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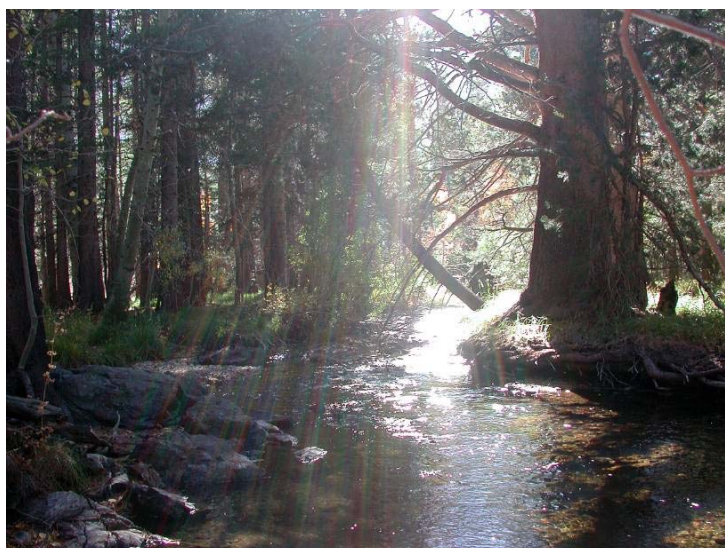
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**DRAFT EIA 2007**

**THE REGIONAL SOLID WASTE MANAGEMENT  
SCHEME “DUBOKO”**

**VOLUME I - EXECUTIVE SUMMARY**



Belgrade, 24 May 2007



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# **Environmental Impact Assessment (version 2007) for The Regional solid waste management scheme `Duboko`**

## **Volume I Executive Summary**

### **DRAFT**

**This EIA study version 2007 consists of three volumes as follows:**

- **Volume I Executive Summary**
- **Volume II The Public Consultation and Disclosure Plan**
- **Volume III The EIA 2005 (supplemented and updated)**

#### **1.0. Introduction**

The Duboko regional solid waste management project comprises the following four components:

1. Construction of `Duboko` regional sanitary landfill complex for non-hazardous solid waste management including waste disposal in the sanitary landfill, a waste separation line, landfill gas extraction and utilization and a leachate treatment plant,
2. Construction of 8 transfer stations in the municipalities of Ivanjica, Lučani, Požega, Arilje, Kosjerić, Čajetina, Bajina Bašta and Čačak,
3. Procurement of trucks for transport of solid waste from the transfer stations to `Duboko`,
4. Closure of nine (9) existing uncontrolled landfills in Ivanjica, Lučani, Požega, Arilje, Kosjerić, Čajetina, Bajina Bašta, Užice and Čačak,

The new sanitary landfill site will be located approximately 3.8 km north-east of the city of Užice, via regional road 263/R Užice – Kosjerić and about 2.5 km by local road through the village of Lazovine (see figure 2).

The future landfill site has been proposed to be located on the left valley side of the Turkish stream, with inclination towards south-east, with relatively balanced slope of 16 - 25° (the Lužnica river basin), and opposite of Čakarevo hill towards north, with an elevation between 530 and 650 m above the sea level (Užice city centre 430 m+sl). The new sanitary landfill will serve the following municipalities of the Zlatibor and Morava districts:

Arilje, Bajina Bašta, Čačak, Čajetina, Ivanjica, Kosjerić, Lučani, Požega, Užice.

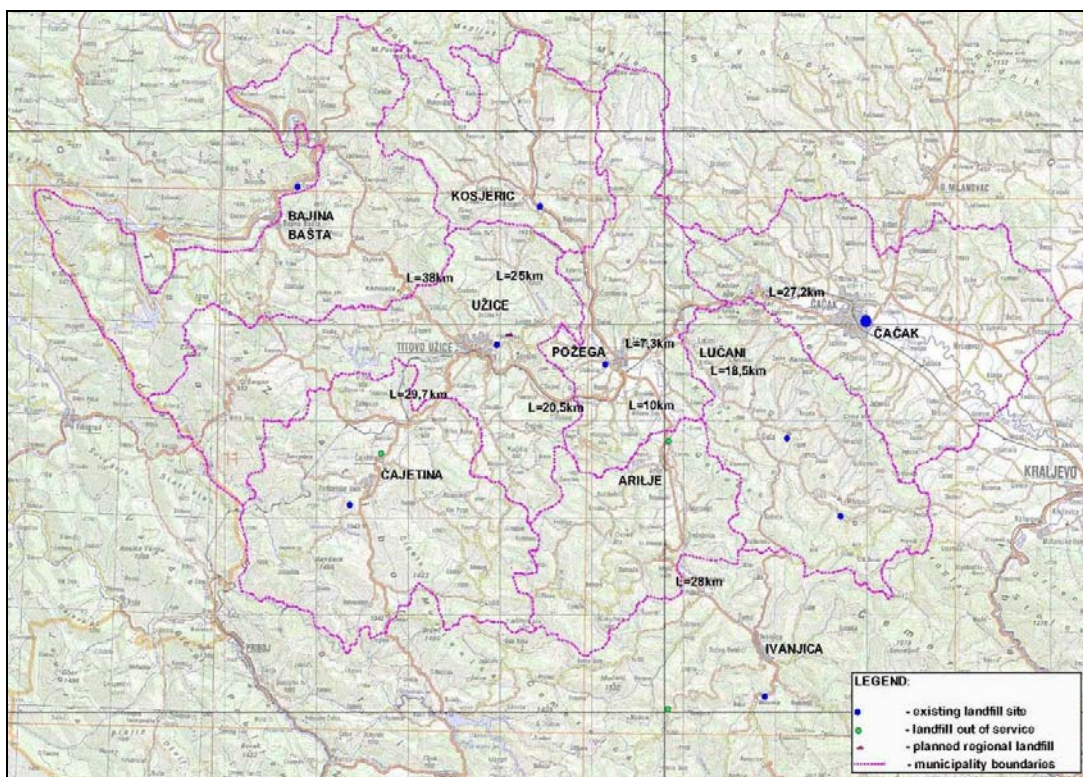
The number of inhabitants in these municipalities is 371,010 (data from 2002 census). The Zlatibor and Morava districts are located in the central/western part of the Republic of Serbia and are the strong industrial areas (see figure 1.).

Inadequate municipal solid waste treatment and final disposal present one of the biggest environmental problems in Serbia. Aware of this situation, the Government of Serbia (GoS) concluded that improvement of the current state of waste collection, treatment and disposal is a priority within the environmental protection policy framework in Serbia. Consistent with this conclusion, the GoS adopted the National Strategy on Solid Waste Management in 2003 and defined improvement of solid waste management as one of the priorities of its environmental policy. The Duboko project would be the first regional solid waste management scheme in Serbia. For this reason, the project will serve as a demonstration project for other regions of Serbia.

## 2.0. Project description

The existing dumpsites/uncontrolled landfills (see Figure 1.) are not complying with the national legal requirements. They are operating without permits and they can only be used for one or two more years. The uncontrolled landfills will be used until the Duboko regional sanitary landfill becomes operational.

**Figure 1. Map of project area with indicated the location of the uncontrolled landfills**



The waste collection and transportation fleet in the municipalities is obsolete, non-standard and can not be safely utilized for waste collection and disposal.

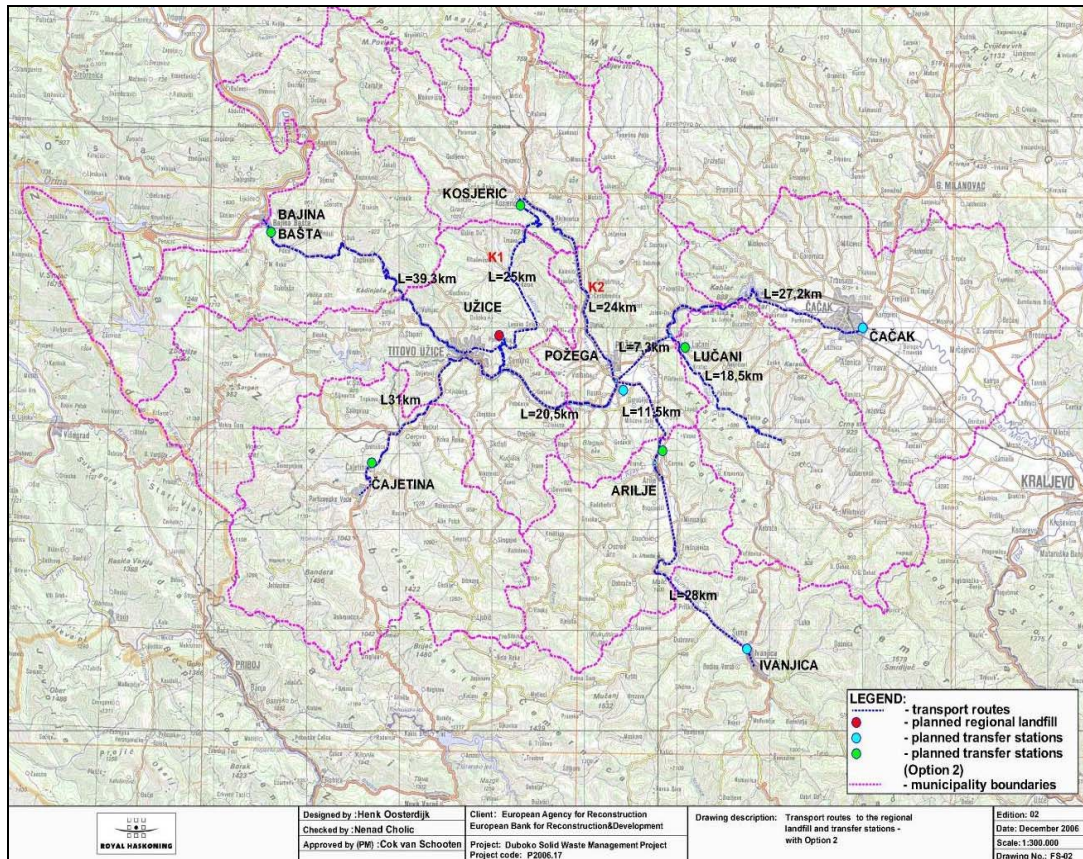
Transfer stations will be structured to receive municipal solid and demolition waste. Waste will be transferred from small-sized vehicles into long-haul trucks for the purpose of efficient transport to the regional sanitary landfill. Waste might also be temporarily stored at the site of transfer station before final transport to the landfill. A map of transport routes and planned transfer stations is presented in Figure 2.



A waste separation line will be installed at the sanitary landfill site where paper/cardboard, plastic, PET bottles, glass and metals will be separated from the waste stream.

To support the 'Duboko' scheme operations, the Municipality of Čačak will promote municipal solid waste policy by introducing waste selection at the source and installing its own local waste separation scheme and construction of a composting facility. These activities are not included in this project.

**Figure 2. Transport routes and planned transfer stations**



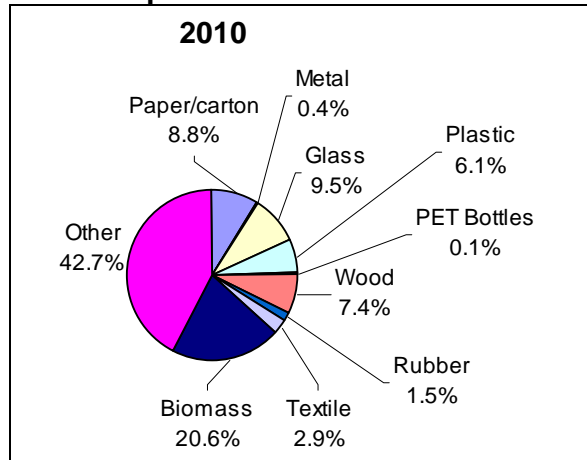
For the above mentioned reasons the participating municipalities agreed on the implementation of the regional solid waste management scheme and to establish a new Public Utility Company (PUC) 'Duboko', which will be responsible for financing, implementation, construction and operation of this project.

Čačak and Užice will jointly be majority stakeholders (at least 51%), while the seven other municipalities are expected to participate as minority stakeholders. The PUC Duboko will operate the landfill on a commercial basis in close cooperation with the existing municipal solid waste collection companies. The PUC would enter into a Deliver-or-Pay arrangement with each of the participating municipalities that would undertake to deliver a guaranteed amount of waste to the landfill or to pay amount equivalent to the tipping fees to the PUC. The tipping fees will be set to provide at least full cost recovery for the PUC Duboko.





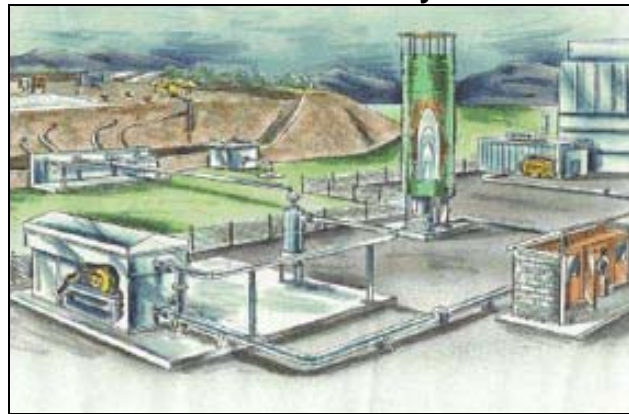
**Figure 3. Expected composition of the waste to be land filled in 2010**



In case the Republic of Serbia ratifies the Kyoto protocol on the reduction of Green House Gas emissions, the Duboko scheme could apply for the international carbon credit scheme (CDM) which could result in financial benefits for the PUC. The proposed gas-extraction techniques make it possible to start gas extraction during the landfill activities (see Figure 4.).

At the Duboko site is a waste separation line and a waste water treatment plant foreseen which will purify all waste water (leachate, precipitation runoff and technical water generated by: washing of the trucks and the equipment, washing of the service area, etc., as well as sanitary water from toilets).

**Figure 4. Artist impression of possible landfill gas extraction & utilization at the Duboko sanitary landfill site**



**Present (April 2007) conditions of the project are:**

- All necessary approvals and permits for the landfill site have been obtained.
- The public has been notified on the planned project.
- Land acquisition for the site Duboko has been completed.
- Project documentation for the first two phases of the project has been completed.

- The participating municipalities have signed an intermunicipal agreement for the landfill construction and its use as well as they have established the PUC 'Duboko'.

**The following activities are being implemented:**

- Finalizing the finance conditions for the construction of the regional sanitary landfill, the establishment of the waste separation line, the construction of the transfer stations and the procurement of the transport trucks,
- Final adoptions of the main designs of the landfill,
- Preparation of the tender documentations for the landfill construction and the waste separation line,
- Site selection for the transfer stations including preparation EIA studies and public consultations procedures.

**Project objectives**

*General:*

Improving the municipal waste management system in the 9 municipalities in line with the National Solid Waste Management Strategy and the relevant national and EU waste Directives and environmental standards.

*Specific:*

1. Closure of local dumpsites/uncontrolled landfill, their remediation and re-cultivation,
2. Construction of the regional sanitary landfill with auxiliary infrastructure.
3. Creating conditions for decreasing quantities of solid waste to be disposed of at the landfill by separation at a waste separation plant.
4. Improving economic sustainability of municipal solid waste management by secondary raw materials recycling.
5. Improving environmental conditions of all participating municipalities by improving waste collection and transport and final disposal.

**Project sponsors**

The project will be funded by:

1. Fund for environmental protection (Ecofund) of the Republic of Serbia,
2. Nine (9) participating municipalities
3. European Agency for Reconstruction (EAR) by grant,
4. European Bank for Reconstruction and Development (EBRD).

Financing plan for construction of the project „Duboko“ is as follows (€):

- |   |           |
|---|-----------|
| • Fund for environmental protection of the Republic of Serbia | 1,527,060 |
| • All nine municipalities                                     | 2,533,111 |
| • EAR   | 2,969,822 |
| • EBRD  | 5,179.161 |

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TOTAL(€) 12,209,156

### **Applied environmental standards**

This project has been developed in line with the environmental legal requirements of the Republic of Serbia as well as EU and EBRD regulations. Particular attention has been paid to carrying out environmental impact assessment and public consultations requirements.

The Republic of Serbia has a well-developed environmental protection legal system reflected in environmental protection laws (Official gazette of RS, no: 135/04) including the law on Environmental impact assessment. These laws are comply with relevant EU legislation. The competent authority of Užice municipality (i.e. the Department of environmental protection) approved the EIA Study for the Regional sanitary landfill 'Duboko' at 27. September, 2005.

The Ministry of Science and Environmental Protection of the Republic of Serbia (Directorate for Environmental Protection) is responsible for enforcing environmental protection laws related to construction and operation of waste management facilities.

The Ministry of Agriculture, Forestry and Water management of the Republic of Serbia is responsible for water management and protection.

As a part of the EU accession plan Serbia is in a process of harmonising other environmentally related laws to EU legislation. The new waste management law has been prepared in draft version and is about to be discussed in the Serbian Parliament; it has been prepared to comply with the EU directives.

### **3.0. Existing environmental conditions at the Duboko site**

#### ***Relief and nature***

The new sanitary landfill site will be located approximately 3.8 km north-east of the city of Užice, via regional road 263/R Užice – Kosjerić and about 2.5 km by local road through the village of Lazovine. The future landfill site is proposed to be located on the left valley side of the Turkish stream, with inclination towards south-east, with relatively balanced slope of 16 - 25° (the Lužnica river basin), and opposite of Čakarevo hill towards north, with an elevation between 530 and 650 m above the sea level (Elevation of Užice city centre is 430 m+sl). The prospective landfill complex will occupy an area of 144,248 m<sup>2</sup>. To the south it enroaches to about 70 m from the Turkish stream. The site is surrounded by forest to the east and west, whilst to the north it spreads to Mala Previja crest, towards the Duboko stream.

#### ***Soil***

The pedological substrate belongs to the category of cambic soil and to the type of district brown soil. The depth of pedological profile exceeds 0.70 m. The soil is of a rather light mechanical composition, low permeability and it is well aerated. The soil reaction is acidic, has a medium nutrient content and is moderately biologically active. By removal of vegetation, the soil would be susceptible to erosion. The natural vegetation is forest (80-90 % area is covered by forest).

#### ***Climate***

The climate in the region is of moderate-continental type with continental pluviometric regime. Summers are moderately hot, winters moderately cold and transitory seasons

long-lasting and mild. These are characterised by changeable weather with autumns being warmer than springs, and in summer, due to shifting of sub-tropical high pressure strip towards the north, the region is frequently exposed to the so called Azore anticyclone, with rather stable weather conditions and sporadic short showers of local character. In winter, the weather is influenced by cyclonic activities from the Atlantic Ocean and the Mediterranean Sea, as well as the winter-time so called Siberian anticyclon (Climate of Užice).

Precipitation is highest at the end of spring and beginning of summer (May, June), and the driest months are February and September. In winter season, there are frequent temperature inversions. The average annual frequency of snowy days is 34.9 days. The region is generally exposed to the impact of air currents from the west. This area is exposed to some extent to the maritime climate coming from the south, which is particularly noticeable as sudden melting of snow in spring and frequent droughts in summer.

### ***Hydrology***

The hydrogeological features of Paleozoic metamorphic rocks are such as to make them almost water-impermeable. However, in the zone of intensively fractured sandstones, shales and phyllites, it is possible to encounter forming of fracture aquifers with shallow groundwater level, with its depth up to 3 m. Aquifers of this type are mostly characterized by permanent and occasional springs of low yield. In the broader zone of the location, 6 occasional and one permanent spring have been identified, forming one surface flow, the Turkish stream, which is located outside the landfill. At times of high water levels and snow melting, the groundwater circulation towards the stream becomes more intensive. At times of low precipitation, the yield of these springs is about 0.1 l/s. The houses surrounding the site, are not using groundwater for drinking water purposes.

In the upper layer, exposed to exogenetic forces, an eluvial-diluvial cover with maximum thickness up to 4.80 m is formed. The eluvial-diluvial clayey-debris material, produced by weathering of these rocks compared to Paleozoic rocks in substratum, has a higher coefficient of water-impermeability and may be considered a relative hydrogeological collector. Presence of clayey fractions in the mentioned debris does not prevent filtration of surface water through the slope body.

Detailed engineering-geological mapping of the terrain confirmed that all surface water flows by gravity to the large ravine and further on to the Turkish stream.

Based on observation of test boreholes and placed piezometers, it has been determined that in the investigated profile to the depth of investigations there is no permanent aquifer, but instead, given the fractured-cavernous type of porosity, there are isolated aquifers of condensed type, which exist at times of high precipitation and snow melting, when a minor portion of water gets infiltrated and the majority portion is exposed to surface runoff.

### ***Flora, Fauna and Protected Natural Resources***

The environment of the location is of typically forest character and corresponds to the association of leafy oak. In addition to leafy and Turkey oak, there are juniper-tree,

Italian oak, beech-tree and silver lime-tree (rare), crab-tree and wild pear-tree, white and red hawthorn, and other species at the underground flora floor. The location is surrounded by black pine.

The vegetation at the location outside the landfill border, to the Turkish stream, is degraded due to intensive bedrock erosion on the present steep slopes. Regarding the fauna, there are rabbits, squirrels and some rodents. The site is not a critical habitation of any plant or animal species.

There are no protected natural resources within the complex.

### ***Cultural and Historical Features***

According to the experts of the Institute for Protection of Cultural Monument from Kraljevo, there is a possibility of discovering a potential archeological site at one locality. In the event of encountering material remnants of earlier cultures during construction, the works will be stopped immediately and inform appropriate local and national institutions.

### ***Settlements and Existing Traffic***

All routes intended for municipal solid waste transport from the transfer stations to the landfill are classified as regional and main roads (provided with asphalt base), which will fully accommodate the selected transport vehicles. The main and alternative routes of municipal waste transport to the Regional landfill are the following:

<b>Municipality</b>	<b>Main routes</b>	<b>km</b>	<b>Alternative routes</b>	<b>km</b>
Arilje	Arilje-Požega-Lunovo Selo-Duboko	36	Arilje –Požega-Užice-Duboko	41
Lučani-Guča	Guča-Lučani-Požega-Lunovo Selo-Duboko	39	Guča-Lučani-Požega-Užice-Duboko	43
Bajina Bašta	Bajina Bašta-Dub-Užice-Duboko	38		
Kosjerić	Kosjerić-Karan-Lunovo Selo-Duboko	22	Kosjerić-Požega-Lunovo Selo-Duboko	50
Požega	Požega-Lunovo Selo-Duboko	21	Požega-Užice-Duboko	25
Čajetina	Zlatibor-Čajetina-Užice-Duboko	27		
Ivanjica	Ivanjica-Arilje-Požega-Lunovo Selo-Duboko	65	Ivanjica-Arilje-Požega-Užice-Duboko	70

Transport routes from transfer stations located in Čačak, Ivanjica, Lučani, Arilje, Požega, and Kosjerić lead to Požega, via the bypass road around Požega and through the village of Lunovo selo. Vehicles will pass by the elementary school "Miodrag Milovanović-Lune" in Lunovo selo, which is located at approx. 100 meters from the road. These roads are classified as regional roads.

Transport routes from Užice and transfer stations in Čajetina and Bajina Bašta (which follow the peripheral streets of Užice), will pass the School for children with hearing problems "Miodrag V. Matić", which is located 200 m from the street.



#### **4.0. Significant environmental impacts**

The proposed project includes construction of the sanitary landfill in Duboko and it will include waste separation line, transfer stations in all municipalities except Užice, as well as closure of the existing dumpsites/uncontrolled landfills in all the participating municipalities. Each of these infrastructural works might have potential environmental impact. The following paragraphs describe these impacts of each of the components of the project.

##### ***The Duboko regional sanitary landfill***

Waste will be constantly disposed at the Duboko landfill. The landfill operation might generate the following potential environmental impacts:

Soil, ground water and surface waters: Quality of soil, groundwater and surface water could be affected by several streams of wastewater (e.g. technical water generated by: washing of the trucks and the equipment, washing of the service area, etc., as well as sanitary water from toilets, etc.) discharge, leachate and precipitation runoff.

Air: Air quality could be affected by dust and gas emitted by the landfill activities. However, landfill gas will be extracted in a controlled manner and utilized for energy generation.

Traffic and noise: Vehicles coming to the landfill and landfill equipment will generate noise, dust and exhaust gases.

Land utilization: The construction and use of the landfill will change land usage from forestry/agriculture to land filling.

Flora/ fauna/ ecosystems: The existing ecosystem could be influenced by an increased amount of insects, rodents and birds scavenging.

Landscape: The landfill construction will change the landscape at the location itself. Existing forest band around the landfill complex will not be removed but additionally expanded.

These environmental impacts will be generated during the landfill construction, operation, closure and re-cultivation. However, construction works, as well as closure and re-cultivation, have minor impact on quality of soil, ground water and surface waters, particularly since the works will be executed in a relatively short time. While landfill operation will last for the lifetime of the scheme (2008 – 2020).

##### ***Transfer stations***

Transfer stations are open air modalities where municipal solid waste, including demolition waste, will be transferred from small-sized vehicles into large trucks for the purpose of efficient transport to the landfill. Waste can be transported directly from one vehicle to another one or it will be temporarily stored at the site. Environmental impacts at the transfer stations site might be the following:

Soil, ground water and surface water: Quality of soil, ground water and surface water could be influenced by wastewater discharge, leachate and precipitation runoff.

Air: Air quality could be influenced by dust and gas emissions (odors).

Traffic and noise: Traffic around the transfer stations will increase because low-capacity vehicles will bring waste to the transfer stations and large trucks will leave from the transfer stations. This will generate dust, exhaust gas releasing and increase noise level at the location and in its surrounding.

Depending on local situation in every municipality, the land utilization, flora, fauna, ecosystems and landscape could be affected.

#### ***Waste separation line***

Major activity of the planned waste separation line will be separation of paper, glass, metal, PET, and plastic foil. It could have similar environmental impact as transfer stations. Major benefits of the waste separation line will be decreasing waste quantities, prolonging the landfill lifetime and reusing/recovering secondary raw material from the separated waste fractions. The waste separation line will be located within the regional landfill complex .

#### ***Transport***

Transport will increase by the implementation of the waste management scheme. Waste from all the municipalities, except Užice will be transported via longer routes. This additional transport causes the following environmental impact:

Air, traffic, noise: Noise, dust and exhaust gas release will be increased. These might affect people living along the main transport routes, particularly along the landfill access road. Size and complexity of the impact will depend on roads maintenance, roadworthiness of waste transport vehicles and protective vegetative strip between roads and yards as well as on the vehicle maintenance levels.

Impacts on soil, ground water and surface water, land utilization, flora, fauna, ecosystems and landscape will not be significant.

#### ***Closing of the existing landfills***

The existing dumpsites/uncontrolled landfills in the municipalities participating in the landfill scheme will be closed.

Soil, ground water and surface waters: The quantity of leachate will decrease over the years and therefore water and soil quality will improve over time.

Air: Air quality will improve since there will be a reduction of dust and odours since the sites will be covered, remediated and recultivated. Gas emissions will decrease gradually.

Traffic and noise: There will be no traffic around the sites anymore and the landfill equipment will not be used any more so noise, dust and gas emissions will stop.

Landscape: Landscape will improve after remediation and vegetation recultivation.

Land utilization: Land utilization potentials will remain limited due to gas generation and soil settlement.

Flora/ fauna/ ecosystems: No impacts will be generated on these site and ecosystems will be balanced.

### **5.0. Mitigation measures**

The sanitary landfill includes protection measures such as an impermeable liner, top capping and leachate collection and treatment system. It will include precise operational procedures to protect soil ground water and surface water from pollution. In addition, the installation of a landfill gas collection and its utilization system has been foreseen.

The following general mitigation measures have been designed for the transfer stations and the waste separation line:

- Waste reception facilities and appropriate work procedures,
- Instructions for cleaning of service area and waste compaction containers.

## ***The Regional sanitary Landfill “Duboko“***

### Air Protection Measures

The main elements of air pollution will be dust particles, gases/odours. The measures to be taken to mitigate impacts of these pollutants, are the following:

- a) Prevention of flying-solid particles and their spreading in the environment will be done by proper execution of waste disposal (spreading, compaction and covering by inert material). During summer season, when there is an increased possibility of dust generation, the landfill body will be regularly sprinkled or sprayed from truck-tanks with recycled leachate. Sprinklers will be installed along the landfill periphery.
- b) Gases generated due to decomposition of disposed waste (anaerobic decomposition) will be collected and will be treated to remove harmful components in a controlled manner at the landfill. Gas collection wells will be installed, enabling landfill gas extraction as soon as waste is decomposed (about three years after first waste cells are completed). The landfill gas extraction system will consist of:
  - gas collection headers,
  - pipe system for gas collection and transport;
  - condense water siphons,
  - gas combustion in flare (in the first phase of the landfill operation),
  - gas utilization in gas engines for electricity generation.
- c) Generation and migration of odours will be minimized by daily covering of disposed waste by soil/inert material. A protective vegetation strip will be formed around the landfill complex, which will act as an additional barrier for spreading of odours.
- d) Regular cleaning and washing of waste collection/transfer vehicles and the access road.

### Soil Protection Measures

- a) **The landfill will be lined by impermeable liner (e.g., high density polyethylene, HDPE plastic liner) which will prevent leachate from percolating and polluting soil and/or groundwater.**
- b) Scattering of light waste will be prevented by daily compaction of waste and covering of daily disposed of waste by a layer of compacted inert material. This will also prevent birds and animals from scavenging.
- c) The landfill will be surrounded by a fence, of prescribed appearance and height, with car and pedestrian gate at the entrance. It will prevent uncontrolled entrance and prevent animals from entering landfill site.
- d) Disinfection and deratisation will be periodically carried out on the site.
- e) The protective vegetative strip will be follow the directions of predominant winds to reduce dust, odour and littering.

### Ground Water Protection Measures

- a) The landfill bottom will be lined by watertight liner (HDPE), which will prevent leachate generated in the landfill body to spread into the soil and ground water. After collection into a joint collector, or collection manhole, leachate will be conveyed to the wastewater treatment plant (see below).
- b) The wastewater treatment plant will be designed to produce effluent in compliance with the required standards.
- c) A portion of the treated wastewater will be used for sprinkling of the working surface at the landfill, and the remaining of the treated water, could be transported by truck-tanks to the municipal sanitary sewerage system. Recycling of the leachate is foreseen because

of the reduction of the quantity of the leachate by evaporating and reduction of dust on the landfill body.

**d) An impermeable liner** has been foreseen to be placed on the top of the each filled cassette for the purpose of preventing surface water from penetrating into the landfill body. Surface water will be directly discharged to the surface water collection system (channels) around the landfill. Surrounding channels will be connected with the Turkish stream.

#### Noise and Vibrations Measures

**a)** A high vegetation protective strip around the landfill will prevent the migration of noise and vibration.

**b)** The equipment planned for operation on the landfill will include a sanitary compactor (equipped with a cabin placed on rubber shock absorbers) which will be air conditioned and will generate low level of noise. Workers working on the site will be provided with adequate noise protection equipment.

#### Radiation Protection Measures

Disposal of waste with radioactive properties is forbidden. Medical waste is managed by Medical Centre, Užice. Radioactive waste is managed by the Institute Vinča.

#### Measures towards Protection of Human Health

All above-mentioned measures will contribute to the human health protection

#### ***Transfer stations***

According to national regulations, for each of the planned transfer stations, an Environmental impact study will need to be prepared. In generally, the locations of the transfer stations have to comply with criteria for site selection and landfill development (Official Gazette of RS, no: 54/92):

- Manipulation-Service areas at a transfer station have to be built of waterimpermeable liners,
- Transfer stations have to be fenced appropriately in order to prevent unauthorized people and animals from entering,
- Regular cleaning and washing of the manipulation-service areas,
- Treatment of wastewaters generated by washing and/or handling waste need to be treated before their discharge into the recipient,
- Regular disinfection and deratization of the manipulation-service areas need to be carried out,
- Protective vegetative strip around the fence need to be provided.

#### ***Waste separation line***

Environmental protection measures for the waste separation line are similar to protection measures planned for the transfer stations. Additional occupational health and safety measures, which are defined by regulations regarding occupational safety will need to be implemented at the facility.

#### ***Transport***

Special compaction containers of adequate size and capacity will transport waste from transfer stations to the landfill site. Modern compaction containers will be used which are constructed to prevent possible leakage. Transfer trucks for transporting compaction containers will be selected which comply with EURO III European standards.

### ***Closure of the existing dumpsites/uncontrolled landfills***

The majority of the 9 municipalities have technical documentation for remediation and re-cultivation of existing dumpsites/uncontrolled landfills once they stop to operate. The municipalities, which have not prepared the designs, will need to complete them within 12 months. According to national regulations, the Ministry of Science and Environmental Protection gives approval on projects of uncontrolled landfill remediation and states that the technical documentation needs to be prepared to comply with the Law on Environmental Protection as well as to the relevant laws.

### **6.0. Monitoring plan**

The monitoring plan includes daily visual control of:

- unloaded quantity and kind of waste,
- high-grade extraction and utilization of landfill gas,
- maintenance of equipment and internal roads,
- washing and disinfection of transport vehicles,
- presence and control of pests.

The monitoring plan includes regular sampling and analysis of:

- quantity and quality of leachate filtrate before and after treatment,
- wastewater (technical, sanitary) quality after treatment at the sedimentation tank – separator,
- soil and groundwater quality,
- air quality outside of the site;
- gas composition after extraction and separation;
- determination of the municipal waste morphological composition by the quantities of the separated waste, for the purpose of statistic data on waste separation.
- geotechnical monitoring of cell construction and stability,
- monitoring during landfill closure and after-care.

Quality control of the analytical control procedures and monitoring and/or analyses, will be carried out by authorized laboratories.

### **7.0. Public consultations and interactions**

#### **Previous activities**

The Public consultation and disclosure procedure as well as the EIA Study 2005 presentation were carried out in compliance with article 29 of the national law on Environmental Impact Assessment (Official Gazette of RS 135/04). All activities regarding approving EIA Study 2005, were available to public in the following ways (for details see as well Appendix 1. of the PCDP, Volume II of the draft EIA 2007):

- Investor PC 'Directorate for construction', Užice, (The Investor), submitted the request for determination of the scope and contents of the EIA study 2005 for the Regional sanitary landfill 'Duboko, to the local Department of Environmental Protection', Užice, (The Authority), on 01st August 2005.
- Notice of the submitted request for determination of the scope and contents of the EIA Study 2005 for the Regional sanitary landfill 'Duboko' was available for review to the stakeholders, on 3rd August 2005 (see Appendix 1. of the PCDP).



- Notice of the submitted request for determination of the scope and contents of the EIA Study 2005 for the Regional sanitary landfill 'Duboko', was released publicly on 5th August 2005 (see Appendix 1. of the PCDP).
- The decision of the scope and contents of the EIA Study 2005 for the regional sanitary landfill Duboko 07, no: 502-5/05, was issued by the local Department of environmental protection, Užice, (The Authority), on 29th August 2005.
- The data on the notice of the decision on the scope and contents of the EIA Study 2005 for the regional sanitary landfill Duboko were published, as well as were made available to the stakeholders, on 3rd September 2005 (see Appendix 1 of the PCDP).
- There were no appeals against the decision of determination of the scope and contents of the EIA Study 2005.
- The Investor submitted the request for approving the EIA Study 2005, prepared by the company 'Drago projekt' Belgrade, to the Authority, on 14th September 2005.godine.
- The data on the announcement of the public review of the EIA Study 2005 were available to the stakeholders on 17th September 2005 (see Appendix 1. of the PCDP)
- The opinion on the EIA Study 2005 was obtained by the following:
  - The Health Protection Institute of Užice, on 26th September 2005, and
  - The members of the Technical Committee for the EIA Study 2005 assessment – Report no: 502-5/05 of 26th September 2005 (see Appendix 1. of the PCDP)
- The Investor submitted written responses to the comments, on 27th September 2005 (see Appendix 1. of the PCDP):
- The approval of the EIA Study 2005 for the regional sanitary landfill Duboko was issued by the Authority of the Municipality of Užice, 07 no: 502-5/05 on 27th September 2005.
- The data on the approval of the EIA Study 2005 for the regional sanitary landfill Duboko were published and were available to the stakeholders on 29th September 2005 (see Appendix 1 of the PCDP):
- There were no appeals against the Decision from the stakeholders.
- All the mentioned documents are in the archive of the Užice municipality.

### **Disclosure of information**

The draft EIA Study 2007 ('Executive Summary'), will be subjected to public information. It will be announced in the daily newspaper Politika and in the local weeklies issued in all nine participating municipalities. Where no local newspapers are available, the public will be informed via local radio/TV. In all cases, announcements will be prepared in Serbian language

The draft EIA Study 2007 in English and Serbian languages will be provided for public information at the office of European Bank for Reconstruction and Development (EBRD's) office and website in London, UK, and in the EBRD Resident Office in Belgrade. Copies will also be provided at PUC «Duboko» office, as well as at the offices of local communities nearest the proposed landfill site: Lunovo selo and Duboko, the Užice municipal office and municipalities' offices of each of the transfer station locations: Čačak, Kosjerić, Požega, Arilje, Ivanjica, Bajina Bašta, Čajetina, Lučani for affected stakeholders.

**Timetable**

The Public consultation period is 120 days from the day of announcing the supplemented EIA Study 2007 to the time for consideration of financing at the meeting of the EBRD Board of Directors.

A public meeting for public presentation and consultations will be held on September 7<sup>th</sup>, 2007 in the Užice City Hall, D, Tucovića 52 at 12:00 in order to discuss the EIA Study 2007 results.

**8.0. Resources and Responsibilities:****1. For receipt comments, objections and suggestions, the following are responsible:**

At the "Duboko" Užice:

- Competent person: Vaso Šunjevarić, Manager
- Address: Heroja Luna bb, 31000 Užice
- Tel.: 062/262-818

At „Mol“ company in Belgrade:

- Person in charge: Ilija Brčeski
- Contact: 063/253-520
- E.mail: [ibrceski@chem.bg.ac.yu](mailto:ibrceski@chem.bg.ac.yu)

**2. For giving professional comments and answers to objections and suggestions, the following are responsible:**

- At „Mol“ company in Belgrade: Ilija Brčeski
- Contact: 063/253-520
- E.mail: [ibrceski@chem.bg.ac.yu](mailto:ibrceski@chem.bg.ac.yu)

**Grievance Mechanism:**

The PUC "Duboko" will process and carefully consider received comments, suggestions and objections by the public. Accepted suggestions and objections will be included in the final version of the EIA Study 2007 within 20 days after receipt and the final EIA Study 2007 of the Regional landfill Duboko will then be considered complete (see PCDP for details).

Date:  
Belgrade, May 24, 2007.

MOL  
General Manager  
Jelena Petrović