to organize a public procurement activity for provisions of municipal waste services.

2.4. Financing the POEs and other privileges

Article 10 of the Law on POEs provides that “A Shareholder shall have no obligation to provide a POE with financing; and a Shareholder shall not provide any financing to a POE except as may be specifically authorized by the applicable Annual Appropriations Law or another law adopted by the Assembly of Kosovo; in such event, the provision of such financing shall comply with the applicable provisions of such law and the Law on Public Financial Management and Accountability”.

In any case, any subvention, exclusive or special right or related right granted to POEs is not in line with the Law on State Aid and with Article 75 (Competition and other economic provisions) of the Stabilization and Association Agreement concluded between the European Union and Kosovo.

State Aid in Kosovo is defined as any aid granted by the state or through state resources, in any form, which shall include but it is not limited to: grants and subsidies; tax exemption, reduction and differentiation; remission of overdue payments and fines; remission of debt or covering losses; guarantees on loans or granting loans with low interest rates; reduction of social insurance commitments; reducing the price of goods and services provided, or the sale of state property below the market price, or purchase of goods and services with the price higher than the one in the market, increasing state capital in the undertakings or changing its value, in circumstances that are not acceptable for a private investor operating in normal economic conditions⁸. As a rule, except for the limited cases provided in the Law on State Aid, it is prohibited to grant any aid from state resources, in whatever form which, directly or indirectly, deforms or threatens to deform the competition giving priority to one or some certain enterprises or for production of certain products⁹.

2.5. Responsibilities and mechanisms for fee collection

Art. 15, parag. 1, sub-parag. 1.8 of the Law on Waste provides that the municipality determines the fees and manner for collection of fees for waste. As there is no specification on the manner of collection of fees for waste, presumably the Municipality is free to choose the manner for waste fee collection.

The Law No. 04/L-042 on Public Procurement in the Republic of Kosovo, as amended by the Laws no. 04/L-237 of 2014, 05/L-068 of 2016 and no. 05/L-092 of 2016 on amending and supplementing the Law on Public Procurement in Republic of Kosovo distinguishes between services contracts, supply contracts and work contracts, however none of the provisions of the law do not provide for

⁸ Article 3, parag. 1, sub-parag. 1.1 of the Law No. 04/L-024 on State Aid of the Republic of Kosovo.

⁹ Article 4 of the Law No. 04/L-024 on State Aid of the Republic of Kosovo.

a modality of engaging a service provider (or any type of contracting) in which the contractor shall assume the responsibility of fee collection. The logic of the public procurement law is that the private/public contractors are paid from the budget of Kosovo, where the budgetary organization assumes the responsibility for payments.

As the Law on Waste provides for an obligation for the Municipality to tender/procure the waste management services, a tendering procedure means an obligation for the Municipality to pay for the service to the selected operator. As such, if there is an obligation to tender and to pay, the only alternative for the Municipality remains to perform fee collection itself, in order to be able to pay for the services of the public/private operator.

An exception to this rule may be the case of a contractual Public Private Partnership in a concession form, however, the provisions of the Law No. 04/L-045 on Public-Private-Partnership (“PPP Law”) are not very clear on the matter. The PPP Law is applicable for concessions for collection, disposal, recycling and management of waste¹⁰. A Service Concession is defined by the PPP Law as a contract of the same type as a service contract except for the fact that the performance of such contract is compensated, in whole or in part, by a grant of a right to exploit the object of such contract¹¹.

- design, construction, financing, maintenance and operation of new public infrastructure;
- rehabilitation, modernization, financing, expansion, maintenance and operation of existing public infrastructure; and/or
- administration, management, operation, maintenance or other services pertaining to public services or new or existing public infrastructure.

In all these forms available for concession of services through a contractual PPP, it is significantly important to note the provisions of Article 11 of the PPP Law which grant the Financial Rights to the private partner in a PPP:

“A Private Partner shall have the right to charge, receive or collect tariffs, fees and any other charges for the use of the Public Infrastructure or the provision of public services in accordance with the terms and condition set forth in the Agreement [meaning the PPP Agreement]”.

In conclusion for this part of the Report, if the Municipality plans to hire a waste management company through a public procurement procedure, it is a precondition that the Municipality begins with collection of waste fees and enacts the proper legal infrastructure. If the Municipality plans to provide a service concession through a Public Private Partnership for waste management, the Municipality may decide to transfer the rights to waste fee collection to the PPP, only after enacting a regulation setting the municipal waste fee pursuant to the Law on Waste.

¹⁰ Article 2, parag. 1, sub-parag. 1.5 of the Law No. 04/L-045 on Public-Private-Partnership of the Republic of Kosovo.

¹¹ Art. 3, parag. 1, sub-parag. 1.8. of the Law No. 04/L-045 on Public-Private-Partnership of the Republic of Kosovo.

2.6. Regulations on waste

Pursuant to the Law on Waste and the Law on Local Self-Government, the Municipalities issue sub-legal acts which regulate the functioning of the municipal competent authority and standards for waste management services¹².

In November 2013, the Municipality of Prizren enacted the new Regulation on Waste Management for the Municipality of Prizren. Article 5 of the Regulation sets the Waste Fee as a Municipal Waste Tax and provides for an obligation of the citizens and the businesses to pay it on quarterly basis, whereas the Municipality will invoice on annual basis. The Regulations provides that if the citizen/business does not pay two subsequent quarters of Waste Tax, a significant number of services of the Municipality will not be provided, except for basic services of providing birth certificates, death certificates and similar.

In September 2015, the Municipality of Vushtrri/Vučitrn also enacted the new Regulation on Waste Management, following a very similar model to Prizren, with the exception that the waste fee is defined as Waste Tariff, invoiced and collected by the Municipality. The Regulation follows the model of Prizren by limiting the public services provided by the Municipality to the citizens/businesses, conditionally to the payment of Waste Tariffs.

An identical regulation to that of Prizren has been enacted by the Municipality of Skenderaj on January 2015. It is likely that the model will be followed by several other Municipalities.

For the legal aspects of this Report, it is important to note that all these Regulations are in force and as such, they have passed the legality test at the Ministry of Local Government Administration. As such, the model has been accepted by the Government and is in line with the Law on waste.

2.7. Joint Procurement of waste management services

The Law on Waste provides that two or more municipalities, where is their interest, they may make agreements on waste management¹³. The Public Procurement Law is silent with regards to joint procurement activities of two or more Municipalities. However, Article 8, parag. 4 of the Law on Public Procurement provide that “The Government as per the proposal of the relevant Ministry of Finance shall authorize the CPA [Central Procurement Authority] to conduct consolidated or common (joint) procurement activities”. The intention of this clause is to provide efficient and more economic procurement for purchases of several Contracting Authorities, but not necessarily of two or more Municipalities.

The Public Procurement Regulatory Committee (“PPRC”) issues an official clarification to Contracting Authorities related to joint procurement by two Contracting Authorities. PPRC noted that in cases of joint procurement activity of two Budgetary Organizations, they should with an internal agreement decide who is going to conduct the proceedings and take lead in organizing the procurement activity¹⁴.

¹² Art. 15, parag. 7 of the Law No. 04/L-060 on Waste of the Republic of Kosovo.

¹³ Art 15. 2 2. Law on Waste.

¹⁴ See response no. 28 in the KRPP Official Portal: http://krpp.rks-gov.net/Default.aspx?PID=HelpInfo&LID=1&PPRCMenu_Open-Node=109 (last access Nov 16, 2016).

2.8. Current municipal initiatives

Municipality of Gjakova/Đakovica

The Municipality of Gjakova/Đakovica has already approved the Local Environmental Action Plans, Local Waste Management Plan (LWMP), the Municipal Regulation on Waste Management within the territory of the Municipality of Gjakova/Đakovica, and the Municipal Regulation on Environmental Protection. Regulation on Taxes and Tariffs for Municipal Services (as amended and supplemented) does not address the issue of waste tax. As provided in previous sections of this Report, the Municipality is obliged to determine the fees for waste services in such a Municipality. The Municipality of Gjakova/Đakovica has not yet undertaken such process.

Issues with implementation of laws are also noticed in the treatment of Local Publicly Owned Enterprise “Çabrat” as it relates to the Law on Waste, the Law on Public Procurement, the Law on Publicly Owned Enterprises and the Law on Business Organizations as amended and supplemented. POE Çabrat is in an undefined legal situation in relation to the Municipality of Gjakova/Đakovica. The Municipality itself is the sole-shareholder of Çabrat, but the Company do not have any contractual relationship with the Municipality (as per public procurement proceedings) as provided on the Law on Waste. In addition, as provided above, the amounts of fees collected by Çabrat from households and businesses is not set by the Municipality as required by Law, Çabrat invoices in accordance with its internal decisions. As a parallel issue, Çabrat does not report to the Municipality and the Municipal Assembly regularly, as it is required in both, the Law on Public Enterprises and the Law on Business Organizations. The responsible officers of the Municipality that deals with budget has confirmed that the Municipality does not receive detailed financial reports and statements from Çabrat for approval by the shareholder (the Municipality), but they do receive some information, but for informational purposes only.

Currently there are reported efforts from the Municipality of Gjakova/Đakovica that they are working on a Municipal Waste Regulation and are planning to address waste related issues accordingly.

Municipality of Prizren

Municipality of Prizren has taken a lead in full implementation of the Law on Waste. In November 2013, the Municipality of Prizren enacted the new Regulation on Waste Management for the Municipality of Prizren. Article 5 of the Regulation sets the Waste Fee as a Municipal Waste Tax and provides for an obligation of the citizens and the businesses to pay it on quarterly basis, whereas the Municipality will invoice on annual basis. The Regulations provides that if the citizen/business does not pay two subsequent quarters of Waste Tax, a significant number of services of the Municipality will not be provided, except for basic services of providing birth certificates, death certificates and similar.

Both, the private operator and the Publicly Owned Enterprise “Eco-Regjioni” have reported a very good cooperation with the Municipality of Prizren and proper implementation of the contract from all sides, pursuant to the public tender they have undergone through. Interview with the representatives of POE “Eco-Regjioni” showed that the POE is in a much better situation after the market liberalization and procurement procedure as they are now able to pay the debts, pay the old debts, they have

increased performance and the Municipality is paying the operators on time, with maximum of 2-3 days of delays. The same has been reported by the private operator, which applauded the process as very efficient. Unofficial reports show that the waste fee collection from the Municipality is over 70% for 2016 (as of November).

Municipality of Prishtinë/Priština

The Municipality of Prishtinë/Priština has enacted the Regulation on Waste Management at the Municipal Assembly, pending review by the Ministry of Local Government Administration, together with the Waste Management Plan. The new Regulation and incomes from waste fee collection from the Municipality have been reported to be included in the next year's budget (2017). The Municipality of Prishtinë/Priština is planning to go for full implementation of the Law on Waste regarding both collection of fees and procurement of Waste Management Operator. However, as reported from GIZ, they are exploring an opportunity to engage the current Publicly Owned Enterprise "Pastrimi" through a negotiated procurement proceeding pursuant to the Law on PP. Such initiative is still not clear whether it will be accepted by the Public Procurement Regulatory Committee.

2.9. Necessary arrangements with the Ministry of Finance

It should be clearly noted that the Municipal Waste Fees are own source revenues of the Municipality which undergoes through collection of such fees. In order to properly implement the collection, the respective Directorate within the Municipality should initiate the procedure to obtain an identification code for the revenues collected from waste fee. Such proceedings should be uniform for all Municipalities and should be addressed with the central level, Ministry of Finance, as ad-hoc efforts from different municipalities may not lead to a uniform approach. As there is now a legal obligation provided under the Law on Waste, a similar approach to the collection of Property Tax should be taken and coordinated with the Ministry of Finance.

2.10. Conclusions

In conclusion, the Municipalities are obliged to enact the following legal infrastructure and perform the following procedures, at minimum::

1. Each Municipality should enact a Waste Management Regulation, which at minimum sets the Waste Fee and the method of collection; If the Municipality does not have any plan to initiate a Public Private Partnership procedure to concession the Waste Management, the Municipality should also set the method of fee collection by the Municipality, and may introduce conditioning with provision of public services against citizens/business which do not pay the Waste Fee;
2. An internal reorganization of the Municipal Waste Sectors is required to accommodate the system and people responsible for waste fee collection, invoicing and payments;
3. After actions from point (1) above have been concluded, the Municipality should begin with procurement proceedings for engagement of one/several operators for waste management; Joint procurements with neighbouring municipalities are possible, although the issue should be further clarified with the Public Procurement Regulatory Committee.
4. The Service Contract entered between the municipality and the operator(s) pursuant to the public procurement proceeding should provide for clear contract management provisions as well as for punitive provisions in case of none compliance from the Operator.

3. WASTE MANAGEMENT: EXISTING SITUATION IN SELECTED KOSOVO MUNICIPALITIES

Waste management in Kosovo remains one of the biggest challenges at the local level. Municipalities face problems of different nature and this is followed by delays in solving the difficulties of managing different types of waste.

3.1. Institutional Framework - Roles and Responsibilities in Waste Management

In Kosovo, responsibility for waste management is divided between central and local institutions.

The Ministry of Environment and Spatial Planning (MESP) has drafted and updated the Law on Waste in order to comply with EU Directives.

Pursuant to Article 14 of the Law on Waste, the main responsibilities of central institutions (MESP and the Kosovo Environmental Protection Agency) are as following:

- determine the general policies, drafting the Strategy, laws regulating waste management and regulation of waste sector;
- drafting action Plan for waste management according to Article 10 of this law;
- ensuring the implementation of the waste management strategy and plan at the country level;
- issuance of license for waste management and issuance of permits for import, export and transfer transit of waste;
- implementation of agreements in the field of international cooperation for waste management;
- cover administrative expenses and costs for managing hazardous waste and other waste that are not under the jurisdiction of the municipality and whose owner is unknown;
- disposal of narcotic plants and narcotic seized substances, in cooperation with competent institutions;
- in coordination with the Ministry of Health and the Ministry of Agriculture, Forestry and Rural Development, determine the management process of medical waste management, respectively veterinary ones.

The main responsibilities of municipalities regarding solid waste management, pursuant to Article 15 of the Law on Waste, are reviewed in subchapter 2.1 Municipal Competencies in Waste Management.

Article 17 of the Law on Local Self Government defines the management of solid waste as a competence of municipalities. Municipalities can create structures, mechanisms and provide for a special budget for waste management (WM).

Although the Law on Waste has been in force since 2012, there are still dilemmas and uncertainties as regards:

- Selection of operator for WM services;
- Budget Planning for WM;
- Fee collection;
- Database of clients;
- The need for additional staff within the municipality, etc.

Tendering of Service is a challenge that municipalities see as difficult to realize, given that in many municipalities this service is provided by regional or municipal companies. In these companies, shareholders are several municipalities with different percentage of shares or even a single municipality that owns 100% of the shares.

For the implementation of procurement procedures, the municipality has to plan in advance the necessary budget in order to pay the operator for the service provided. Most municipalities, in the category of goods and services do not have the financial means to cover this service, and as a result the Municipality of Prizren has made the payment with funds from the category of capital investments. This has led to remarks from the Auditor General. The initiative for solving the **budget planning** issue was taken by the Association of Kosovo Municipalities. Consequently, municipalities that have expressed interest have been enabled budget planning for this service.

Fee collection for the waste collection service is a problematic issue which determines to a certain extent the quality of service delivery by operators, as a result of poor fee collection at the country level. The low level of collection, except for being a consequence of non-payment by citizens, is also the result of the lack of a complete database of clients. Updating the **client database** is essential in order to have all clients who use this service included in the payment system.

The organizational set-up for fulfilling of legal responsibilities related to waste management, varies between the municipalities analyzed. Gjakova/Đakovica, Gračanica/Graçanica and Ranilug/Ranilug have only one environmental inspector. This makes it impossible to carry out legal obligations. Municipalities have the possibility of reorganizing the staff, in case they have a sufficient number, or otherwise the Ministry of Public Administration and the Ministry of Finance are the ones which should be involved in the issue of increasing the number of employees, as it is an issue of civil servants.

Waste collection and transportation operation model

The municipal waste collection and transportation service in Kosovo is provided by regional, municipal and private (economic) operators.

In Kosovo there are the following operation models:

- Municipal Model (local-municipal enterprise);
- Regional model (local-regional enterprise);
- Private model (private enterprise);
- Public Private Partnership Model (private and public enterprise).

In order for the municipalities to have a clearer picture as regards the selection of the operator model, the advantages and disadvantages of each of the models are presented in the table below:

Table 1¹⁵: Operating Models: Advantages and Disadvantages

The operating model	Advantages	Disadvantages
Municipal Model (local-municipal enterprise)	• Easier management • A greater possibility for covering the entire territory with services • More efficient in services	• More costly (payment of the board of directors, staff, chief executive officer, salaries of employees) • Creating operation equipment • Difficulty for investment in operation equipment
Regional model (local-regional enterprise)	• Lower waste management costs • Investment synergy (investment in operating equipment) • Economy of scale	• Collection of waste fees • Complex management (decision-making in the Board, outvoting of small municipalities) • Poor control of service realization
Private model (private enterprise)	• It may be less costly • More efficient than the public company • It may relieve officials from secondary activity.	• Poorly defined contracts • Poor control of contract performance • The tendency to find gaps in the agreement.
Public Private Partnership Model (private and public enterprise)	• Transfer of financial and construction risk • New investments • Improvement of the quality of service.	• It's a complex model • Contracts are quite complex • They have not shown much result at the municipal level

In the municipalities analyzed this service is provided by different operators, who regardless of the organization form, have almost the same challenges.

In the Municipality of Prishtina/Priština and Gračanica/Gračanica, the service is provided by RWC Pastrimi (in M. of Gračanica/Gračanica, there are other companies operating, without a permit from the municipality)¹⁶. In the Municipality of Prizren/Prizren operate two companies: RWC Eko-regjioni and a private company. In the Municipality of Gjakova/Đakovica: RWC Çabрати (although it is registered as a RWC, it offers services only in the Municipality of Gjakova/Đakovica) and two private companies (which operate without a permit from the municipality)¹⁷. In the Municipality of Ranilug/Ranillug, the service is provided by the municipal staff, but using the license from Ekohigjena which operates as PPP.

Table 2: Operator models in the municipalities analyzed

Municipality	Service Provider	The operating model
Prishtina/ Priština	Pastrimi	Regional
Prizren/Prizren	Eko-regjioni	Regional
	Private company	Private
Gjakova/Đakovica	Çabрати	Regional
	Private company (without a work permit from the municipality)	Private
Gračanica/Gračanica	Pastrimi	Regional
	Company without a work permit from the municipality	
Ranilug/Ranillug	Municipality (with license from Ekohigjena)	PPP

Municipality of Prizren/Prizren is the only municipality in Kosovo that has followed the procurement procedures for selecting the operator for providing waste collection and transportation services, as required by law. Consequently, two companies were selected for service delivery: one public company and one private company. According to municipal officials, procurement procedures have proved to be quite successful in terms of service delivery and in lowering company costs and increasing bill collection rates.¹⁸

Tendering of waste collection and transportation services should be conducted after a thorough preliminary analysis (waste management planning analysis), defining the scope of service (extent, the frequency of collection, roads, means of transport and bins, maintenance, organization of fee collection, cost calculation, annual budget, penalties, etc.).

¹⁶ Interview with officials of the Municipality of Gračanica/Gračanica

¹⁷ Interview with officials of the Municipality of Gjakova/Đakovica

¹⁸ Interview with officials of the Municipality of Prizren/Prizren

Number of employees in municipalities and WM companies

Reporting and comparing the number of employees in the municipality, responsible for WM, enables the identification of excessive or insufficient personnel and creates the opportunity for an optimization process. Some of the municipalities analyzed have begun with the staff reorganization process, and so far they have not found a solid solution, which according to officials has to do with restrictions from the central level.

Being the largest municipality in Kosovo, Prishtina/Priština did not have many problems in designating the waste management staff, after having shifted some employees from other departments to this unit.

While Prizren/Prizren has planned that the number of employees to be included in this unit, in a process to be concluded in 2018, shall be a total of 23 people, according to the Municipal Waste Management Plan they have developed with the Japan International Cooperation Agency (JICA), the Ministry of Public Administration (MPA) constraints on recruiting staff, has caused that this unit currently function with 4 officials.¹⁹

Supervision, monitoring, reporting

The concluding of contractual agreement between operators providing waste collection services and municipalities remains a challenge for all municipalities in Kosovo (except for Prizren/Prizren), which to an extent dictates the part of supervision of operations of the operators. Without such an agreement, supervising, monitoring and conditioning are difficult to achieve.

In the larger municipalities, such as Prizren/Prizren and Prishtina/Priština, supervising and monitoring is considered less problematic and more efficient due to agreements with the inspectorate staff, as well as the greater number of inspectors. For example, the Municipality of Prishtina/Priština with the public order inspectorate will check or impose fines for the waste management company, businesses, as well as for transport and construction companies, if any violation is noted. Also, the duties of supervising, reporting and using data to improve the service should be checked in order to improve efficiency. Similar situation is noticed also in the Municipality of Prizren/Prizren, although there is a need for more to be done on the efficiency of the inspectors work.

The Municipality of Gjakova/Đakovica lacks proper supervision and monitoring due to insufficient technical capacities in the inspectorate and the small number of inspectors for inspection and enforcement of laws, rules and regulations. The same situation is noticed in the smaller municipalities (Gračanica/Gračanica and Ranilug/Ranillug), mainly as a result of the limited staff allowed by the Ministry of Public Administration.

Another factor for insufficient/inadequate supervision is the low importance ascribed to environmental protection, and in particular to waste management.

Although lacking municipal inspectors, the implementation of the Administrative Instruction on Mandatory Fines in the Municipality of Gjakova/Đakovica was made possible by the decision of the Mayor to allow the imposition of fines be done by other officials, and this initiative has resulted in 20 civil

¹⁹ Interview with officials of the Municipality of Prizren/Prizren

servants having the right to do this in case of any violations by environment polluters.

Also, Inspectors and Kosovo Police have reported that the large number of cases in the Basic Court of Gjakova/Đakovica makes it impossible for the Court to prioritize specific issues such as mandatory fines. In addition, the Inspectorate reported that the Court required additional information that was not made available to the Inspector at the time of imposition of the fine, such as father's name, current address, the signature of the offender, etc.²⁰

The Kosovo Police Regional Station in the Municipality of Gjakova/Đakovica and the Inspection Department reported regular and close cooperation between the institutions, which has improved significantly in recent periods. There are no joint operations planned between the Police and the Inspectorate, but most of the cooperation appears on an ad-hoc basis, as required by the Inspectorate.

Cooperation between the Police and the Inspectorate is essential for imposing mandatory fines. Article 9 of the Administrative Instruction on Mandatory Fines stipulates that: **“if the physical entity or legal entity representative to whom is imposed a mandatory fine, fails to present their ID card, or refuse to give personal data, then the inspectors shall ask for support by Police Service of the Republic of Kosovo and escort such person to the Kosovo Police Service for identification”**. This process is also essential for the implementation of the Mandatory Fines through the Basic Court of Gjakova/Đakovica if such a fine is not voluntarily paid by the offender.

During the interviews, it was clear that the entire waste management sector lacks sufficient co-operation and coordination between the operators that provide this service and the municipal inspectorates.

²⁰ Municipal Law Enforcement gap Analysis Report, DEMOS

3.2. Technical Framework - Technical Aspects of Waste Management

Coverage with waste collection services

Coverage of the whole territory of Kosovo with waste collection service is a challenge faced by municipalities and citizens of Kosovo. Although there are different operators that provide this service in each municipality, rural areas are the ones most affected by lack of this service.

Table 3: Waste collection system in the municipalities analyzed

Municipality	Trucks	Other means of transport	Containers			Frequency of collection		
			1.1 m ³	7.1 m ³	120 l	Area 1	Area 2	Area 3
Prishtina – RWC Pastrimi	33	No information	No info.	No info.	No info.	No info.	No info.	No info.
Prizren – RWC Eko-regjioni and Private operator 1	32	4	No info.	No info.	No info.	3 times a day	Every day	once / 7 days
Gjakova – RWC Çabradi	13	3	208	50	No info.	7/7 (once a day)	3/7 (2 times a day)	1/7 (once a week)
Graçanica – RWC Pastrimi						2 times/7 days	2 times/7 days	once/7 days
Ranillug- Municipality	1		220		18	once / 7 days	once / 7 days	once / 7 days

Based on interviews with different stakeholders, the tendency for covering the territory with waste collection service has increased, although there is still work to be done in order to develop a better waste management system. Coverage in the territory of the Municipality of Prizren/Prizren has been improved since billing and collection of fees are carried out by the municipality.

The situation is different in the municipality of Graçanica/Graçanica, where RWC Pastrimi covers only a part of the territory of the municipality with service, whereas there is the perception that part of the territory is covered by other companies operating without a work permit from the municipality.

Similar situation is present also in the Municipality of Gjakova/Đakovica. Another important issue in coverage of waste collection services are entrance roads where trucks cannot have access to the neighborhood because of their large dimensions (Ranillug/Ranillug and Graçanica/Graçanica), or because of the distance of up to 40 km from the centre to a particular village.

In cases such as Ranillug or remote rural villages, where the distance for waste collection and transportation is very large and waste generation is not large enough to fill a truck, other options should be considered, such as bigger or underground containers.

On the other hand, illegal dumping sites grow because there is no continuous access to the above-mentioned villages provided. However, this is not the only reason, as there is still much to be done in the awareness raising campaigns that should be carried out by waste management companies and municipalities.

Table 4: Territorial coverage and number of illegal dump sites in the analyzed municipalities

Municipality	Territorial coverage	Number of illegal dumping sites	Type of waste at dump site
Prishtina	71.6 %	94	Mixed municipal and construction waste
Prizren	85 %	No info.	No info.
Gjakova	75 %	70	Mixed municipal and construction waste
Graçanica	70.0 %	17	Mixed municipal and construction waste
Ranillug	98.6 %	7	Mixed municipal and construction waste

Client database

The situation Kosovo has experienced over the past few years, the large flow of construction throughout Kosovo, the emigration of citizens to third countries and the migration within Kosovo (from rural areas to cities) has brought up a major challenge in terms of listing residents or clients for the corresponding public services. There is no unified database of clients for different public services. Different operators have used their databases and there are major differences between these databases both in terms of the number of clients and other records.

An accurate database would assist in better budget planning for the provision of waste management services, as it would accurately identify the number of clients using the service and the amount of generated waste. It will also make it much easier for the municipality and companies to calculate WM costs. An accurate database would also enable easy identification of non-paying clients.

Municipalities that have commenced the development of such database were based on property tax data and the population census conducted in 2011. Although this has proved to be a good method, it has its difficulties. It requires a lot of daily work, since the municipal property database, apart from houses, also has information on garages or other properties not used as living space by families; therefore, this process will require continuous updating of the database. Moreover, it is considered that even the property tax database is not 100% up to date.

In the Municipality of Prishtina, as a result of continuous updating of the database, the number of clients from January 2016 to December 2016 has increased by 3,639 households (8.6%) or 300 per month, and 192 businesses (4.3%) or 16 per month, which has also influenced the increase in collection, as shown in the table below.

Table 5: Clients, billing and collection of RWC Pastrimi, January - December 2016

Prishtina	No. of bills/ month	Billed amount/ month	Average amount	Paid amount	% Total
Households – January	42,242	198,537.40	4.70	162,412.89	81.80
Households – December	45,881	215,640.70	4.70	183,326.80	85.01
Businesses – January	4,461	33,149.14	7.43	22,543.65	68.01
Businesses – December	4,653	34,426.42	7.43	23,122.53	67.17

In order to minimize errors in the client database, it is proposed to compare the database of clients who are offered the waste collection service with databases of other public utilities, such as water supply and electricity. This will enable to identify the families currently residing in the property against households owning a property but living abroad and using the property for a certain time of the year.

Household database

The table below shows that the comparison of client databases from different sources gives us a very clear picture in terms of which of the analyzed municipalities need to prioritize the issue of updating the waste collection database.

Table 6: Comparison of databases of companies providing waste collection services, population census and KEDS

Municipality	Number of households according to the company	Number of households according to the population census 2011	KEDS (clients) in 2016	Gap
Prishtina	50,536	40,528	51,231	2 %
Prizren	Unknown	Unknown	Unknown	Unknown
Gjakova	9,370	Unknown	23960	137 %
Graçanica	2,388	2,388	5,774	129 %
Ranillug	1,249	1,249	unknown	0 %

The comparative database analysis indicates that each of the municipalities has different specifics in this regard.

In the Municipality of Prishtina, the household clients database of RWC “Pastrimi” is largely up-to-date, and the gap lies in comparing the company’s data with those of KEDS with a margin of 500 clients.

In the Municipality of Prizren, customer data verification was conducted by the waste management unit established in the municipality that used the property tax database to update their database. This process is still ongoing, and it is mainly done in cooperation with citizens who report eventual errors.²¹

In the Municipality of Gjakova, the waste collection service is provided by RWC “Çabрати” and two private companies. Only the data from Çabрати was considered for the analysis, and there is noticed a large gap in the company’s database compared to data from other sources. This shows that the potential of RWC Çabрати clients can grow by more than 50% in households and businesses.

In the Municipality of Graçanica, the customer database belongs to RWC “Pastrimi”. From the comparison of different sources of information it results that the municipality data give another number compared to RWC Pastrimi and KEDS data, but according to municipal officials, the database covers only ¼ of their total clients.

The Municipality of Ranillug faces the problem of using the license from “Eko-higjiena” company to provide the waste collection service, which is provided by the municipality itself. Therefore “Eko-higjiena” keeps the database of consumers in place of the municipality. In general, it may be considered that a **customer database** will need improvement, such as being user friendly, reflecting recent updates and serving users better. It is necessary that these databases are adapted to the needs and the system to be used by the municipalities.

²¹ Interviews with municipal officials – Municipality of Prizren

Business database

The database for business clients is more problematic for operators providing waste collection services.

Comparison of data of RWC “Pastrimi” and the Tax Administration of Kosovo shows that only 1/5 of businesses are registered as “Pastrimi” clients.

Table 7: Comparison of databases of RWC “Pastrimi” and TAK for businesses

RWC Pastrimi 2		Tax Administration database of active businesses
Businesses	4,653	22,623
17,970 missing		

Given that we have credible data from the Tax Administration and the comparison with KEDS data on businesses, a significant number of 17,970 clients are most likely missing from the RWC “Pastrimi” database, which number should clearly be attributed to businesses.

Thus, not all businesses are included in the database of “Pastrimi”, as they are free to choose among the various licensed waste collection operators and in most cases large waste generators such as supermarkets, shopping malls, factories, etc. tend to make agreements with other licensed waste collection operators. This option provided to them opens way for manipulation and thus large waste generators dump their garbage in public waste collection points, exceeding the capacity of waste bins which are normally intended for households.

The following actions may be undertaken to solve this problem:

- Specific rules for businesses: Businesses that want to use a specific private waste service must provide a contract, name and identify their own private containers so that they can be inspected. Penalties and/or invoices for previous months may also be imposed.
- On the other hand, the municipal inspectorate may conduct a supervisory activity to control and identify the business that officially has a service provider but uses public services: these businesses should receive bills and/or penalties.

Use of new techniques (GIS) in the WM sector

Use of the Geographic Information System (GIS) technology supports the optimization of municipal solid waste management by offering the possibility of collecting, analyzing and presenting data. The QGIS application, which is offered to users for free, is used in the field of waste management to create an accurate database of client data, as well as to plan waste collection and transport: road optimization, container redistribution and complete sector redesign. The main goal is to identify clients correctly, and reduce distance and time of collection. Road optimization has a direct impact on reducing costs (fuel and maintenance) as well as environmental impacts due to greenhouse gas emissions.

The use of GIS in the waste management sector would not only enable waste operators to manage their truck condition and distribution throughout the city, but would also provide an understanding of neighborhood-based tariff collection.

To improve tariff collection efficiency, the Geographic Information System and in particular the QGIS is an excellent tool to have a clear picture of available geographic data. It will help detect where the collection of tariffs is not done properly and determine the gaps where information is missing and which should be found.

Assets maintenance

In general, the waste management sector is characterized by costly maintenance due to the type of trucks, containers and the nature of work. Regional companies must allocate a substantial part of their budget for asset maintenance. Due to the trucks it has received as a grant from the Government of Japan, the Municipality of Prizren has low maintenance costs compared to other regional waste companies. Thus, through the improvement of tariff collection, this municipality is able to make planning for preventive maintenance costs, where in these situations costs are always lower than emergency repairs.

Maintenance and preventive maintenance planning are in turn important factors to ensure the continuity of waste collection as there should be no shortage of service delivery because of the impact that waste can have on the environment and health.

Table 8: Comparison of annual truck maintenance by municipality

Annual maintenance of trucks			
RWC/Municipality	No. of trucks	Annual maintenance cost (EUR)	Average cost/truck/year (EUR)
RWC "Pastrimi"	33	133,408	4,044
RWC "Çabratli"	13	110,562	8,504.75
Annual maintenance cost	1	1,332	1,332

The above table shows that the annual cost of truck repairs is not high. However, RWC "Çabratli" is an exception as the average cost of truck maintenance per year is quite high as a result of old trucks and inadequate maintenance planning. On the other hand, the Municipality of Ranilug/Ranilug spends less money on maintenance compared to other municipalities because they have a new truck.

The table above shows that operators/municipalities have only calculated the value of truck maintenance and have failed to take into account the maintenance cost of containers and other equipment owned by them, which would in fact be a much higher cost .

Construction/demolition and inert waste

Based on Administrative Instruction (AI) no. 07/2015, the management of this type of waste is a municipal obligation. According to this Administrative Instruction, the municipality may in cooperation with the surrounding municipalities build a landfill for construction/demolition waste in order to prevent further degrading of the environment. This AI also defines the criteria for selecting suitable sites for this type of waste, where among the most important are:

Suitable sites for the disposal of this type of waste may include sites previously used for exploitation in order to fill the holes, naturally formed channels, degraded sites due to erosion of landslides or other similar locations.

However, as mentioned above, it is the responsibility of each municipality to handle the demolition/inert waste. It can be said that all municipalities in Kosovo have lagged behind in terms of creating suitable dumpsites/disposal sites.

As a result, most of the illegal dumping sites in municipalities consist of demolition/inert waste. During the conducted interviews, it has been noted that municipalities are not currently sufficiently engaged in preventing this phenomenon, as this type of waste is collected as normal waste by good willing companies, but on the other hand, the increased amount of waste, which they are not obliged to collect, also affects the price they have to pay for landfills.

All municipal waste management plans address inert waste and solutions that need to be undertaken by municipalities. To this end, municipalities need to engage more in meeting the requirements set out and agreed upon by them in these plans.

From the analyzed municipalities, only the Municipality of Gjakova is working on solving the issue of construction waste and has already determined the location. It is also in the procedure of setting tariffs for collection and treatment of such waste.

Animal waste

Animal waste can be considered as the most problematic waste falling under the responsibility of municipalities. This waste is problematic because it is not accepted from landfills, even though there are cases where landfills accept this type of waste in the absence of proper space for its treatment.

In most cases, the sources of this waste cannot be identified as it is dumped as other municipal waste and at night when municipal inspectors are not on duty. Therefore, the identification of butchers and meat processing plants is necessary, but since there is no institutional solution, it is proposed that this waste be collected and deposited separately and later on, after the landfill is constructed, it would give us an idea of the generation capacity of this type of waste and it would be possible to establish an appropriate database to identify whether any of this waste is dumped illegally. Following the “polluter-pays-principle”, these special management and “treatment” activities of animal waste collection require a special fee.

The site/landfill for this type of waste is under construction by the EU and the Government of Kosovo donations, and based on the nature of this waste it is expected to fall under the management of the Kosovo Veterinary Agency, which will provide technical details regarding their management in another administrative instruction.

3.3. Financial Framework - financing services related to waste management

Budget for waste management

Taking into account the requirements of the Law on Waste which stipulates that the waste collection services are tendered, where in order for municipalities to have the opportunity to start implementing the Law, municipalities should plan a budget for this service.

Municipalities currently have no allocated budget needed for waste management.

The Ministry of Finance should engage to:

- Ensure that each municipality is allocated the necessary budget for waste management;
- Taking into account that waste management constitutes a service, the budget for this purpose should be allocated within the economic category “Goods and Services” ;
- Further, within the economic category “Goods and Services”, the budget should be allocated under the “Public Services” program.
- If within the “Public Services” program there is no adequate sub-program for these services then create a new sub-category with the name “waste management services” or any other appropriate designation.

Economic Category: Goods and Services

Program: Public Services

Subprogram: Waste Management Services

Over the last few years, certain municipalities have, in the absence of sufficient financial resources from the categories of goods and services, paid for the waste collection from the capital investment budget. For this, they received remarks from the Auditor General.

The Ministry of Finance has already announced that any municipality that is willing to take over waste management (including collection and payment of services to WC operators) may apply to the Ministry of Finance for a special code identified as 50423 with description **Sale of services and collection from waste management**.

Fees on waste collection and transportation services

Fees on waste collection and transportation services were originally determined by the Water and Waste Regulatory Office. When responsibility for waste management was transferred to the municipalities according to Law no. 04 / L-060 on waste, municipalities were obliged to set fees for different categories of clients and consult the public and have them approved at the municipal assembly.

The municipalities analyzed have determined the fees for different categories of clients or are in the process of having them determined. For Gjakova/Đakovica municipality, the data have not been presented because they are in the process of preparing the new Waste Management Regulation, in which regulation new fees will also be set. Meanwhile, the Municipality of Prishtina is in the process of re-determining waste collection fees, but for the time being the fees as presented in the table below are being used.

Table 9: Waste Collection Fees in the Municipalities Analyzed

	Households	Small craft activities and services	Medium/large low cost services	Medium/large medium cost services	Medium/large high cost services	Clients with special contracts	Institutions
Prishtina	4.70 €	8.40 €	12.00 €	20.60 €	20.60 €	10.50 € each emptying 1.1m ³	10.50 € each emptying 1.1m ³
						40.8 € each emptying 7.10 m ³	40.80 € each emptying 7.1 m ³
Prizreni	3.88 €	4.48 €	10.47 €	18.50 €	20.60 €	10.5 € each emptying 1.1 m ³	10.50 € each emptying 1.1 m ³
						40.80 € each emptying 7.1 m ³	40.80 € each emptying 7.1m ³
Gračanica	4.70 €	6.40 €	6.40 €				
Ranillug	3.24 €	7.75 €	7.75 €	9.74 €	25.78 €/monthly	28.59 € / monthly	

The table above indicates that fees vary depending on the municipality, but in each municipality there is a fee which is considered to be affordable for citizens but also for other categories. This fee does not take into account the amount of waste generated but is unified for all households.

The waste service fee at the country level is not high and is estimated to cover the costs if the collection is regular. However, the collection rate for this service is low and this prevents service delivery at a satisfactory level.

As regards the fee collection in the municipality of Prishtina/Priština, there is an increase and it is thought that this has come as a result of a debt collection campaign carried out by RWC Pastrimi.

Table 10: Financial Performance of RWC Pastrimi during 2016 in the municipalities of Prishtina/Priština and Gračanica/Gračanica

Municipality	Nr. of invoices/ monthly		Amount billed/ monthly (euro)		Amount paid		Total in %	
	Households	Businesses	Households	Businesses	Households	Businesses	Households	Businesses
Prishtina	523,721	54,202	2,461,488.70	402,544.34	2,211,073.16	288,864.08	89.83 %	71.76 %
Gračanica	2,230	158	10,481.00	1,006.06	2,177.80	368.78	20.78 %	36.66 %

The table above indicates that RWC Pastrimi has problems with the collection of funds from both categories in the municipality of Gračanice/Gračanica. Only a low percentage of the company's annual costs are covered by citizens' payments due to the fact that there is no conditionality measures that would oblige citizens to pay and also the customer database is not updated.

The Municipality of Gračanice/ Gračanica has signed a Memorandum of Understanding with RWC Pastrimi, pledging to pay for what has not been paid by its citizens and in fact only in 2015 they paid EUR 91,857 (according to the General Audit Report) , an amount corresponding to unpaid bills of its citizens.

In Gjakovë/Đakovica Municipality, from the data of 2014, 86% of the households receive services from RWC Çabradi, while the rest is covered by two private companies, which operate without prior agreement with the Municipality.

The table below presents data on the financial performance of the company Çabradi, where we can notice that the collection is very low, especially considering that this figures include old debts. It is essential that the performance of the billing system of this company is increased in order for the quality and efficiency of services to increase as well.

Table 11: Financial Performance of RWC Çabradi

	Households	Businesses	Institutions	Total
Gjakova 2014				
Number of potential clients	22'205	4'761	110	27'076
The number of clients receiving invoices (2014)	9'370	1'933	104	11'407
% of clients receiving invoices	42%	41%	95%	42%
Number of invoices issued monthly	112'440	23'196	1'248	136'884
The number of paid invoices	56'339	9'752	1'123	67'214
Billing Potential	1'332'300	440'118	105'636	1'878'054
Amount invoiced	562'200	178'691	99'874	840'765
% invoiced	42%	41%	95%	45%
Average bill amount	5.00	7.70	80.03	6
Fees collected + invoices paid	281'695	78'535	89'886	450'116
% collection / potential	21%	18%	85%	24%
Efficiency of fee collection	0.50	0.44	0.90	0.54

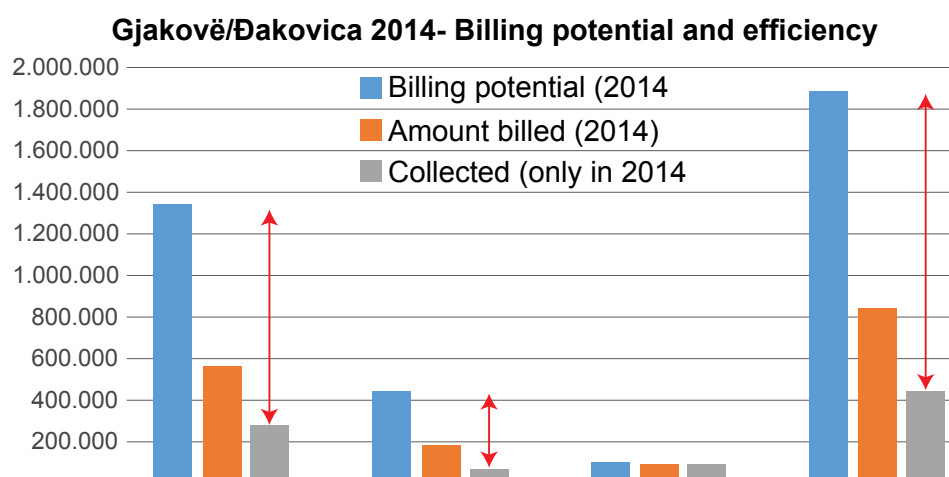


Figure 1: Potential clients to be included in the waste collection system

The situation in reality can be changed if Çabрати and the municipality make more efforts in registering the clients who are offered the service but are not registered. This is presented in the figure above, which explains the number of potential clients versus clients already in the Çabрати database and the potential budget that this company would have if the rate of collection would be 100%.

The current annual service cost is estimated at about € 500,000. The potential for improving the billing system indicates the possibility of financing service extension in the entire territory or improving the service by introducing additional activities (recycling, cleaning machines) and even opening the door for lowering the fees if a large number of citizens pay the bills.

Municipality of Ranilug / Ranillug needs an annual budget of about 19,000 Euros to cover waste management services, while the current collection is 56%.

Billing and fee collection system

Billing and fee collection for waste collection and transportation services across Kosovo (except Prizren) is carried out by operators providing this service.

Table 12: Billing and collection system in the municipalities analyzed

Municipality	Responsible	Frequency	System	Payments	Fee collection rate	Conditionality
Prishtina	RWC Pastrimi	Monthly	door-to-door	12 times/year	80%	No
Prizren	Municipality	Yearly	via mail	4 times/year	80 %	Yes
Gjakova	Çabрати	Monthly	door-to-door	12 times/year	54%	No
Graçanica	KRM Pastrimi	Monthly	door-to-door	12 times/year	20 %	No
Ranillug	Ekohigjiena/ Municipality	Monthly	door-to-door	12 times/year	56%	No

Municipality of Prizren is the first and the only municipality in Kosovo to conduct billing and collection through the Waste Management Department in the municipality, although there were many doubts as to whether this system would be successful or it would only be a test.

According to the WM operators in the Municipality of Prizren, fee collection is now carried out at a rate greater than 80% and is improving day by day²². Bills are issued once a year through a mail service, while payments can be made in up to 4 instalments. The annual budget for the waste sector in the Municipality of Prizren is 1,200.200,00 Euros. The annual budget according to municipal officials is almost covered by the current paid invoices, which means that if all invoices are paid on time, the sector can function as independent.

According to WM operators, imposing conditionality on the citizens on the provision of different municipal services has played an important role in achieving these figures, and has proved to be a successful method, since the software program used in the WM unit does not allow any official to issue any municipal document to debtors.

Tools, as well as the billing and payment frequency, can be further improved so that the distribution of invoices and fee collection can be more efficient.

The billing system in the Municipalities of Prishtina/Priština, Gjakova/Đakovica and Gračanica/Graçanica is carried out by operators (Pastrimi and Çabrati), where bills are issued each month and delivered door-to-door and the collector waits to collect the money on the spot. This process has been shown ineffective due to the following reasons:

- Clients are not present at their home at the time the bill is delivered;
- They are not able to pay immediately with cash;
- Payments can be made later at the company's premises or through the bank, however the level of debts remains high due to improper implementation.
- Some businesses claim to have established contractual relationships with private companies in order to avoid paying the fee or to pay a very low fee that does not match the service provided.

The cost of the billing system and the fee coverage is high, using significant amount of human resources. A simpler and more efficient system can make human resources available for other tasks such as improving client database, debt recovery, service oversight, or cleaning services.

Municipality of Gračanica/Graçanica has signed a Memorandum of Understanding with RWC Pastrimi, pledging to pay for what is not paid by its citizens and in fact, they have paid 91,857 Euros (according to the General Audit Report) only in 2015, an amount corresponding to the unpaid bills of its citizens. In this municipality, there is an urgent need to verify the client database in order to present more realistic data, as it will help in future planning.

The billing system in the Municipality of Ranilug/Ranillug is different from other municipalities, generation of client databases and issuance of bills is done by RWC Ekohigjiena, while they are distributed by municipal staff engaged in waste collection. The rest of the procedure is the same as in other municipalities where the collector waits to collect the money on the spot.

According to a study done by GAP (a local non-governmental organization) on public debt, the largest debtors of regional waste companies are households, followed by businesses and institutions.

²² Interview with municipal officials – Municipality of Prizren

Table 13: RWC debtors by category

Households	Businesses	Institutions
63%	22%	15%

4. PUBLIC AWARENESS

Proper management of municipal solid waste is a very important issue for the governments, the public, and the international donor agencies operating in Kosovo, as the direct and indirect consequences to the public and the environment are becoming more and more visible and acute day by day. Addressing the issue of proper solid waste management should be an important objective of state policies, because on the one hand, citizens' awareness of harmful side effects increases, and on the other hand, it affects the reduction of the amount of generated solid waste, which has increased considerably in the recent decades, and therefore the municipal management capacity is not able to react to these changes.

There are three biggest problems in public awareness regarding the waste management. First: When individuals decide what to consume, they never take into account how much waste they will generate, because the external waste generation consequences such as: air pollution and water pollution are ignored by individuals, and this has led to growing amounts of waste generated and disposed. Secondly, in Kosovo, a large proportion of businesses and households do not pay for waste disposal and also the costs of waste disposal are not reflected in the prices they pay for daily activities, which leads to greater waste generation. The opposite would happen if they would pay more for the additional generated waste, under marginal social, health or environmental costs. The third problem lies in poor management in the waste sector both at the local and central level, followed by the spread of diseases, air, water pollution, lack of good image and other consequences.

In this case public awareness is seen as a very important instrument for achieving certain goals, such as reducing the amount of waste generated, dumping in areas designated for this purpose, not disposing of waste in forms that would pollute the air and soil, etc.

Responsibility for public awareness lies with the municipalities and WM companies, which because of the limited budget have not planned any activity that would have an impact on the issues raised above.

In Municipal Waste Management Plans analyzed, each of the municipalities has planned allocating funds for public awareness activities, but it remains to be seen how much it will be feasible in the years to come.

Synthesis and propositions

The results of the gap analysis are presented in the next table:

Table 14: Synthesis of the study and proposals

Synthesis

		Prishtinë/ Priština	Prizren	Gjakova/ Đakovica	Gračanica/ Gracanice	Ranilug/ Ranillug
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Organization

Service provider		RWC Pastrimi	Private operator and Ekoregjioni	Çabрати	RWC Pastrimi	Municipality itself
Waste management unit		Yes	Yes	planned	planned	planned
Service coverage	%	100%	100%	86%	partial	100%

Financial Framework

Tariff						
year of data		2016	2016	2014	2016	2016
Households	€/month	4.7	3.88	5	4.7	3.24
Business (average)	€/month	7.4	11.15	7.7	6.4	17.49
Amount Invoiced	€/year	2,864,033	Not known	840,765	11,487	Not known
Amount paid, incl. debt	€/year	2,499,937	Not known	450,116	2,547	Not known
% paid	%	87%	70%-80%	54%	22%	56%
Annual Budget	€/year	2,440,398	1,200,200	500,000	Not known	19,000
Annual budget coverage	%	102%	70%-80%	90%	Not known	100%

Billing system						
Responsible		RWC Pastrimi	Municipal-ity	Çabрати	RWC Pastrimi	Ekohigjiena/ Mun.
Frequency		monthly	yearly	monthly	monthly	monthly
System		door to door	mail	door to door	door to door	door to door
Payments		12/year	4/year	12/year	12/year	12/year
Conditionality for households		No	yes	No	No	No
Conditionality for business		No	yes	No	No	No

Clients register

Date		2016	2016	2014	2016	2016
RWC House- hold clients	number	50,354	Not known	9,370	2,230	1,249
KEDS (elect.), Household clients	number	51,231	Not known	22,205	5,100	1,249
Gap	%	2%	Not known	137%	129%	0%
RWC business clients	number	4,653	Not known	1,933	Not known	Not known
TAK active business	Bus. number	22,623	Not known	4,761	Not known	Not known
Gap	%	386%	Not known	146%	Not known	Not known
Appears to be fine						
Potential important gap, an action seems to be necessary						
Not known, or remains to be realized						

Table 15: *Proposals for action*

Considering the analysed data, the main following actions can be proposed:

	Main potential improvements	Prishtinë/ Priština	Prizren	Gjakova/ Đakovica	Gračanica/ Graçanicë	Ranilug/ Ranillug
A	Introducing a tendering procedure for waste services	needed	OK	needed	needed	needed
B	Efficiency and cost reduction of tax recovery system	needed	OK	needed	needed	needed
C	Conditionality for households	needed	OK	needed	needed	needed
D	Conditionality for business	needed	OK	needed	needed	needed
E	Extension of client database	engaged	OK	needed	needed	needed
F	Transfer of billing system to the Municipality	engaged	done	needed	needed	needed
G	Business cadastre and supervision	needed	needed	needed	needed	needed
H	Tax calculation for business	already done	already done	already done	already done	already done
I	Analysis of present services (routes) and proposition for extension of service coverage	already done	already done	needed	needed	needed
J	Improvement in service quality	needed	needed	needed	needed	needed
K	Improvement in supervision and reporting	done	done	needed	needed	needed
L	Improvement of demolition waste management (site, rules, fees, penalties)	needed	needed	done	needed	needed
M	Improvement of animal waste management (producer identification, rules, organization of solution, fees, supervision, penalties)	needed	needed	needed	needed	needed
N	Maintenance. Models, guide, tools, organization, contract for a good maintenance of truck and bins	needed	needed	needed	needed	needed

Proposals for improving the situation are provided below:

- Introducing a tendering procedure for waste services.** The tendering procedure is a very important phase in the waste management process. It establishes a framework, and detailed economic conditions for a certain time period (3 years max according to PPRC). For this reason it must be conducted carefully with the help of external expert. The road map is given in Annex A.
- Efficiency and cost reduction of fee collection system, improvement of the billing/fee collection system.** A detailed analysis of the staff and operation cost of the billing/fee collection system should be done, with propositions to simplify it and/or to change it (frequency, distribution, and billing with electricity, water or property tax, transfer to municipality....)
- Conditionality.** A project for implementing conditionality system for households, based on the Prizren model.
- Conditionality.** A project for implementing conditionality system for businesses.
- Client database.** An analysis of the growth potential of the client database should be made, by comparison with other databases (civil register, electricity or water billing system, GIS and satellite images). This should be done based on a methodology, planning and objective propositions and applied to a pilot project in a limited area.

- f. **Transfer of billing system to the Municipality.** Using the Prizren model, the transfer of the billing system to the municipality should be organized and planned. Since Prizren municipality has taken over the fee collection, it was observed that there is ongoing improvement, seeing the results of improvement, a similar initiative is to be followed soon by Prishtinë/Priština and some other municipalities, which is expected to improve fee collection to desired levels
- g. **Business cadastre and supervision.** A survey and supervision of the businesses and big waste generators could be organized and conducted in order to adapt the tariffs to the real service on the polluter-pays principle.
- h. **Tariff calculation for business.** The situation of each municipality regarding business tariffs can be very different, but all have to apply the polluter-pays principle. If necessary, an analysis and proposition of an adapted tax system should be developed. The question of businesses having a private contract but using public service could also be developed in order to find a solution.
- i. **Analysis of present services (routes) and proposition for extension of service coverage.** For the municipality considering having a major problem of service coverage, an extension of the waste management plan should be elaborated, in order to establish a budget and take decisions. For establishing the present situation and optimization potential, it could be considered to implement a mobile (temporary, 1 to 3 weeks) GPS in the trucks in order to identify the routes and show the gaps, as well as to measure the time, km and consumption. This could provide a basis to identify the gap, define objectives and calculate the additional cost.
- j. **Improvement in service quality.** For the Municipality having covered a substantial part of the budget through improved client cadastre and billing system, an improvement of the service quality level can be developed. This requires a new cost calculation (operation and investment) in order to be able to take good decisions and to insure the sustainability of the operation.
- k. **Improvement in supervision and reporting.** The need of supervision of waste management service and population good/bad practices is an issue since until now no proper procedure was followed by the municipal inspectors. Supervision, monitoring and reporting are inter-related, and for proper functioning of the system, it should continuously be monitored and reported. What was observed until now is that most of the environmental degradation is being done during non-working hours and also based on the fact that there are limited human resources to monitor each neighbourhood, this will continue to result in improper waste management, since also the waste collection companies are aware that they are not monitored at all. This situation is expected to change when the fee collection will be taken over by municipalities, as the units established within the municipalities will be directly responsible for monitoring and reporting for the waste sector, an initiative taken by Prizren and followed by Prishtinë/Priština which sounds to be promising. Last but not least, introduction of new technologies such as GIS in the fee collection and client database is needed as this is interrelated to the performance of the waste management sector.
- l. **Improvement of demolition waste management (site, rules, fees, penalties).** The bad practices with demolition waste multiply the illegal dumpsites and require expensive correction measures. This issue is clearly in the responsibility of Municipalities and the tasks include technical (site definition), contractual, regulation and supervision tasks (rules, fees, control, penalties, communication).

- m. **Improvement of animal waste management** (producer identification, rules, organization of solution, fees, supervision, penalties). The management of animal waste (bones, etc.) is more difficult because there are no good legal and technical solutions in the country for a while. However, a solution should be developed, following the polluter-pays principle. It must go through an inventory of producers, determination of rules (higher) tariffs and penalties, organization of a specific collection and provisory solution (separate dumping in special cell).
- n. **Maintenance.** Form the interviews it was noted that maintenance of the trucks in the waste management sector is crucial for the system to function well, it is well known the correlation of the age vs cost and taking into consideration that most of the fleet operating in the sector is old and requires constant maintenance. This can be seen when comparing the fleet of Gjakova/Đakovica, which is older, to the fleet of Prizren, being only 3 years old.

Learning from international experience

Some lessons learned from international experience were reported at the national conference of December 8th 2016, by the international expert on solid waste, Félix Schmidt, from CSD Engineers (Switzerland). They are summarized here.

Regardless of the operator model for waste management, (delegated to a private company, delegated to a POE or made by a team of the municipal employees), two things are absolutely important in order to insure a good service efficiency/cost ratio:

- a. A clear “contract” or a definition of the strategy, technical choices, tasks of the entity in charge of waste collection and treatment;
- b. A good supervision of the work, allowing to identify the gap of service quality and to adapt continuously the service to the evolution of the city.

Other opportunities are given by the possible use of GIS and free available data to improve the waste management sector (c.).

a. Contract

In waste management there are not good or bad solutions. Different solutions have to be considered and compared in order to present to the municipality the possible options, their cost, advantages and disadvantages. At the end, the operation cost is often the key point. Usually, major initial investments can conduce to an operation cost reduction, but they are not always possible.

Therefore, the contract has to be based on a clear analysis, a diagnosis of the present situation, collecting and analysing all the data required for cost estimation.

Population, waste production, material (trucks, bins), timetable, frequencies, working hours, routes, collection points, km, position of treatment points, are the most important elements to be analysed.

Waste management being a logistic process, the key parameter is the time required to load and transport a certain quantity of waste. The major parts of the cost are trucks, fuel and workforce. Less time the team use to load and transport the waste, cheaper and more efficient will be the solution. Thus, the analysis has to identify all the possible solutions to reduce the time.

From this analysis different possible scenarios, should be developed and for each scenario a cost calculation should be done, including investments, operation and depreciation costs. On this basis, the authority will be able to decide and choose the best solution for the city, which is basis for the development of the waste management plan.

In the example of the city of Shkodra, Albania, the waste management in 2007 was in a very bad condition.

Helvetas (dldp project) had provided a diagnostic study, with the objective to help the municipality to prepare a tendering procedure for the waste collection and street cleaning.

A private company was in charge of the waste collection. They had a “black box” contract, with very few specification and conditions, based on hypothetical waste quantities, but without any measurement of the real collected tons. The company had old trucks and were working with a reduced number of old containers, 100 % of them being damaged. The situation in the city was dramatic, presenting very dirty image everywhere (photo 1 to 4). The waste was scattered on the floor (photo 1) and in the old containers (photo 2), and dumped in the river bed (photo 3). Only the roads of the city centre were regularly cleaned (waste collected) and the other parts of the city where irregularly cleaned or not at all.



Photo 1 (2007)



Photo 2 (2007)



Photo 3 (2007)



Photo 4 (2007)

The data collection and the diagnostic of the situation provided the main following elements:

- A huge loss of time was produced by the necessity to collect the waste on the floor or in bad state containers: to load 1 m³ in a good container, it takes 2 or 3 minutes for 2 people. To load the same quantity from a container with all wheels damaged, it takes twice this time, and to load the same quantity from the floor and clean the place, it takes 4 to 5 time more, with 3 or more people.
- The very old trucks were also a source of inefficiency, the trucks being often stopped for repair.

From this analysis, a deep discussion was conducted with the authority in order to establish priorities and different possible strategies. On this basis, different scenarios where established, with a cost calculation (fig below).

From the cost calculation, it was demonstrated that the service could be extended to the 100% of the city, for an operational cost reduced for 40 % from the previous situation. This cost could be reduced by considering highest investments, which were not considered as possible. The key element for this cost reduction was to buy a big number of new bins, in order to reduce the collection time, and also to improve the appearance of the city. Other point was to organize bins and trucks maintenance, in order to maintain the equipment in the good state necessary to keep up with waste collection pace.

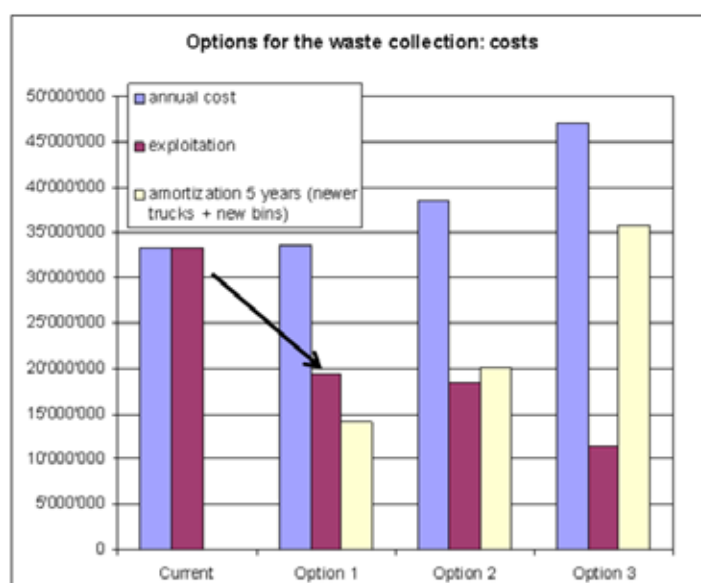
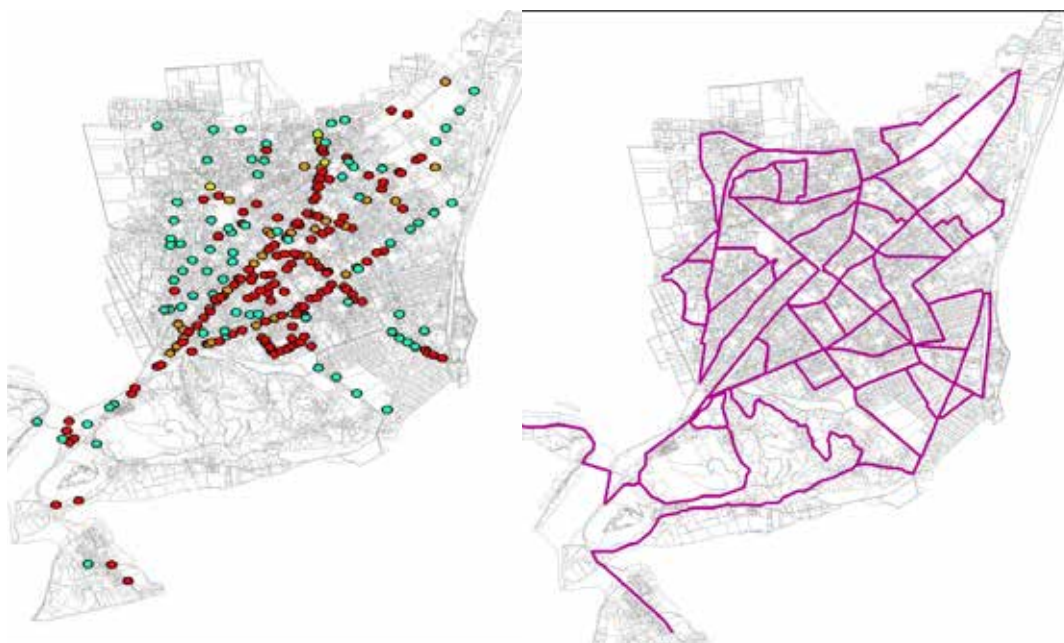


Figure 2: Result of the cost calculation of different scenarios The operation cost can be reduced with 40 % (option 1), with an improved and extended service to the 100% of the city. It could be reduced more with other strategies (bigger bins, lower frequencies) but these solutions would need higher initial investment (options 2 and 3).



Such cost calculation and elaboration of an optimized waste management plan should be done in any case, regardless of the type of service delegation, and should be the base of a “contract” between the authority and the service provider and of the supervision and reporting. It should be adapted and reviewed every 5 years, in order to adapt the scheme to the evolution of the city and to improve progressively the level of service, for example introducing step by step selective collection and recycling, treatment of waste, GPS, etc..

b. Importance of supervision and reporting

Supervision and reporting are key elements to insure and improve the quality and the efficiency of services.

In the case of Shkodra in 2007, the supervision was provided on a pure formal basis, without any relation to the reality of the service, and probably with corruption or at least close relationship between company and supervisor. The reporting was not based on evidences (tons, working hours, km or ration between extension of waste collection and street sweeping). Reporting was not used to pay the company or to adapt the system.

Supervision and reporting were step by step adapted with the following objectives:

1. **Reporting as a base for the service payment:** the payment of the company should be based on measurement figures, like ton of waste (needs a balance) or the number of emptied bins (in the preliminary phase during which we had no balance to weight tons).
2. **Reporting as a basis of penalties.** Payments of the service are reduced with penalties in case of bad practices. This penalty system generated hard discussion, but is absolutely and rapidly efficient to improve the service quality: once penalties are applied, the company is forced to introduce internal controlling and pressure to the team in order to comply with the contract and avoid new penalties.

In the beginning (2007), penalties were defined for the following cases:

- a. For unrepaired damaged bins;

The Company has the responsibility to replace and repair the damaged bins within 5 days after notification

- b. Uncollected bins;

- c. Unswept streets;

- d. Disposal of the waste on a wrong place;

- e. Lack of service during the implementation phase;

It was important that the new company begins the service from the very first contractual day

- f. Ungiven Reporting or wrong reporting or data

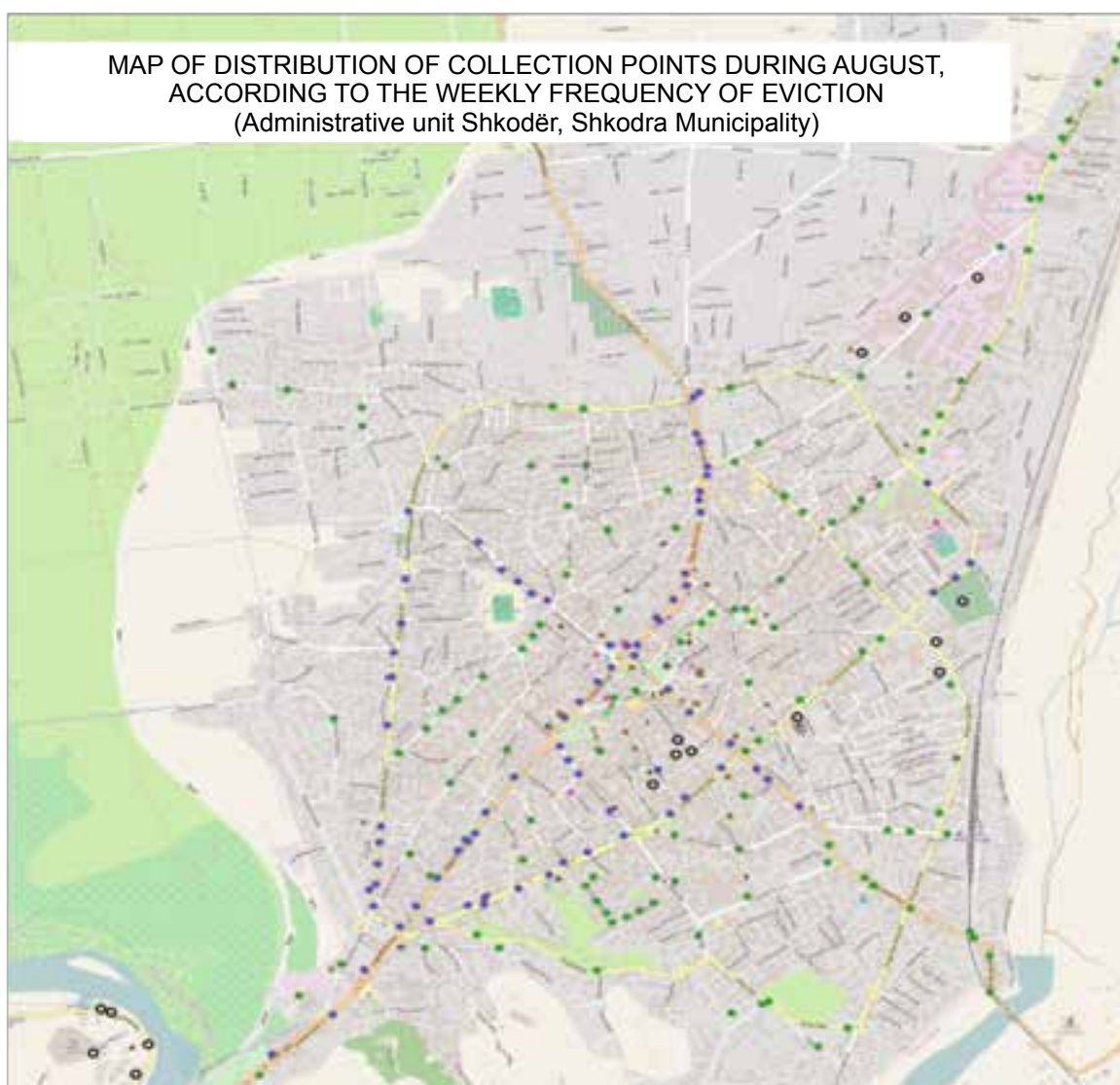


Figure 3: This figure (Shkodra, 2016) shows a GIS map of the city which is used to report the frequency of the containers collection, as a basis for a weekly definition of penalties for unloaded containers.

3. **Reporting as a learning process for a continuous improvement of the system.** Waste collection is a logistic process and must be permanently controlled, optimized and adapted to the evolution of the city. For that, it is necessary to collect and analyze data and to use the results to take weekly or monthly decisions for adapting the system. Both the company and the supervision team of municipality have to measure the work and exchange the data in order to be able to adapt and improve the system. The data which has to be given by the company to the authority should be clearly mentioned in the contract.

These data could be for example (not exhaustive list):

- Timetable for each truck and each day: departure, beginning of collection, dumping time, end of work;
- Quantities for each truck and each day: route, tons, km, fuel consumption, number of workers;
- Data on preventive and ad hoc maintenance of the trucks and bins;
- Positions where bins are insufficient or in excess. The need for additional bins;
- GPS positions of the trucks (route and timetable);
- Position of new black points, or dumpsites of unauthorized waste (solid/construction waste, animal, heath, industrial, garden waste, etc.);
- Position of big quantities of waste from not registered business.

Data provided by the supervisors, with the help of head of unit could provide additional data:

- Control of the data provided by the company (time table, tons, ...);
- Uncollected containers, streets, or zones;
- Quality and quantities of services : uncollected bins, non-swept streets, unclean collection points, damaged bins;
- Non-contractual activities of the trucks team (non-contractual breaks or routes, illegal dumping, illegal activities, alcohol, incomplete team, security problems (insufficient lights, lack of uniforms or security material, etc.);

From the interpretation of these data through weekly or monthly reports, decisions can be taken each week, from the authorities and/or from the company in order to insure or improve the service, like:

- Replace and repair damaged containers;
- Provide new containers where they are clearly insufficient, or remove it were not used;
- Adapt the route or the timetable;
- Organize maintenance of trucks and organize alternative solution;
- Send a specialized team for removing solid or construction waste dumpsite, voluminous waste deposit, river bed, canalizations, etc;
- Send a supervisor to evaluate/adapt tariff for categories of business producing more waste than supposed to;
- Send a supervisor or police for information or for sanctioning bad practices;
- Adapt and organize the collection team, etc.

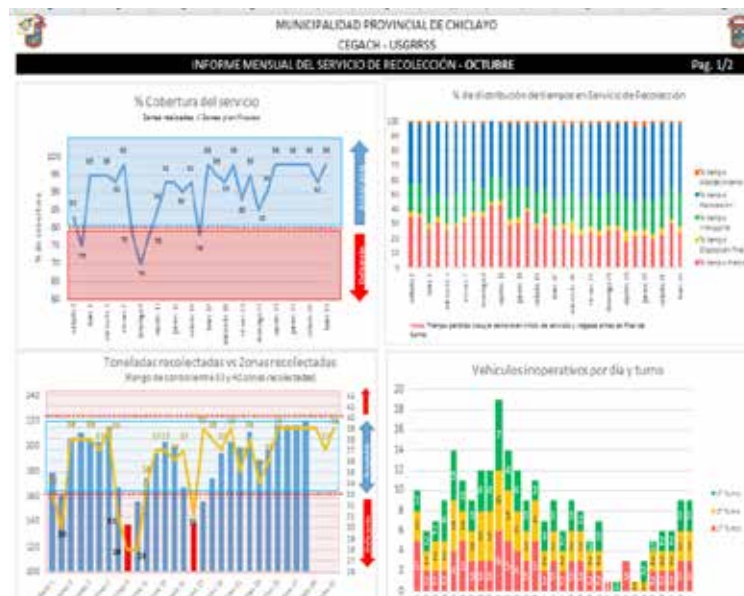


Figure 4: Report of monitoring the city of Chiclayo

This figure represents part of a monitoring report of the city of Chiclayo, Peru (2016), showing the daily coverage of the service, the collected waste tons, and the time lost by the trucks in unnecessary activities. These data allow defining and progressively applying corrective measures in order to improve the efficient use of trucks and working hours.

c. Opportunities of introducing GIS in waste management.

It is now possible to find in the Internet exhaustive geographic information about the present situation of the country, and especially about to main elements useful for waste management:

- Building;
- Road network.

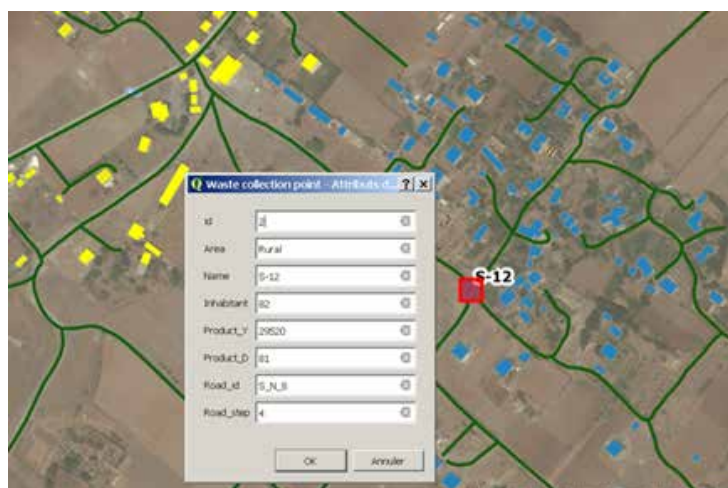


Figure 5: Views from GIS

The figure shows a zone of Albania, with the network of roads and all the building in the area. Each roads and building are linked to a database where different characteristics can be found or can be added in a GIS system, like the number of apartment or type of business, the number of families or people, the permanent or seasonal occupation, the client name or ID, etc.

Waste management planning:

These data can be used for waste management planning.

From the same example, it is possible to calculate the number of houses and people served by one collection point (in red) in a distance of 200 m by road (in blue). This allows estimating the number of containers necessary on this point for a certain frequency.

Using such calculation it is possible to calculate different scenario of routes and position of collection points. For each scenario, it could be possible to calculate the number of collection point, time and km of the trucks, bases of a calculation of the operation cost of each scenario.

The next figure represents the evaluation of 4 different strategies of collection, from a collection limited to main road to a full door to door collection. For each scenario can be calculated the percentage of coverage of the service (%) and the specific cost, allowing the authorities to make a clear decision.

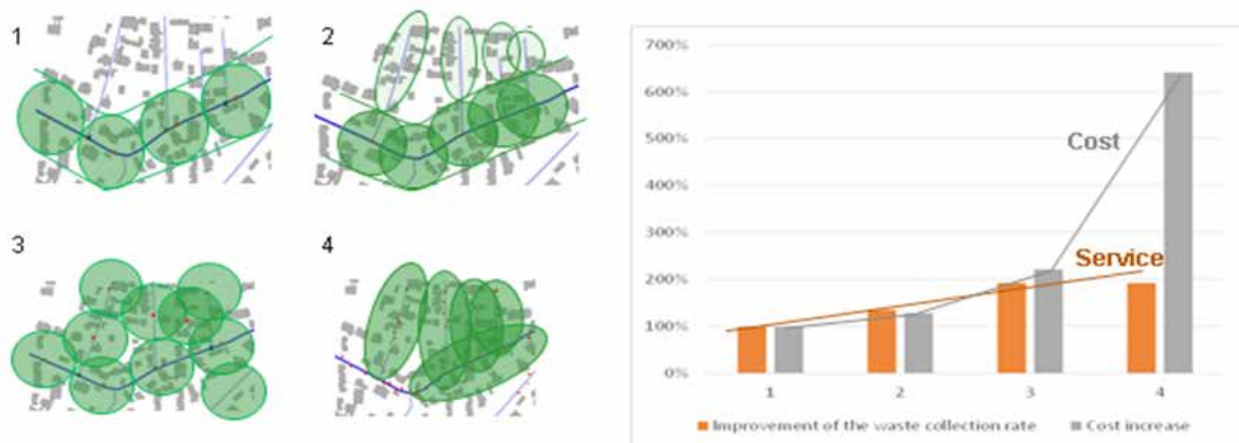


Figure 6: Views from the software for WM

Client register:

GIS data base can also be used to control, manage and extend the client database and the billing system.

Once the client database and billing system are linked to the GIS system, all the houses which are not included in the client database can be clearly shown. This allows seeing where the inspectors should be sent to register new clients, households or business. It could also show where clients are not paying the bill, where information campaigns or other actions had to focus.

It could be also interesting to compare the data of the client register to other geographic database like the property tax register, or the electricity or water supply companies' client registers, in order to extend the client list.

GPS and logistics

GPS data can be entered in the GIS system, in order to analyze where the trucks are losing time or what are the bigger uncovered zones. This can allow adapting the routes and improving the service coverage.



Figure 7: GPS system

The figure shows a result of the GPS system used in Chiclayo (Peru 2017)

To check in real time and on a weekly basis the position and the routes of the trucks, and the places where they stopped for longer time period.

The progressive integration of GIS in the municipal activities provides many other possibilities and interests.

Annex 1: Roadmap for the waste collection service tendering procedure

The tendering procedure is a very important phase in the waste management process. It the framework and details the economic conditions for a certain time (3 years max according to PPRC). Therefore, it must be the framework and details the carefully.

As a tentative roadmap, the following steps can be proposed:

- Initial organization:

It is important that the group, in charge of the process, is well defined and strongly supported by the Mayor.

- Appointment of the **project manager**, responsible;
- Appointment of the **steering committee** in charge of waste management plan and procurement procedure development;
- Appointment of the expert, if any, for assisting the Committee;
- Identification of stakeholder to be consulted and informed on the process and results (Municipal assembly, village leaders, etc...);
- Setting the time-limit of the planning process, and information to the mayor;

Baseline assessment

In this phase it is important to collect and analyse:

- Current service state of play?
- Identify available data to serve as grounds for defining the future waste management service?

B1 Current service state of play

The data are similar to these of the present gap analysis including, if possible, the following elements:

- Type of existing services (collection, sweeping, cleaning);
- Arrangement of existing services (private, public) and engaged team (administrative, drivers, workers, sweepers, mechanics, etc.);
- Extension of the existing services: geographical extension, quality;
- Routes and position of containers or waste collection points, frequency;
- Cost of the existing services, annual budget;
- Financing of the service: tariffs, organization of billing system and fee collection, results (coverage) of fee collection, organization and efficiency of maintenance, etc.;
- Available equipment (trucks, containers, sweeping machine, garage, workshop, personal facilities, landfill or other treatment plant, existing recycling activities, etc.);
- Main problems and population complains/expectation.

B2 Available data to be used for waste management planning

It is necessary to identify the existing data which can be used to plan the service and establish a cost calculation. These data can be:

- Road system (map, quality of road, commercial speed of trucks);
- Typology of service zone (urban, rural, mountain or remote area, etc.);
- Category of clients (houses, family, business) and technical points (landfill, garage, workshop, waste collection points, gas station, etc.);
- Average number of people/family per house
- Average waste production per capita or family, or per business, institution (kg/day), in each specific service zone;
- Average density of waste in container and truck (kg/m³);
- Typical possible material (container, trucks): volume, characteristic, consumption, etc.

Establishing goals and scenarios

The tender dossier has to define, as much as possible, the scope of the service. The risk for the sustainability of the system is to establish high level requirements without considering the cost and funding manner. If the municipality (and at the end the citizen) is not able to finance the service at the required level, the service will collapse, stop or derive.

To avoid this difficulty, it is necessary to establish a circle of goal definition and cost calculation.

At the beginning it is necessary to establish the main goals and priorities of the Municipality in the waste services, responding to questions like:

- What are the different areas of the Municipality regarding the service?
- What is the service in each area?: Waste collection and transport, manual street sweeping, mechanical street sweeping, street cleaning.
- What are the optimal service frequencies in each area?
- Is it possible to consider a different frequency in urban and rural area?
- Is it possible to make investments within the budget;
- Is the budget adequate? Are there any possibilities to increase it?
- Who will be the owner of the containers: Citizen? Company? Municipality?
- Who will be the owner of the trucks: Company? Municipality?
- Who is in charge of repairing and replacing the containers.

On such grounds, the task of the engineer will be to propose, and discuss with the Steering Committee, different scenarios of zones, frequency, containers and trucks, for example:

- **Scenario 1:** Once a day, 200m from each citizen
 - 1100 L plastic bins in whole territory;
 - city centre: collection point each 400 m on main roads, 6/7 days per week 1 shift in the night;
 - suburb: collection point each 400 m on main roads, 2/7 days per week, 1 tour in the day;
 - rural area, 1/7 day per week, 1 tour in the day shift;
 - 1/7 day per week in the rural area, 1 tour in the day shift;
- **Scenario 2:** twice a week, 100 m from each citizen
 - Both 1700 and 1100 L bins in urban area; 1700 L bins in rural area;
 - city centre: collection point each 200 m on all roads, 2/7 days per week, 1 shift in the night;
 - 1 additional shift at main street every day (restaurants, commercial area, market);
 - suburbs: collection on main roads only, collection point each 400 m, 2/7 days per week, 1 tour in the day shift;
 - rural area, collection on main roads only, on the crossing to secondary roads, 1/7 day per week, 1 tour in the day shift.

Calculating the cost of scenarios, comparing and preparing decision

Based on the above, the engineer can calculate the investment costs and operational costs (annual costs, cost per ton, cost per family) of each scenario and present the results to the Steering Committee and then to the Mayor, in order to decide over a scenario or develop a different one, knowing the effect on the cost.

Other option is to develop a step by step scenario, with service improvement over time, for example:

- 1st year : providing service in the urban area;
- 2nd year : buying bins and a new truck and extending the service to suburb area;
- 3rd year : buying bins and a new truck and extending the service to rural area.

Pre-tendering process

Communication

Adaptation of legislation

Developing and adopting the Regulation on Waste Management, definition of rules, tasks, organization, responsibilities, and penalties necessary for a good implementation of the new service. A current model adopted by some Municipalities (i.e. Prizren, Vushtrri/Vučitrn, Skenderaj) can be used as an example as it already passed the legality test at the Ministry of Local Government Administration).

Establishment of Waste Management Unit within the Municipality, pursuant to the Law on Waste, and in charge of implementation of the Regulation.

Pursuant to the Law on Public Procurement and sub-legal acts of PPRC, the Municipality should plan the procurement of waste management services. An overall total value of services to be procured during the fiscal year should also be planned during the procurement planning phase. Detailed rules on planning of procurement activities are published by PPRC (Handbook No. II). This is a common practice for all public authorities, including the Municipalities.

As the fee collection has to be taken over by the Municipality, it is critical that the responsible directorate for finance at the Municipality has the required codes dedicated for waste tax revenues. As part of these efforts, a consolidated approach from the Association of Kosovo Municipalities should be undertaken in addressing all budgetary issues with the Ministry of Finance, including allocation of incomes from own source revenues (waste tax) and expenditures (payment for services procured).

Developing tender document

Once the scenario and the budget are defined, it is possible to draft specification of the tender document, with a clear description of:

- The required material (containers, trucks) with minimal technical requirements;
- The zones, tour, timetable and frequency;
- The responsibility of maintenance;
- The controlling tasks of the Municipality and of the company;
- The data the company have to collect and provide to the municipality, the frequency (time table of trucks and km, maintenance data for bins and trucks, daily weight of waste, etc.);
- The way to calculate the service costs (per ton, per container, ...);
- The penalties imposed to the company for bad practices (not emptied container, dirty collection points or roads, illegal dumping, etc.);
- The cost of additional services (providing more bins, etc.);
- The possibility of proposition of other alternative scenario;
- The criteria for selection of the company, etc.

Tendering, evaluating offers

Tender

Bid evaluation

Decision

Contract

Implementation

