Republika e Kosovës
Republika Kosova - Republic of Kosova

Municipality of
Kaçanik/Kačanik

# Local Waste Management Plan 2016-2021

## Municipality of Kaçanik/Kačanik

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2016

# *Acknowledgments*

This plan has been prepared by the working group of the Municipality of Kaçanik, in close cooperation with the coordination group and with the support of professional consultants and DEMOS project officers. DEMOS project is implemented by the organization Helvetas Swiss Intercooperation and is funded by the Swiss Cooperation Office (SCO).

Working and coordination group for drafting the Local Waste Management Plan in the Municipality of Kaçanik analysed the state of play and proposed concrete measures for the purpose of creating a clean environment for its citizens.

*Working group*

1. **Ramadush Osmani**, Director of DEPS
2. **Fatos Koxha**, Public Services Officer
3. **Menduh Krasniqi**, Head of PS
4. **Skender Sopa**, Public Services Officer
5. **Arlinda Koloshi**, Legal Officer
6. **Arsim Zenuni**, Financial Officer
7. **Ukshin Çallaku**, Public Services Inspector
8. **Bujar Dullovi**, Environmental inspector
9. **Nuhi Krivenjeva**, Environmental inspector

*Coordination group*

1. **Mr. Besim Ilazi** - Mayor
2. **Mr. Xhelal Gashi -** Chairperson
3. **Mr. Ramadush Osmani -** Director of DEPS

DEMOS Project support team

1. **Tush Markaj,** RECURA/DEMOS
2. **Gazmend Ahmeti,** RECURA/DEMOS
3. **Majlinda Jupolli,** DEMOS/Helvetas Swiss Intercooperation

# Abbreviations

| | |
|---|---|
| **MESP** | Ministry of Environment and Spatial Planning |
| **SRKWM** | Strategy of the Republic of Kosovo on Waste Management |
| **PRKWM** | Plan of the Republic of Kosovo on Waste Management |
| **MWMP** | Municipal Waste Management Plan |
| **LEAP** | Local Environmental Action Plans |
| **EU** | European Union |
| **KEPA** | Kosovo Environmental Protection Agency |
| **KLMC** | Kosovo Landfill Management Company |
| **MEF** | Ministry of Economy and Finance |
| **MLGA** | Ministry of Local Government Administration |
| **POE** | Publicly-Owned Enterprises |
| **PSP** | Private Sector Participation |
| **RCWC** | Regional Companies for Waste Collection |
| **MA** | Municipal Assembly |

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# 1. INTRODUCTION

Municipal Waste Management Plan (MWMP) is a guiding and planning document, which enables the implementation of national waste policy at the local level. This plan enables the strategic orientation of the Municipality of Kaçanik/Kačanik toward an integrated and sustainable waste management, which represents a challenge for all stakeholders of municipality to find the best way of contributing in having a clean environment, in compliance with standards and which reflects civilization.

This plan aims at having a clear approach of waste management policies at the local level and contributing to the good governance of the Municipality of Kaçanik/Kačanik in the field of municipal waste management by building capacities and developing regulatory framework for municipal waste management.

Data collection is a baseline for drafting the waste management plan of the Municipality of Kaçanik/Kačanik. Upon drafting of this profile and assessing the state of play, we have utilized various sources for collection, systematization and analysing necessary data.

Data have been collected through municipal structures, namely through the Working Group (WG) and Coordination Group (CG), based on decision taken by governing structures of the Municipality of Kaçanik/Kačanik, in close cooperation with the representatives of “Helvetas” and Regional Waste Company “Pastërtia” branch in Kaçanik/Kačanik.

MWMP indicates and promotes possible technical solutions which are effective for integrated waste management, including the installation of new waste collection systems for the purpose of reducing waste and promoting recycling in certain areas of municipality. It establishes orientations of local policies for sustainable waste management for coming years, depending on the financial commitment of the government for municipal waste management.

**MWMP objectives are as follows:**

- Protect environment and ensure healthy living conditions,
- Promote increasing the quality of life,
- Support sustainable economic development, and
- Generate employment and incomes.

Plan provides the municipality with the opportunity to expand cooperation with other municipalities for specific issues on waste management. Short-term projects (1-2 years) 2016-2018 and medium-term projects (3-4 years) have been selected. With regards to the waste issues, the Environmental Action Plan foresees a series of priority projects, as follows:

- Improving solid waste management,
- Improving municipal waste landfills management,
- Support waste recycling by subsidies,

- Increase billing for waste collection,
- Rehabilitation of areas polluted by waste,
- Strategies for use of construction waste and recycling of construction waste.
- Provision of waste collection service and expansion to the whole territory of the municipality from 60 -100% by 2021
- Establishment of waste collection and recycling functional systems by type (glass, paper, plastic, scrap vehicles, electric and electronic waste, tires, metals, garden waste etc.) in order to gradually reduce the amount of municipal waste disposed in landfills and achieve objectives of Waste Management Strategy.

## 1.1 VISION, MISSION AND OBJECTIVES

### Vision

A clean and green environment and a contemporary waste management service.

### Mission

Provision of waste collection service that fulfils the needs and requirements of residents in terms of quality and costs.

### General objectives:

**Objective 1: Strengthening waste management system**

- **M1:** Increasing and expanding waste collection service in areas not covered with services.
- **M2:** The whole territory of Kaçanik/Kačanik covered with waste management service by 2021.
- **M3:** 3,000 pieces of 120l containers distributed by 2018.
- **M4:** 300 pieces of 1.1m3 containers distributed by 2018.
- **M5:** Waste Management Sector (WMS) established and empowered by 2017

**Objective 2: Investment in areas with critical problems and in infrastructure – Strengthening waste management system**

- **M1:** Public Municipal Waste Management Enterprise (PMWME) established by 2021.
- **M2:** Municipality equipped with two trucks by 2021.

**Objective 3: Increasing residents awerness level**

- **M1:** Issuing an annual newsletter adressing municipal waste issue.
- **M2:** Starting from 2016 and onwards, organize 3-4 training sessions/meetings per year with the recivers of waste management service.

## 1.2 Municipal profile

Municipality of Kaçanik/Kačanik is extended in the southern part of Kosovo, approximately in the altitude 42˚ 13” 40” and longitude 21˚ 15” 31”. With total of approximately 306 km² and based on the Census of 2011[1] has a population of 33.409 inhabitants.

Municipality is bordered with the Municipality of Ferizaj/Uroševac in the north, Vitia/Vitina in northeast, Shtërpca/Štrpce in west and Hani i Elezit/Elez Han in south. Total length of borderline is 101.41km² and the area of 210.90 km² and is mainly mountainous territory.

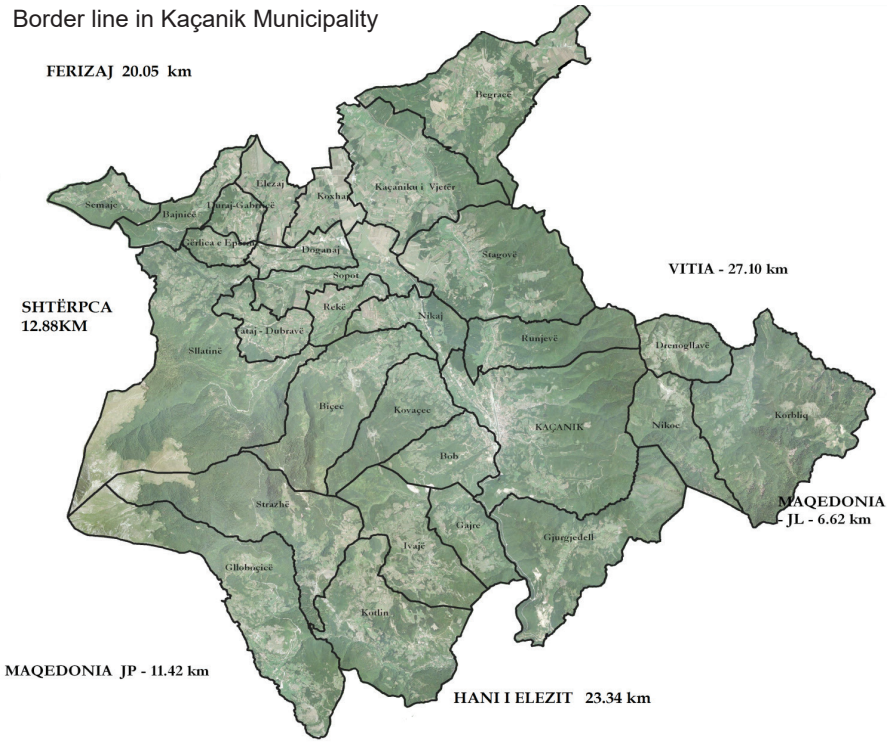



*Fig. 1 – Position of the Municipality of Kaçanik/Kačanik in Kosovo*

The furthest distance in the territory of municipality is 22,3 km between villages Sllatine in west and Korbliq in east. No significant differences are noticed in direction north-south. Area of municipality has no regular form, but is rather irregular, mountainous relief impacts the expansion of roads and makes difficult the connection of settlements with the municipal centre. Villages Korbliq/Korbulic, Drenogllave/Drenova Glava, Nikoc/Nikovce, Glloboçice, Kotlinë/Kotlina, Ivajë/Ivaja, Biçec/Bičevac and Sllatinë/Slatina have no good connections with the municipal centre. Due to the connections, several villages receive services in nearest surrounding centres, whereas they communicate with the municipal centre only for administrative issues.

1 Data obtained from the Kosovo Agency of Statistics 2011

## 1.3 Population structure and number of inhabitants

Structure of population by age and gender is important for demographic and economic development of a country, for both present and the future. The direction and impact in demographic and socio-economic development of the municipality are determined based on the population structure.

*Table 1: Population number by gender and age*[2]

| Pupulation number | Male | Female |
|---|---|---|
| 33.409 | 16.970 | 16.439 |
| In % | 50.8% | 49.2% |

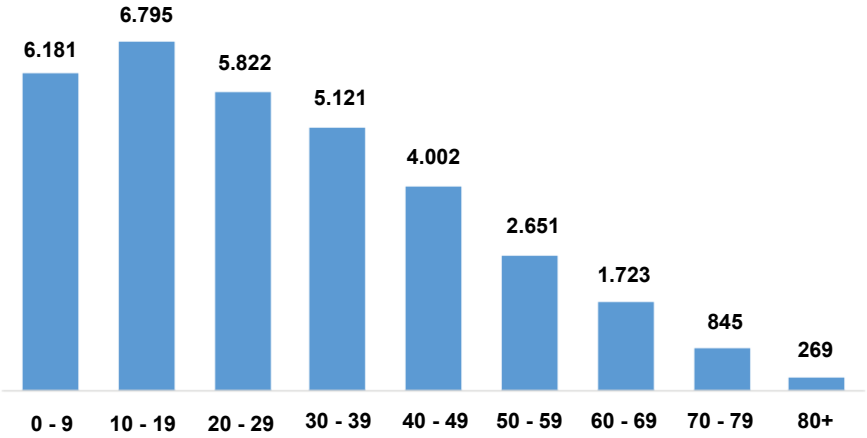



*Fig. 2 – Population by age-groups*

Population of the Municipality of Kaçanik/Kačanik is mainly young. The average population age is 28.3 years old. In general, young age-groups of population (0 to 19 years) significantly dominate the general population of municipality. Around 40% of total population in municipality are aged 0 to 19 years, 54.4% are aged 20 to 64, whereas age-groups above 65 years have a lower share with 5.6% of total population of Kaçanik/Kačanik.

2 Number of total population by gender and age in the Municipality of Kaçanik/Kačanik, KAS 2011

## 1.4 Family and characteristics

The data from census show that the average family size in the Municipality of Kaçanik/Kačanik is 6.9 members. In the Municipality of Kaçanik/Kačanik generally dominate families with 5 and 6 members, as well as those with 4 and 7 members. Also, we have a significant number of families with 8 and more members, whereas there are a small number of families with 1, 2 and 3 members, namely 7.6 % of all families in municipality.

*Fig. 3 – Number of family members (in %)*

The above figure shows that the dominant group of families in the Municipality of Kaçanik/Kačanik is that with 5 members, namely with 6 members.

## 1.5 Legal framework on waste management

The purpose of legislation on Waste Management – Law no. 04/l-060 on Waste is to:

- Protect the environment and human health from pollution and risk of harm from waste through environmentally sound waste management by establishing conditions for prevention and reduction of waste production and its harmfulness;
- Develop and use of products which by the nature of their production, use or final disposal, are designed to decrease the damage and hazards from waste pollution;
- Use of best possible techniques for storing waste which contains hazardous substances, with the possibility for processing or final disposal;
- Process wastes by means of re-use, recycling or any other process, with a view of extracting secondary materials;
- Use of waste as a source of energy and restoration of areas polluted by waste;
- Law on waste governs types and classification of waste, waste planning and management, conditions for waste collection, transport, treatment, storing and disposal, rights, duties and responsibilities of legal and natural persons involved in the waste management, as well as

conditions and procedures of waste management permits. This law also establishes principles of special waste leaks, basic provisions for burning waste, etc. Pursuant to the Law, drafting of "Local Waste Management Plans" are obligatory.

## 1.6 Competent authorities of waste management

Institutional competent authorities for waste management are:

- Ministry,
- Municipalities.

Law establishes roles and responsibilities even for:

- Waste holder
- Product producer and importer
- Waste producer
- Waste transporters
- Waste treatment operator
- Waste landfill operator

## 1.7 Responsibilities and duties of municipal authority

Responsibilities and duties of municipalities to implement the provisions of this law are:

- Establishment of waste management system based on the hierarchy principle,
- Based on the Article 10 of Law on Waste, municipality is obliged to draft and implement municipal plans;
- Drafting annual report on waste management to present the implementation of plan to the ministry by 31 January of the following year,
- Regulating responsibilities and duties to perform services for waste management, implement them and organize the waste management in their territory;
- Maintenance and custody on the public information system and reporting on works performed as prescribed by this law,
- Selection of licensed persons for collection, gathering, storage and transportation of inert, municipal, commercial, voluminous and construction and demolition waste.
- Determining fees and the manner for collection of funds for municipality services.
- Identification of contaminated sites on their territory, development of projects for their rehabilitation, which includes notes about the location, spatial geometric features, type of pollution, and waste quantity, deadlines for improving the situation and other important data for the implementation of projects.
- Two or more municipalities, where is their interest, they may make agreements on waste management.

- Municipality exercises supervision and control measures and waste management activities in its territory, through the municipal inspectors on environment.
- At the request of the Ministry, the municipality provides information and recommendations regarding waste management.
- The municipality is obliged to provide care and remove wastes that are dumped in public spaces or outside waste landfills in its territory.
- If the responsible person for waste management in accordance with legal responsibility does not care for thrown wastes by unknown person, the responsibility for those wastes will take the municipality.
- The municipalities issue the sub acts which regulate the functioning of the municipal competent authority and standards for waste management services. Strategy of the Republic of Kosovo for Waste Management 2013-2022 and the Plan of the Republic of Kosovo for Waste Management 2013–2017, have been approved by the government.
- Plan of the Republic of Kosovo for Waste Management establishes projects in the field of waste management for five-year period (2013-2017), this plan is in harmony with the Strategy of the Republic of Kosovo for Waste Management and generates economic opportunities by focusing on:
    - Reduction of waste generation, reduction of the amount of waste at source and reduction of the amount of waste to be disposed;
    - Development of infrastructure for the establishment of an integrated approach for waste management (Reduction – Reuse – Recycling – Burning – Land filling) thus creating the conditions for more effective functioning of the system;
    - Reduction of risk from waste;
    - Contribution to increasing employment in the country;
    - Capacity building for waste management;
    - Improvement of the municipal waste collection service (improvement of the actual system, expansion of the collection zones, examination and harmonization of capacities for waste disposal)
    - Public education and awareness-raising;
    - Drafting legislation and instructions on waste management;
    - Exact determination and inventory of the hazardous waste;
    - Management of inherited hazardous waste,
    - The raising of the responsibility of the producers of products and waste generated from their products.

Municipal Waste Management Plan should be in harmony with the Plan of the Republic of Kosovo for Waste Management.

## 1.8 Scope of the plan

This plan covers a period of five-years (2016-2021). Projects included in this plan are short-term projects (1-2 years) and medium-terms (3-5 years). Regarding the waste issues, the Environmental Action Plan foresees a series of priority projects, as follows:

- Improving management of solid waste,
- Improving management of municipal waste landfills,
- Supporting waste recycling
- Increased billing for waste collection,
- Rehabilitation of areas polluted by waste,
- Strategies for use of building material and recycling of used building materials.
- Provision of waste collection service and expansion to the whole territory of our municipality.

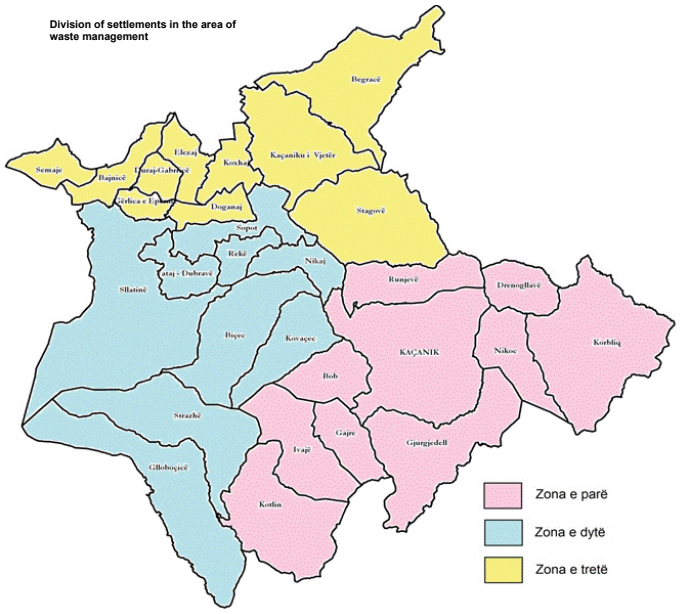
## 1.9 Division into areas

Waste collection service will be provided by making a division into areas of service. Three (3) areas of waste management services provision have been determined and distributed under the set criteria, which provide proportional distribution of all relevant factors in determining them, which are as follows:

- Size of the territory
- Number of households
- Configuration of the terrain
- Quantities of generated waste, calculated
- Opportunity for carrying out waste collection
- Economically justified orientations.

*Table 2: Division into areas by defined criteria*

| Area | No. of setlements | Average in km² | Area in km² | No. of households | No. of population | State of waste per year |
|---|---|---|---|---|---|---|
| Area 1 | 11 | 9,23 | 87 | 3.669 | 15.049 | 5.153 |
| Area 2 | 9 | 12,02 | 74 | 2.009 | 8.993 | 2.280 |
| Area 3 | 10 | 11,23 | 50 | 2.166 | 9.367 | 2.067 |
| **Total** | **30** | | **211** | **7.844** | **33.409** | **9.501** |




**Defined area for Waste Management - M. of Kaçanik**

| Zone 1 | Zone 2 | Zone 3 | Total |
|---|---|---|---|
| No. of locations 11 | No. of locations 9 | No. of locations 10 | No. of locations 30 |
| *36.7%* | *30.0%* | *33.3%* | *100.0%* |
| Population 15.049 | Population 8.993 | Population 9.367 | Population 33.409 |
| *45.0%* | *26.9%* | *28.0%* | *100.0%* |
| Surface in Km² 87 | Surface in Km² 74 | Surface in Km² 50 | Surface in Km² 211 |
| *41.2%* | *35.2%* | *23.6%* | *100.0%* |
| Households 3.669 | Households 2.009 | Households 2.166 | Households 7.844 |
| *46.8%* | *25.6%* | *27.6%* | *100.0%* |
| WM service offered on households 1.735 | WM service offered on households 468 | WM service offered on households 193 | WM service offered on households 2.399 |
| *72.4%* | *19.5%* | *8.0%* | *100.0%* |
| WM service coverage 47.45% | WM service coverage 23.3% | WM service coverage 8.9% | WM service coverage 30.6% |

*Fig. 4 – Map of areas defined for waste management*

## 1.10 Proposed scenarios for areas defined in MWMP

Three scenarios which may be used for areas defined in MWMP may be applied for all areas, or separately, depending on situation in the field and serve as a basic indicator that may influence:

a. elements of service quality,

b. improving basic legal infrastructure

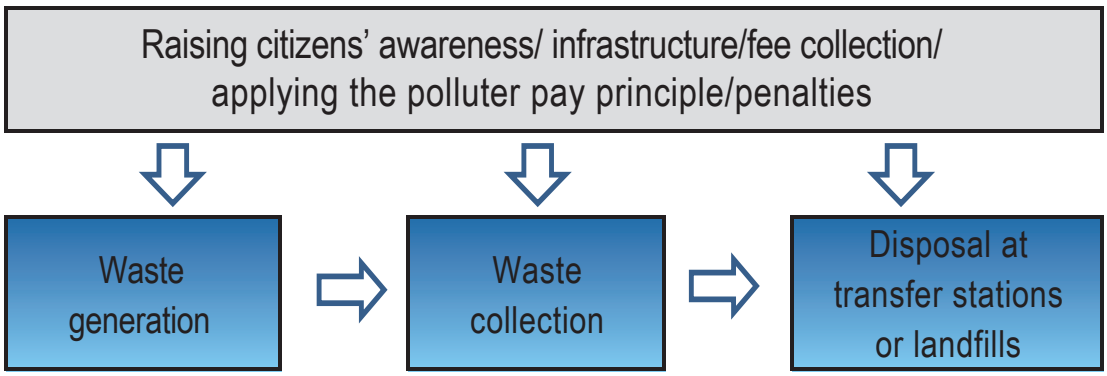
c. increasing incomes by collecting cleaning fee

d. raising citizens awareness

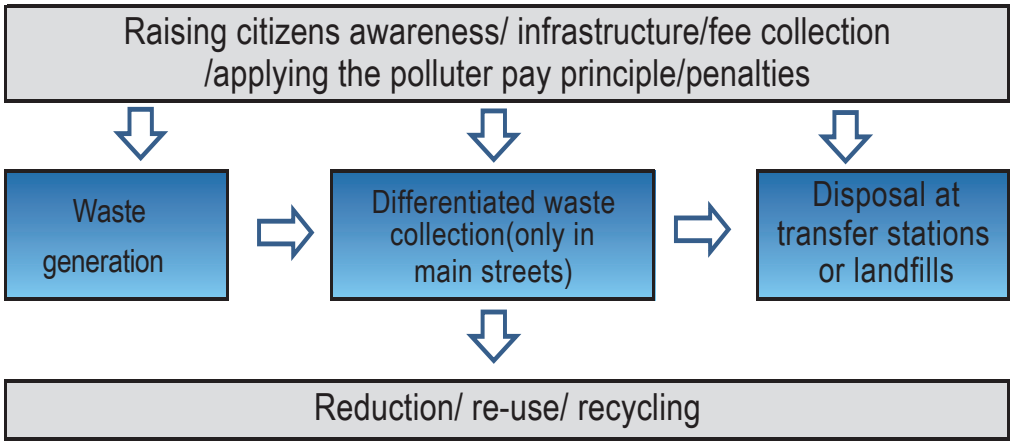
e. applying polluter pays principle / penalties

f. controlling the pollution in current areas

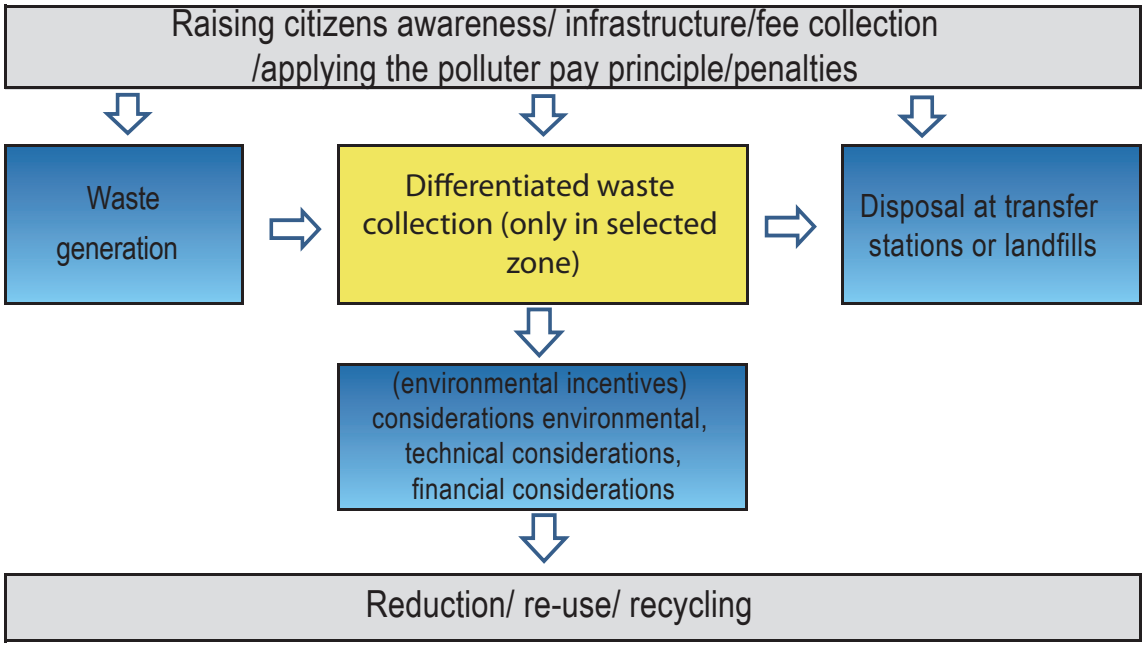
**SCENARIO I:** WASTE COLLECTION AND DISPOSAL



**SCENARIO II:** DIFFERENTIATED WASTE COLLECTION (ONLY IN MAIN STREETS) AND DISPOSAL




**SCENARIO II:** DIFFERENTIATED WASTE COLLECTION (ONLY IN MAIN STREETS) AND DISPOSAL



# 2. STATE OF PLAY AND THE PLAN

## 2.1 Arrangement of waste collection management

In the municipality of Kaçanik/Kačanik, arrangement of the waste collection service is carried out by the regional waste company RWC "Pastërtia" headquartered in Ferizaj/Uroševac. The coverage area expressed in percentage, 30.6% of households has enabled the participation of other operators in the waste management sector in few settlements. Second operator involved in waste management (WM) sector operates in four suburban locations, in **Kaçanik i Vjetër/Staro Kačanik, Begracë/Begrace, Banjicë/Banjica, Doganaj/Doganović.**

From the settlements covered by the second operator, company "Pastrimi", operates only in **Doganaj/Doganović**, providing services for 36 households, expressed as a percentage of the total number of households in this locality 15.7%, while 84.3% are covered by the second operator. Coverage in these four settlements by the company "Pastrimi" is 2.8% of the total number of 1.288 households.

*Table 3: Coverage of households by the second private operator, by settlements*

| Settlement | Households | Population | Covered | Not covered | Covered in % | Not covered in % |
|---|---|---|---|---|---|---|
| Doganaj/Doganović | 229 | 957 | 36 | 193 | 15.7% | 84.3% |
| Begracë/Begrace | 499 | 1,936 | - | 499 | 0.0% | 100.0% |
| Kaçanik i Vjetër/ Staro Kačanik | 438 | 1,840 | - | 438 | 0.0% | 100.0% |
| Banjicë/Banjica | 122 | 475 | - | 122 | 0.0% | 100.0% |
| **Total** | **1,288** | **5,208** | **36** | **1,252** | **2.8%** | **97.2%** |

## 2.2 Municipal wastes

In the municipality, waste collection service is provided in urban areas and in 15 rural settlements. However, the service in these areas does not cover all households. As a result of non coverage with service of all households, in some settlements are created illegal dump sites. Some households are provided with services such as supplying with plastic bags, which citizens usually buy at their cost. However, this service was shown as not efficient, because collection of waste in settlements is done once a week. The company which provides this service lacks technical equipment and in cases when they have problems with their means of transportation, wastes that are in trash bags, and which are collected door to door, remain uncollected and they scatter throughout streets and other public spaces in vicinity.

## 2.3 Categorization of clients

According to data from the company RWC "Pastërtia", the operating unit in Kaçanik/Kačanik deals with two groups of clients, households and business/institutions. Out of total 7.840 households, around 31% receive waste collection service.

*Table 4: Client's structure*

| Cateogory | No. of Clients |
|---|---|
| Households | 2.159 |
| Businesses | 240 |
| **Total** | **2.399** |

## 2.4 Current service areas

Current areas of waste collection service include the urban area of Kaçanik/Kačanik and 15 rural settlements. This service in these areas is provided partially, including three ways of waste collection:

- Door to door service (with plastic bags)
- Service with individual trash containers
- Service with collective trash containers

## 2.5 Wastes and their characteristics

In order to define waste structure, we have estimated waste types based on the calculations, at a national level, of waste generation per capita. In order to estimate waste structure, we have divided them in three groups as follows:

- **Estimated quantities of waste** indicate calculations based on waste generation, based on the number of population and population characteristics.
- **Managed wastes** indicate waste quantities collected and disposed at central landfills.
- **Unmanaged wastes** indicate waste quantities not managed, and disposed at illegal and other types of dump sites.

Estimated amounts are based on the calculation models, which have no significant deviation from the real information that serve to estimate calculated waste structure:

- The amount of disposed wastes (treated by the company) in one year is: 2015.91 t
- The amount of disposed wastes per capita is: 60.34 kg/year.
- Calculated waste amount generated, based on annual indexes, at the national level is 9.335t. The amount treated, expressed in percentage is 34.4%, or 3.208t/year, based on the calculated waste generation models.

*Table 5: Type of waste in the territory of municipality, based on indexes at national level*

| Type | Managed | Unmanaged | Calculated |
|---|---|---|---|
| Kitchen waste | 1,347 | 2,573 | 3,921 |
| Paper | 436 | 833 | 1,270 |
| Other | 369 | 705 | 1,074 |
| Plastic | 340 | 649 | 990 |
| Ash | 266 | 509 | 775 |
| Glass/bottles | 157 | 300 | 457 |
| Grass and wood (green waste) | 93 | 178 | 271 |
| Ash/soil | 93 | 178 | 271 |
| Metal | 42 | 80 | 121 |
| Textile | 38 | 74 | 112 |
| Ceramic and stones | 16 | 31 | 47 |
| Rubber and leather | 10 | 18 | 28 |
| Total | 3,208 | 6,127 | 9,335 |
| **In %** | **34.37%** | **65.63%** | **100.00%** |

## 2.6 Current waste services, facilities, vehicles, staff

General information on activities of the current operator:

- Current waste service is provided by the regional waste company RWC “Pastërtia” through its operative unit in Kaçanik/Kačanik.
- The headquarters of this company are located at the place called “Separacioni” near Kovaçec/ Kovačevac village, where there is an building with offices, but they lack furniture/inventory and technological equipment.
- The company has also an office at the municipal building, however they lack technological equipment and without furniture.
- As far as technical equipment, the company possess: two old trucks and a tractor.
- The number of staff employed in waste collection is 9.

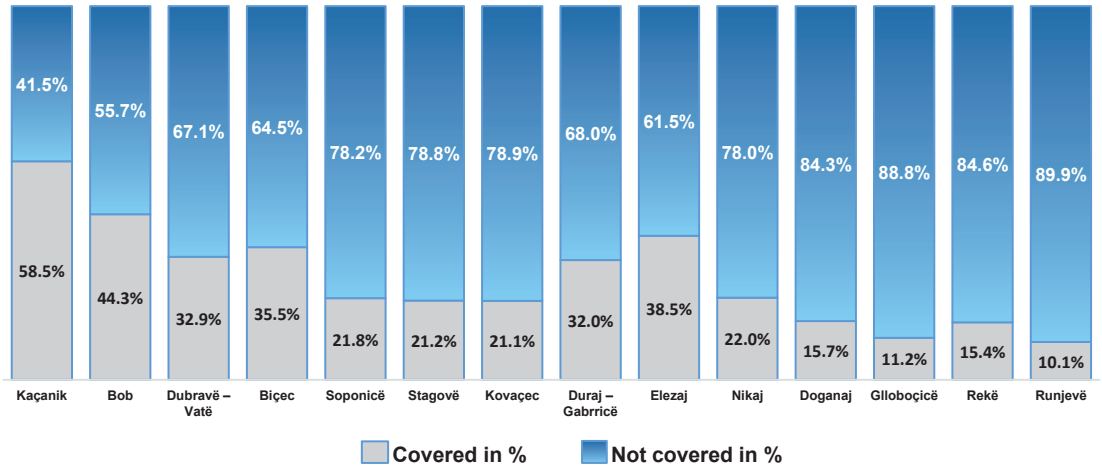



*Fig. 5 - Graphical presentation of the covering rate, based on the locations where the household WM services are provided*

*Table. 6: Locations covered with WM services, based on households*

| Settlements | Households | Population | Covered | Not covered | Covered in % | Not covered in % |
|---|---|---|---|---|---|---|
| Kaçanik/Kačanik | 2,690 | 10,393 | 1,573 | 1,117 | 58.5% | 41.5% |
| Bob | 334 | 1,606 | 148 | 186 | 44.3% | 55.7% |
| Dubravë/Dubrava – Vatë/Vata | 407 | 2,239 | 134 | 273 | 32.9% | 67.1% |
| Biçec/Bičevac | 324 | 1,496 | 115 | 209 | 35.5% | 64.5% |
| Soponicë/Sopotnica | 293 | 1,062 | 64 | 229 | 21.8% | 78.2% |
| Stagovë/Stagovo | 283 | 1,160 | 60 | 223 | 21.2% | 78.8% |
| Kovaçec/Kovačevac | 284 | 1,010 | 60 | 224 | 21.1% | 78.9% |
| Duraj/Dura – Gabricë/Gabrica | 172 | 944 | 55 | 117 | 32.0% | 68.0% |
| Elezaj/Eleza | 109 | 495 | 42 | 67 | 38.5% | 61.5% |
| Nikaj/Nika | 182 | 778 | 40 | 142 | 22.0% | 78.0% |
| Doganaj/Doganović | 229 | 957 | 36 | 193 | 15.7% | 84.3% |
| Gllobočicë/Globočica | 258 | 1,287 | 29 | 229 | 11.2% | 88.8% |
| Rekë/Reka | 169 | 652 | 26 | 143 | 15.4% | 84.6% |
| Runjevë/Runjevo | 168 | 698 | 17 | 151 | 10.1% | 89.9% |
| Begracë/Begrace | 499 | 1,936 | - | 499 | 0.0% | 100.0% |
| Kaçanik i Vjetër/Staro Kačanik | 438 | 1,840 | - | 438 | 0.0% | 100.0% |
| Koxhaj | 178 | 980 | - | 178 | 0.0% | 100.0% |
| Ivajë/Ivaja | 117 | 596 | - | 117 | 0.0% | 100.0% |
| Gajre | 108 | 574 | - | 108 | 0.0% | 100.0% |
| Banjicë/Banjica | 122 | 475 | - | 122 | 0.0% | 100.0% |
| Gjurgjedell/Đurđev Dol | 47 | 436 | - | 47 | 0.0% | 100.0% |
| Kotlinë/Kotlina | 124 | 416 | - | 124 | 0.0% | 100.0% |
| Gërlicë e Epërme/Gornja Grlica | 86 | 387 | - | 86 | 0.0% | 100.0% |
| Strazhë/Straza | 54 | 258 | - | 54 | 0.0% | 100.0% |
| Sllatinë/Slatina | 38 | 211 | - | 38 | 0.0% | 100.0% |
| Semajë/Semanje | 50 | 193 | - | 50 | 0.0% | 100.0% |
| Llanishtë | 38 | 172 | - | 38 | 0.0% | 100.0% |
| Korbliq | 31 | 124 | - | 31 | 0.0% | 100.0% |
| Drenushë/Drenova Glava | 11 | 34 | - | 11 | 0.0% | 100.0% |
| Nikoc/Nikovce | 1 | 0 | - | 1 | 0.0% | 100.0% |
| | 7,844 | 33,409 | 2,399 | 5,445 | 30.6% | |

## 2.7 Current tariffs and collection mechanisms

Current tariff system is regulated under the earlier decision of WWRO, where tariffs are the same for the whole region, and has the following system:

- Households 5€
- Businesses 8€, emptying of a container size 1.1 m³, institutions 13€, businesses 11.80€, businesses 19.7€ and fuel stations 26€.
- Collection is done door to door, and so far we don't have any form of conditionality or to obligate the citizens to pay their bills.
- The annual billed amount for waste collection services is: € 164.538.
- The annual amount collected for waste collection services is: € 111.426.
- The annual percentage of collection is: 67.72%.

## 2.8 Waste management operational arrangement

**Staff engaged:** Municipal unit "Pastërtia", a total of 9 employees for technical works.

**Service schedule:** In the urban area, service is provided every day, except on Sunday (day off). In some settlements the service is provided once a week, whereas in some other settlements, once a month.

**Machinery:** Currently the company has two old trucks and a tractor.

**Transfer stations:** Regional waste company RWC "Pastërtia", unit in Kaçanik/Kačanik, utilizes the transfer station at the village Gërlicë/Gerlica (Gurëz), municipality of Ferizaj/Uroševac, however most of collected wastes are not transferred here, instead they are transported directly at the regional landfill in Gjilan.

As a result, waste collection service is not performed efficiently since most of the time is spent on transportation, due to the long distance and due to lack of sufficient technical equipment.

## 2.9 Institutional wastes

Regional waste company RWC “Pastërtia”, unit in Kaçanik/Kačanik, provides waste collection service for most of public institutions, such as: schools, municipal administration, MFMC, FMC, FMA, Court, Kosovo Police, PTK, BCP in Gllboçicë/Globočica.

*Table 7: Collection of fees billed for the municipal institutions in Kaçanik/Kačanik, year 2014*

| No. | Institution | Place | Paid bill |
|---|---|---|---|
| 1 | Municipal administration | Kaçanik/Kačanik | 9,617 |
| 2 | MFMC | Kaçanik/Kačanik | 3,094 |
| 3 | Pre-school institutions (kindergarten) | Kaçanik/Kačanik | 1,315 |
| 4 | Primary school “Emin Duraku” | Kaçanik/Kačanik | 3,850 |
| 5 | Gymnasium “Skenderbeu” | Kaçanik/Kačanik | 1,754 |
| 6 | Vocational Secondary School | Kaçanik/Kačanik | 1,863 |
| 7 | Primary school “Idriz Seferi” | Bob | 548 |
| 8 | Primary school “Kadri Zeka” | Dubravë/Dubrava | 356 |
| 9 | Primary school “Nazmi Osmani” | Elezaj/Eleza | 658 |
| 10 | Primary school “Qamil Ilazi” | Kaçanik i Vjetër/ Staro Kačanik | 1,315 |
| 11 | Primary school “Ali Asllani | Doganaj/Doganović | 301 |
| 12 | Primary school “Kongresi i Manastirit” | Gllboçicë/Globočica | 329 |
| | Total | | 25,000 |

*Table 8: Institutions which do not receive waste collection services*

| No. | Institution | Place |
|---|---|---|
| 1 | Primary school “ Agim Bajrami” | Stagovë/Stagovo |
| 2 | Family Medicine Ambulance | Stagovë/Stagovo |
| 3 | Primary school “ 7 Shtatori” | Begracë/Begrace |
| 4 | Family Medicine Ambulance | Begracë/Begrace |
| 5 | Family Medicine Ambulance | Doganaj/Doganović |
| 6 | Primary school “Jusuf Gërvalla” | Biçec/Bičevac |
| 7 | Family Medicine Clinique | Biçec/Bičevac |
| 8 | Primary school “Jusuf Gërvalla” | Nikë/Nika |
| 9 | Primary school “Idriz Seferi” | Gajre |
| 10 | Primary school “Dituria” | Ivajë/Ivaja |
| 11 | Primary school “Naim Frashëri” | Kotlinë/Kotlina |
| 12 | Primary school “Emin Duraku” | Gjurgjedell/Đurđev Dol |
| 13 | Primary school | Vatë/Vata |
| 14 | Primary school “ Dituria” | Strazhë/Straza |
| 15 | Family Medicine Clinique | Strazhë/Straza |
| 16 | Family Medicine Clinique | Elezaj/Eleza |
| 17 | Primary school “Kadri Zeka” | Provoli |

## 2.10 Service to businesses

Out of 1.552 businesses, waste collection service is provided only to 240 businesses. First urban zone is covered with services on daily basis, whereas rural zones on weekly basis. Businesses are partially equipped with containers of different sizes.

## 2.11 Construction and solid wastes

Construction wastes and those of demolitions are a challenge for municipalities due to absence of the conditions and facilities for their treatment. The municipality has taken steps towards improving the problem of construction waste, as this year it signed a contract with a citizen? for disposal of such wastes, near the place called Guri i Shpum.

This site is used mainly by the urban area and nearby settlements. It is estimated that this site can hold solid wastes for a period of 4-5 years.

The municipality must also consider the possibility of finding another suitable location for the coverage of other remaining settlements, until the final resolution or finding other better alternative solution for the treatment of solid wastes in order minimize negative effects on the environment.

## 2.12 Other wastes

Other types of waste: electronic waste (e-wastes), animal residue waste, organic wastes and medical wastes.

**Electronic waste** – there is no accurate data for this type of waste. They may be seen in illegal dump sites or disposed not separated from household wastes.

**Animal residue waste** – for this type of waste currently is not provided waste collection service, because the company RWC “Pastërtia”, unit in Kaçanik/Kačanik, is prohibited to dispose such wastes. These wastes are disposed in an uncontrolled manner in public spaces or are buried in the ground in an individual manner. In our municipality, the total amount of this type of waste is low, but these wastes are brought from the surrounding municipalities.

**Medical wastes** – are not treated nor classified. Although they are quite hazardous wastes, they are collected in containers 1.1m³, and are disposed along with household wastes, and their quantity is around 2.5 - 3 ton/month.

**Cleaning of public spaces:** Public open space maintenance, in the municipality of Kaçanik/Kačanik, is carried out by two technical staff employed within Public Services Department. Both these staff members cover a large space, therefore covering and maintaining of these spaces only with two employees is very difficult.

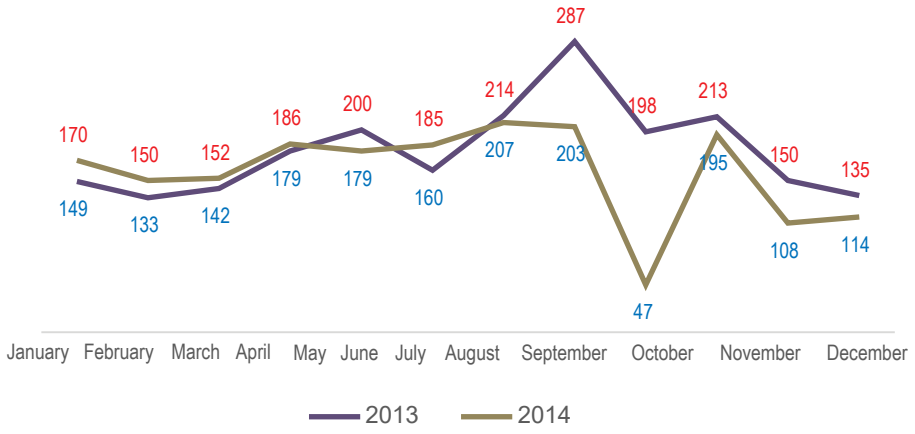
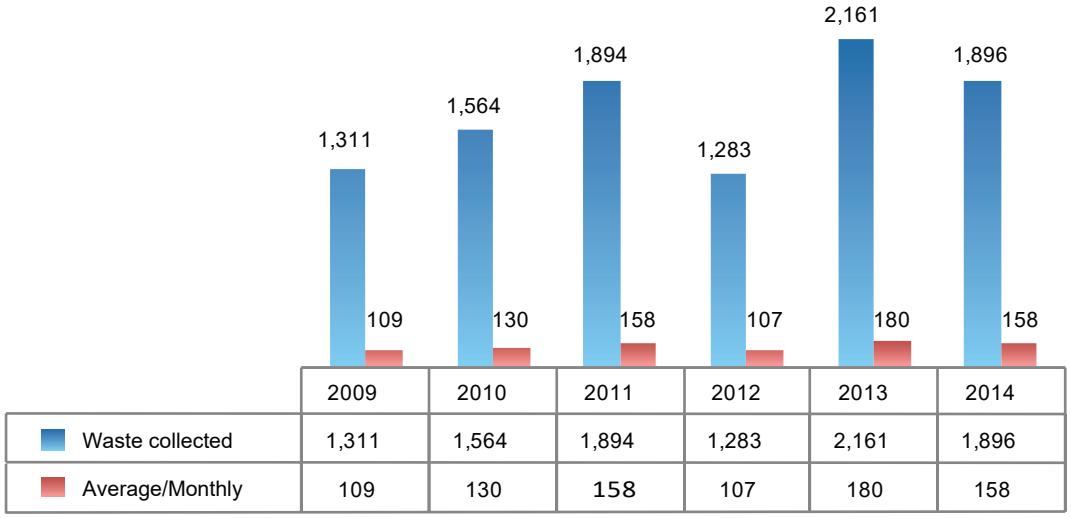



*Fig.6 – Waste disposal by month (2013/2014)*

2009-2015 waste disposal data indicates that the largest amount of waste was deposited in 2013, with 2.160.670 kg, while the least waste were disposed in 2012, around 1.282.500 kg, this low amount of disposed waste is reduced as a result of blockage of landfills by KLMC.




| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|
| Waste collected | 1,311 | 1,564 | 1,894 | 1,283 | 2,161 | 1,896 |
| Average/Monthly | 109 | 130 | 158 | 107 | 180 | 158 |

*Fig. 7 – Waste disposal through years (2009-2014)*

**The highest amount of the deposited wastes:**

- Deposited quantity: 2.160.670 kg or 2.160 t
- Annual value of waste quantity: €12.964, while
- Monthly value of waste quantity: € 1.080.

**Scrap vehicles** – their disposal: In our municipality we have several locations for disposal of scrap vehicles. We have four locations which are utilized for the deposition of outdated vehicles.

**Scrap yards** – its wastes: we have two locations used for the collection of scrap waste – one in village Runjevë/Runjevo and other in village Beljant.

**Rubber** - We do not have any specific location for the disposal of rubber wastes, but their disposal is done by burning them in different private spaces, which after they burn them, they take the wire material and they sell it at scrap yards.

## 2.13 Illegal dump sites

Not full coverage with WM services has an impact on the environment of the area causing environmental disturbances, which is expressed in constant creation of illegal dump sites, which are subject to waste treatment from the municipal budgets. Municipal authorities systematically monitor wild landfills and assess their impact on the environment. Reduction of the impact on environment is done by additional commitments of funds to mitigate the number and quantities of waste disposal in locations and areas (suburban areas, rivers, etc.) but not for the elimination of this phenomenon.

With increasing coverage with WM services we will mitigate the impact of the creation of wild landfills and reduction of the impact on vulnerable environments. In 2015, total of 35 wild landfills are identified in all municipal zones, including also the urban zone.

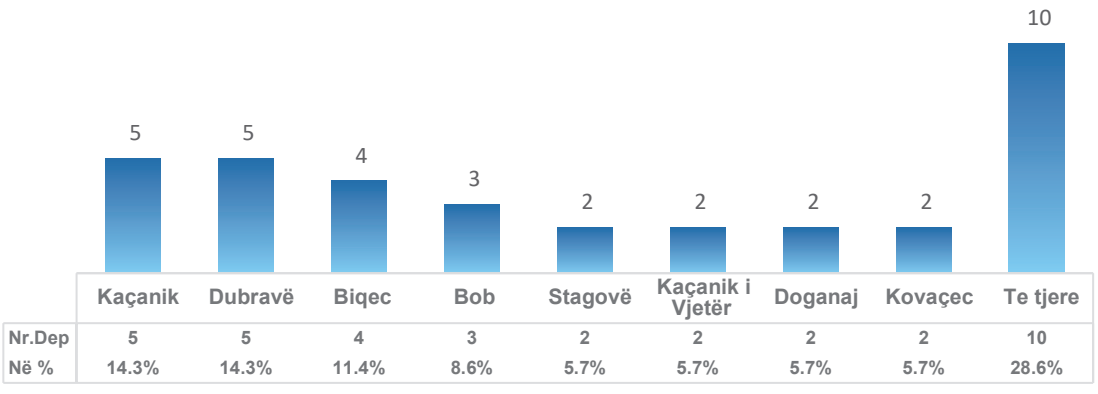



*Fig. 8 – Wild landfills expressed by settlements*

*Table 9: List of wild landfills expressed in number of locations*

| Place | Location | No. |
|---|---|---|
| Kaçanik/Kačanik | At the riverbank of Lepenc River, At the Banovina bridge | 1 |
| | At the neighbourhood “Malësia” | 1 |
| | Street “Agim Bajrami” | 1 |
| | At the junction of two rivers | 1 |
| | At the first tunnel, regional road Kaçanik/Kačanik-Hani Elezit/Elez Han | 1 |
| Kaçanik/Kačanik Total | | 5 |
| Dubravë/Dubrava | On both sides of the Lepenc River, near village Dubravë/Dubrava | 1 |
| | Neighbourhood Mema, Dubravë/Dubrava | 1 |
| | On the stream bed at the neighbourhood Imisht, Dubravë/Dubrava, | 1 |
| | Along the road to neighbourhood Zharku | 1 |
| | At the graveyard of the neighbourhood Vishi, in the village Dubravë/Dubrava | 1 |
| Total number in village Dubravë/Dubrava | | 5 |
| Biqec | Near Lepenc River, on the road to village Biçec/Bičevac-Nikë/Nika | 1 |
| | At the neighbourhood Koraçi-Bunjaku, in village Biçec/Bičevac | 1 |
| | At the place called “Ordonica”, Biçec/Bičevac | 1 |
| | At the graveyard of village Biçec/Bičevac | 1 |
| Total number in village Biqec | | 4 |
| Bob | Near the primary school of the village Bob | 1 |
| | Near the graveyard of the village Bob | 1 |
| | At the neighbourhood Zeneli, village Bob | 1 |
| Total number in village Bob | | 3 |
| Stagovë/Stagovo | At the neighbourhood Bajrami (railway tunnel), Stagovë/Stagovo | 1 |
| | At the “Udha e Kuqe”, Stagovë/Stagovo | 1 |
| Total number in Stagovë/ Stagovo | | 2 |
| Kaçanik i Vjetër/Staro Kačanik | Near the bridge of the Nerodime River, Kaçanik i Vjetër/Staro Kačanik | 1 |
| | At the neighbourhood Brati, Kaçanik i Vjetër/Staro Kačanik | 1 |
| Total number in Kaçanik i Vjetër/Staro Kačanik | | 2 |
| Doganaj/Doganović | In the riverbank of Lepenci River, Doganaj/Doganović | 1 |
| | At the “Fusha e Mulës” | 1 |
| Total number in Doganaj/ Doganović | | 2 |
| Kovaçec/Kovačevac | Near Lepenci River, in the village Kovaçec/Kovačevac | 1 |
| | At the Përroi i Kovaqve. | 1 |
| Total number in Kovaçec/Kovačevac | | 2 |
| Nikaj/Nika, Kamenicë/Kamenica, Kotlinë/Kotlina, Elezaj/Eleza, Llanishtë, Gajre, Sepetin, Guri i Shpuar, Begracë/Begrace, Kaçanik/Kačanik | | 10 |
| **Total** | | **35** |

# 3. OPERATIONAL WASTE MANAGEMENT PLANNING (2016-2021)

**The Local Waste Management Plan** (herein referred as MWMP) is a strategic planning document, which enables the Municipality of Kaçanik/Kačanik to implement national waste policy at municipal level. MWMP indicates the direction to be followed by municipal authorities in the future. Its aim is to guide municipal authorities towards practical measures and actions regarding the waste collection and treatment.

More specifically, MWMP in the best case scenario aims to provide:

1. **Alignment with the National Waste Policy and its objectives:** by contributing to the implementation of waste management policies and to the achievement of national objectives.
2. **Description of characteristics of the area and waste:** by giving a description of waste lines and responsibilities for them, of the waste volume that needs to be managed and its characteristics, and by determining the geographical coverage of the plan, etc.
3. **An assessment of existing waste collection schemes, equipment and staff involved and of main disposal and recuperation facilities:** in order to identify the existing situation of WM services and activities.
4. **Waste management alternatives:** in order to enable waste collection and treatment in compliance with national objectives and the municipal context; in addition, it helps the identification and assessment of waste collection and transportation techniques, treatment sites and technologies, disposal and waste recycling.

The Municipality of Kaçanik/Kačanik is obliged to enable the provision of the waste collection service, street cleaning, and recycling and disposal of urban and rural waste. To achieve this goal, the municipal authority, based on the legal framework which is currently applicable in the Republic of Kosovo, can provide and operate waste management in the four following modalities:

1. Organization by the municipal authority through municipal publicly owned enterprises.
2. Regional organization (regional publicly owned enterprises).
3. Delegated service organization to private enterprises/operators.
4. Joint (public-private) service organization.

## Selected model of operation

Following a prudent analyzing of the aforementioned alternatives, the municipal authority has decided to go for combined public and private model in the next 5-year period. More specifically, the model consists of:

- Operating with public operators (regional publicly owned enterprises); and
- Private operators.

However, it should be emphasized that the high municipal authorities are very interested to establish a publicly owned local company, but this is currently not possible due to legal and bureaucratic uncertainties, so the authorities have agreed that, until the next revision of the municipal plan, citizens will continue to be served by the existing operators and private operators. Regarding private operators in the Municipality of Kaçanik/Kačanik, operators that are not yet licensed by the municipal authority continue to be operational.

## Main waste management goals

In order to achieve the objectives set for the planning period of 2016-2021, the Municipality of Kaçanik/Kačanik will implement the following midterm activities:

- Drafting the Municipal Regulation on Waste Management 2016-2021
- Establishment of the Waste Management Sector under DEPS
- Definition of operational zones
- Establishment of the municipal waste management enterprise

## Drafting municipal regulations on waste management

According to the legal framework in force, each municipality in the territory of the Republic of Kosovo should have its own regulatory framework for waste management in the entire municipal territory. The local framework includes municipal regulations, guidelines, policies and decisions governing the waste management sector.

In order to complete its regulatory framework, the Municipality of Kaçanik/Kačanik should approve the following municipal acts in the period 2016-2021:

- Local Environmental Action Plan;
- Municipal Regulation on Waste Management in the territory of the Municipality of Kaçanik/Kačanik;
- Municipal Regulation on Environmental Protection;

- Regulation on the establishment of the Waste Management Unit; and
- Regulation on the establishment of the Municipal Waste Management Enterprise.

## Waste management sector

For purposes of implementing the waste management plan, the Municipality of Kaçanik/Kačanik will in 2017 establish the Waste Management Unit under the Department of Emergency and Public Services, which will have the following responsibilities:

- implement and monitor the waste management plan;
- develop operational plans for the collection and treatment of waste, defining areas of operation;
- set the fees and conditions for operators dealing with waste collection, transportation and treatment, and monitor and evaluate these companies;
- in cooperation with relevant stakeholders, develop monitoring procedures for activities that reduce the amount of illegal dumping, develop and manage plans for the elimination of illegal dump sites;
- in cooperation with relevant stakeholders, develop pilot projects aimed at improving the performance of the Municipality in the area of waste management.

Initially the unit will have three officials responsible for all aspects of waste management in the territory of the municipality. It will also serve as the office responsible for the developing and reviewing the waste management plan. The unit shall have its head, a waste management officer and a planning officer.

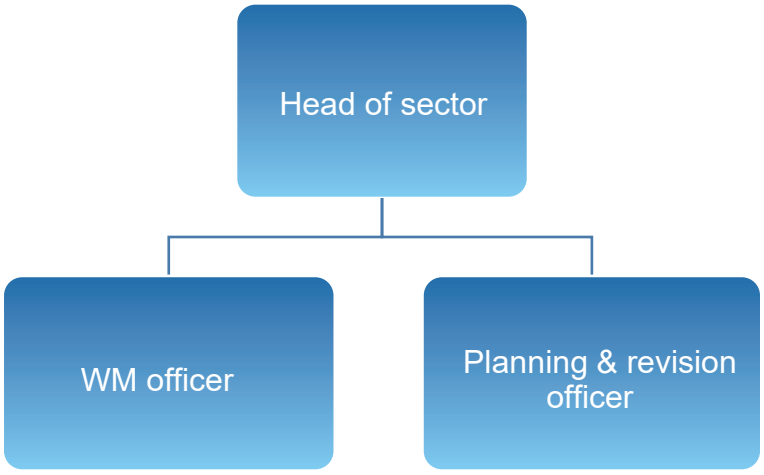



*Figure 9: Waste Management Unit Organizational Chart*

## Waste management service delivery schemes

In order to achieve its goals for waste collection in the entire territory of the municipality, the municipal authority, in cooperation with the Operational Unit “Pastërtia” in the Municipality of Kaçanik/Kačanik, will use the following organization schemes:

- Door-to-door collection scheme
- Collection scheme using 1.1 m³ containers
- Periodical scheme

**Door-to-door collection scheme:** will be implemented in urban and rural areas. Depending on the quantity of generated waste, collection will be done on a weekly basis in urban zones and suburban villages, whereas in remote areas it will be done on a biweekly basis and in some cases only once a month.

**Collection scheme using 1.1 m³ containers:** this mode of service is more specific and is mainly provided in urban areas, specifically in neighborhoods with collective housing units. This scheme will also be implemented in remote areas where the number of residents is small and access is difficult.

**Periodical scheme:** This scheme is actually more related to illegal dump sites, which represent a serious problem with serious consequences for the environment. This mode of operation will not have any specific action plan, but will rather be coordinated with the office of the environmental protection inspectorate and will be implemented depending on emerging circumstances.

## Establishment of the municipal publicly owned enterprise

Based on the need on the ground, but also on the right and the existing law on waste, the municipal authorities of Kaçanik/Kačanik are interested to deliver the waste collection service through a municipal public enterprise, namely to establish an enterprise that specializes in waste collection and treatment.

However, due to many central level bureaucratic difficulties, the municipal authorities have decided to continue until 2018 to be part of RWC Pastërtia, which covers the southeast region. The MWMP will be reviewed in 2018 and thereupon it will be decided to establish the public municipal enterprise.

According to preliminary analysis, the new company would begin municipal service delivery with 15 employees and 2 trucks. In fact, this company would be based on the Unit of Kaçanik/Kačanik, which is currently under the management of RWC Pastërtia headquartered in Ferizaj/Uroševac.

# 4. FINANCIAL PLAN

The financial plan 2016-2021 is based on the state of the environment, the current organization of the social situation impact and factors of financial opportunities related to waste management in the Municipality of Kaçanik/Kačanik.

The Public Company Pastërtia is the only operator providing Waste Management (WM) and has operated with positive turnover in the two last years (2013-2014).

In order to identify the features of the municipal area, data from the last population census were used, as well as property tax information, which contributed to the identification of the area and the distribution of households, construction sites, businesses, etc. We have engaged the Company ITEG specialized in satellite measurements to measure lengths and areas using the GIS system. Based on these measurements, the system for calculating waste, population distribution and population density was created. This further informed the establishment of the methodology for assessing population coverage with waste management services and calculating waste based on main categories.

The level of coverage with WM services in the municipality is 30.6 % or, in other words, 2.399 households are included in the waste management system (data provided by the company Pastërtia). According to the WM system, the company Pastërtia as the only operator is present in 17 locations. No location is completely covered by MM services, including the urban zone of the town of Kaçanik/Kačanik.

The objective of the Municipality of Kaçanik/Kačanik is to cover the entire territory with WM services by the end of panning period 2016-2021, which means providing WM services to 5444 households in all the settlements (30 settlements).

*Table 10: Environmental analysis: Essential information on the environment*

| Category | Value | In % |
|---|---|---|
| Number of inhabitants | 33,409 | |
| Number of households | 7,844 | |
| Area of the Municipality of Kaçanik/Kačanik in km² | 211 | |
| Waste generation (calculated) | 9,501 | |
| Covered with WM services (households) | 2,399 | 30.6% |
| Not covered with WM services (households) | 5,444 | 69.4% |

## 4.1 Main assumptions in the financial plan

In order to develop the financial plan for Waste Management (hereinafter: WM), a number of assumptions are required based on the observed situation in the waste management sector and the financial outcomes of the Public Company Pastërtia in 2014.

Assumptions are based on the objectives of the Municipality of Kaçanik/Kačanik for providing quality services to citizens and businesses by not considering the new potential forms of participation of other economic operators in waste management or the establishment of a municipal waste management company.

**The main assumptions of the financial plan include:**

- Based on received information, the Public Company Pastërtia has operated within profitability in the business years 2013 and 2014.
- Investments will be made based on short-term needs and capital investments aimed at achieving the objectives set by the Municipality of Kaçanik/Kačanik.
- Investment will be intensive in the first two years (2015/2016) to allow the immediate improvement of the quality level of WM services.
- Financing of investments will be done by external sources of the Public Company Pastërtia in the form of governmental grants, municipal subsidies and other sources. Investment support resources are supposed to be achievable on the basis of planned investments.
- Waste management costs will be reduced as a result of new investments, modernization of equipment, and modern approach in the waste management sector.
- The collection rate is planned to grow in all categories of customers (households, small businesses, large businesses and institutions) at reasonable rates.
- The level of generated waste collection is expected to grow during the planning period.
- The number of customers (new households and businesses) currently not included in the waste services will increase until full coverage by the end of the planning period 2016-2021.
- Covering the entire area with waste management services during the planning period 2016-2021.
- The implementation of the plan for the period 2016-2021 will have measurable financial effects as well as effects on the environment of the area.

## 4.2 Coverage plan for planning period 2015-2021 for non covered zones with WM services

**The effects of WM implementation in the entire territory of the Municipality of Kaçanik/Kačanik include:**

- WM Company Pastërtia currently has 2.399 customers in its list; this figure represents only 30.6 % of total households according to the last census.
- For purposes of the MWMP 2015-2021 implementation, we have adopted a scenario of full coverage of households by 2021.
- The inclusion of 5.440 households in the WM system will contribute to increased revenues from WM for the entire planning period 2016-2021 amounted to **261,356** Euros. It has also been estimated that 20 % of the future customers will not be able to pay for WM services due to their social status; therefore they have been exempted from calculation of revenues for the planning period.

Activities of WM service delivery are based on the distance from urban centers and concentrated in distances of 0-6 kilometers, which expressed in percentage, included 76.1 % of total clients included in the WM system. Based on estimates, in order to ensure full area coverage in the period 2016-2021, it is necessary to cover households based on smaller distances in the first years of plan implementation, including distances of 0-6 kilometers from the town of Kaçanik/Kačanik as a top priority, and moving to rural and remote rural areas in later periods until reaching full coverage in 2021.

The economic reasoning for distance based implementation lies on relevant impact factors of plan implementation, including:

- Ability of quick low-cost inclusion of households in the WM system;
- Enabling immediate revenue generation from WM services;
- Creating opportunities for new investments based on the revenue increase due to inclusion of households in the WM system; and
- Geographic configuration and road infrastructure enable reasonable cost WM services.

*Table 11: Service delivery by distance in number of households*

| Category | 0-3 | 3-6 | 6-9 | 9-12 | 12-40 | Total | In % |
|---|---|---|---|---|---|---|---|
| - WM services provided | 1,781 | 17 | 305 | 170 | 126 | 2,399 | 30.6% |
| - WM services not provided | 1,527 | 259 | 1,587 | 655 | 1,417 | 5,445 | 69.4% |
| Total | **3,308** | **276** | **1,892** | **825** | **1,543** | **7,844** | **100.0%** |
| **Coverage rate** | **53.8%** | **6.2%** | **16.1%** | **20.6%** | **8.2%** | **30.6%** | |

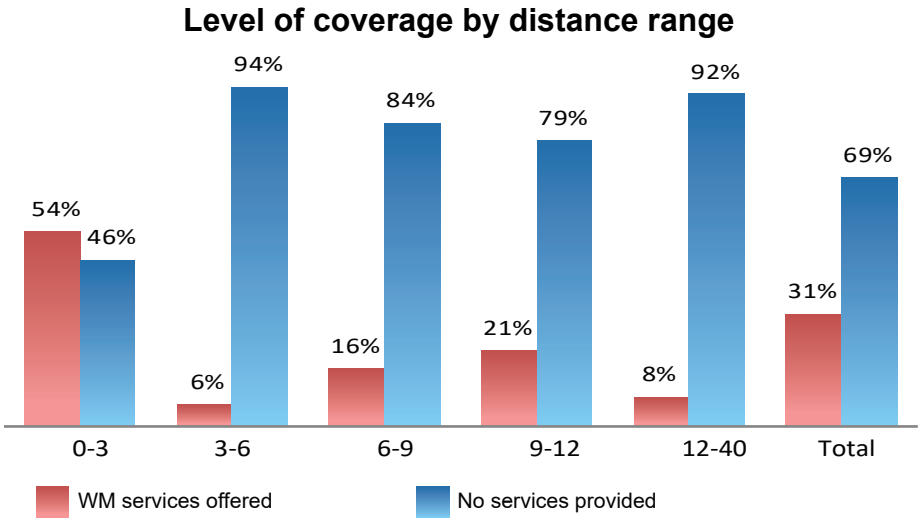



*Figure: 10 – Level of coverage based on distance ranking*

## 4.3 Implementation of coverage plan for planning period 2016-2021 – financial and environmental impacts

The plan developed for the period 2016-2021 was based on the need of full area coverage with WM services, which is the planning axis and has multiplier effects in all segments covered with WM services, by impacting on measurable financial factors and, in particular, on environmental protection factors, with a particular emphasis on increasing the quality of life of the inhabitants of the area.

**Environmental impact factors** are significant in terms of managing waste in the estimated quantity of 6.232 tons, which is currently not managed and is located in open space in illegal dump sites, in rivers and in locations not dedicated to waste treatment, such as in suburban neighborhoods or other areas.

**Financial factors** have a direct influence in increased revenues and growth of WM operators. Area coverage with WM services will enable the growth of employment in the sector and the possibility of employment in recyclable waste collection.

### 4.3.1. Implementation of coverage plan for planning period 2016-2021 – financial impact of plan implementation

Area coverage has a multidimensional financial impact in several aspects, including:

- Increased revenues of WM operator;
- Increased tax collection as a result of increased client base in the WM system;
- Impact on direct employment of population in WM operators, and employment in the collection and division of recyclable waste; and
- Indirect financial cost by reducing WM cost for the elimination of illegal dump sites, which are a result of the non-coverage of households in the WM system. National level experience has shown that the management of not systematized waste is a burden to municipal budgets causing additional costs depending on the emergency for environmental status alleviation.

Generated revenues for the period of 2016-2021 are estimated to 261.120 Euros, with the implementation of area coverage with WM services based on implementation time. It is estimated that a category of households will be unable to meet monthly obligations for WM services due to their social status; this category is exempted from payment of services, amounting to 20 % of total customers.

*Table 12: Revenue calculation – MWMP implementation 2016 -2021*

| Category | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|
| Households | 1,786 | 1,587 | 777 | 943 | 352 | 5,445 |
| Projected revenues (fee: 5 Euros) per year | 107,160 | 95,220 | 46,636 | 56,558 | 21,120 | 326,695 |
| Exempt from payment | 20% | 20% | 20% | 20% | 20% | |
| Households/active | 85,728 | 76,176 | 37,309 | 45,247 | 16,896 | 261,356 |
| Annual revenues | 85,728 | 76,176 | 37,309 | 45,247 | 16,896 | 261,356 |
| **Total municipal revenues** | **85,728** | **161,904** | **199,213** | **244,460** | **261,356** | |

**Revenue estimates-WM implementation 2016-2021**

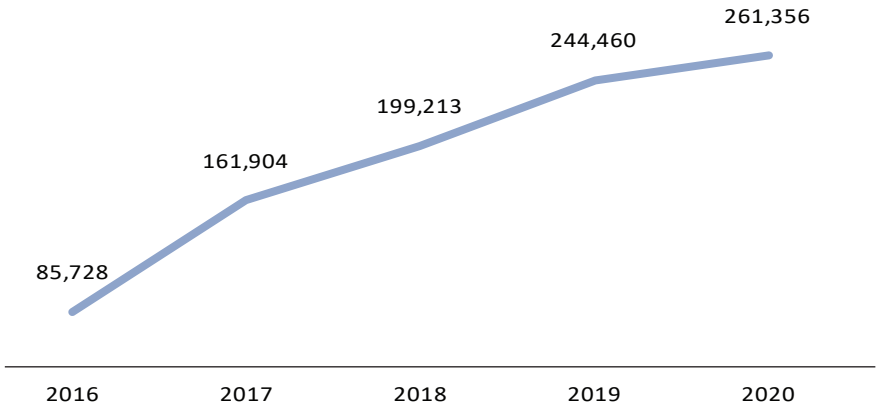



*Figure 11: Revenue estimates*

## 4.4 Required new capital investments

The required investments for the planned period 2016-2021 amounted to 534.000 €, estimated by waste management category.

*Table 13: Planned investments for 2016-2021*

| No. | Category | 2016 | 2017 | 2018 | 2019 | 2020 | Total | In % |
|---|---|---|---|---|---|---|---|---|
| I. | 1.1 $m^3$ containers | 35,000 | 35,000 | 20,000 | - | - | 90,000 | 54.9% |
| II. | Transportation & garage equipment | 65,000 | - | - | - | - | 65,000 | 39.6% |
| III. | Public awareness | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 6,000 | 3.7% |
| IV. | Other equipment | 3,000 | - | - | - | - | 3,000 | 1.8% |
| | **Total investment** | **104,200** | **36,200** | **21,200** | **1,200** | **1,200** | **164,000** | **100.0%** |
| | In % | 63.5% | 22.1% | 12.9% | 0.7% | 0.7% | 100.0% | |

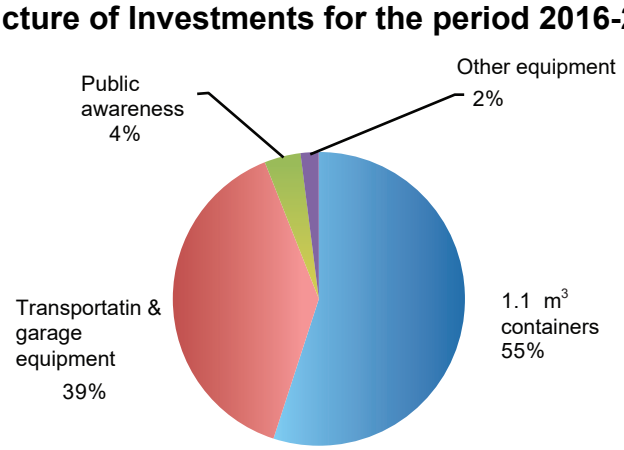



*Figure 12: Structure of investments for the period 2016-2020*

Planned investments, depending on the timing and value of investments, are divided in two investment periods:

- Period 2016/2017 in the amount of 164.000 € or, expressed in percentage, 85.6% of total investments; and
- Period 2017/2021 in the amount of 23.000 € or, expressed in percentage, 14.4% of total investments.

*Table 14: Planned investments for two investment periods*

| No. | Category | 2016/2017 | 2018/2020 | Total | In % |
|---|---|---|---|---|---|
| I. | 1.1 m³ containers | 70,000 | 20,000 | 90,000 | 54.9% |
| II. | Transportation & garage equipment | 65,000 | - | 65,000 | 39.6% |
| III. | Public awareness | 2,400 | 3,600 | 6,000 | 3.7% |
| IV. | Other equipment | 3,000 | - | 3,000 | 1.8% |
| | **Total investments** | **140,400** | **23,600** | **164,000** | **100.0%** |
| | In % | 85.6% | 14.4% | 100.0% | |

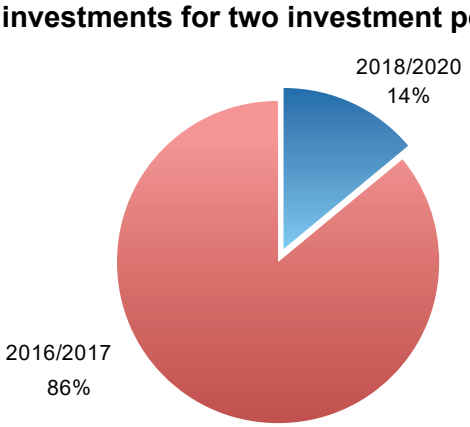



*Fig. 13 – Planned investments for two investment periods*

Investments will enable the achievement of objectives set in the strategy of the Municipality of Kaçanik/Kačanik on waste management and improvement of service quality, as well as will have a direct impact on the overall cost by reducing it based on new equipment that improve the effectiveness of waste management.

*Table 15: Planned investments 2016-2020*

| No. | Category | Year | Pcs | Price | Investment Value | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I. | Containers 1.1 m³ | | | | | | | | | | |
| 1 | Containers 1.1 m³ | 2016 | 50 | 300 | 15.000 | 15.000 | | | | | 15.000 |
| 2 | Containers 1.1 m³ | 2017 | 50 | 300 | 15.000 | | 15.000 | | | | 15.000 |
| 3 | Containers 120 Liters | 2016 | 1.000 | 20 | 20.000 | 20.000 | | | | | 20.000 |
| 4 | Containers 120 Liters | 2017 | 1.000 | 20 | 20.000 | | 20.000 | | | | 20.000 |
| 5 | Containers 120 Liters | 2018 | 1.000 | 20 | 20.000 | | | 20.000 | | | 20.000 |
| | **Total containers 1.1 m³** | | | | **90.000** | **35.000** | **35.000** | **20.000** | **-** | **-** | **90.000** |
| II. | Transportation & garage equipment | | | | | | | | | | |
| 1 | Compressing truck - 4-7 Tons | 2016 | 2 | 15.000 | 30.000 | 30.000 | | | | | 30.000 |
| 2 | Loader | 2016 | 1 | 20.000 | 20.000 | 20.000 | | | | | 20.000 |
| 3 | Garage | 2016 | 1 | 15.000 | 15.000 | 15.000 | | | | | 15.000 |
| | Total transp. & garage equipment | | | | **65.000** | **65.000** | **-** | **-** | **-** | **-** | **65.000** |
| III. | Public awareness | | | | | | | | | | |
| 1 | Public relations | 2016 | 1 | 1.200 | 1.200 | 1.200 | | | | | 1.200 |
| 2 | Public relations | 2017 | 1 | 1.200 | 1.200 | | 1.200 | | | | 1.200 |
| 3 | Public relations | 2018 | 1 | 1.200 | 1.200 | | | 1.200 | | | 1.200 |
| 4 | Public relations | 2019 | 1 | 1.200 | 1.200 | | | | 1.200 | | 1.200 |
| 5 | Public relations | 2021 | 1 | 1.200 | 1.200 | | | | | 1.200 | 1.200 |
| | **Total public awareness** | | | | **6.000** | **1.200** | **1.200** | **1.200** | **1.200** | **1.200** | **6.000** |
| IV. | Other equipment | | | | | | | | | | |
| 2 | Other | 2016 | 1 | 3.000 | 3.000 | 3.000 | | | | | 3.000 |
| | **Total other equipment** | | | | **3.000** | **3.000** | **-** | **-** | **-** | **-** | **3.000** |
| | **Total investments** | | | | **164.000** | **104.200** | **36.200** | **21.200** | **1.200** | **1.200** | **164.000** |

## 4.5 Fees

Current fees are consistent with fees at local level which are unified. Costs to revenues ratio fee estimation provided information as follows: reasonable at cost operating level, which makes possible a good operating process of RWC “Pastërtia”.

Fees are unique for the whole territory of Municipality of Kaçanik/Kačanik, by not taking into account the distance neither the level of population density. 17.916 residents or expressed in percentage 46.9% of total population is concentrated in a distance of 0-6 km. High population density and concentration in a narrow area affects in a lower cost of waste collection compared to remote areas or those with a lower density.

Fees are unique for businesses, and there is no distinction based on the level of waste generation which have an effect on the costs of waste collection and management which shall be applied in differential rates depending on the level of waste generation. Unique fixed fees are not applicable for all businesses despite waste generation rates, by applying fees based on containers.

Fees for hazardous waste, organic solid waste, medicinal waste, etc are considered as household waste; therefore it is essential that these fees to be treated in a special way depending on waste management costs.

Assessment of cost recovery for 2014 is favourable for RWC "Pastërtia", and all costs are covered by revenues from existing fees and collection rate which provides a financial solvency of the company.

**Cost recovery** (cost coverage from revenues) means that fees reflect all costs related to the provision of waste management services including operative, maintenance, and capital, replacing and financing costs. Based on the information provided for 2014 as well as their analysis, the cost recovery is at an acceptable level.

**Financial viability** of applied fees enables the financial viability of service, where anyone shall pay its contribution, and where income from waste shall progressively increase (year after year) in order to ensure the financial sustainability of waste management.

Waste management fees for customers are defined based on a financial logic. The principal **"polluter pays"** means that a waste producers shall pay the total cost of their waste management, depending on waste generation.

## 4.6 Costing of the WM sector of RWC ''Pastërtia''

Recognition of costs is an essential factor in estimation of waste management operations, in order to recognize waste management costs of the region/municipality where the costs have been analysed based on GIZ methodology. The estimation of waste management fees has provided information regarding possible costs and fees, applicable in the level of overall equipment conditions and municipal features.

**By analysing waste management costs, we have calculated financial indicators of fees in the following segments:**

- Waste collection cost for household/clustomer is 2.35 EUR. These costs consist costs allocated by waste collection
  - Direct cost of waste management is 2.35 EUR.
  - Indirect cost of waste management is 1.49 EUR.
  - Total cost (direct + indirect) of waste management is 3.84 Eur.
- For 2014, waste collection costs amounted to 56,284 EUR, while expressed in percentage 83% from total cost of waste management.
- Waste disposal costs in central landfills amounted to 11,376 EUR, while expressed in percentage 17% of the total waste management costs
- Annual amount of waste collected is 1,896 tons.

**In fee calculation of waste management costs, the following factors have special impact:**

- Geographical extention of the area, which consists of hilly areas with disproportionate concentration of population (households);
- Technical conditions and insufficient number of equipments;
- The distance between landfills for waste disposal;
- Waste disposal costs, and the quality of landfills (maintenance, access in the landfill).

*Table 16: Costing of RWC "Pastërtia"- all expenditures*

| Cost type | | Annual costs in 2014 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Waste collection | | Waste transfer | | Landfill | | Road cleaning, Others | | WM total cost | |
| Direct | Operating equipment (Depreciation) | 1,125 | | - | | - | | - | | 1,125 | |
| | Operating staff | 28,368 | | - | | - | | - | | 28,368 | |
| | Consumable material for operations | 26,791 | | - | | 11,376 | | - | | 38,167 | |
| | Subtotal operating cost | 83% | 56,284 | 0% | 0 € | 17% | 11,376 | 0% | - | 100% | 67,660 |
| Indirect | Garages (Depreciation) | - | | | | | | | | - | |
| | Transfer Station (Depreciation) | | | - | | | | | | - | |
| | Landfill building (Depreciation) | | | | | - | | | | - | |
| | The workshop, store (Depreciation) | - | | - | | - | | - | | - | |
| | Administration building (Depreciation) | - | | - | | - | | - | | - | |
| | Workshop equipments (Depreciation) | - | | - | | - | | - | | - | |
| | Consumable tools (at the workshop ) | - | | - | | - | | - | | - | |
| | Indirect staff | 35,797 | | - | | 7,235 | | - | | 43,032 | |
| | Other indirect costs | - | | - | | - | | - | | - | |
| | Subtotal: Indirect cost | 83% | 35,797 | 0% | - | 17% | 7,235 € | 0% | - | 100% | 43,032 |
| **Total cost of WM services** | | **83%** | **92,081** | **0%** | **-** | **17%** | **18,611 €** | **0%** | **-** | **100%** | **110,692** |
| Performance: Collection / Transfer / Disposal | | 1,896 t/a | | | | 1,896 t/a | | | | 1,896 t/a | |
| Direct costs per unit | | 30 €/t | | 0 €/t | | 6 €/t | | | | 36 €/t | |
| Indirect costs per unit | | 19 €/t | | 0 €/t | | 4 €/t | | | | 23 €/t | |
| Total costs per unit | | 49 €/t | | 0 €/t | | 10 €/t | | | | 58 €/t | |

| Population served | The average cost of SWM services of households per month | | | | | |
|---|---|---|---|---|---|---|
| **2,403 households** | **Waste collection** | **Waste transfer** | **Landfill** | **Road's cleaning, Others** | **WM total cost** | |
| Direct cost | 1.95 | - | 0.39 | - | 2.35 | |
| Indirect cost | 1.24 | - | 0.25 | - | 1.49 | |
| Total cost of WM services | 3.19 | - | 0.65 | - | 3.84 | |
| Collection, transfer, disposal of waste | | | 3.84 | - | 3.84 | |

## 4.7 Clients of WM sector for 2016-2021 period

Clients of WM sector counts 2.159 households and 240 institutions and businesses, which in total amounts to 2.399 clients. With the plan for area coverage, which is based on defined criteria, is made the assessment of impact in clients' growth for the planned period and also for their financial impact and environmental factors.

A number of households have been excluded from payment of services due social and economical reasons which provides a reliable planning for the planned period. Services shall be provided to this group of clients but payments shall be reviewed for meeting the obligations by the municipality's financial sources or other sources. Experience in local level for private operators in WM services, provide ''bonuses'' for vulnerable categories in zones covered withi their activities.

Growth assessment of clients in this sector: Based on population census, until the end of the planning period 2015-2021 is foreseen an inclusion of **7.839** households. 20% of new clients involved in this sector are estimated that cannot fulfil the obligations for WM.

**Active client** means every client who is considered to fulfil the obligations and willing to use WM services.

*Table 17: Clients movement for planned period 2015-2020*

| Category | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| Household | 2,399 | 4,185 | 5,772 | 6,549 | 7,492 | 7,844 |
| Plan implementation (inclusion in WM) | | 1,786 | 3,373 | 4,150 | 5,093 | 5,445 |
| Active clients in WM | 2,399 | 3,828 | 5,097 | 5,719 | 6,473 | 6,755 |

**Graphical presentation of clients' movement for planned period 2015-2020**

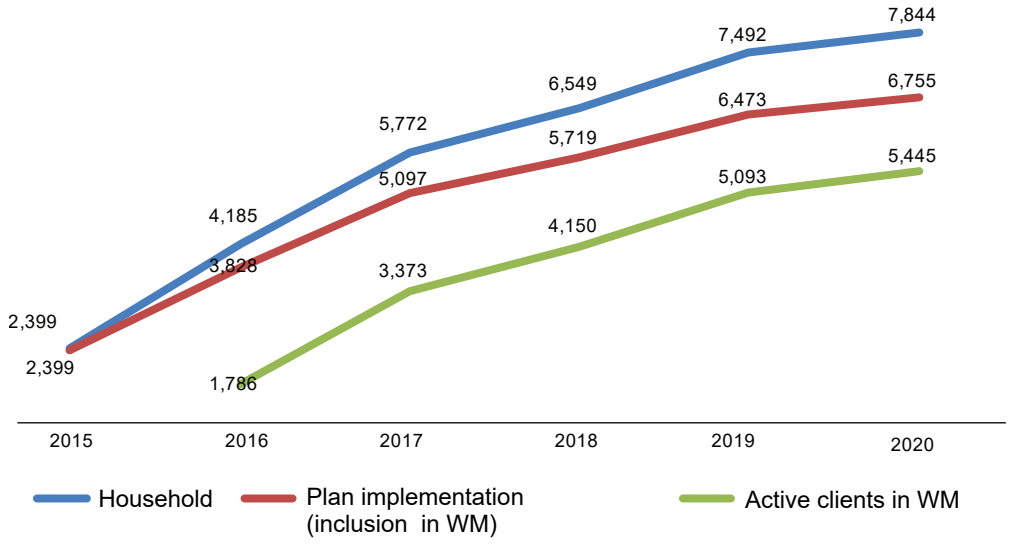



*Fig. 14 – Graphical presentation of clients' movement for planned period 2015-2020*

*Table 19: Clients movement for planned period 2015-2021 – based on determined zones*

| Zone | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| Zone 1 | 1.738 | 3.300 | 3.503 | 3.514 | 3.638 | 3.669 |
| Zone 2 | 468 | 692 | 1.415 | 1.688 | 1.688 | 2.009 |
| Zone 3 | 193 | 193 | 854 | 1.347 | 2.166 | 2.166 |
| **Total** | **2.399** | **4.185** | **5.772** | **6.549** | **7.492** | **7.844** |
| Coverage ratio | 30,6% | 53,4% | 73,6% | 83,5% | 95,5% | 100% |

## 4.8 Plan implementation - main operation factors for the period 2016-2021

Implementation of the plan for planned period 2016-2021 for the purposes of monitoring is divided into impact groups:

**1. Environment impact factors**

1.1 Implementation of the WM plan for the main categories

- Households
- Number of locations based on territorial division by municipal criteria
- Number of residents by settlements

| Categories/Implementation | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|
| Households | 1.786 | 1.587 | 777 | 943 | 352 | 5.445 |
| No. of locations | 10 | 5 | 6 | 4 | 30 | 30 |
| Number of residents | 7.208 | 6.912 | 3.798 | 3.878 | 1.735 | 23.530 |
| Generated waste (in tons) | 2.543 | 1.753 | 864 | 755 | 317 | 6.232 |

1.2 Implementation of the plan based on households - not included in WM system

- Households not included in WM system
- Households planned to be included in WM system for planned period 2016-2020

| Zone/Implementation | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|
| Zone 1 | 1.562 | 203 | 11 | 124 | 31 | 1.931 |
| Zone 2 | 224 | 723 | 273 | - | 321 | 1.541 |
| Zone 3 | - | 661 | 493 | 819 | - | 1.973 |
| **Total** | **1.786** | **1.587** | **777** | **943** | **352** | **5.445** |

## 1.3 Implementation of plan based in households – 100% coverage

- Households planned to use of WM services. Total number of households
- Zones determined based on criteria
- Coverage of households with WM services

| Zone/Implementation | 2016 | 2017 | 2018 | 2019 | 2021 | Total |
|---|---|---|---|---|---|---|
| Zone 1 | 1.738 | 3.300 | 3.503 | 3.514 | 3.638 | 3.669 |
| Zone 2 | 468 | 692 | 1.415 | 1.688 | 1.688 | 2.009 |
| Zone 3 | 193 | 193 | 854 | 1.347 | 2.166 | 2.166 |
| **Total** | **2.399** | **4.185** | **5.772** | **6.549** | **7.492** | **7.844** |
| In % | 30,6% | 53,4% | 73,6% | 83,5% | 95,5% | 100% |

## 1.4 Implementation of the plan based on number of residents – not included in WM system

- The number of residents who will be included in WM for planned period 2016-2021

| Zone/Implementation | 2016 | 2017 | 2018 | 2019 | 2021 | Total |
|---|---|---|---|---|---|---|
| Zone 1 | 6.411 | 1.204 | 34 | 416 | 124 | 8.189 |
| Zone 2 | 797 | 2.954 | 1.502 | - | 1.611 | 6.864 |
| Zone 3 | - | 2.754 | 2.262 | 3.462 | - | 8.477 |
| **Total** | **7.208** | **6.912** | **3.798** | **3.878** | **1.735** | **23.530** |
| In % | 30,6% | 29,4% | 16,1% | 16,5% | 7,4% | 100% |

## 1.5 Implementation of the plan based on calculations of generated waste, expressed in tons.

- The quantity of waste planned to be included in WM system for the planned period 2016-2021
- Wastes calculated based on estimation per capita

| Zone/Implementation | 2016 | 2017 | 2018 | 2019 | 2021 | Total |
|---|---|---|---|---|---|---|
| Zone 1 | 2.252 | 295 | 9 | 76 | 23 | 2.655 |
| Zone 2 | 291 | 755 | 384 | - | 294 | 1.723 |
| Zone 3 | - | 704 | 472 | 679 | - | 1.854 |
| **Total** | **2.543** | **1.753** | **864** | **755** | **317** | **6.232** |
| In % | 40,8% | 28,1% | 13,9% | 12,1% | 5,1% | 100% |

## 2. Financial impact factors

### 2.1 Revenues calculated for period 2016-2021

- Revenues from WM services based on existing fees.
- Included clients who use WM services cannot afford meeting of obligations due to social status (20% of total active clients)
- Households included in WM system for planned period can afford meeting of obligations.

| Kategoria | 2016 | 2017 | 2018 | 2019 | 2021 | Total |
|---|---|---|---|---|---|---|
| Households | 1.786 | 1.587 | 777 | 943 | 352 | 5.445 |
| Calculated revenues (5 EUR fee) in year | 107.160 | 95.220 | 46.636 | 56.558 | 21.120 | 326.695 |
| Excluded from payment | 20% | 20% | 20% | 20% | 20% | 0% |
| Active households | 85.728 | 76.176 | 37.309 | 45.247 | 16.896 | 261.356 |
| Annual revenues | 85.728 | 76.176 | 37.309 | 45.247 | 16.896 | 261.356 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Total revenues (cumulative) | 85.728 | 161.904 | 199.213 | 244.460 | 261.356 | |

### 2.2 Planned investments for period 2016-2021

- Capital investments necessary for improving WM services for planned period

| Investimet - 2016-2021 | 2016 | 2017 | 2018 | 2019 | 2021 | Total |
|---|---|---|---|---|---|---|
| I. Containers 1,1 $m^3$ | 35.000 | 35.000 | 20.000 | - | - | 90.000 |
| II. Vehicles for transport & garage | 65.000 | - | - | - | - | 65.000 |
| III. Public awareness | 1.200 | 1.200 | 1.200 | 1.200 | 1.200 | 6.000 |
| IV. Other tools | 3.000 | - | - | - | - | 3.000 |
| **Total: Investments** | **104.200** | **36.200** | **21.200** | **1.200** | **1.200** | **164.000** |

# 5. MWMP ACTION PLAN

Municipality shall compile an internal operating regulation for the company dealing with cleaning/ greening, in particular for cleaning service, in which shall be defined staff duties and rights.

They shall respect, based on a study made for this purpose, the placement of waste bins which shall be used by people living in apartments.

They shall draft the waste collection schedule defining road cleaning and waste collection days.

They shall periodically place the road cleaning schedule in easily noticeable places, in order to inform the community.

## Financial field

Government sources - revenues from central government, municipal government sources, payments for public services, other environmental fees and environmental taxes; Supporting the private sector - e.g. financing by the industry for their pollution expenditures, and public-private partnerships in order to finance environmental infrastructure and services;

International financing - foreign currency borrowing by banks abroad, loans and grants from bilateral donors and international NGOs and grants, as well as loans from international development agencies.

**They shall perform the operating cost calculation of cleaning service, taking into consideration:**

- Labour force,
- Forecast for wage increase by decisions of the municipal assembly,
- Adding two other services such as: public education and extension of waste system.

They shall take organizational measures to collect fee from citizens

They shall approve indicators of the table in which are presented trends of fee increase in years as long-term implementation objectives

## Investments field

They shall purchase metal waste containers with 1.1 $m^3$, in order to distribute them, based to the study made for this purpose.

Purchase of containers is a necessity to reduce the cost and improve the quality of this service.

They shall provide necessary funds for purchasing a technological machine in order to introduce modern technological processes of cleaning services as well as to make in full operation the metal waste containers.

They shall build a waste disposal site with approximately 5 hectares area.

## 5.1 Action plan, budget and implementation period

Action plan presented below includes overall objectives, measures, targets and investments, responsibilities, timeframe, as well as potential sources of investments.

- **Objective 1:** Growth and expansion of the waste collection service in areas not covered.
- **Objective 2:** Strengthening the system of waste management.
- **Objective 3:** Raising the awareness of population

| No | Measures | Purpose of investment | Actions Leading Agency | Activity | Time period | Suggested sources | No Years | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | O1 M1 | Establishment of municipal waste management infrastructure – Establishment and empowerment of waste management sector, | Municipality | Management | 2016-2017 | Municipality | 2 | | | | | |
| 2 | O1 M2 | The municipality should prepare an internal regulation on functioning for the enterprise dealing with the cleaning/ greening by zones, especially for cleaning service, where duties and rights of the staff would be determined | Municipality | Management | 2016 | Municipality | 1 | | | | | |
| 3 | O2 M1 | Gradual reduction of hazardous waste by using existing industrial capacities for hazardous waste treatment | Municipality/ WM Company | Investment | 2017-2021 | Municipality/ Companies | 4 | | | | | |
| 4 | O2 M2 | Transformation of illegal dump sites into green areas, | Municipality/ WM Company | Investment | 2016-2021 | Municipality / MMPH/Donator | 5 | | | | | |
| 5 | O2M3 | Improvement of waste collection service from the RWC “Pastërtia” within the transitional three-year period. Provision of waste collection services by private operators or establishment of publicly-owned enterprise | Municipality/ WM Company | Investment | 2016 – 2018 | Municipality | 3 | | | | | |
| 6 | O2M4 | Commencement of separating and recycling waste | Municipality/ MESP | Investment | 2017-2021 | Municipality/ MESP/Donor | 4 | | | | | |
| | O1M3 | Determination of fee and increasing waste collection fee | Municipality | Management | 2016 | Municipality | 1 | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | O2O3M1 | Gradual increase of inclusion of population in waste treatment system through the promotion | Municipality/ MESP | Invest-ment | 2016-2021 | Municipality/ Donor | 4 | | | | | |
| 8 | O2M4 | Construction of the landfill of 5 ha for construction waste | Municipality / Private companies | Invest-ment | 2016-2017 | Municipality/ Donor/ Companies | 5 | | | | | |
| 9 | O1M4 | Establishment of central data-base and information on state of waste management | Municipality | Manage-ment | 2016-2017 | Municipality | 4 | | | | | |
| 10 | O2M3 | Ensure purchasing of metallic waste containers, with a capacity of 1.1 $m^3$ to distribute them in the territory of munic-ipality according to the study conducted for this purpose. | Municipality/ WM Company | Invest-ment | 2016-2019 | Municipality / Donator/Com-panies | 4 | | | | | |
| 11 | O2M4 | Ensure purchasing of the ma-chinery necessary for waste collection | WM Company | I Invest-ment | 2017 -2021 | Municipality / Donator/Com-panies | 4 | | | | | |
| 12 | O1M | Finalisation of municipal waste management regula-tions in accordance with the law | Municipality | Manage-ment | 2016-2017 | Municipality | 2 | | | | | |
| 13 | O2 O3M1 Invest-ment | Gradual reduction of waste at the source before disposal and energetic uses of the waste or waste reuse, | Municipality/ WM Company | Aware-ness-rais-ing | 2017-2021 | Municipality/ Donor | 4 | | | | | |

# 6. CITIZENS EDUCATION AND AWARENESS-RAISING

One of the components important for the implementation of waste management plan is public education and awareness-raising on issues affecting environmental protection. This component is in compliance with the philosophy that will serve as a basis for addressing the cleaning service provision for the coming years, promoting the participation of community for its active contribution in this process.

All public services, but especially cleaning service represent problems not only of technical and financial levels, but especially with regard to public communication. This is not a challenge of Municipality of Kaçanik/Kačanik solely, but as such should be addressed at the regional and national level.

Problems faced related to the environmental pollution are conditioned largely by the level of citizens' awareness on their responsibilities to be reflected for its progress and proper administration.

In this context, we can mentioned problems impacting not only the quality of cleaning service but broader for the environment, which were identified during the joint discussions with the working group in the municipality, e.g. regular payment of the fee: Even though it was considered the economic situation and level of the living for the citizens of the Municipality of Kaçanik/Kačanik, or non-qualitative cleaning services provided in the past, the level of incomes from fees of citizens is at very low levels. In general, there is an inherited perception on services provided by the municipality as the rights of the citizens, not including obligations for paying the fee or tax for a certain service, which obligations should cover a considerable part of costs for the relevant service.

Behaviour in relation to dumping of waste and maintenance of public spaces: many problems in outcomes expected from a regular and effective cleaning service and which impact the increase of cots, are impacted from the practice of not dumping wastes at the appropriate place and pollution of public spaces, as streets, sidewalks, different parts, etc...

1. In this context, the process for more active participation and communication with public was focused on:
    - Conducting an observation to assess the performance of cleaning services, problems, responsible stakeholders, state of play, opportunities for solution and expected contributions.
2. Establishment of a working group with the citizen representatives and organization of meetings for discussions related to the proposals of the waste management plan and closer cooperation with the community.
3. Identification of 4 target groups which should be included in the awareness-raising plan and short-term and medium-term interventions;

Community, business, school and local media are stakeholders which will play an important role in managing the quality of cleaning service in the coming years.

- Component for raising citizens' awareness will include various forms of awareness-raising in a short-term plan, such as:
- Developing and handing over information sheets on the schedule for waste collection and dumping then in certain places,
- Maintenance by using containers,
- Separating and dumping inert waste, implementation
- Placing substantial posters in most frequented public places, organization of meetings with citizens for payment of current fee, and organization of classes in schools for environmental issues,
- Cary out of voluntary actions for cleaning in special areas and of various massive actions,
- Review and assessment of school curriculum with a view of introducing the environmental education in the following years,
- Establishment of environmental groups with pupils of schools and relevant cabinets. Identification of teacher training needs for environmental education,
- Qualification of teachers and update of environmental education methodology.

# 7. MONITORING

Monitoring process is an extremely important element for sustainability of the efficient implementation of the proposed NWMP scheme. Monitoring should be realized by the municipal working group and by the working group of citizens. Both of these structures will provide accurate information on the progress of implementation of the scheme in all its elements through:

1. Organization of field visits during working hours as per weekly schedule along the whole year
2. Organising of open consultation meetings with representative groups of citizens

Monitoring implementation of the waste collection and transport schedule by the group of citizens will consist in inclusion of citizen's opinion and their evaluation for:

- Better use of public funds for this service
- The degree of citizens satisfaction with regard to the cleanliness of the city
- Collection of fee payment for cleaning services
- Community contributions in favour of schedule implementation
- Monitoring the implementation waste collection and transport schedule by cleaning and greening company will consist in the following technical indicators:

- Daily quantity of waste pick up by pilot zones
- Daily / weekly frequency of waste pick up
- The effectiveness of use of the vehicle by road infrastructure
- Maintenance of the containers and their technological compatibility with the
- Vehicles for waste transport
- Filling the landfill site

For all these technical indicators, the respective annual financial indicators and human resources utilised will be monitored.

Monitoring Report will serve for taking further steps to improve cleaning service and reduce costs for its realization. The planed budget for each year, by covering this service will consider monitoring indicators for planning of funds and their efficient distribution by respective items.

# ANNEX I: PLAN IMPLEMENTATION FOR THE PERIOD 2016-2021

## 1. Plan implementation – by households

### 1.1 Plan implementation- by households by zones

| Zone | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|
| Zone 1 | 1.562 | 203 | 11 | 124 | 31 | 1.931 |
| Zone 2 | 224 | 723 | 273 | - | 321 | 1.541 |
| Zone 3 | - | 661 | 493 | 819 | - | 1.973 |
| **Total** | **1.786** | **1.587** | **777** | **943** | **352** | **5.445** |

### 1.2 Plan implementation- by households by distances of locations

| Distance | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|
| 0-3 | 1.527 | - | - | - | - | 1.527 |
| 3-6 | 259 | - | - | - | - | 259 |
| 6-9 | - | 1.587 | - | - | - | 1.587 |
| 9-12 | - | - | 655 | - | - | 655 |
| 12-40 | - | - | 122 | 943 | 352 | 1.417 |
| **Total** | **1.786** | **1.587** | **777** | **943** | **352** | **5.445** |

### 1.3 Plan implementation- by households by year of implementation

| Zone | Year/Implementation | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|---|
| Kaçanik/Kačanik | 2016 | 1,117 | | | | | 1,117 |
| Bob | 2016 | 186 | | | | | 186 |
| Kovaçec/Kovačevac | 2016 | 224 | | | | | 224 |
| Runjevë/Runjevo | 2016 | 151 | | | | | 151 |
| Gajre | 2016 | 108 | | | | | 108 |
| Biçec/Bičevac | 2017 | | 209 | | | | 209 |
| Stagovë/Stagovo | 2017 | | 223 | | | | 223 |
| Gjurgjedell/Đurđev Dol | 2017 | | 47 | | | | 47 |
| Llanishtë | 2017 | | 38 | | | | 38 |
| Ivajë/Ivaja | 2017 | | 117 | | | | 117 |
| Rekë/Reka | 2017 | | 143 | | | | 143 |
| Soponicë/Sopotnica | 2017 | | 229 | | | | 229 |
| Nikaj/Nika | 2017 | | 142 | | | | 142 |
| Nikoc/Nikovce | 2017 | | 1 | | | | 1 |
| Kaçanik i Vjetër/Staro Kačanik | 2017 | | 438 | | | | 438 |
| Drenushë/Drenova Glava | 2018 | | | 11 | | | 11 |
| Dubravë/Dubrava – Vatë/Vata | 2018 | | | 273 | | | 273 |
| Doganaj/Doganović | 2018 | | | 193 | | | 193 |
| Koxhaj | 2018 | | | 178 | | | 178 |
| Banjicë/Banjica | 2018 | | | 122 | | | 122 |
| Begracë/Begrace | 2019 | | | | 499 | | 499 |
| Gërlicë e Epërme/Gornja Grlica | 2019 | | | | 86 | | 86 |
| Elezaj/Eleza | 2019 | | | | 67 | | 67 |
| Duraj/Dura – Gabrricë/Gabrica | 2019 | | | | 117 | | 117 |
| Kotlinë/Kotlina | 2019 | | | | 124 | | 124 |
| Semajë/Semanje | 2019 | | | | 50 | | 50 |
| Strazhë/Straza | 2021 | | | | | 54 | 54 |
| Sllatinë/Slatina | 2021 | | | | | 38 | 38 |
| Gllobojcicë/Globočica | 2021 | | | | | 229 | 229 |
| Korbliq | 2021 | | | | | 31 | 31 |
| Total | | 1,786 | 1,587 | 777 | 943 | 352 | 5,445 |

## 2. Plan implementation - by number of residents involved in the WM system

### 2.1 Plan implementation: by number of residents

| Zone | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|
| Zone 1 | 6.411 | 1.204 | 34 | 416 | 124 | 8.189 |
| Zone 2 | 797 | 2.954 | 1.502 | - | 1.611 | 6.864 |
| Zone 3 | - | 2.754 | 2.262 | 3.462 | - | 8.477 |
| **Total** | **7.208** | **6.912** | **3.798** | **3.878** | **1.735** | **23.530** |

### 2.2 Plan implementation - by number of inhabitants by distances

| Distance | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|
| 0-3 | 6.007 | - | - | - | - | 6.007 |
| 3-6 | 1.201 | - | - | - | - | 1.201 |
| 6-9 | - | 6.912 | 3.323 | - | - | 10.234 |
| 9-12 | - | - | 475 | 3.878 | 1.735 | 6.088 |
| 12-40 | - | - | - | - | - | - |
| **Total** | **7.208** | **6.912** | **3.798** | **3.878** | **1.735** | **23.530** |

### 2.3 Plan implementation; Number of residents by year of implementation

| Area | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|
| Kaçanik/Kačanik | 4,316 | | | | | 4,316 |
| Bob | 894 | | | | | 894 |
| Kovaçec/Kovačevac | 797 | | | | | 797 |
| Runjevë/Runjevo | 627 | | | | | 627 |
| Gajre | 574 | | | | | 574 |
| Biçec/Bičevac | | 965 | | | | 965 |
| Stagovë/Stagovo | | 914 | | | | 914 |
| Gjurgjedell/Đurđev Dol | | 436 | | | | 436 |
| Llanishtë | | 172 | | | | 172 |
| Ivajë/Ivaja | | 596 | | | | 596 |
| Rekë/Reka | | 552 | | | | 552 |
| Soponicë/Sopotnica | | 830 | | | | 830 |
| Nikaj/Nika | | 607 | | | | 607 |
| Nikoc/Nikovce | | 0 | | | | 0 |
| Kaçanik i Vjetër/Staro Kačanik | | 1,840 | | | | 1,840 |
| Drenushë/Drenova Glava | | | 34 | | | 34 |
| Dubravë/Dubrava – Vatë/Vata | | | 1,502 | | | 1,502 |
| Doganaj/Doganović | | | 807 | | | 807 |
| Koxhaj | | | 980 | | | 980 |
| Banjicë/Banjica | | | 475 | | | 475 |
| Begracë/Begrace | | | | 1,936 | | 1,936 |
| Gërlicë e Epërme/Gornja Grlica | | | | 387 | | 387 |
| Elezaj/Eleza | | | | 304 | | 304 |
| Duraj/Dura – Gabrricë/Gabrica | | | | 642 | | 642 |
| Kotlinë/Kotlina | | | | 416 | | 416 |
| Semajë/Semanje | | | | 193 | | 193 |
| Strazhë/Straza | | | | | 258 | 258 |
| Sllatinë/Slatina | | | | | 211 | 211 |
| Gllboçicë/Globočica | | | | | 1,142 | 1,142 |
| Korbiliq/Korbulic | | | | | 124 | 124 |
| Total | 7,208 | 6,912 | 3,798 | 3,878 | 1,735 | 23,530 |

# 3. Estimated generated waste

## 3.1 Plan implementation - number of estimated generated waste

| Zone | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|
| Zone 1 | 2.252 | 295 | 9 | 76 | 23 | 2.655 |
| Zone 2 | 291 | 755 | 384 | - | 294 | 1.723 |
| Zone 3 | - | 704 | 472 | 679 | - | 1.854 |
| **Total** | **2.543** | **1.753** | **864** | **755** | **317** | **6.232** |

## 3.2 Plan implementation - number of estimated generated waste by distances

| Distance | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|
| 0-3 | 2.192 | - | - | - | - | 2.192 |
| 3-6 | 351 | - | - | - | - | 351 |
| 6-9 | - | 1.753 | - | - | - | 1.753 |
| 9-12 | - | - | 777 | - | - | 777 |
| 12-40 | - | - | 87 | 755 | 317 | 1.158 |
| **Total** | **2.543** | **1.753** | **864** | **755** | **317** | **6.232** |

## 3.3 Plan implementation of estimated generated waste by year of implementation

| Zone | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|
| Kaçanik/Kačanik | 1,575 | | | | | 1,575 |
| Bob | 326 | | | | | 326 |
| Kovaçec/Kovačevac | 291 | | | | | 291 |
| Runjevë/Runjevo | 183 | | | | | 183 |
| Gajre | 168 | | | | | 168 |
| Biçec/Bičevac | | 247 | | | | 247 |
| Stagovë/Stagovo | | 234 | | | | 234 |
| Gjurgjedell/Đurđev Dol | | 111 | | | | 111 |
| Llanishtë | | 31 | | | | 31 |
| Ivajë/Ivaja | | 152 | | | | 152 |
| Rekë/Reka | | 141 | | | | 141 |
| Soponicë/Sopotnica | | 212 | | | | 212 |
| Nikaj/Nika | | 155 | | | | 155 |
| Nikoc/Nikovce | | 0 | | | | 0 |
| Kaçanik i Vjetër/Staro Kačanik | | 470 | | | | 470 |
| Drenushë/Drenova Glava | | | 9 | | | 9 |
| Dubravë/Dubrava – Vatë/Vata | | | 384 | | | 384 |
| Doganaj/Doganović | | | 206 | | | 206 |
| Koxhaj | | | 179 | | | 179 |
| Banjicë/Banjica | | | 87 | | | 87 |
| Begracë/Begrace | | | | 353 | | 353 |
| Gërlicë e Epërme/Gornja Grlica | | | | 71 | | 71 |
| Elezaj/Eleza | | | | 56 | | 56 |
| Duraj/Dura – Gabrricë/Gabrica | | | | 164 | | 164 |
| Kotlinë/Kotlina | | | | 76 | | 76 |
| Semajë/Semanje | | | | 35 | | 35 |
| Strazhë/Straza | | | | | 47 | 47 |
| Sllatinë/Slatina | | | | | 39 | 39 |
| Gllboçicë/Globočica | | | | | 208 | 208 |
| Korbiliq/Korbulic | | | | | 23 | 23 |
| **Total** | **2,543** | **1,753** | **864** | **755** | **317** | **6,232** |

# ANEXS II: Determining waste management zones –detailed summary based on relevant variables for WM

## 1. Zoning summary table

| Category | Zone 1 | Zone 2 | Zone 3 | Total |
|---|---|---|---|---|
| No. of locations | 11 | 9 | 10 | 30 |
| Averae in km | 9,23 | 12,02 | 11,23 | |
| Surf. km² | 87 | 74 | 50 | 211 |
| No. of households | 3.669 | 2.009 | 2.166 | 7.844 |
| No. of households/services offered WM | 1.738 | 468 | 193 | 2.399 |
| Level of covering with WM Ser. | 47,4% | 23,3% | 8,9% | 30,6% |
| No. of inhabitants | 15.049 | 8.993 | 9.367 | 33.409 |
| Waste generated per year | 5.153 | 2.280 | 2.067 | 9.501 |

## 2. Zoning of locations by defined criteria (Summary table)

| Zone | Nr. locations | Average in Km | Suf.Km² | No. households | No. inhabitants | Waste generation per year |
|---|---|---|---|---|---|---|
| Zone 1 | 11 | 9.23 | 87 | 3,669 | 15,049 | 5,153 |
| Zone 2 | 9 | 12.02 | 74 | 2,009 | 8,993 | 2,280 |
| Zone 3 | 10 | 11.23 | 50 | 2,166 | 9,367 | 2,067 |
| **Total** | **30** | | **211** | **7,844** | **33,409** | **9,501** |

## 3. Number of residents by zone and the main categories

| Inhabitants | Zone 1 | Zone 2 | Zone 3 | Total | In % |
|---|---|---|---|---|---|
| Urban | 11,999 | 1,010 | - | 13,009 | 38.9% |
| Suburban | 1,272 | - | - | 1,272 | 3.8% |
| Rural | 1,066 | 6,227 | 4,901 | 12,194 | 36.5% |
| Remote | 712 | 1,756 | 4,466 | 6,934 | 20.8% |
| **Total** | **15,049** | **8,993** | **9,367** | **33,409** | **100.0%** |
| In % | 45.0% | 26.9% | 28.0% | 100.0% | |

## 4. Cadastral zones by main categories - Surface in Km²

| Kategoria | Zone 1 | Zone 2 | Zone 3 | Total | In % |
|---|---|---|---|---|---|
| Urban | 20 | 5 | - | 25 | 11,8% |
| Suburban | 10 | - | - | 10 | 4,7% |
| Rural | 31 | 31 | 25 | 87 | 41,2% |
| Remote | 28 | 38 | 23 | 89 | 42,3% |
| **Total** | **89** | **74** | **48** | **211** | **100%** |
| In % | 42,1% | 35,2% | 22,7% | 100% | |

## 5. Zoning based on defined criteria – Zone 1

| Zone | Orientation | Surface Km² | Distance | Number of households in the municipality | Number of persons in the municipality | Waste gener. per year |
|---|---|---|---|---|---|---|
| Zone 1 | | | | | | |
| Kaçanik/Kačanik | South East | 16 | 0.5 | 2,690 | 10,393 | 3,793 |
| Bob | North West | 4 | 1.0 | 334 | 1,606 | 586 |
| Drenushë/Drenova Glava | North East | 3 | 9.3 | 11 | 34 | 9 |
| Gajre | South East | 3 | 4.7 | 108 | 574 | 168 |
| Gjurgjedell/Đurđev Dol | North East | 13 | 7.5 | 47 | 436 | 111 |
| Ivajë/Ivaja | North West | 8 | 8.1 | 117 | 596 | 152 |
| Korbiliq/Korbulic | North West | 16 | 37.0 | 31 | 124 | 23 |
| Kotlinë/Kotlina | North West | 11 | 13.3 | 124 | 416 | 76 |
| Nikoc/Nikovce | South West | 5 | 8.8 | 1 | 0 | 0 |
| Runjevë/Runjevo | South West | 6 | 3.3 | 168 | 698 | 204 |
| Llanishtë | North West | 1 | 8.0 | 38 | 172 | 31 |
| **Total** | | **87** | | **3,669** | **15,049** | **5,153** |

## 6. Zoning based on defined criteria – Zone 2

| Zone | Orientation | Surface Km² | Distance | Number of households in the municipality | Number of persons in the municipality | Waste gener. per year |
|---|---|---|---|---|---|---|
| **Zone 2** | | | | | | |
| Biçec/Bičevac | North West | 18.1 | 6.3 | 324 | 1,496 | 382 |
| Gllboçicë/Globočica | South West | 13.0 | 23.8 | 258 | 1,287 | 235 |
| Kovaçec/Kovačevac | North East | 5.3 | 3.0 | 284 | 1,010 | 369 |
| Nikaj/Nika | South East | 3.2 | 8.8 | 182 | 778 | 199 |
| Rekë/Reka | South East | 2.3 | 8.1 | 169 | 652 | 167 |
| Sllatinë/Slatina | North East | 20.8 | 20.3 | 38 | 211 | 39 |
| Soponicë/Sopotnica | North West | 3.1 | 8.5 | 293 | 1,062 | 271 |
| Strazhë/Straza | North East | 4.7 | 19.9 | 54 | 258 | 47 |
| Dubravë/Dubrava – Vatë/Vata | North West | 3.9 | 9.5 | 407 | 2,239 | 572 |
| **Total** | | **74** | | **2,009** | **8,993** | **2,280** |

## 7. Zoning based on defined criteria – Zone 3

| Zone | Orientation | Surface Km² | Distance | Number of households in the municipality | Number of persons in the municipality | Waste gener. per year |
|---|---|---|---|---|---|---|
| **Zone 3** | | | | | | |
| Banjicë/Banjica | North West | 3 | 12.1 | 122 | 475 | 87 |
| Begracë/Begrace | North East | 12 | 12.1 | 499 | 1,936 | 353 |
| Doganaj/Doganović | South West | 4 | 10.4 | 229 | 957 | 245 |
| Duraj/Dura – Gabrricë/Gabrica | North West | 2 | 12.8 | 172 | 944 | 241 |
| Elezaj/Eleza | North East | 3 | 12.3 | 109 | 495 | 90 |
| Gërlicë e Epërme/ Gornja Grlica | South East | 1 | 12.2 | 86 | 387 | 71 |
| Kaçanik i Vjetër/Staro Kačanik | South West | 10 | 8.9 | 438 | 1,840 | 470 |
| Koxhaj | North East | 1 | 10.6 | 178 | 980 | 179 |
| Semajë/Semanje | North West | 3 | 14.3 | 50 | 193 | 35 |
| Stagovë/Stagovo | North East | 12 | 6.6 | 283 | 1,160 | 296 |
| **Total** | | **50** | | **2,166** | **9,367** | **2,067** |

# ANEX III

**STATEMENT ON JUSTIFYING THE DETERMINATION FOR NON PREPARATION OF THE STRATEGIC ASSESSMENT REPORT ON THE ENVIRONMENT, LOCAL WASTE MANAGEMENT PLAN (MWMP) 2016 to 2021 IN MUNICIPALITY OF KAÇANIK/KAČANIK**

## 1. Summary of MWMP

Municipality of Kaçanik/Kačanik, thanks to the support of DEMOS has prepared the MWMP. Initially a Working Group was created composed of representatives from various interest parties, representatives of relevant directorates of Kaçanik/Kačanik, representative of the regional company for waste collection, as well as representatives of other institutions of the civil society.

An important role in the process of preparing the MWMP have played experts engaged by DEMOS, who have worked closely with municipal experts in identification and description of the current situation regarding waste the management, financial analysis and economic and financial opportunities for improvement of waste management, definition of objectives, definition of actions and activities that should be undertaken to improve the waste management.

**MWMP includes:**

- Increasing the extension of waste collection services:
- Collection and transportation of waste to landfill, transfer to Ferizaj/Urôevac, or in some specific cases, transportation to the regional landfill in Gjilan/Gnjilane;
- Creation of the billing system and increase of revenue collection
- Building institutional capacity of the municipal waste management:
- Capacity building of the regional company (municipal unit) for waste collection;
- Awareness campaign on waste management;

**MWMP does not include:**

- Construction of landfills, either permanent or transfer landfills;
- Construction of waste treatment plants;
- Construction of physical infrastructure for waste management
- Other projects, for which according to the law would be required an Environmental Impact Assessment

**Law No. 03/L-230 on Strategic Environmental Assessment,**
**Article 3**

1. SEA shall be carried out for certain plans or programs when exist possibility that realization are likely to have significant environmental effects.
2. Drafting of SEA report is obligatory for plans and programs from spatial planning and city planning field, on land use, agriculture, forestry, fisheries, hunting, energy, industry, mines, traffic, waste management, water management, telecommunication, tourism, which give a frame for future development projects, which undergoes environmental impact assessment according to the Environmental Impact Assessment Law, as well as, plans and programs which, taking into the consideration location in which they realize, can have an effect on nature protected zones, on nature habitats and in wild flora and fauna.

Determination not to prepare the SEA report for 2016-2021 MWMP in the municipality of Kaçanik/ Kačanik is in accordance with the above mentioned article. Point 2 of this article emphasizes that **"... SEA is mandatory for plans in the field of ... waste management ...";** But in the second part of this paragraph continues **"... which undergoes environmental impact assessment according to the Environmental Impact Assessment Law ..."**

**Article 5 Determination of need for SEA,**

1. The responsible authority shall determine, in a case-by-case examination, in accordance with the criteria in Annex I, whether the plans or programmes referred to in Article 3 paragraph 3 and 4 of this law that are likely to have significant environmental effects and therefore to require SEA.

The working group for preparation of the MWMP, referring to the above mentioned provision has reviewed MWMP by comparing the criteria of Annex 1, from where it is also found that the MWMP 2015 to 2021 is not expected to have major impacts on the environment, and as such, it is not subject to the SEA procedure.

**Comparative analysis according to criteria of Annex 1 of Law for SEA Nr. 03 / L-230, as well as the activities of MWMP 2016-2021 of the municipality of Kaçanik/Kačanik**

| Assessment criteria as specified in Annex 1 of the Law on SEA | Impacts of the Local Plan for Waste Management in Kaçanik/Kačanik (MWMP) |
|---|---|
| 1. **The characteristics of plans and programs, having regard in particular** | |
| 1.1. the degree to which the plan or programme sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources | MWMP has not envisaged development of projects (infrastructure, facilities, etc.) which would be subject to the procedure under the law on EIA. The main operations will be waste collection by a collective type (urban zone) and door to door in other areas, as well as the transfer of waste to landfill in Ferizaj/ Uroševac |
| 1.2. the degree to which the plan or programme influences other plans and programmes, including those in a hierarchy | This plan is consistent with, and does not influence, other existing plans, either municipal or national |
| 1.3. the relevance of the plan or programme for the integration of environmental considerations in particular with a view to promoting sustainable development | In general, the plan is in line with the principles of sustainable development, even though the plan does not foresee specific projects, will foster, promote and encourage the 3R's: reduction, reuse and recycling. |
| 1.4. environmental problems relevant to the plan or programme | The plan will solve/reduce environmental problem of waste disposal in places not appropriate and will result in positive effects, because as a result of waste collection service will be reduced, the number of illegal dump sites, dumping of waste near rivers, roads etc; and will result in improvement of waste management which will reduce the risk to the health of the local population. |
| 1.5. the relevance of the plan or programme for the implementation of European Community legislation on the environment (e.g. plans and programmes linked to waste-management or water protection) | First of all, the plan results from the environmental law requirements, the practical need for improvement of waste management, but is in full harmony with plans and the local legislation. Also the plan is fully consistent with the interests of residents who will be involved in waste collection service. |
| 2. **Characteristics of the effects and of the area likely to be affected, having regard, in particular, to:** | |
| 2.1. the probability, duration, frequency and reversibility of the effects | MWMP includes a 5-year period (2015-2021). Impact rates will mark and annual increase. The nature of impacts will be positive. (See point 1.4) |
| 2.2. the cumulative nature of the effects, | The plan does not foresee impacts in the cumulative context that would result with environmental consequences. The only impact is the expected increase of trucks movement for collection and waste transport, that could raise the traffic or during waste loading could cause traffic obstructions. But this impact will be minimized by developing a plan and appropriate Schedule for waste collection. |
| 2.3. the trans-boundary nature of the effects,<br><br>2.4. the risks to human health or the environment (e.g. due to accidents), | Adverse trans-boundary effects are not expected. Waste Management Plan is of local character. Small positive impacts are expected, but they will be indirect. This will result from the reduction of waste disposed at/near watercourses, which will result in reduction of pollution of these watercourses, which then through Lepenc pass to Macedonia. |

| | |
|---|---|
| 2.5. the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected) | Positive environmental impacts of the plan by the end of 2021 will affect 100% of the territory and 33.409 inhabitants in the municipality of Kaçanik/Kačanik. |
| 2.6. the value and vulnerability of the area likely to be affected due to: | Not relevant for MWMP Kaçanik/Kačanik. |
| 2.6.1. special natural characteristics or cultural heritage, | Being that MWMP does not foresee physical intervention, construction of buildings, infrastructure, forest cutting, occupation of land, excavations, etc., there will be no damage/degradation of natural or cultural heritage sites. |
| 2.6.2. exceeded environmental quality standards or limit values, | MWMP does not foresee projects that would result in emissions in the air or water, which will be subject to review in the context of exceeding standards or limit values. |
| 2.6.3. intensive land-use | MWMP foresees no occupancy or use of land. The waste will be transported to the transfer landfill in Ferizaj/Uroševac, which will then be disposed at the regional landfill in Gjilan. |
| 2.7. he effects on areas or landscapes which have a recognised national, European Community or international protection status. | The territory of municipality of Kaçanik/Kačanik is predominantly a rural and forestry area, near the National Park “Mali Sharr”. The impacts of MWMP will have modest positive impacts, reducing the amount of waste disposed in natural areas, by improving the natural appearance, which is also important for the development of local tourism. |

# ANNEX IV: REPORT ON RECOGNITION OF THE ZONE, KAÇANIK/KAČANIK MUNICIPALITY

## 1. Population

### 1.1 Number of inhabitants by zone and main categories

| Population | South East | South West | North East | North West | Total | In % |
|---|---|---|---|---|---|---|
| Urban | 10,393 | - | 1,030 | 1,796 | 13,219 | 39.6% |
| Suburban | 574 | 698 | - | - | 1,272 | 3.8% |
| Rural | 1,430 | 2,897 | 1,630 | 3,444 | 9,401 | 28.1% |
| Remote | 387 | 1,287 | 3,080 | 4,763 | 9,517 | 28.5% |
| **Total** | **12,784** | **4,882** | **5,740** | **10,003** | **33,409** | **100.0%** |
| In % | 38.3% | 14.6% | 17.2% | 29.9% | 100.0% | |

### 1.2 Number of inhabitants by zone and by distance (reference point)

| Category | 0-3 | 3-6 | 6-9 | 9-12 | 12-40 | Total | In % |
|---|---|---|---|---|---|---|---|
| Urban | 13.219 | - | - | - | - | 13.219 | 39,6% |
| Suburban | - | 1.272 | - | - | - | 1.272 | 3,8% |
| Rural | - | - | 8.410 | 991 | - | 9.401 | 28,1% |
| Remote | - | - | 172 | 3.383 | 5.962 | 9.517 | 28,5% |
| **Total** | **13.219** | **1.272** | **8.582** | **4.374** | **5.962** | **33.409** | **100%** |
| | 39,6% | 3,8% | 25,7% | 13,1% | 17,8% | 100% | |

## 2. Households

### 2.1 Number of households in the municipality

| Housing | South East | South West | North East | North West | Total | In % |
|---|---|---|---|---|---|---|
| Urban | 2,690 | - | 284 | 334 | 3,308 | 42.2% |
| Suburban | 108 | 168 | - | - | 276 | 3.5% |
| Rural | 351 | 668 | 341 | 734 | 2,094 | 26.7% |
| Remote | 86 | 258 | 700 | 1,117 | 2,161 | 27.6% |
| **Total** | **3,235** | **1,094** | **1,325** | **2,185** | **7,839** | **100.0%** |
| Ne % | 41.3% | 14.0% | 16.9% | 27.9% | 100.0% | |

### 2.2 Number of households in the municipality by distance range

| Distance | 0-3 | 3-6 | 6-9 | 9-12 | 12-40 | Total |
|---|---|---|---|---|---|---|
| Urban | 13.219 | - | - | - | - | 13.219 |
| Suburban | - | 1.272 | - | - | - | 1.272 |
| Rural | - | - | 8.410 | 991 | - | 9.401 |
| Remote | - | - | 172 | 3.383 | 5.962 | 9.517 |
| **Total** | **13.219** | **1.272** | **8.582** | **4.374** | **5.962** | **33.409** |
| In % | 39,6% | 3,8% | 25,7% | 13,1% | 17,8% | 100% |

## 3. Cadastral zones

### 3.1 Cadastral zones by main categories-surface km²

| Surface Km² | South East | South West | North East | North West | Total | In % |
|---|---|---|---|---|---|---|
| Urban | 16 | - | 5 | 4 | 25 | 11.8% |
| Suburban | 3 | 6 | - | - | 10 | 4.7% |
| Rural | 5 | 18 | 28 | 29 | 81 | 38.6% |
| Remote | 1 | 13 | 40 | 40 | 94 | 44.9% |
| **Total** | **26** | **38** | **73** | **73** | **210** | **100.0%** |
| In % | 12.3% | 17.9% | 34.8% | 35.0% | 100.0% | |

### 3.2 Cadastral areas based on main categories-surface

| Distance | South East | South West | North East | North West | Total | In % |
|---|---|---|---|---|---|---|
| 0-3 | 16 | - | 5 | 4 | 25 | 11,8% |
| 3-6 | 3 | 6 | - | - | 10 | 4,7% |
| 6-9 | 5 | 15 | 25 | 29 | 74 | 35,2% |
| 9-12 | 4 | 5 | 3 | - | 13 | 6% |
| 12-40 | 1 | 13 | 40 | 35 | 89 | 42,3% |
| **Total** | **30** | **39** | **73** | **68** | **211** | **100%** |
| In % | 14,1% | 18,7% | 34,7% | 32,5% | 100% | |

## 4. Waste generating

### 4.1 Waste Distribution Report by main categories (number of inhabitants * kg per day / 1000)

| Category | North West | North East | South East | South West | Total | In % |
|---|---|---|---|---|---|---|
| Urban | 656 | 376 | 3,793 | - | 4,825 | 52% |
| Suburban | - | - | 168 | 204 | 371 | 4% |
| Rural | 880 | 416 | 365 | 740 | 2,402 | 26% |
| Remote | 869 | 562 | 71 | 235 | 1,737 | 19% |
| **Total** | **2,405** | **1,355** | **4,397** | **1,179** | **9,335** | **100%** |
| % | 25.8% | 14.5% | 47.1% | 12.6% | 100.0% | |

### 4.2 Waste Distribution Report by distances in kilometres from the centre, main categories of number of residents x waste generation per day

| Category | 0-3 | 3-6 | 6-9 | 9-12 | 12-40 | Total |
|---|---|---|---|---|---|---|
| Urbane | 4.825 | - | - | - | - | 4.825 |
| Suburban | - | 371 | - | - | - | 371 |
| Rural | - | - | 2.149 | 253 | - | 2.402 |
| Remote | - | - | 31 | 617 | 1.088 | 1.737 |
| **Total** | **4.825** | **371** | **2.180** | **871** | **1.088** | **9.335** |
| In % | 51,7% | 4% | 23,4% | 9,3% | 11,7% | 100% |

## 4.3 Estimated distribution of waste by type of waste

| Composition | In % | North West | North East | South East | South West | Total |
|---|---|---|---|---|---|---|
| Kitchen waste | 42.0% | 1,010 | 569 | 1,847 | 495 | 3,921 |
| Paper | 13.6% | 327 | 184 | 598 | 160 | 1,270 |
| Other | 11.5% | 277 | 156 | 506 | 136 | 1,074 |
| Plastic | 10.6% | 255 | 144 | 466 | 125 | 990 |
| Heating ashes | 8.3% | 200 | 112 | 365 | 98 | 775 |
| Glass/bottles | 4.9% | 118 | 66 | 215 | 58 | 457 |
| Grass & wood (green waste) | 2.9% | 70 | 39 | 128 | 34 | 271 |
| Ashes / soil | 2.9% | 70 | 39 | 128 | 34 | 271 |
| Metal | 1.3% | 31 | 18 | 57 | 15 | 121 |
| Textile | 1.2% | 29 | 16 | 53 | 14 | 112 |
| Ceramic & stone | 0.5% | 12 | 7 | 22 | 6 | 47 |
| Rubber and leather | 0.3% | 7 | 4 | 13 | 4 | 28 |
| **Total** | **100.0%** | **2,405** | **1,355** | **4,397** | **1,179** | **9,335** |
| | | 25.8% | 14.5% | 47.1% | 12.6% | 100.0% |

## 4.4 Estimated distribution of waste by type of waste (distances)

| Kitchen waste | 0-3 | 3-6 | 6-9 | 9-12 | 12-40 | Total |
|---|---|---|---|---|---|---|
| Kitchen waste | 2,026 | 156 | 916 | 366 | 457 | 3,921 |
| Paper | 656 | 51 | 297 | 118 | 148 | 1,270 |
| Other | 555 | 43 | 251 | 100 | 125 | 1,074 |
| Plastic | 511 | 39 | 231 | 92 | 115 | 990 |
| Heating ashes | 400 | 31 | 181 | 72 | 90 | 775 |
| Glass/bottles | 236 | 18 | 107 | 43 | 53 | 457 |
| Grass & wood (green waste) | 140 | 11 | 63 | 25 | 32 | 271 |
| Ashes / soil | 140 | 11 | 63 | 25 | 32 | 271 |
| Metal | 63 | 5 | 28 | 11 | 14 | 121 |
| Textile | 58 | 4 | 26 | 10 | 13 | 112 |
| Ceramic & stone | 24 | 2 | 11 | 4 | 5 | 47 |
| Rubber and leather | 14 | 1 | 7 | 3 | 3 | 28 |
| **Total** | **4,825** | **371** | **2,180** | **871** | **1,088** | **9,335** |
| In % | 51.7% | 4.0% | 23.4% | 9.3% | 11.7% | 100.0% |

# Municipal Waste Management Plan Municipality of Kaçanik/Kačanik 2016-2021

HELVETAS
Swiss Intercooperation
KOSOVO

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