

## Analytical Study

# REPORT

## Waste Management Issues in Georgia

### Project

Implementation of waste management policies in EaP countries  
according to Association Agreements (Moldova, Georgia and Ukraine)



International Business and Economic Development Center, Georgia

Tbilisi, Georgia

2016

# Introduction

The rapid increase of waste generation and environmental pollution by waste represent one of the most urgent problems for Georgia.

The waste management sector of Georgia must be changed significantly in subsequent years. The commitments undertaken within the framework of Association Agreement with the EU, envisage the formation of waste management system in the country in full compliance with the EU requirements.

According to the Association Agreement, Georgia had made a commitment to implement reforms and ensure harmonization of legislation with a number of the EU directives, including in the fields of environmental protection and sustainable development. In particular, mentioned deals with the following fields (Article 302<sup>1</sup>): environmental governance and horizontal issues; air quality; water quality and water resource management; waste management; nature conservation; environmental pollution by the enterprises; chemical substance management.



Accordingly, integration of Georgian national legislation with the EU laws will be useful for the formation of sustainable and effective waste management system, the waste disposal practices to landfills will be improved and further measures will be taken for closing them, more adjustments will be made in waste collection and sorting practices (for example, packaging materials, biodegradable waste, household and other types of electronic appliances). Improvement of waste management will lead to reduction of pollution of soils, surface and ground waters and air. It will become possible to avoid air pollution with dioxins and toxic substances, and certain standards and norms will be provided for the protection of soils and ground waters.

The measure to be taken in the field of waste management are given in Annex XXVI of EU-Georgia Association Agreement. In particular, it is envisaged to prepare the waste management plans in accordance with the five-step hierarchy, and to develop the waste prevention programs.

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<sup>1</sup> The Association Agreement, on the one hand, between the EU and the European Atomic Energy Community, and on the other hand, between and their member states and Georgia.  
<http://www.mfa.gov.ge/>

# Legislation

Currently, the solid waste management sector is regulated by the following legislative acts:

## National legislation:

- › The Constitution of Georgia;
- › Waste Management Code;
- › Law of Georgia on Environment Protection;
- › Law of Georgia on Local Self-Government;
- › Law of Georgia on Ecological Examination;
- › Law of Georgia on Environmental Impact Permit;
- › Law of Georgia on Local Fee Collection;
- › Law of Georgia on Public Health;
- › Technical Regalement - “Municipal Solid Waste Landfill Construction and Operational Rules and Regulations”;
- › Technical Regalement - “Methodic of Environment Damage Determination and Calculation”.

The new waste law, the *Waste Management Code* was adopted on 26 December 2014 and came into force in January 2015. Before that, the waste related issues were regulated by a number of legal acts and, to some extent, by international conventions. Although the newly adopted Code is based on the principles and approaches envisaged by the EU-Georgia Association Agreement (AA) and best international practices, it is necessary to develop and adopt a number of secondary legislation for the full implementation of the Code.

The new Law seeks to create a legal and regulatory framework that supports waste prevention and reuse, as well as environmentally sound waste management processes including collection, transport, recovery (recycling, composting, etc.) and disposal. The objective of the Law is to: 1) protect human health and the environment by preventing or reducing waste generation and its adverse impacts; 2) introduce effective mechanisms for managing waste; and 3) encourage a more effective use of resources that could be derived through better management of the municipal waste stream.

Through the “Waste Management Code”, the Government of Georgia seeks to improve waste management practices throughout the country by mandating higher design and operational standards that are consistent with those that exist in the European Union. This objective is supported by the fact that Georgia has obligations under the European Union-Georgia Association Agreement to harmonize its waste management practices with those of the European Union.

The Code does not regulate waste generated from extractive industries (mining waste). Mining waste are supposed to be regulated by the Law on Mineral Resources. However, the law is not complete and does not correspond to the AA requirements. Mining waste pose a high risk to the environment and human health and, therefore, are to be regulated on the basis of the relevant EU Directive.

**Georgia is a Party to two main conventions in the field of waste**, which set special requirements for its member states, and their implementation requires special efforts from the country. These conventions are as follows:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Stockholm Convention on Persistent Organic Pollutants

A third convention - the Minamata Convention on Mercury - has been signed, but not been yet ratified by Georgia.

International Conventions are not fully transposed into national legislation. Practice proves that without full adjustment of the national legislation the implementation of the conventions is not effective. For example, the national Law on Waste Transit and Import does not fully cover the requirements of the Basel Convention including early notification procedures and export issues. Therefore, there is a need for a new law. The Ministry of Environment Protection and Natural Resources of Georgia, with the support of the EU, is being in the process of drafting a new law on transboundary movement of waste.

Enforcement of the provisions of the Code and requirements from international conventions is a critical aspect which needs further improvement at national and local levels.

The new Law “Waste Management Code” will lead to new waste management initiatives intended to: 1) optimize and expand the coverage of formal municipal collection services; 2) implement new landfills designed and constructed to sound international standards; and 3) significantly increase the rate of recovery through formal municipal recycling and composting programs. To support this target improvement process, the Georgian Law “Waste Management Code” stipulates that

local governments (that are now, and will continue to be, responsible for municipal waste collection and transport) must develop comprehensive *Municipal Waste Management plans* that aim to improve their waste related functions. The waste management plan must be based on waste management hierarchy and the principles stipulated by Article 5 of Waste Management Code. The Law “Waste Management Code” stipulates that these plans are to cover a 5 year planning timeframe and that they should correspond to the national waste management strategy and action plan currently under development. The municipal plans must also correlate to other national waste management initiatives for specific waste streams including, at a minimum, persistent organic pollutants, mercury, healthcare waste, animal waste, and asbestos.

The Law “Waste Management Code” also stipulates that the MWM plans must define the means by which the level of recycling and recovery will be significantly increased through formal programs developed by the municipalities. This may include regional initiatives aimed at achieving a more effective economy of scale for the recovery process. (The Law stipulates that adjacent municipalities can develop common MWM systems and also can collectively develop a common MWM plan, if warranted).

Specifically, Article 13 of the Law “Waste Management Code” defines both the intent and minimum content of the mandated municipal waste management plans. The most urgent measures are expected to be focused on improving waste collection and disposal processes, while longer term measures will, most likely, address waste

### **Article 13 - Municipal waste management plan**

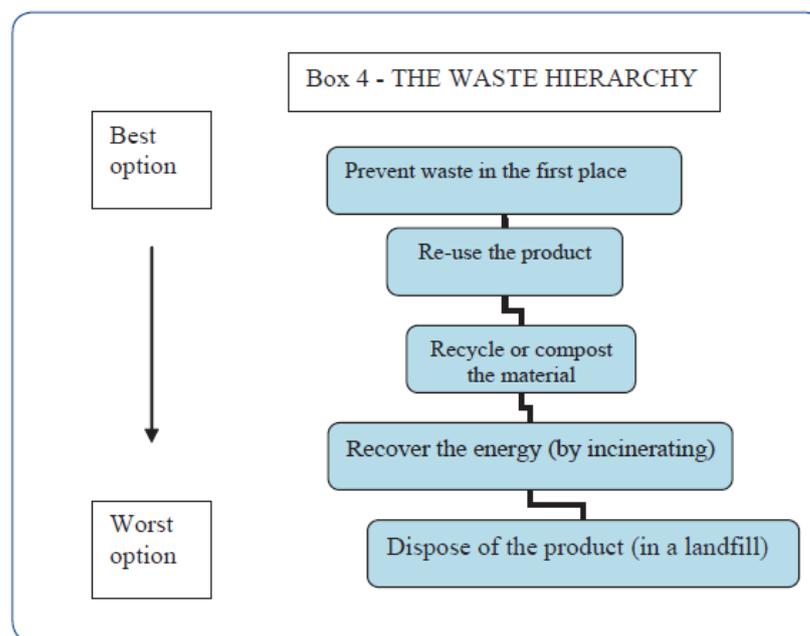
- (1) Each municipality shall adopt a plan for the management of the municipal waste produced within its territory for a period of five years. A Municipal Waste Management Plan may be prepared jointly by neighbouring municipalities.
- (2) The Municipal Waste Management Plan shall be compliant with the National Waste Management Plan and other plans under Article 12 paragraph 7 of this Law.
- (3) The adoption of the Municipal Waste Management Plan shall be preceded by public consultations, involving the relevant stakeholders and the neighbouring municipalities. These public consultations shall be carried out by the respective municipality(ies).
- (4) The Municipal Waste Management Plan shall contain the following:
  - a) information on the existing system for collection of waste from population;
  - b) data on the types and the amounts of non-hazardous waste collected, recovered and disposed of;
  - c) data on the types and the amounts of hazardous waste from population collected, recovered and disposed of;
  - d) location of the waste treatment facilities;
  - e) planned measures to be taken for the establishment of separate collection and recovery of municipal waste, including of biodegradable waste and packaging waste;
  - f) planned construction of new waste treatment facilities;
  - g) programmes to raise awareness of the public on waste management issues;
  - h) implemented and planned measures for co-operation with other municipalities in the field of waste management;
  - i) the way and timeframe in which the proposed measures shall be implemented, responsible persons, estimated costs and sources of financing for their implementation.

minimization, reduction, and recovery processes.

# Waste Management Strategy

On 1 April, 2016, Georgian Government approved (Resolution #160) the 2016-2030 *National Waste Management Strategy* and 2016-2020 *Waste Management Action Plan for Georgia*. The Strategy and Action Plan are an integral part of Georgia's Waste Management policies. The National Waste Management Strategy is aimed at creating the solid foundations for phased formation and development of system meeting the waste management modern requirements in Georgia, taking into account international practices and socioeconomic situation in the country. So, the Strategy emphasizes strengthening the capacities.

The Waste Management Strategy complies with the Waste Management Code that sets out the Waste Management Hierarchy: a) Prevention b) Preparation for re-use c) Recycling d) Other recovery, including energy recovery e) Disposal.



**Fig. 1. Waste Management Hierarchy**

Source: The story behind the strategy. EU Waste Policy. European Commission

Furthermore the Strategy complies with the **Principles of Waste Management** by Code<sup>2</sup>:

a) **Precaution** means that in order to avoid the threat or danger to the environment deriving from waste, measures shall be taken even if full scientific certainty is not available;

<sup>2</sup> Waste management Code of Georgia

b) **Polluter pays** means that the producer or holder of waste, , shall cover the costs of waste management;

c) **Proximity** means that the treatment of waste shall be undertaken in the nearest appropriate waste treatment facility, taking into consideration environmental and economic efficiency;

d) **Self-sufficiency** means that an integrated and adequate network of facilities for waste disposal and recovery of municipal waste is established and operated.

The Strategy is in harmony with key EU Environmental Management principles:

1. **Sustainable development** (Sixth Community Environment Action Programme) - use of the natural resources without destroying or harming them and by a manner that does not restrict the possibilities for their use by the future generations
2. **Waste prevention principle** (Directive 2008/98/EC on waste) - reduction of the quantity and/or hazardousness of the waste generated
3. **Best Available Technology** (Directive 2008/98/EC on waste) - in establishing recovery or disposal facilities the use of best available technologies shall be taken into account
4. **Extended Producer's Responsibility** (Directive 2008/98/EC on waste) - producers and importers of specific products are responsible for the waste that remains after those products have been used, as well as the subsequent management of the waste and financial responsibility for such activities.
5. **Integrated waste management** (Sixth Community Environment Action Programme)

The integrated management combines all other principles of the waste management policy and guarantees interaction and optimal combination of the different methods and approaches with a purpose of achieving economically and environmentally effective waste management.

The Strategy also is in line with two international key principles:

- The UNECE principle on Access to information and Public Participation (Aarhus Convention) and
- The UNEP Green Economy Initiative - Towards a Green Economy - Pathways to Sustainable Development and Poverty Eradication - promoting the development of green economy, which ensures sustainable development and avoids degradation of the environment.

**The Vision of the Waste Management in Georgia is:**  
***“Georgia to become a preventing and recycling society”*** by:

- Taking action on prevention, reuse, recycling and recovery of waste
- Collection of all municipal waste in Georgia
- Developing waste at source separation
- Introducing Full Cost Recovery
- Introducing Extended Producers Responsibility
- Taking initiatives on specific waste streams of national concern
- Establishing Private-Public Partnership
- Introducing incentives to meet the objectives of the Strategy

One of significant goals of National Waste Management Strategy, within the capabilities, is to provide waste prevention, reuse, recycling and/or recovery. In this regard, there have been determined realistic, but at the same time ambitious indicators of waste reuse, recycling and recovery, which must be reached at the required level (Table 1).

**Table1. The minimal indicators of paper, glass, metal and plastic waste recycling to be reached at the national level in Georgia**

Type of waste	2020	2025	2030
Paper	30%	50%	80%
Glass	20%	50%	80%
Metal	70%	80%	90%
Plastic	30%	50%	80%

The Waste Management Code obliges, in the waste management field, the municipalities to perform the function of municipal waste collection and transportation, as well as to implement waste recovery programs. Since 2019, the Code places the municipalities under an obligation to implement waste separation practices, but by 2025, they have to establish waste separation system in immediate proximity to paper, plastic, glass and metal waste sources. So, the country’s local authorities and the whole society will face new significant challenges in the near future.

# Responsibilities of Waste Management Capacities

Presently, waste management (including municipal waste management in Georgia) is the responsibility of different government levels. The roles and responsibilities, as of today, are as follows:

- **The Ministry of Environment and Natural Resources Protection (MENRP)** is the government authority, responsible for the development and implementation of the national policy in the field of waste management. To accomplish this, the Ministry is developing a national strategy and action plan on waste management, as well as a strategy on biodegradable municipal waste management. Currently, the Ministry issues environmental permits related to waste related activities and is responsible for state supervision of waste management. The Ministry also addresses issues related to the management of hazardous and other specific waste forms.
- **The Ministry of Labour, Health and Social Affairs** is responsible for the management and control of healthcare waste in cooperation with the MENRP.
- **The Ministry of Agriculture** regulates and supervises the management of animal waste in cooperation with the MENRP.
- **The Ministry of Economy and Sustainable Development** defines waste transportation related requirements in cooperation with the MENRP .
- **The Ministry of Finance** regulates transboundary movement of waste in cooperation with the MENRP.

**The LLC Solid Waste Management under the Ministry of Regional Development and Infrastructure (MRDI)** is responsible for construction, operation and closure of landfills as well as for operation of transfer stations in Georgia except for the landfills in the Autonomous Republic of Ajara and self-governing City of Tbilisi.

**The municipalities** are responsible for managing the collection, transportation and treatment of municipal waste as well as cleaning streets, parks and other public spaces within their local jurisdictions.

In the Autonomous Republic of Ajara and in the city of Tbilisi, management of nonhazardous waste, construction, operation and closure of landfills is the responsibility of the relevant authorities.

In addition, the MENRP, **Ministry of Internal Affairs** and municipalities are responsible for controlling the violations in the field of waste management within the scope of their mandate.

Implementation of the newly adopted Code as well as meeting the requirements of the international treaties need a strengthening of the capacities and a close cooperation between all stakeholders involved in the waste management including the private sector. A needs assessment of the stakeholder capacities as well as capacity building programmes are not in place.

Waste management capacities of private companies are mostly the Limited Liability companies. The majority of private companies generating waste have no clear understanding on proper waste treatment and waste management in general. In most companies, there is no person responsible for environmental issues or waste management. There are some international or affiliated private companies that follow internationally defined procedures, hence their waste management capacities are reasonably well established.

## Waste generation

Waste generated today in Georgia, there are generated approximately 900 thousand tons of municipal waste annually of which 700 thousand tons of waste are disposed to landfills.

Hazardous healthcare waste amounts are approximately to 1.500 tons annually. The quantities of hazardous waste and Company waste generated each year are unknown while obsolete pesticides approximately amount 4000 tons and PCB containing waste oils have been estimated to be more than 600 tons. Waste containing arsenic substances are estimated at 120.000 tons.

### **Materiality of solid waste volume establishment do not exist<sup>3</sup>.**

Currently, in 47 out of 56 municipalities data on the amount and specifics of the generated waste do not exist. Weighing of the waste occurs at the time of entrance at the landfill and only nine big cities carry it out. Those cities are following: Telavi, Gori, Akhaltsikhe, Kutaisi, Ozurgeti, Batumi, Tbilisi, Rustavi and Borjomi.

Waste generation, is not observed on the whole territory of Georgia in order to determine exact amount of the municipal solid waste. In the above-mentioned cities, waste is weighted when it is disposed at the landfill, which is not sufficient for developing and implementing effective solid waste management plan.

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<sup>3</sup> Performance Audit of Municipal Solid Waste Management. Report number N18/00. State Audit Office of Georgia. [www.sao.ge](http://www.sao.ge)

Currently, no systems studies of waste composition are occurring in Georgia. However, within the separate projects, the universities are carrying out studies in different regions.

In 2015-2016, within the project „Waste Management Technologies in Regions“, the season-based study of morphological composition of solid municipal waste was carried out in Ajara<sup>4</sup>.

The results of this study were coded according to the 20th group “Municipal waste and similar commercial, industrial and institutional wastes including separately collected fractions” of the Annex 1 “List of Waste Groups” approved by the Resolution #426 of the Government of Georgia made on August 17, 2015 on Approval of the Regulation on Determination and classification of the list of waste by waste types and properties.

Specifically ten (10) main waste categories from 46 waste components included in the Waste Composition Study Summary Form were identified during the process of determination of volumes and composition of waste.

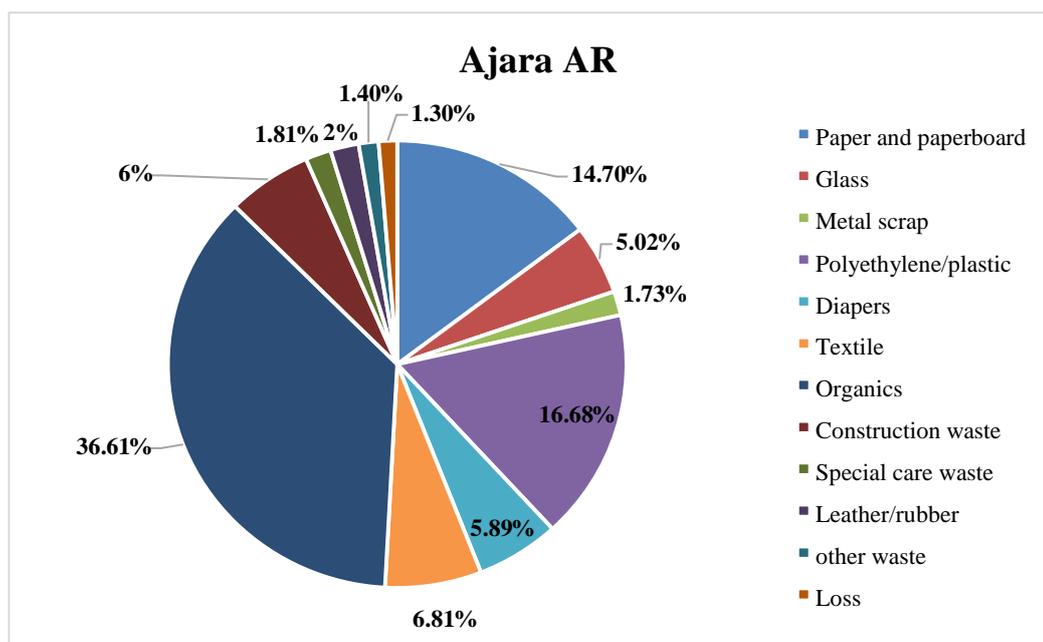
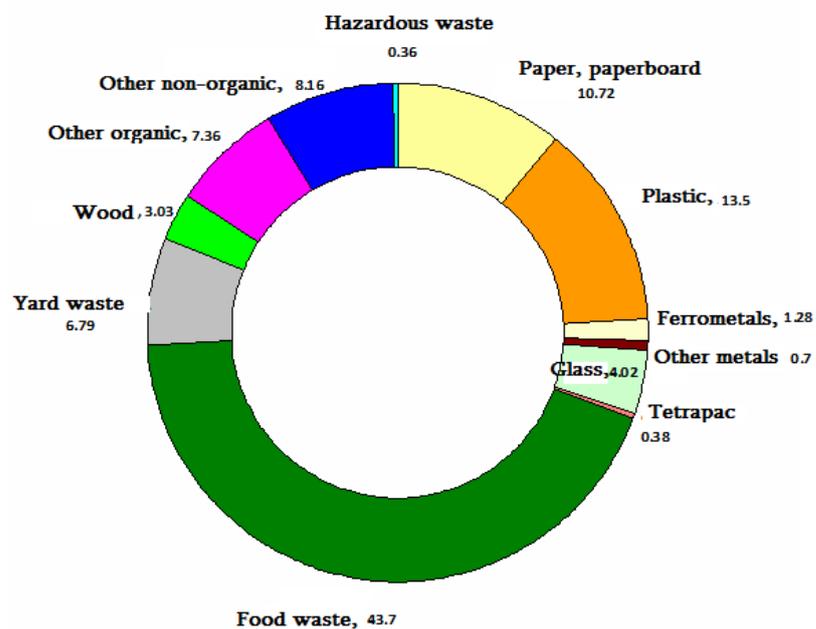


Fig. 2. Waste composition, Ajara AR, 2015-2016

<sup>4</sup> Waste Management Technologies in Regions. Seasonal Study of the Morphological Composition of Solid Municipal Waste in Ajara AR. Report. May 31, 2016. Prepared by: International City/County Management Association, 777 North Capitol Street NE, Suite 500, Washington, DC 20002-4201. The Caucasus Environmental NGO Network (CENN), 27 Betlemi Str., Tbilisi 0105 Georgia

As a result of study performed at the Akaki Tsereteli State University, the average annual composition of municipal waste generated in Kutaisi in 2010-2011 was determined as follows:<sup>5</sup>: plastics - 13,5%, paper waste - 10,72%, metal waste- 3%-mde, glass waste - 4,02%, food waste - 43,7%.

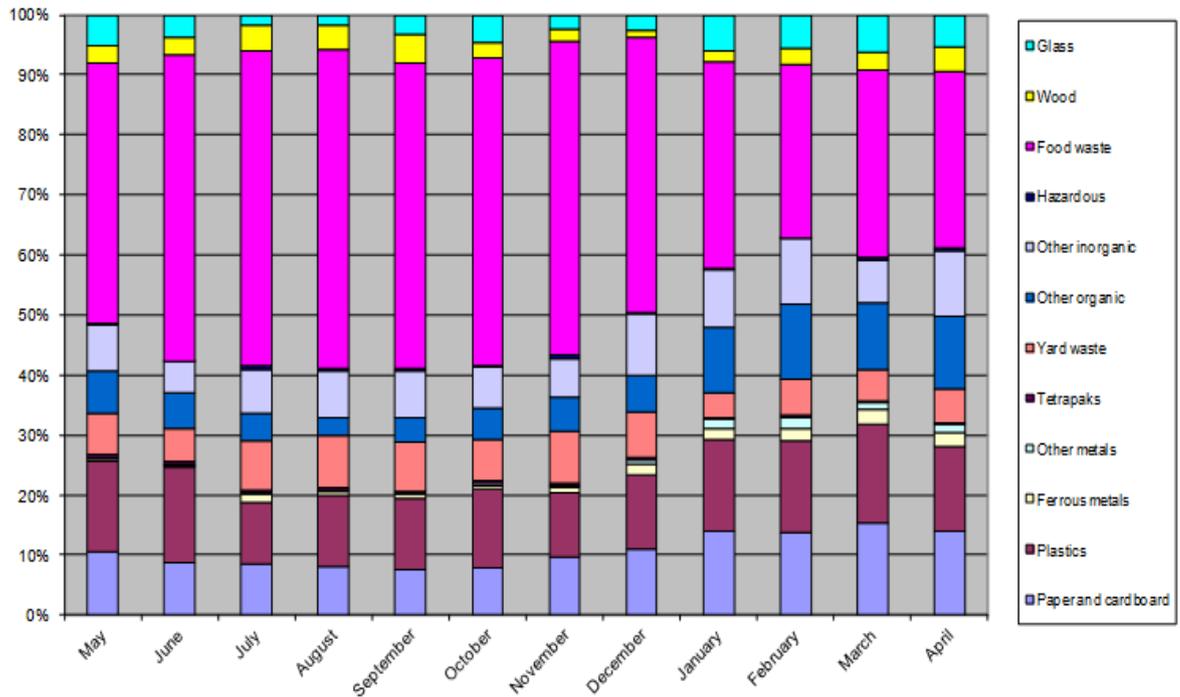
Waste generation, with account for seasonal component, demonstrates that the minimal quantities of waste are generated in the month of February, and, for example, according to data of 2010-2011 observations, they made up 15,4 kg per capita. Maximal indicator of waste generation was fixated in August (21,7 kg per capita), 2010-2011)<sup>6</sup>. The diagram illustrates waste generation seasonal trends in Kutaisi.



**Fig.3. The average annual composition of municipal waste generated in Kutaisi in 2010-2011.**

<sup>5</sup> G. Denafas, Ch. Ludwig, Ts. Turkadze and at all. Seasonal variation of municipal solid waste generation and composition in four East European cities. // Resources, Conservation and Recycling, 89, 2014. p. 22-30.

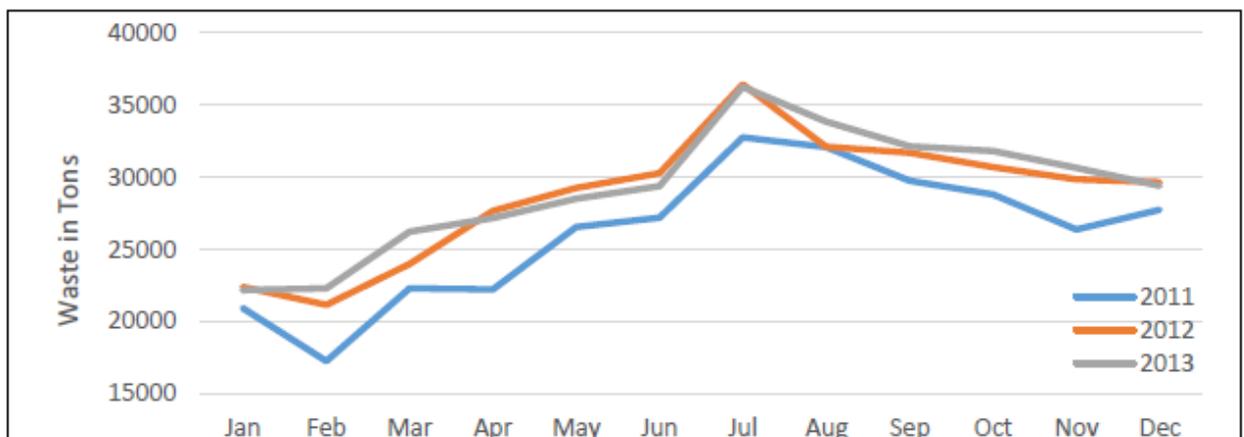
<sup>6</sup> G. Denafas, Ch. Ludwig, Ts. Turkadze and at all. Seasonal variation of municipal solid waste generation and composition in four East European cities. // Resources, Conservation and Recycling, 89, 2014. p. 22-30.



**Fig.4. Waste composition in 2010-2011 by month**

The composition of food waste generated in Kutaisi more than any other exhibit seasonality. Their content is high in July-August. The quantities of these waste also depend on the number days off, public holidays and fasting-days during the month. The number of hot days and public holidays also influences the content of plastic components.

Survey on Tbilisi 2011-2013 cumulative waste streams, demonstrates that waste generation reaches its peak in July and is at minimum in February. To properly reflect changes in the waste volume on the number of services, it is important to analyze seasonal changes. The graph below shows the amount of waste in Tbilisi in span of years 2011-2013<sup>7</sup>.

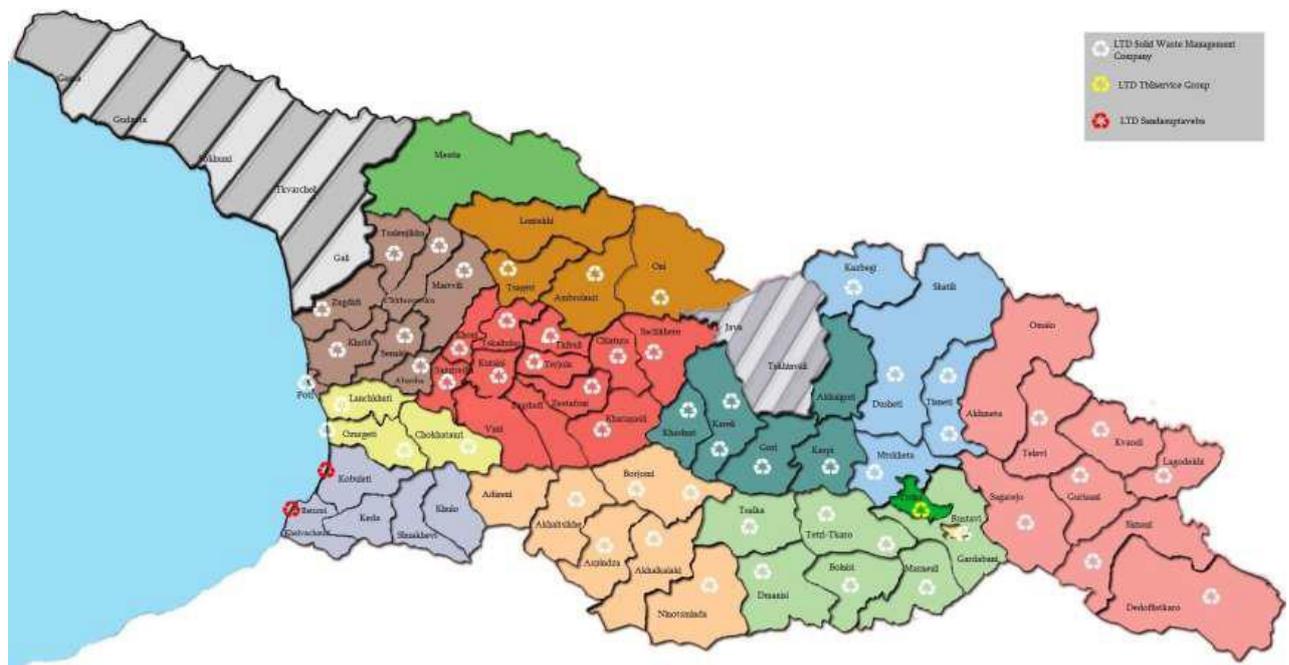


**Fig. 5. Waste Amount by Months in 2011-2013 (Tbilisi)**

<sup>7</sup> Performance Audit of Municipal Solid Waste Management. Report number N18/00. State Audit Office of Georgia. [www.sao.ge](http://www.sao.ge)

# Landfills

As of 2015, there are only four landfills (one private and three public) in Georgia meeting international standards. In general, nearly every rural settlement has one or even more - in principal illegal - dumpsites. Several impose serious impacts to the environment and the surrounding communities. Totally more than 60 official landfills (without a permit) and many more illegal dumpsites (small not official landfills) are recorded in Georgia.



**Fig. 6. Registered Landfills in Georgia**

According to the Code, operation of the non-hazardous (municipal) waste landfills is the responsibility of the LTD Solid Waste Management Company (SWMC) under the Ministry of Regional Development and Infrastructure of Georgia. SWMC takes steps to improve the state of the old landfills and construct new modern landfills. The Company has rehabilitated 19 landfills. Other actions are taken to construct new sanitary landfills in Qvemo Qartli, Imereti, Samegrelo-Zemo Svaneti and Kakheti regions.

### Goals of LTD Solid Waste Management Company:

- Reduced environmental impact from waste and waste treatment;
- Avoiding and minimization of waste generation, especially organic waste and hazardous waste;
- Reduced amount of waste land filled, especially organic waste and hazardous waste;
- Reduced numbers of active dump sites and gradually closure of dump sites non-compliant with EC-directives;
- Treatment of waste accepted at the landfill in a sustainable, environmentally safe and cost efficient manner;
- Development of landfills into waste treatment facilities comprising waste sorting activities for facilitating reuse, recycling and energy recovery of the waste prior to land filling;
- A good occupational safety and working environment for staff working within waste management;
- Increased public awareness on sustainable solid waste management;
- Well functioning cooperation and exchange of expertise between the Company and the municipalities;
- Well established, close links with the pertinent stakeholders, including ministries, local municipalities and other administrations and entities responsible for different parts of the SWM system;
- EC membership and compliance with EC directives within the SWM field.



**Fig. 7. Kutaisi Landfill before and after rehabilitation.**

The similar activities take place in Ajara Region, where works are ongoing aiming at closing the old and constructing a new landfill (construction permit has already been granted). The relevant authorities of the Ajara Autonomous Republic are in charge of above mentioned activities.

All types of waste are disposed to the landfills or to dumpsites. No activities towards minimization of disposing the biodegradable waste on landfills are observed and no strategy exists in the country (the Code envisages development of the strategy). There are no landfills for hazardous or special waste e.g. construction waste and only few landfills have separate cells for special waste, like asbestos waste.

The State Audit Office<sup>8</sup> has examined existing situation of solid waste management in the country and considered important parts of management system, such as waste transportation-logistics, waste collection fee, problematic issues of new, old and unregistered landfills.

Problem of environment pollution due to uncontrolled dumping of waste is still very relevant in Georgia. Except of official registered landfills, almost all settlements have spontaneous, so-called unregistered landfills, which are formed by the population over time. In Georgia, uncontrolled, unregistered landfills are located in ravines, channels, river banks and the streets. Unregistered landfills do not go through any special treatment and present significant source of environment pollution. The landfills are completely non-isolated from the environment, which leads domestic and wild animals, birds and fish to feeding with waste. Light fractions and other harmful waste are scattered in nature without due control.



Currently, in Georgia there are around 2,000 villages, but only 480 74 of them have waste service system. Thus, 1520 villages are left without waste removal service leading to formation of at least 1 unregistered landfill in each village. The population is engaged in "self-service" and the waste is placed in arbitrarily selected

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<sup>8</sup> Performance Audit of Municipal Solid Waste Management. Report number N18/00. State Audit Office of Georgia. [www.sao.ge](http://www.sao.ge)

areas, some population burns waste openly.

Challenges<sup>9</sup>:

- No landfills or cells within landfills for hazardous and inert waste;
- High number of illegal dumpsites;
- Existing landfills not in line with permitting law requirements;
- Large amounts of biodegradable waste disposed on landfills;

## Prevention, reuse, recycling and recovery

The waste prevention, reuse, recycling and recovery practices are underdeveloped in Georgia.

Existing practice of preventing, reuse, recycling and recovery is very limited in Georgia. A limited number of installations for recycling of waste materials like paper, glass, plastic and others exist in Georgia, however still data on amounts of recycled materials is not available. Recycling is only carried out by private companies for those waste materials for which the costs (per tonne) for collection and treatment are lower than the prices of raw materials.

Incineration of waste for recovery of energy does not exist in Georgia.

The absence of the incentives and lack of promotion of prevention and waste separation limits the reuse and recycling opportunities in Georgia.

Challenges<sup>10</sup>:

- Absence of waste prevention activities.
- Limited waste separation activities and waste treatment facilities.
- Lack of incentives to improve reuse, recycling and waste recovery.

**The National Waste Management Strategy envisages the objectives of waste prevention, reuse, recycling and recovery as follows:**

1. Source separation for paper, plastic, glass and metal established by 2025.
2. National minimum targets for the waste to be managed:

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<sup>9</sup> National Waste Management Strategy 2016-2030

<sup>10</sup> National Waste Management Strategy 2016-2030

Type of waste	2020	2025	2030
Paper	30%	50%	80%
Glass	20%	50%	80%
Metal	70%	80%	90%
Plastic	30%	50%	80%

3. Waste prevention promoted and implemented by companies by 2020.
4. Waste not reused or recycled to be recovered to the extent possible by 2025.
5. Waste reuse, recycling and incineration facilities established by 2025.

So, since 2019, all municipalities of our country will be obliged to start municipal waste separation practices, and by 2025, they have to establish waste separation system in immediate proximity to paper, plastic, glass and metal waste sources. Waste separation in immediate proximity to their sources is one of the most common approaches to waste sorted collection. It is actively utilized in the EU and other developed countries (USA, Canada, etc.). Source separation means that the waste owner himself separates recyclable waste (for example, paper, metal, plastic or glass, etc.) and places them separately in special containers intended for these particular fractions.

To date, Georgia has some examples of waste separation. Of particular interest is experience of municipalities in waste separated collection. Here we should also note waste separated collection experience of Kutaisi City, where since the year of 2015, there is being successfully implemented plastic source collection. The mentioned activities have been made possible by the EU Black Sea Program 2007-2013. As a result, within the project “Introduction of waste management innovative approaches in three selected cities of Georgia, Moldova and Armenia”, plastic waste separated collection was implemented at a municipal level in Kutaisi City.



To that end, 100 special containers with a volume 1,1 m<sup>3</sup> each, were placed in the city. As observations have shown, the people are actively involved in plastic sorted collection activities, as a result of which more than 40 tons of separated waste were collected during the year. The

contents of the containers are also very important: 95-97% of their contents are only plastic waste. The result points to fact that the population of Kutaisi City is aware of the importance of waste separation, and of the benefit derived from waste recycling.

## Toward to recycling society

Introduction of the waste source separation system directly depends on public awareness and public involvement in this process. Accordingly, it is important to undertake activities in all municipalities to raise public awareness there.

The National Waste Management Strategy pays a certain attention to the needs for raising public awareness, where there is noted that “it is necessary to raise the level of education and develop skills in society in this regard that can be achieved by promotion of formal and informal education, particularly by way of developing and implementing appropriate programs for all age groups. The waste management principles, hierarchy, and understanding the role of people in improving the waste management effectiveness must become a significant component part of school and pre-school training programs, as well as for extensive public awareness raising campaigns, media campaigns”.

So, the ninth objective of National Waste Management Strategy is aimed at “strengthening the capacities of the public sector at the national and local levels, as well as contributing to strengthening and raising public awareness”. In particular, implementation of activities associated with raising public awareness are planned by the year of 2030.

Raising public awareness in the of waste management sphere is a very significant stage in terms of waste prevention and elimination in the population. As the current situation shows, the public awareness activities are not sufficient, since they are not quite extent, and do not cover all target groups, as well as entire territory of Georgia. Lack of information causes a proliferation of spontaneous landfills, and the formation of the population’s negligent attitude toward waste that also negatively impacts on the environment, adversely affects the country’s economy, tourism industry particularly.

It is necessary to note that the population’s attitude toward waste management in such Georgian cities, as Tbilisi, Kutaisi and Batumi. In particular, the results of newly performed surveys have shown that 43,6% of respondents find very distressing the problem of solid municipal waste. It is very important that 74% of respondents express

their willingness to be actively involved in waste separation process, but 12,6% of them are still undecided in this regard.

The survey showed that the most convenient approach for the people to waste separation is a source separation again, or when they are sorting themselves waste by fractions, and placing themselves these sorted waste in the appropriate containers placed in the city (68,6%). Although, placement of mixed (unsorted) waste in a general container with their further sorting at the sorting centers is acceptable to 20% of respondents. Disposal of sorted waste in the waste collection points with obtaining appropriate compensation is more attractive to 11%. Less popular is waste composting: only 4% of respondents are ready to use individual methods for organic waste composting.

## The role of non-governmental organizations in the development of waste management

For the purpose of raising waste management public awareness, it is necessary to emphasize the activities of non-governmental organizations in this regard. Among the organizations acting in Tbilisi, it is necessary highlight the non-governmental organizations consortium: the Greens Movement of Georgia/Friends of Earth - Georgia, "Ecovision", "Orchis", which implement the process of raising public awareness and improving waste management with the governmental financial support. This process also actively involves the Caucasus Environmental NGO Network (CENN), which as a partner within the program (Waste Management Technologies in Regions) funded from USAID, actively works on waste management problems, including public awareness raising.

Among the non-governmental organizations acting in the region, it should be highlighted the Imereti Scientists' Union "Spectri", which is greatly experienced in activities in waste management sphere, including the long-year experience in the implementation of educational programs. In particular, within the EU Black Sea Program's project "Introduction of waste management innovative approaches in three selected cities of Georgia, Moldova and Armenia", the "Spectri" has developed and implemented the waste management training module in Kutaisi pilot schools: there

were conducted the lessons, prepared and published the Waste Manual for pupils; for junior pupils, the coloring book was prepared and printed, organized numerous environmental events (cleaning events, drawing contests and so on). A video flick was prepared on promotion and support of waste separation practice, which was broadcast on TV and is available on the Internet. It should be noted that successful implementation of plastic separation in Kutaisi is explained, in a large extent, by a high level of public awareness of waste management modern approaches that contributed to the formation of purposeful awareness and motivation.

However, reality shows that the level of public awareness in Georgia in terms of waste management and cleaning services is low yet. This is confirmed by the existence of a large number of illegal and spontaneous landfills and sites and rivers polluted by waste. Of particular urgency is the problem of polluted with by waste places in the resort, tourist and recreation parks, protected areas and territories of researveses. Often, during their nature tours and picnics, people leave their waste behind that is often explained by the absence of special containers for them, although anyway the main reason for that is a low level of public awareness. It should be noted that growing number of nature visitors leads to the uncontrolled growth of the quantities waste left behind by them. As a result, there are polluted tourist zones and lowered tourist potential of Georgia. It is necessary to foster the infrastructural improvements in tourist destinations, and, simultaneously, to undertake activities aiming at raising public awareness in this sphere. Tourism industry is a priority sector in economic development of Georgia, although such sites, where the poorly organized and spontaneous landfills are burning in an open space, cannot be attractive to potential visitors. Spontaneous waste pose a threat to agricultural lands as well.

## ANNEX

### On the existing situation with waste management in accordance with the European Union Association Agreement

#### 1. The aim and target groups of the survey

The survey was aimed at determining the situation existing in the process of fulfilling the European Union Association Agreement requirements and identifying needs of such target groups as municipalities, waste management municipal services, non-governmental organizations, universities, as well as at determining the population's attitude to the implementation of modern waste management approaches.

The following target groups have been identified for the survey: municipalities, municipal services, non-governmental organizations, universities and the population.

The survey was carried out in three cities of Georgia: Tbilisi, Kutaisi and Batumi.

#### 2. Questionnaire design

Proceeding from the specificity and the different target groups' attitude to it, there have been designed two questionnaires: one specifically for the municipalities and municipal services, representatives of non-governmental organizations universities, and another - for the population.

The first questionnaire consisted of five thematic clusters as follows: (1) Awareness of the EU Association Agreement requirements in waste management sphere; (2) The situation with the implementation of the EU Association Agreement requirements regarding waste management sphere; (3) Waste separation and recycling; (4) Challenges and capacity development in waste management sphere; (5) The role of non-governmental organizations in the introduction of modern waste management approaches.

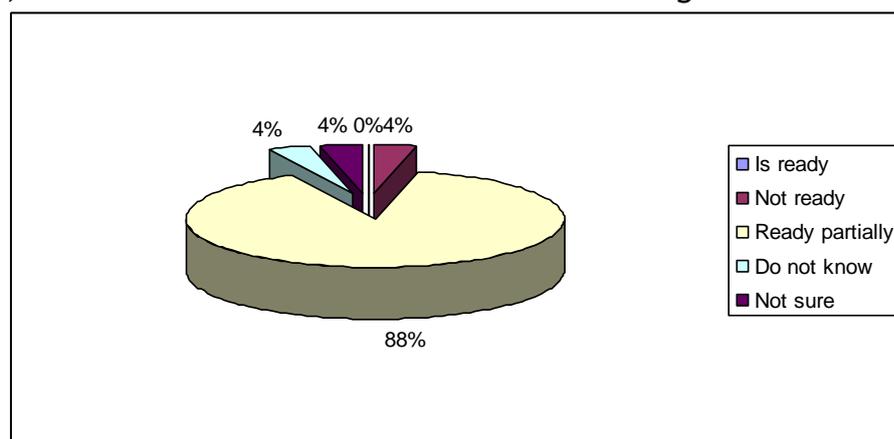
#### 3. Respondents

A total of 306 respondents were questioned, including women (75%) and men (25%).

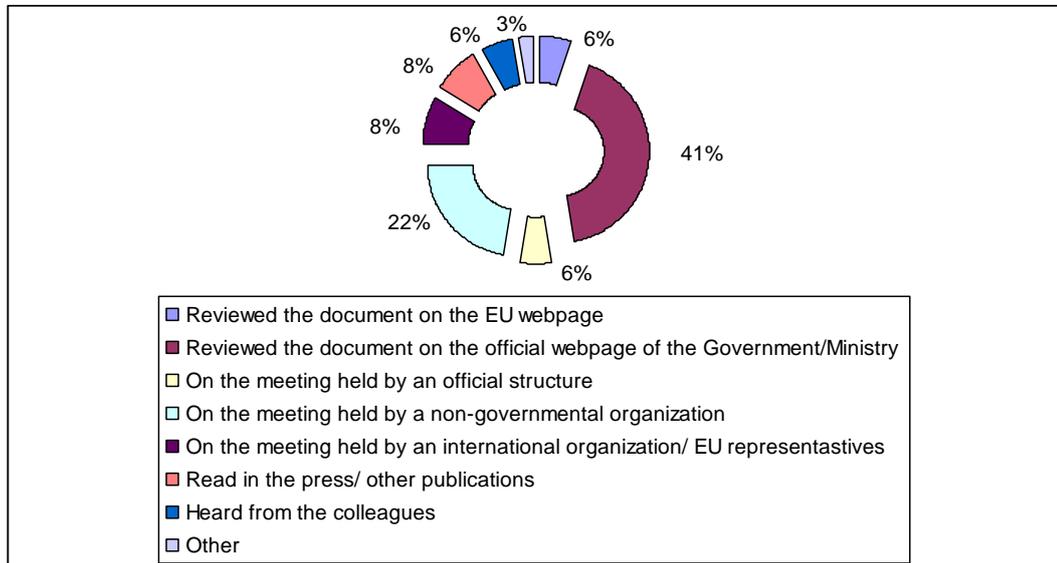
#### 4. Survey data analysis

##### Awareness of the EU Association Agreement requirements in waste management sphere

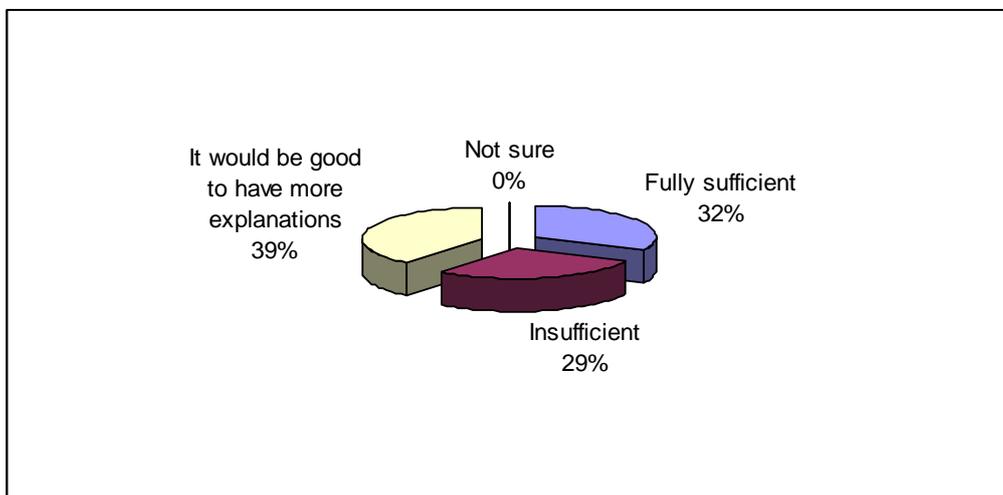
The survey showed that 26% of respondents are well enough aware, and 23% are well aware of the European Union Association Agreement requirements regarding waste management, but 38% of them believe that they are not well enough of this.



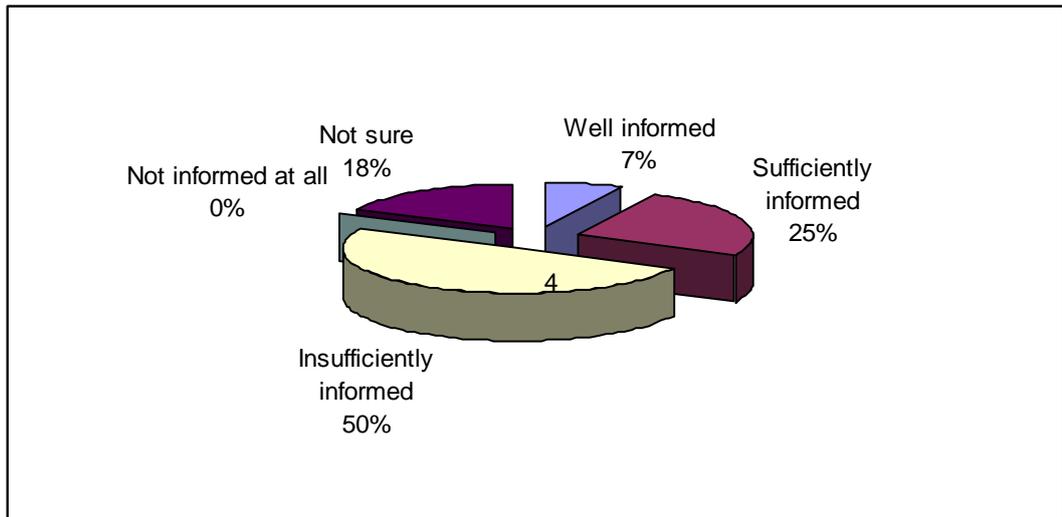
It is interesting that respondents have received information on European Union Association Agreement requirements from different sources. In particular, 41% of respondents have read this document on the Government's and the ministries' web-pages, 22% have received related information on the meetings held by non-governmental organizations, 8% of them have received information on the meetings organized by the offices of international organizations and European Union, as well as 8% have received the same information from the media, 6% have read this information on the European Union's web-page and 6% have received it from their colleagues.



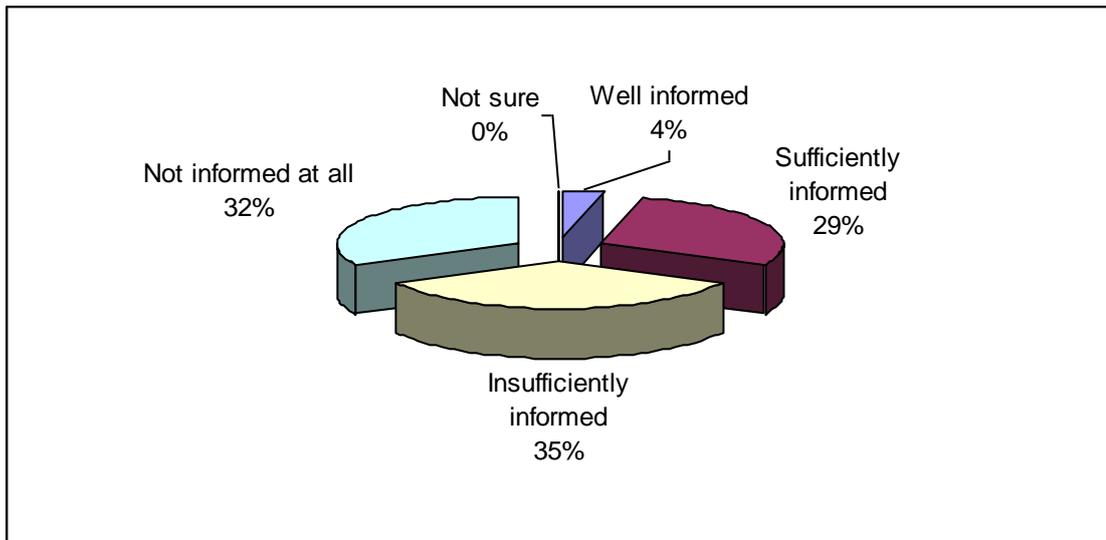
32% of respondents believe that the information they received is sufficient, but 29% of them consider it insufficient, while 39% believe that it would be good to have more explanations regarding the mentioned issues.



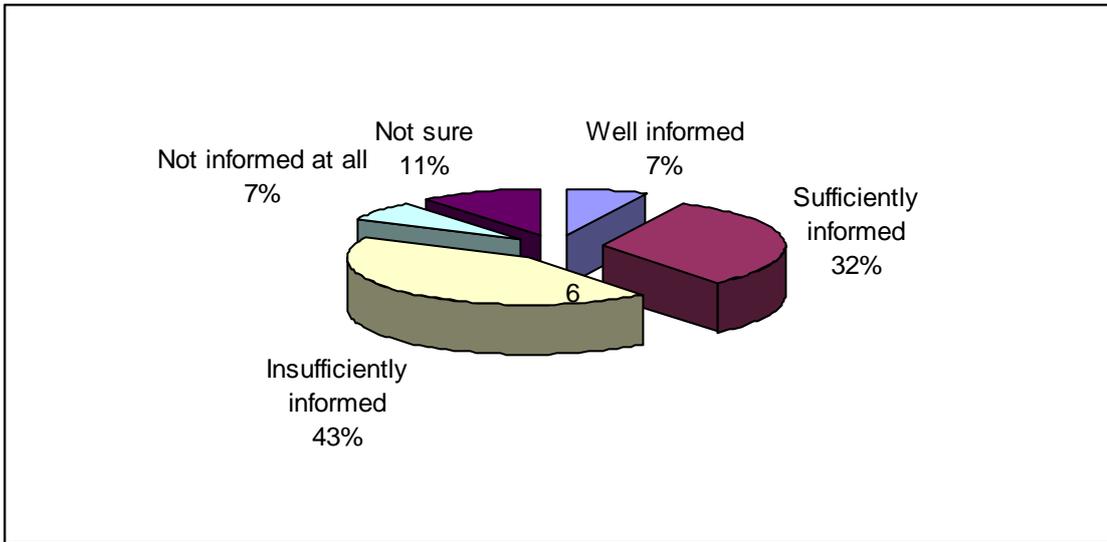
On the question on how well the local self-government bodies are informed about the EU Association Agreement requirements regarding waste management, 7% responded that they are well informed, and 25% - sufficiently informed. 50% of respondents believe that local self-government bodies are insufficiently informed about the EU Association Agreement requirements regarding waste management.



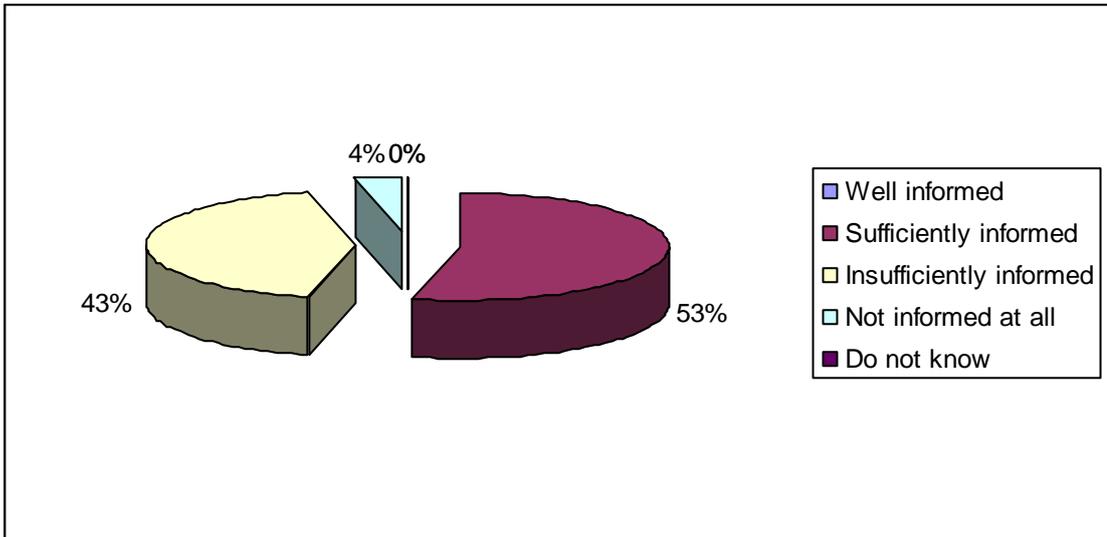
The survey was also focused on the level of awareness of non-governmental organizations on the EU Association Agreement requirements regarding waste management. 3% and 29%, accordingly, believe that non-governmental organizations are well informed and sufficiently informed about the EU Association Agreement requirements regarding waste management, but 35% consider they insufficiently informed, and 32% believe that they are not informed at all about this.



On the question on how well the sanitation services in selected cities are informed about the EU Association Agreement requirements regarding waste management, 32% responded that the sanitation services are sufficiently informed, and 7% consider them well informed. At the same time, 43% of respondents believe that the sanitation services are insufficiently informed about the EU Association Agreement requirements regarding waste management.

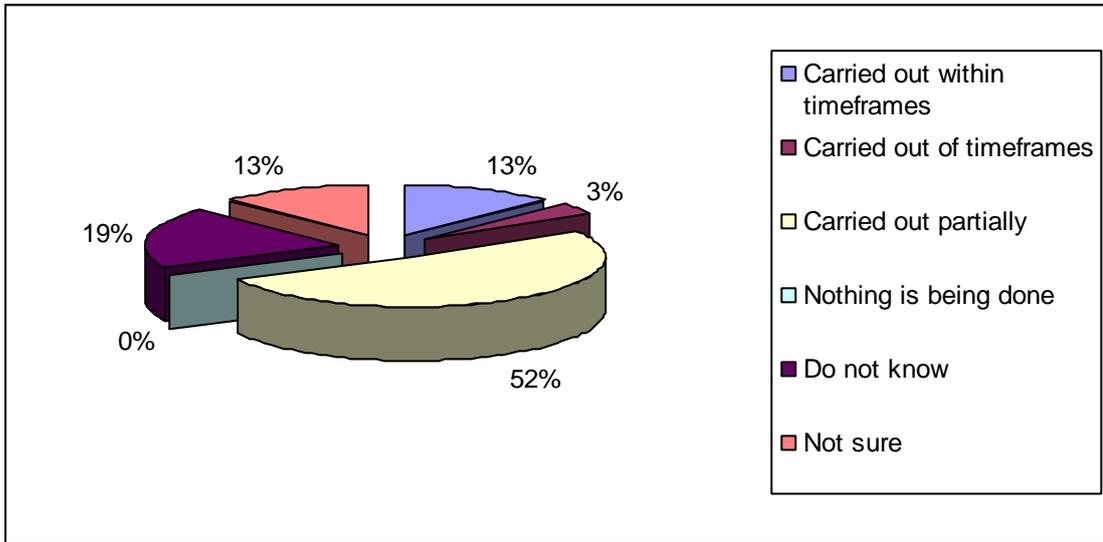


53% of respondents believe that the population is insufficiently informed about the EU Association Agreement requirements regarding waste management, but 43% of them believe that the population not informed at all about this.

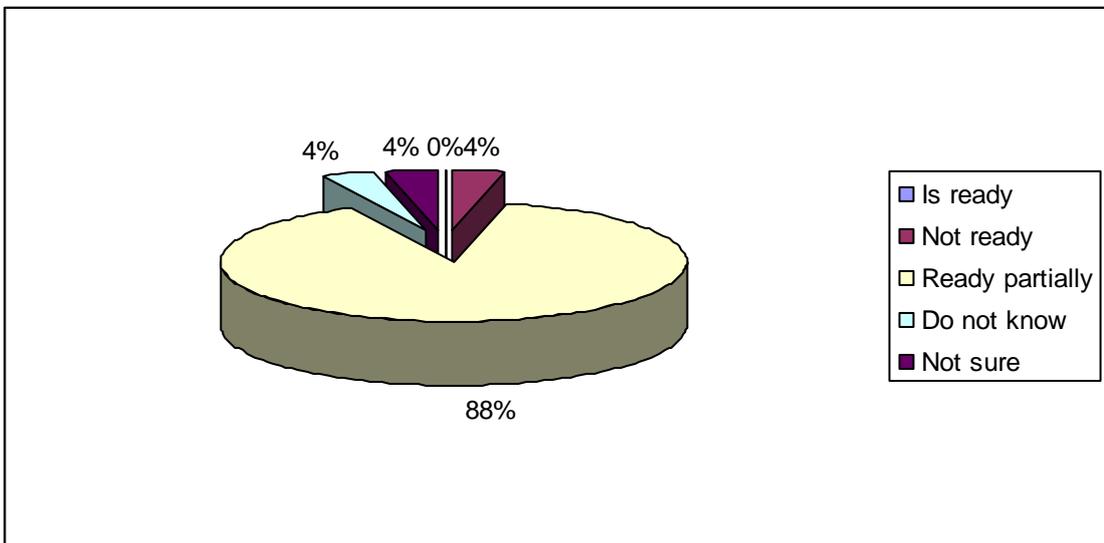


### The situation with the implementation of the EU Association Agreement requirements regarding waste management sphere

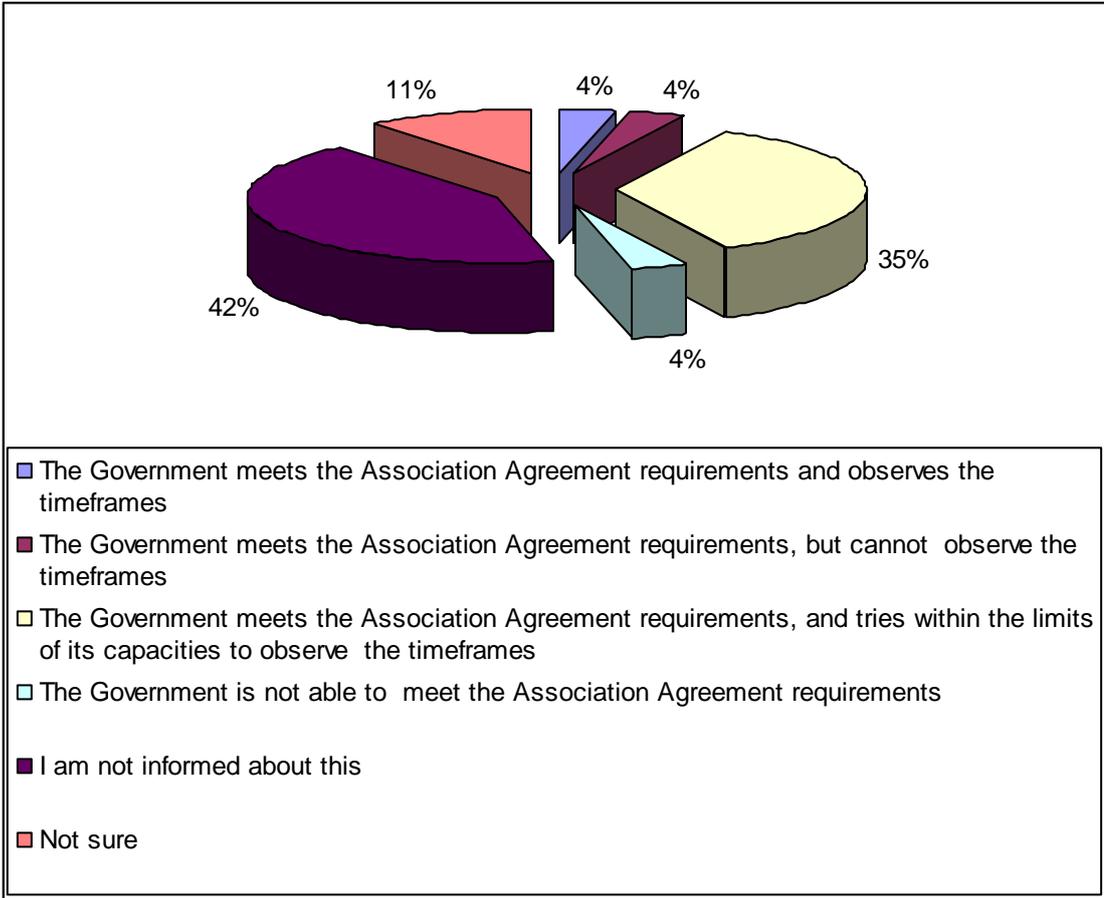
On the question on how compliance with the EU Association Agreement requirements regarding waste management sphere is carried out at the local and national levels, 13% responded that this compliance is carried out within timeframes, 52% of them believe that compliance is carried out partially, but 3% of them believe that it is carried out of timeframes.



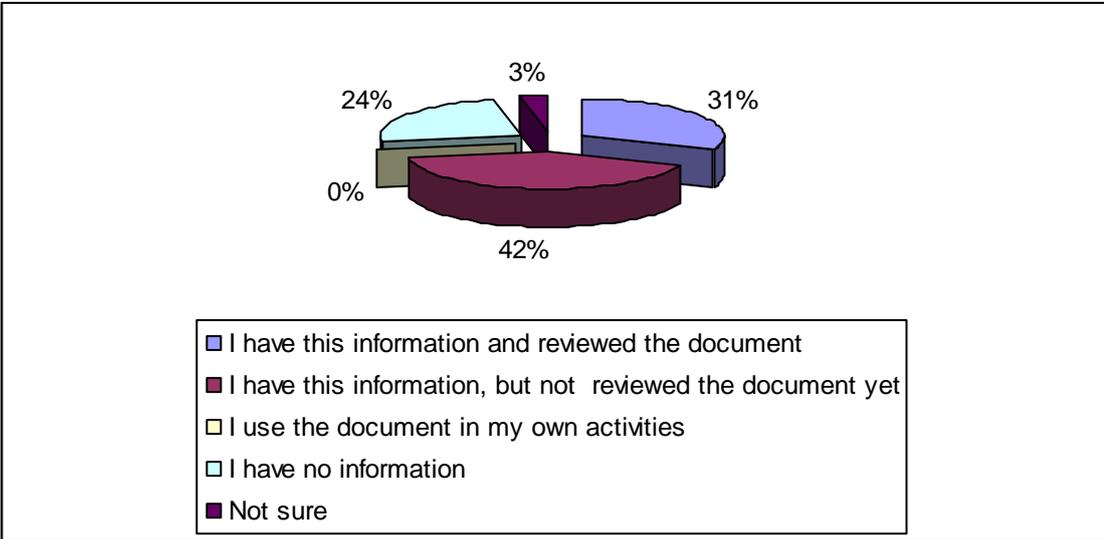
88% of respondents believe that the population is ready partially for putting the EU Association Agreement requirements regarding waste management sphere into practice.



The answers from respondents to the question: “Were sufficient efforts of the Government to meet the Association Agreement requirements, and how well are you informed about this?”, were divided as follows: 35% of them believe that the Government meets the Association Agreement requirements and tries wherever possible to follow the timeline, 4% believe that the Government meets the Association Agreement requirements and observes the timeframes, and 4% believe that the Government meets the requirements, but cannot observe the timeframes.



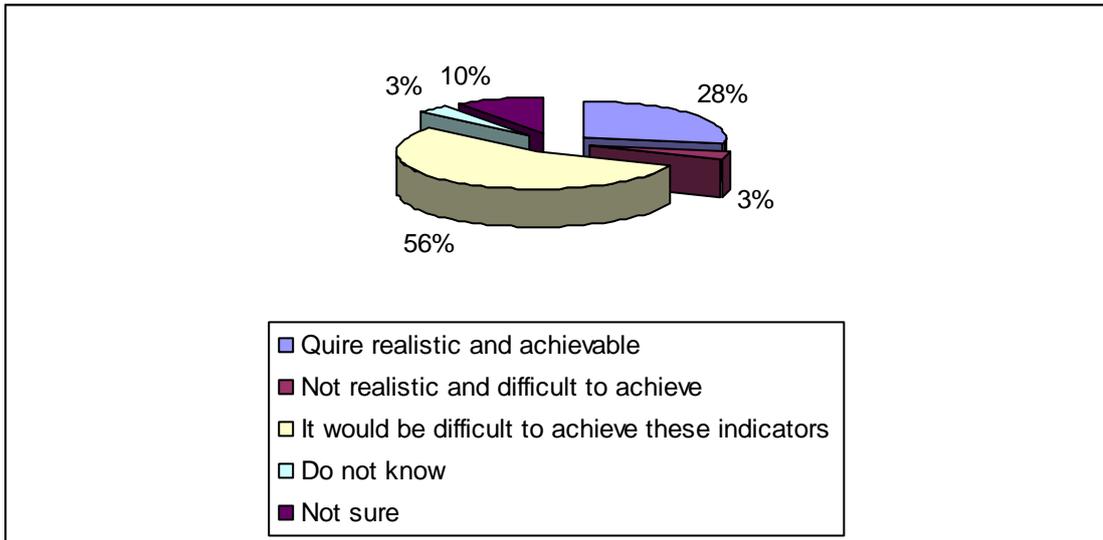
As is known, on 1 April, 2016, the National Waste Management Strategy and Action Plan were approved by the government of Georgia. 31% of respondents are familiar with this document, but 42% of them have heard of it, but have not read it yet.



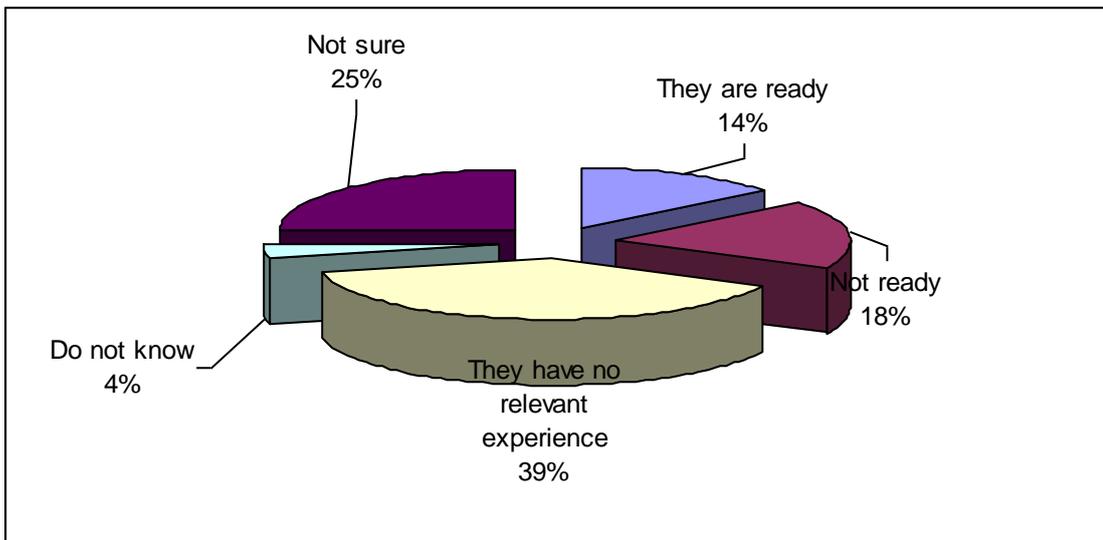
**Waste separation and recycling in municipalities**

As is known, the National Waste Management Strategy envisages the waste separation minimum indicators. In particular, in accordance with the Waste Management National Strategy, the following indicators are planned to achieve by 2010: paper - 30%; glass - 20%, metal - 70%, plastic - 30%.

So, 28% of respondents believe that it is realistic to achieve these indicators, but 56% of them think that it would be difficult to achieve these indicators.

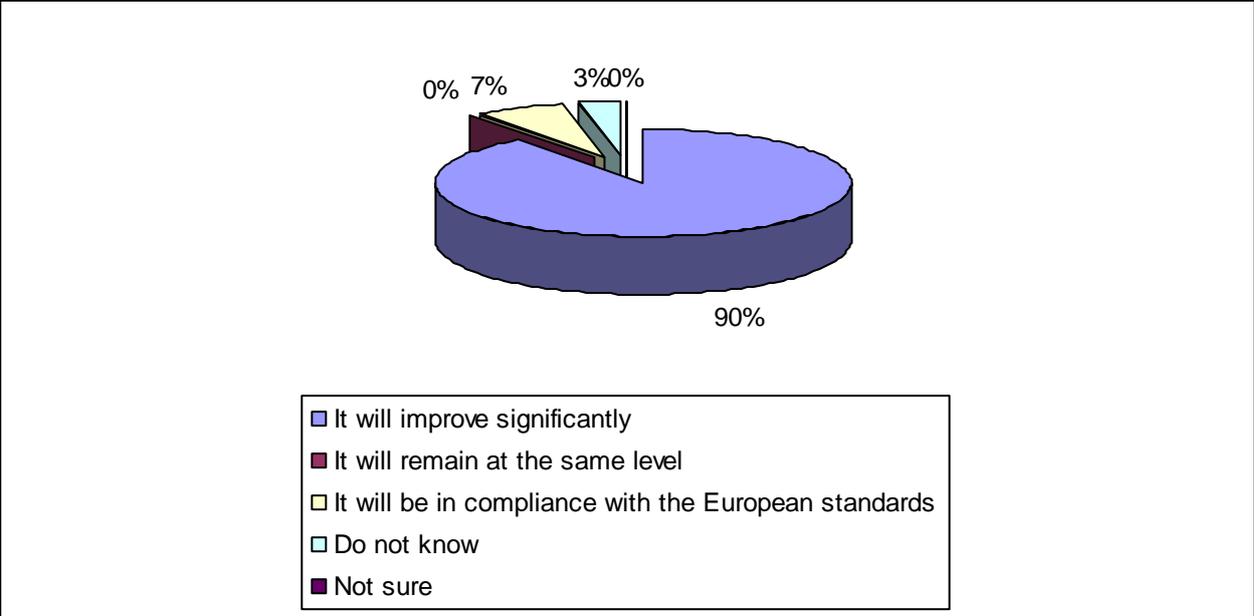


According to the National Waste Management Strategy, the municipalities have to start the meeting the commitments of implementing the waste separation practices since 2019. In this regard, 14% of respondents believe that the municipalities are ready to meet these commitments, but 39% of them think that the municipalities have no relevant experience, and only 18% of them believe that they are not ready for this.

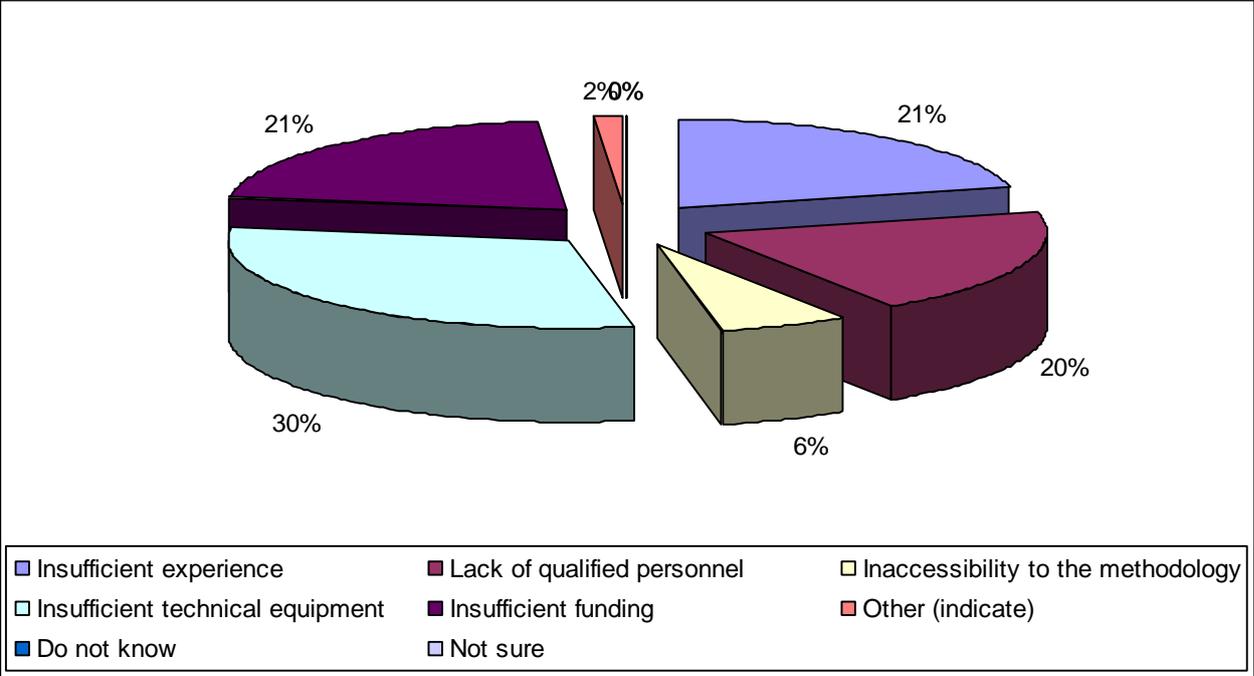


### Challenges and capacity development

On the question on how extensively will the Association Agreement contribute to the improvement and development of waste management systems, 90% responded that it will improve significantly.

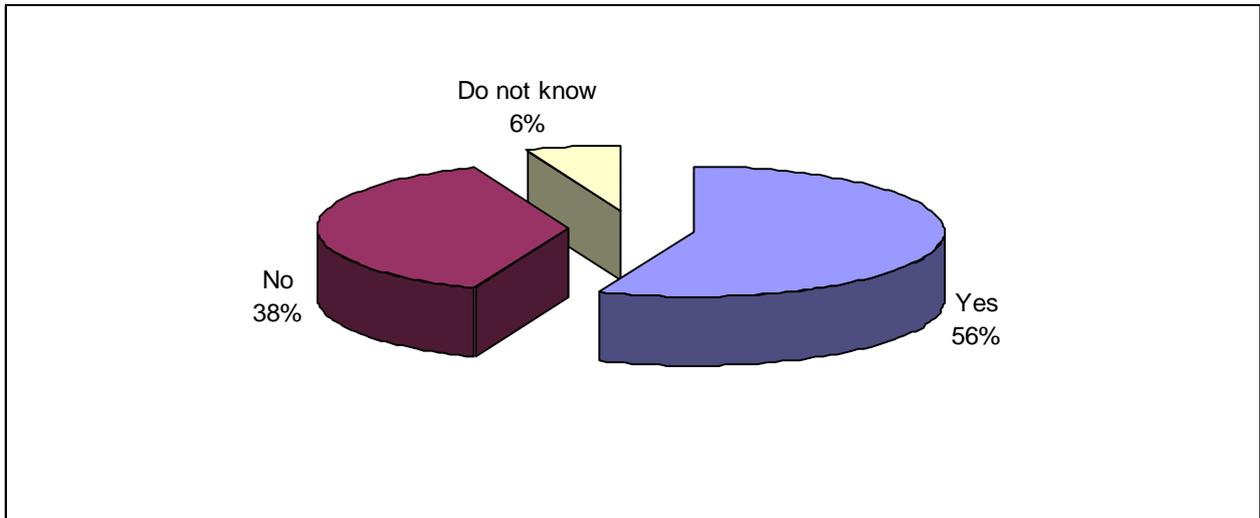


From difficulties they face or may have for introduction of modern waste management approaches at the local levels, respondents highlighted the following ones:

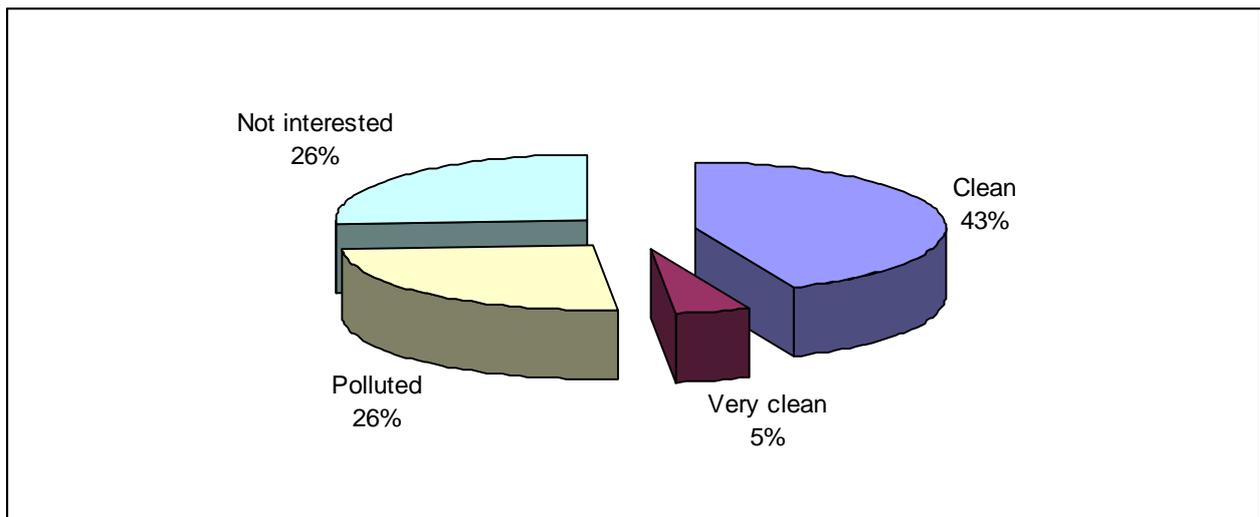


## The results of the population-based survey

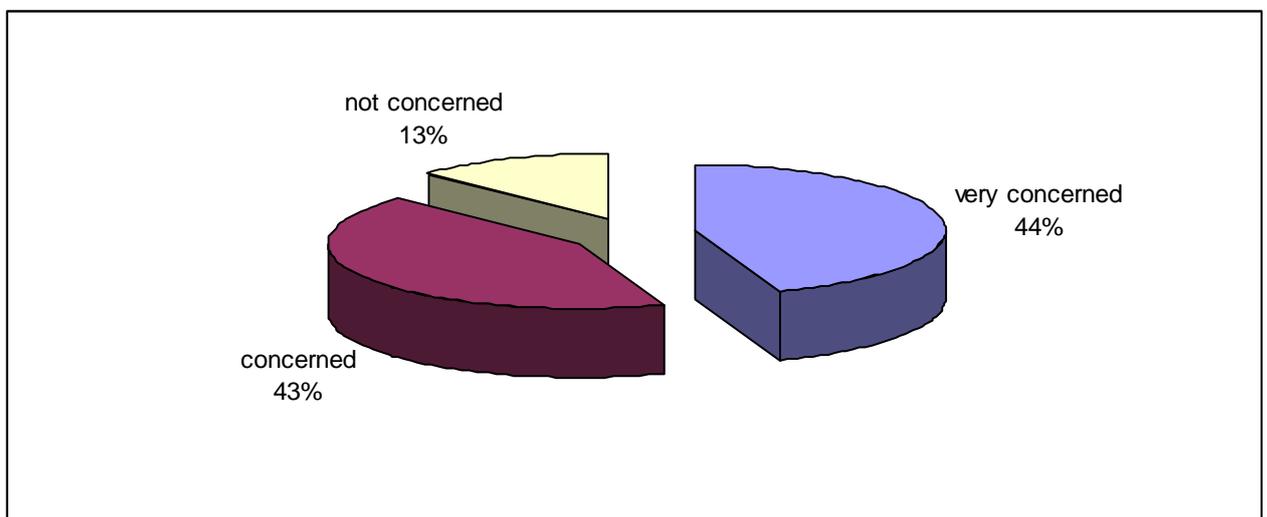
56% of respondents responded positively to the question “Did the level of cleanliness in the city change over the past two years?”, and 38% responded negatively.



43% believe that their residential area is clean, but 5% consider it very clean, but 34% think that their residential area is polluted.

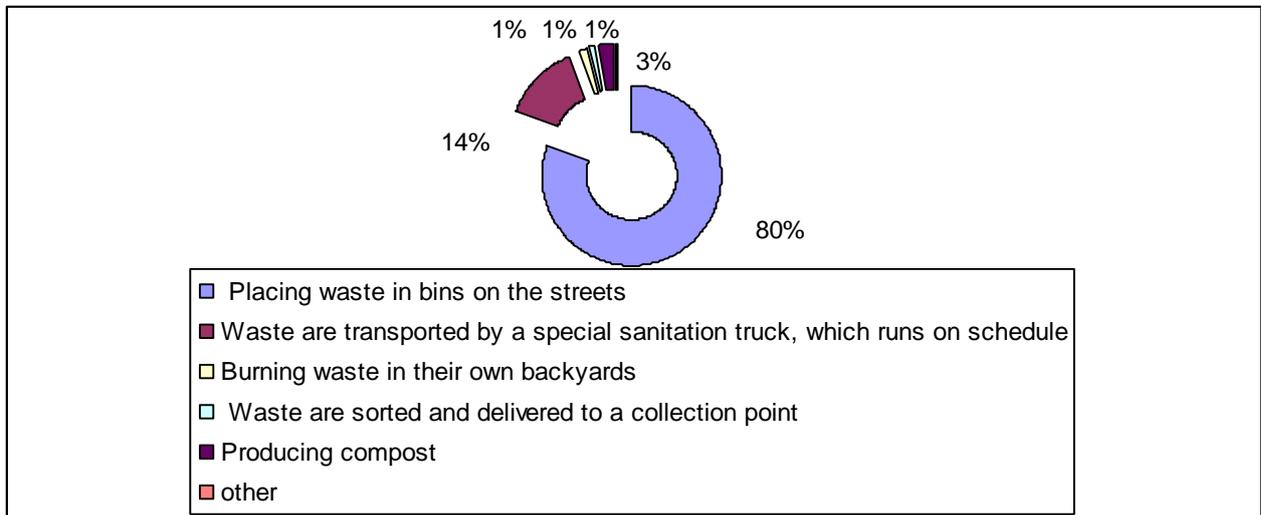


44% of respondents are very concerned, and 43% are concerned about the problem of domestic solid waste.



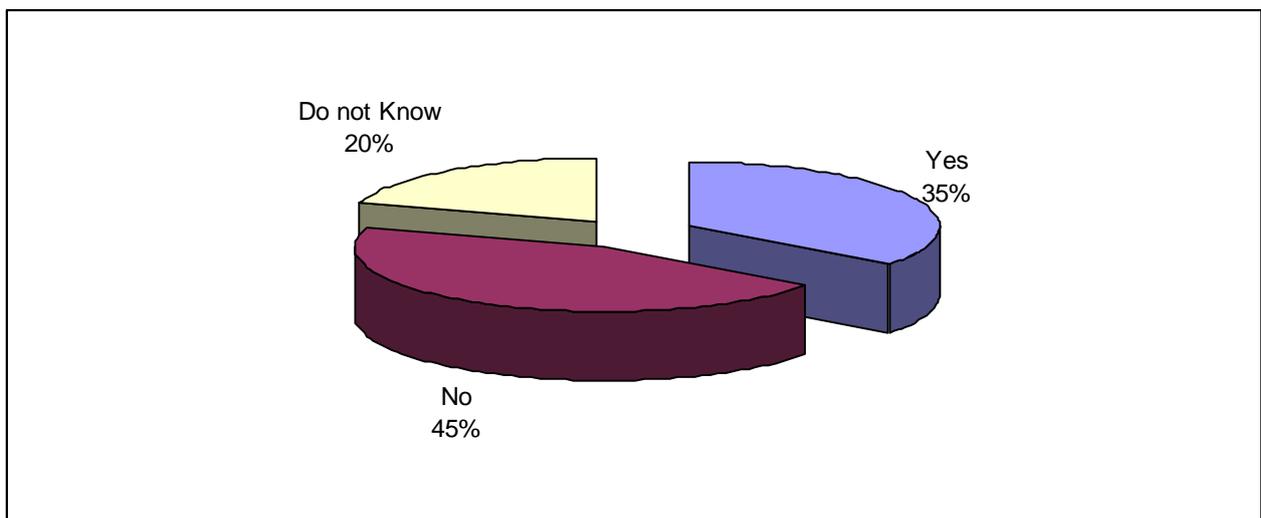
To cope with the problem of domestic solid waste, respondents apply the following procedures:

- Placing waste in bins on the streets (90,2%);
- Waste are transported by a special sanitation truck, which runs on schedule (16%);
- Waste are sorted and delivered to a collection point (1,1%);
- Producing compost (2,9%)
- Burning waste in their own backyards (1,5%).



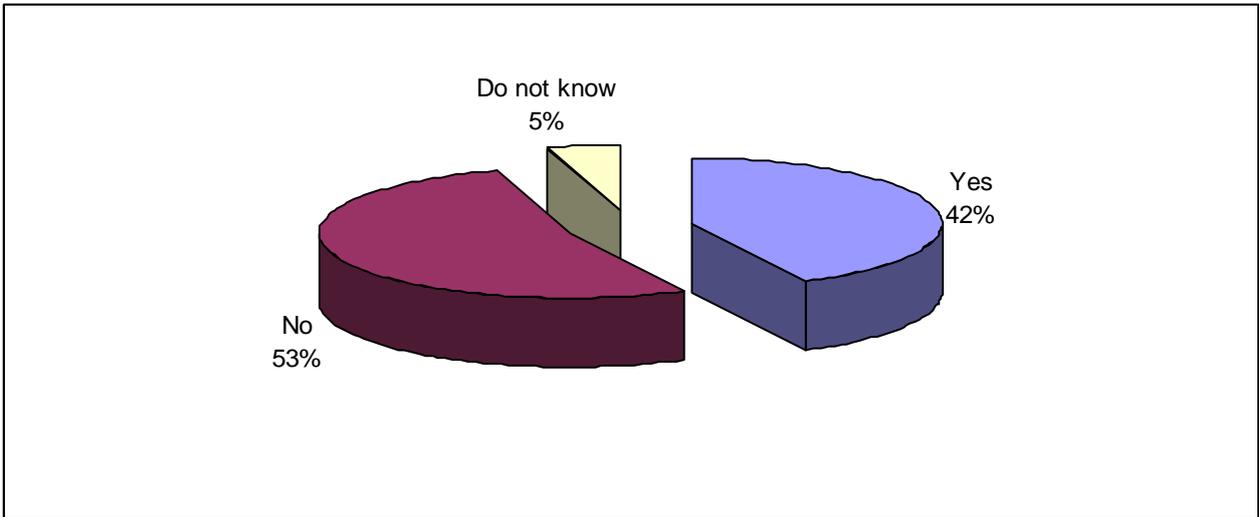
On the question on whether the separated collection of waste is being implemented in your cities, respondents gave the following answers:

Yes - 37,3%, No - 44,1 %, and Do not know - 18,6%.



The types of waste, which are being separated in all three cities are as follows: plastic, paper, glass, metal.

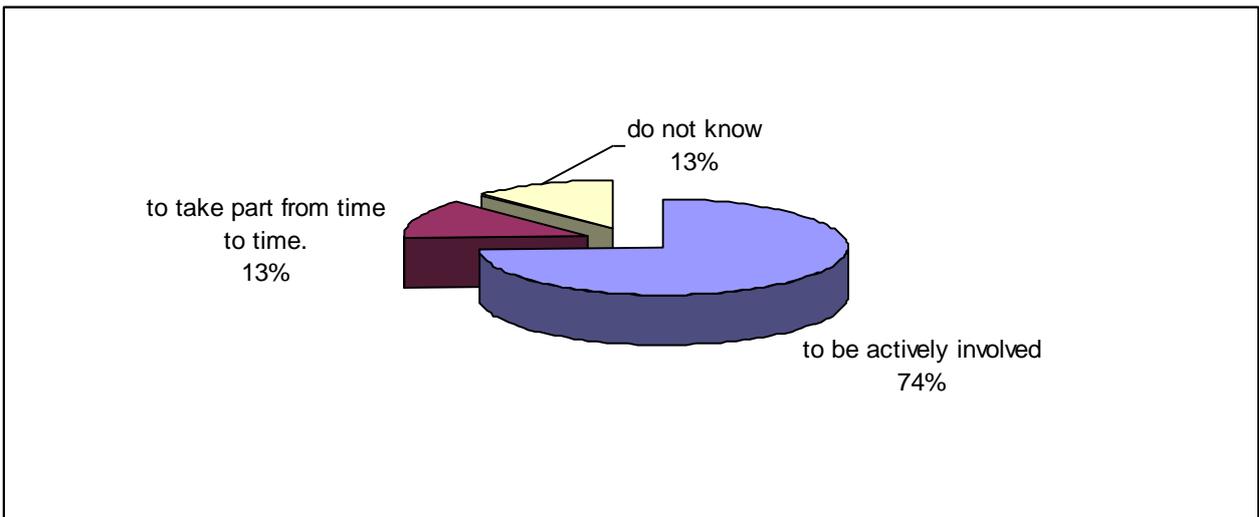
The separated collection of waste is being carried out by: municipality (Kutaisi), non-governmental organizations (Tbilisi), private sector (Tbilisi, Batumi, Kutaisi). 53% of respondents are involved in waste separation process, and 42% do not participate in it.



44% of respondents consider waste separation very easy, but 39% of them think that this process is not easy.

Diagram 6

74% of respondents express their readiness to be actively involved in waste separation, but 13% don't really know yet what will they do, and 13% of them are going to take part from time to time.



The best convenient approaches to waste separation for respondents are as follows:

- Separation at home conditions and placing of sorted waste in the specially-designed containers (68%).
- Placing of mixed ((unsorted) waste in a general container with subsequent sorting of them in the sorting centers (20,7%).
- Sorted waste delivery to a collection center with receipt of the relevant payment (14,2%).
- Producing compost from organic waste at home conditions, and placing other waste in a general container (4%).

96% of respondents believe that waste separation and recycling will contribute to the environment protection and sustainable development.

