



**United Nations Development Programme
Country: Serbia
Project Document**

Project Title Feasibility study for the remediation of the Bor mine surface and groundwaters

UNDAF Outcome(s): To promote sustainable development and increase capacity at municipal level

Expected CP Outcome(s): Sustainable development plans/policies effectively respond to the need of stakeholders, as well as promote employment and environmental protection

Expected Output(s): Mine water quality analysis performed and remediation measures identified; Increased capacities at local level to deal environmental hazards, focusing on mine water issues

Implementing Partner: Ministry of Environment and Spatial Planning

Brief Description

The project focus is to prepare a feasibility study for selected sites in the Bor mine complex that both serve to determine requirements for environmental remediation of pollution sources to water and also introduce a socio-political perspective. It is intended to achieve recommendation and study outcomes that introduce a community participatory approach to remediation of environmental hot spots that in the absence of remediation measures could constitute a trigger for national or transnational tensions.

The project also addresses key aspects of the EnvSec Initiative, contributing to its larger mining initiative. It is formulated in such a way that the outcome of remediation recommendations would build capacity for mine site management in Serbia, draw both political and community attention, and also provide for learning in a regional context.

The project has a two-fold approach: the first is to perform an assessment to determine and identify necessary follow-up actions at the site(s) – both in terms of further studies and/or actions related to remediation of environmental hot-spots. Within this first goal, the assessment is also intended to provide an overview of potential remediation measures adapted to the specific circumstances of the Bor site. The second goal is to strengthen local capacities to perform such assessments and carry out remediation activities independently – and to identify strategies that can facilitate this. Budget: 95,000 USD. Timeline: 12 months.

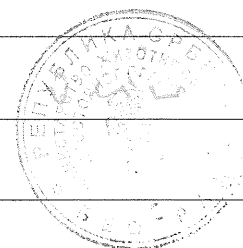
Programme Period:	2005-2010
Key Result Area (Strategic Plan)	Environment and Sustainable Development
Atlas Award ID:	00058608
Start date:	1 Dec 2009
End Date	1 Dec 2010
PAC Meeting Date	13 Nov 2009
Management Arrangements	NIM

2010 AWP budget:	95,000
Total allocated resources:	95,000 USD
• Regular	
• Other:	
○ CIDA/OSCE	95,000 USD
○ Government	_____
Unfunded budget:	_____
In-kind Contributions	_____

Agreed by the Ministry of Environment and Spatial Planning: _____

Agreed by UNDP: _____

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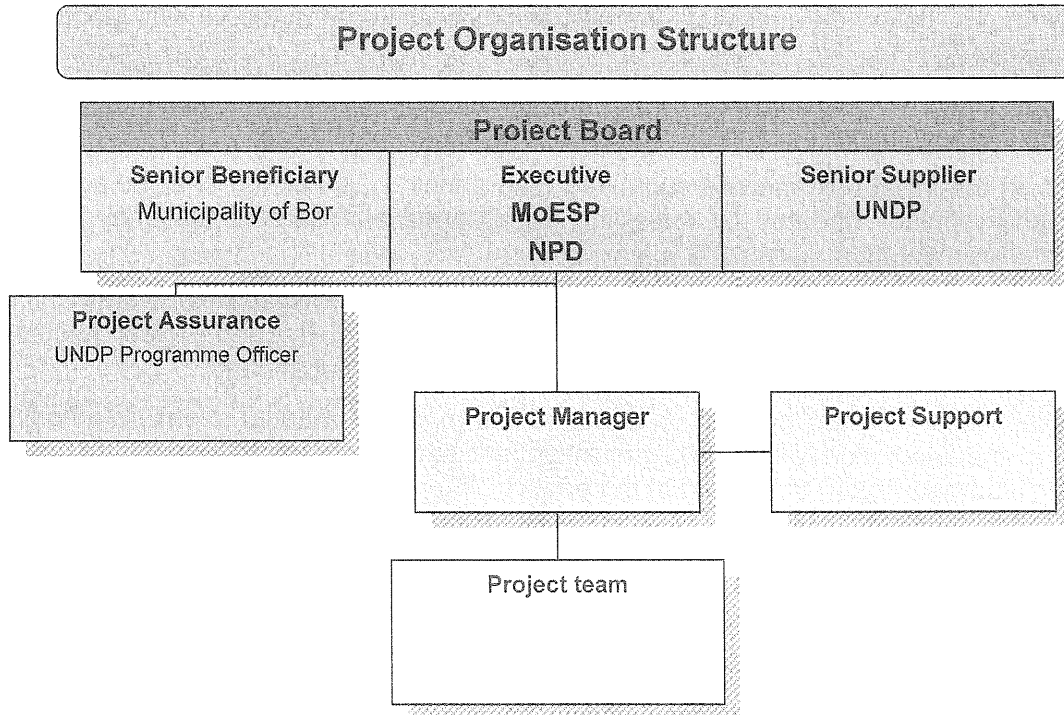
I. ANNUAL WORK PLAN

Year: 2010

EXPECTED OUTPUTS	PLANNED ACTIVITIES	TIMEFRAME				RESPONSIBLE PARTY	Funding Source	PLANNED BUDGET		
		Q1	Q2	Q3	Q4			Budget Description	2009	2010
Output 1: Mine water quality analysis and remediation identification	Activity 1: Assessment of surface and ground water quality and identification of priority areas for more in-depth study and remediation measures:	X	X	X	X	MoESP	71300 Local Consultants	2,000	13,000	
							71600 Travel	500	2,500	
Output 2: Increased capacities at local level to deal environmental hazards, focusing on mine water issues	Activity 2: Local capacity building for environmental security						72100 Contractual Services - Companies		45,000	
							74500 Miscellaneous Expenses	500	500	
							71300 Local Consultants	500	2,500	
		X	X	X	X	MoESP	71600 Travel	500	1,500	
						72600 Grants		25,000		
						74500 Miscellaneous Expenses	500	500		
							Subtotal	4,500	90,500	
TOTAL									95,000	

II. MANAGEMENT ARRANGEMENTS

III. MANAGEMENT ARRANGEMENTS



Project Board:

The Project Board is the group responsible for making executive management decisions for a project when guidance is required by the Project Manager, including approval of project revisions. Project assurance reviews by this group are made at designated decision points during the implementation of a project, or as necessary when raised by the Project Manager. The Project Manager consults this group for decisions when project tolerances have been exceeded. This group contains three roles: an Executive to chair the group, a Senior Supplier to provide guidance regarding the technical feasibility of the project, and a Senior Beneficiary to ensure the realization of project benefits from the perspective of project beneficiaries.

The representative of the Ministry of Environment and Spatial Planning will have the role of the Executive in the Project board for "Feasibility study for the remediation of the Bor mine surface and groundwaters" project. Ministry will appoint National Project Director who will chair the project board. This means that the project management arrangement will be under National Implementation Modality with direct payment method used for payments. UNDP will appoint its representative to act as a Senior Supplier in the project board. UNDP Programme Officer will also have the role of Project Assurance. Programme Officer will be responsible for oversight of project management techniques and methods applied.

IV. MONITORING FRAMEWORK AND EVALUATION

In accordance with the programming policies and procedures outlined in the UNDP User Guide, the project will be monitored through the following:

Within the annual cycle

- On a quarterly basis, a quality assessment shall record progress towards the completion of key results, based on quality criteria and methods captured in the Quality Management table below.
- An Issue Log shall be activated in Atlas and updated by the Project Manager to facilitate tracking and resolution of potential problems or requests for change.
- Based on the initial risk analysis submitted (see annex 1), a risk log shall be activated in Atlas and regularly updated by reviewing the external environment that may affect the project implementation.
- Based on the above information recorded in Atlas, a Project Progress Reports (PPR) shall be submitted by the Project Manager to the Project Board through Project Assurance, using the standard report format available in the Executive Snapshot.
- a project Lesson-learned log shall be activated and regularly updated to ensure on-going learning and adaptation within the organization, and to facilitate the preparation of the Lessons-learned Report at the end of the project
- a Monitoring Schedule Plan shall be activated in Atlas and updated to track key management actions/events

Annually

- **Annual Review Report.** An Annual Review Report shall be prepared by the Project Manager and shared with the Project Board and the Outcome Board. As minimum requirement, the Annual Review Report shall consist of the Atlas standard format for the QPR covering the whole year with updated information for each above element of the QPR as well as a summary of results achieved against pre-defined annual targets at the output level.
- **Annual Project Review.** Based on the above report, an annual project review shall be conducted during the fourth quarter of the year or soon after, to assess the performance of the project and appraise the Annual Work Plan (AWP) for the following year. In the last year, this review will be a final assessment. This review is driven by the Project Board and may involve other stakeholders as required. It shall focus on the extent to which progress is being made towards outputs, and that these remain aligned to appropriate outcomes.

Quality Management for Project Activity Results

OUTPUT 1: Mine water quality analysis and remediation identification		
Activity Result 1 (Atlas Activity ID)	Water quality assessment	Start Date: 1 Dec 2009 End Date: 1 Dec 2010
Purpose	To perform an initial assessment of surface and groundwater quality and identify priority areas for more in-depth study and/or action	
Description	Collection, selection and reinterpretation of already published materials to date Hydro geological reconnaissance Identification of readily detected hot spots in the Bor area that pollute the environment Hydrogeological mapping of selected pilot study area(s), Establishment of monitoring network for water quality observations (surface- and groundwater, possible polluters etc.) Data collection from the monitoring network Field and laboratory analysis Result interpretation and presentation	
Quality Criteria	Quality Method	Date of Assessment
Compliance with the standard procedures(Sampling, monitoring)	Presentation of the certificates by subcontracted entity	During the procurement process for selection of subcontractor
OUTPUT 2: Increased capacities at local level to deal environmental hazards, focusing on mine water issues		
Activity Result 1 (Atlas Activity ID)	Local capacity building for envsec (for both man and woman)	Start Date: 1 Dec 2009 End Date: 1 Dec 2010
Purpose	To assess the capacities of local organizations to deal with environmental hazards, focusing on mine water issues and recommendations	
Description	Assessment of legislative framework gaps Assessment of community response measures to pollution prevention and of industrial accident Assessment of local capacity gaps Assessment of community capacities and actors to take part in pollution prevention and remediation activities Pilot project implementation at local level	
Quality Criteria	Quality Method	Date of Assessment
Number of participants in NGO activities	Verification mission	During the pilot project implementation phase

V. LEGAL CONTEXT

This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA [or other appropriate governing agreement] and all CPAP provisions apply to this document.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document”.

ANNEXES

1. Risk Analysis
2. Situation Analysis
3. Strategy
4. Geological and chemical characteristics of the site
5. Capacity Assessment



Annex I: RISK LOG

Project Title: Feasibility study for the remediation of the Bor mine surface and groundwaters
 Award ID: 00058608
 Date: November 2009

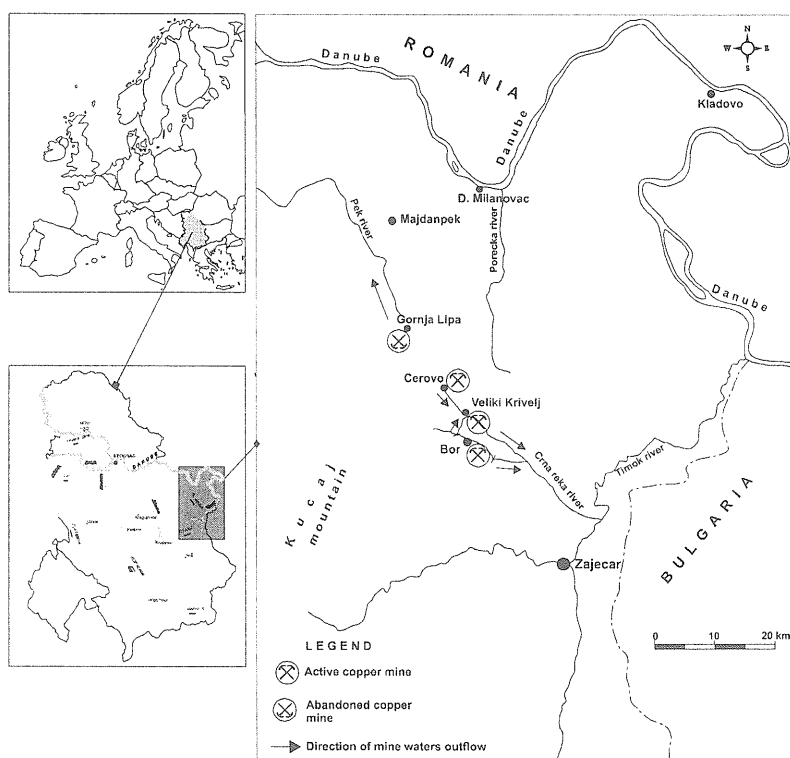
#	Description	Date Identified	Type	Impact & Probability	Countermeasures / response	Owner	Submitted, updated by	Last Update	Status
1	Implementing partner capacity	November 2009	Organizational	Delays in project implementation P = 2 I = 3	National Project Director appointed from the Ministry	NPD	UNDP Program officer		

ANNEX II: SITUATION ANALYSIS

Background

Significant copper ore deposits are located in eastern parts of Serbia in the "Timocka eruptive area". There are several mines and plants for the processing of copper ore and among these, the most important are in the Bor area (Bor, Veliki Krivelj and Cerova) (Figure 1). The process of copper ore treatment has produced large amounts of ore waste and flotation tailing heaps that are unsecured, unprotected and are contributing to ongoing environmental risk and harm. These are located in the vicinity of Bor. The waste and tailing heaps pollute the environment in a number of ways, sometimes to the extent of constituting ecological catastrophes. In general, the forms of ore tailing disposal followed in Eastern Serbia are generally performed with inadequate surface and groundwater protection measures in the zone of inflow. Ore tailing disposals at a scale of more than 1 million m³ have been dumped and are still being dumped in depressions, mainly riverbeds. Such disposal – riverbeds being one of the worst conceivable locations for such waste – has resulted in direct hydraulic connections of tailing disposals and river water flows thus exacerbating the seriousness of pollution outcomes. In several occurrences tailing disposals are often dumped upon geological profiles comprised of water bearing rocks as gravels, sands and limestones and as a result are contaminating these aquifers. The contaminated surface and ground water flows into streams and rivers within respective catchment area and accumulate in larger rivers. These water resources are shared by several countries in the region (Sava, Danube and more.). By raising the level of contaminants downstream this also constitutes a cross border environmental hazard. If the ecological and toxicological carrying capacity of the transboundary watercourse is reached an environmental crisis will follow entailing serious negative impacts on the environment and on human livelihoods. These impacts may be irreversible.

Figure 1 Position of the Bor area



In addition, the potential for an environmental and human crisis related to transboundary pollution of the water resources in the region may also constitute a potential risk for national or transnational tensions. The Balkan region, due to its conflict legacy of the 1990's is still politically very instable and is tentatively moving from post conflict recovery into a development phase. At this point in time, political stability is essential in order to create an environment for peaceful transition where national economies and institutional capacities can be built up in order to secure

sustainable human livelihoods. Conflict prevention and peace building in this region can be only successful if they start in parallel in three key sectors: the creation of a secure environment, the promotion of sustainable democratic systems, and the promotion of economic and social well-being. Progress in all three sectors is necessary for sustainable peace and democracy. Contamination of the larger rivers by mine waters from the Bor district pose a threat to the stabilization of two of the three key sectors: it undermines the creation of a secure natural environment as well as the promotion of social well-being in the sense that it serves to hinder access to clean and safe water for the most vulnerable groups in society.

The institutional and societal capacity to deal with the environmental threats merging from mining activities in Serbia and in the region is low. The state owned mining companies have little capacity and technical know-how to monitor, manage and prevent pollution of ground and surface-water and thus also limited ability to remediate the already severely contaminated areas. Further, local authorities have insufficient capacity to control and advise the industries in order to secure the safety of citizens and civil society may not be empowered to address environmental issues of concern or deal with related conflicts. In addition, on a national level there is little legislation or by-laws that regulate these activities and thus create no incentive for municipalities and mining industries to invest resources in pollution control. This situation may have a major negative impact on the EU accession process of Serbia and its ratification of EG environmental legislation. In particular this is the case for the implementation of the Water Framework Directive, which advocates for decentralization of water governance bodies, expanded use of by-laws and systematic mapping and monitoring of water resources on a sub-national water catchments-based level.

The proposed research project arises out of individual investigations of the impact of mine waters on the environment that was carried-out during last decade. None of the mines, or the other "hot spots" in the Bor area, has solved the problem of mine waters. At present, severely polluted waters are released directly to nearest waterways and contaminate surface waters and ground waters in adjacent aquifers. Earlier investigations were often characterized by lack of data, non-comparability of data, uncertainty regarding spatial coordinates, data scarcity, and so forth. The proposed project also arises out of lack of local institutional capacity e.g. of environmental monitoring and control, lack of regulatory based incentives from a national level, a lack of a local authority knowledge and an absence of measures for remediation.

Situation analysis

The mine in Bor is located at one of the oldest sites of ore exploitation in Europe and large-scale operations date from the beginning of 20th century. Mine waters from underground mining flow directly into the Bor River near the mine and then to the Kriveljska River, into where also mine waters from the Veliki Krivelj and Cerovo mines flow. This results in excessive surface water pollution in the mentioned streams, as well as groundwater pollution in alluvial and karst aquifers in the surroundings of the mentioned mines. The characteristics of the site are described in Annex I.

The lack of reliable data creates a need to make a study on the real scope of the environment pollution on the territory of the region of Bor and in the direct vicinity of the copper mine. The identification and resolution of pollution problem on the territory of Bor – a large community – is a substantial, multidisciplinary and socially complex undertaking.

As a consequence, the project in question focuses at a smaller scale, but nonetheless on a serious segment of the problem of the environment protection on the territory of this municipality. Further, it is clearly recognised that the pollution of surface- and groundwater courses cannot be solved by the mere presentation of the scientific results. It is believed that the long-term solution to the existing and ongoing pollution will lie in a broad-based local community realization that they own the problem, that they must know how to deal with it, that they can learn how to estimate the dangers and how to effectively and permanently eliminate it.

Recent reports communicate dramatic pollution of environment within the territory of the Bor municipality. The current situation in Bor is complex and confusing: although respectable efforts has been performed in the past in order to protect and prevent environment (e.g. joint action between governmental and local community levels) the state of environmental pollution is still alarming, and is even increasing in seriousness. This could indicate certain errors and a misdirection of already applied strategies. The Bor area already possesses a Local Environmental Action Plan (LEAP), addressing environmental issues related to water, air, soil and food chains pollution, state of population health etc. However, referring to the existing situation this may indicate a significant gap between the strategic environmental planning and its implementation in society. A number of local NGO's, ecological organizations, local expert teams and medias have all made an effort to improve this situation, but with little success to date. In addition, the state of isolation during 1990s that has encompassed social, economic and political marginalization of the countryside, has caused a situation where there is a lack of accurate scientific results that address pollution in the Bor area. Thus, there is also a need to reorganize a local pollution source database and to provide better communication among people in the local community. This situation may indicate that there may be a need for a completely new methodological approach in order to tackle the pollution of Bor. A new methodology could include the distribution of human resources, analysis of legislative gaps, building and real strengthening of local capacities etc.

ANNEX III: STRATEGY

1. Guiding principles

The project focus is to prepare a feasibility study for the environmental remediation of water pollution sources for selected sites in the Bor mine complex; including taking a community participatory approach by bringing in the socio-political perspective into the study. Site selection should take into account and coordinate with ongoing World Bank Bor project. This, in order to determine the requirements of environmental remediation of pollution sources in water in a long-term sustainable manner by not only provide technical recommendations to combat environmental hazards but also by providing tools that allow the affected community to participate.

To determine water quality (focusing on both surface- and groundwater quality), a monitoring network will be established and the samples will be analysed both on the field and in the laboratory. Conventional measures/steps in remediation techniques will be explored and cross-examined. Their economic effects and expected outcomes will be also compared. In addition, some novel ways of remediation will be tested (e.g. extracting copper from water streams). The proposed monitoring network will also represent a "test matrix" for a number of other "pilot scale" monitoring networks on typical contamination sites. The knowledge obtained from monitoring and test works at these sites could be used to scope the requirements for a much larger monitoring network in order to understand, track and monitor the nature of groundwater flow regimes and pollutant dispersion in the area.

The aspect of capacity building will be assessed and defined in several ways; the central concerns of environmental management - to manage change, to resolve conflict, to manage institutional pluralism, to enhance coordination, to foster communication, and to ensure that data and information are shared – require a broad view of capacity development. This covers both institutional (legislative) and local-community-based capacity building. The aim of the project in this regard is to perform identification of actors and necessary structures in order to carry out capacity building activities in the follow-up actions that the feasibility study recommends.

Aligning the two components above the project will show a new approach to serious environment pollution (Impact Orientated Planning and Monitoring) where scientific research would be the basis of constructive action of various factors in the local community, aiming at establishing permanent institutions which will monitor the environment conditions, predict possible hazards and prevent them. The projects will constitute an example of how to deal with other types of environment pollution in the given municipality, as well as in other towns.

The project addresses the aspects of the EnvSec Initiative, contributing to its larger mining initiative, and is formulated in such a way that the outcome of remediation recommendations would build capacity for mine site management in Serbia, draw both political and community attention, and it will provide learning in a regional context. The mining initiative of EnvSec addresses pilot sites identified by a desk assessment in 2004 and further consulted and elaborated in 2005 at the Ciuj-Napoca Ministerial Conference. The activities in this project will take the document "Mining for Closure" (UNEP, Grid- Arendal 2005)¹ developed through this initiative and endorsed at the Conference into account as a policy recommendation for the proposed activities and outcomes.

2. Project goal, objective and outputs

The overall project goal is to contribute to the stability and security of the region of South Eastern Europe and to prevent potential crises by addressing environmental degradation emerging from human activities and by working towards their potential remediation.

The project objective is to address the aspects of the environmental security risks of contaminated mine waters formulated in such a way that the outcome of remediation recommendations would build capacity for sustainable mine site management in Serbia and in particular in Bor, and to draw both political and community attention. Moreover, the project will provide material for learning in a regional context.

As such, the project output has a two-fold approach: the first is to perform an assessment to determine and identify necessary follow-up measures, in terms of further studies and/or actions related to remediation of environmental hot-spots. Another aspect of this is to provide an overview of potential remediation measures adapted to the specific circumstances of the Bor site. The second output is to assess potentials and identify strategies to enhance local capacity to perform such assessments independently and carry out remediation activities.

The project outputs are defined as followed:

Output 1: Mine water quality analysis and remediation identification

To perform an initial assessment of surface and groundwater quality and identify priority areas for more in-depth study and/or action and to provide an overview of and recommendations for potential remediation measures and techniques for further evaluation;

Output 2: Increased capacities at local level to deal environmental hazards, focusing on mine water issues. To assess the capacities of local organizations to deal with environmental hazards, focusing on mine water issues and recommendations for bridging these capacity gaps and to provide grant schemes to implement pilot projects

To successfully achieve the outputs, the project will set up a steering committee, comprising of technical expertise, national government representatives and community-based representatives in Bor. This committee will oversee the implementation of the project and ensure the strategic aim of producing an aligned report on recommendations of follow-up action, in both the technical as well as social sense. Thus, in addition to conducting the technical research, social research on legislative and community capacity gaps will be conducted, with recommendations on how to address them in the remediation activities.

¹ "Mining for Closure: Policies and Guidelines for Sustainable Mining Practice and Closure of Mines" is intended as a checklist and guidebook on "best practices" related to mining, useful for an audience far beyond the mining industry, including government, NGOs, international organizations and the general public.

Immediate action will only be feasible in a limited number of cases where contaminant sources can be easily removed. Since the area is so large, and since there will be so many sites of pollution, it will be necessary to focus on some of the most “typical” types of sites in order to generate quantitative knowledge for small areas that may allow some qualitative or even semi-quantitative generalization to other sites. This is also an aspect to ensure the sustainability of the project.

3. Project delivery

The main delivery of the project is a feasibility study of the Bor mine surface- and groundwater with recommendations for follow-up remediation action.

These recommendations will also comprise of the identification of necessary mechanisms and actors in community-based activities in the follow-up remediation. The study will provide baseline information and recommendation that may serve as a basis for development of large-scale community participatory remediation project activities.

4. Project activities

In detail, the project outputs will be reached through the following activity stages:

Output 1: Mine water quality analysis and remediation identification

Analysis of mine ground- and surface water quality with identification of remediation measures will include the following:

- Collection, selection and reinterpretation of already published materials to date
- Hydro geological reconnaissance
- Identification of readily detected hot spots in the Bor area that pollute the environment
- Hydrogeological mapping of selected pilot study area(s),
- Establishment of monitoring network for water quality observations (surface- and groundwater, possible polluters etc., ensuring monitoring network sustainability and compatibility with relevant monitoring networks)
- Data collection from the monitoring network
- Field and laboratory analysis
- Result interpretation and presentation

Output 2: Increased capacities at local level to deal environmental hazards, focusing on mine water issues

Analysis of local capacities to deal with environmental hazards, focusing on mine water issues:

- Assessment of legislative framework gaps
- Assessment of community response measures to pollution prevention and of industrial accident
- Assessment of local capacity gaps
- Assessment of community capacities and actors to take part in pollution prevention and remediation activities
- Pilot project implementation at local level

ANNEX IV: GEOLOGICAL AND CHEMICAL CHARACTERISTICS OF THE SITE

The copper ore deposit at Bor has been originated by volcanic rocks and their pyroclastic equivalents, hydrothermally altered igneous rocks and sedimentary rocks. Ore bodies of massive –sulphide, -impregnation and porphyry type can be found at the deposit. Covellyne, chalcocite, enargite, bornite and chalcopyrite are included among the ore minerals present. The stated physio-chemical parameters and microbiological processes active at the sites have resulted in the formation of mineralized sulphate waters with low pH values and significantly elevated concentrations of some metals (Table 1).

Table 1. Physical-chemical characteristics of mine waters of the “Bor” copper mine

Components	Values
Organoleptic properties	
Temperature (°C)	18.5
Color	Light yellow
Basic chemical properties	
Dry residue (mg/l)	4322
Electrical conductivity ($\mu\text{S}/\text{cm}$)	4560
pH value	3.8
Eh (mV)	604
Total hardness (°dH)	89.60
Temporary hardness (°dH)	<0.01
Permanent hardness (°dH)	89.60
Primary macrocomponents (mg/l)	
Chlorides (Cl ⁻)	<0.1
Hydrocarbonates (HCO ₃ ⁻)	<0.1
Sulphates (SO ₄ ²⁻)	3480.90
Sodium (Na ⁺)	115.8
Calcium (Ca ²⁺)	356.2
Magnesium (Mg ²⁺)	184.4
Silica (SiO ₂)	73.2
Secondary macrocomponents (mg/l)	
Potassium (K)	4.70
Iron (Fe)	275.30
Boron (B)	0.08
Strontium (Sr)	2.28
Nitrites (NO ₂ ⁻)	0.001
Nitrates (NO ₃ ⁻)	0.20
Microcomponents (mg/l)	
Copper (Cu)	173.00
Barium (Ba)	0.03
Zinc (Zn)	12.9
Aluminum (Al)	162.20
Arsine (As)	0.0007
Lead (Pb)	0.045
Gaseous components (mg/l)	
Dissolved O ₂	7.20
Dissolved CO ₂	<0.01

Mine waters from underground mining flow directly into the Bor River near the mine and then to the Kriveljska River, where mine waters from the Veliki Krivelj and Cerovo mines also flow into.

This results in excessive surface water pollution in the mentioned streams, as well as groundwater pollution in alluvial and karst aquifers in the surroundings of the mentioned mines. For example, about 9 km to the east from the mine after joining of the Borska and Kriveljska streams, the long-term chemical composition, of water characteristics have been assessed to be:

- pH: 3.7-6.5 (Maximum admissible concentrations [MAC] for drinking waters=6.8-8.5)
- SO₄²⁻: 880-3235 mg/l (MAC = 25 mg/l)

- Fe: 0.8-223mg/l (MAC = 0.05 mg/l)
- Cu: 0.5-315 mg/l (MAC = 0.1 mg/l)

Further to the environmental problems related to sites such as those listed above, it should be mentioned that waters from copper smelting and electrolysis processes are also released into the water basin of the Borska River adding to the contamination of this stream. The flow originating by joining of the Borska and Kriveljska rivers is called the Crna reka (Black river) and is within the basin of the Veliki Timok, namely the Danube. This is the most polluted stream in Serbia, and perhaps in Europe as well.

Hydrogeochemical processes in aerated zone of deposits, in mining works and in surrounding tailing dumps have resulted in groundwaters with high mineralization and non-compliant chemical composition. These acid sulfate waters, with high contents of Fe, Al, Cu and other elements or compounds pollute surface and ground waters in both alluvial and limestone (karst) aquifers in the region.

ANNEX V: CAPACITY ASSESSMENT

Project Title		Remediation of Veliki backi kanal	
Name of the Institution		Ministry of Environmental Protection, Republic of Serbia	
Date of assessment		18 February 2008	
INDICATOR	AREAS FOR ASSESSMENT	APPLICABLE DOCUMENTS/TOOLS	COMMENTS
PART I – REFERENCES AND PRELIMINARY CHECKS			
1.1 History and Compliance with International Resolutions/Standards			
1.1.1 History	Date of creation and length in existence, 2000-2004, 2007 onwards Has the institution gone through a recent re-organization/re-structuring? Yes, 2007	Annual Reports - yes Media Kit Website, yes	Media officer www.ekoserb.sr.gov.yu
1.1.2 United Nations Security Council 1267	Is the institution listed in any reference list? No	United Nations Security Council 1267 Committee's list of terrorists and terrorist financiers	
1.1.3 Certification	Is the institution already certified through international standards? No	ISO, Project Management standard, other standards No	State administration procedures defined by Law on state administration Republic of Serbia
PART II. ASSESSING NATIONAL INSTITUTION CAPACITY FOR PROJECT MANAGEMENT			
2.1 Managerial Capacity			
Ability to plan, monitor and coordinate activities			
Planning, Monitoring & Evaluation	Does the institution produce clear, internally consistent proposals and intervention frameworks, including detailed workplans? To some	Well-designed project and programme documents. No Action Plans/Work plans, yes, to some	PMU – project management unit has been established. Not yet experienced in project management. Capacity building will be provided during project

	<p>extent</p> <p>Does the institution hold regular programme or project review meetings? No</p> <p>Are there measurable outputs/deliverables in the defined project plans? To some extents</p> <p>Was the institution previously exposed to UNDP RBM approach/methodology or equivalent in other donor agencies? No</p>	<p>extent</p> <p>Log frame or equivalent, Occasionally</p> <p>Project reports, Occasionally</p> <p>Evaluation reports, Occasionally</p> <p>Indicators available in project plans, Occasionally</p> <p>Lessons-Learned reports, no</p>	<p>implementation.</p>
2.1.2 Reporting and performance track record	<p>Does the institution monitor progress against well defined indicator and targets, and evaluate its programme/project achievements? No</p> <p>Does the institution report to its stakeholders on a regular basis? Yes</p>	<p>Reports to donors and other stakeholders, To some extent</p> <p>Reporting system, Not fully developed</p>	<p><u>Information brochure</u></p>
2.2 Technical Capacity			
2.2.1 Specialization	<p>Does the institution have the technical skills required? Yes in administrative sense</p> <p>Does the institution have the knowledge needed? Yes, to some extent.</p> <p>Does the institution keep informed about the latest techniques/ Yes, to some extent.</p> <p>Competencies/policies/trends in its area of expertise? Yes, to some extent.</p> <p>Does the institution have the skills and competencies that complement those of UNDP? No</p>	<p>Publications on activities, specific issues, analytical articles, policies, Yes to some extent</p> <p>Reports from participation in international, regional, national or local meetings and conferences. Yes when required</p> <p>Tools and methodologies, No</p> <p>Evaluations and assessments, To some extent</p>	
2.2.2 Ability to monitor the technical aspects of the project.	<p>Does the institution have access to relevant information/resources and experience? Yes</p> <p>Does the institution have useful contacts and networks? Yes</p> <p>Does the institution know how to get baseline data, develop indicators? To some extent</p> <p>Does it apply effective approaches to reach its targets (i.e participatory methods)? Not clear</p>	<p>Evaluations and Assessments, Methodologies/training materials</p> <p>Use of toolkits, indicators and benchmarks/capacity-development tools</p> <p>Databases</p>	
2.2.3 Human	Does the institution staff	Profile of staff, including	There is no technical expertise

Resources	<p>possess adequate expertise and experience? No, due to large staff turnover.</p> <p>Does the institution use local capacities (financial/human/other resources)? Yes-see comment</p> <p>What is the institution capacity to coordinate between its main office and decentralized entities/branches (if relevant)?</p> <p>Not relevant</p> <p>Have staff been trained on project management methodology? To some extent</p>	<p>expertise and professional experience n/a</p> <p>Staff turnover Yes</p> <p>Chart of assignments of roles and functions n/a</p> <p>Reports on technical experience from national or international agencies for operations and capacity-building N/a</p> <p>Individual certification on project management such as PRINCE2 No</p>	<p>in the MoEP, as it is state administration institution.</p> <p>No local, technical –internal capacities available in the MoEP</p> <p>Ad hoc trainings, limited no of staff.</p>
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PART III. ASSESSING NATIONAL INSTITUTION CAPACITY FOR ADMINISTRATIVE AND FINANCIAL MANAGEMENT

3.1 Administrative capacity
Ability to provide adequate logistical support and infrastructure

3.1.1 Ability to manage and maintain infrastructure and equipment	<p>Does the institution possess logistical infrastructure and equipment? Yes, limited</p> <p>Can the institution manage and maintain equipment? Yes</p>	<p>Adequate logistical infrastructure: office facilities and space, basic equipment, utilities See comment</p> <p>Computer capability and library materials To some extent</p> <p>Proper equipment for area of specialization To some extent</p> <p>Inventory to track property and cost. Yes</p>	<p>Lack of space and logistical infrastructure in general</p>
3.1.2 Ability to procure goods services and works on a transparent and competitive basis.	<p>Does the institution have the ability to procure goods, services and works on a transparent and competitive basis? Yes</p> <p>Does the institution have standard contracts or access to legal counsel to ensure that contracts meet performance standards, protect UNDP and the institution's interests and are enforceable? Yes</p> <p>Does the institution have the authority to enter into contracts? Yes</p>	<p>Standard contracts, yes</p> <p>Examples of how procurement is done, See comment</p> <p>Written procedures for identifying the appropriate vendor, obtaining the best price, and issuing commitments, Yes</p>	<p>MoEP, in line with Law on public procurement, Off. Gazette RS No 39/02,43/03,55/04 and 101/05.</p>
3.1.3 Ability to recruit and manage the	<p>Is the institution able to staff the project and enter into</p>	<p>Standard contracts, yes</p> <p>Job descriptions, yes</p>	<p>Staff available partly, loaded with daily job</p>

best-qualified personnel on a transparent and competitive basis.	contract with personnel? Yes, partly Does the institution use written job descriptions for consultants or experts? Yes, when needed		
3.2 Financial Capacity			
3.2.1 Financial management and funding resources	Is there a regular budget cycle? Yes Does the institution produce programme and project budgets? Yes What is the maximum amount of money the institution has managed? Does the institution ensure physical security of advances, cash and records? Yes Does the institution disburse funds in a timely and effective manner? To some extent Does the institution have procedures on authority, responsibility, monitoring and accountability of handling funds? Yes Does the institution have a record of financial stability and reliability? Yes	Operating budgets and financial reports List of core and non-core donors and years of funding Written procedures ensuring clear records for payable, receivables, stock and inventory Reporting system that tracks all commitments and expenditures against budgets by line	Depends of budget availability.
3.2.2. Accounting System	Does the institution keep good, accurate and informative accounts? Yes Does the institution have the ability to ensure proper financial recording and reporting? Yes	A bank account or bank statements, yes Audited financial statements, yes Good, accurate and informative accounting system, yes Written procedures for processing payments to control the risks through segregation of duties, and transaction recording and reporting	
3.2.3. Knowledge of UNDP financial system	Does the institution have staff familiar with Atlas through External Access? No	External access provided	