

Belgrade, November 2021



**SEURECA**  **VEOLIA**

# REPORT

## **Non-Technical Executive Summary of the RWCM Duboko, Užice**

**Client:** EBRD and AFD

---

**Prepared by:** ENVICO d.o.o. Belgrade, Serbia

**Title:** **Non-Technical Executive Summary of the RWCM Duboko, Užice**

**Client:** EBRD/AFD

**Developed by:** dr Milica Karanac, Vukica Popadić-Njunjić, dr Slobodan Cvejić, Olivera Vuković, Miloš Tišović, Tijana Veljković

**QA/QC:** Dušan Nedeljković

**Version:** 1.0

**Status:** Final

**Date:** 8. November, 2021

## Content

---

List of figures .....	iv
List of tables .....	v
Abbreviations and acronyms.....	vi
1 INTRODUCTION .....	7
2 PROJECT DESCRIPTION .....	8
2.1 Biogas collection and valorization plant .....	8
2.2 Biological treatment plant (composting with active aeration) .....	10
2.3 Leachate treatment plant .....	10
3 BACKGROUND .....	11
3.1 History of the Project.....	11
3.2 Current environmental and social situation and considerations .....	11
4 EIA PROCESS .....	13
4.1 Conducted EIA Process .....	13
4.2 Public Consultations.....	13
5 SUMMARY OF ENVIRONMENTAL AND SOCIAL IMPACTS.....	14
5.1 Impacts during construction phase .....	14
5.2 Impacts during operation and maintenance .....	15
6 SUMMARY OF ENVIRONMENTAL AND SOCIAL MITIGATION AND MANAGEMENT MEASURES.....	17
6.1 Construction phase.....	17
6.2 Operation and maintenance phase.....	19
7 COMMUNICATIONS.....	20

## List of figures

---

Figure 1 Location of the biogas treatment facility and the leachate treatment facility.....9

## List of tables

---

Table 1 The main information about biogas collection and valorization system.....	8
---	---

## Abbreviations and acronyms

<b>A&amp;A</b>	<b>Description</b>
<b>AFD</b>	French Development Agency
<b>CB</b>	Coordination Body
<b>CTMP</b>	Construction Traffic Management Plan
<b>EBRD</b>	European Bank for Reconstruction and Development
<b>EIA</b>	Environmental Impact Assessment
<b>ESIA</b>	Environmental and Social Impact Assessment
<b>EPRP</b>	Emergency Preparedness and Response Plan
<b>ESAP</b>	Environmental and Social Action Plan
<b>ESAR</b>	Environmental and Social Appraisal Report
<b>EU</b>	European Union
<b>H&amp;S</b>	Health and Safety
<b>ISO</b>	International Organization for Standardization
<b>MBT</b>	Mechanical biological treatment
<b>MRF</b>	Materials Recovery Facility
<b>NGO</b>	Non-governmental Organization
<b>OHS</b>	Occupational Health and Safety
<b>OTMP</b>	Operation Traffic Management Plan
<b>PAP</b>	Project Affected Person
<b>PIU</b>	Project Implementation Unit
<b>PPE</b>	Personal Protective Equipment
<b>PR</b>	Performance Requirement
<b>PUC</b>	Public Utility Company
<b>RS</b>	Republic of Serbia
<b>RFD</b>	Refuse-derived Fuel
<b>RO</b>	Reverse Osmosis
<b>RWMC</b>	Regional Waste Management Center
<b>RWMS</b>	Regional Waste Management System
<b>SEP</b>	Stakeholder Engagement Plan
<b>TMP</b>	Traffic Management Plan
<b>ToR</b>	Terms of Reference
<b>TS</b>	Transfer Station
<b>WWTP</b>	Wastewater Treatment Plant

## 1 INTRODUCTION

---

The European Bank for Reconstruction and Development (“EBRD”) and the French Development Agency (AFD) (“the Banks” or “the Lenders”) are considering providing a sovereign loan of up to EUR 100 million to the Republic of Serbia to finance critical improvements in the solid waste management system across several secondary cities in the country, which includes construction of new facilities at the RWMC Duboko (“the Project”).

The Duboko regional waste management system (RWMS) consists of 9 municipalities. This regional waste management area already has a RWMC Duboko with a sanitary landfill and materials recovery facility (MRF). The Duboko RWMS wishes to improve waste management with the construction of a leachate treatment plant, a biogas treatment plant, a composting plant. It is also planned to modernize the existing MRF.

In addition to the existing sanitary landfill for municipal solid waste within the Regional Center, the construction of following infrastructure for additional waste treatment is planned:

- construction of a mechanical-biological plant for the treatment of all municipal and industrial non-hazardous waste that comes to this center, with or without the previous partial separation of individual waste fractions.
- phased construction of an energy production plant, through the combustion of material (RFD - refuse-derived fuel) that has left the line for mechanical-biological treatment, and
- leachate treatment plant.

The goal of the expansion of the Regional Waste Management Center is to enable the sorting and separation of municipal waste, recovery of valuable waste components, biological waste treatment (waste composting) and thermal recovery of waste.

The Project aims to additionally improve the waste management in the area by constructing the facility for mechanical and biological treatment of municipal waste within and utilisation of landfill gas the RWMC Duboko.

The regional waste management scheme is setting up transfer and transport system that would haul all solid waste to the waste management centre in Duboko. Currently, municipal solid waste from these territories is transported to the regional waste management centre, where waste sorting/separation is carried out in a separation line, while the remaining waste is deposited on the new landfill.

## 2 PROJECT DESCRIPTION

In addition to the existing sanitary landfill for municipal solid waste and associated infrastructure, the following construction is planned on the location of the RWCM Duboko:

- biogas treatment plant,
- composting plant,
- leachate treatment plant.

### 2.1 Biogas collection and valorization plant

The intention of the project is to collect and use the generated landfill gas for electricity production and to burn excess gas through a flare. In the winter, the exhaust gas will be used to heat the premises through the existing central heating and a new boiler. It is planned to install two internal combustion engines equipped with a generator of electricity (capacity of 450 kW) as well as a transformer for sending the produced electricity to the electricity distribution network. Table 1 Table 1 The main information about biogas collection and valorization *system*.

Table 1 The main information about biogas collection and valorization system

Biogas collection	
<b>Evacuation network</b>	<ul style="list-style-type: none"> <li>▪ Biogas wells that are vertical perforated pipes in the landfill body that collect the gas</li> <li>▪ Horizontal network to connect the biogas wells to the point of use (landfill gas pipes) with secondary lines and main lines</li> <li>▪ System for collecting and removing condensate from the gas network (condensate traps, going to the main leachate collector)</li> </ul>
<b>Phases of construction</b>	2 phases of gas network construction, in addition to the gas network already in place <ul style="list-style-type: none"> <li>▪ Phase 1</li> <li>▪ Phase 2</li> </ul>
<b>Number of biogas wells</b>	<ul style="list-style-type: none"> <li>▪ 28 already installed</li> <li>▪ First phase of construction: 7 new wells (B29 - B35)</li> <li>▪ Second phase of construction: 24 wells (B36 - B59)</li> </ul>
Biogas extraction	
<b>Maximum landfill gas production</b>	<ul style="list-style-type: none"> <li>▪ Landfill gas generation: 899 Nm<sup>3</sup> / h</li> <li>▪ Capture rate: 68%</li> <li>▪ Landfill gas collected: 612 Nm<sup>3</sup>/h</li> </ul>
<b>Maximum value of produced electricity</b>	<ul style="list-style-type: none"> <li>▪ expected to be 1MW</li> </ul>
Biogas treatment and Valorisation	
<b>Valorisation</b>	<ul style="list-style-type: none"> <li>▪ Electricity + heat</li> </ul>
<b>Equipment planned</b>	<ul style="list-style-type: none"> <li>▪ "Internal combustion engines" (SUS engines) (525 kW each, with 509kW of thermal power)</li> <li>▪ 1 generator of electricity (450 kW)</li> <li>▪ 1 transformer (to send the produced electricity to the electricity distribution network)</li> <li>▪ 1 gas boiler (120 kW) for administrative building heating</li> <li>▪ 1 flare for excess gas and emergency</li> </ul>



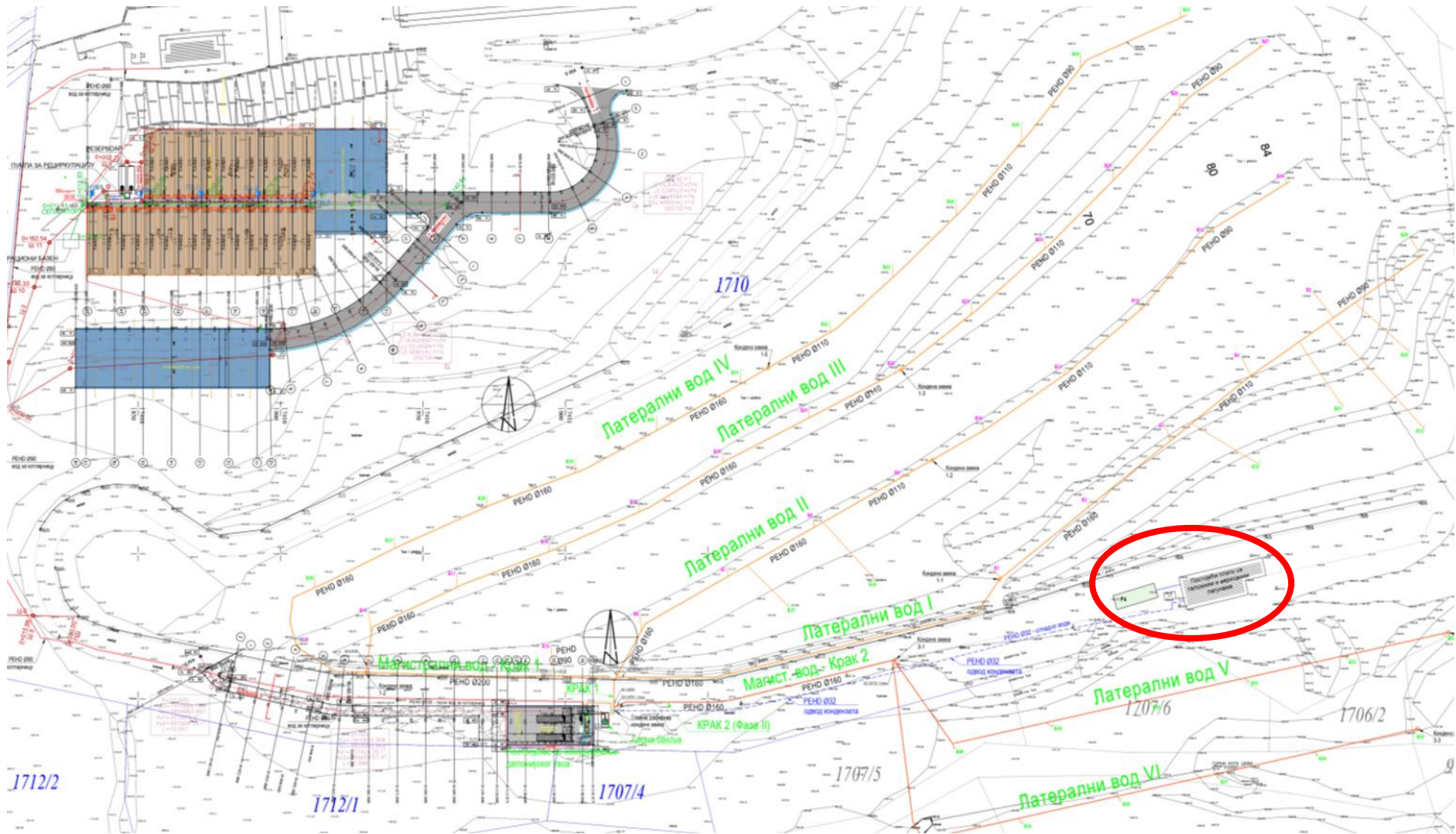


Figure 1 Location of the biogas treatment facility and the leachate treatment facility

## 2.2 Biological treatment plant (composting with active aeration)

Currently, there is no sufficient clear information whether the planned input for the plant mixed municipal waste is or separately collected waste (such as garden and park waste) – or perhaps both, with other words: it is yet not clear if this facility is a compost plant or a combined facility. A plateau is foreseen, including technological operations with 2 shredders.

Biodegradable waste is shredded, without changing chemical properties, and such sent for further treatment (composting). Plant for mechanical pre-treatment of waste includes a waste shredder (shredder), dimensions consisting of 4 conveyor belts and 2 waste shredders. The shredder capacity is about 70 tons/day of waste.

Plateau for mechanical pre-treatment of waste and reception raw material for composting has a total area of 875 m<sup>2</sup> dimension (25m x 35m). It is covered by a canopy above and below the access road.

## 2.3 Leachate treatment plant

The goal of the leachate treatment is treated leachate from landfill Duboko to the quality required for discharge in the final recipient. This new plant should provide water purification by reverse osmosis technology and lead to an appropriate level of water quality for discharge to the Turkish stream. The leachate treatment facility will be close to the existing leachate lagoons and placed inside a container.

Table 2 The main features of the system are presented below

Location	
Localisation	<ul style="list-style-type: none"> <li>Close to the actual lagoons (sedimentary and aerated lagoons).</li> </ul>
Installation	<ul style="list-style-type: none"> <li>Prefabricated container (6 x 2.5 x 2.6m).</li> </ul>
Leachate collection and treatment	
Recirculation	<ul style="list-style-type: none"> <li>Leachate recirculation is performed at Duboko Landfill and will still be performed. The excess leachate is evacuated for treatment.</li> </ul>
Actual treatment	<ul style="list-style-type: none"> <li>Aeration and sedimentation (lagoons with a volume of 600 m<sup>3</sup>)</li> <li>Water from the sedimentary lagoon is transported by road tankers to a wastewater treatment plant</li> </ul>
Future treatment	<ul style="list-style-type: none"> <li>3 stages RO (reverse osmosis) membranes; fully automated in container</li> </ul>
<b>Outlet</b> Discharge quality	<ul style="list-style-type: none"> <li>The outlet water (treated leachate) shall have parameters allowing it to be discharged in the river "Turkish stream"</li> </ul>
Leachate transport	<ul style="list-style-type: none"> <li>Landfill body -&gt; collection shaft -&gt; lagoons -&gt; treatment process in container -&gt; flow into the "Turkish Stream".</li> </ul>
List of equipment for leachate treatment	<ul style="list-style-type: none"> <li>Sedimentary and aerated lagoons</li> <li>Floating pump (provides filtration)</li> <li>Polypropylene piping and fittings</li> <li>Chemical dosing (preparation to the membrane specifications)</li> <li>Three-stage reverse osmosis</li> <li>Concentrate stored in a tank, before being stabilised</li> <li>Permeate discharge pipe into river "Turkish Stream", with inspection manholes</li> </ul>

## **3 BACKGROUND**

---

### **3.1 History of the Project**

---

This RWMS already has a Regional Centre with a sanitary landfill that has been operating since 2011. The 9 municipalities of the RWMS signed in October 2005 an agreement whereby they commit themselves to be an integrated part of PUC Duboko. The agreement covers founding, constructing and exploitation of the Regional Sanitary Landfill Area Duboko (RWMC). The feasibility study for the Regional Centre was finalized in March 2007. The Regional Centre also features a MRF (designed as a secondary separation plant for recyclables, but currently operating as a "dirty MRF", i.e. sorting on mixed municipal waste).

Before the construction of the Duboko RWMC, the municipalities were using unsanitary dumpsites.

The total surface area of Duboko sanitary landfill is 15,08 ha. The landfill has 4 cells with a total capacity of 580.000 m<sup>3</sup>. The three first cells are full and the fourth is currently in operation. There are 28 bio-wells for biogas but no additional treatment of the biogas.

In addition, there is a plant for pre-treatment of the leachate. The plant is treating it to the level of communal wastewaters and then they send it by a truck to the nearest municipal sewage treatment plant. During the Consultant visit to the site, the pre-treatment plant was not operational.

### **3.2 Current environmental and social situation and considerations**

---

#### **Air Quality**

For the Project location there is no available air quality data. In 2020, Air Quality in city of Užice is classified as category III – over polluted air since concentrations of suspended particles PM<sub>10</sub> and PM<sub>2,5</sub> exceeded limit values.

#### **Environmental Noise**

There is no data on environmental noise baseline within Project location. Closest residential housing is located some 250 m away from the Project area. Main noise sources within Project area is generated by the operations and traffic on the landfill and waste transfer.

#### **Biodiversity**

The environment of the location is of a typical forest character and coincides with the association of the oak. The Project location is surrounded by black pine. Vegetation outside the landfill boundary has been degraded due to intensive erosion of the stone base on steep slopes. As for the fauna, there are rabbits, squirrels and some species of rodents. The site is not a critical habitat for plant or animal species.

In line with the available information presence of rare or endangered plant and animal species, as well as especially valuable plant communities, has not been registered at the subject location and in the immediate vicinity. However, there is no clear information that biodiversity baseline survey has been performed.

## **Cultural Heritage**

Within 3 km of the Project site, there are no identified cultural monuments, or natural resources. It is worth mentioning that according to the experts of the Institute for the Protection of Cultural Monuments of Kraljevo, there is a possibility of discovering an archaeological site in the wider area, although such a discovery did not occur, even during the construction of the "Duboko" landfill.

## **Soil Quality**

In line with the available information there is no data available on soil quality baseline.

## **Surface and Groundwater**

Turkish stream (Turski potok) is located within the Project area and in the close proximity of the landfill. It belongs to the Duboki potok basin, which flows into Lužnica, which then flows into Skrapež (and so on to Zapadna Morava). Along with the Turkish stream, there are also three occasionally active streams that flow into the Turkish stream. Based on the 2015 results the quality of Turkish stream as well as groundwater at Piezometer P3 is within prescribed limits.

## **Worker and Public Health and Safety**

The entire complex of the Regional Waste Management Center is fenced with a controlled entrance and exit and a security service. The same will continue during future operation. RWMC Duboko operates under the Serbian regulation pertaining workers and public health and safety, following the rule of law in sectors of public and occupational health and safety, traffic standards and safety. Based on the information available, workers of the PUCs currently operating in relevant municipalities are mostly equipped with the PPE and other working equipment.

## **Land Use**

This landfill volume would allow only 12-15 years of operation which is why the Serbian government has declared that it is in the public interest to expropriate the land in order to expand the Duboko landfill complex. PUC Duboko started the expansion and stabilization of the body of the regional landfill at the end of June 2021. The construction work on the site is still ongoing.

## **Social Issues**

The valley of Turkish Stream is practically uninhabited. The first significant condensed-type settlements are Lazovine, on the right, and Tatinac on the left bank, and Laćevine in the confluence zone of Turkish Stream. These are more than 500 m away from the future landfill expansion cell. In the broader area, there are no settlements with straight streets or of condensed type, and the first households are 200 m away from the Duboko landfill.

The only vulnerable group that could be affected by the project, indirectly through closure of local waste dump sites, are the informal waste pickers. Representatives of the PUCs in the nine cities reported small numbers of informal waste pickers in Pozega and Arilje.

## **4 EIA PROCESS**

---

### **4.1 Conducted EIA Process**

---

Environmental Impact Assessment (EIA) Study on the Upgrade of the Municipal Waste Treatment Plant for the Regional Waste Management Center "Duboko" - Biological Waste Treatment and Gas Plant has been developed in December 2020. However, Environmental Study has been prepared separately from the impact assessment procedure prescribed by the Serbian Law on Environmental Impact Assessment. As per the available information, the Project has not officially submitted EIA Screening and Scoping application to the authorities. Although the Study contains information, assessment and other provisions usually expected in the environmental impact assessment study, it cannot be considered as an Environmental Impact Assessment (EIA) prepared in line with requirements of the national legislation.

Furthermore, no EIA has been developed for the leachate treatment plant planned to be constructed as a part of the Project.

### **4.2 Public Consultations**

---

Since the EIA Study for the Biological Waste Treatment and Gas Plant was not officially submitted to the authorities, i.e. no administrative procedure was initiated, no mandatory public consultations took place.

According to the SEP developed for the Project in 2016 the communication and consultation process with individuals and groups at local, regional and state level has started during the Environmental and Social Impact Assessment (ESIA), but there is no evidence on progress that has been made. In addition, Coordination Body (CB) was established but there no evidence if this CB includes PAPs as well as local NGOs.

When it comes to external communication channels, ESIA and SEP, as indicated in SEP form 2016 has been published at EBRD website<sup>1</sup>. Also, at official website of PUC Duboko, some brief information about project and its progress have been published.

---

<sup>1</sup> <https://www.ebrd.com/work-with-us/projects/esia/duboko-solid-waste.html>

## 5 SUMMARY OF ENVIRONMENTAL AND SOCIAL IMPACTS

---

Main identified impacts are presented in this chapter. More detailed impacts are presented in the Environmental and Social Appraisal Report (ESAR).

### 5.1 Impacts during construction phase

---

**Magnitude** of most construction impacts is low due to the fact activities will be performed in a limited area. Only activities that will be conducted outside the Project area, or where impacts may extend off-site are characterized with medium magnitude.

**Significance** of the impact is established by the portion of the environment and community that will be affected and potential level of impact. Most of the impacts' significance are assessed as low and medium. The majority of impacts during the construction phase are limited to the construction location where there is no housing. Following impacts are assessed as potentially high impact significance:

- Health and safety aspects of operations are with higher risks, where outcomes may be light and heavy injuries or fatalities (both occupational and community health and safety).
- Impact on surface water and groundwater as a result of the potential spillage or inadequate using chemicals during the construction or operation phase, although low in magnitude, could potentially have high significance due to the potential of the hazardous substances to significantly pollute surface and groundwater even in case of small spillages.
- Impact on overall safety at the landfill and RWMC due to the potential instability of terrain (in line with contrasting information provided in available Project documentation) during the execution of works. Potential impact of instability could also be irreversible.

Most of the impacts are characterized as *reversible*, due to the sheer nature of the impact, except the following:

- Waste generation is irreversible; however, re-use of waste will be an option assessed once waste composting is performed.
- Spillage of pollutants and hazardous materials and chemicals into ground and surface water. However, these are all small quantities and significant impacts on surface or groundwater are not expected.
- Construction works in the area of RWMC Duboko could have an irreversible impact on biodiversity, especially if not managed properly.
- Health and safety aspects of operations are with higher risks, where outcomes may be light and heavy injuries or fatalities.
- Traffic safety impacts (in the same way as other safety impacts) could be irreversible if serious injury or fatal accident occurs. Volume of traffic will be especially increased during the construction of the WWTP, mechanical-biological plant and landfill gas utilization facility, which will be undertaken in parallel with the existing operation of the RWMC. The Contractor should develop and implement a Construction Traffic Management Plan (CTMP) to minimize risk to road users as well as local communities. All drivers will be trained, and strict speed limits will be enforced. An Emergency Preparedness and Response Plan (EPRP) will be in place for the project, before the

start of construction. It should include measures and procedures to manage any traffic and waste transport-related emergencies.

**Extent** of impacts is mostly localized on the construction site.

Generally, the **duration** of these impacts is limited to the construction phase.

## 5.2 Impacts during operation and maintenance

---

**Magnitude** of most operation and maintenance impacts will be low and medium and performed on the limited area, mostly within the RWMC. The exception is traffic safety management during operation, which is recognized as medium magnitude, as it goes out of the immediate area of the RWMC. Collection and transport of waste generated in the region will have an effect on traffic safety on local and regional roads.

**Significance** of the impact is established by the portion of the environment and community that will be affected or the scale of possible effect.

Due to the limited scale of the Project, most of the impacts will be low to medium significance. The majority of negative impacts during operation are limited to the operation site, given the Project area is located away from the nearby communities (4.0 km from Užice, Lunovo Selo (8,0 km), Lazovina (1,2 km), Udovicici (2,8 km), Sevojno (3 km)), and in the area where there are no sensitive receptors in the immediate vicinity (schools, kindergartens, hospitals, culture and entertainment centres, etc.). Closest housing is located about 250m away from the RWMC area.

Following impacts are assessed as **medium significance**:

- Surface and groundwater pollution due to accidental spillage of hazardous materials/fuels/chemicals. Although these types of accidents could possibly have a significant impact, these are all small quantities and significant impacts on surface or groundwater are not expected.
- Management of waste during RWMC operation, specifically mixed municipal waste (identification of hazardous), hazardous waste in MBT processes, sludge from the wastewater treatment process, and waste from grease and oil separator;

**High significance** is allocated to following impacts

- Improved access of affected communities to safe disposal of municipal waste.
- Overall positive impacts on the environment as a result of project implementation.
- Potential impact of occupational health and safety incidents during operation and maintenance could be assessed as high depending on the severity of the injury. However, implementation of OHS national legislation requirements, as well as international and good industry OHS standards, should limit the possible impact on occupational health and safety.
- Possible impact on traffic safety management on local roads during operation of the RWMC is assessed as high, due to the level of expected waste transport traffic and sensitivity of recipients (all community members regarded as sensitive). Through adequate traffic management, education of waste truck drivers and affected communities these impacts are expected to be controlled.

- Impact on overall safety at the landfill and RWMC due to potential instability of terrain (in line with contrasting information provided in available Project documentation) during operation. These impacts are irreversible and have high significance and it is of utmost importance that adequate design safety provisions are embedded in the Project design, based on the confirmed stability parameters.

When it comes to **reversibility** of the impacts, number of possible impacts are regarded as irreversible:

- Waste generation is irreversible; however, it can be limited if waste is re-used;
- Pollution is caused by the spillage of pollutants and hazardous materials/chemicals into ground and surface water. Accidental spillage of fuels or chemicals stored in workshops (if there will be on-site vehicle maintenance) or on the WWTP or from malfunctioning, although of accidental nature and low magnitude can have an irreversible impact on the environment. As already mentioned, these are all small quantities and significant impacts on surface or groundwater are not expected;
- Inadequate management of sanitary sewage, leachate wash-off from the RWMC plants maintenance and oily atmospheric water could lead to irreversible impacts;
- Although occupational health and safety aspects are of lower risks compared to those identified during construction, OHS incidents have the potential to be irreversible (fatality or disability) if OHS risks are not adequately managed;
- Similar to the above, possible impacts of lack of landfill gas control, i.e. inadequate management of the landfill gas utilization facility, as well as control and treatment of leached from the sanitary cassettes (if not constructed before the start of operation in line with relevant standards or there has been damage to the geomembrane) are assessed as irreversible.

**Extent** of impacts is mostly localized on the operation site, except when it comes to traffic safety management on local roads, related to the collection and transport of waste to the RWMC. The Operator should develop and implement Operation Traffic Management Plan (OTMP) as a part of the Operation E&S Management Plan, to minimize risk to road users as well as local communities. All drivers will be trained, and strict speed limits will be enforced. An Emergency Preparedness and Response Plan (EPRP) will be in place for the project, before the start of operation of the WWTP, mechanical-biological plant and landfill gas utilization facility. This will include measures and procedures to manage any traffic and waste transport-related emergencies.

Also, positive impacts to affected communities range from local to regional, improving access to services related to safe management of communal waste.

Generally, the **duration** of these impacts is mostly associated with the life of the Project. At this point, there is no information on how long this phase will last. Duration of some impacts is assessed as limited/accidental due to their accidental nature, while the impact regarding change of use land, landscape, biodiversity is assessed as permanent.



## **6 SUMMARY OF ENVIRONMENTAL AND SOCIAL MITIGATION AND MANAGEMENT MEASURES**

---

This chapter outlines feasible cost-effective measures to avoid, minimize, mitigate or compensate for environmental and social impacts to acceptable levels and address other environmental and social issues.

### **6.1 Construction phase**

---

This phase of the Project development foresees the construction of new facilities (Contractor). This phase is expected to be implemented by PUC RWMC Duboko with Project Implementation Unit (PIU) and support from the Ministry.

#### **Obligations PUC RWMC Duboko/PIU:**

- Establish an ethical wall in permitting processes, to avoid conflicts of interest;
- Procure services from licensed companies for the construction works, installation of the plant and equipment following standards of the Public procurement regulations that have performance requirements of the lenders embedded;
- In Call for Proposal (CfP) for Engineer and Contractor, it is necessary to include all E&S requirements (as will be defined in the future EIA Study, the ESAP);
- Establish monitoring and supervision of the implementation of Occupational Health and Safety measures, in line with applicable OHS regulation during construction and operation;
- Ensure transparency in engagement of construction company. The Client will run tender for construction of RWMC and transfer stations in an open way and in compliance with relevant laws.
- Ensure parallel construction of the WWTP, Mechanical-biological plant for the treatment of municipal and industrial non-hazardous waste and Landfill gas utilization facility.
- Ensure continuity and safe disposal of generated waste in existing sanitary cassettes in line with applicable environmental regulation;
- Ensure in the shortest possible time the development of project documentation for construction Transfer Station (TS) in Pozega, including the EIA Study (associated project), which has cumulative impacts on RWMC;
- Supervise the implementation of community safety and security measures during construction;
- Inform the public of environmental and OHS measures and monitoring results during construction work and preparatory works;
- Biodiversity survey of the area should be undertaken to inform biodiversity baseline and develop/update a Biodiversity Management Plan before the start of construction activities.
- Provide update to the existing environmental "zero stage baseline" (surface and groundwater quality) with more recent data and establish "zero stage baseline" for soil, air quality and noise (not provided in the available documentation) prior to the start of the construction works at RWMC, during the mobilization stage
- Allocate budget for the above services.

**PUC RWMC Duboko/PIU shall also be responsible for the following:**

- Implementation of the requests for environmental protection provided by: Lenders and other institutions. Also, Law on Environmental Protection ("Official Gazette of the RS", No. 135/04, 36/09, 72/09, 43/11, 14/16, 76/18 and 95/18), Law on Environmental Impact Assessment ("Official Gazette of the RS", No. 135/04 and 36/09) and other local law should be implemented during construction and operation;
- Implementation of the ESHS requirements in procurement documentation, ToR for construction and construction contract specifications;
- Provision of environmental monitoring supervision via consulting services;
- Preparation of relevant (quarterly reports) reports on progress of implementation of environmental and health and safety (and social) requirements (national, international, Lenders, good international practice).

**The Contractor is obliged to:**

- The contractor will be responsible for implementing environmental and health and safety mitigation measures during preparation and construction works
- The Contractor should appoint environmental and health and safety specialist(s) who will be responsible for the day to day implementation and management of the Contractor's environmental and health and safety responsibilities;
- Prepare the Contractor's Site-Specific Environmental and Social Management Plan (CESMP). CESMP to define detailed mitigation measures in line with requirements of future EIA Studies (prepared and approved in line with the national legislation procedure and requirements), ESAP, construction contract, EU Directives, Lenders requirements and good international practice;
- CESMP to include following sub-plans and procedures as a minimum: Organisational structure, roles and responsibilities for ESHS management; Labour Management Plan; Waste Management Plan; Pollution Prevention Plan; Traffic Management Plan; OHS Management Plan; Community H&S Management Plan; Design change procedure/plan; Supply chain Management Plan/procedure; Monitoring Plan; type of reports and reporting frequency;
- The Contractor to prepare as a part of the CESMP or as a stand-alone document Health and Safety Management Plan;
- The Contractor will be responsible to develop Emergency Preparedness and Response Plans in line with requirements and risks identified in the EIA Studies (prepared and approved in line with the national legislation procedure and requirements), ESAP and other relevant legislation before the commencement of works. Emergency Preparedness and Response Plan should be submitted to the Project Supervision Consultant for approval;
- Contractor shall perform all project activities following the Health and Safety Management Plan, national legislation and Lenders requirements regarding health and safety;
- Ensure safe disposal of generated waste in line with applicable environmental regulation and include hazardous waste;
- Pursuant to Article 109 of the Law on Cultural Heritage ("Official Gazette of the RS", No. 71/94, 52/11 (other law), 99/11 (other law)), the obligation of the Contractor and the Project is to, if he encounters an archaeological site or archaeological objects, he shall immediately stop the works and inform the competent Institute for Protection of

National Monuments and take measures so that the find is not damaged, destroyed and preserved at the place and position in which it was discovered.

- In accordance with the provisions of the Law on Waters ("Official Gazette of the RS", No. 30/10, 93/12, 101/16 and 95/18 (other law)), it is prohibited to discharge untreated wastewater generated at the construction site into the environment and the final recipient;
- The Contractor will ensure that the budget for implementation of the required mitigation measures and monitoring activities defined in CESMP is included in Project costs as a separate item.

## **6.2 Operation and maintenance phase**

---

This phase of the Project development foresees the operation of the RWMC and associated maintenance. This phase is implemented by the PUC RWMC Duboko as Operator.

### **PUC RWMC Duboko:**

- Operator to establish Operations Management System in line with the internationally recognized standards (ISO standards 14001 and 45001 and its required documents, plans and procedures). Certification is not mandatory.
- Develop Operations Environmental and Social Management Plan (OESMP), which will include all necessary environmental and health and safety sub-plans/procedures before the start of operation additionally constructed facilities;
- OESMP to include as a minimum following sub-plans and procedures: Waste Management Plan; Soil and groundwater contamination monitoring and management; Leachate treatment and monitoring; Pollution Prevention Plan; Biodiversity Management Plan; OHS Management Plan; Traffic Management Plan; Community H&S Management Plan; Security personnel requirements; Grievance mechanism;
- As a part of the Operations Management System, the Operator will establish a Safety Management System which will ensure preparation and implementation of Emergency Preparedness and Response Plan; Update existing EPRP to reflect operation of new facilities to be constructed as a part of this Project.
- Operations Safety Management System and Emergency Response Plans will ensure coordination and communication between RWMC and relevant regional and national authorities in case of accidental situations;
- Update organizational structure to ensure adequate capacity for operation of new facilities constructed as a part of the Project;
- Review and update Monitoring Program of RWMC once the new facilities become operational, in line with applicable national legislation, EU directives, Lenders requirements and ESAP;
- The Operator is obliged to manage waste in accordance with the provisions of the national and EU legislation, including all requirements and measures defined in the EIA Studies (prepared and approved in line with the national legislation procedure and requirements) and ESAP.
- Allocate budget for the above services.
- Another social impact related issue to be managed here is transparency in employment procedure. The Client will run employment process in an open way and in compliance with relevant laws.

## 7 COMMUNICATIONS

---

During the construction and operation anyone can raise a grievance with PUC Duboko. All grievances should be based on written forms (presented in SEP), which can be filled in by any affected person or organization and submitted to PUC Duboko. The PUC Duboko will look into all grievances officially received and within 15 days inform the author about taken actions. The acknowledgement will specify a contact person, their reference indicator and an anticipated target date for resolution.

In case when grievance is not connected to the PUCs activity, grievant will receive explanation in written form and grievance will not be further processed.

In all other cases the PUC will investigate whether they have failed to work to the intended standard and, if they have, identify measures which may be taken to prevent further occurrences. Upon resolution if the grievant considers the grievance to be satisfactorily resolved the PUC would appreciate sharing that with him/her by signing a Statement of Satisfaction.

The grievance mechanism will be made public throughout the public consultation process, and will be maintained during preparation, construction and operation activities. Grievances will be monitored by Director of PUC Duboko Momir Milovanović.

The PUC Duboko may contact the grievant at a later stage to ensure that its activities continue to pose no further problems.

Grievance can be submitted in several ways:

- Send a completed Grievance Form to the address on the back of the form
- Contact the PUC Director Momir Milovanović
- Send an email to the indicated address: office@duboko.rs
- Call the PUC Duboko directly, on a confidential phone line at +381 64 8387367 and/or +381 64 8387358
- It is also possible to leave a completed Grievance Form in the PUC Mailbox.

As described above grievance process has several steps:

1. Receive a complaint
2. Grievance acknowledgement
3. Investigation of cause of grievance
4. Resolution of grievance
5. Follow up, if needed

Upon approval of the SEP, its location will be publicly announced.



Consultant:

ENVICO d.o.o. Beograd  
Vardarska 19/IV  
11000 Belgrade, Serbia  
Tel: +381 11 64 17 257

Client:

EBRD and AFD