



PROJECT EXECUTIVE SUMMARY

GEF COUNCIL INTERSESSIONAL WORK PROGRAM SUBMISSION

AGENCY'S PROJECT ID: P085112
GEFSEC PROJECT ID: 2143
COUNTRY: Bosnia and Herzegovina
PROJECT TITLE: Water Quality Protection Project
GEF AGENCY: World Bank
OTHER EXECUTING AGENCY(IES): Ministry of Agriculture, Water Management and Forestry
DURATION: 5 years
GEF FOCAL AREA:
GEF OPERATIONAL PROGRAM: OP-8
GEF STRATEGIC PRIORITY: IW-I: Catalyzing Financial Resources for Implementation of Agreed Actions
Pipeline Entry Date: 6/13/2003
ESTIMATED STARTING DATE: July 2005
IA FEE: \$392,000

CONTRIBUTION TO KEY INDICATORS OF THE BUSINESS PLAN:

The project supports priority investments identified in the SAPs for the Danube/Black Sea and Mediterranean basins. It also demonstrates low cost wastewater treatment and management practices that can be replicated in the region.

RECORD OF ENDORSEMENT ON BEHALF OF THE GOVERNMENT(S):

Minister Dragon Doko, Minister of Foreign Trade and Economic Relations

Date: February 11, 2004

Approved on behalf of the World Bank. This proposal has been prepared in accordance with GEF policies and procedures and meets the standards of the GEF Project Review Criteria for work program inclusion

Steve Gorman
GEF Executive Coordinator, The World Bank

Date: January 14, 2005

FINANCING PLAN (US\$)	
GEF PROJECT/COMPONENT	
Project	8,500,000 ⁽¹⁾
PDF A	
PDF B	
PDF C	
<i>Sub-Total GEF</i>	
<i>Co-FINANCING*</i>	
IBRD/IDA/IFC	2,000,000
Government	4,190,000
Bilateral	5,180,000
NGOs	
Others	
<i>Sub-Total Co-financing:</i>	11,370,000
<i>Total Project Financing:</i>	19,870,000
FINANCING FOR ASSOCIATED ACTIVITIES	
IF ANY:	
LEVERAGED RESOURCES IF ANY:	

*Details provided under the Financial Modality and Cost Effectiveness section

⁽¹⁾ GEF Council is requested to approve funding for only US\$ 4.35 million at this time. The remaining financing would be provided under the GEF Strategic Partnership for the Danube/Black Sea basin that was approved by GEF Council in May 2001

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1. PROJECT SUMMARY

a) PROJECT RATIONALE, OBJECTIVES, OUTPUTS/OUTCOMES, AND ACTIVITIES

Bosnia and Herzegovina (BiH) has stressed the importance of addressing the environmental degradation of the pollution of transboundary rivers and has been asking for World Bank assistance in this area since 1998. It has repeatedly sought assistance to eliminate identified regionally prioritized hot spots by improving cooperation with its neighbors in managing transboundary water resources. The proposed project would address water quality and environmental degradation of two transboundary rivers: the Neretva which discharges in the Adriatic Sea and the Bosnia River which is part of the Danube river basin.

The **project development objective** is to improve water quality in the Neretva drainage basin and Bosnia river basin. The **global environmental objective** is to reduce pollution in the Adriatic Sea and the Danube basins. The project objectives will be achieved by further strengthening the capacity of local utilities and reducing nutrient loads from municipal wastewaters that are discharged in the Neretva and Bosnia rivers. The project would (i) develop a Wastewater Improvement Plan (WIP) for BiH that would clarify the institutional framework for wastewater management; (ii) formalize the cooperation with institutions in Croatia and Serbia and Montenegro; (iii) build a network of public and private institutions needed for effective wastewater treatment; (iv) develop and implement high-priority low-cost wastewater treatment investments; and (v) disseminate information in BiH and the region for replication of project activities at other priority sites in the Balkans. The Bank could further improve ongoing communication between the neighboring countries, which would need to reach agreement on origination of water polluters and monitoring and evaluation of water quality and expand this cooperation to other neighboring countries.

The project components focusing on the Bosnia River are designed to address the main source of transboundary pollution as identified in the Strategic Action Plans (SAP) for the Danube and Black Sea basins, more specifically nutrient loads from municipal waste waters. The components focusing on the Neretva River address one of the main sources of land-based pollution as identified in the SAP for the Mediterranean Sea (SAPMED). Both SAPs identify nutrient loads, especially from municipal waste waters, as one of the main cause of pollution and degradation of the Adriatic Sea and the Danube River and their ecosystems. The project would support interventions in hot spots and sensitive areas identified in the SAPs, such as Neum-klek, Mostar, Mali Ston and Canyon Delta for the Neretva River, and the high density areas along the Bosnia River – Sarajevo, Illijas, Visoko, Kakanj, Travnik, Zepce and Maglaj.

The project is presented under the framework of two GEF Strategic Partnerships, the GEF Black Sea/Danube Strategic Partnership¹, approved by the GEF Council in May

¹ The GEF Strategic Partnership for the Danube/Black Sea basins provides a common framework for addressing transboundary pollution in the basin with particular focus on nutrient reduction. It provides financial supports to accelerate on-the-ground implementation of the Danube and Black Sea basin SAPs. The Strategic Partnership was approved by the GEF Council in May 2001 with an overall envelope of US\$

2001 and the proposed GEF Strategic Partnership for the Mediterranean Large Marine Ecosystem², which entered the GEF pipeline in December 2004 and is currently under preparation.

The project is presented to GEF Council as a whole. However, GEF funding of US\$ 4.15 million for the Bosnia River components is being sought under the WB-GEF Black Sea/Danube Nutrient Reduction Investment Fund (already approved by Council in May 2001). At this time GEF Council is requested to approve the remaining funding of US\$ 4.35 million covering the Neretva River components. While the linkages of this part of the project to the objectives of the proposed Mediterranean Partnership are obvious, the project processing and approval could not be subject to the finalization of the Mediterranean Partnership. The project will however be used as model for pollution reduction working with municipal utilities under the proposed Mediterranean Partnership.

Project Components. The proposed project would have the following components: Action Plan for reduction of river pollution in BiH; high-priority investments; wetland conservation; Project management; and Replication, Information Sharing and Implementation.

Component A:

Action Plan for reduction of river pollution in BiH (US\$.450 million - GEF)

This plan would provide the basis for all further actions for a National Wastewater Strategy for reducing river pollution. It would consist of the following components:

Data Collection:

- Examine existing laws and regulations for discharge of effluent for the various river regimes;
- Describe existing institutional arrangements;
- Determine river flow regimes and pollution levels;
- Identify polluters and levels of pollution; and
- Determine requested measures for reducing pollution and the cost.

Data Review and Plan Development:

- Review all collected data;
- Develop a phased nutrient reduction plan in accordance with priorities in order to sustain adequate river basin water quality and estimate its cost;

95 million (US\$ 70 million for the GEF-WB Investment Fund for Nutrient Reduction and US\$ 25 million for the UNDP/UNEP-GEF regional projects).

² The GEF Strategic Partnership for the Mediterranean Large Marine Ecosystem provides a framework for the basin countries under the Barcelona Convention to implement priority pollution reduction measures identified in the two SAPs for land-based pollution and for biodiversity. Under the proposed Partnership, countries will be able to access funds for capacity building and investments supporting pollution reduction, river basin management and marine and coastal biodiversity conservation in hot spots. It would be funded by a GEF grant of US\$ 100 million over multiple tranches. The concept for the Partnership entered the GEF pipeline in December 2004.

- Develop a long-term river quality monitoring program;
- Develop a financing plan;
- Analyze economic benefits of clean rivers; and
- Propose required institutional improvements including coordination with riparian countries.

The *expected outcome* for Component A will be the finalization of a Wastewater Improvement Plan (WIP) that would outline the required organizational framework for implementation. The WIP will provide a strategic economic and technical approach for efficient rehabilitation, investment and operation of sewage systems and waste water treatment, including a financial monitoring and economic analysis. The WIP will also assess the potential financing sources such as municipal budgets, entity and national budgets, international financing institutions, bilateral funds, local financial institutions and private capital.

a) Component B: High-priority investments (Total: US\$ 15.55 million; GEF US\$6.04 million)

a) Mostar (Neretva River), 100,000 inhabitants, proposed investments

Mostar is the main polluter of the Neretva River. It discharges all raw sewage into the river. The project would finance a first stage of construction for the central town area, consisting of sewage main collectors along the narrow river valley and an effluent treatment unit.

b) Zivinice (Spreca River/Bosnia river basin) 45,000 inhabitants, proposed investments

Zivinice discharges raw sewage into the Spreca River, which flows in the Modrac Lake. This lake is the main water source for the whole Tuzla region. The project would finance some main sewage collectors and upgrade of a sewage treatment plant.

c) Trnovo (Zeljeznica River/Bosnia river basin) 2,200 inhabitants, proposed investments

The rehabilitation of the Trnovo sewage treatment plant is a very high priority. The project would finance the rehabilitation of this treatment plant.

d) Odzak (Bosnia River) 10,000 inhabitants

The rehabilitation of the treatment plant is needed. Since there is flat land available near the river, the feasibility of biological sewage treatment in lagoons would be investigated. The project would finance some sewer rehabilitation, an outfall pipeline to the river for treated effluent and a sewage treatment plant.

The *expected outcome* for Component B would be the rehabilitation and development of high-priority, low-cost wastewater investments and improve the water quality of the Neretva and the Bosna Rivers. Due to the high costs of wastewater treatment, the Government's strategy has been to first focus on water supply, reduce inefficiencies in

the system and improve financial conditions and only then proceed gradually towards low cost wastewater treatments. Because the economic situation in the country is slowly improving, environmental concerns have become a high priority. The GEF funds will be used as leverage for the investments

Component C: Wetland Management (Total: US\$ 1.48 million; GEF: US\$ 1.28 million)

The project will target the wetlands of the lower Neretva River in the municipalities Čapljina and Stolac, and potentially also in the area of the lower part of Bosna River – municipality Odžak (included in Component C) and if additional funds are secured, the municipality of Domaljevac – Šamac. A feasibility study will be prepared in accordance with the rules of wetland conservation on low cost natural treatment of wastewater taking into account conditions such as climatic, hydrogeological (sensitive karst area) and land management. The study will assist to demonstrate appropriate investments for low cost/low energy treatment for small towns and settlements in the municipalities. It is planned that in the long run, this will be replicated in other parts of BiH.

The *expected outcome* of Component C will demonstrate wetland conservation actions as a measure for protection from wastewater discharges. The wetlands will apply low cost/low energy treatment for the small towns and settlements in municipalities with populations of 50,000 or less and seek to also encourage replicating through other small municipalities and smaller communities in BiH.

Component D: Project Management (GEF: US\$ 0.31 million)

This component would include management of the project; monitoring of the project; and training for Utilities and local governments on project implementation. This would include the follow up of the Water Law, planned for adoption by the Government in 2005.

The *expected outcome* of Component D is an efficiently delivered project meeting its project objectives in compliance with procurement and financial requirements set forth in the Legal Agreements.

Component E: Replication, Information Sharing and Implementation (Total: US\$ 0.75 million; GEF: US\$ 0.45)

This would finance financial management training for institutional strengthening and capacity building for the utilities and drafting of annual Business Plans for each Utility. This would also finance replication of the project findings in the region. Specifically, a monitoring, updating and implementation of the Action Plan, coordination with water utilities and international counterparts (from Croatia and Serbia and Montenegro) through bi- annual meetings, a review of the implementation progress reports, social and economic assessments, environmental monitoring information along with lessons learned under the project, will be followed by recommendations on measures to be adopted to

suit other geographical locations. A major part of the TA would focus on the stumbling blocks for replication. The lessons learned would be disseminated through one regional/national/international seminar for design institutes and water utilities. It will also include a public awareness campaign to increase the understanding of the proposed investments and policy actions.

The *expected outcome* of Component E is financially viable utilities with satisfactory annual Business Plans. The component would assist in successful replication of low cost wastewater treatment in BiH and neighboring countries; data sharing and monitoring of water quality issues between BiH, Croatia and Serbia and Montenegro with bi-annual meetings; attendance at Danube and Mediterranean Program meetings and increased participation and awareness of the public in environmental and wastewater related matters.

b) KEY INDICATORS, ASSUMPTIONS, AND RISKS (FROM LOGFRAME)

- Completion of the Wastewater Improvement Plan;
- Regional cooperation and replication in the Balkan region;
- Reduction of municipal-based pollution.

The set of monitoring (physical/technical) and performance indicators (operational and environmental) that will be monitored and reported on a timely basis by means of Project Management Reports (PMRs) have been agreed during project preparation. These include:

- annual reduction of nutrients discharges (P and N kg/year);
- average operation cost of nutrient reduction process (US\$/kg of nutrients);
- annual reduction of BOD discharges (tons/year);
- average operation cost of the BOD reduction (US\$/kg of BOD).

Total Pollution Reduction and Abatement Costs: 2005-2029

<u>Incremental effects</u>	Total	Black Sea Basin	Mediterranean Basin
BOD5 reduction (tons)	111,000	41,000	70,000
Nitrogen reduction (tons)	7,000	1,400	5,600
Total phosphorus reduction (tons)	1,600	600	1,000
<u>Abatement costs GEF</u>			
Abatement costs kg/BOD5	US\$0.10	\$0.20	\$0.07
Abatement costs kg/nutrients	US\$1.1	US\$12.78	US\$0.42
Total annual cost per inhabitant (capital cost + O&M cost)	US\$200	\$200	\$200
GEF investment cost per inhabitant	US\$34	\$27	\$48

Risks

Risk	Mitigation Strategy
Complicated institutional structure and layers of Government will prevent consensus.	The World Bank, with its extensive policy and investment experience in Bosnia, would take the lead to ensure that all levels of Government are involved and project approval would be based on conditionality of cooperation and consensus of State, Entity and regions.
Projects of different donors are uncoordinated and give mixed signals to the BiH Government on approaches and methodology.	All donor partners have emphasized the need to address and coordinate on the Wastewater Improvement Plan.
Institutional capacity at the water Utility level is limited.	The Public Water Management Enterprise, Vodoprivredas, has successful experience in implementing and operating international projects and would work closely to transfer knowledge to the utilities.
The wastewater treatment process would be too expensive to operate.	The most cost-effective option would be selected for the nutrient removal process. The utilities will undertake public communications campaign during project implementation to increase the willingness to pay.

2. COUNTRY OWNERSHIP

a) COUNTRY ELIGIBILITY

BiH is a member of the International Commission of Protection of the Danube River (ICPDR) and the Danube-Black Sea Program (Dablas) and ratified the Danube Convention in December, 2004. BiH is also a contracting party of the Barcelona Convention³.

b) COUNTRY DRIVENNESS

On July 11, 1996, BiH and Croatia signed an agreement to establish a framework for water management. Since that ratification, three sub-agreements on specific projects have been negotiated, and signatures are pending. Both countries support the Barcelona Mediterranean Convention of 1976 for the prevention of pollution of the Mediterranean, and have signed and ratified all its protocols. In addition, Croatia, Serbia and Montenegro and BiH signed the Framework Agreement on the Management of the Sava River in December, 2002.

During the early preparation of the IDA-funded Mostar Water Supply and Sanitation Project, the City Administration of Mostar, Entity Ministries, Mostar utility and sector professionals all sought assistance on the protection of the Neretva River. In various stakeholder analyses, the cleanup and protection of the Neretva is always rated as a high priority.

³ Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean.

While working with the Mostar Water Supply and Sanitation Project, the Mostar officials and utility were extremely eager to begin work on a phased approach for the protection of the Neretva River. The World Bank reached agreement with the Borrower that it would be best to first focus on water supply, reduce inefficiencies in the system and improve financial conditions before embarking on an expensive sanitation scheme. BiH received a USTDA grant to undertake a phased, low-cost scheme to protect the Neretva River. After almost 3 years of data collection, monitoring and analysis, the study was completed by January 2004.

During the preparation of the Neretva River Protection Study, authorities also requested assistance on the Bosnia River, which covers the largest, most populated and developed area of the Federation. The most developed industrial regions are in the vicinity of the river. Funding was secured from the Black Sea/Danube Program for the Bosnia River component of the project.

In addition to the focus of the proposed project on the Neretva and Bosnia Rivers, the Government of BiH has stressed the urgent need for a Wastewater Management Plan. One serious problem is the ad hoc approach currently being undertaken to wastewater treatment. Different bilateral aid agencies do random civil works that are generally not planned in any coherent manner. Because of the vast costs of wastewater treatment, it is critical to undertake a management plan that would systematically address the financing, technical and most importantly, institutional aspects of a national Wastewater Management Plan. The main objective is to have a national strategy on wastewater management; avoid construction of costly treatments plants; focus on an overall framework of affordability; target areas with greatest needs; promote low-cost natural treatment methods and promote coordination with Croatia, Montenegro and Serbia.

Coordination has already started through the Steering Working Group for the project. The Working Group consists of professionals from BiH, Hrvatske Vode in Croatia and relevant sector specialists from Serbia and Montenegro. All these professionals worked together during ex-Yugoslavia times and the project would facilitate the monitoring of water quality, exchanging of information and rebuilding of communication that currently is lacking.

3. PROGRAM AND POLICY CONFORMITY

a) FIT TO GEF OPERATIONAL PROGRAM AND STRATEGIC PRIORITY

The project is consistent with GEF Operational Programs Number 8, “*Waterbody Based Operational Program*”, which focuses “on seriously threatened water-bodies and the most important trans-boundary threats to their ecosystems.” OP-8 is applicable with its intervention to assist countries to work collaboratively with the support of implementing agencies in achieving changes in sectoral policies and activities so that transboundary environmental concerns degrading specific waterbodies can be resolved.

The proposed project implements priority measures and investments as identified under the Black Sea/Danube and Mediterranean SAPs. Both SAPs identify nutrient loads, especially from municipal waste waters, as one of the main cause of pollution and degradation of the Adriatic Sea and the Danube river and their ecosystems.

The project is presented under the framework of the GEF Black Sea/Danube Strategic Partnership which was approved by the GEF Council in May 2001 for the Bosnia River components (US\$ 4.15 million GEF grant) and the GEF Strategic Partnership for the Mediterranean Large Marine Ecosystem, which entered the GEF pipeline in December 2004 and is currently under preparation for the Neretva River components (US\$ 4.35 million GEF grant).

The project meets the eligibility criteria for receiving funding under the WB-GEF Black Sea/Danube Nutrient Reduction Investment Fund⁴ (IF) since: (1) it addresses nutrient loads from municipal waste waters, one of the eligible type of projects under the IF; (2) it supports policy reforms in the water and waste water sectors that are essential to achieve nutrient reduction and ensure long term sustainability; (3) it pilots low-cost waste water treatment that is highly replicable in-country as well as in the region; (4) it helps mobilize other donors' interest in nutrient reduction through improved coordination and leveraging co-financing.

The project also supports the overall objectives of the GEF Mediterranean Partnership⁵ by addressing one of the main sources of land-based pollution. However, since the Mediterranean Partnership is still in preparation phase, the project is submitted to Council for funding ahead of the Partnership approval. The project however could be used as a model for working with municipal utilities to reduce water pollution under the proposed Mediterranean Partnership.

The Project is also fully consistent with the GEF strategic priority on international waters of catalyzing financial resource mobilization for implementation of agreed actions and reforms in Strategic Action Programs.

b) SUSTAINABILITY (INCLUDING FINANCIAL SUSTAINABILITY)

The sustainability of the project would depend on achieving financial viability by gradually decreasing inefficiencies and increasing revenues to cover adequate operating and maintenance expenditures and debt service; and adequate prioritization of infrastructure development by ensuring that all investments are the least cost and adequately maintained.

⁴ The WB-GEF Investment Fund for Nutrient Reduction in the Danube/Black Sea basin is the investment arm of the GEF Strategic Partnership for the Danube/Black Sea Basin. It received GEF funding of US\$ 70 million over three approved by the GEF Council in May 2001, 2002 and 2003 respectively.

⁵ The GEF Strategic Partnership for the Mediterranean Large Marine Ecosystem provides a framework for the basin countries under the Barcelona Convention to implement priority pollution reduction measures identified in the two SAPs for land-based pollution and for biodiversity. Under the proposed Partnership, countries will be able to access funds for capacity building and investments supporting pollution reduction, river basin management and marine and coastal biodiversity conservation in hot spots.

The GEF project will be consistent with other projects that are being implemented in the water sector in the BiH. Similar to other operations involving utilities, the project would assist the utilities under the project to (i) establish commercially oriented business type practices, and (ii) become financially self-sustaining through the preparation of yearly Business Plans.

During preparation, the project assisted the Utilities by defining the overall purpose of a Business Plan and how the plan elements can help in managing the water company. The Utilities would be asked to develop a yearly Business Plan for their operations and services. The Business Plan would show the overall targets for each year, for example, in terms of the increase of the number of people to be served, including the poor; intended improvements in the quality of water; improvements in the collection-to-billing ratio; reduction of energy per m³ and of the staff per 100 connections; and increases in tariffs and cost-recovery levels, up to their breakeven points. The Utilities would incorporate the planned improvements in institutional capacity, such as a billing and collection system, tariff policy and structure and proper financial accounting and reporting that should lead to the strengthening of the commercial and financial management capacity.

Another result of the Business Plan would be the updating of the financial statements (income statement, balance sheet and cash flow statement) during project implementation. This practice would be new for the Utilities and assist in managing all of their resources and define measures, toward the planned targets, and determining which ones directly affect financial performance.

Because of the differences in institutional capacity and financial performances in the water supply and sanitation Utilities, the Utilities would be grouped in two categories. Mostar and Zivinice are expected to become financially viable and cover all their operating and maintenance during project implementation. Odzak and Trnvo would also be expected to reach financial viability and cover all operation and maintenance costs but the target for these smaller utilities would be to gradually improve their financial standing during the course of project preparation.

In addition, the utilities and institutions that benefited from the extensive dialogue and relationship built with the Government that began in 1996 are now able to transfer knowledge and assist new Borrowers. Vodopriveda Sarajevo, which implemented the first Urgent Works Project in coordination with Vodopriveda Mostar (beneficiary of the Mostar Water Supply and Sanitation Project), has agreed to provide technical assistance to the 3 new Utilities. This cooperation by existing and past Borrowers and institutions will greatly facilitate the start-up phase and foster the transfer of knowledge and information.

c) REPLICABILITY

Moving beyond the borders of BiH and even the Balkans, the project will serve to support regional dialogue on pollution control issues. First, the lessons learned in the project will be fed to project specialists working with projects under the two basin

networks through the existing basin organizational structures. Secondly the success of the project, itself, specifically in improving cooperation on international waterways, will further improve ongoing communication between the regional countries. This will further enhance data sharing and information exchange on origination of water polluters and monitoring and evaluation of water quality.

Additionally, the Project will be a demonstration for other regions on its low cost/ low energy approaches in nutrient pollution reduction. This will focus on detailing concrete approaches for plant rehabilitation and the implementation of the new approaches in wastewater collection and treatment. This will include the use of common process and GEF technical indicators to assist regional tracking of progress in creating better local and regional environments with reduced eutrophication and pollution from municipal sources. Highlighted successful intervention practices will provide the basis for replication in other cities and states and will play a catalytic role in the achieving meaningful results under the Azov/Black basin-wide Environmental Management Plan as well as the Mediterranean Environmental Management Plan under the Barcelona Convention and elsewhere.

The project will support the design of training modules on integrated wastewater treatment processing, support training in environmental policy for law enforcement agents on wastewater management (e.g. municipalities, municipal and regional inspectorates, environment authorities and the private sector) and will coordinate and organize an implementation conference on wastewater management for the regional information transfer in one of the sites (most likely Mostar) at the end of the Project. With these activities, the project will not only support the establishment of links and partnerships between the cities of the region on comprehensive wastewater management but will also provide a model and adaptable curriculum in enable implementation of the new processes.

The project design includes technical assistance to support replication interests in the immediate drainage area of the Balkan Region. Technical specialists working with the project will also be available to share their experience and the lessons learned under the project through joint meetings, training session and conferences organized in support of the UNDP/UNEP regional projects as part of the GEF Black Sea/Danube Partnership and GEF Mediterranean Partnership. They would also be available to assist in the identification of future project sites and activities that would most profit from the replication of the project approach. The models and modalities refined under the project, moreover, are expected to also attract additional funding and invest support by other donors.

d) STAKEHOLDER INVOLVEMENT

The preparation of this project has built upon the considerable preceding and continued involvement of the World Bank in the water and sanitation sector in the country. In each project consultation with the stakeholders and the conduct of social assessments has been a key element in project development and design. It is also the basis for monitoring the

social impact of all projects. The key objectives of this process are to: (i) ensure that key stakeholders have been identified, (ii) to involve key stakeholders in the design and preparation process, and (iii) provide for a stakeholder role in the implementation and monitoring process.

A Stakeholder Plan was prepared for the Project by the Social/Safeguard Specialist working as part of the project team and is provided in the Project Document as Annex 17. The identification of key Stakeholders began with dialogue during project identification with a variety of ministries, local administrative units, the utilities charged with providing related infrastructure services and social consultants. This has been a key element in the ownership of the project by the Government. This has been paired with consultation with the users/beneficiaries of infrastructure services, in part also to gain ownership of proposed projects but equally important in order to ensure the sustainability of investments under these projects.

Obtaining feedback on quality assurance will be the key to building a sense of local ownership of the improvements and reinforcing the willingness to pay for improved services. The approach will be to go into the local community and reinforce existing community mechanisms. As an additional benefit, the feedback activities will seek to solidify and encourage ethnic reintegration. The model will follow the Stakeholder Plan under the Urban Infrastructure and Service Delivery (UISD) Project (approved July, 2004) and will profit from the lessons learned by this ongoing project. The plan will build upon existing institutions, including the former neighborhood councils, or “mjesna zajednica”. Mjesna zajednica, translated as “local community,” is the smallest administrative unit in BiH that used to report to the municipalities on key issues and also provide some social needs at the neighborhood level.

Implementation of the Stakeholder Plan under the Project will be the responsibility of the newly established Customer Service Offices (CSO) under the utilities. This will include the formation of a user/stakeholder committee at the local level under the neighborhood councils. The stakeholders will participate in the review of any local issues and advise on the design of the community score cards to be used for monitoring user satisfaction. These cards will be periodically scored by the stakeholders with the facilitation of the CSO to show change over time. An education program on the environmental impact of sanitation and waste water treatment will also be included.

The CSO will also link to local educational and health facilities at the municipal level and, where relevant, include them as stakeholders on the committee. The objective of this comprehensive approach will be to generate a better understanding of the social and economic importance of the benefits of good environmental management by the beneficiaries as well as by local administrators. As a result both institutional and social capital will be strengthened, and the score card monitoring process will become a sustainable component of utility operations at the community level. The plan will subsequently be used as a pilot for replication at the national level.

e) MONITORING AND EVALUATION

Monitoring of the project will be the responsibility of the Client. The Client will continuously collect and analyze data to measure the performance of each component. Monitoring will enable the Client and its project team to take appropriate corrective action, if needed in project implementation to achieve expected results. Monitoring will be set on the baseline data, performance indicators of the participating utilities and direct pollution measurements verified at early implementation. The Project Management Team would collect and present data and reports from the Project Implementing Team for bi-yearly review by the Association in conjunction with the bi-yearly supervision missions. During supervision, the Project Management Team will provide feedback on the implementation and progress towards achieving the global environmental goals.

Evaluation of ongoing and/or completed sub-projects will ensure that objectives are being fulfilled and the impact and sustainability of the for the project results. The project team and the Client will jointly conduct annual progress reviews and a mid-term review to develop and implement necessary adjustments to accomplish the project indicators.

Project Indicators

The following present project indicators that will be monitored during project implementation:

Process Indicators

- Establishment of BiH interministry steering committee engaging key ministries that are involved in water sector development and environmental pollution from the municipal sources (Federal Ministries: Ministry of Environment, Ministry of Agriculture, Water Management and Forestry, Federation and RS Ministries, Vodoprievodas and donors);
- Establishment of a Joint BiH/Croatian Working group, with coordination from Serbia and Montenegro to implement the plan; and
- Development of the Water Improvement Plan for reduction of river pollution in BiH and its endorsement by the Government (in line with the Water Law under draft).

Environmental Stress Reduction Indicators

- Nutrient pollution reduction (N and P kg discharges from the municipal sources per year);
- Annual reduction of nutrients discharges (P and N kg/year);
- Average operation cost of nutrient reduction process (US\$/kg of nutrients);
- Annual reduction of BOD discharges (tons/year);
- Average operation cost of the BOD reduction (US\$/kg of BOD);
- Amount of wetland area placed into protected management.

Environment Status Indicators

- Percentage of the effluent discharged according to the national standard; and
- Increased stakeholder awareness and documented stakeholder involvement.

4. FINANCIAL MODALITY AND COST EFFECTIVENESS

The overall project has an estimated total cost of US\$ 19.87 million with GEF co-financing of US\$ 8.5 million, of which US\$ 4.15 million would be sought under the WB-GEF Investment Fund for Nutrient Reduction in the Black Sea/Danube basin (GEF Strategic Partnership for the Black Sea/Danube basin). GEF Council is requested to approve the remaining US\$ 4.35 million. Co-financing for US\$ 11.37 million is provided by Government, IDA and bilateral donors.

Co-financing Sources				
Name of Co-financier (source)	Classification	Type	Amount (US\$)	Status*
Mostar Water Supply and Sanitation (project approved)	IDA	Credit	1.0	Confirmed
Urban Infrastructure and Service Delivery	IDA	Credit	1.0	Confirmed
Bilaterals	Governments of Spain, Italy and others	Grant	5.18	1.25 (Confirmed)
Government	Local financing		4.19	Confirmed
Sub-Total Co-financing				

Co-financing from the Government of Spain is confirmed for approximately US\$1 million as part of overall program with Government of BiH. Co-financing from the Government of Italy is confirmed for US\$250,000 per numerous meetings held at the Italian Embassy, Sarajevo. Additional financing from the Italians is being sought and co-financing discussions with other donors are underway.

5. INSTITUTIONAL COORDINATION AND SUPPORT

a) CORE COMMITMENTS AND LINKAGES

The Country Assistance Strategy for BiH (Report No: 29196 – BA) stresses the importance of developing and maintaining infrastructure. The CAS confirms that only about 40 percent of the urban population has access to sewerage services. The challenges are cited to improving water pollution control and conservation of wetlands. In addition, the estimated limit on private and public external borrowing for external borrowing for investment purposes over the period constitutes a critical constraint to bridge the investment financing gap. The GEF grant project will assist to leverage funds.

The project would be integrated as part of the World Bank Mostar Water Supply and Sanitation Project (US\$12 million) and the Urban Infrastructure and Service Delivery

Project (\$20 million). The proposed project would further develop the Bank's contribution through the Mostar Water Supply and Sanitation Project, the Solid Waste Management Project and the ongoing water supply and sanitation policy and sector work that all fit within the Government's priority on environmental infrastructure.

The GEF portfolio consists of two projects currently involving the Neretva River. The Water Quality Project addresses the phased approach of wastewater and water quality and would work directly with utilities. The other project, the Integrated Ecosystem Management Project under preparation addresses wider River Basin Body Management issues working across sectors reflecting the multiple uses of the River Basin resources including agriculture, irrigation, water, environment, energy and transport. The Integrated Ecosystem project will benefit from the water pollution control which will be improved through the Water Quality project.

b) CONSULTATION, COORDINATION AND COLLABORATION BETWEEN IAS, AND IAS AND EXAS, IF APPROPRIATE.

At a higher, regional level, the Project will be proactive in furthering consultation and information sharing. This initiative will provide an action model for other projects. The project will link to both UNDP and UNEP regional projects under the Black Sea/Danube and the Mediterranean Partnerships to ensure wider replication in the two basins. The Project will support liaison with and participation in the activities organized by the respect commissions for the Mediterranean basin (MAP), the Danube Basin, and the Black Sea basin. The technical specialists responsible for the implementation of the project will serve as a resource base that can assist capacity building as well as decision making in neighboring countries. Financial resources and staff time included in the project budget and work program will cover a portion of the costs and effort for this collaboration.

c) PROJECT IMPLEMENTATION ARRANGEMENT

The project would be implemented during FY 2005-2010 under the overall responsibility of the Ministry of Agriculture, Water Management and Forestry. A Project Management Team (PMT) has been established to handle procurement and financial management aspects.

Project Implementing Teams (PITs) would be located in each Utility. The PITs would consist of a Procurement Officer and Financial Officer. The PMT would have overall responsibility for implementation, including procurement and financial management, the PITs would handle day-to-day matters. The PITs would conduct all procurement in coordination with the PMT and then submit to the PMT for clearance. Once cleared by the PMT, the procurement documents would be submitted to the Bank for clearance. The contracts should be signed only by the Utility Director, as the actual Borrower should ultimately be the one signing the contracts.

ANNEX A: INCREMENTAL COST ANALYSIS

Broad Sectoral Development Goals and the Baseline

1. Under its National Environmental Action Plan (NEAP) prepared in March 2003, the basic sectoral goals that the Government intends to achieve by 2020 are: (i) provision of sufficient quantities of high-quality water for water supply and other needs; (ii) protection of water resources and preservation of surface and ground water quality; and (iii) protection from flooding. Among the principal problems to be addressed are lack of treatment of municipal and industrial wastewaters, existence of numerous wild dumpsites, many close to water sources and watercourses; and lack of application of preventive measures. The most recent Country Assistance Strategy (CAS) Progress Report (Doc. No. xxx-BiH), dated xx stresses the important environmental issues existing at the local level, and the Poverty Reduction Strategy Paper (PRSP) for BiH places high priority on the need to address the rapid environmental degradation. BiH is also seeking to promote cooperation with surrounding countries in managing transboundary water resources.

It is a member of the International Commission of Protection of the Danube River (ICPDR) and the Danube-Black Sea Program (Dablas) as a full member of the Danube and Black Sea Conventions. In July 1996, BiH and Croatia signed an agreement to establish a framework for water management. Both countries support the Barcelona Mediterranean Convention of 1976 for the prevention of pollution of the Mediterranean, and have signed and ratified all its protocols.

2. Status of the sector: The substantial water resources of BiH provide an important economic potential, but important issues need to be addressed. Insufficient attention has been paid in the past to protection of water. This has been exacerbated by infrastructure damage caused by war activities during 1990-1995, and inadequate repair and maintenance due to the difficult financial situation of the water and wastewater utilities. Around 56% of the urban population is connected to sewerage systems. For smaller settlements, the proportion is around 10%. Maintenance is often inadequate, and the governing regulations and legislation are still not complete. Overflow from the systems occurs in the rainy season and affect 65% of the municipal centers. The problems lie not only with failure to complete the systems as originally planned but also to rectify war damage. Few wastewater treatment plants exist. Only seven cities with a population in excess of 5,000 inhabitants had treatment systems before the war. Two plants, in Sarajevo and Trnovo, are still not functioning in full capacity due to war damage. In addition, at one point there were about 120 plants for treatment of industrial wastewater. Very few are in use after the decline of industry following the war. Most wastewater (almost 90%) is released directly without treatment into the nearest rivers, streams and underground channels. Pollution of water by wild dumpsites close to water sources and watercourses has been identified as a significant problem needing attention. Major constraints to achieving a rapid improvement in the sector are institutional weaknesses, and the difficult financial state of the utilities due to low tariffs and low collections. Nutrient reduction was rarely addressed by state.

3. Baseline: In the above sectoral context, the Government's priority, within its financial constraints, has been to restore water supply to as high a proportion of the affected population as possible. The Bank has supported this through a number of operations including the immediate post-war Urgent Works Project, approved in 1996, and the Mostar Water Supply & Sanitation Project, approved in June 2000. The Bank also financed a Solid Waste Project, approved in 2002, which would help reduce the threat of pollution of potable water sources, and an Urban Infrastructure and Service Delivery Project (approved in 2004). These operations have been supplemented by a number of donor-financed projects, aimed principally at water supply restoration, and improvement in sewerage networks.

4. While environmental issues of local as well as transboundary impact are high on the Government's list, in the overall situation of its financial constraints, the Government will need to give priority to those impacting the local population. The scope of the other investments and the speed with which they are addressed will depend upon the amount of external financing that the Government will be able to secure. The Baseline therefore includes the Government's program in continuing to improve the water supply situation and sewerage networks, particularly where they pose significant health risks for the population.

Global Environmental Objective and GEF Alternative

5. Under the Baseline discussed above, the Government is unlikely to be able to allocate financial resources to address the growing pollution effects of uncontrolled and increased urban wastewater discharge which will have negative transboundary and global environmental consequences including:

- endangered marine ecosystems and habitats
- endangered coastal ecosystems
- risks and adverse impacts on biodiversity
- development of algae populations
- declining of marshlands of the global importance

6. GEF Alternative: To minimize the pollution and consequent eutrophication of the wetlands and marine areas, the alternative proposed includes investments that will significantly reduce the nutrient loads of the wastewater discharged into the Neretva and Bosna rivers. Availability of a significant GEF contribution will help leverage the financing by encouraging other donors to make substantial contributions to project financing. It is unlikely that these donor contributions will materialize in the absence of the GEF grant to support the project. The Government contribution to the project is expected of US\$ 5.19 million. Out of the total project investment of US\$ 19.87 million, an amount of about US\$ 11.37 million will therefore be additional to the proposed project (See Table 3). The investments proposed are the following:

A. Action plan for reduction of river pollution in BiH

B. High priority investments in Mostar (Mediterranean Basin), Zivinice, Trnovo and Odzag (Black Sea Basin)

C. Wetland conservation

D. Project management and monitoring

E. Replication, Information Dissemination and Implementation

7. The GEF grant will be applied to the following investments/activities which would not have been financed in the absence of the grant:

A. Action plan for reduction of river pollution in BiH (\$.450 million- GEF will cover 100%).

B. High priority investments in Mostar, Zivice, Trnovo and Odzag (GEF will cover \$6.04 million or about 36% of the total investment in these cities). Investments will cover wastewater improvements in both Neretva and Bosna river basins.

C. Wetland conservation (GEF will cover \$1.26 million or about 85%)

D. Project management, monitoring and replication (\$0.30 million)

E. Replication, Information Dissemination and Implementation (\$0.75 million and GEF will cover \$.45 million or about 53%)

8. The project investments are expected to result in the following reductions in nutrient and BOD loads:

Table 1. Quality of wastewater discharged into BiH surface waters (after project intervention)

Main parameter	Assumed sewage inlet concentration (mg/l)	Expected median of RE (%)	Expected median of outlet concentration (mg/l)
BOD	200-250	70%	60-75
N-total	50-60	25%	30-40
P-total	20-27	20%	15-20

9. Additionally: The measures under the proposed GEF alternative are additional to the Baseline. These additional actions will complement existing and planned activities. Specifically the additional activities are designed to improve international waters quality and reduction of pollution from municipal sources, wildlife management of the wetlands, restore precious habitats, and secure long-term biodiversity protection of both marine and marshland areas. Incorporation of these components into the proposed alternative will ensure the conservation of globally unique biodiversity by integrating biodiversity protection to the improvement of quality of life.

Reduction in health costs(local benefit): The poor water quality has an impact on health conditions in the local population. Reduction of sewerage discharges and resulting

improvement of water quality will have a positive health impact, although the magnitude of these benefits may not be very large since the water from the river is not generally used for direct consumption. This is because in ‘normal’ circumstances, most individuals may treat water before drinking it, if they consider it to be harmful. However, the benefits of reduced treatment cost or aversive expenditure (i.e. purchase of water filter, bottled water, etc.) may be indeed quite large, which should be included in the people’s willingness-to-pay (WTP) for the higher quality water.

Downstream population benefits. Improved water quality is expected to generate significant public benefits for the downstream municipalities and smaller communities.

10. Expected outputs and global benefits: These are the following:

- reduction in sewage pollution load, and prevention of pollution of bays and surrounding coastal areas with BOD and nutrients
- protection of endangered marshland and marine biodiversity
- restoration of marshlands currently polluted by untreated sewage and prevention of a reduction in biodiversity in the marshlands

Cost and Financing Plan

The total cost of the GEF co-financing of the alternative is estimated at US\$8.50 million detailed as follows:

Table 2: Cost of the GEF financing of the Alternative (in US\$ 000)

A. Action plan for reduction of river pollution in BiH	1,000
B. High priority investments	
Mostar (Neretva River)- Mediterranean Sea Basin	
Effluent treatment unit	2,700
Subtotal for the Mediterranean Basin	2,700
Zivinice (Spreca River)- Black Sea Basin	
Sewage treatment plant upgrade	850
Trnovo (Zeljeznica River)- Black Sea Basin	
Rehabilitation of sewage treatment plant	500
Odzag (Bosna River)- Black Sea Basin	
Rehabilitation of sewage treatment plant	2,000
Subtotal for the Black Sea Basin	3,350
C. Wetland conservation	1,460
D. Project implementation and replication	300
Contingencies	410
Total	8,500

11. Financing Plan: The GEF alternative will be financed as follows:

Table 3: Project financing plan (in US\$ 000)

<i>Component</i>	<i>GEF</i>	<i>Other donors</i>	<i>Total</i>
A. Action plan for reduction of river pollution in BiH	.45		
B. High priority investments	6.04	4,540	
C. Wetland conservation	1.28		
D. Project management	.31	170	
E. Replication	.45	110	
Total (without contingencies)		4,820	
Total including physical and price contingencies	8,500	5,180	
In percent	43%	31%	

Benefits-Global Environmental Effects

Table 4. Matrix of global environmental benefits and incremental costs (GEF component)

	Baseline	Alternative	Incremental global environmental benefit
	Implementation of two WB projects. Gradual and slow reduction of raw untreated wastewater discharge into rivers; deterioration of local environment also affecting globally important natural habitats	Improvement in water and wastewater services, including improved management of the water utilities and rehabilitation of existing water infrastructure. Improvement in wastewater collection gives large local benefits.	Protect and restore endangered coastal and marine habitats; increase of biodiversity; reduction of BOD5 and nutrient emission:
Cost (US\$ million)	15.0	35.17	20.17
Component A. Action plan for reduction of river pollution in BiH	No action	Develop pollution cadastre for the BiH surface water polluters	Help to develop affordable pollution prevention action plan and fulfill the BiH international obligations
Component B High priority investment	Discharge of raw untreated wastewater into rivers; slow rehabilitation of the wastewater treatment facilities; deterioration of local environment also affecting globally important natural habitats	Protect and restore endangered coastal and marine habitats; increase of biodiversity; reduction of BOD5 and nutrient emission: BOD5: 111,000 ton Nitrogen: 7,000 ton Phosphorus: 1,600 ton	Reduction of pollution of the globally important watercourses and seas with nutrients.
Component C. Wetland conservation	No action	Testing the fully natural wastewater treatment option for one selected town	Reduction of the nutrient pollution
Component D.	No action	Monitoring system in place	Cooperation with

	Baseline	Alternative	Incremental global environmental benefit
Project management			international agencies on monitoring
Component E. Project Implementation and replication	No action	Replication seminars and training	Replication of the BiH experience in the region

Cost-Effectiveness

Table 5. Quantities of substances reduced for years 2005 to 2029 (tons/year)

Component	Years	Wastewater production on average (m3/year)	Expected reduction of Nitrogen pollution loads (tons/year)	Expected reduction of Phosphorus pollution loads (tons/year)
Mostar	2005-2029	22,641,000	226	36
Odzak	2005-2029	1,783,000	17	4
Trnovo	2005-2029	697,000	6	2
Zivinice	2005-2029	600,000	6	2

Table 6. Total Pollution Reduction and Abatement Costs: 2005-2029

<u>Incremental effects</u>	Total	Black Sea Basin	Mediterranean Basin
BOD5 reduction (tons)	111,000	41,000	70,000
Nitrogen reduction (tons)	7,000	1,400	5,600
Total phosphorus reduction (tons)	1,600	600	1,000
<u>Abatement costs GEF</u>			
Abatement costs kg/BOD5	US\$0.10	\$0.20	\$0.07
Abatement costs kg/nutrients	US\$1.1	US\$12.78	US\$0.42
Total annual cost per inhabitant (capital cost + O&M cost)	US\$200	\$200	\$200
GEF investment cost per inhabitant	US\$34	\$27	\$48

ANNEX B: RESULTS FRAMEWORK

PDO	Outcome Indicators	Use of Outcome Information
Overall objective: develop a regional approach in pollution reduction to further improve international cooperation and reduce the pollution from municipal sources in the Bosna and Neretva Rivers	Improved water quality in regional rivers Increased regional institutional capacity	Preparation of regional rolling plan for sustainable reduction of pollution Annual project reviews during supervision Regional guidelines for project replication
Intermediate Results One per Component	Results Indicators for Each Component	Use of Results Monitoring
Component A: <i>[Action Plan]</i> Collaborative planning and data collection	Component A: Completed Wastewater Improvement Management Plan	Component A: Data collection and sharing Identification of subsequent action requirements
Component B: <i>[High-priority Investments]</i> Systemic treatment of sewage	Component B : Monitoring and comparison with baseline data on service provision	Component B: Community score Card Annual Business Plan of Utilities
Component C: [Wetlands Conservation]	Component C: Information dissemination on low cost natural treatment Public education on merits of natural treatment and overall environmental issues	Component C: Promotion and acceptance of low cost/low energy treatment. Dissemination to regions where wastewater treatment is unaffordable.
Component D: [Project Management/Monitoring] NA	Component D: Monitoring Implementation of Project Working Group Coordination	Component D: Efficient implementation of project Cooperation of Working Group to share information and water quality data
Component E: Replication, Information Sharing and Implementation	Component E: Business Plans Replication of low cost wastewater treatments	Component E: Financial viability of Utilities Successful Replication

Project Objectives and approaches for the implementation, monitoring and evaluation

Activity	Indicators Process (P), Environmental Stress Reduction (SR), Environmental Status (ES)	Achievement date expected	Use of outcome information
Establishment of the Steering Working Group	Establishment of BiH national interministry steering Working Group engaging key ministries that are involved in water sector development and environmental pollution from the municipal sources and follow up with the Water Law. (Ministry of Environment, Ministry of Agriculture, Water Management and Forestry, Vodoprievodas and donors). P-1	September 2005	Sharing information among stakeholders, clarification of the project implementation roles, endorsement of the appropriate regulation
Development of a regional working group.	Establishment of a Joint BiH/Croatian Working group, with coordination from Serbia Montenegro to coordinate activities and monitoring. P-2	Ongoing	Sharing project outcomes, replication of the project approaches and results, establishing common standards, and development of the cooperation mechanisms
Wastewater Improvement Plan	Development of the Water Improvement Plan for reduction of river pollution in BiH and its endorsement by the Government during the first years of the project implementation. P-3	January 2006	Sharing information, increasing opportunities for the international cooperation and donor funding
Wastewater standards development	Country adoption of the affordable water/ environment standards for municipally-based pollution P-4	Mid-term review	Share information on development of affordable and enforceable wastewater standards as a first step in adoption of the EU water standards
Develop and implement high-priority, low-cost water capital investments in Mostar, Zivinice, Trnovo and Odzag	Nutrient pollution reduction (N and P kg discharges from the municipal sources per year) as a result of the investment program <ul style="list-style-type: none"> • annual reduction of nutrients discharges (P and N kg/year); • average operation cost of nutrient reduction process (US\$/kg of nutrients); • annual reduction of BOD 	Though project implementation in every city	Share information within the country and the region on measurement, new approaches in wastewater treatment and monitoring procedures

	<p>discharges (tons/year);</p> <ul style="list-style-type: none"> • average operation cost of the BOD reduction (US\$/kg of BOD). <p>SR-1</p>		
Wetland conservation	<p>Feasibility study to rehabilitate, construct and maintain wetland area</p> <p>SR-2</p>	Through project implementation	To set ground for the wetland protection campaign in the region
Wastewater quality monitoring	<p>Percentage of the effluent discharged according to the national standard</p> <p>ES-1</p>	Through project implementation and beyond	Assure sustainability of investment, replication throughout the region
Disseminate information in BiH and the region for replication of project activities at other priority sites in the Balkans	<p>Increased stakeholder awareness and documented stakeholder involvement (number of meetings; number of publications)</p> <p>ES-2</p>	Through project implementation and beyond	Assure sustainability of investment, replication throughout the region

Arrangements for results monitoring

Outcome Indicators	Baseline	Target Values					Data Collection and Reporting		
		YR1	YR2	YR3	YR4	YR5	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
P-1. Establishment of BiH interministry steering Working Group		X					Once in nine months after the project effectiveness	PMT/PIT Quarterly and Annual Reports, Supervision	MWSSU/PMT
P-2 Establishment of a Joint BiH/Croatian Working group			X				Meet on bi annual basis.	PMT/PIT Quarterly and Annual Reports, Supervision	MWSSU/PMT
P-3 Water Improvement Plan				X			At mid-term review	PMT/PIT Annual Report, Supervision	MWSSU/PMT
SR-1-A Nutrient pollution reduction (N and P kg discharges from the municipal sources per year) as a result of the investment program <ul style="list-style-type: none"> • annual reduction of nutrients discharges (P and N kg/year); • average operation cost of nutrient reduction process (US\$/kg of nutrients); • annual reduction of BOD discharges (tons/year); • average operation cost of the BOD reduction (US\$/kg of BOD). 							Continuously	PMT/PIT Quarterly and Annual Reports, Supervision	MWSSU/PMT
SR-1-B Capital investments in Mostar, Zivinice, Trnovo and Odzag		X	X	X	X		Twice a Year	PMT/PIT Quarterly and Annual Reports, Supervision	MWSSU/PMT
SR-2-A Wetland conservation plan development		X					Once in nine month after the project effectiveness	PMT/PIT Quarterly and Annual Reports, Supervision	MWSSU/PMT
SR-2-B Wetland area protected territory set			X	X	X		Annually after completion of the SR-2-A	PMT/PIT Quarterly and Annual Reports, Supervision	MWSSU/PMT
ES-1 Wastewater quality monitoring							Continuously	PMT/PIT Quarterly and Annual Reports, Supervision	MWSSU/PMT
ES-2 Results dissemination			X	X	X		Once a year national or international meeting	PMT/PIT Quarterly and Annual Reports, Supervision	MWSSU/PMT

ANNEX C: RESPONSE TO PROJECT REVIEWS

a) CONVENTION SECRETARIAT COMMENTS AND IA/ExA RESPONSE

Not available at this stage.

b) STAP EXPERT REVIEW AND IA/ExA RESPONSE

RA Kenchington
RAC Marine Pty Ltd
PO Box 588, Jamison
ACT 2614, Australia

Scientific and technical soundness

The detail provided on the basis of treatment and the role of wetlands in treatment at the various locations is limited. The scientific and technical basis of reducing the level of sewage pollution contaminants flowing through to environmental waterways is sound. The project is linked with the Bank's Municipal Water and Wastewater Project and addresses the critical issue of reducing nutrient pollution resulting from untreated discharges from the cities of Mostar, Zivinice, Trnovo and Ozdag. It addresses important environmental linkages in relation to national responsibilities in connection with the Danube and Black Sea Conventions and the Barcelona Mediterranean Convention.

The proposal addresses urgent social, human health and economic needs for waste water management with the environmental benefit of halting and reversing decline of wetlands and waterways. If successful it will address an important element of the development/human health and well-being/environment linkage and should contribute to building national awareness of the importance and benefits of addressing environmental issues.

The proposal builds upon a number of sanitation, solid waste and water treatment projects conducted with Bank and other funding support. No direct environmental project linkages are listed but it is consistent with pursuit of implementation and benefits of comparable pollution reduction demonstration projects being undertaken in catchments draining into the Mediterranean, Baltic and Black Seas.

Global environment benefits and costs

Nutrient pollution of enclosed seas has been identified as an environmental issue of global significance. Major changes in the Adriatic Sea have been attributed to very high levels of eutrophication with impacts on the habitats of endangered species and biological diversity generally. If this project achieves its objectives it will have clear benefits in addressing a significant source of nutrient pollution of the Adriatic Sea from Bosnia.

The context of GEF goals and guidelines

The project clearly addresses the issues of surface water contamination within the context of environmental-poverty linkages. It should bring early benefits through improvements to public health and the living. With adequate attention to information and education it should help to generate understanding of the social and economic importance of the benefits of good environmental management.

The project is consistent with the objectives GEF Operational Programs No.2 *Coastal, Marine, and Freshwater Ecosystems*; Number 8, *“Waterbody Based Operational Program”*, which focuses “on seriously threatened water-bodies and the most important trans-boundary threats to their ecosystems”. No.9 *Integrated Land and Water Multiple Focal Area*; No.10 *Contaminated-Based* and No.12 *“Integrated Land and Water Multiple Focal Areas Operational Program”*. It applies the guidelines with respect to incremental costs and the log-frame.

Regional Context

Although Bosnia Herzegovina has a small coastline the management of wastewater within its catchments is important in the context of addressing eutrophication and other pollution related threats to the Adriatic Sea.

Replicability

This project builds on experience of projects addressing water treatment in the context of social, human health, economic and environmental benefits of waste water management. The proposal does not specifically address replication strategy but there is the implication of extending similar levels of treatment to other population centres.

Sustainability

The financial situation of the water cycle companies is a critical factor for sustainability. In the longer term, progress beyond this project to more general adoption of a complete water treatment cycle will depend on community awareness of the benefits and consequent willingness to pay the charges that can sustain the costs of operation. This in turn will depend upon demonstration to the community and continuing appreciation by decision-makers of the economic, environmental and social benefits of high quality management of water and sewage.

Contribution to future strategies and policies

As discussed above, success with this project should make an important contribution to the broader adoption of high quality water and sewage management, consequent reduction of nutrients and pollutants into environmental waterways and protection of some environmentally significant wetlands.

There is limited information on the wetlands component of the project but on the basis of the very limited budget provision there would appear to be capacity for little more than a survey to

identify remnant areas of relatively intact wetland. Given the important and multiple roles that healthy wetlands can provide in nutrient assimilation, resource production, recreation, landscape and maintenance of biodiversity and ecosystem processes there appears to be a case for enhancing the wetland component. Protection of wetland areas is important but a clearer context of their geography, upstream dilution gradients and nutrient assimilation capacity will be needed to underpin longer term conservation. Further, use of created or natural wetlands within their assimilation capacity can be an effective and important strategy in reducing nutrient levels before water flows reach aquifers or rivers. This is also important for appreciating the full range of economic values of wetland areas.

Involvement of stakeholders

The project proposal recognizes that at this stage of its development:

“Improved handling of sewage is a social priority and perceived need.”

“The majority of respondents placed sanitation and sewage treatment high on the list of community needs.”

“Respondents readily saw the impact of untreated sewage not only on their immediate but also quite distant neighbors and the global ecology.”

“Respondents also saw improved service delivery as not only important for poverty reduction, but also as a precondition for a return of economic and cultural vitality. Community members were willing to be involved in community action to support improvements in service delivery, and were willing to pay for it.”

There is no discussion of approaches to achieve this beyond:

“It is expected that consultation with beneficiaries will be on a continuous basis during project implementation through public relations campaigns conducted by the private operator under the Municipal Water and Wastewater Project.”

The proposal includes a stakeholder education campaign to connect improved service and willingness to pay. There is no provision for community or school based education to address the broader community benefits in terms of linkages of social well-being - particularly human health - and environmental components of benefits.

Risk assessments

To the extent that I can judge, being unfamiliar with the field operating situation, the risks are significant but seem to be reasonably addressed and I generally concur with the assessments.

Costs

I have insufficient operational experience in the target area to make substantial comment on the detail of funding allocations. However, as discussed above the budget for the wetland component is very small at \$100K out of \$8.58 million GEF in almost \$24.55 million total. In the light of comments above on the broader role of wetlands in water treatment I would suggest that the design team consider making provision for a more detailed and substantial wetlands component in the program.

Conclusion

This is an important project addressing the issues of sewage pollution and water quality in ways that reasonably reflect the operating constraints of the post Civil War redevelopment of urban communities of Bosnia Herzegovina. Subject to more substantial consideration of provision for the project to address the role of wetlands in the water cycle, I recommend that it should proceed.

Response from Task Team

STAP review comments confirm the scientific and technical soundness of the project concept and approach to reducing the level of sewage pollution contaminants that flow through to environmental waterways. The review also states that the project addresses important environmental linkages in relation to national responsibilities in connection with the Danube and Black Sea Conventions and the Barcelona Mediterranean Convention. If this project achieves its objectives, the task team agrees that it will have clear benefits in addressing a significant source of nutrient pollution.

The task team also agrees with the review that as the project is successfully implemented, it will address an important element of the development/human health and well-being/environment linkage and should contribute to building national awareness of the importance and benefits of addressing environmental issues.

The proposal builds upon a number of sanitation, solid waste and water treatment projects conducted with Bank and other funding support. These projects are not stand alone environmental project linkages but consistent with pursuit of implementation and benefits of comparable pollution reduction demonstration projects.

In terms of replicability, the STAP review expressed concern that the proposal did not fully provide a replication strategy. The team feels that the model provided by and the lessons learned under the project will greatly strengthen not only extending similar levels of treatment to other population centers but also strengthen regional cooperation and technical cooperation. To ensure adequate replicability, technical assistance for replication has been included in the project design to enable the replication of the project outcome in the immediate drainage area of the Balkan region. Specific linkage to GEF basin administrations and their regional projects has been clarified in the text as a major means of promoting replication.

The financial situation of the water cycle companies is a critical factor for sustainability. It is noted that the importance of financial variability of the utilities is the focus of other projects of the Bank in Bosnia, namely the Mostar Water Supply and Sanitation Project and the Urban Infrastructure and Service Delivery Project, both of which concentrate almost entirely on financial viability to cover operating and maintenance costs. Agreement was reached with the on line Ministries that it would be best to first focus on water supply (through Bank projects), reduce inefficiencies in the system and improve financial conditions before embarking on any sanitation schemes. This sequencing is the appropriate way to proceed for cost recovery and sustainable investments. In addition, the WIP will further ensure that wastewater investments are taken in a low cost and phased approach.

The Stakeholder Plan referred to in both the Executive Summary and the PAD has been attached as annex 17 to the PAD. Since it follows the model designed for the Urban Infrastructure Development Project (co financing) that is under implementation, the lessons learned will facilitate and even serve as a working base for the WQP Project. The use of existing local institutions and linking to local educational and health facilities at the municipal level is seen as both innovative and a means of building badly needed social capital. There is also the potential for creatively reinforcing ethnic reintegration at the community level. The management role of the Customer Service Office of the utilities in monitoring community impact will move the utilities into a new customer-oriented work culture. An educational component under the Plan would have the objective of generating a better understanding of the social and economic importance of the benefits of good environmental management by the beneficiaries as well as by local administrators. The campaign could subsequently be used as a pilot for replication at the national level.

The STAP review also stressed the need to increase the amount of the wetlands component. Otherwise, there would appear to be insufficient funds to go beyond conducting a survey to identify remnant areas of relatively intact wetland. Although consideration of such options is in itself innovative, given the important and multiple roles that healthy wetlands can provide in nutrient assimilation, resource production, recreation, landscape and maintenance of biodiversity and ecosystem processes, it was agreed that given the limited amount of funding available, the best option is to proceed with a feasibility study. A feasibility study will be prepared in accordance with the rules of wetland conservation on low cost natural treatment of wastewater taking into account conditions such as climatic, hydrogeological (sensitive karst area) and land management. The study will assist to demonstrate appropriate pilot investments for low cost/low energy treatment for small towns and settlements in the municipalities. In the future, if a follow up project is prepared for BiH, the wetlands component can be further increased. The pilot investments recommended by the feasibility study, moreover, can potentially attract funds from other environmental focused donors.

c) GEF SECRETARIAT AND OTHER AGENCIES' COMMENTS AND IA/EXA RESPONSE

The GEF Secretariat sought to divide the projects into 2 projects, one to fit under OP 8 as part of the Danube/Black Sea Basin Partnership and the other an OP 10 GPA demo to implement the Mediterranean SAP already produced by the nations.

Two other Neretva Basin concepts may be under development: one by WB in OP 12. A coordinated approach must be sorted out. GEFSEC participated with ECA in several meetings on the topic. A division of labor between concepts was structured in order to foster clarity and a strategic partnership was being considered by the Bank as an implementation vehicle.

It was also emphasized that inexpensive and alternative treatment systems may have widespread replicability potential if successful, both under the Barcelona Convention for the Mediterranean as well as globally.

Response from Task Team to GEFSEC comments at Pipeline Entry

It was agreed to keep the project as one but to have the Bosnia River under OP 8 as part of the Danube/Black Sea Basin Partnership the Mediterranean SAP.

Regarding coordination between the different projects, the Water Quality Project addresses the phased approach of wastewater and water quality and would work directly with utilities. The Integrated Ecosystem Management Project under preparation by ECSSD addresses wider River Basin Body Management issues working across sectors reflecting the multiple uses of the River Basin resources including agriculture, irrigation, water, environment, energy and transport. The Integrated Ecosystem project will benefit from the water pollution control which will be improved through the Water Quality project.

Since 1997, the EU has been working on a River Basin Body Management Plan based on Australia's and France's models. The EU, Ministries, sector professionals have all disagreed about how to proceed and virtually no work has taken place on the ground over the past 7 years. The task team has reviewed the work and found that it would be impossible strictly on the basis of financial sustainability to generate sufficient financing for this approach in a small country as BiH. The resources are not available to set up seven River Basin Bodies, hire new staff in these areas and pay the costs for operating and maintenance. The Integrated Ecosystem Project will address these broader issues and will support a water resources management policy and institutional framework. The two Bank task teams working on these GEFs maintain close collaboration in their respective preparation and implementation.

The project would serve to support the dialogue on pollution control issues both in BiH and in the wider Balkans region. The success of the project, specifically in improving cooperation on international waterways could further improve ongoing communication between the regional countries. This would further enhance data sharing and information exchange on origination of water polluters and monitoring and evaluation of water quality and expand this cooperation to other neighboring countries.

The project design includes TA to support replication interests in the immediate drainage area of the Balkan Region. Technical specialists working with the project will also be available to share their experience and the lessons learned under the project through joint meetings, training sessions and conferences organized in support of the UNDP/UNEP regional projects as part of the Black

Sea/Danube Program and MED SAP. They would also be available to assist in the identification of future project sites and activities that would most profit from the replication of the project approach. The models and modalities refined under the project, moreover, are expected to also attract additional funding and invest support by other donors.

Response from Task Team to GEFSEC comments at Work Program Inclusion

The GEFSEC commented that a Partnership Brief for a SAP Implementation Investment Fund for the Mediterranean with an emphasis on the Adriatic Sea will be under preparation, and this part of the project may fit under that Investment Fund. The Ministries from the respective countries are implementing the Strategic Action Program (SAP) to address pollution from land-based activities in the Mediterranean Region (SAP MED). The main objective of the MEDP SEA is to facilitate the efforts of the recipient countries of the Mediterranean Sea basin in implementing their top transboundary priority pollution reduction strategies to reverse the degradation of freshwater basins. The proposed project would assist implementing the SAP MED in BiH.

The GEFSEC requested that the proposal clarify that the part under the Danube Black Sea Investment Fund has already been approved by Council and that the other part under Med Partnership has not yet been approved by Council.

The GEFSEC requested that the proposal describe the two Partnerships; specify the linkage for communicating the lessons learned in the implementation of project components to each Partnership(including mention in the log frame); show how the project meets the eligibility criteria specified in the Partnership Briefs; and give an estimate of types of pollution to be reduced and estimate reduction. The document now describes both frameworks, explaining that the GEF Strategic Partnership for the Danube/Black Sea basins provides a common framework for addressing transboundary pollution in the basin with particular focus on nutrient reduction. Similarly, the document describes the GEF Strategic Partnership for the Mediterranean Large Marine Ecosystem that provides a framework for the basin countries under the Barcelona Convention to implement priority pollution reduction measures identified in the two SAPs for land-based pollution and for biodiversity. The linkages for sharing lessons learned have been added in the text and log frame, and the estimates of reduced pollution are part of the key indicators.

The GEFSEC requested that the project further clarify the linkages between the Water Quality Protection Project and the Integrated Ecosystem Management Project. The document clarifies that the GEF portfolio consists of two projects currently involving the Neretva River. The Water Quality Protection Project addresses the phased approach of wastewater and water quality and would work directly with utilities. The Integrated Ecosystem Management Project under preparation by ECSSD addresses wider River Basin Body Management issues working across sectors reflecting the multiple uses of the River Basin resources, including agriculture, irrigation, water, environment, energy and transport. The Integrated Ecosystem project will benefit from the water pollution control which will be improved through the Water Quality Protection Project.

The GEFSEC requested that the proposal describe in detail the project components, showing project costing for total project costs and the GEF portion. The Executive Summary has been revised and lists each component of the project and its expected outcome and the amount that is financed by the total project costs and the GEF costs.

The wording has been clarified in Annex 4 of the PAD to clarify that GEF funds will be used for pollution reduction and not pollutant discharges.

The sustainability section has been expanded to further explain that the project would assist the utilities under the project to: (i) establish commercially-oriented business type practices; and (ii) become financially self-sustaining through the preparation of yearly Business Plans. As a result of the differences in institutional capacity and financial performances in the water supply and sanitation utilities, the utilities would be grouped in two categories. Mostar and Zivinice are expected to become financially viable and cover all their operating and maintenance during project implementation. Odzak and Trnvo would also be expected to reach financial viability and cover all operation and maintenance costs, but the target for these smaller utilities would be to gradually improve their financial standing during the course of project preparation.

A Stakeholder Plan was prepared for the Project. It is provided in the PAD as Annex 17. The identification of key stakeholders began with dialogue during project identification with a variety of ministries, local administrative units, the utilities charged with providing related infrastructure services and social consultants. This has been a key element in the ownership of the project by the Government. This has been paired with consultation with the users/beneficiaries of infrastructure services, in part also to gain ownership of proposed project but equally important in order to ensure the sustainability of investments under these projects.

The project costs have been divided into components that fall under the Black Sea Danube and the Mediterranean Partnership.

The Monitoring and Evaluation Plan has been expanded to include process, environmental stress-reduction, and environmental status indicators.

ANNEX D: PROJECT COST TABLE

Project Cost - Black Sea/Danube Partnership					Project Cost - Mediterranean Partnership				
Estimated project cost					Estimated project cost				
Project Components	Local	Foreign	GEF	Total	Project Components	Local	Foreign	GEF	Total
US\$ million	US\$ million	US\$ million	US\$ million	US\$ million	US\$ million	US\$ million	US\$ million	US\$ million	US\$ million
Action Plan for reduction of river pollution in BiH					High Priority Investments - Neretva River				
a) Data collection/preparation by local consultants			0.25	0.25	a) Mostar (Neretva River)				
b) Data review, preparation of final plan and monitoring program			0.20	0.20	Phase 1 for central town area				
Subtotal	-	-	0.45	0.45	- Main sewage collector	3.35	3.55		
High Priority Investments for the Bosna River					- Sewer overflows	0.16	0.13		
c) Zivinice (Spreca River)					- Effluent treatment unit			2.50	
- Sewage treatment plant upgrade	0.85		0.84	1.69	- Engineering services: for final design	0.33	0.27		
- Engineering services: for final design	0.07	0.06		0.13	for construction supervision	0.11	0.09		
- Engineering services: for construction supervision	0.03	0.02		0.05	Subtotal	3.95	4.04	2.50	
Subtotal	0.95	0.08	0.84	1.87	Wetland Conservation				
d) Trnovo (Zeljeznica River)					Identify pilot in the Neretva basin near Capljina	0.10			
- Rehabilitation of sewage treatment plant (3)			0.70	0.70	Establish conservation pilot	0.10		1.28	
- Engineering services for construction supervision	-	0.01		0.01	Subtotal	0.20		1.28	
Subtotal	-	0.01	0.70	0.71	Replication, Information Dissemination and Implementation				
e) Odzag (Bosna River)					Replication	0.05		0.40	
- sewer rehabilitation works	0.08	0.07		0.15	Implementation/Audit	0.06	0.24		
- outfall pipeline for treated effluent	0.33	0.27		0.60	Subtotal	0.11	0.24	0.40	
- rehabilitation of sewage treatment plant incl. pumping station			1.50	1.50	Total Baseline Cost				
- Engineering services: for final design	0.07	0.05		0.12		4.26	4.28	4.18	
- Engineering services: for construction supervision	0.03	0.02		0.05	Physical Contingencies	0.21	0.21	0.15	
Subtotal	0.51	0.41	2.00	2.92	Price Contingencies	0.01	0.01	0.02	
Subtotal for component	1.46	0.50	3.54	5.50	Total Project Cost	4.48	4.50	4.35	
Project Management					in %	33.5%	33.6%	32.9%	
- Operation cost for 24 months	0.11	0.09		0.20	Combined Cost for Black Sea/Danube and Mediterranean Partnership				
- Hard / software, transport	0.06	0.05		0.11	Project Components				
Subtotal	0.17	0.14	-	0.31		Local	Foreign	GEF	Total
Total Baseline Cost	1.63	0.64	3.99	6.26		US\$ million	US\$ million	US\$ million	US\$ million
Physical Contingencies	0.08	0.03	0.15	0.26	A. Action Plan for reduction of river	-	-	0.45	
Price Contingencies	0.00	0.00	0.01	0.01	B. High Priority Investments				
Total Project Cost	1.71	0.67	4.15	6.53	a) Mostar (Neretva River)	3.95	4.04	2.50	
in %	26.0%	10.2%	63.7%	100%	c) Zivinice (Spreca River)	0.95	0.08	0.84	
					d) Trnovo (Zeljeznica River)	-	0.01	0.70	
					e) Odzag (Bosna River)	0.51	0.41	2.00	
					Subtotal for component	5.41	4.54	6.04	
					C. Wetland Conservation	0.20	-	1.28	
					D. Project Management	0.17	0.14	-	
					E. Replication, Information Dissemination	0.11	0.24	0.40	
					Total Baseline Cost	5.89	4.92	8.17	
					Physical Contingencies	0.29	0.25	0.30	
					Price Contingencies	0.01	0.01	0.03	
					Total Project Cost	6.19	5.18	8.50	
					in %	31.2%	26.1%	42.8%	

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