
NON-TECHNICAL SUMMARY OF ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

Autonomous Republic of Ajara, Georgia

Ajara Solid Waste Management Project

ASSIGNMENT NUMBER 1989230000



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1 Introduction

The Government of Georgia and the Autonomous Republic of Ajara are cooperating with European Bank for Reconstruction and Development (EBRD or the Bank) to improve the solid waste management situation in the coastal region of Ajara, Figure 1. The Ajara Solid Waste Management Project is intended to help improve solid waste management services in the region through the building of a new European Union (EU) compliant sanitary landfill and waste facility. The total investment costs are estimated to EUR 7 million, to be financed by a loan from the EBRD of EUR 3 million and a grant from the Swedish International Development Agency (SIDA) of EUR 4 million.

This document is the Non-technical Summary (NTS) the Environmental and Social Impact Assessment (ESIA) carried out for the Ajara Solid Waste Management (SWM) Project, in accordance with the EBRD requirements. The document aims at describing the proposed project and presents the main findings and conclusions of the ESIA as well as of the public consultation process undertaken during the development of the ESIA and the project proposal.



Figure 1 Location of Ajara in Georgia

2 The Project

2.1 Project categorization

EBRD's Performance Requirements outlines the process of appraising, managing and monitoring environmental and social issues associated with a project. The Landfill Project in Tsetskhlauri has been categorised as Category A, i.e. is subject to a comprehensive ESIA process.

2.2 Description of the Project

The primary project objective is to improve the Solid Waste Management (SWM) situation in the coastal zone in Ajara by

- Closing down and remediate three non-compliant landfills to the extent of available funds and
- Construct and operate a new sanitary landfill facility, compliant for non-hazardous waste in accordance with the EC Landfill Directive¹

The locations of the proposed new landfill in Tsetskhlauri and old dumpsites in Batumi and Kobuleti are shown in Figure 2.

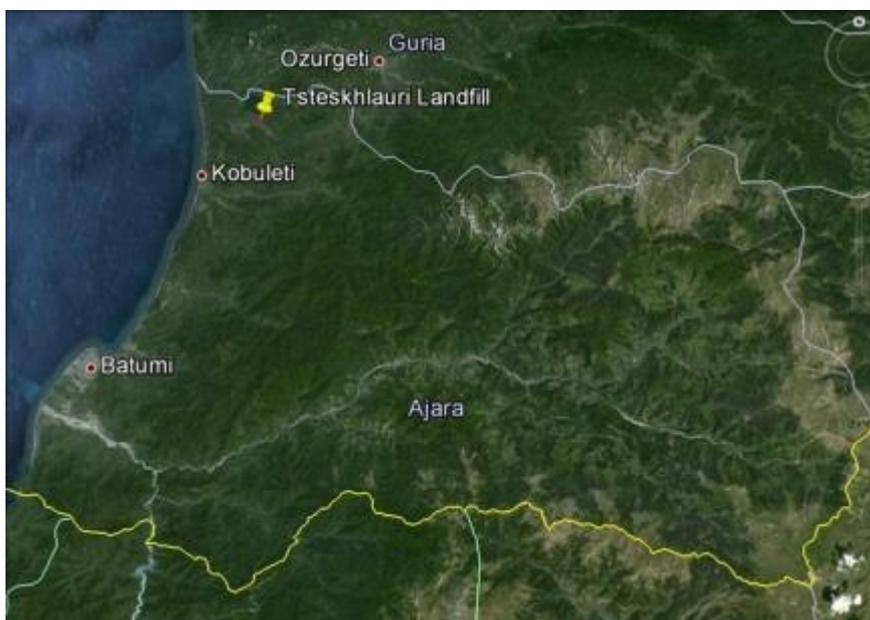


Figure 2 Locations of the new landfill in Tsetskhlauri and cities in Batumi and Kobuleti (Google,2012)

2.3 Closing of three dumpsites

Three dumpsites will be remediated and closed within the Project area:

- Operating dumpsite in Batumi,
- Temporary operating dumpsite in Kobuleti and
- Abandoned dumpsite in Kobuleti

The dumpsites needs to be closed as soon as possible because of the poor conditions observed within and around the sites. The financial allocation in the investment programme is not enough to cover the costs of a finale closure according to the EC

¹Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste

Directive on landfills. It is proposed that procedures for covering are made at a robust and affordable level. This means applying a final cover on the waste consisting of a low-permeable soil and a vegetation cover. A natural passive methane oxidising filter will be placed in the upper part of the reshaped dumpsite to reduce emissions of greenhouse gases to the atmosphere. The territory should be guarded after the closure to prevent unsanctioned dumping and waste picking in the area. Monitoring equipment should be also protected.

The objectives for closure of the dumpsites are to reduce or prevent

- spreading of wind-blown wastes
- generation of leachate water and its drainage into the surrounding water bodies
- landfill gas emission to the atmosphere
- spreading of odour
- the risk for fires and
- unhealthy informal recycling activities

At the Batumi landfill about 50-70 waste pickers are reported to work, at Kobulti around 10-15. In addition, 9 shelters exist at the Center of the Northern part of Batumi landfill, approximately 8 just on the Eastern boarder of the Northern part of the landfill, 2 shelters with agriculture/cattle at the Southern part.

Waste pickers sort out PET bottles from the waste piles as well as metals. A company is buying the plastic material from the waste pickers, it is allegedly the company Sever, who used to operate the landfill who is buying the waste. The waste pickers are not employed by the company and they do not have other sources of income. It is reported that few women are waste pickers (about 4 at Batumi) but confirmation of these figures are difficult. During summer more female waste pickers might work at the landfill, as Uzbeks are said to come. It would seem that no children involved in the work, but teenagers occasionally work at the sites. It is not known whether the teenagers are also enrolled in school or not.

2.4 New landfill facility in Tsetskhauri

The proposed landfill site is located approximately 6 km from the Black Sea shore-line, 10 km from City Kobuleti and 45 km from Batumi City, see Figure 2. The investigated area has a size of 40 ha and it is situated in the west outskirts of village Tsetskhauri eastward from the regional town Kobuleti. At the future landfill area there are two populated houses within the protection zone of 500 meters around the proposed landfill. Within the sanitary zone there are corn fields that is utilised by people living (4 households) in the houses north of the landfill site. In addition, some 60-80 plots exist at the landfill territory (some of these used for agriculture/grassing) and people farming the land within the sanitary zone.

The new sanitary landfill is designed to meet the requirements of the EC Landfill Directive and EC Industrial Emissions Directive. The new sanitary landfill will be a landfill for non-hazardous wastes. The cell area is estimated to 11,5 hectares, with a height of 15 meters

and will accommodate the solid waste amount of 1,4 Mm³, transported from the target area to the new site. At the landfill base and the sloped sides of the cells an impermeable sealing layer will be applied and a drainage system for leachate water collection.

Within “Ajara Solid Waste Management Project”, for the construction of solid waste landfill in the village Tsetskhauri, municipality of Kobuleti, consultant company SWECO has used the 2007-2010 years’ information about the amount of waste for the primary research. However, during 2011-2013 the volume of solid waste collected in the Autonomous Republic of Ajara has sharply increased from 50 000 to 70 000 tons per annum. Reason behind this change is the unified system of collection of solid waste from the population of whole administrative area of Ajara. Moreover, in the near future volume of solid waste supplied to the new landfill is expected to rise gradually to 75 000 tons per annum. Exploitation period of the landfill is 21-35 years (35 years in case of strengthening the waste recycling sector). The waste will be disposed into the cell currently in operation and will be distributed and compacted by an excavator/compactor. The open tipping face will be minimised at all times to reduce the exposure of organic material and this will in turn reduce the amount of flies, birds, rats etc. Compacted waste will be covered daily to minimise wind-blown waste and odour to the surroundings. The source of soil material for daily cover is located north of the landfill, within the sanitary zone.

Step by step as the waste pile reach the final height an intermediate cover will be applied to allow diversion of the surface runoff and reduce the generation of leachate. Once a landfill cell has been completely filled up an intermediate cover² will be applied. The final cover³ of the cells will be connected to each other so that the sealing layer is completely covering the whole landfill area.

The Government of Ajara, aims all waste to be sorted before it is landfilled. Therefore the Ministry of Environmental Protection of Ajara plan to install a sorting facility at the new waste facility in Tsetskhauri. The operation of the sorting facility is issued in a separate environmental permit handled by the Ajara Government. The sorting facility will sort 100% of the incoming waste.

A concrete wall will be built around the landfill and planted hedges will further prevent insight. Trees will be planted north of the site to prevent a negative visual impact for the people living close to the site. The total area covered by trees will be approximately 8 hectares, of which half of the the area will be outside the border of the landfill (i.e. outside the concrete wall).

The waste facility will include:

² The objectives of intermediate cover are the same as daily cover, except that this material should also minimise surface water ingress. It is regarded as cover that is required to remain effective for an extended period of time. Types of cover recommended for intermediate cover include soils (mainly clay or other impermeable types); colliery shale; heavy duty reusable plastic sheets; or non-reusable plastic films.

³ The current recommendation with regards to final capping is to follow the *BAT Guidance Notes for the Waste Sector: Landfill Activities* (2011) (www.epa.ie). If national or EU requirements would be changed in future, the procedure should be adjusted so as to ensure that new requirements are met.

- Access road
- A concrete wall, gate and information board
- Weighbridge and waste registration office including guard house
- Administration building including offices space
- Staff building including sanitary facilities
- Internal roads, parking area and lighting
- Workshop and Wheel wash facility
- Sorting and storage facilities for recyclables and hazardous waste
- Surface water collection and storage
- Sewage water, water (drinking/raw water), electricity and communication
- Leachate collection and treatment system
- Landfill gas generation and collection, torch, energy utilisation unit
- Vehicles necessary for the operation

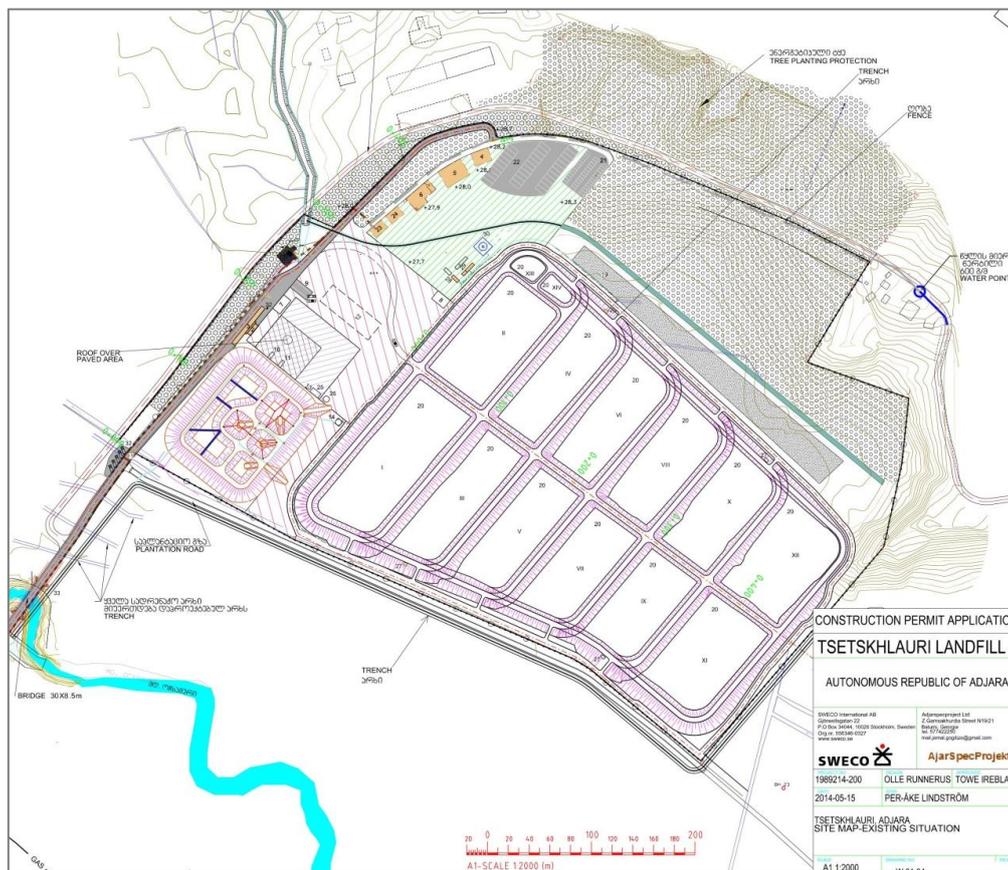


Figure 3 Location and preliminary landfill layout in Tsetskhlauri

2.4.1 Hazardous Waste

Incoming waste may include hazardous waste. The initial inspection routine will identify such hazardous waste and ensure that no hazardous waste is disposed at the landfill. All hazardous waste identified will be transferred to external operators and treatment facilities.

There is one small incinerator handling infectious waste at the non-compliant landfill in Batumi and there is also a special vehicle for collection of such waste. The incinerator may be relocated to Tsetskhauri landfill site in the future. However, the installation and operation of such an incinerator would require a separate environmental permit from the Ministry of Environmental Protection of Ajara. This ESIA concerns the landfill for non-hazardous waste in Tsetskhauri only, and moving the incinerator is thus not included in this project. (see also description of cumulative or indirect impacts below).

2.4.2 Cumulative impacts

Cumulative or indirect impacts are impacts that are not directly linked to the projects, but could be expected as a result of the project. Estimating cumulative impacts is difficult and often includes uncertainties. However, analyzing potential cumulative may reduce the risk of unwanted or unexpected negative impacts from the project. Potential indirect and/or cumulative impacts of the project include:

- Installation of more advanced sorting facility at the new landfill site. Such a sorting facility may further increase reuse and/or recycling of material and contribute to an extended life span of the landfill.
- Installation of an incinerator for medical waste, probably classified as hazardous waste according to the EU Directive⁴. Such installment would require a separate environmental permit together with specific management and monitoring procedures. Should such installation take place, measures should be undertaken to ensure health and safety of staff and of men and women living or working in the vicinity of the site, and to minimize impacts such as emissions, odour or noise.

2.4.3 Access to infrastructure

An access road will be built from the new highway passing to the landfill. The distance between the landfill and the new highway is approximately 1.1 km. The access road shall also be used during the construction period. This implies that heavy transport will be avoided on the existing village road.

2.5 Project Alternatives Considered

As described in Chapter 2.1, there were two site selection processes performed within the project. The first site in Chakvi was identified by TACIS project financed by Black Sea

⁴ Directive 2008/98/EC of 19 November 2008 on waste

Environmental Facility Project. It was performed during the period 2005-2006. After a pre-selection process, six possible sites in Ajara coastal zone were assessed. The evaluation was based on 23 different criteria including natural conditions, proximity to houses and airports, surface and groundwater conditions, transportation conditions and possible volume of the landfill. The final comparison followed a logic scheme including assessment of six main environmental and social parameters or sources of potential conflicts if a landfill should be established:

1. **Water** (location in relation to groundwater, rivers, springs and private wells),
2. **Housing and infrastructure** (distance to houses, visual exposure of the site),
3. **Tourism** (visual effect on scene, integration into the landscape),
4. **Geological conditions** (bedrock, soil properties, permeability, stability),
5. **Agriculture** (land use today, development plans),
6. **Accessibility** (distance to main roads, quality of access roads).

The second site selection procedure was performed 2012 after the Government of Ajara decided to move the new landfill site from Chakvi to a more remote location where social and environmental scenery and other implications were expected to be less.

2.5.1 Site Selection for the new landfill

The identification of a new landfill site started in February 2012. The exclusion criteria for the site selection followed the parameters of the first site selection process and the specific characteristics can be found in the full length draft ESIA.

Due to the constraints resulting from the development plans, population pattern, highway delineation, existing national parks, wetland areas etc. there were only two potential landfill locations left for consideration. One of them was located in the vicinity of the temporary dumpsite at Cholokvi village, in the plain east of Kobuleti village. The second optional site was in the north part of Ajara on the plain near village Tsetskhauri.

Vicinity to highway, settlements and a wetland area indicated that the Cholokvi site was not suitable for a landfill. The Tsetskhauri site was selected to be the more preferable site for constructing a new landfill, both from a social, environmental and technical perspective.

The rapid assessment proved that the landfill location did not violate the major requirements but minor deviations were observed. Thus the *Rapid Site Assessment* found the place suitable for landfill construction and operation. However, it was noted that the new site would cause longer transport distances from Batumi in comparison to previous location at Chakvi, and therefore the new location results in higher transport costs. It could be also assumed that a transfer stations between Batumi and Tsetskhauri would be preferable in the future. More detailed investigations were conducted subsequently, presented in the ESIA.

2.6 Project Owner

A landfill company Hygiena Ltd. was created to own and operate the new sanitary landfill site facility and the associated assets in Tsetskhauri to provide landfill services for the population. Hygiena Ltd. is not yet staffed. The Government of Ajara is the owner of the new landfill company.

3 Environmental and Social Impact Assessment

The draft ESIA describes a baseline, and the potential impacts during both construction and operation of the new landfill facility. Mitigation measures are proposed for all phases of construction, operation and aftercare phases to maintain compliance with lender requirements. Of the subjects considered and potential impacts and mitigation measures identified and assessed the following were considered key:

3.1 Air quality

Dust has the potential to cause significant nuisance to people living close to the site and may pose a risk to the health of those working on the site. Dust from the landfill could cause problem for people mainly in the village of Jikhanjuri. The operational procedures and working plan will set out the requirements to minimize and control potential nuisance from dust. When intensive earth works is carried out, the areas will be watered to eliminate the problem of dust. Other activities will be regular sweeping and spraying of surfaced site roads. People living in the surroundings of the site will be informed by the Ajara Government of the construction schedule. The impact of dust during the construction phase is temporary and is deemed limited provided that mitigation measures are implemented.

3.2 Odour

Odour may be a significant problem for the people working in the landfill area and people living in the surroundings of the site. The main source of odour at the site is from the handling of the waste when it is unloaded from the waste trucks at the sorting area or in the landfill cell. To reduce smell from the landfill, proper management and operation including daily cover including in the same time minimisation of open tipping face area are the most important measures.

3.3 Noise

A potential nuisance is noise from construction as well as normal operation of the landfill mainly from vehicles when compacting and covering waste and transports of waste to the landfill. Noise can also come from building and construction work at the site, reversing alarms, pumps and electrical equipment. The topography is favourable to minimise noise to the surroundings. The distance to nearby residential areas is also satisfactory as the nearest houses are located at a distance exceeding 500 m from the new landfill site.

3.4 Birds, vermin and insects

Birds, vermin and insects may cause a nuisance to workers and people living close to the site. Assessment of bird scaring techniques will be implemented when species likely to be affected is specified based on experience from the site. Care shall be taken to ensure that the use of insecticides does not cause environmental pollution to water, soil or air.

3.5 Littering

Litter causes a negative visual impact to many people, and may cause significant nuisance to people in the neighbourhood. Since south west is the predominated wind direction, there is a risk that waste could reach the nearby villages of Tsetskhlauri and Jikhanjuri. Littering will be mitigated through by proper management and by the daily covering of the landfill. Daily inspections and waste picking shall be implemented. Around the sorting area, a net will be installed between the roof and the ground level. The wall around the landfill will also reduce the littering of surrounding areas by windblown e.g. plastic bags. However, waste that has been spread around should be regularly collected.

3.6 Waste transports and machinery

Frequent waste truck transports may disturb the residents around the road during the construction and operation of the landfill. The number of waste transports will show hardly noticeable increase compared to the normal traffic load on the highway. Further, the access road from the highway junction to the landfill will not pass near any settlements.

Regular service and maintenance of vehicles, switching off the engines when the vehicles are not in use and minimising on-site vehicle movement will be important mitigation measures as well as marking of pedestrian/vehicle zones for traffic safety. There shall be regular sweeping of surfaced site access roads to prevent mud on roads to pose damage to the road from truck movements. At the paved area on site there will be a washing place for vehicles. The washing unit will be equipped with an oil trap.

3.7 Environmental Health Risks and Safety

There are health and safety risks connected with the waste facility for the workers and visitors at the site and for the population living in the vicinity of the site. Health risks for the workers at the landfill site are normally associated with exposure to sharp, infected or toxic material at the site. Other risks are the hazards for explosions and fires caused by improper management of the waste or the landfill gas. Vehicle movements are a risk factor for incidents in the daily work; both waste trucks as well as heavy machines will be in traffic within the site.

An Environmental Health and Safety Plan including health and safety measures to avoid accidents and injuries during work at the landfill will be developed (entailing also Occupational health and safety). A training programme will be performed before the operations start at the site and continuously when new staff is employed, to ensure that all staff is informed about safety regulations, including safety risks and controls. One example is hazardous waste, which demands trained staff to determine the type of waste

and decide upon proper handling/treatment, if such waste should be brought onto the site.

3.8 Emissions to surface water

Emission of pollutants into the surface waters is not expected during the construction or operational phase. However, there is a risk for leakage of petrol, oil and greases from working machines, which should be mitigated through regular control and maintenance of the equipment. Surface water from the sorting area will pass an oil trap before entering to the leachate treatment system. An oiltrap will be installed at the workshop to minimize emissions to surface and groundwater.

3.9 Emissions to groundwater

Important observation was made during the field survey that the ground water levels were not constant but are seasonally varying and also depends on the climate cycles. The ground water levels were close to the surface in the plain areas of the landfill site. Both the vertical and horizontal water movement is very limited. The Tsetskhauri Plain is not a groundwater recharge / discharge area. There is no shallow or intermediate aquifer under the Plain, thus, the landfill is not going to impact the groundwater resources.

Leakage of polluted leachate water to the ground and to the groundwater will be minimized due to the advanced bottom construction, meeting the requirements in the EC directive for landfills of non-hazardous waste. No influence on the groundwater quality is expected if the bottom construction and leachate treatment is applied properly.

3.10 Closing of the landfill/after care

Final closure of the site will be described in the Closure Plan for the landfill. The closure plan will show that potential environmental effects and risks are minimized when the landfill full and no more waste will be placed on the landfill. Sufficient financial resources must be allocated for the closing of the landfill. This includes a final cover that meets the requirements of the regulations. The provisions shall according to the Landfill directive cover a period of at least 30 years. In the BAT guidance, recommendations for facilities with landfills of organic waste is 50 years⁵. A major risk is that there will be a lack of sufficient financial provision to cover the cost of closure and aftercare.

3.11 Cultural and Historical heritage

The Department of Environmental Protect of Ajara has informed the Consultant that no objects considered as cultural or historical heritage found in the landfill functional or impacted area, after ocular assessment by the Ministry of Culture. A visit to regional museum shows many chance finds are made and it cannot be ruled out and precaution is consequently suggested in the ESIA.

⁵ Final Draft BAT Guidance Note on Best Available Techniques for the Waste Sector: Landfill Activities, EPA, Ireland, 2011

3.12 Resettlement and economic displacement

The Consultant has worked together with the The Government of Ajara and Ajara's Land Cadastre Department to identify cadastral maps and entitlements for the area where the landfill is proposed to be placed. In addition, interviews were carried out with project affected population. Based on desk studies and site visits, following findings have been made:

Batumi and Kobuleti:

- Estimated 50-70 waste pickers work at Batumi landfill.
- Estimated 10-15 waste pickers work at Kobuleti landfill.
- 9 shelters (for waste pickers) exist in the center (Northern part) of Batumi landfill (no registration of land/property exist).
- 8 shelters (for waste pickers) and a farm is situated right on the boarder to the Norther part of Batumi landfill (no registration of land/property exist).
- 2 shelters with agricultural land and cattle exist at (the Southern part) Batumi landfill, (no registration of land/property exist).

Tsetskhlauri:

- The land between village Tsetskhlauri and the highway / railway line is state owned (this information was given to the Consultant by Land Cadastre Office).
- The Consultant has not observed any fenced land plots within the area during the site visits and field surveys.
- There are two (2) plots with 3 houses and 3 families living within the landfill zone. Total number of affected people is around 11. These two plots are reported to be registrered in the name of the heads of households (men). In addition, people report to use farming land (unregistrered).
- There are 7 plots to the North of the landfill, of which 4 have land within the sanitary zone. These plots are reported to be registrered in the name of the heads of households (men). In addition, people report to use farming land (unregistrered).
- Some 60-80 plots exist within the landfill zone, who farm these is not currently not verified. The area for the planned landfill is used mainly for grazing and partly for cultivation of maize today. Plots are not formally registrered on users.
- There are some houses (South and East) on the boarder to the sanitary zone.

It should be noted that according to Georgian legislation, no dwelling houses and agricultural land can be located within the 500 m sanitary protection zone around a landfill.

A census is required to get a detailed understanding of how many people are affected by the project (so-called PAPs) and how they are affected, to be done within the RAP. In

addition, a Resettlement Action Plan (RAP), reflecting the Resettlement/ Livelihood REstoration Framework (R/LRF) currently being developed, should also spell out how people should be compensated (waste pickers, people losing permanent housing and income).

An idea has been presented to offer waste pickers authorised but non-employed positions at the new site in Tsetskhlauri. However, this is not in line with EBRD policy and recommendations to avoid such 'authorised non-employment' is made in the ESAP. A high risk is that the waste picking situation is merely moved to Tsetskhlauri. Any employment will have to be in line with both EBRD and Georgian legislation.

As an option, the Government has offered the waste pickers work during the closure works at the Batumi and Kobuleti landfills. A census in line with R/LRF and listing of potential labour is needed.

3.13 Compensation scheme

A R/LRF is currently being developed in line with EBRD recommendations as well as the regulations on compensations for land acquisition and resettlement established by the Government of Georgia. A RAP will be developed after the R/LRF and will make all efforts to avoid and/or minimize the effects of displacement and resettlement, by compensating the affected people. How this should be done will be detailed in the RAP.

4 Environmental and Social Action Plan

Hygiena Ltd and the Government of Ajara must implement measures described in the feasibility report, ESIA and SEP to maintain compliance with legislation and EBRD requirements. Further measures are detailed in an Environmental and Social Action Plan (ESAP) to ensure that the Project maintains compliance with EBRD requirements throughout the lifetime of the Project i.e. both during the construction and operational phase. The implementation of these measures will require support from appointed technical consultants and capacity building as the design develops and further project stages are initiated. The following are the main actions included in the ESAP to ensure the Project's compliance with EBRD Requirements:

- Design and operation of the new landfill is to meet EU Directive requirements applicable to landfill.
- The Contractor will be required to prepare a Construction Environmental and Safety Management Plan (CESMP) to be approved by the Engineer/Employer. This will cover all safety procedures and incident procedures and environmental impact mitigation measures as well as monitoring.
- Set-up and staff Hygiena Ltd to so PIU can become operational.
- Develop and implement an Environmental Health and Safety (EHS) Management Programme.

- Develop and implement policy and actions to safeguard equal opportunities and non-discrimination (including equal salaries and zero tolerance against harassment).
- HR policy and actions to ensure recruitment and promotion of best qualified staff and management.
- The company shall identify and evaluate the risks and potential impacts to the health and safety of the affected community during the design, construction, and operation of the project. These impacts should then be mitigated by the Government of Ajara.
- Individuals are to be assigned clear responsibilities for environmental, social and health and safety issues.
- Adopt and implement the SEP and regularly update the plan.
- Prepare and implement Resettlement Action Plan (RAP), including grievance mechanism, based upon and in line with the R/LRF currently under development.

5 Stakeholder Participation

There are a number of stakeholders connected to the project; people living in the surrounding area of the site, workers at the current landfill sites, municipal and governmental organisations, non-governmental organisations, public institutes and services, other groups of interest etc. A Stakeholder Engagement Plan (SEP) has been developed including:

- a stakeholder map and annexed list of key stakeholders within government and private enterprises
- needed activities both for planning phase (of which some has already taken place), efforts as well as communication/information disclosure needs during construction and for operational purpose.
- General grievance mechanism principles for resettlement and economic displacement issues (to be developed and detailed further in the RAP)
- Grievance mechanism for customers (at operational stage)
- Principles for monitoring of SEP

The SEP contain indicators, of which some are required to be disaggregated according to sex (e.g. survey results, who are invited to and participating in meetings), because women tend to be excluded from decision-making in general, and specifically in public decision-making. Women are also often found to hold the primary responsibility for waste management in the household.