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Bosnia Herzegovina

Solid Waste Management Project II

Environmental Framework and Management Plan

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I. Background

History of Solid Waste Management Project.

In Bosnia and Herzegovina (BiH), equipment for waste collection and disposal just few years ago was mostly obsolete and/or poorly maintained. As a result, the current waste collection and disposal capacities are unable to keep up with waste production and lead to significant quantities of waste being discarded in unofficial sites such as wild dumps, roadsides, small village dumps, rivers, and mines, posing a direct risk to public health. Runoff and leachate infiltration from dumpsites are potential hazards for the groundwater aquifers in some areas of BiH that provide the main source of water supply.

The most serious problems caused by such dumpsites include the deterioration in groundwater quality, the destruction of vegetative cover, and the proliferation of insects and rodents that are disease vectors. These serious public health and environmental problems/ risks are worsened by weak institutional and enforcement capacity. Furthermore, odors and unsightliness discourage development in the immediate vicinity of these dumps and end up being harmful to overall economic development.

The Government of BiH recognizes the need to significantly strengthen capacities in solid waste management and has identified this as a priority. The key recommendation of National Waste strategy was the development of regional landfill facilities serving multiple municipalities. The Government is proceeding in three phases of which the existing Solid Waste Management Project (SWMP) supports the first phase (2002-2008). In light of successful implementation progress, the Government had sought additional financing for the project. The Bank approved an amount of US\$8 million in June 2005. The existing bank support (US\$ 26 million) for the sector will result in development of 5 international standard regional landfill facilities. The Project will close on November 30, 2009. Given the enormous funding needs to continue and finally complete implementation of the strategy, the Government has approached the Bank for continued support to the sector to expand the project to other regions.

The first solid waste management project (including additional financing) invested US\$26 million in 6 regional landfills. The suggested repeater project would finance investments in additional 6-8 regional sites. Given that an estimated number of 14-16 landfills will be required to cover a country the size of BiH (the National Solid Waste Strategy prepared by EU back in 2000 estimated a need for approximately 16 regional landfills), SWMP-2 would come close to achieve full coverage in BH.

The approach

The Government seeks to develop multi-municipal disposal districts where a single landfill site can be rehabilitated and used for disposal of the waste generated by several municipalities. The rationale for this approach is that the number of sites should be consolidated to minimize expenses for landfills and waste disposal management. With the possible exception of Sarajevo, it is

apparent that few if any municipalities in BiH generate enough waste to develop and operate their own independent sanitary landfills in a cost-effective and safe manner. Small municipalities generate limited quantities of waste and it is not economically viable for small individual municipalities to operate their own landfills. The multi-municipal concept involving one site for several urban and associated rural areas is seen as a viable approach to the current solid waste management problem, since shared waste treatment and disposal sites are expected to result in significant economies of scale.

As municipalities start to share landfill sites, there will be a need to establish transfer stations to provide cost effective transportation of wastes to landfills. Transfer stations can take many forms and the Government favors low-cost transfer stations that are simple in design to reduce transport costs to sites and to optimize local vehicle time for waste collection.

In terms of landfill rehabilitation, the Government approach is to focus on existing landfill rehabilitation as opposed to construction of new landfills. This will allow investments to be targeted to maximize current strengths, i.e., the existence of adequate landfill disposal capacity. This strategy reflects a calculated decision not to invest in costly high-technology waste processing options at this stage. The SWMP design supports this approach.

Experiences from the first Solid waste Management Project.

In general, implementation progress is going well under SWMP I and has been particularly impressive at sites in Sarajevo, Banja Luka, Zenica and Bijeljina. These regions are advancing faster than initially foreseen and success has been achieved in a relatively short period of time. Sarajevo landfill accomplishes excellent operational results, meets high international standards and clearly functions as a model for other project regions. Some utilities have achieved cost-effective operation already. Inter-municipal boards, formed for each landfill, function very well and municipalities cooperate smoothly with each other. Monitoring and information sharing between municipalities - one of the most challenging aspects in such arrangements - are being managed well by the respective boards. At the same time, implementation was seriously delayed in Tuzla; and outstanding issues have to be resolved in Bihac.

Administrative Structure

The political structure of BiH is important to understand in the context of solid waste management because there are two separate administrative structures in place. After signing of the Dayton Peace Accord (Dec 14, 1995 in Dayton, Ohio, USA), BiH administratively was divided into two entities: Federation of Bosnia Herzegovina (FBiH) and Republika Srpska (RS). Another region of Bosnia-Herzegovina is the district of Brčko which is independent of both entities. FBiH is made up of 10 cantons and 80 municipalities, with separate administrations. RS does not have cantons but has seven regions and 61 municipalities .

The Federation Cantons are as follows: (1) Una Sana, (2) Posavina, (3) Tuzla, (4) Zenica-Doboj, (5) Bosnia-Podrinje, (6) Srednjobosanski, (7) Herzegovina-Neretva, (8) West Herzegovina, (9) Sarajevo, and (10) Herzeg-Bosnia. The Republika Srpska regions are the following: (1) Banja Luka, (2) Doboj, (3) Bjeljina, (4) Zvornik, (5) Foca, (6) Sarajevo-Romanija and (7) Trebinje.

II. Project description

The project's objectives are to: (a) improve solid waste services cost effectively in participating priority areas; (b) increase administrative and technical capacity for solid waste management at the local and entity level; (c) improve the cost recovery mechanism of the sector to encourage private sector involvement; and (d) correct environmental problems and reduce health hazards caused by inadequate waste collection and disposal systems.

The Second Solid Waste Management Project will build upon the successful project design of SWMP-1. Overall project size equals USD 27.5 million, of which USD 25 million will be provided by the Bank and USD 2.5 million by the borrower. The borrower's co-financing share of 10 percent will solely finance investments under Component A.

Project components

SWMP-2 would have three components, outlined in more detail in the following: **Component A, Waste Management** (USD 25 million) invests in rehabilitation of existing disposal sites, wild dump closures, collection infrastructure, support equipment, and to a limited extent the conversion of existing small dumpsites to transfer stations. At more advanced regional landfills the component will also support upgrading processes such as sorting, recycling and gas capturing. It will also cover operational cost of regional Project Implementation teams. The component includes 10 percent co-financing from the Government.

Component B, Technical Assistance (USD 1.5 million) will provide technical assistance and engineering services to participating regions and will finance institutional strengthening and capacity building activities benefiting the entity level institutions involved in solid waste management. This component will support the preparation of feasibility studies, financial, environmental and social assessments of landfill sites and provide support for bidding procedures for the investments and services provided under Component A. The Component will also finance a Public Communication Program and Environmental Monitoring. In addition it may support strategic studies for Hazardous Waste Management and Inter-state cooperation in Solid Waste Management.

Component C, Project Management Unit (USD 1.0 million) will support operation of the PMU and give assistance in project implementation.

Eligibility criteria - Criteria for selection of the sites

Criteria for sub-project eligibility have been agreed upon to ensure effective implementation and economic efficiency of regional sanitary landfills. The Government has prepared the criteria for both Investment funding and

Technical assistance to fit in the second phase of the project. Based on these sites for SWMP 2 will be chosen.

Eligibility for Investment Funding

All regions that achieve to meet at least four of the following six criteria may become eligible for investment funds under the project. The criteria are as following:

- (1) Regional Solid Waste Management Company established,
- (2) Site for regional sanitary landfill selected,
- (3) Local community consulted for site selection,
- (4) Feasibility study prepared,
- (5) Detailed Project Design and bidding documents prepared, and
- (6) Environmental Assessment and Environmental Management Plan prepared.

Eligibility for Technical Assistance

Regions meeting the following four criteria become eligible to apply for Technical Assistance under the project:

- (1) Proven consistency with the National Solid Waste Management Strategy,
- (2) At least three municipalities have stated interest to cooperate in solid waste management,
- (3) Participating municipalities constitute of a minimum aggregated population of 100,000, and
- (4) Inter-municipal board established

The Government has presented a list with regions currently eligible under these criteria and initial fund allocation will take place according to this list. Based on the criteria outlined below, the Government will submit to the Bank by February 22, 2008 a list of municipalities to be included in the project. Possible sites for the SWMP 2 are: Doboj, Gorazde, Prjedor, Trebinje, Visoko, Zvornik.

III. Institutional Arrangements for Waste Management and Legal Framework

Institutional Arrangements for Waste Management.

In the FBiH, the Ministry of Environment and Tourism is responsible for waste management policy and legislation while other Ministries also play a role. For example: Ministry of Agriculture, Water Management and Forestry for wastewater discharge; Ministry of Health for medical waste management and the Ministry for Energy, Mining & Industry for industrial waste management. This structure of organization responsibility is similar at the Cantonal level in FBiH. The Cantonal Ministries are largely responsible for policy and legislation in their respective fields. In RS, the Ministry of Physical Planning, Construction and Ecology is responsible for waste management policy and legislation. There is no Canton structure but the organization of services in the

municipalities/regions closely resembles that of the FBiH. Within the municipalities, the Utility Companies are usually responsible for waste management as well as collection of fees from customers. There is also an Inter-Entity Environmental Steering Committee that was established in July, 1998 made up of Government officials, professionals and academics, to coordinate environmental policy in harmonizing environmental laws between the Entities.

The unevenness in SWM organizational structures, evident from the above description, along with political realities, has led to huge inefficiencies in SWM. This is most evident in the excessive number of controlled and uncontrolled landfills throughout Bosnia and Herzegovina, and the related infrastructure, most of which is obsolete or poorly functioning. This project continues to introduce a new approach to SWM which addresses the institutional, financial, technical and environmental aspects of SWM.

Legal Framework

Recently, both entities drafted new environmental laws that are harmonized with the legislation of the European Union. The new environmental laws are: Law on environmental protection; Law on nature protection; Law on air protection; Law on water protection; Law on waste management; and Law on environmental fund. In addition to environmental laws, several other important laws were also drafted in both entities recently, such as the law on physical planning and the law on construction. Although these laws replaced the existing pre-war laws (focused mostly at urbanism, physical planning and construction), setting a pro-European environmental legislation system, the transformation has not been completed yet, resulting in poor implementation, due to lack of specific secondary legislation as well as due to lack of knowledge and poor enforcement. A key requirement of the Law on Environmental Protection, the by-law regulating the EIA and Environmental Permit has been adopted in FBiH and RS.

Environmental Impact Assessment Legislation

Federation of Bosnia and Herzegovina (FBiH)

Environmental Impact Assessment procedure in the FBiH is regulated by the Federal Law on Environmental Protection (Official Gazette of FBiH, No. 33/03) and its Regulation on facilities subject to obligatory EIA, and facilities which may be constructed and operated only with a valid environmental permit (Official Gazette of FBiH, No.19/04). The latter provides a list of industrial plants and facilities, which undergo individual evaluation concerning the EIA requirement.

For the following structures / units, before environmental permit can be issued, an obligatory EIA procedure has to be undertaken by the Federal Ministry: a) units for waste incineration, b) units for chemical treatment, c) hazardous waste landfills, d) units incineration of municipal waste, e) units for biological and physical - chemical treatment of non hazardous waste aiming at

further disposal with daily capacity of 50 t/day, f) landfills with daily capacity of 10 t or more, or maximum total capacity of 25000 t, excluding inert waste, and g) inert waste landfills with total maximum capacity of 250000 m³ or more; or covering area of 4 ha or more.

There is as well group of units / structures whose environmental impact is assessed on cantonal level. For such, individual evaluation is done on the need for EIA. When evaluating the EIA requirement, the Ministry takes into account individual project characteristics (industrial plant/facility size, waste generation, pollution, etc.), project location and environment sensitivity, as well as characteristics of potential impacts (impact extent, probability, etc.). These are: a) units for biological and physical - chemical treatment of non hazardous waste aiming at further disposal with daily capacity of 10 t/day, b) inert waste landfills with total maximum capacity of 200000 m³ or more; or covering area of 2 ha or more, c) landfills with daily capacity of 5 t or more, or maximum total capacity of 10000 t, excluding inert waste.

Republika Srpska (RS)

Like the FBiH Law, the Law on Environmental Protection of RS (Official Gazette of RS, No. 53/02), amended in 2005 (Official Gazette of RS, No. 109/05), regulates the preservation, protection, restoration, and improvement of ecological quality and capacity of environment, and the quality of life; the measures and conditions for management, preservation and reasonable use of natural resources; the legal and administrative framework for the issues of preservation, protection, and improvement of environment; the financing of environmental activities, including those in sole responsibility of the authorities. According to this law, the components of environment (soil, water, air and ecosystems) must be protected individually, as well as within the protection programs for other components, taking into account their interdependence.

This Law, as well as its implementing Regulation on facilities which may be constructed and put in operation only with a valid Environmental Permit (Official Gazette of RS, No. 07/06), introduces obligatory environmental permitting for all facilities potentially endangering the environment. The key provisions of this Law, including those on EIA, are equivalent to the provisions of the FBiH Law. Regulation on Projects subject to EIA and Criteria for Establishing the EIA Requirement and Its Extent (Official Gazette of RS, No. 07/06) lists industrial plants, facilities and projects with substantial negative environmental impacts subject to mandatory EIA, with thresholds related to waste management activities equivalent to those of the FBiH legislation.

The National Strategy

The European Union (EU) funded preparation of a Nationwide Solid Waste Management Strategy completed in 2001. The Strategy was the first document on solid waste after the war. The Strategy recommends a wide range of technical, institutional and financial upgrading over the next 15-20 years. A key part of the Strategy centers on the management of household and municipal

wastes. It is based on the establishment of multi-municipal districts covering a minimum of 200,000 persons each. Wastes collected from both urban and rural areas would be transferred to larger containers via transfer stations for transportation to a multi-municipal landfill site. In the long run, it is believed that less populated regions would also join and waste would be transported to fewer but larger landfills. Recycling and introduction of waste incineration are also promoted in accordance to EU standards.

The Law on Waste

The Law on Waste Management is a framework document and provides general provisions for the overall concept of waste management, while specific issues are dealt with within the bylaws that have been developed or are currently in the adoption procedure.

IV. World Bank policies

The safeguards policies

The World Bank requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus improve decision making (OP 4.01, January 1999). EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed project. EA evaluates a project's potential environmental risks and impacts in its area of influence; examines project alternatives; identifies ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation. The World Bank favors preventive measures over mitigation or compensatory measures, whenever feasible. EA takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property); and transboundary and global environmental aspects. The Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of EA.

Standard Bank's environmental categories

The Bank classifies the proposed project into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts.

- **Category A:** A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. EA for a Category A project examines the project's potential negative and positive environmental impacts, compares

them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. For a Category A project, the borrower is responsible for preparing a report, normally an EIA (or a suitably comprehensive regional or sectoral EA). The scope of the report is presented in annex 1.

- **Category B:** A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas - including wetlands, forests, grasslands, and other natural habitats - are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than for Category A projects. The scope of EA for a Category B project may vary from project to project, but it is narrower than that of Category A EA. Like Category A EA, it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. The findings and results of Category B EA are described in the project documentation (Project Appraisal Document and Project Information Document). For B category project EA in form of EMP usually has to be prepared. The content of the EMP is presented in annex 2.

- **Category C:** A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required for a Category C project.

Environmental Framework

Environmental Framework (EF) is prepared where locations and/ or investments are not fully known at the appraisal stage of the project. EF serves as a tool to ensure that the proposed investments implemented through the Project comply with the existing environmental protection laws, regulations and standards in Croatia as well as with the World Bank's Operation Policies and Practices. In this way it presents screening procedures for determination of the scope of the work under EIA.

Assessment of the current project by the Bank

The project is assigned Category B. This is a repeater project, which will finance the upgrading of existing municipal dumps to serve as regional landfills covering several municipalities, and some smaller existing dumpsites might be converted to transfer stations. The locations and designs, and therefore the nature and degree of the environmental impacts are yet to be specified. However, as in the first project, no new waste disposal sites will be established. The Bank agreed that an Environmental Framework and Environmental Management Plan for one site will be prepared prior to Appraisal to serve as the basis for preparation of site-specific EAs/EMPs when the investment sites are identified. This document presents the Environmental Framework, and Environmental Management Plan for Mostar landfill Uborak

which follow national requirements and standards while making provisions for compliance with World Bank requirements when these are stricter in any case. One completed EIA for a representative site will also be submitted prior to Appraisal as a model.

V. Screening procedure

The complex administrative structure in BiH (entities, cantons and municipalities) results in different requirements at different levels or in some cases there are differences in the requirements of entity regulations. The national EA legislation, both in FBiH and RS has been drafted recently and implementation has not started in the full sense. Weak knowledge of the laws at certain levels of responsibility in the EA process, results in varying interpretations of the law. This is exacerbated by the lack of secondary legislation (e.g. effluent standards) which is also a requirement for full implementation of the EA process. What is evident from the EIA legislation, is that four types of impacts can be recognized: (I) significant impacts - list of project for which full EIA is necessary is identified, (II) potential significant or moderate impact - the entity ministries responsible for environment will screen against list of project and decide whether an EIA is required based on prepared Preliminary EIA, (III) moderate impacts - Installations and facilities for which Environmental Permit is issued by entity ministries responsible for environment and which do not require EA, (IV) low or not significant impacts, not specially identified.

The World Bank carries out screening and categorization based on the impacts of the projects (type, location, sensitivity, scale, etc.), whereas in BiH, the categorization is done based on pre-defined lists of installations and facilities where scale and threshold levels are key factors in defining the category.

Table in Annex 4 compares World Bank and BiH policies with respect to projects/installations that trigger the EA process. A project categorized as Cat II or III by national legislation may not require EIA, however by Bank procedures and safeguards it may require a full EIA and higher requirements for public involvement. Similarly, a project categorized as Cat B by the Bank where an EMP is sufficient, may trigger a full EIA by local regulations. Therefore the two screening/categorization procedures need to be carried out separately, where projects would be categorized as A/B/C in accordance with Bank's screening policies and as category I/II/III/IV as per national policies. The project will follow the requirements which are stricter.

The following table summarizes the screening against the project components and the national criteria and also suggests the World Bank category categorization.

Table 1 Screening table

Activity type	Category I Significant impact	Category II To be assessed weather significant	Category III Moderate Impact	Category IV Lo or no impact	World bank recommendations
rehabilitation of existing landfill sites	landfills with daily capacity of 10 t or more, or maximum total capacity of 25000t	landfills with daily capacity of 5 t or more, or maximum total capacity of 10000 t			A or B depending on the decision of the Ministry for category II
wild dump closures				+	B
collection infrastructure				+	C
support equipment				+	C
transfer stations			+		B
technical assistance				+	C
electricity production from landfilled gas	Installments of more than 50 MW capacity	Installments of more than 2 MW	Installments of less than 2 MW		A (category I and II) and B (category III)

Steps of the BiH environmental review process is described in Annex 3.

Public Consultation

The public consultation rules will as well follow the stricter procedure.

For all A categories subprojects (WB assessment) and for all I category projects (BiH assessment) two public consultations will be held, one during the Preliminary Environmental Assessment (inception) phase and second after the draft EIA report is prepared.

In case the project is classified as Cat II, by BiH legislation, one consultation is required during the Preliminary Environmental Assessment phase, and if decided that EIA is required, a second consultation will be held after the draft EA is produced.

For Category III by BiH laws and/or Cat B by World Bank procedures only one consultation is required during the Environmental Permit issuing procedure/EA process.

Records of all consultations must be disclosed with the EA documents as per World Bank requirements.

Disclosure

For categories I and II and/or Cat A projects, the first disclosure should take place during the Preliminary Environmental Assessment process (prior to the first consultation), and the second after the draft EA report is prepared. For category III requests for issuing environmental permits need to be publicly available during the permit issuing procedure. However, if the project is Cat B, the EMP should be disclosed together with the permit request (if not already included with the permit request) in order to satisfy World Bank procedures. All

documents (EIA report, draft EIA report, EMP) need to be sent to the World Bank for disclosure at the Infoshop.

VI. Institutional capacity to implement project and environmental safeguards

Institutional arrangements for the implementation of the Solid Waste Management Project I and II (and subprojects) have been defined, consisting of a Project Management Unit (PMU) formed in the Ministry of Environment and Tourism. In addition the same, a board appointed will supervise individual subprojects project as in SWMP I. This board consists of a representative from each municipality which is using the same landfill, and will protect the interest of each municipality in terms of the system running smoothly and fairly. As the SWM system is going to be based on a regional basis the existing Utility companys will have to be merged into one. Each of the municipalities would have to have an engineered transfer station at the location of their existing disposal site. The overseeing "institution" would, in accordance with the Ministries at the Cantonal/Regional or Entity level, coordinate inspections and monitoring.

The PMU is responsible for the overall environmental management and decision making in accordance with the EF during the preparation and implementation of subprojects. A separate environmental unit for the project is not required, since the PMU will be staffed by qualified personnel and specialists which will be able to carry out environmental management along with technical assistance from the World Bank and independent experts/specialists.

The Utility Company /boards in charge for the landfill are responsible for obtaining an Environmental Permit for subprojects that impact the environment. For the purpose of screening, the utility company/board, with the guidance of PMU, should prepare the initial project concept/minimum required information about the project which will enable adequate categorization. The PMU will play a key role during the screening, and will participate in categorization of subprojects in accordance with requirements of national legislation and Bank's procedures, based on the screening presented in chapter V. The results of the screening and categorization should be reviewed and approved by the Bank. The Bank should provide assistance during the screening process, especially with respect to safeguards. Furthermore, the PMU will advise the Utility Company /board on the World Bank EA requirements (contents of an EA report and/or EMP format), the EF chapter requirements and other necessary information. The PMU will also be responsible for contacts and consultations with entity ministries, related to requirements, procedures and EIA contents for projects requiring environmental permits from the entity level (Cat I, Cat II and Cat III subprojects). Where an Environmental Permit or any other necessary permit (e.g. location or construction permit) is issued by cantonal or municipal authorities, the Utility Company should send the official

permit request and attached documents to the PMU for review prior to submission to authorities.

The PMU with the Utility/board is responsible for selection and contracting of Consultants to be engaged in the preparation of the EIA report or EMP as well as for supervision during preparation. EIA reports or other separate reports (such as EMP) will be submitted by the PMU to the Bank for review and approval. For Cat A projects the Utility Company /board retains independent EA experts not affiliated with the project to carry out the EA. Consultations with project affected groups and NGO's will be arranged by the Entity Ministry. In case the Entity Ministry is not responsible for the consultation by national policies, the Utility Company /board will be responsible for carrying out the consultation, in agreement with the PMU and by informing the competent ministry/authority. The Utility Company /board will send a copy of the consultation record to the PMU. In case significant issues have been identified during the consultations, the PMU will inform the Bank accordingly. The Utility Company will as well be responsible for selection and contracting of licensed company / laboratory (e.g. central BiH laboratory) for monitoring of EIA requirements. The data collected during these monitoring activities would need to be readily accessible for all interested parties. Due to the cost of local and external work force, monitoring should be carried out by the staff of the landfill, once properly educated and trained.

During both the construction and operating phases of each subproject the Utility Company /board will carry out the monitoring defined in the EIA and EMP to ensure that mitigation requirements specified in the EMP and any other environmental requirements specified in the Environmental Permit are complied with. The environmental protection law requires that the Utility Company /board reports to the competent authority (that issued the permit) on emission monitoring results, accidents, and other information requested by the permit(s), during the initial and last phases of construction, operation and decommissioning. When required by national policies, and if the PMU finds it necessary (due to lack of equipment or capacity), specialized institutions/companies will perform the required monitoring and data collection. Implementation of mitigation measures specified in the EMP and Environmental Permit must be supervised by the PMU on biannual basis. Reports on mitigation measures and monitoring results are submitted by the Utility Company /board to the PMU for the project progress report. The PMU is responsible for reviewing and analyzing the reports received from the Utility Company /board and can request additional monitoring in order to ensure that all environmental guidelines and permit requirements are satisfied. The environmental compliance reports will be attached to the annual progress reports submitted by the PMU to the Bank.

In addition the responsible Ministries will be in charge for the monitoring of the EIA requirements.

Allocation of responsibilities

The Entity (FBiH and RS) Ministry of Environment will be assigned the following tasks: conducting inspections, mandating monitoring activities, collecting and forming a database of monitoring results and analyses.

Each Canton/region within which the landfill is located, can take over the activities of the Entity body that can not be conducted at that level. The Canton will enforce and penalize improper disposal activities, form the overseeing institution, conduct an educational campaign for the general public and try to motivate the population to accept the SWM system.

Institutional strengthening

Considering the current SWM system in BiH it has been determined that there is a need for training of staff (operations and monitoring staff) and SWM authorities, and public awareness rising in local population. The training/public awareness rising will be aimed towards several groups of stakeholders including management, technical staff, monitoring staff, citizens, NGOs, etc. Annually, there will be: (i) A half day seminar for management; (ii) a two day workshop for all staff at the landfills included in the project which includes one day on-site workshops, alternating amongst the landfill sites. These training packages will address topics selected by participants and could include: selection of appropriate collection equipment; development of collection equipment specification; planning efficient route designs; financial management and cost recover; resource recovery and recycling; special handling of hazardous and medical wastes; landfill operations; environmental monitoring and regulation.

As in case of Sarajevo landfill, opening of education centers for public on waste management issues will be encouraged.

SEMINAR Series

The participants will be: Managers of the working unit of the landfill, landfill staff, citizens, environmental authorities, local authorities, and other stakeholders.

The contents of the Seminar could cover topics such as: Public consultation and disclosure, Environmental policies and disclosure, Environmental impact assessments during the construction and rehabilitation phases, System and organization of managing the environment and National regulations

WORKSHOPS

Participants will include same as above but with more specialized topics and participants choosing those most pertinent to them.

The proposed contents of the Workshop is as follows:

- I. Operation Module: Basics of sanitary landfill
 - Proper Design description
 - Proper handling procedures
 - Effects of improper handling of the system
- II. Environmental Module
 - Environmental Impact Assessment
 - System of managing the environment
 - Impact on health and environment
 - Environmental Impact from solid waste management
 - Measuring environmental impacts associated with solid waste management and landfills
 - Monitoring for environmental quality
- III. Supervision and Inspection Module
 - Procedures of environment licensing in BiH
 - Monitoring the negative impacts on environment
 - Supervision on environmental protection
 - Preparation of technical requests concerning the environmental in the specifications for the contractors

VII. Public Disclosure

Environmental Framework

The Government will conduct national consultations on the EF by _____, 2008 and disclose the updated framework document to the public beforehand. The document will be presented in Mostar. Copies of the EF in Bosnian and Serbian language will be distributed and the framework briefly discussed. Copies of the Minutes and a list of person present will be attached to this document.

Environmental Assessments and EMPs

For subprojects falling in World Bank Category A and B, the municipality/canton / region will consult the project affected groups and local non-governmental organizations (NGOs) about the project's environmental aspects and take their views into account.

Category A: The public consultation will occur twice: a) after the environmental screening in the form of EF and/or before the terms of reference for the EIA are finalized; and b) after the EIA is prepared to seek feedback on the report.

Category B: The public consultation will occur when the EMP is in a draft phase and the findings of the draft EMP will be discussed. The views of the public will be incorporated in the final EMP.

For meaningful consultations, the municipality will provide relevant information to the public in a timely manner. The minutes of public meetings will be recorded and included in the final EIAs or EMPs.

VIII. Environmental Management Plan

The Environmental Management Plan (EMP) for Mostar landfill Uborak, which is an integral part of the Environmental Framework (EF) and is presented on the following pages. The EMP identifies the proposed mitigation measures to address the potential negative environmental impacts of the proposed Project activities. The content of the EMP is described in Annex 3. Since EMP as such does not exist in national legislation it has to be prepared by WB standards.

The screening of the potential subproject sites will be done according to procedures described in chapter V. Mostar landfill Uborak will serve as a sample case the EF, and for this mitigation and monitoring measures will be presented.

Background data

The Mostar region encompasses two Cantons in FBiH, Herzegovina-Neretva Canton and West-Herzegovina Canton. Within these two cantons 12 municipalities are included. The largest city in this region is the city of Mostar, with more than 100.000 inhabitants. Mostar is now the administrative center

for the Herzegovina-Neretva Canton. It also has a university, and before the war it had a well-developed industry. The major companies were *Aluminij*-Aluminum electrolysis industry, Soko army aircraft industry, and Hepok agricultural complex.

The major environmental issue in this region is protection of the Neretva River, which is a landmark, tourist attraction, hydro-power source, and an important water resource. Neretva is very important in agricultural irrigation. Neretva is also used as a drinking water supply, both in Bosnia-Herzegovina and neighboring Croatia. The Neretva flows almost through the entire Canton, through Croatia and discharges into the Adriatic Sea.

Within the Mostar region there are a number of unsanitary landfills (legal) and illegal dumpsites. None of these sites have pollution-prevention measures that would safeguard the environment or the health and welfare of the local population and animals. Mostar itself is divided into 6 city municipalities, West, South West, South, North, South East and Stari Grad. Within these 6 city municipalities two public works organizations are functioning. Those are: *Parkovi* which is in charge of waste collection for West, Southwest and South with no sanitary landfill as a final disposal site and *Komos*, the proprietor of the Uborak landfill that operates in the municipalities of North, South East and Stari Grad.

The landfill

The Uborak landfill is a fully sanitary landfill (donors have supported several millions of dollars of investments in Uborak). The pit is lined with impermeable foils, the gas release pipes are installed and so is a leachate collection-circulation system. The landfill encompasses an area of 7 hectares, with an additional 4.2 hectares designated for recycling and another 8 hectares for future expansion of the landfill. Uborak also has an incinerator on site, which is not equipped with exhaust fumes treatment. The capacity of the existing pit is 440,000 m³, while the daily amount deposited amounts to 30 tons. Uborak is located some 10 km from Mostar, off the main road - M 17. It is fairly distant from the road. The nearby villages, for the most part, have been abandoned during the war, and there are no public institutions or designated public areas in the vicinity. The landfill is also free of any old war materials, explosives, mines and weapons.

The illegal landfills, or wild dumps, to be closed are those within the regions to be serviced by the landfill sites supported by the project. This supports the strategy that with a well-functioning, sanitary landfill, transfer and collection system in place, illegal landfills will not be necessary. Approximately 30-40 transfer stations will be funded by the project. Transfer stations will be sited on existing illegal dump sites closed under the project.

The investments financed will not affect any known archeological or historical site or any natural habitat, nor affect indigenous people. The social assessment has determined that there are no scavengers active in the landfills included in

the project; and there are no people living on the existing landfills or illegal dumps.

Doing nothing and consequence environmental impacts

If a “do nothing” alternative was followed, the outcome can be reasonably foreseen. Uncollected waste will become more evident for longer in the residential areas and eventually public health impacts will be significant. The time scale for this scenario cannot be predicted with accuracy. Currently, the situation of SWM in BiH is serious. The large number of illegal dumpsites, and the poor quality of collection and operation of landfills affects the aesthetic look, environment and health of the entire country as well as neighboring countries, as well as the attitude of general local population. As an example, illegal dump sites allow for scavenging and animals roaming through a large collection of assorted waste. This means that all the health care wastes, food industry waste (carcasses etc.), hazardous waste is openly accessible to disease vectors and human contact.

The potential for contamination of water supplies is great in the “do nothing” alternative. In the Mostar region which is predominantly karst, it is evident that the leachate from piles of waste will eventually find their way into the water. Being open, this waste can often be propelled by the wind.

The effects of unregulated wild dumpsites are very broad. As an example an abandoned mine in Mostar has been used as a dumpsite. This dumpsite allows leaching of waste materials directly into a lake connected to the Neretva river, which is not only a tourist attraction and recreational area but most importantly a drinking water and irrigation source for a large portion of the Southern region as well as neighboring Croatia.

Whatever monitoring program that may have existed before the war, if any, it no longer exists. Currently, no monitoring activities are carried out at any of the locations, except for weighing of waste at the Uborak landfill in Mostar, where preliminary ground water sampling has been done in 1990 and 1991. There is no baseline data for any other environmental parameter. The SWMP II will significantly contribute to improve environmental quality monitoring. The project will finance monitoring programs, equipment and services. It will also finance training in monitoring on the national and regional level. The common monitoring program to be used for the project landfills is described below.

Monitoring and Enforcement

The Environmental Assessments of each site includes analysis of the site's location and environmental quality, before the works commence. Currently, there is no indication that the groundwater is contaminated by the leachate at any of the landfills intended for rehabilitation. However, throughout the period of the operation of the landfill, there will be an increase in the leachate discharge. It is important to monitor the quantity and quality of the leachate to prevent potential groundwater contamination. Upon organizing the multi-municipal SWM program the Cantonal Ministries in the regions of interest shall organize an overseeing board. This board shall be composed of representatives

of each involved municipality, and as such, will have the power to influence, if not bring about the major decisions regarding the management of this concept. This board will oversee most of the activities dealing with SWM. Monitoring will most likely be included in their scope or the scope of the Utility Company, and will be controlled by periodically scheduled on-site inspections and/or reports. Some of the visual/observatory monitoring activities may be conducted by the trained staff at the site. However, when dealing with monitoring that requires laboratory analyses, it is not cost efficient to have one lab per region conducting these analyses. The project intends that all the tests be conducted in one or two central laboratories for the entire country. The capacity of the laboratories to conduct these analyses would lead to the possibility of involving the well-equipped Institute of Hydro-engineering at the Faculty of Civil Engineering in Sarajevo, and the Institute for Public Health in Sarajevo. Air quality can be analyzed at the Ex- Jugoinspekt laboratory in Kakanj.

The parameters to be monitored are based on national waste strategy are as follows:

- Leachate quality on site
- Groundwater quality in surrounding and downstream areas
- Surface water quality in surrounding and downstream areas
- Soil quality in surrounding areas
- Gas emissions from the site
- Incinerator emissions
- Weight of the waste
- Composition of the waste
- Disposal suitability of the waste (Hazardous waste)
- Construction activities
- After decommissioning monitoring

In Bosnia-Herzegovina there is no central agency that might provide baseline environmental quality information, nor is there any available written evidence. The data that is not available contains surface water, groundwater monitoring, and air quality, leachate and gas measurements. These should be assessed through the EIA procedure.

The number of trucks, equipment and waste composition at each site has been given in detail within the Feasibility Studies for each site as well as waste composition, volume, and weight, GWCC and IHTM studies.

Environmental Impacts and Environmental Management Plan (EMP)

By improved collection, transfer, and disposal of solid waste, and the reduction of illegal dumping in environmentally sensitive areas, the project is expected to have positive benefits to human health and to reduce adverse environmental impacts of waste disposal. Additional positive impacts include: (i) improved waste collection would lessen the quantity of uncollected waste; (ii) improved collection methods, landfill design and management practices will separate

municipal wastes from medical wastes and provide for the separate and proper disposal of each; and (iii) closure of illegal dumps will eliminate future contamination and health hazards. While resource recovery and recycling are desirable in the long term, there is currently just a formation of a market that will provide adequate payment for recyclables to fund the additional costs associated with waste separation. Recycling, including composting of solid waste, will only be considered for inclusion in the project scope if there is solid evidence of a long-term market potential and customer willingness to pay.

Potential negative environmental impacts associated with solid waste management include contamination of soil, groundwater, surface water and air quality. These impacts would be associated with construction; collection, transfer and storage; operation of the landfill; leachate and gas emissions from landfills and transfer stations; and decommissioning of the landfills. Improper landfill siting is not a consideration as no new construction is planned.

Of the three components of the SWMP II, only "Component A. Waste Management" includes activities which may have potential for negative environmental impact. The sub-components of rehabilitation of landfills, closing of landfills, and transfer stations may have potential negative environmental impacts. Rehabilitation activities will vary from site to site. Uborak landfill requires minimal rehabilitation. The following tables provide the specifics for each region/site and mitigation measures.

Please note, under the column of institutional responsibility when the listed institution is *Utility Company* this means the authority on the landfill or the authority for transport, which shall be determined once the overseeing body has been formed.

When *governmental authorities* are mentioned this means the entity or regional authorities which would govern SWM legislation.

It has also been deemed necessary to set up some sort of public education campaign for the general local population. This campaign shall entail billboard advertisements, TV advertisements and flyers. This is listed as *education done by the government authorities*.

Table 2 Environmental Mitigation Measures

LOCATION: MOSTAR UBORAK LANDFILL				Cost		Institutional responsibility	
Phase	Issue	Mitigating measure	Comments	Install	Operate	Install	Operate
Operation	Clandestine dumping causes widespread environmental pollution	Sanitation of existing wild dumps, or collection of such waste, Penalizing for illegal dumping			Varies by the location and conditions		The Utility company in charge of a given region For serious cases the government intervention should be included

LOCATION: MOSTAR UBORAK LANDFILL				Cost		Institutional responsibility	
Phase	Issue	Mitigating measure	Comments	Install	Operate	Install	Operate
Operation	The waste is scattered around the collection containers causing aesthetic degradation and increase in disease vectors	Education and raising environmental awareness of local population Efficient waste collection intervals		Education: US\$ 18,000		The government authorities (FBiH or Cantonal) should conduct the educational campaign Utility company should improve collection rate	
Operation	Waste collection in open-container vehicles causes littering along the collection route	Use of closed vehicles or protective cover on the container	The vehicles are already equipped with a mesh net cover.	Meshing: US\$3-5,000 New truck: US\$ 90,000 per truck		Utility company	
Operation	Residual waste on the collection trucks poses a threat to health and aesthetics	Cleaning of vehicles after dumping of waste	The vehicles are already cleaned on site, after each disposal.		US\$ 10,000	Utility company / Landfill	Utility company / Landfill
Operation	Poorly maintained vehicles pose an additional air pollution threat	Utilize newer vehicles and ensure proper maintenance	The vehicles are regularly maintained on site at the Komos headquarters.		US\$ 4,000 / truck-year	Utility company / Landfill	Utility company / Landfill

LOCATION: MOSTAR UBORAK LANDFILL				Cost		Institutional responsibility	
Phase	Issue	Mitigating measure	Comments	Install	Operate	Install	Operate
Operation	Non-uniform waste bins and containers cause inefficient collection	Mandate use of one standard waste container type suited to the collection vehicles.			US\$ 250-600 /bin according to bin size US\$ 4,000 per vehicle	Utility company / Landfill	Utility company / Landfill
Operation	Large, non-uniform bins are a health hazard to workers while manually loading them on the vehicles	Mandate use of a standard waste container type suited to the automatic lifting onto the vehicle. If not, mandate use of smaller waste bins adequate for manual loading.			US\$ 250-600 /bin according to bin size	Utility company / Landfill	Utility company / Landfill
Operation	Open burning of waste causes air pollution	Improvement of collection services to include the majority of the local population Education of local population			Education: US\$ 18,000	Government environmental authorities should conduct educative campaign Utility company / Landfill should improve services	

LOCATION: MOSTAR UBORAK LANDFILL				Cost		Institutional responsibility	
Phase	Issue	Mitigating measure	Comments	Install	Operate	Install	Operate
Operation	Potentially hazardous solid and liquid (contained) waste poses a bigger threat to groundwater	Placing special containers on collection sites designated for such waste.			US\$ 250-600 /bin according to bin size	Utility company / Landfill should conduct services Government environmental authorities should legally regulate	
Operation	Not recycling materials decreases the capacity of the landfill and further depletes natural resources	Training and equipment for recycling. Governmental awareness of such revenue possibilities.	There is definitely will at Uborak landfill but no means. Some recycling attempts of cardboard and aluminum have been made.	US\$ 100,000 for basic recycling including cardboard and metal		Utility company through funds or donations	Utility company-with government environmental legal backing
Operation	The landfill site is a health threat through its accessibility to animals and scavengers	Placing a fence around the premises, and having security at the site	The only issue in Uborak is a large number of ravens and seagulls.	US\$ 15 / m of fence		Utility company	Utility company
Operation	Large number of birds act as disease vectors	Increasing the frequency of waste cover up	Covering the waste is mechanically done.		US\$ 100-200 per day	Utility company	Utility company

LOCATION: MOSTAR UBORAK LANDFILL				Cost		Institutional responsibility	
Phase	Issue	Mitigating measure	Comments	Install	Operate	Install	Operate
Operation	Lack of a methane collection system causes a threat to the atmosphere through release of GHG	Using a gas torch to burn off the generated gas	Gases are freely emitted into the atmosphere	US\$ 12,000 / ha of landfill		Utility company	Utility company with governmental legal backing
Operation	Lack of a methane collection system causes a fire hazard	Using a gas torch to burn off the generated gas	The landfill is equipped with fire hydrants around the perimeter and an additional water storage pool.	US\$ 12,000 / ha of landfill		Utility company	Utility company
Operation	Lack of a leachate collection system poses a threat to the groundwater	Installing a leachate collection system	Already present at the site, involves circulation of the leachate	N/A		Utility company	Utility company
Operation	The proximity of the landfill to a drinking water source poses a health threat	Sealing off leachate in the landfill, collection of leachate and proper monitoring	The landfill already contains PEHD foils on the bottom and sides of the pit.	N/A		Utility company	Utility company/ ind. laboratories

LOCATION: MOSTAR UBORAK LANDFILL				Cost		Institutional responsibility	
Phase	Issue	Mitigating measure	Comments	Install	Operate	Install	Operate
Operation	Operation of the landfill causes a noise, aesthetic and health threat to the nearby local population and environment	Placing a buffer zone around the site	The surrounding houses around the site are mostly abandoned. There are no known endemic species in the vicinity. There are no schools, hospitals or other institutions in the area except for the army barracks next to the site.	US\$ 30 per meter of length		Utility company	Utility company with governmental legal backing
Operation	Burning of wastes in an incinerator without exhaust treatment and monitoring causes air pollution	Installation of filters and appropriate equipment Training of staff to know what wastes can be burned and how	Some burning has occurred of expired food cans and SFOR medical wastes.			Utility company	Utility company with governmental legal backing

LOCATION: MOSTAR UBORAK LANDFILL				Cost		Institutional responsibility	
Phase	Issue	Mitigating measure	Comments	Install	Operate	Install	Operate
Operation	The landfill and its operational facility may be aesthetically unpleasing	Placing a buffer zone around the site	The site is fairly withdrawn from the major road and local population center and can not be seen except from close by.	US\$ 30 per meter of length		Utility company	Utility company
Operation	Seasonal variations cause an increase in odor in summer time	Increasing the number of cover up layers	This method is already in effect		US\$ 100-200 per day	Utility company	Utility company
Operation	The landfill poses a threat to nearby small farmlands	Placing a buffer zone, Carrying out proper monitoring		US\$ 30 per meter of length of buffer		Utility company	Utility company with indep. labs
Operation	Dirt roads around the landfill generate dust-particulate air pollution	Paving the access roads and landfill roads	Access roads are paved in a narrow strip, while the roads on site are not.	US\$ 25-30,000		Utility company	Utility company

LOCATION: MOSTAR UBORAK LANDFILL				Cost		Institutional responsibility	
Phase	Issue	Mitigating measure	Comments	Install	Operate	Install	Operate
Operation	The workers are exposed to health risks	Proper protection, proper education and training, regular health checks	The workers have the proper, mandated equipment and are also subject to semiannual health checks.	US\$ 200 per worker + methane detectors US\$ 500		Utility company	Utility company with governmental legal backing
Operation	Cover layer materials obtained from other sites place a stress on the environment of material's origin	Utilizing materials whose procurement does not directly harm the environment	The landfill uses the on site excavated materials as well as additional soil whose procurement does not harm the environment		Cost is included in the cover up.	Utility company	Utility company
Future Expansion / Construction	Expansion of the landfill site might take up land otherwise useful.	Thorough survey of the site Accordance of the authorities	The BiH authorities designate the use of the land as was the case with the current site.			Utility company	Utility company with governmental legal backing

LOCATION: MOSTAR UBORAK LANDFILL				Cost		Institutional responsibility	
Phase	Issue	Mitigating measure	Comments	Install	Operate	Install	Operate
Future Expansion / Construction	Construction work might endanger the surrounding environment and inhabitants	Limit construction to the standard level (time-wise)	Most surrounding settlements are abandoned and the environment is mostly rocky, hilly and has scarce vegetation.			Utility company with construction workers	Utility company with construction workers
Future Expansion / Construction	Expansion site construction and operation causes potential health and welfare risks	Fencing off the site Requiring proper safety gear Limiting access to workers only	Future project	US\$ 15 / m of fence		Utility company with construction workers	Utility company with construction workers
Future Expansion / Construction	Site might cause pollution of ground water	Thorough site investigation and monitoring Installation of a clay bottom layer followed with PEHD foils	Future project	US\$ 400-500,000		Utility company	Utility company
Future Expansion / Construction	A small flood brook may be polluted from the expansion of the landfill	Rerouting this brook	Future project			Utility company with construction and design workers	Utility company with construction and design workers

LOCATION: MOSTAR UBORAK LANDFILL				Cost		Institutional responsibility	
Phase	Issue	Mitigating measure	Comments	Install	Operate	Install	Operate
Decommission	Any decommissioning of the leachate system might cause a spill into the environment.	Careful monitoring that would be less frequent than during operation				Utility company	Utility company
Decommission	Pit might be accessible to disease vectors such as animals, rodents and pests.	Placing a final layer on the pit		US\$ 20 / m ²		Utility company	Utility company
Decommission	Collection of rain water on top of the site	Surface drainage				Utility company	Utility company
Decommission	Possible landslides	Placing final cover and vegetating the area				Utility company	Utility company

Table 3 Environmental Monitoring Plan

<i>Phase</i>	<i>What parameter is to be monitored</i>	<i>Where is the parameter to be monitored</i>	<i>How is the parameter to be monitored</i>	<i>When is the parameter to be monitored</i>	<i>Why is the parameter to be monitored</i>	<i>Cost</i>		<i>Responsibility</i>
						Install	Operate	
Baseline Operation	Groundwater quality -Contamination -Groundwater flow -Quantity variations	Downstream of site	Periodical sampling and analysis	Monthly	To observe the effect on GW, and to determine any leaks in the protective layers	75,000 US\$ for initial survey, bore holes	6,500 US\$ per year for analyses	The sampling should be done by the landfill authorities while the analysis should be conducted at an independent lab.
Baseline Operation	Surface water quality -contamination -flow	Downstream of site	On the basis of groundwater sampling.	Monthly	To observe the effect of the existing dump on SW, and to determine any leaks in the protective layers		5,500 US\$ per year	The sampling should be done by the landfill authorities while the analysis should be conducted at an independent lab.

<i>Phase</i>	<i>What parameter is to be monitored</i>	<i>Where is the parameter to be monitored</i>	<i>How is the parameter to be monitored</i>	<i>When is the parameter to be monitored</i>	<i>Why is the parameter to be monitored</i>	<i>Cost</i>		<i>Responsibility</i>
						Install	Operate	
Baseline Operation	Leachate	Collection pool-circulating system	Periodical sampling and analysis	Monthly	To prevent pollution of the environment, to determine the composition of the leachate and its potential risks		6,500 US\$ per year	The sampling should be done by the landfill authorities while the analysis should be conducted at an independent lab.
Baseline Operation	Released gas	At the exit end of the pipe	Periodical sampling and analysis	Monthly	To prevent release of pollutants, Green house gasses to atmosphere, to determine applicability of electricity production		6,500 US\$ per year	The sampling should be done by the landfill authorities while the analysis should be conducted at an independent lab.
Operation	Exhaust fumes from incineration	At the exhaust end of the incinerator	Standard incinerator monitoring equipment is expensive. Periodical lab analyses	Monthly (if equipment is unavailable to do it continuously)	To prevent pollution of atmosphere and harm to environment and human health		6,500 US\$ per year	Lab analyses

Phase	What parameter is to be monitored	Where is the parameter to be monitored	How is the parameter to be monitored	When is the parameter to be monitored	Why is the parameter to be monitored	Cost		Responsibility
						Install	Operate	
Operation	Amount of waste deposited	Upon entrance of the landfill	Weighing bridge in the access road	Continuously at entrance of trucks	To determine the speed at which the site is being filled. To predict the life span of the site.	20.000 US\$	2,000 US\$ per year	Landfill operators / authorities
Construction	Dust Noise Solid wastes Water runoff Soil excavation Soil compaction Traffic disturbances Removal of plants	At all construction sites	Observations, and measurements	During construction, periodical (weekly) visits to the site	To reduce pollution hazards, to reduce the magnitude of the effect on beings and plants in the area		50 US\$ per weekly visit	Construction crew, Ministry of Environment Inspection / Staff
Decommissioning	Atmospheric water collection	On site	Observation	After major deposition of water Once a month	To prevent increase in liquid collection and possible spreading of pollution.		5,500 US\$ per year for entire after closure monitoring	Ministry of Environment Inspection / Staff Landfill operators / authorities
Decommissioning	Landslides	On site	Observation	Monthly-during the other routine observations	To prevent re-opening of the site.			Ministry of Environment Inspection / Staff Landfill operators / authorities

<i>Phase</i>	<i>What parameter is to be monitored</i>	<i>Where is the parameter to be monitored</i>	<i>How is the parameter to be monitored</i>	<i>When is the parameter to be monitored</i>	<i>Why is the parameter to be monitored</i>	<i>Cost</i>		<i>Responsibility</i>
						Install	Operate	
Decommissioning	Leachate seepage	On site, Downstream of the landfill	Groundwater bore holes, sampling and analysis	Bimonthly, less frequently than during operation	To observe the variations after the site has been closed			Independent contracted lab. Ministry of Environment
Decommissioning	Groundwater quality -Contamination -Groundwater flow -Quantity variations	Downstream of the landfill	Groundwater bore holes, sampling and analysis	Bimonthly, less frequently than during operation	To observe the variations after the site has been closed, to monitor contamination			Independent contracted lab. Ministry of Environment
Decommissioning	Surface water quality -contamination -flow	Downstream of the landfill	Sampling Downstream of landfill	Bimonthly, less frequently than during operation	To observe the variations after the site has been closed, to monitor contamination			Independent contracted lab. Ministry of Environment
Decommissioning	Released gas	On site	On release end of the pipes	Bimonthly, less frequently than during operation	To observe the variations after the site has been closed, to monitor contamination			Independent contracted lab. Ministry of Environment

IX. X Public Consultation

The key stakeholders are the citizens of the regions to be serviced by the project's rehabilitated sanitary landfills. During project preparation stakeholders, including local and national NGOs, were involved in workshops, local level community meetings, and public consultations. The EA have been discussed during project preparation stakeholder workshops and will be publicly disclosed.

The social assessment determined that there is broad support for the project, but it is important to get specific feedback, on the local level, from the public and stakeholders regarding their district landfill. A public consultation on the project was conducted on 24.01.2002. in the City Council of Mostar. It was attended by Marko Markić, the Head of the Infrastructure Department and his Deputy, Ibrahim Šehić along with over 20 citizens. In general the consultation showed that the city of Mostar is willing to support proper landfilling at the Uborak location, and that they are willing to cooperate and oversee this project.

Annex 1 Content of the EA for A category projects

1. An environmental assessment (EA) report for a Category A project focuses on the significant environmental issues of a project. The report's scope and level of detail should be commensurate with the project's potential impacts. The report submitted to the Bank is prepared in English, French, or Spanish, and the executive summary in English.

2. The EA report should include the following items (not necessarily in the order shown):

(a) Executive summary. Concisely discusses significant findings and recommended actions.

(b) Policy, legal, and administrative framework. Discusses the policy, legal, and administrative framework within which the EA is carried out. Explains the environmental requirements of any cofinanciers. Identifies relevant international environmental agreements to which the country is a party.

(c) Project description. Concisely describes the proposed project and its geographic, ecological, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines, access roads, power plants, water supply, housing, and raw material and product storage facilities). Indicates the need for any resettlement plan or indigenous peoples development plan² (see also subpara. (h)(v) below). Normally includes a map showing the project site and the project's area of influence.

(d) Baseline data. Assesses the dimensions of the study area and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences. Also takes into account current and proposed development activities within the project area but not directly connected to the project. Data should be relevant to decisions about project location, design, operation, or mitigatory measures. The section indicates the accuracy, reliability, and sources of the data.

(e) Environmental impacts. Predicts and assesses the project's likely positive and negative impacts, in quantitative terms to the extent possible. Identifies mitigation measures and any residual negative impacts that cannot be mitigated. Explores opportunities for environmental enhancement. Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions, and specifies topics that do not require further attention.

(f) Analysis of alternatives.³ Systematically compares feasible alternatives to the proposed project site, technology, design, and operation--including the "without project" situation--in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement.

(g) Environmental management plan (EMP). Covers mitigation measures, monitoring, and institutional strengthening; see outline in OP 4.01, Annex C.

(h) Appendixes

(i) List of EA report preparers--individuals and organizations.

(ii) References--written materials both published and unpublished, used in study preparation.

(iii) Record of interagency and consultation meetings, including consultations for obtaining the informed views of the affected people and local nongovernmental organizations (NGOs). The record specifies any means other than consultations (e.g., surveys) that were used to obtain the views of affected groups and local NGOs.

(iv) Tables presenting the relevant data referred to or summarized in the main text.

(v) List of associated reports (e.g., resettlement plan or indigenous peoples development plan).

Annex II EMP content

To prepare a management plan, the borrower and its EA design team (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements.

The following content is developed based on WB OP 4.01 Annex C, and adapted to Solid Waste Management Project. Therefore the EMP should include following components:

As noted in the earlier section, EMPs will be required for projects that fall in World Bank Category B.

It is suggested that the following information be included:

- (a) Responsible Party: The authors who prepared the EMP along with the date of preparation.
- (b) Project Description: Present a brief description of the subproject. Include the nature of the investment, the location, and any characteristics of the area that are of particular interest (e.g. near a protected area, area of cultural or historical interest, sensitivity of the area). Also, include a brief description of the socio-economic conditions in the area. If available, a simple map should be included.
- (c) Mitigation Plan: This should include a description of the steps to be taken to identify all anticipated significant effects, to mitigate the major potential impacts on land, water, air and other media during the planning, design, construction and operation phases. Particular attention should be paid to the specification of emission limits and design standards and how these compare to national law (which at a minimum must be met) and any other relevant guidelines such as those in directives of the European Union or limits suggested by the World Bank Pollution Prevention and Abatement Handbook (1998) or other relevant international norms. (A practical form for mitigation plan is given in this annex following the proposed content)
- (d) Monitoring Plan: This should include a description of the key parameters to be monitored (including monitoring locations, schedules and responsible entities) and reporting procedures to ensure that the construction and operation of the project is in conformance with national law and other relevant norms and standards. If such details are covered by permits or construction or monitoring contracts these can be referenced as attachments. (A practical form for monitoring plan is given in this annex following the proposed content)
- (e) Institutional Arrangements: There should be a narrative discussion that provide a brief presentation on how the monitoring data is going to be used for sound environmental performance - who collects the data, who analyzes it, who prepares reports, who are the reports sent to and how often, what is done by the responsible authorities after they receive the information; and how is noncompliance with the EMP treated. This should also include (a) technical assistance programs, (b) procurement of equipment and supplies, and (c) organizational changes.
- (f) Implementation Schedule and Cost Estimates: For all three aspects (mitigation, monitoring, and capacity development), the EMP provides (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the EMP. These figures are also integrated into the total project cost tables.
- (g) Consultations with affected groups and non-governmental organizations. The following should be included: Date(s) of consultation(s); Location of consultation(s); Details on attendees (as appropriate); Meeting Program/Schedule: What is to be presented and by whom; Summary Meeting Minutes (Comments, Questions and Response by Presenters) Agreed actions.

Mitigation Plan

Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility		Comments (e.g. secondary impacts)
			Install	Operate	Install	Operate	
Construction	<ul style="list-style-type: none"> Example: Water and soil pollution from improper disposal of waste materials 	Example: dispose waste material at appropriate location protected from washing out, specified by local authorities.	Example: BoQ		Example: contractor		
Operation	<ul style="list-style-type: none"> 						

Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility		Comments (e.g. secondary impacts)
			Install	Operate	Install	Operate	
Decommissioning	<ul style="list-style-type: none"> 						

Monitoring Plan

Phase	issue	what	where	how	when	Cost		Institutional Responsibility	
		is the parameter to be monitored?	is the parameter to be monitored/type of monitoring equipment?	is the parameter to be monitored/frequency of measurement or continuous?	is the parameter to be monitored (optional)?	Install	Operate	Install	Operate
Baseline									
Construct	Example: Water and soil pollution from improper material storage, management and usage	Example: water and soil quality (suspended solids, oils, pH value, heavy metals)	Example: runoff from site, material storage areas; wash down areas of equipment	Example: inspection; observation	Example: during material delivery and construction, especially during precipitation (rain, snow, etc)				Example: Supervision Engineer, Regional Inspectorate of Environment and water
Operate									
Decommission									

Annex III Six steps in the environmental review process

In FBiH, the environmental review results in an Environmental Permit which is in turn, a condition for obtaining the Location Permit. Certain installations and facilities require an EIA in order to obtain an Environmental Permit. In RS, for installations requiring the Environmental Permit, the Environmental Permit is a condition for obtaining the urbanism permit. In some cases the EIA study may be a requirement for the Construction Permit. The required permit and sequence of permits will be decided by the Entity Ministry based on project type and location.

The key steps in the environmental review process are as follows:

Step 1: Categorization

Borrower prepares the initial project concept and consults the municipal authorities in order to check if the project/activity location is compatible with the existing spatial plans. The borrower then identifies the basic characteristics of the project that would be used for the environmental screening (type and size, capacity and output of the activity, use and quantities of hazardous materials, etc). With guidance from the municipality (if needed), the borrower identifies the project/activity category in accordance with BiH legislation, including the authority responsible for issuing the required permits. Following the categorization, the borrower consults the responsible authority and identifies steps and obligations for obtaining the required permits (environmental and other permits).

Step 2: Preparation of documents and necessary permits

Based on the categorization and inputs from the responsible ministry, the borrower prepares the required documents. If needed, the borrower may be assisted by specialists/consultants (In RS, the contents of the request for an Environmental Permit have to be prepared by an authorized institution). In case the project is in Cat IV, the borrower does not require an Environmental Permit and may directly proceed to obtaining a location permit from the municipal authorities. (In case a detailed urbanism plan exists for the municipality, the location permit is not required. The municipality issues the physical-technical conditions which are a basis for preparing the investment-technical documentation, required for obtaining a construction permit.)

Step 3: Request for Environmental Permit/Preliminary Environmental Assessment

In FBiH: Borrower submits the request for Preliminary Environmental Assessment to the Entity Ministry for Projects in Cat I & II or request for obtaining an Environmental Permit for projects in Cat III (Entity Ministry or Cantonal Ministry). For projects in Cat II, the preliminary assessment will determine whether an EIA is required prior to issuing of the Environmental Permit. For Cat I projects the preliminary assessment will determine the scope of the EIA study.

In RS: Borrower submits a decision request for and EIA to the Entity Ministry for Projects in Cat I & II or request for obtaining an Environmental Permit for projects in Cat III (Entity Ministry and municipal authority). For projects in Cat II, Ministries decision will determine whether an EIA is required prior to issuing of the Environmental Permit. For Cat I projects the decision will determine the scope of the EIA study.

Step 4: Disclosure and Public Consultation

For Cat I & II, the relevant authority (in step 3) makes the documents available to interested parties for comments (30 days are allowed for comments), and (if found necessary) arranges a public consultation as near as possible to the subject location. For Cat III the request for issuing an Environmental Permit (or draft permit) must be accessible by the public, where 30 days are allowed for comments.

Step 5: Environmental Permit/EIA study

- In case there are no comments, the competent ministry issues an Environmental Permit for Projects in Cat III (within 120 days starting from the request date). The Environmental Permit is then used for obtaining other permits (location permit, construction permit and usage permit).
- Following the screening and preliminary assessment, Cat II projects will either receive an Environmental Permit from entity ministries or will be required to prepare an EIA study.
- Projects in Cat I will prepare an EIA study.
- In F BiH & RS: the decision for preparation of EIA is issued 60 days after the request for PEA was made.

Step 6: Preparation of EIA study

In F BiH: The borrower is required to contact an institution/firm that will prepare the EIA study. The borrower submits the EIA study/draft EIA study to the Entity Ministry for review and approval.

In RS: Following a written request from the borrower (request must be submitted within 6 months from the date the decision for EIA is issued by the Ministry), the Entity Ministry contracts¹ an authorized institution (within 15 days from the request date) for conducting the EIA study (to be prepared within 90 days). Once the study is completed, the authorized institution submits the study to the Entity Ministry.

Step 7: Disclosure

F BiH & RS: The Entity Ministry sends a copy of the draft EIA study to relevant authorities and other interested parties, allowing 30 days for receiving comments to the report. In RS, the draft EIA study is additionally sent to the borrower.

Step 8: Public Consultation

F BiH & RS: Entity Ministry organizes a public consultation to be held as near as possible to the project location, and invites the public to the consultation via printed media/radio/TV. Comments and suggestions on the EIA study must be received within 30 days starting from the date of the public consultation (in F BiH, the date of invitation for public consultation). In RS, the deadline for inclusion of comments and suggestions into the EIA study is 30 days following the date of public consultation.

Step 9: Approval

In F BiH and RS: The Entity Ministry issues a decision for either approving (within 30 days following receipt of the final EIA study) or rejecting the EIA study. The decision is sent to the borrower and interested parties that participated in the consultation process.

¹ In practice the borrower/applicant contracts the institution and not the Ministry.

Note: In FBiH, a positive decision is considered an Environmental Permit, while in RS, the law does not state that and Environmental Permit will be issued following the completion of EIA. However it is expected that the Environmental Permit will be issued in practice.

Annex IV Comparison of National EIA requirements and WB

Issue	BiH (FBiH & RS)	Proposed Legislation	World Bank requirements
Categorization/ Screening	<p>FBiH: Categorization and screening is based on lists (to be drafted) of <i>installations and facilities</i> requiring environmental permits obtained through either an EIA or without EIA.</p> <p>RS: Categorization and screening is based on a list (to be drafted) of <i>projects</i> requiring environmental permits obtained through either an EIA or without EIA.</p>	<p>FBiH: Proposed legislation contains the required lists</p> <p>RS: Proposed legislation in preparation.</p>	<p>Screening and categorization is based on type, location, sensitivity, and scale of the proposed project identifying key issues including any resettlement, indigenous peoples, and cultural property concerns.</p>
Significant impacts	<p>FBiH: Cat I: Installations and facilities to be assessed for their impact on environment requiring full EIA will be defined by secondary legislation. The EIA is a requirement for obtaining an Environmental Permit.</p> <p>RS: Cat I: Projects requiring full EIA will be defined by secondary legislation.</p>	<p>FBiH: The proposed legislation contains a list of Cat I installations and facilities.</p> <p>RS: Secondary legislation containing a list of Cat I projects is in preparation.</p>	<p>Cat A: Projects likely to have significant adverse environmental impacts that are sensitive (irreversible).</p>
Moderate Impacts	<p>FBiH & RS: Cat II: Entity ministries responsible for environment will screen and decide whether an EIA is required.</p> <p>Cat III: Installations and facilities for which Environmental Permit is issued by entity ministries responsible for environment and which do not require a full EA.</p>	<p>FBiH: Cat II: Contains a list of facilities/installations which undergo screening and criteria for screening (size, cumulative impact, use of natural resources, sensitivity, etc.) in order to re-categorize as either Cat I or III.</p> <p>Cat III: Contains a list of facilities and installations which do not require an EIA and Environmental Permit is issued by the Ministry.</p> <p>RS: Secondary legislation in preparation.</p>	<p>Cat B: Projects with environmental impacts less adverse than those of Cat A.</p>

Issue	BiH (FBiH & RS)	Proposed Legislation	World Bank requirements
Low or no impacts	<p>FBiH: Cat IIIa: All smaller facilities and installations which require an Environmental Permit to be issued by responsible cantonal ministry. Secondary legislation will define the size and thresholds of these facilities.</p> <p>RS: Cat IIIa: Local administration units (municipalities) responsible for environment, issue environmental permits to facilities (which require an Environmental Permit) with threshold levels below Categories I,II,III and those facilities which are not included in Categories I,II and III.</p> <p>FBiH: Cat IV: Very small installations and facilities (which do not exceed household emissions) not requiring environmental permits are under the responsibility of relevant cantonal ministries. These thresholds have not been defined yet. The cantons may transfer this obligation to municipalities in the future.</p> <p>RS: Cat IV: Installations which do not require environmental permits.</p>	<p>FBiH: Cat IIIa: Proposed legislation states that relevant Cantonal ministry is responsible for issuing environmental permits to facilities and installations with threshold levels below Categories I,II,III and those facilities which are not included in Categories I,II and III.</p>	<p>Cat C: Projects with minimal or no adverse impacts.</p>
Other	None	None	List of activities not eligible for financing by the Bank.
EA Documentation/ Document Content	<p><u>Cat I:</u> Phase I: Preliminary environmental assessment needs to be submitted by the project developer to the Federal Ministry (in FBiH)/ Decision request for and EIA to the Entity Ministry (in RS) in order to determine the scope of the EIA study. The assessment/request contains the project description including information about the location, purpose and size of installation, measures to prevent or mitigate possible negative impacts, information required for identification and assessment of basic environmental impacts, copy of spatial plan of the location, non-technical summary (non-technical summary is submitted in FBiH only).</p> <p>Phase II (FBiH): The Entity Ministry defines the content and scope of the EIA based on the results of the Preliminary Environmental Assessment and in accordance with secondary legislation. The Ministry also provides a list of institutions authorized to prepare EIA.</p> <p>Phase II (RS): Following Entity Ministry's decision, the project</p>	<p>FBiH: EIA study content:</p> <ul style="list-style-type: none"> -Project description -Description of environment that might be endangered by the project. -Description of possible significant impacts on the environment. -Description of mitigation measures for negative impacts. -Description of alternatives -Non-technical summary -Difficulties during preparation of the EIA <p>RS: Secondary legislation is in preparation.</p>	<p><u>Cat A:</u> Full EA is required, normally an EIA. The EMP is an essential part of the EA. EA content for a Cat A project is given in Annex I.</p> <p>(Separate Resettlement Plans and Indigenous Peoples Plans are Disclosed with the EA report)</p>

Issue	BiH (FBiH & RS)	Proposed Legislation	World Bank requirements
	<p>developer submits a request for preparation of an EIA. Based on the request the Entity Ministry contracts an authorized institution for the preparation of the EIA.</p>		
	<p>Cat II (FBiH & RS): Activities in this category also undergo an Preliminary environmental assessment/, where the content of the document submitted is identical to that of Cat I.</p> <p>Cat III(FBiH & RS): Written request for obtaining an Environmental Permit needs to contain the following: -Name and address of the project developer -Location and description of: installation, facility and activity (plan, process description); raw materials; sources of emissions; site conditions; type and quantity of emissions; key environmental impacts; prevention and mitigation measures; measures for prevention of waste generation; after closure measures; alternatives; request form for other required permits, non-technical summary.</p>		<p><u>Cat B:</u> Scope of EA narrower than Cat. A project. Usually just an EMP is required. Environmental considerations are either incorporated in project documents or are included in a separate report. The Concept Review decides the scope of the EMP and whether any additional environmental requirements are necessary.</p> <p>(Separate Resettlement Plans and Indigenous Peoples Plans are Disclosed with the EA report)</p>
	<p><u>Cat IIIa(FBiH & RS):</u> Formal written request to Cantonal Ministry responsible for environmental issues (in FBiH)/ Municipal body responsible for urbanism (in RS), has the same content as request for Cat III.</p> <p>The Cantons are authorized to modify the above requirements for Cat IIIa in the Cantonal laws dealing with EA.</p>		<p><u>Cat C:</u> No EA is required. No action is required beyond screening.</p>
Transboundary Env. Impacts	<p>For all projects and installations/facilities that may have negative transboundary (including inter-entity boundary) environmental impacts the following are required:</p> <ul style="list-style-type: none"> - The EIA report needs to have a special chapter containing information on possible transboundary environmental impacts. - The request for an Environmental Permit (and relevant documents included with the request) needs to be sent to relevant entity/foreign state authorities. 		<p>Notification of riparians may be required if international waterways are involved.</p>
Consultations	<p>Public consultation is the responsibility of entity ministries responsible for environment for Categories I, II, III while it is under the responsibility of Cantonal Ministries (in FBiH)/Municipalities (in RS) for Cat IIIa.</p>		<p>The borrower is required to consult project affected groups and local NGO's about the projects environmental aspects and take</p>

Issue	BiH (FBiH & RS)	Proposed Legislation	World Bank requirements
	<p><u>Cat I</u>: Article 61 of the FBiH law on environmental protection (and Article 62 in RS) prescribes that the public consultation should take place after the draft EIA study is submitted. However art. 36. (art. 35 in RS) requires public consultations to be carried out through all phases of the EA. Although not specified explicitly, this article may be interpreted that the public consultation is also required during the Preliminary environmental Assessment phase. The Ministry will decide whether a consultation is required.</p> <p>Cat II: Depending on the screening results, Cat II is re-categorized either as Cat I or Cat III and will thus inherit the requirements of these categories.</p> <p>Cat III & IIIa: Consultation is carried out once, during the Environmental Permit issuing procedure.</p> <p>Transboundary impacts: In case of negative transboundary (including inter-entity boundary) environmental impacts, the representatives and the public of the entity/foreign state have the right to participate in the consultation process.</p>		<p>their views into account.</p> <p><u>Cat A</u>: At least two consultations (1) at the scoping stage, shortly after environmental screening, and before the ToRs for the EA are finalized, and (2) once a draft EA report is prepared.</p> <p><u>Cat B</u>: At least once during the EA process.</p>
Disclosure	<p>Cat I & II (FBiH & RS): Preliminary environmental Assessment Report (in FBiH)/Request for Decision (in RS) is disclosed prior to consultation (30 days allowed for comments).</p> <p>Cat I & II (FBiH): For all Cat. I projects, and those Cat II projects that require an EIA (following the PEA), Entity Ministry sends a copy of the EIA study (may be interpreted as "draft EIA study" although not mentioned in the law) to relevant authorities and other interested parties, allowing 30 days for receiving comments to the report.</p> <p>Cat I & II (RS): For all Cat. I projects, and those Cat II projects that require an EIA (following the PEA), Entity Ministry sends a copy of the draft EIA study to the project developer (since the Ministry contracts the preparation of the EIA study), relevant authorities and other interested parties, allowing 30 days for receiving comments to the report.</p>		<p><u>Cat A</u>: Borrower provides for the initial consultation a summary of the proposed project's objectives, description, and potential impacts. After draft EA report is prepared, the borrower provides a summary of the EA's conclusions. The borrower makes the draft EA report available at a public place (in local language).</p> <p><u>Cat B</u>: Separate Cat B reports are to be made available to local NGOs and affected groups (local language).</p> <p>The disclosure process is complete</p>

Issue	BiH (FBiH & RS)	Proposed Legislation	World Bank requirements
	<p>Categories III & IIIa (FBiH & RS): Request for issuing an Environmental Permit (and relevant documents) must be accessible by the public, where 30 days are allowed for comments.</p>		<p>only after the EA report is officially received by the Bank.</p>
EA Review and Approval	<p>Cat I , II, III (FBiH and RS): Entity ministries responsible for environmental issues review and approve the EIA reports and Environmental Permit requests.</p> <p>Cat III & IIIa: Cantonal Ministries (in FBiH)/Municipal authorities (in RS) review and approve Environmental Permit requests.</p>		<p>For Cat. A & B Projects, before formal clearance of environmental aspects of the project, the Bank reviews the results of the EA (especially consultations, EMP and institutional capacity), ensuring that the EA report is consistent with the ToR.</p>
Licensing/permitting	<p>New projects(FBiH): The following permits are required (each being a requirement for the next) for new projects:</p> <ul style="list-style-type: none"> - Environmental Permit (for installations and facilities listed in the proposed EA secondary legislation, categories I,II,III IIIa) - Urbanism Permit (not required if detailed urbanism plans are available. Urban-technical conditions are prescribed by the relevant authority) - Construction Permit - Usage permit <p>Reconstruction/Rehabilitation projects(FBiH): The following permits are required (each being a requirement for the next) for reconstruction/rehabilitation projects:</p> <ul style="list-style-type: none"> - Environmental Permit (for installations and facilities listed in the proposed EA secondary legislation an Environmental Permit is not required until 2008 if a conditioning plan exists for categories I,II,III IIIa) - Urbanism Permit (not required if detailed urbanism plans are available. Urban-technical conditions are prescribed by the relevant authority) - Construction Permit - Usage permit 		<p>None</p>

Issue	BiH (FBiH & RS)	Proposed Legislation	World Bank requirements
	<p>Note: Repair/rehabilitation of buildings and facilities destroyed during the war only require a construction permit and do not require urbanism and environmental permits.</p> <p>Cat IV projects (FBiH & RS): Cat IV projects do not require an Environmental Permit however environmental aspects have to be included in the urbanism permit. The following permits are required (each being a requirement for the next).</p> <ul style="list-style-type: none"> - Urbanism Permit (not required if detailed urbanism plans are available. Urban-technical conditions are prescribed by the relevant authority) - Construction Permit - Usage permit <p>During the issuing of environmental and urbanism permits for all categories, other permits may be required by the relevant entity, cantonal or municipal authorities issuing the permits (e.g. water use permit).</p> <p>RS: The permitting system in RS is similar but more flexible than in the FBiH where the Environmental Permit is in some cases a condition for an urbanism permit and in other case it is a condition for a construction permit. Similarly, the EIA, if the Ministry decides so, may also be a requirement for the construction permit. Relevant ministries/authorities decide on the sequence of permits, i.e. when the Environmental Permit is a condition for other permits.</p>		
Effluent standards/guidelines	<p>The Environmental Permit contains the limit values for pollutant emissions. However, the lack of secondary legislation creates gap in defining these values. For the time being, several laws and guidelines (mostly pre-war) are used for this purpose. The laws and guidelines are given below:</p> <p>FBiH & RS:</p> <ul style="list-style-type: none"> -Rulebook on hazardous matters that should not be discharged into waters. -Rulebook on categorization of water streams. <p>FBiH: Several cantonal laws for air quality and noise are in place.</p> <p>RS: Rulebook on air quality protection</p>	New entity environmental guidelines containing environmental/effluent standards are in preparation.	Emission levels acceptable to the Bank are given in the PPAH

Issue	BiH (FBiH & RS)	Proposed Legislation	World Bank requirements
Mitigation Plan	For Cat I projects, mitigation measures are prescribed in the EIA study which are also included in the Environmental Permit. For other categories requiring an Environmental Permit, measures for protection of air, water, soil, flora and fauna and solid waste management measures are included in the permit itself. These measures can be considered as mitigation measures.		Mitigation measures are included in the EMP. Obligation to carry out the EMP and additional conditions/measures under the EMP need to be included in the loan conditions. The EMP format is given in Annex II.
Monitoring Plan	The Ministry <u>may</u> require the preparation of the monitoring plan during preparation of EIA. Self-monitoring plan is included in the Environmental Permit for all categories that require an Environmental Permit (Cat I,II,III,IIIa). Besides self-monitoring, for categories that require an Environmental Permit, the environmental protection law states that, monitoring of installations and facilities by authorized institutions will be carried out every 3 years, in order to ensure that the requirements of the Environmental Permit (monitoring and other issues) are satisfied. Other environmental laws (e.g. law on air protection, law on water protection etc.) also specify the required monitoring procedures to be carried out by authorized institutions.		Monitoring plan is included in the EMP.
Permits and Licensing during implementation	The Environmental Permit is reissued every 5 years or earlier if found necessary by the responsible Ministry (Art. 74 in FBiH and Art. 71 in RS).		None

