

Document of  
The World Bank

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Report No.: 43587-ECA

PROJECT APPRAISAL DOCUMENT  
ON A  
GLOBAL ENVIRONMENT FACILITY TRUST FUND GRANT  
IN THE AMOUNT OF US\$6.0 MILLION  
TO BOSNIA AND HERZEGOVINA  
AND  
IN THE AMOUNT OF US\$2.0 MILLION  
TO THE REPUBLIC OF CROATIA  
FOR  
NERETVA AND TREBISNJICA MANAGEMENT PROJECT

May 07, 2008

Sustainable Development Unit  
Europe and Central Asia Region

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## CURRENCY EQUIVALENTS

FISCAL YEAR  
January 1 – December 31

### ABBREVIATIONS AND ACRONYMS

ADRICOSM	Integrated Coastal Areas and River Basin Management System	GNI	Gross National Income
APL	Adjustable Program Lending	GOC	Government of Croatia
Bcm	Billion Cubic Meters	GP	Good Practice
BEEPS	Business Environment and Enterprise Performance Survey	GWP	Global Water Partnership
BiH	Bosnia and Herzegovina	Ha	Hectare
BOD	Biological Oxygen Demand	HPP	Hydropower Plant
BSAP	Biodiversity Strategic Action Plan (Croatia)	HR	Croatia
CARDS	Community Assistance for Reconstruction, Development and Stabilization	HV	<i>Hrvatske Vode</i> (Croatian Waters)
CAS	Country Assistance Strategy	IBRD	International Bank for Reconstruction and Development
CC	Coordination Committee	ICB	International Competitive Bidding
CIS	Common Implementation Strategy	ICM	Integrated Coastal Management
CFMS	Country Financial Management Strategy	IDA	International Development Association
CPPR	Country Project Portfolio Review	IF	Investment Fund
CQS	Consultants' Qualifications Selection	IFR	Interim Financial Report
DA	Designated Accounts	IMF	International Monetary Fund
EA	Environmental Assessment	ISA	International Standards on Auditing
ECA	Europe and Central Asia	ISWC	Interstate Water Committee
ECSEE	Energy Community of South East Europe	IUCN	The World Conservation Union
EIA	Environmental Impact Assessment	IW LEARN	International Waters Learning Exchange and Resource Network (of the Global Environment Facility)
EMF	Environmental Management Framework	IWRM	Integrated Water Resources Management
EMP	Environmental Management Plan	KEC	Karst Ecosystem Conservation
EU	European Union	Kg	Kilogram
FAO	Food and Agriculture Organization (UN)	Km	Kilometer
FBiH	Federation of Bosnia and Herzegovina	Km <sup>2</sup>	Square Kilometer
FBS	Fixed Budget	LCS	Least-Cost Selection
FM	Financial Management	LME	Large Marine Ecosystem
FMA	Financial Management Arrangements	M&E	Monitoring and evaluation
FMAWMF	Federation Ministry of Agriculture, Water Management and Forestry	MAFRD	Ministry of Agriculture, Fisheries and Rural Development
FMET	Federation Ministry of Environment and Tourism	MAFWM	Ministry of Agriculture, Forestry and Water Management/RS
GDP	Gross Domestic Product	MAP	Mediterranean Action Plan
GEF	Global Environment Facility	MED POL	Mediterranean Action Plan
GEF4 IW	Global Environment Facility 4 <sup>th</sup> Replenishment for the International Waters	MED TDA	Transboundary Diagnostic Analysis for the Mediterranean Sea
GIS	Global Information System	MFT	State Ministry of Finance and Treasury/BiH
		MOC	Ministry of Culture
		MOF	Ministry of Finance
		MOFTER	Ministry of Foreign Trade and Economic Relations/BiH
		MOU	Memorandum of Understanding

## FOR OFFICIAL USE ONLY

MORDFWM	Ministry of Regional Development, Forestry and Water Management	SBD	Standard Bidding Document
MSPCEE	Ministry of Spatial Planning, Civil Engineering and Environment/RS	SC	Steering Committee
NAP	National Action Plan	SEE	Southeastern Europe
NCB	National Competitive Bidding	SOE	Statement of Expenditures
CSA	National Capacity Self-Assessment	SSCA	Small Scale Community Agriculture Project
NEAP	National Environmental Action Plan	TA	Technical Assistance
NGO	Nongovernmental organization	TAG	Technical Advisory Group
NTMP	Neretva and Trebisnjica Management Project	TDA-SAP	Transboundary Diagnostic Analysis and a Strategic Action Program
NTRB	Neretva and Trebisnjica River Basin	TORs	Terms of Reference
O&M	Operation and Maintenance	TTI	Trade and Transport Integration Project
OM	Operations Manual	TWG	Technical Working Group
PAD	Project Appraisal Document	UN	United Nations
PDO	Project Development Objective	UNEP	United Nations Environment Programme
PEs	Public Enterprises	UNESCO	United Nations Educational, Scientific and Cultural Organization
PFM	Public Financial Management	UNIDO	United Nations Industrial Development Organization
PFS	Project Financial Statement	WB	World Bank
PIT	Project Implementation Team	WFD	Water Framework Directive 2000/60/EC
PIU	Project Implementation Unit	WIS	Water Information System
PMT	Project Management Team	WQPP	Water Quality Protection Project
PRSP	Poverty Reduction Strategy Paper	WSSD POI 2002	Johannesburg Political Declaration on Sustainable Development and Plan of Implementation of the World Summit on Sustainable Development
QCBS	Quality and Cost-Based Selection	WWF	World Wide Fund
RBMP	River Basin Management Plan	WWT	Wastewater Treatment
REA	Rapid Economic Assessment	WWTP	Wastewater Treatment Plant
REC	Regional Environmental Center		
REReP	Regional Environmental Reconstruction Program		
RFP	Request for Proposal		
RS	Republika Srpska		
SA	Social Assessment		
SAP	Strategic Action Plan		
SAP BIO	Strategic Action Program for the Conservation of Mediterranean Marine and Coastal Biological Diversity		
SAP MED	Strategic Action Program to Address Pollution from Land-Based Activities in the Mediterranean Region		

Vice President:	Shigeo Katsu
Country Director:	Orsalia Kalantzopoulos
Country Director:	Jane Armitage
Sector Manager:	John Kellenberg
Task Team Leader:	Usaid El-Hanbali

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EUROPE AND CENTRAL ASIA

NERETVA AND TREBISNJICA MANAGEMENT PROJECT (BOSNIA AND  
HERZEGOVINA AND THE REPUBLIC OF CROATIA)

PROJECT APPRAISAL DOCUMENT

EUROPE AND CENTRAL ASIA

ECSSD

Date: May 05, 2008	Team Leader: Usaid I. El-Hanbali
Country Director: Jane Armitage and Orsalia Kalantzopoulos	Sectors: General water, sanitation and flood protection sector (100%)
Sector Manager/Director: John Kellenberg	Themes: Water resource management (P);Pollution management and environmental health (P);Biodiversity (S);Land administration and management (S)
Project ID: P084608	Environmental screening category: Partial Assessment
Focal Area: Multi-focal area	
Lending Instrument: GEF Grant	

**Project Financing Data**

☐ Loan   ☐ Credit   ☒ Grant   ☐ Guarantee   ☐ Other:

Total Bank financing - GEF Grant (US\$m.): 8.00

**Financing Plan (US\$m)**

Source	Local	Foreign	Total
RECIPIENTS	8.45	0.00	8.45
Global Environment Facility (GEF)	8.00	0.00	8.00
Bilateral Agencies	3.92	0.00	3.92
Beneficiaries	0.50	0.00	0.50
Total:	21.27	0.00	21.27

Notes:

1. Recipients (Bosnia and Herzegovina US\$6.0 million, Croatia US\$2.0 million)
2. Bilateral Agencies include: EU CARDS, Spain, and the Netherlands.

**Recipients**

Bosnia and Herzegovina  
Ministry of Finance and Treasury  
Trg BiH 1  
71000 Sarajevo  
Republic of Croatia  
Ministry of Finance  
Katanciceva 5  
Zagreb, 10000

<b>Responsible Agency:</b> <u>BiH</u> BiH Ministry of Foreign Trade and Economic Relations Sarajevo Bosnia and Herzegovina																																																	
FBiH: Ministry of Agriculture, Water Management and Forestry Sarajevo Bosnia and Herzegovina																																																	
FBiH: Ministry of Environment and Tourism Sarajevo Bosnia and Herzegovina																																																	
RS: Ministry of Spatial Planning, Civil Engineering and Environment Banja Luka Bosnia and Herzegovina																																																	
RS: Ministry of Agriculture, Forestry and Water Management Banja Luka Bosnia and Herzegovina																																																	
<u>Croatia:</u> Ministry of Regional Development, Forestry and Water Management Ministry of Environmental Protection, Physical Planning, and Construction Ministry of Culture Zagreb, Croatia  Hrvatske Vode Ulica grada Vukovara 220 10000 Zagreb, Croatia																																																	
<table border="1"> <thead> <tr> <th colspan="10">Estimated disbursements (Bank FY/US\$m)</th> </tr> <tr> <th>FY</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>0</th> <th>0</th> <th>0</th> <th>0</th> </tr> </thead> <tbody> <tr> <td>Annual</td> <td>0.60</td> <td>2.00</td> <td>2.20</td> <td>2.00</td> <td>1.20</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td>Cumulative</td> <td>0.60</td> <td>2.60</td> <td>4.80</td> <td>6.80</td> <td>8.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> </tr> </tbody> </table>										Estimated disbursements (Bank FY/US\$m)										FY	2009	2010	2011	2012	2013	0	0	0	0	Annual	0.60	2.00	2.20	2.00	1.20	0.00	0.00	0.00	0.00	Cumulative	0.60	2.60	4.80	6.80	8.00	0.00	0.00	0.00	0.00
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Cumulative	0.60	2.60	4.80	6.80	8.00	0.00	0.00	0.00	0.00																																								
Project implementation period: Start , September 2008 End: June 30, 2013 Expected effectiveness date: September 2008 Expected closing date: December 31, 2013																																																	
Does the project depart from the CAS in content or other significant respects? [ <input type="checkbox"/> ]Yes [X] No <b>Ref. PAD A.3</b>																																																	
Does the project require any exceptions from Bank policies? [ <input type="checkbox"/> ]Yes [X] No <b>Ref. PAD D.7</b>																																																	
Have these been approved by Bank management? [ <input type="checkbox"/> ]Yes [ <input type="checkbox"/> ] No																																																	
Is approval for any policy exception sought from the Board? [ <input type="checkbox"/> ]Yes [X] No																																																	
Does the project include any critical risks rated "substantial" or "high"? [X]Yes [ <input type="checkbox"/> ] No <b>Ref. PAD C.5</b>																																																	
Does the project meet the Regional criteria for readiness for implementation? [X]Yes [ <input type="checkbox"/> ] No <b>Ref. PAD D.7</b>																																																	
Project development objective <b>Ref. PAD B.2, Technical Annex 3</b>																																																	

The development and global environmental objective of the Project is to provide mechanisms for the efficient and equitable water allocation amongst the users of the Neretva and Trebisnjica river basin (NTRB) at the transboundary level, and for enhancing the basin ecosystems and biodiversity through improved water resources management.

**Global Environment Objective *Ref. PAD B.2, Technical Annex 3***

See above, The project is consistent with the GEF operational programs: Integrated Land and Water Multiple Focal Area Operation Program, (OP#9) under the GEF International Waters Focal Area and Coastal, Marine and Freshwater Ecosystem (OP#2) under the Biodiversity Focal Area. The project is fully consistent with the eligibility criteria of the World Bank- GEF Investment Fund for the Mediterranean Sea Partnership.

**Project description *Ref. PAD B.3.a, Technical Annex 4***

The first component will strengthen the institutional capacity for the comprehensive management of the NTRB's water resources and environment through institution and capacity building; measurement, monitoring and information management and preparation of a river basin management planning.

The second component will maintain and conserve water dependent ecosystems (e.g., wetlands) and their associated biodiversity in the NTRB, according to requirements of the EU WFD through improved operation of reservoirs, hydropower plants and dams and rehabilitation of small scale water management infrastructure.

The third component will reduce water pollution to the NTRB through high priority investments in low cost, appropriate wastewater technology improvements in three municipalities (Bileca, Konjic, Ljubuski, Nevesinje and Trebinje) and two industrial sector investments (Konjic) in BiH through municipal wastewater treatment improvements, industrial pollution control and strengthening of water quality monitoring laboratories.

The fourth component will increase civil society participation in the decision making process for water resource management and to establish an incentive mechanism for responsible, local level resource management.

**Which safeguard policies are triggered, if any? *Ref. PAD D.6, Technical Annex 10***

The Project triggers the following safeguards policies: OP/BPs 4.01 on Environmental Assessment, OP/BP 4.40 on Natural Habitats, OP/BP 4.37 on Safety of Dams and OP/BP 7.50 on Projects on International Waterways. Overall, the project does not negatively impact the water quality or quantity in the Adriatic Sea and is implemented jointly by both countries. However, because of the rehabilitation nature of the activities financed, the project falls under the exception to the notification requirement under paragraph 7(a) of OP 7.50 (rehabilitation of an ongoing scheme). On this basis, an exemption to the notification of riparians was approved by the office of the ECA Regional Vice President on March 29, 2007.

Environmental Management Plans (EMPs) were prepared to address mitigation measures and monitoring activities of any negative environmental impact of the known investments, as well as

the Environmental Management Framework (EMF), that was included in the project EMP to guide further assessment of activities related to the implementation of the small grants program and the salt water intrusion pilot.

Significant, non-standard conditions, **if any**, for:  
*Ref. PAD C.7*

***Board conditions***

- None.

***Effectiveness conditions***

*For BiH*

- The MOFTER PMT, Federation PIT and RS PIT have each been established with a composition and terms of reference satisfactory to the World Bank;
- The Croatia GEF Agreement has been executed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of this Agreement) have been fulfilled;
- The Memorandum of Understanding (MOU) has been executed on terms and conditions satisfactory to the World Bank;
- A Project Agreement has been executed on behalf of the World Bank and an Entity, on terms and conditions satisfactory to the World Bank;
- For the Entity, a Subsidiary Grant Agreement has been executed on behalf of the Recipient and the Entity concerned, on terms and conditions satisfactory to the World Bank; and
- The Operational Manual (OM) has been duly adopted by the Recipient, the Republic of Croatia, the Entities and HV.

*For Croatia*

- The Croatia PIT has been established with a composition and terms of reference satisfactory to the World Bank;
- The Bosnia and Herzegovina GEF Agreement has been executed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of this Agreement) have been fulfilled;
- The Memorandum of Understanding (MOU) has been executed on terms and conditions satisfactory to the World Bank;
- The HV Project Agreement has been executed on behalf of the World Bank and HV, on terms and conditions satisfactory to the World Bank;
- The HV Subsidiary Grant Agreement has been executed on behalf of the Recipient and HV, on terms and conditions satisfactory to the World Bank; and
- The Operational Manual (OM) has been duly adopted by the Recipient, Bosnia and Herzegovina, HV, the Federation and Republika Srpska.

## ***Implementation Covenants***

### ***For BiH***

- BiH shall maintain the ISWC, the CC, the TA and the MOFTER PMT, and shall cause the Entities to maintain, respectively, the Federation PIT and the RS PIT at all times during Project implementation, with terms of reference and resources satisfactory to the World Bank, and with competent staff in adequate numbers;
- BiH through the ISWC, CC, TA, MOFTER and the MOFTER PMT shall, and shall cause the Entities, through, respectively, the Federation MAWMF, the Federation MET, the Agency for Watershed of the Adriatic Sea, the Federation PIT, the RS MAFWM, the RS MSPCEE, the Republika Srpska Water Directorate and the RS PIT to:
  - duly perform all obligations under the Operational Manual, the EMP, the EMF and the MOU in a timely manner and in accordance with their respective terms, and apply and implement, as the case may be, the actions, criteria, policies, procedures and arrangements therein set forth; and
  - not amend or waive, or permit to be amended or waived the Operational Manual, the EMP, the EMF or the MOU or any provisions of any one thereof, except with the prior written approval of the World Bank.
- BiH shall cause the Entities, through the Waste Water Utilities, not later than November 30 of each year, during the implementation of the Project, each to submit to the World Bank an Annual Business Plan for the following calendar year, and shall agree with the World Bank on activities to be undertaken under the Project in the following year and the related budget.
- BiH shall, through the MOFTER PMT, and shall cause the Entities, through the Federation PIT and the RS PIT respectively to: (i) to duly perform all obligations under this Agreement, the respective Subsidiary Grant Agreements and Project Agreements, as the case may be, in accordance with the river basin management plan to be prepared under Part 1.A(iii) of the Project and acceptable to the World Bank; and (ii) in the event that said plan is amended or waived, ensure that any such amendment or waiver is acceptable to the World Bank.

### ***For Croatia***

- Croatia shall maintain the ISWC, the CC and the TA, and shall cause HV to maintain the Croatia PIT at all times during Project implementation, with terms of reference and resources satisfactory to the World Bank, and with competent staff in adequate numbers.
- Croatia, through the ISWC, CC and TA, shall, and shall cause HV, through the Croatia PIT to:
  - duly perform all obligations under the Operational Manual, the EMP, the EMF and the MOU in a timely manner and in accordance with their respective terms,

and apply and implement, as the case may be, the actions, criteria, policies, procedures and arrangements therein set forth; and

- not amend or waive, or permit to be amended or waived the Operational Manual, the EMP, the EMF or the MOU or any provisions of any one thereof, except with the prior written approval of the World Bank.

- Croatia shall, and shall cause HV, through the Croatia PIT to: (i) duly perform all obligations under this Agreement, the HV Project Agreement and the HV Subsidiary Grant Agreement, as the case may be, in accordance with the river basin management plan to be prepared under Part A (iii) of the Project and acceptable to the World Bank; and (ii) in the event that said plan is amended or waived, ensure that any such amendment or waiver is acceptable to the World Bank.

*For BiH and Croatia*

- The Recipients shall cause, respectively, the Entities and HV to make grants to Beneficiaries under the Small Grants Program in accordance with eligibility criteria and procedures set forth in the Operational Manual, and acceptable to the World Bank, which shall include, *inter alia*, the following: grants made under the Small Grants Program shall be selected, appraised, implemented and evaluated in accordance with the principles and procedures set forth in the Operational Manual, the Procurement Guidelines, the EMP and the EMF. The Recipients shall cause, respectively, the Entities and HV to make grants under the Small Grants Program under a Small Grants Program Grant Agreement with the respective Beneficiary on terms and conditions approved by the World Bank.

***Withdrawal Conditions and Withdrawal Period***

For BiH, no withdrawal shall be made:

- For expenditures under Categories 2, 3, 4 and 5 in the table in Part A.2, Section IV of Schedule 2 to this Agreement, unless:
  - A Project Agreement between the World Bank and the Federation has been executed on terms and conditions satisfactory to the World Bank;
  - A Subsidiary Grant Agreement between the Recipient and the Federation has been executed on terms and conditions satisfactory to the World Bank; and
  - An opinion has been furnished to the World Bank stating that the Federation Project Agreement and the Federation Subsidiary Grant Agreement have been duly authorized or ratified by the Federation and the Recipient, as the case may be, and are legally binding upon them in accordance with their respective terms;or

- For expenditures under Categories 6, 7, 8 and 9 in the table in Part A.2, Section IV of Schedule 2 to this Agreement, unless:
  - A Project Agreement between the World Bank and the Republika Srpska has been executed on terms and conditions satisfactory to the World Bank;
  - A Subsidiary Grant Agreement between the Recipient and the Republika Srpska has been executed, on terms and conditions satisfactory to the World Bank; and
  - An opinion has been furnished to the World Bank stating that the RS Project Agreement and the RS Subsidiary Grant Agreement have been duly authorized or ratified by the RS and the Recipient, as the case may be, and are legally binding upon them in accordance with their respective terms.





**BOSNIA AND HERZEGOVINA  
REPUBLIC OF CROATIA  
NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

**CONTENTS**

	<b>Page</b>
<b>A. STRATEGIC CONTEXT AND RATIONALE.....</b>	<b>1</b>
1. Country and sector issues .....	1
2. Rationale for Bank involvement.....	4
3. Higher level objectives to which the project contributes .....	5
<b>B. PROJECT DESCRIPTION.....</b>	<b>7</b>
1. Lending instrument.....	7
2. Program objective and phases .....	7
3. Project development objectives and key indicators.....	7
4. Project components.....	8
5. Lessons learned and reflected in the project design .....	9
6. Alternatives considered and reasons for rejection.....	10
<b>C. IMPLEMENTATION .....</b>	<b>10</b>
1. Partnership arrangements .....	10
2. Institutional and implementation arrangements .....	11
3. Monitoring and evaluation of outcomes/results .....	13
4. Sustainability and Replicability .....	13
5. Critical risks and possible controversial aspects .....	14
6. Grant conditions and covenants.....	15
<b>D. APPRAISAL SUMMARY .....</b>	<b>18</b>
1. Economic and financial analyses.....	18
2. Technical .....	19
3. Fiduciary .....	19
4. Social .....	20
5. Environmental .....	21
6. Safeguard policies.....	21
7. Policy Exceptions and Readiness .....	22

<b>Annex 1: Country and Sector Background.....</b>	<b>23</b>
<b>Annex 2: Major Related Projects Financed by the Bank and/or Other Agencies.....</b>	<b>32</b>
<b>Annex 3: Results Framework and Monitoring.....</b>	<b>34</b>
<b>Annex 4: Detailed Project Description .....</b>	<b>39</b>
<b>Annex 5: Project Costs .....</b>	<b>48</b>
<b>Annex 6: Implementation Arrangements.....</b>	<b>49</b>
<b>Annex 7: Financial Management and Disbursement Arrangements .....</b>	<b>53</b>
<b>Annex 8: Procurement .....</b>	<b>62</b>
<b>Annex 9: Economic and Financial Analysis.....</b>	<b>75</b>
<b>Annex 10: Safeguard Policy Issues.....</b>	<b>81</b>
<b>Annex 11: Project Preparation and Supervision.....</b>	<b>87</b>
<b>Annex 12: Documents in the Project File .....</b>	<b>88</b>
<b>Annex 13: Statement of Loans and Credits.....</b>	<b>89</b>
<b>Annex 14a: Country at a Glance .....</b>	<b>92</b>
<b>Annex 14b: Country at a Glance.....</b>	<b>95</b>
<b>Annex 15: Incremental Cost Analysis.....</b>	<b>98</b>
<b>Annex 16: STAP Roster Review.....</b>	<b>105</b>
<b>Annex 17: Map IBRD # 35303.....</b>	<b>114</b>

## A. STRATEGIC CONTEXT AND RATIONALE

### 1. Country and sector issues

Bosnia and Herzegovina and Croatia, former republics of Federal Republic of Yugoslavia, are situated in Southeastern Europe (SEE) in the central part of the Balkan Peninsula. Croatia is classified as an upper-middle-income country, with a per capita gross national income (GNI) of US\$8,060. In 2005, Croatia received approval to begin talks for accession to the European Union, which the country hopes to join by 2011. To meet these objectives, Croatia needs to implement reforms that will improve the investment climate, boost private sector activity, and increase economic competitiveness, both in the European Union (EU) market and globally.

Bosnia and Herzegovina (BiH), on the other hand, is classified as a lower-middle-income country, with a per capita GNI of US\$2,440. In 1995, the Dayton Peace Agreements ended the conflicts following the dissolution of Yugoslavia and created two entities within BiH—the Federation of BiH (FBiH) and the Republika Srpska (RS), each with its own government and body of law. Since 1995, BiH's economy has undergone impressive recovery, with gross domestic product (GDP) growth of 11.3 percent in 2006. Yet major challenges remain. The war caused extensive destruction of physical capital and a huge loss of output. Real GDP plummeted by 80 percent, and over 2 million people—nearly half of the prewar population—became refugees, either abroad or internally. General government spending remains high at over 47 percent of GDP, and the current account deficit is still outsized at 12 percent of GDP.

*Significance of the Neretva and Trebisnjica River Basin (NTRB):* The NTRB is a transboundary basin between BiH and Croatia that covers approximately 10,000 square kilometers (km<sup>2</sup>). The Neretva River (220 kilometers [km]) originates in BiH, and its last 20 km flows through Croatia before entering the Adriatic Sea. The Trebisnjica River (99 km) is located mostly in BiH and is hydraulically and naturally partially linked to the Neretva River, being part of the same karstic hydrogeological basin.<sup>1</sup> Taken together, these two rivers constitute most of the Adriatic watershed of BiH and part of the Adriatic watershed of Croatia. Both rivers are crucial for transport, recreation, fisheries, and fishing. They are also used for drinking water, irrigation, and energy production.

The entire valley and delta of the lower Neretva River from Mostar municipality (in FBiH) to the river's mouth (in Croatia) contain the largest and most valuable remnants of the natural Mediterranean wetlands in the Eastern Adriatic coast, as evidenced by its designation as a Ramsar Wetlands site. The wetlands serve a number of functions important to water resource management including water purification, nutrient reduction, sedimentation sink, flood management, and prevention of shoreline erosion. They also provide critical habitats and support local economic activities.

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<sup>1</sup> The term “karst” or “karstic” may be broadly defined as all landforms that are produced primarily by the dissolution of rocks, mainly limestone and dolomite.

*Key Issues, Root Causes, and Threats:* During project preparation, a transboundary environmental analysis was conducted to assess land and water management, biodiversity, and the social and economic conditions in the NTRB. It identified the following environmental areas relating to NTRB water resources that need improvement: Industrial and municipal wastewater management and treatment, deteriorating agriculture, Environmental flows and Water quality, Protection of sensitive areas, River regulation, and Cooperation among stakeholders on addressing the conflicting and competing needs for water in the basin.

This has led to degradation and loss of wetlands and their associated habitats and biodiversity, causing problems such as salt intrusion, especially in the Neretva Delta, and erosion of riverbeds and land. It is of critical importance to coordinate the operation of the infrastructure on the rivers of Neretva and Trebisnjica, such as hydroelectric power plants and accompanying reservoirs, to prevent potential negative effects on the environment and ecosystem activities.

*Social and Economic Issues:* The NTRB water resources, and the ecosystems dependent upon them, play an important part in the economies of both countries and in the livelihoods of over 430,000 people (approximately 35,000 in Croatia, 87,000 in RS, and 308,000 in FBiH). While in the prewar period significant industrial production capacities were located within the NTRB, most of this activity ceased after the conflicts and transition. Currently, 40 percent of the 100,000 skilled labor force is engaged in agricultural activities, with the remaining workers employed by municipal authorities and public enterprises. Due to problems caused by the sea (such as saltwater intrusion) in Neretva Delta, accumulation of salt in the soil results in its degradation, which in turn results in lower crop yields (below potential yields).

More than half of all employment is located in two municipalities in BiH: Mostar (FBiH) and Trebinje (RS). There are high levels of poverty and unemployment (ranging from 26 to 46 percent basin-wide), with the highest levels in the upper and middle watershed areas of the NTRB located in BiH. The Dubrovnik-Neretva County GDP per capita was 6 percent below the national level of USD8,754 in 2005, which made it ranked the fourth out of 21 counties in Croatia. The county had a positive migration as well as positive natural growth of population due to improved living standard. The unemployment rate at around 17 percent remains higher than the national average.

*Biodiversity Issues and Water Resources:* Pressures on water resources and their associated ecosystems are related and include: conversion of wetlands and other critical natural habitats to agricultural land; illegal land possession/construction in sensitive and/or protected areas; excessive illegal hunting and fishing in the wetlands; unsustainable agricultural practices including overuse of pesticides and lack of crop rotation; interference with the hydrological regime of the NTRB for agricultural, municipal, industrial, and hydropower use of water; inadequate flood control; point water pollution (for example, municipal and industrial wastewaters, solid waste dump sites) and non-point water pollution (agricultural); and lack of public awareness and involvement. While these pressures represent competing water demands by users, characteristic of

many river basins, in the case of the NTRB an additional problem is caused by demands for water resources that are not balanced through any comprehensive and coordinated strategy. The cumulative negative impacts of these pressures include a documented loss of habitat and biodiversity, land degradation and reduced agricultural productivity, sedimentation and erosion leading to reduced efficiency of reservoir operations, salinization, and saltwater intrusion.

The NTRB region covers three globally significant ecosystems identified by WWF's Global 2000 program and adopted by the Biodiversity Strategy for the Bank's ECA Region: (i) the European-Mediterranean Montane Mixed Forests; (ii) Mediterranean Forests, Woodlands and Scrubs; and (iii) Balkan Rivers and Streams. These also include the Mediterranean Sea and the Karst ecosystem. More details on the ecosystem in the two countries are given in Annex 1.

*Government Strategy:* In the process of the EU accession, both governments'/entities' strategies in the water sector are driven by conditions and requirements that have to be fulfilled through a number of directives and regulations, most significantly the Water Framework Directive (WFD). The individual country's water sector strategies are in different stages of development and their capacity to meet the WFD varies (see Annex 1). Both governments'/entities' strategies began with reforming water legislation in order to bring their water sector legal framework into harmony with the EU WFD.

In BiH the two Water Laws in BiH entities have been revised to be in line with the WFD; in addition, they were adopted in each entity, and approved by their respective parliaments in 2006. In FBiH, the water authority is the Agency Watershed, and in RS it is the Republika Srpska Water Directorate.

In Croatia, the Croatian Water Act has been partially aligned with the WFD, and full approximation of water legislation is expected by the end of 2008. The Ministry of Regional Development, Forestry and Water Management has jurisdiction over water policy and the *Hrvatske Vode* (Croatian Waters) has jurisdiction over water management.

In January 2006, Croatia launched an irrigation and water management strategy relevant to the NTMP project, through the National Irrigation and Agricultural Land and Water Management Project. The strategy aims at a systematic upgrade and/or development of the agricultural infrastructure, consolidation of agricultural lands, and implementation of state-of-the-art irrigation technologies. The Neretva Delta is one of the selected priority areas of the aforementioned project.

Transboundary cooperation is based on an agreement regulating water management relations between BiH and Croatia, signed on July 11, 1996, to regulate transboundary cooperation. The treaty notes that it is in the two countries' mutual interest to initiate necessary activities and measures to resolve water management matters, and established a joint Interstate Water Commission (ISWC) composed of six members, three from BiH and three from Croatia, who are key water management authorities in their respective countries. Under its mandate, the ISWC has two main subcommissions, one for each of

the basins (Black Sea and Adriatic). Currently, the ISWC is the key bilateral mechanism for transboundary cooperation in the NTRB. The ISWC has played a significant role in final preparation of the project and will be strengthened by the project.

## **2. Rationale for Bank involvement**

The “Neretva and Trebisnjica Management Project” is the first project to receive financing from the World Bank-Global Environment Facility (GEF) Investment Fund for the Mediterranean Sea Large Marine Ecosystem (LME) Partnership.<sup>2</sup>

The main objective of the Bank-GEF Investment Fund for the Mediterranean Sea Partnership is to assist the recipient countries of the Mediterranean Sea basin in implementing their top priority pollution reduction and habitat protection measures and to contribute to reversing the degradation of the Mediterranean LME and its coastal areas. The Investment Fund would primarily finance investments that support pollution reduction and other conservation targets agreed by the basin countries under the Strategic Action Program to Address Pollution from Land-Based Activities in the Mediterranean Region (SAP MED) and the Strategic Action Program for the Conservation of Mediterranean Marine and Coastal Biological Diversity (SAP BIO), including domestic and industrial wastewater treatment. The targets include: wetland restoration and/or construction, improved management of watershed and aquifers for habitat conservation and pollution reduction, and protection of endangered natural habitats and sensitive areas.

In the case of the NTMP, the rationale for World Bank involvement rests on its presence and experience in the water sector through a number of projects under implementation and preparation, including the ones financed by GEF. The NTMP will complete, complement, and harmonize these initiatives by providing both the overall environmental context and a transboundary dimension.

In BiH, the project was designed in coordination with the BiH GEF Water Quality Protection Project (WQPP), 2004, which finances a wastewater strategy for the BiH part of the Neretva River. The NTMP would also benefit the ongoing Energy Community of South East Europe (ECSEE), the Electric Power Reconstruction 3 Project in BiH, which will finance repairs to dams within the NTRB. In Croatia, the project has direct linkages to three World Bank projects: the Karst Ecosystem Conservation Project (financed by GEF), the Coastal Cities Water Pollution Control Project, and the Trade and Transport Integration Project (TTI). The project team will closely coordinate with the TTI project implementation team, since TTI project investments are mainly in Place Port situated just north of the Neretva Delta.

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<sup>2</sup> The GEF Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem follows the model established by the GEF Strategic Partnership for the Black Sea and Danube basins, which has been under implementation for seven years and has been very successful in helping the basin countries address the major causes of transboundary water pollution. The Partnership and its two elements—the World Bank-implemented Investment Fund and the UNEP-implemented Regional Technical Assistance Project—are described in the Framework document approved by the GEF Council in August 2006.

### **3. Higher level objectives to which the project contributes**

Improved water resource management and biodiversity conservation have been identified by both countries as key environmental issues in their National Environmental Action Plans (NEAPs).<sup>3</sup> The two National Action Plans (NAPs) for SAP MED implementation that were prepared by BiH and Croatia in 2005 are concentrated on the coastal areas and define the priority pollution reduction investments, focusing on nutrients and urban wastewater throughout the NTRB.

The BiH CAS and the BiH Poverty Reduction Strategy Paper (PRSP) stress the importance of improved water resource management for, respectively, sustainable growth and as a key environmental priority. The Croatia CAS stresses the importance of water for further development of Croatia, and the Croatia Biodiversity Strategic Action Plan (BSAP 2000) identifies the Neretva Delta wetlands as the most threatened ecosystem in the country. BiH and Croatia have jointly identified protection of the Neretva Delta and improved transboundary and river-basin-level management of the Neretva River as priority actions through the Regional Environmental Reconstruction Program (RERP) of the Southeast Europe (SEE) Stability Pact. The project will pilot a scheme to mitigate saltwater intrusion into the Neretva Delta and reduce pollutants from agriculture into the Neretva River.

#### *Consistency with the GEF Strategic Priorities and Programs and with the Bank-GEF Investment Fund for the Mediterranean Sea Partnership*

The project is consistent with the GEF operational programs: the Integrated Land and Water Multiple Focal Area Operation Program (OP#9), under the GEF International Waters Focal Area, and the Coastal, Marine and Freshwater Ecosystem Program (OP#2) under the Biodiversity Focal Area.

The project is fully consistent with the eligibility criteria of the World Bank-GEF Investment Fund for the Mediterranean Sea Partnership, as described in Table 1. The project supports the GEF-3 Strategic Priorities IW-1 Catalyze resources for implementation of SAP priority reforms and stress reduction measures and B-2 (Mainstreaming biodiversity in productive land/seascape).

The NTMP also conforms to the IW Strategic Objectives and Strategic Programming for GEF-4. The NTMP fully support the achievement of the IW Strategic Objective 2 that calls for “a catalytic role in addressing transboundary water concerns by assisting countries to utilize the full range of technical assistance, economic, financial, regulatory and institutional reforms that are needed”.

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<sup>3</sup> NEAPs were approved in BiH in 2003 and in Croatia in 2001.

**Table 1: Consistency with the Project Eligibility Criteria of the Investment Fund**

Eligibility Criteria of the Investment Fund	Elements of Consistency with the NTMP Project
<b>The project focuses on hotspots and sensitive areas and responds to priorities identified by the Mediterranean Sea TDA and SAP BIO and SAP MED.</b>	Both the 2005 TDA and SAP MED identify the lower Neretva with the Hutovo Blato wetland, and the delta of the Neretva River as unique ecosystems of priority relevance within the context of the Mediterranean-Adriatic Seas.
<b>The project responds to the priorities identified in the National Action Plan or equivalent strategic documents endorsed by the requesting county.</b>	SAP MED indicates as priorities the “transboundary management plan for the Lower Neretva Valley” and the treatment of “domestic and industrial waste” in the NTRB. These priorities are incorporated into the NAPs of both Croatia and BiH. The project will provide mechanism to improve the joint management of the Basin surface and groundwater, with focus on the delta and coastal areas, developing measures to protect and rehabilitate ecosystem integrity, and will implement the following specific N/P reduction activities identified in the NAPs: (a) wastewater treatment improvements in Bileca, Konjic, Ljubuski, Trebinje, and Nevesinje municipalities; (b) Industrial Pollution Control in Konjic including by the “SurTec Eurosjaj” and “Unisgal” companies.
<b>The project has secured adequate co-financing for non-incremental components.</b>	The GEF contribution represents 38% of the total project cost, which includes substantial contributions in cash and kind from the countries and bilateral donors.
<b>The project adheres to the principles of the GEF International Waters Strategies, Operational Programs, and Strategic Priorities and is formally endorsed by the country’s GEF Focal Point(s).</b>	The project fully conforms to GEF4 IW Strategic Objectives and Programs and has been endorsed by the GEF Operational Focal Points.
<b>The project includes piloting and testing alternative methodologies and approaches that are innovative in the country context.</b>	The project includes a pilot project to demonstrate responses to salinity and methods to reduce irrigation water use and contribution to salinization. In addition, the project will finance a feasibility study of technical alternatives to remediate saltwater intrusion. Several types of proposed hydraulic structures will be examined and the optimal solution will be proposed. This would potentially result in not only innovative approaches but also eminently transferable approaches to addressing this serious problem.
<b>The project can demonstrate on-the-ground impact and includes provisions and adequate financial resources for monitoring and evaluation activities, and specific indicators consistent with International Waters and Biodiversity frameworks.</b>	It is expected that the project will produce measurable impacts in terms of nutrient releases reduction, of control of saline intrusion in the delta, and of increased environmental flows. Specific stress reduction indicators have been identified and will be monitored during project implementation (see Component 1, and Annex 3).
<b>The project demonstrates high potential for replication within the country and the Mediterranean basin.</b>	Two aspects of the project, namely the focus on coastal karstic hydrology and the methods to control saline intrusion along the coastal region, will represent replicable experiences to be disseminated among Adriatic coastal communities, and more broadly throughout the Mediterranean. The project will cooperate with the UNEP Regional Component of the Partnership to enhance awareness and replication.



<b>The requesting country commits to the policy, legal, and institutional reforms related to transboundary pollution reduction and coastal-marine ecosystem conservation supported by the project.</b>	Both countries are fully committed to SAP objectives, to the goals set by the Barcelona Convention and its Protocols, and to the principles of the EU Water Framework Directive.
<b>The requesting country(ies) is up-to-date on contributions to the Barcelona Convention.</b>	Yes.

The NTMP project can be categorized as a “type 3” project, having a principal focus on improving flows to protect coastal and marine habitats by establishing joint integrated management of this transboundary watershed. The project also presents relevant elements of “types 1 and 2” projects, in particular its components on point source nutrient pollution reduction, and on reversing coastal aquifer salinization.

The NTMP also conforms to the International Waters (IW) Strategic Objectives and Strategic Programming for GEF-4. The NTMP fully supports the achievement of the IW Strategic Objective 2 that calls for “a catalytic role in addressing transboundary water concerns by assisting countries to utilize the full range of technical assistance, economic, financial, regulatory and institutional reforms that are needed.” The NTMP project also conforms with the Strategic Programs 2 and 3 of the IW focal area.

## **B. PROJECT DESCRIPTION**

### **1. Lending instrument**

The lending instrument consists of two GEF separate grants totaling US\$8.0 million. One GEF grant of US\$6.0 million will be given to the state government of BiH through the Ministry of Finance and Treasury. The other grant of US\$2.0 million will be given to the Government of Croatia through the Ministry of Finance. The project includes contributions of US\$4.53 million from BiH, and US\$4.32<sup>4</sup> million from Croatia, as well as beneficiaries’ contributions of US\$0.50 million, thus the project total cost would be US\$17.35 million. In addition, the project has a parallel financing from other donors, amounting to US\$3.93 million, making the total project cost including the parallel financing of US\$21.27 million (see Annex 5).

### **2. Program objective and phases**

Not applicable.

### **3. Project development objectives and key indicators**

The development and global environmental objective of the project is to provide mechanisms for the efficient and equitable water allocation among the users of the NTRB at the transboundary level, and for enhancing the basin ecosystems and biodiversity through improved water resource management.

<sup>4</sup> This amount also includes the government contribution for the Coastal Cities Pollution Control Project, but it does not constitute additional commitment under this project.

*Key indicators:*

a. Process indicators: Increased interstate cooperation and capacity for transboundary water resource management, and application of Integrated Water Resources Management (IWRM) principles.

b. Stress-reduction indicators: Reduction of water nutrients and other pollution from municipal and industrial sources in selected municipalities in the basin, improved maintenance of environmental flows and improve ecosystem health and biodiversity in the basin, and reduction of saltwater intrusion as a result of implementation of a Pilot Scheme in Neretva Delta.

#### **4. Project components**

**Component 1: Improved Transboundary Water Resource Management (US\$2.65 million of which GEF US\$2.01 million).** The objective of this component is to improve water resource management capacity in both countries and to strengthen the existing transboundary mechanisms (institutional, technical, and regulatory) and tools for effective water resource management. The component would support both national and interstate institutions for transboundary river basin management and transboundary management tools including basin-wide measurements, monitoring, modeling, and a database management system, and would support training and capacity building.

**Component 2: Improved Management and Use of Wetlands Ecosystems and Biodiversity (US\$3.09 million of which GEF US\$2.25 million).** The objective of this component is to maintain and conserve water-dependent ecosystems and their associated biodiversity in the coastal area of the NTRB, which has been identified in the MED TDA and SAPs as critical for the health of the Adriatic-Mediterranean ecosystem. This component will finance water infrastructure improvements in both countries, including improved wetlands management and a pilot scheme to address saline water intrusion in Neretva Delta in Croatia; and rehabilitation of small-scale water management infrastructures, such as gates, weirs, river banks, and irrigation structures in the two countries. In addition, since maintaining environmental flow requirements in the river is key to the integrity of the ecosystems, this component will also finance improvements to hydropower plant (HPP) operations to accomplish this objective. This activity would be also linked and would contribute to the development of the NTRB IWRM plan. This project also supports a flood control management intervention by improving dam safety equipment of one dam in RS in the NTRB.

**Component 3: High-Priority Investments for Water Pollution Control (US\$9.10 million of which GEF US\$2.46 million).** The objective of this component is to reduce water pollution, mainly nutrients, of the NTRB through high-priority investments by low-cost, appropriate wastewater technology improvements in three municipalities, and small improvements of wastewater collection and treatment infrastructure in two other municipalities and one industrial sector in BiH. Each selected site discharges wastewater into a particularly environmentally sensitive area of the NTRB. The municipalities and local industry will contribute a 50 percent of the investment costs. The project will also

finance capacity building for monitoring and enforcement of industrial wastewater effluents by developing effluent standards and enforcements guidelines, and training.

**Component 4: Public Participation and Management of Project Implementation (US\$2.51 million of which GEF US\$1.28 million).** The objectives of this component are to increase civil society participation in the decision-making process for water resource management and to establish an incentive mechanism for responsible, local-level resource management, and to manage project implementation activities. This component includes scientific community involvement; civil society participation including a small grant program; development and maintenance of a website and participation in relevant IW LEARN events; participation in relevant activities of the Regional Component (UNEP) of the Mediterranean Strategic Partnership; and monitoring of projects indicators and evaluation activities.

For a detailed project description, including rationale for site selection, the financing plans, and technical details of investments and cost estimates, see Annex 4 and Annex 5.

## **5. Lessons learned and reflected in the project design**

Lessons learned from the region, the two countries, and from the broader GEF international waters project portfolio were drawn upon and considered in preparing the project documents. Key lessons include:

For transboundary projects, it is particularly important that all stakeholders be involved early in the project concept design, specifically local communities and influential decision makers. The project was designed using a combination of participatory local level, national level, and transboundary workshops. Decision makers were convened into a joint technical working group that provided the technical oversight of the project. Consistent and accurate data and information are needed to make successful and sound judgments on water management issues. The project finances establishment of new data collection and information management systems that are harmonized and coordinated across boundaries.

Commitment of local communities to invest is critical for investment sustainability. As such, a participatory approach has been built into the project design.

The longer duration of the project allows for personal relations and trust to develop, and that can facilitate transboundary cooperation and consensus-building. The project is designed to last five years, which should be sufficient to develop such relations. The project preparations have been longer than average to encourage consensus-building across borders. Now that the interstate relationships are established, cooperation is expected to continuously improve.

In BiH the integration of the Project Management Units within their respective ministries or agencies would maximize the opportunity for institution building and training. Thus, the project implementation team will be within MOFTER. Also, there is a need to monitor and document the level of achievement of development objectives during project

implementation. Thus, the project design includes a set of indicators to monitor the development objectives.

## **6. Alternatives considered and reasons for rejection**

During project preparation the following alternatives were considered:

- Limiting the geographic and political scope of the project by including only BiH, where 90 percent of the watershed is located; or including FBiH and Croatia, where the Neretva River lies, while excluding the Trebisnjica River Basin, mostly located within RS.
- Focusing the project only on water resource management, without taking into consideration the environmental perspective, that is, the biodiversity conservation and wetlands protection.
- Inclusion of more ecosystems than wetlands.

The fact that the Neretva and Trebisnjica Rivers are hydraulically partially linked (due to karst) and have significant mutual hydrologic and environmental impacts, led to the conclusion that both rivers should be included in the project. Although only 10 percent of the NTRB is in Croatia, the ecosystem of global significance, the Neretva Delta, is primarily located within Croatia, thus explaining the inclusion of Croatia in the project. Furthermore, no river basin management plan can be considered comprehensive without the inclusion of the downstream user, and in this case it is Croatia.

Also, since the project is financed by the Investment Fund (IF), the project design should be in line with the IF objectives and assist the recipient countries of the Mediterranean Sea basin in implementing their top priority pollution reduction and habitat protection measures and contribute to reversing the degradation of the Mediterranean LME and its coastal areas.

The project is considered to be already complex mainly because of the implementation arrangements (two countries and two entities in BiH), thus the inclusion of more watershed management issues and maintenance of the various ecosystems in a river basin were judged to be overly ambitious and were not included in the project. It is expected that the river basin management plan will lay the groundwork for addressing these larger issues. The focus on wetlands reflects their relative importance in the maintenance of water quality and management of flows.

## **C. IMPLEMENTATION**

### **1. Partnership arrangements**

Partnerships were improved during project preparations, and they will continue throughout the implementation. They include partnerships: (a) between the country and entity-level Ministries of Agriculture, Water Management and Forestry and the Ministries in charge of Environment and Nature Protection; (b) between additional ministries with implementation responsibility including the Ministry of Energy; and (c) between different levels of government and administration, such as the Ministry of Foreign Trade and

Economic Relations in BiH and the entity-level relevant agencies. The joint partnership between BiH and Croatia was strengthened during preparations by the involvement of the Interstate Water Committee (ISWC) and the establishment of the joint technical working group.

Project activities will be coordinated with other World Bank projects focused on environment or water that are either ongoing or under preparation in Croatia and BiH (see Section A.2). Also, project preparations have been closely coordinated with the EU and other donors financing activities in the area of water and environment in the region covered by the project. Other donor financing totals US\$3.93 million, as described in section B.1.

More important, the project will be implemented as a part of the GEF-World Bank-UNEP Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem (LME), which will support capital investments, economic instruments, implementation of policy reforms, and strengthening of public institutions and public participation. This Partnership will be accomplished through two complementary components: the Regional Technical Assistance project, implemented by UNEP and executed by the Mediterranean Action Plan (MAP), its regional centers, and various partners (FAO, GWP, UNESCO, UNIDO, WWF), and the Investment Fund managed by the World Bank.

## **2. Institutional and implementation arrangements**

The project will be implemented during FY2009–14. Although there are two GEF grants, the recipients intend to jointly implement some of the project activities, especially the preparation of the river basin management plan. At the transboundary level, the existing ISWC and the project Coordination Committee (CC) will be responsible for coordinating and monitoring the joint work under the project, including preparation of a water management plan, and guidance on problem resolution. The CC will report to the ISWC regularly on the progress of implementation of the project joint activities and seek ISWC guidance on any issues that may arise during implementation of the joint project activities. CC members from both countries will be determined within three months of effectiveness, and the CC will be chaired alternatively every six months by a representative from each country. The CC will be supported by the Technical Advisory Group (TAG), which will be established as needed on a temporary basis to deal with thematic questions, and will consist of experts in the water, environment, agriculture, and energy sectors from the two countries; the HPP authorities; municipal representatives; and NGOs.

In **BiH**, the overall project implementation includes:

*Component 1 – “Improved Transboundary Water Management”:* This is the responsibility of the BiH State-level Ministry of Foreign Trade and Economic Relations (MOFTER), which will coordinate the activities of the implementing agencies across sectors and entities, and will serve as the liaison with Croatia and the World Bank for the activities financed under this component. A Project Management Team (PMT) established within the MOFTER is responsible for fiduciary aspects of the Urban

Infrastructure and Service Delivery Project and will also be responsible for all fiduciary arrangements related to Component 1.

*Component 2 – “Improved Management and Use of Wetlands Ecosystems and Biodiversity”* and *Component 3 – “High Priority Investments for Water Pollution Control”*: These will be implemented by the responsible entity line ministries<sup>5</sup> in the RS and the FBiH.

*Component 4 – “Public Participation and Management of Project Implementation”*: MOFTER, RS, and FBiH will implement this component, each according to its share of the cost and responsibilities. Project Implementation Teams (PITs) will be established within two existing water management institutions, the Agency for Watershed of Adriatic Sea (*Agencija za Vodno područje slivova Jadranskog mora*) in Mostar, FBiH, and the RS Water Directorate in Bijeljina (*Direkcija za vode Bijeljina*, RS).

The PITs in each of these institutions will include representatives of relevant entity ministries responsible for water, environment, and representatives of municipalities.<sup>6</sup>

In **Croatia**, overall project implementation is the responsibility of the Ministry of Regional Development, Forestry and Water Management (MORDFWM) through a public entity, the Croatian Waters (*Hrvatske Vode*, HV). A PIT would be established in HV with the support of experts from the four ministries (the Ministry of Regional Development, Forestry and Water Management; the Ministry of Agriculture, Fisheries and Rural Development, the Ministry of Environmental Protection, Physical Planning and Construction; and the Ministry of Culture) that are responsible for implementation of project activities within their scope. The PIT will be financed by the government, and it will also include three specialists (a Project Manager, a Financial Manager, and a Procurement Manager). All three specialists will be appointed from the HV staff. The PIT will be responsible for financial management, supervision, reporting, and project implementation (including preparation of bidding documentation with technical specifications, evaluation, and contracting).

During project preparation, both countries’ project preparation teams developed strong working relationships with one another and across sectors. The Operations Manual (OM) and the Memorandum of Understanding (MOU) spell out project implementation arrangements and the clear roles and responsibilities for each agency, including implementation arrangements for the Small Grant Program. For a more detailed description of the implementation arrangements, see Annex 6.

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<sup>5</sup> These ministries are: (a) in RS: the Ministry of Agriculture, Forestry and Water Management, the Ministry of Spatial Planning, Civil Engineering and Environment, and the RS Water Directorate in Trebinje; and (b) in FBiH: the Federal Ministry of Environment and Tourism, the Federal Ministry of Agriculture, Water Management and Forestry, and the Adriatic River Basin Authority office in Mostar.

<sup>6</sup> According to new Entity Water Laws, the transformation of current institutions into new agencies for water has been executed in FBiH and is expected to be executed in RS within the next six months. This legal change does not affect project implementation.

### **3. Monitoring and evaluation of outcomes/results**

The monitoring and evaluation of outcomes and results during implementation would follow standard Bank practice (see Annex 3). Monitoring and evaluation will be based on existing data sources, supplemented by data collection within the project and special surveys and assessment updates undertaken by contracted specialists. The evaluation of outcomes will use baseline measurements from the social assessment, environmental assessment, the National Action Plans (NAPs), Transboundary Diagnostic Analysis for the Mediterranean Sea (MED TDA), and biannual updates data from the project monitoring system, special assessments, and data from other sources. The PMT and PITs will collect and present data and reports for semiannual reviews by the Coordination Committee and project agencies, in conjunction with supervision missions. Data will also be provided by the PMT data management systems that will be established under this project. Discussions during supervision related to institutional capacity building, financial viability, technical reviews, and site visits will provide an especially effective measure of monitoring progress.

### **4. Sustainability and Replicability**

#### *Sustainability*

The project builds on the existing structure and the agreed upon initiatives for national and transboundary water management. By strengthening the new Adriatic Basin Authorities in BiH, the project will support the already existing water sector reform initiative. By working with the existing Interstate Water Committee (ISWC), the project will link itself to broader transboundary water resource management, to which both countries are already committed, including in the Danube Basin (Sava Basin). Thus the project places itself within a larger initiative to which the governments of both countries are committed and which receives donor support.

The environmental requirements for EU accession, including those for water resource management, are a major challenge in each country. Both countries recognize that regional cooperation activities such as those supported by the project will enhance their chances for future EU grants, which further increases their commitment to fully implement the project.

The social assessment identified the public perception of exclusion from the decision-making process as a factor in continued unsustainable use of water resources. This project will create opportunities for larger public involvement in the preparation of the RBMP and incentives through the small grants program to develop sustainable water resource management activities. Social sustainability of the project is expected to result from these activities once broad-based support is built.

Financial sustainability of the proposed wastewater treatment investments entails the ability of the operating entity to cover the costs of operation and maintenance and, where necessary, the non-grant-financed part of the investment expenses. Each participating municipality will be required to develop annual business plans for their operations and services. The business plan approach has been successfully applied in the ongoing BiH Water Quality Protection Project (WQPP).

### *Replicability*

Preparation of the project has included a public awareness and communication campaign on project activities, and more activities will be undertaken to generate interest in replication of project interventions both within and outside Croatia and BiH. In addition to the many regional- and national-level workshops that have already been organized to maximize participation in the project design, the project includes training components for relevant national and local government officials, such as workshops, field trips, participation in GEF's International Waters Learning Exchange and Resource Network (IW LEARN) programs, and participation in GEF International Waters conferences. The project will interact closely with the regional replication activities implemented under the Regional Component of the Mediterranean Strategic Partnership, and will allow for dissemination of project results to broader audiences.

## **5. Critical risks and possible controversial aspects**

Adequate mitigation measures are incorporated in the project to reduce risk of misuse of funds and corruption, as described in section D.3.

<b>Risk</b>	<b>Mitigation Strategy</b>	<b>Risk Rating with Mitigation</b>
Reforms in the water sector may not proceed as planned.	Both entities in BiH are committed to adjust water and environment legislation in line with the EU WFD.	M
Cooperation between BiH and Croatia may not be sufficient.	The 1996 treaty between the two countries established a joint Interstate Water Commission (ISWC). The ISWC has played a significant role in project preparation and will continue to support project implementation. Also, a Coordination Committee will be established by the project (a Condition of Implementation) to strengthen coordination between the two countries during project implementation.	H
Given tight government budget conditions, counterpart financing to project activities may not materialize.	Most project activities for river basin management planning are already part of the water ministries budgeted activities.  Counterpart financing for wastewater treatment investments has already been committed in municipal budgets.	M
Project management may not have enough capacity for the inevitably cumbersome implementation arrangements of the project.	In both countries the project implementation teams will build on the experience gained from existing implementation structures for other WB projects and sector work. Also, the project includes several capacity components and TA to strengthen the PMT and the PITs to implement the project.	S
Overall Risk Rating		H

H = High. M = Modest. S = Significant



## **6. Grant conditions and covenants**

### *Board conditions*

- None.

### *Effectiveness conditions*

#### *For BiH*

- The MOFTER PMT, Federation PIT and RS PIT have each been established with a composition and terms of reference satisfactory to the World Bank;
- The Croatia GEF Agreement has been executed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of this Agreement) have been fulfilled;
- The Memorandum of Understanding (MOU) has been executed on terms and conditions satisfactory to the World Bank;
- A Project Agreement has been executed on behalf of the World Bank and an Entity, on terms and conditions satisfactory to the World Bank;
- For the Entity, a Subsidiary Grant Agreement has been executed on behalf of the Recipient and the Entity concerned, on terms and conditions satisfactory to the World Bank; and
- The Operational Manual (OM) has been duly adopted by the Recipient, the Republic of Croatia, the Entities and HV.

#### *For Croatia*

- The Croatia PIT has been established with a composition and terms of reference satisfactory to the World Bank;
- The Bosnia and Herzegovina GEF Agreement has been executed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of this Agreement) have been fulfilled;
- The Memorandum of Understanding (MOU) has been executed on terms and conditions satisfactory to the World Bank;
- The HV Project Agreement has been executed on behalf of the World Bank and HV, on terms and conditions satisfactory to the World Bank;
- The HV Subsidiary Grant Agreement has been executed on behalf of the Recipient and HV, on terms and conditions satisfactory to the World Bank; and
- The Operational Manual (OM) has been duly adopted by the Recipient, Bosnia and Herzegovina, HV, the Federation and Republika Srpska.

### ***Implementation Covenants***

#### *For BiH*

- BiH shall maintain the ISWC, the CC, the TA and the MOFTER PMT, and shall cause the Entities to maintain, respectively, the Federation PIT and the RS PIT at all times during Project implementation, with terms of reference and resources satisfactory to the World Bank, and with competent staff in adequate numbers;

- BiH through the ISWC, CC, TA, MOFTER and the MOFTER PMT shall, and shall cause the Entities, through, respectively, the Federation MAWMF, the Federation MET, the Agency for Watershed of the Adriatic Sea, the Federation PIT, the RS MAFWM, the RS MSPCEE, the Republika Srpska Water Directorate and the RS PIT to:
  - duly perform all obligations under the Operational Manual, the EMP, the EMF and the MOU in a timely manner and in accordance with their respective terms, and apply and implement, as the case may be, the actions, criteria, policies, procedures and arrangements therein set forth; and
  - not amend or waive, or permit to be amended or waived the Operational Manual, the EMP, the EMF or the MOU or any provisions of any one thereof, except with the prior written approval of the World Bank.
- BiH shall cause the Entities, through the Waste Water Utilities, not later than November 30 of each year, during the implementation of the Project, each to submit to the World Bank an Annual Business Plan for the following calendar year, and shall agree with the World Bank on activities to be undertaken under the Project in the following year and the related budget.
- BiH shall, through the MOFTER PMT, and shall cause the Entities, through the Federation PIT and the RS PIT respectively to: (i) to duly perform all obligations under this Agreement, the respective Subsidiary Grant Agreements and Project Agreements, as the case may be, in accordance with the river basin management plan to be prepared under Part 1.A(iii) of the Project and acceptable to the World Bank; and (ii) in the event that said plan is amended or waived, ensure that any such amendment or waiver is acceptable to the World Bank.

*For Croatia*

- Croatia shall maintain the ISWC, the CC and the TA, and shall cause HV to maintain the Croatia PIT at all times during Project implementation, with terms of reference and resources satisfactory to the World Bank, and with competent staff in adequate numbers.
- Croatia, through the ISWC, CC and TA, shall, and shall cause HV, through the Croatia PIT to:
  - duly perform all obligations under the Operational Manual, the EMP, the EMF and the MOU in a timely manner and in accordance with their respective terms, and apply and implement, as the case may be, the actions, criteria, policies, procedures and arrangements therein set forth; and
  - not amend or waive, or permit to be amended or waived the Operational Manual, the EMP, the EMF or the MOU or any provisions of any one thereof, except with the prior written approval of the World Bank.

- Croatia shall, and shall cause HV, through the Croatia PIT to: (i) duly perform all obligations under this Agreement, the HV Project Agreement and the HV Subsidiary Grant Agreement, as the case may be, in accordance with the river basin management plan to be prepared under Part A (iii) of the Project and acceptable to the World Bank; and (ii) in the event that said plan is amended or waived, ensure that any such amendment or waiver is acceptable to the World Bank.

*For BiH and Croatia*

- The Recipients shall cause, respectively, the Entities and HV to make grants to Beneficiaries under the Small Grants Program in accordance with eligibility criteria and procedures set forth in the Operational Manual, and acceptable to the World Bank, which shall include, *inter alia*, the following: grants made under the Small Grants Program shall be selected, appraised, implemented and evaluated in accordance with the principles and procedures set forth in the Operational Manual, the Procurement Guidelines, the EMP and the EMF. The Recipients shall cause, respectively, the Entities and HV to make grants under the Small Grants Program under a Small Grants Program Grant Agreement with the respective Beneficiary on terms and conditions approved by the World Bank.

*Withdrawal Conditions and Withdrawal Period*

For BiH, no withdrawal shall be made:

- For expenditures under Categories 2, 3, 4 and 5 in the table in Part A.2, Section IV of Schedule 2 to this Agreement, unless:
  - A Project Agreement between the World Bank and the Federation has been executed on terms and conditions satisfactory to the World Bank;
  - A Subsidiary Grant Agreement between the Recipient and the Federation has been executed on terms and conditions satisfactory to the World Bank; and
  - An opinion has been furnished to the World Bank stating that the Federation Project Agreement and the Federation Subsidiary Grant Agreement have been duly authorized or ratified by the Federation and the Recipient, as the case may be, and are legally binding upon them in accordance with their respective terms; or
- For expenditures under Categories 6, 7, 8 and 9 in the table in Part A.2, Section IV of Schedule 2 to this Agreement, unless:
  - A Project Agreement between the World Bank and the Republika Srpska has been executed on terms and conditions satisfactory to the World Bank;

- A Subsidiary Grant Agreement between the Recipient and the Republika Srpska has been executed, on terms and conditions satisfactory to the World Bank; and
- An opinion has been furnished to the World Bank stating that the RS Project Agreement and the RS Subsidiary Grant Agreement have been duly authorized or ratified by the RS and the Recipient, as the case may be, and are legally binding upon them in accordance with their respective terms.

## **D. APPRAISAL SUMMARY**

### **1. Economic and financial analyses**

The project has a number of environmental and economic benefits that will be enjoyed globally, regionally and locally. Global benefits include the protection of the flora and fauna of the NTRB wetlands and the contribution to the preservation of the Mediterranean ecosystem. The most important benefits to be enjoyed by regional countries are related to tourism and recreation in the NTRB, including ecotourism to wetland areas and along the Adriatic coast. Reduction of pollution from municipal and industrial sources will help improve bathing water quality and support marine biodiversity. Key local benefits in Croatia and BiH are: (a) improved agricultural productivity and hence incomes in the Delta region due to anti-salinization measures; (b) improved availability of drinking water sources and reduction of water treatment and health-hazard-related costs in upstream BiH cities; and (c) preservation of tourism benefits in Croatia's Adriatic coast.

*Cost-effectiveness of wastewater treatment investments* will be ensured by selecting technology options that have the lowest present value of investment and operations and maintenance costs. The project will assist beneficiary municipalities to improve financial viability of their operations through the business plan approach, which has proven successful in the ongoing Water Quality Protection Project (WQPP). Annual business plans would help service providers establish and manage all of their resources and define measures toward the planned targets, and identify the measures directly affecting financial performance. The project will closely coordinate with the WQPP in this regard.

Other key economic and financial issues are: (a) fiscal sustainability of institutions responsible for cross-border river basin management, and (b) financial and economic feasibility of the pilot scheme to mitigate saltwater intrusion in the Neretva Delta.

*Fiscal sustainability of institutions responsible for cross-border river basin management* is ensured, since in Croatia and BiH, government staff traveling for meetings of the Adriatic Sub-commission of the ISWC is adequately compensated as part of the state budget. However, in BiH and Croatia, both travel and accommodation costs and compensation of nongovernmental experts of the TAG is a problem, so the project will provide modest funds to cover those costs for TAG experts. Fund allocation will decline over the life of the project to be completely phased out in the last year of the project.

*Financial and economic analysis of pilot measures to mitigate saltwater intrusion in the Neretva Delta.* The project will pilot modern irrigation techniques, improved drainage, and good agricultural practices in an area of about 400 hectares (ha) in the Neretva Delta in Croatia. In addition to the environmental benefits, these practices are expected to result in increased yields, and improved marketability and market price, due to improved quality of the produce. The analysis focuses on the increased revenues to farmers in the pilot area due to improved practices (financial analysis) and their impact on the overall economy (economic analysis). The main benefits to the farmers will be through yield increases and price premia for better-quality produce. Reestablishment of mandarin trees on 150 ha is also planned. The results of the analysis indicate that both the reestablishment scheme and the overall pilot activities are potentially financially and economically feasible. There is, however, relatively strong dependence on price premia and yield improvements achieved, as explained in detail in Annex 9.

## **2. Technical**

Integrated Water Resource Management (IWRM) is an acknowledged systemic approach to proper and efficient water resource and environmental water management and is applied in the project. IWRM can be improved through unification of instruments, such as water resources and land-use planning, efficient ecosystem management, biodiversity conservation, and community-based resource conservation. The EU WFD principles incorporate IWRM, and are used to guide project design. The project supports the IWRM in the basin by harmonizing the management approach and legal frameworks across the two countries, and ensuring stakeholder participation at all levels.

To support transboundary IWRM, this project aims at the development of an RBMP for the NTRB in accordance with the WFD guidelines. The RBMP would specify the measures aimed at the achievement of a “good ecological status” of the river basin. For this reason, the project is technically justified on the basis of environmental management. Improvement of protected area management, conservation of ecosystems, raising public awareness and education, which are included within the project, will also serve as mechanisms to develop IWRM.

To address the problem of saltwater intrusion in Neretva Delta, the project will include a pilot scheme that will identify and elaborate sustainable solutions for the reduction of negative impacts of saltwater intrusion. It will also apply recent research results and modern irrigation technology, and good agricultural practice on a pilot area of about 400 ha to increase and maintain sustainable crop production. Because the Neretva Delta is a priority area for future countrywide irrigation development in Croatia, the GOC is ready to co-finance the rehabilitation works and eventually scale-up the rehabilitation/development measures once their effectiveness and beneficial impact on crop production and environment are proven.

## **3. Fiduciary**

*Financial Management.* In BiH the financial management functions of the project will be handled by the Project Management Team in the Ministry of Foreign Trade and

Economic Relations (MOFTER), and designated units in the two entities, for the FBiH PIT in the Agency for Watershed of the Adriatic Sea in Mostar and for the RS PIT in the Water Directorate in Bijeljina (*Direkcija za vode Bijeljina*, RS). For Croatia the *Hrvatska Voda* (Croatia Water, HV) will be responsible for the implementation. These four project implementing agencies and institutions will be responsible for the flow of funds, accounting, reporting, and auditing of well-defined parts of the project.

An assessment of the financial management arrangements (FMAs) for the project was undertaken and finalized in March 2007, and FMAs of the project are acceptable to the Bank. The overall FM risk for the project is substantial, due to the number of implementing entities involved in the project.

In addition, there continue to be systemic and structural weaknesses in the public financial management systems of both BiH and Croatia. Public sector budgeting; accounting; reporting; and auditing remain a challenge. The corruption risk is considered substantial. Project-level safeguards have been established to mitigate the risks inherent in these systems, and adequate mitigation measures are incorporated into the project. Bank staff will closely monitor performance during implementation. However, Croatia is taking actions to improve public financial systems. For further detail on these issues and mitigation measures and on financial management and disbursement arrangements, see Annex 7.

**Procurement:** A procurement assessment was carried out for BiH and Croatia in March 2007. The assessment showed that the two project implementation units have good experience in procurement according to the Bank Procurement Guidelines. However, some strengthening in procurement is needed through hiring additional staff to the implementation units and through providing training on procurement.

There is a procurement plan for each country for the project life. See Annexes 8 for details.

#### **4. Social**

A social assessment was conducted as part of project preparation (see Annex 17 for details). Stakeholders throughout the NTRB region are concerned about resource limitation and environmental degradation. Primary concerns include: lack of adequate water supply for household needs; negative impacts on subsistence hunting and fishing; and environmental degradation potential affecting economic development, particularly agriculture and tourism. The survey respondents considered water one of the principal natural assets and a majority of respondents were concerned about water quality.

Few stakeholders had experience in participating in community organizations or any community forum relating to land and water issues, with the exception of the environmental groups in the upper watershed, which have campaigned against the development of hydropower plants. Stakeholders, however, expressed their interest in participating more actively in the decision-making process concerning the watershed.

## 5. Environmental

Overall, the project is expected to have important and positive environmental impacts on the project area. They will lead to: (a) reducing municipal-based and industrial-based organic and other pollution, (b) enhancing maintenance of environmental ecosystem and natural resources management in the coastal areas of the Neretva and Trebisnjica River Basin, and (c) improving water quality and agriculture efficiency in the basin.

An Environmental Impact Assessment (EIA) prepared by the BiH clearly indicates that the project's environmental impact is generally positive. It did, however, also identify minor environmental issues that may require attention during project implementation. These minor impacts are predictable, temporary, and can be mitigated through the application of standard measures in engineering design, procurement construction, and operation and maintenance.

See Annex 10 for details on these impacts, and for details on the Environmental Management Plans (EMPs) prepared to address mitigation measures and monitoring activities of any negative environmental impact of the known investments, as well as the Environmental Management Framework (EMF), prepared as part of the EIA, and included in the project EMP to guide further assessment of activities related to the implementation of the small grants program and the salt water intrusion pilot.

## 6. Safeguard policies

The project triggers the following safeguards policies: OP/BPs 4.01 on Environmental Assessment, OP/BP 4.04 on Natural Habitats, OP/BP 4.37 on Safety of Dams, and OP/BP 7.50 on Projects on International Waterways.

**Table 5: Safeguard Policies**

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP/GP 4.01)	[X]	[ ]
Natural Habitats (OP/BP 4.04)	[X]	[ ]
Pest Management (OP 4.09)	[ ]	[X]
Cultural Property (OPN 11.03, being revised as OP 4.11)	[ ]	[X]
Involuntary Resettlement (OP/BP 4.12)	[ ]	[X]
Indigenous Peoples (OD 4.20, being revised as OP 4.10)	[ ]	[X]
Forests (OP/BP 4.36)	[ ]	[X]
Safety of Dams (OP/BP 4.37)	[X]	[ ]
Projects in Disputed Areas (OP/BP/GP 7.60)*	[ ]	[X]
Projects on International Waterways (OP/BP/GP 7.50)	[X]	[ ]

\* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas.

Two elements of OP 4.37 are highlighted here: (a) safety, and (b) reliable operation. BiH prepared a report that describes the inspection and evaluation procedures used to monitor dam safety and the current safety status of each dam. The report makes recommendations for any remedial works or safety-related measures necessary to upgrade the existing dams to an acceptable standard of safety. The conclusion of the report is that the Alagovac Dam in the Nevesinje municipality (RS), a small earthen dam on a reservoir that is used for irrigation, is the only dam in the NTRB that lacks the

appropriate equipment to adequately monitor dam safety. Accordingly, the project will finance the needed safety monitoring equipment for that dam. The project does not envision any work on or use of dams.

The proposed project will provide a number of investments that will target improved water resources management in the Neretva and Trebisnjica rivers that flow into the Adriatic Sea, therefore triggering World Bank OP 7.50. Overall, the project does not negatively impact the water quality or quantity in the Adriatic Sea and is implemented jointly by both countries. However, because of the rehabilitation nature of the activities financed, the project falls under the exception to the notification requirement under paragraph 7(a) of OP 7.50 (rehabilitation of an ongoing scheme). On this basis, an exemption to the notification of riparians was approved by the office of the ECA Regional Vice President on March 29, 2007.

See Annex 10 for more detail on safeguard policy issues.

## **7. Policy Exceptions and Readiness**

The NTMP does not require any policy exceptions and is ready for implementation.



**Annex 1: Country and Sector Background**  
**BOSNIA AND HERZEGOVINA**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

**Country Background**

Bosnia and Herzegovina (BiH) and Croatia, former republics of Yugoslavia, are situated in Southeastern Europe (SEE) in the central part of the Balkan Peninsula. They share a border and have approximately the same land area (51,129 km<sup>2</sup> and 56,594 km<sup>2</sup>, respectively) and population (4.1 million and 4.4 million, respectively). BiH comprises two separate administrative units (entities), each with its own government and body of law as established by the Dayton Peace Accords following the war of 1992–95. The entities are the Federation of BiH (FBiH) and the Republika Srpska (RS). The FBiH covers approximately 51 percent of the country's territory and the RS approximately 49 percent. Within the BiH part of the project region, poverty and unemployment are high. Economic conditions are better in the Croatian portion of the Neretva river basin, but the area is characterized by out-migration, an aging population, and lack of economic opportunity.

The Neretva and Trebisnjica River Basin (NTRB) is the focus of the proposed project. The NTRB is a transboundary basin lying within both BiH and Croatia and covers approximately 10,000 km<sup>2</sup>. The Neretva River (220 km) is the largest river in the Eastern Adriatic watershed. Its average annual flow is 11.9 billion cubic meters (bcm). It originates in BiH and flows through Croatia for its final 20 kilometers before entering into the Adriatic Sea at Mali Ston Bay. Within BiH, the NTRB has additional transboundary characteristics because it is shared by the two entities. The Trebisnjica River (99 km) is located mostly in the BiH and is hydraulically linked partially to the Neretva River. Its average annual flow is about 2.5 bcm. Taken together, these two rivers comprise most of the Adriatic watershed of BiH and part of the Adriatic watershed of Croatia.

The NTRB is relatively rich in water resources, draining 63 percent of all surface water flows in BiH (the rest draining to the Danube/Black Sea). Both rivers have high flows and surrounding areas rich with karst valleys, fertile and arable land, and diverse wetlands. The rivers are used for transport, recreation, fisheries, fishing, and abstraction for drinking water, irrigation, and energy production. The entire valley and delta of the lower Neretva River from Mostar municipality (in FBiH) to the river's mouth (in Croatia) contain the largest and most valuable remnants of the natural Mediterranean wetlands in the Eastern Adriatic coast, as evidenced by its designation as a Ramsar Wetlands site. The wetlands serve a number of functions important to water resource management including water purification, nutrient reduction, sedimentation sink, flood management, and prevention of shoreline erosion. They also provide critical habitats and support local economic activities.

The upper Neretva River flows swiftly through a mountainous landscape, while the lower course, the last 30 km of the river from Mostar (FBiH) to the river's mouth in Croatia, spreads into an alluvial delta covering 20,000 ha before emptying into the Adriatic Sea. The upper valley of the delta covers 7,411 ha in BiH and is under protected area status as Hutovo Blato Nature Park. In the lower valley in Croatia, the Neretva River splinters into multiple courses, creating a delta covering approximately 12,000 ha. The entire lower valley and delta of the lower Neretva River from Mostar (FBiH) to the river's mouth (Croatia) contains the largest and most valuable remnants of the Mediterranean wetlands in the Eastern Adriatic coast and is one of the few areas of this kind remaining in Europe. The project region hosts a rich collection of plants and animals. A major attraction in the delta is its water and wetland birds. More than 300 bird species can be seen here, 115 of which nest in the area. When compared to other internationally important wetlands in Europe, the Neretva Delta has a greater number of species, although not as many nesting waterfowl species. However, the area is most important as a significant European resting and wintering place for migratory birds.

The Croatian portion of the delta was designated a Ramsar site in 1993. The BiH portion is under protected area status in the Hutovo Blato Nature Park, which since 2001, has also been declared a Ramsar site. Since this development, there is now only one Ramsar site that is a natural entity divided by the state border. The delta region is not protected as comprehensively nor managed for ecosystem and biodiversity conservation purposes in Croatia. There are five protected areas in Croatia with a total area of 1,620 hectares, and a further two proposed protected sites covering 777 ha. Three of the protected sites are ornithological reserves (Pod Grede, Prud, and Orepak), one is an ornithological and ichthyological reserve (the Neretva Delta), and two are protected landscapes (Modro Oko and Desne Lake). Two other sites (Parilla Lake and Kuti Lake) have been proposed as ornithological reserves. The Important Bird Areas program, conducted by Birdlife International, covers protected areas in Croatia and BiH.

The water resources of the NTRB play an important part in the economies of both countries and in the livelihoods of over 430,000 people, many of them rural poor (approximately 35,000 in Croatia, 87,000 in RS, in the Trebisnjica watershed, the rest in FBiH, primarily in the lower Neretva water course, where the basin's largest city, Mostar, population 100,000, is located). The rivers are used for transport, recreation, fisheries, fishing, and abstraction for drinking water, irrigation, and energy. SEE regional development plans include expansion of the role of water resources in energy and transport. Regional traffic routes, which already criss-cross the basin (for example, the Sarajevo-Ploce railroad, Adriatic Highway) and ports (Ploce, Croatia) connecting the Adriatic with the interior, are under further development.

The existing water management practices still need further improvement in the following areas: legal and institutional mechanisms for transboundary river-basin-level water resource management; basin-wide management tools including hydrological and biological monitoring and water information management systems, and water use permit systems; understanding of river basin dynamics and water balance to assess and manage

supply and demand among competing users; and consideration of ecological issues; as well as prompting public participation in the decision-making processes.

The Neretva and Trebisnjica Rivers are important in terms of energy production due to their high water capacities and mechanisms of exploitation of those capacities. In this area there are five hydroelectric power plants on the Neretva and two on Trebisnjica, with accompanying reservoirs. One purpose of the available infrastructure is to control the water level in the downstream area of the river basin. The water levels in the lower parts of the rivers drop significantly during the summer, despite the compensatory volumes supplied by the discharge at dams. The operation of the infrastructure available on the Neretva and Trebisnjica Rivers should be coordinated to prevent potential negative effects. In the past the hydropower installations had priority in the usage of the water resources of the NTRB, which helped balance the naturally unbalanced flow of the rivers. The existing hydroelectric power plants in the NTRB, provided they are properly managed, have the capability of leveling water, reducing the large flow water, and increasing small flow water, taking into account the needs of the downstream users.

The varied and valuable environmental resources of the NTRB are subject to a series of threats with significant consequences for future development of NTRB. Wetlands and other critical natural habitats are being converted to agricultural land, water quality is degrading, and there are illegal land possession/construction in sensitive and/or protected areas, excessive illegal hunting and fishing in the wetlands, unsustainable agriculture practices, interference with the hydrological regime of the NTRB for agricultural, municipal, industrial, and hydropower use of water; uncoordinated management of reservoirs for flood control; water pollution from point (municipal and industrial wastewaters, solid waste dump sites) and nonpoint (agricultural) sources; and a lack of public awareness and involvement.

## **Sector-specific Issues**

### ***Water***

*Water resources and management in BiH:* BiH is contained within the Danube/Black Sea catchment (75.7 percent) and the Adriatic Sea catchment (24.3 percent). Although the rivers are characterized by relatively high runoff (22 l/s/km<sup>3</sup>), there is great variation in flow, and much of this (57 percent) leaves the territory unused. In spite of the apparent wealth of water resources, this significant spatial and time variation results in areas that experience heavy flooding in winter months and suffer from drought in the summer. The quality of potable water is still unsatisfactory in some parts of the country, with pollution caused by municipal wastewater discharges. Collection and treatment systems are outdated or damaged by the war, and even the most basic treatment, disinfection, is compromised due to inadequate, poorly functioning chlorination systems. Approximately 56 percent of the urban population is connected to sewerage systems. Few wastewater treatment plants exist, with most wastewater (around 90 percent) being discharged directly into rivers and streams. Only seven cities with a population in excess of 5,000 had treatment systems before the war and very few of 120 prewar plants for

treatment of industrial wastewater are still operational. Major constraints to achieving a rapid improvement in the sector are institutional weaknesses, lack of application of preventive measures, and the difficult financial state of the utilities due to low tariffs and low collections. The World Bank (WB) has financed several water supply and sanitation projects in BiH that address the infrastructure and utility management including the Mostar Water Supply and Sanitation Project (closing in 2006) and the Urban Environmental Infrastructure Project (2005–09). The WB BiH project for Environmental Management includes improvements to solid waste treatment.

Each entity in BiH has its own water legislation, water rights, water management practices, and institutions. MOFTER is responsible for water and environment management at state level. However, there are so far no water and environmental laws at the state level. Pursuant to Article 9 of the BiH Law on Ministries and other Administration Authorities, the Ministry of Foreign Trade and Economic Relations is responsible for carrying out activities and tasks related to policy formulation, basic principles, coordination of activities, and harmonization of entity-level government bodies and institution's plans related to international activities in the area of environmental protection, the development and use of natural resources, agriculture, and energy. Each entity has issued its new Water Law in 2006.

Within FBiH, the water sector is managed by the Federal Ministry of Agriculture, Water Management and Forestry/and Agencies for Watershed Areas. The newly established Agency for Watershed of Adriatic Sea in Mostar (*Agencija za Vodno područje slivova Jadranskog mora* Mostar) is responsible for certain aspects of water resource management in part of the project area. The Ministry of Agriculture, Forestry and Water Management of RS is directly responsible for water resource management in RS and is supported by Water Directorate in Bijeljina (*Direkcija za vode Bijeljina*, RS), which will be transformed into water agencies. According to new Water Laws' provisions, water agencies at the level of river basin have been established in FBiH and are expected to be established within six months in RS.

*Water Resources and Management in Croatia:* Croatia is endowed with relatively abundant water and is characterized by great rivers and the karst coastal area. The northern and the central area of Croatia belong to the Black Sea catchment area (some 60 percent of the territory) and the Adriatic Sea catchment area (the remaining 40 percent of the territory). The surface water balance shows a mean runoff amounting to 1,038 m<sup>3</sup>/s or 32.7 x 10<sup>9</sup> m<sup>3</sup> yearly. The mean annual water consumption in Croatia is about 870 million cubic meters (gross amount). Some 75 percent of the population is connected to the public water supply network. The quality of water supply is highly different within each area of the country. A considerable portion of wastewater (some 75 percent) is discharged from public sewerage systems into watercourses and the sea without purification. There is a shortage of funds for the construction of municipal and industrial wastewater treatment plants, including construction of public sewerage systems. Other water management issues include the need for combating accidental pollution and the need for harmonization with other sectors.

Water resources for use in the agriculture sector are an important concern in Croatia. High agricultural production is infeasible without irrigation in the Mediterranean part of Croatia. The climate is characterized by highly seasonal precipitation occurring primarily during the winter months, and little to no rainfall during the summer months. As a result, most coastal deltas in Southern Croatia, including the Neretva Delta, experience a seasonal salinity cycle, with high salinity in the summer and lower salinity during the wet winter period.

Though the natural agricultural production potential of the Republic of Croatia, particularly in the fertile river deltas along the Mediterranean coast, is significant, the area currently under irrigation countrywide is only about 9,000 ha. Non-competitiveness in the field of agriculture is caused by low technological production levels, fragmented production units, lack of adequate rural infrastructure, insufficient soil and water conservation, and low crop yields. Drought is a very common phenomenon, causing millions of dollars in damage, while at the same time agricultural land is not being irrigated sufficiently and the large water potential is underused for irrigation purposes.

To assess irrigated agriculture countrywide and to make better use of the country's natural potential, the government has launched the *National Irrigation and Agricultural Land and Water Management Project in the Republic of Croatia*. It is expected that suitable measures will be undertaken in systematically upgrading and/or developing agricultural infrastructure, consolidating agricultural lands, and introducing state-of-the-art irrigation technologies. Introduction of more cash crops (most of them currently imported) would initiate a positive change in agricultural production methods, and the National Project would eventually contribute to a more favorable macroeconomic environment. The Neretva Delta is one of the selected priority areas of the aforementioned project. The "salt intrusion subcomponent" of the proposed project (Component 2) will be embedded in the National Project, and its pilot character will help boost agricultural production in similar river deltas situated along the Mediterranean Coast.

The basic legal framework governing water management in the Republic of Croatia is determined by two acts: the Waters Act and the Water Management Financing Act. MORDFWM performs administrative, supervision and coordination of water management issues and other tasks related to water policy and water management. HV is a State Agency reporting to the MORDFWM and is the legal entity responsible for water management. This includes the activities aimed at the provision of sufficient quantities of adequate water for diverse purposes: protection of waters against pollution, water use, regulation of watercourses, and protection against adverse effects of water. Croatian Water has five decentralized regional offices, one in the project region.

*Transboundary Water Resources and Management in NTRB:* In addition to the lack of a legal framework, on the international level, a number of other obstacles to effective transboundary water resource management remain. Institutions have limited capacity to effectively maintain adequate monitoring and evaluation of the evolving supply, demand, and quality of water at a level of detail permitting adequate planning and regulation on a

river-basin level. This has undermined the establishment of an effective and comprehensive hydrological monitoring system, with incomplete scientific data, thereby hampering rational allocation of water rights through concessions. Water use is theoretically based on a permit system in each country, but the basis for, and enforcement of, water use licenses and permits, is limited. Demands for water resources are not balanced through any comprehensive and coordinated strategy, and water pricing, particularly for irrigation, is not market based, especially in the delta region, where land tenure rights are vague and charges for irrigation water are essentially ignored. Lack of efficient water management has resulted in unrealized potential benefits to and from the Neretva.

While the existing water laws include requirements for transboundary cooperation on the international river basin, it is clear that upstream decisions and management in BiH have significant impacts in Croatia. Yet many of the same challenges to water management on the local and national level exist on the international level. There is a transboundary legal framework for water management in both countries, representing international treaties signed and ratified by each country. In Croatia these are: the Convention on the Protection and Use of Transboundary Waters and International Lakes (Official Gazette – International Treaties No. 4/96), the Convention on Co-operation in the Protection and Sustainable Use of the Danube River (Official Gazette – International Treaties No. 2/96), and the Framework Agreement on the Sava Catchment Area (Official Gazette – International Treaties No. 14/03). Experience with the Danube and Sava River commissions has been helpful in designing this project.

There are also important bilateral agreements on cooperation in the field of water management signed between Croatia and its neighbors, Hungary and Slovenia. In regard to the NTRB, BiH and Croatia passed on July 11, 1996 a treaty between the two governments regulating water management relations. The treaty notes that it is in the joint interest of the two countries to initiate necessary activities and measures to resolve water management matters. “Competent government bodies, institutions and water management companies or companies carrying out water management activities shall achieve direct contact and all other forms of joint cooperation for the purpose of carrying out necessary activities.” The treaty established a joint Interstate Water Commission (ISWC) comprised of six members who are key water management authorities in the respective countries. Each country appoints three members: president, deputy, and technical secretary. The ISWC, established in 1996, is the key international mechanism now for transboundary cooperation in a field of water management

### ***Biodiversity***

*BiH environmental management:* About 50 percent of BiH is covered by forests and 25 percent by pastures. The country is mostly hilly and mountainous, with only 5 percent of territory classified as plains, 24 percent as hills, 29 percent as Karst, and 42 percent as mountains. BiH is at a geographic crossroad and includes five types of climate (continental, moderate continental, Mediterranean, modified Mediterranean, mountain), three regions (Alpine-Nordic, Euro-Siberian and Boreo-American, Mediterranean),

several provinces (for example, Adriatic, Illyrian, Mesian, Central-European, Dinaric), six landscape types (Mountain, Highland, Pannonian, Mediterranean highland, Supra-Mediterranean, Mediterranean), and a great variety of biotopes. BiH is also important for ecological processes: karstic processes are extensive and among the best examples worldwide; large blocks of forests, large enough to maintain ecological integrity; river dynamics; and large carnivore dispersion between Central and Southeast Europe. The natural park of “Hutovo Blato” in Bosnia and Herzegovina is also a recognized IBA area.

The most important problems related to biodiversity in BiH are: loss of habitat due to overgrazing, an underdeveloped system of protected areas, and poor land management, including settlements in protected areas. Furthermore, the unfavorable relief (for example, karst), poor farming practices, minefields, temporary refugee settlements, NATO camps, and municipal waste dumping are the main causes of changes in land use leading to biodiversity loss.

Despite the high diversity of ecosystems and habitats, areas preserved in BiH are relatively small. According to the Entity Laws on Nature Protection, four types of protected areas are defined, which reflect only loosely The World Conservation Union (IUCN) classification system: Nature Protection Areas, National Parks, Natural Monuments, and Landscape Protection Areas. The entities’ Laws on the Protection of Nature (adopted in 2002 and 2003 in RS and FBiH, respectively, and harmonized with the EU requirements) stipulate the revitalization, protection, preservation, and sustainable development of landscapes, ecosystems, plants, and animals, and functions of nature that are part of the environment. Responsibilities for landscape planning and management generally rest with the Ministry of Environment and Tourism in FBiH and the Ministry of Spatial Planning, Civil Construction and Environment, although in the FBiH some tasks have been delegated to the cantonal level. The management of protected areas is being carried out by specialized public enterprises, which in all instances are constrained by insufficient resources provided via governmental budgets.

*Croatia biodiversity management:* Unusually rich biodiversity in Croatia is due to its geography, between the Mediterranean and Central-European continental climatic regions, and its geology, which is predominantly karst. Croatia karst ecosystems host 3,500 species of flora (283 endemic), 12 species of amphibians, 36 species of reptiles, 200 species of resident birds, 79 species of mammals, and 64 species of freshwater fish (11 endemic). The Dinarids karst region includes hundreds of sinkholes, chasms, underground streams, and some 8,000 caves, which represent a global hotspot of subterranean biodiversity. About 8.2 percent of Croatia’s area is under some form of protection. Threats to biodiversity include lack of systematic inventory and monitoring of the ecosystem, man-induced habitat changes and fragmentation, increasing water and air pollution, extensive exploitation of natural resources, and introduction of foreign species.

Apart from this, nearly two thirds of Neretva Delta is in the Republic of Croatia and represents a very significant area with regard to biodiversity. Due to very intensive irrigation practice, out of twelve former river branches in the Delta, today only three of

them remained. Once broad strip of reed, swampland, small lakes and lagoons crucial for hibernation and migration of birds as well as for spawning of fish, nowadays are reduced to small fragments threatened by a wide spectrum of human activities. Although the Ministry for Culture of Republic of Croatia intended for this area of delta to be a natural park, currently there are only five protected locations on the surface of 1,620 ha, which fall into the category of ornithological and ichthyologic preserve. This level of protection is absolutely inappropriate and it practically does not provide the very basic protection level.

Lower parts of Neretva contain some priceless remains of Mediterranean swamp areas, and as such it falls into category of a very rare kind in Europe. The swamp area of delta plays a very important role in managing the overall ecosystem of the NTRB. This area has an international importance because of a very rich diversity of bird and endemic fish species. This area has been included as Ramsar site in the program of Important Bird Areas (IBA), conducted by Birdlife International. Croatian BSAP (Biodiversity Strategic Action Plan) identifies the swamp area of Neretva delta not only as the area with the richest biodiversity in the Mediterranean part of Croatia, but also with the most endangered ecosystem in Croatia.

The need for improvement of monitoring stations is evident, as well as for their extension to cover both surface and ground water. The salinity penetration in the Neretva Delta area is gradually increasing by a deepening of the river mouth as a consequence of insufficient alluvium due to controlled releases from water reservoirs. This caused changes in biodiversity of the lower Neretva area.

The Law on Nature Protection (2004) provides the framework for management of protected areas and biodiversity conservation, both of which are the responsibility of the Ministry of Culture.

The Ministry of Environmental Protection, Physical Planning and Construction (MEPPPC) is the central government body responsible for environmental protection. Among other activities that fall under its jurisdiction, it is responsible for administrative and other affairs relating to the general environmental protection policy with respect to waste management; air protection, climate, and ozone layer protection; environmental impact assessment; environmental contingency plans; and sea and coastal zone protection, soil protection, and care for the environment in the Danube area.

Apart from the MEPPPC, the other central government bodies that also perform activities relating to environmental protection are: Ministry of Regional Development, Forestry and Water Management (MORDFWM); the Ministry of Culture; the Ministry of the Sea, Tourism, Transport and Development; the Ministry of Health and Social Welfare; the Ministry of Economy, Labor and Entrepreneurship; the Ministry of the Interior; the State Meteorological Institute.



*Transboundary:* At the regional scale, the NTRB region covers three globally significant ecosystems identified by World Wide Fund's Global 2000 program and adopted by the Biodiversity Strategy for the Bank's Europe and Central Asia (ECA) Region: (a) the European-Mediterranean Montane Mixed Forests; (b) Mediterranean Forests, Woodlands and Scrubs; and (c) Balkan Rivers and Streams. These also include the Mediterranean Sea and the karst ecosystem. There are no formal mechanisms for transboundary cooperation in managing protected areas, habitats, or biodiversity conservation.

The project seeks funding under of the GEF-World Bank-UNEP Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem that has been created to accelerate the implementation of the policy reforms and priority investments that address transboundary pollution reduction and biodiversity conservation priorities in hotspots identified in two Strategic Action Programs endorsed by the countries of the Mediterranean Basin at the governmental level within the context of the Barcelona Convention and its Protocols and Land-based Pollution and on Coastal Zone Management. This funding would help address some of the above sector issues, which are in line with the GEF Investment Fund partnership.

## Annex 2: Major Related Projects Financed by the Bank and/or Other Agencies

### BOSNIA AND HERZEGOVINA REPUBLIC OF CROATIA NERETVA AND TREBISNJICA MANAGEMENT PROJECT

Country	Financed By	Project Name	Focal Area	Project Stage	Project Cost (\$ million)
BiH	WB	Water Quality Project	Water sanitation and flood protection	Active	20.3
BiH	WB	Urban Infrastructure and Service Delivery Project	Water sanitation and flood protection; Law and justice and public administration	Active	22.5
BiH	WB	Small-Scale Commercial Agriculture Development Project	Agriculture, fishing and forestry; Industry and trade	Active	14.13
BiH	WB/Swedish International Development Cooperation	Agriculture and Rural Development Project	Reform of agricultural institutions in line with EU requirements	Active	36.19
BiH	WB	Solid Waste Management Project	Water sanitation and flood protection; Law and justice and public administration	Active	30.30
BiH	GEF-IBRD	Forest and Mountain Protected Areas	Biodiversity	Pipeline	3.40
HR	WB	Coastal Cities Pollution Control Project	Water sanitation	Active	95.05
HR	WB	Agriculture Acquis Cohesion Project	Agriculture, fishing, and forestry	Active	30.14
HR	WB	Municipal Environmental Infrastructure	Water sanitation	Active	145.4
BiH	GEF-UNEP	Preparation of National Biodiversity Strategy and Action Plan	Biodiversity	Active	0.288
HR	GEF-UNDP	Conservation and Sustainable Use of Biodiversity in the Dalmatian Coast through Greening Coastal Development	Biodiversity	PDF B	
BiH	GEF-UNEP	National Capacity Self-Assessment (NCSA) for Global Environmental Management	Multifocal area	Active	0.2
HR	GEF-IBRD	Karst Ecosystem Conservation Project	Biodiversity	Closed	5.3
Regional (incl. BiH and HR)	GEF-UNEP	Determination of Priority Actions for the Further Elaboration and Implementation of the Strategic Action Programme for the Mediterranean Sea	International waters		6.29

Regional (inc. BiH and HR)	GEF-UNEP	Strategic Partnership for the Mediterranean Large Marine Ecosystem— Regional Component: Implementation of agreed actions for the protection of the environmental resources of the Mediterranean Sea and its coastal areas	International waters	Pipeline	15.0
BiH	EU CARDS	“Water Quality Management at River Basin Level”	Water Quality	Active	Estimated cost related to NTRB goals 1.0
BiH	EU CARDS	“River Basin Management Program”	River Basin Management	Active	Estimated cost related to NTRB goals 0.5
HR	EU CARDS	“Approximation of Croatian Water Management Legislation with EU Water Acquis”	Water and wastewater legislature	Active	Est. cost to NTRB goals 0.9
BiH HR	Government of Italy	The ADRICOSM project “Integrated Coastal Areas and River Basin Management System Pilot Project”	Coastal areas	Active	Estimated cost related to NTRB goals 0.25
HR	EU CARDS	“Capacity Building and Development of Guidelines for the Implementation of Water Framework Directive”	River Basin Management	Active	Estimated cost related to NTRB goals 0.4
HR	Government of the Netherlands	“Development of the Framework for Formulation of Regional Water Management Plans in the Coastal zone of the Croatia”	River Basin Management	Closed	Estimated cost related to NTRB goals 0.2
BiH HR	REC	“Cross-Border Cooperation through Environmental Planning and Investment”	Multifocal	Active	Estimated cost related to NTRB goals 0.09
BiH	Government of Italy	“SEENET project on ecotrails in Hutovo Blato and provision of silent boats for bird watching, etc.”	Wetlands, ecotourism	Phase 1 accompli shed, Phase 2 in initiation	0.096
BiH	EU CARDS	“Development of a National Environmental Monitoring System”	Monitoring	Active	Estimated cost related to NTRB goals 0.2
HR	GEF IBRD	“Agricultural Pollution Control Project”	Agriculture, water quality, biodiversity, farming	Active	5.0

**Annex 3: Results Framework and Monitoring**  
**BOSNIA AND HERZEGOVINA**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

<b>PDO</b>	<b>Outcome Indicators</b>	<b>Use of Outcome Information</b>
Provide mechanisms for the efficient and equitable water allocation among the NTRB users at the transboundary level and for enhancing the basin ecosystems and biodiversity through improved water resource management.	<p>Increased interstate cooperation and capacity for transboundary water resource management (process).</p> <p>Reduction of waterborne municipal and industrial-based pollution in selected municipalities (stress reduction).</p> <p>Improved maintenance of environmental flows and improved ecosystem and natural resources management in the basin (process).</p> <p>Reduction of saline water intrusion as a result of implementation of a Pilot Scheme in Neretva Delta (stress reduction).</p>	<p>Evaluate success or failure of project.</p> <p>Adjust scheduling and targeting of activities if needed.</p> <p>Replication of transboundary cooperation mechanisms.</p> <p>Up-scaling of successful pilot activities.</p>
<b>Intermediate Results One Per Component</b>	<b>Results Indicators for Each Component</b>	<b>Use of Results Monitoring</b>
<b>Component One:</b> Improved transboundary water resource management of the Neretva and Trebisnjica River Basin.	<p><b>Component One:</b> Transboundary River Basin Management Plan completed.</p> <p>Comprehensive hydrological measurement and monitoring program, linked to a transboundary water information system, in place (process).</p> <p>Two Water Management Agencies in BiH equipped and professional staff trained to fulfill its mandate (process).</p>	<p><b>Component One:</b> Provision of framework of implementation measures to meet desired water quality and water quantity objectives.</p> <p>Collaborative data collection and data exchange will be incorporated into RBMP.</p> <p>Training needs assessment of professional staff.</p>

<p><b>Component Two:</b> Improved ecological status of wetlands.</p> <p>Improved Water Management Infrastructure.</p> <p>Implementation of a Pilot Scheme for mitigation of salinity in Neretva Delta.</p>	<p><b>Component Two:</b> Environmental flow requirements established and maintained (stress reduction).</p> <p>Water management infrastructure along Krupa river in place (stress reduction).</p> <p>Development of solutions and implementation of pilot scheme to reduce salt intrusion in Neretva Delta (stress reduction).</p> <p>Dynamic reservoir operation model in place (stress reduction).</p>	<p><b>Component Two:</b> Dissemination of good practice to other river basin.</p> <p>Cooperation of states to share information and data on the state of ecosystems.</p> <p>Replication to other areas in the Neretva Delta.</p>
<p><b>Component Three:</b> Improved water pollution control.</p>	<p><b>Component Three:</b> Improved quality of discharge of wastewater effluents of municipal and industrial pollutants to international waterways in project sites (stress reduction).</p>	<p><b>Component Three:</b> Evaluate progress in management of WWT plants and industries and disseminate good practice to other municipalities and industries.</p>
<p><b>Component Four:</b> Increased public participation in IWRM.</p>	<p><b>Component Four:</b> Increased number of civil society activities that engage stakeholders in river basin management planning and improved use of water resources (process).</p>	<p><b>Component Four:</b> Provides input to the RBMP.</p> <p>Assure sustainability of investment.</p>

## 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
Increased interstate cooperation and capacity for transboundary water resource management	Some capacity exists through ISWC	Annual meetings and training	Annual meetings and training	Annual meetings and training	Annual meetings and training	Annual meetings and training	Annual reports	PMT/PIT Quarterly and Annual Reports, Supervision	<ul style="list-style-type: none"> <li>PMT</li> <li>Croatia: MAFWM</li> <li>BiH: MAFWM</li> </ul>
<b>Results Indicators for Each Component</b>									
<b>Component 1:</b> Improved transboundary water resource management of the Neretva and Trebinjica River Basin									
Adoption of Transboundary River Basin Management Plan	No plan exists	TOR, RFP and selection of consultant	Preparation of plan starts	Draft report	Final report and plan prepared	Adoption of the plan by CC	Once every six months after the project effectiveness	PMT/PIT Quarterly and Annual Reports, Supervision	<ul style="list-style-type: none"> <li>Croatia: MAFWM/ MEPPPC</li> <li>BiH, PITs: s</li> </ul>
Comprehensive hydrological measurement and monitoring program, linked to a transboundary water information system	Old hydrological data exist on waterflows and water quality	Updating of data, M&E and dissemination	Updating of data, M&E and dissemination	Updating of data, M&E and dissemination	Updating of data, M&E and dissemination	Updating of data, M&E, and dissemination	Semiannually from effectiveness, seasonal reports once system is in place	Consultant status reports, later monitoring reports	Drawn from implementation status reports of the Mostar and Trebinje PIT offices
<b>Component 2:</b> Improved management and use of wetlands ecosystems and biodiversity									
Environmental water flow requirements	Old	Preparation of	Preparation of	Final Report and	Environmental	Environmental	Semiannual	PMT/PIT	MAFWM / MEPPPC /

established and maintained through use of mathematical model for water management decision-making	requirements exist on water quality and flows	TOR and RFP	Model starts	mathematical model prepared	waterflows maintained	waterflows maintained	reports	Quarterly and Annual Reports, Supervision	MOC/PMT
Improved management of wetlands to better process pollutants, to reduce outflow to international waterways, and improve ecosystem health	Few samples are currently collected on water flow and quality	Baseline updating	Improved sampling and dissemination of data	Improved sampling and dissemination of data	Improved sampling and dissemination of data	Improved pollutants processing and reduced outflow	Some data are available and documented in the E/A		
Restoration of water management infrastructure, including wetlands, river banks rehabilitation along Krupa river	Poor management of wetland (quality and quantity)  No plans implemented for restoration	Preparation of plans for restoration including establishing key database indicators for biodiversity in Hutovo Blato National Park	Implementation of plans	Implementation of plans	Completion 80%		Some data are available and documented in the E/A		
Development of comprehensive plan for management of Hpp reservoirs	No plan exists	TOR and RFP	Preparation of plan	Final plan	Improved management of the reservoirs	Improved management of the reservoirs			
Area developed under the pilot scheme to mitigate salt intrusion in Neretva Delta (total area 400 ha)	0 ha	Preparation of design	Bidding	Start implementation	200 ha completed	400 ha completed. Establish M&E to monitor sustainability and replicability	Solutions for salt intrusion and possibility for replicability developed M&E		
<b>Component 3: Improved water pollution control</b> Reduced discharge through wastewater effluents of municipal	Wastewater treatment plants need	Preparation of final design	Bidding and start of construction	Construction completed O&M	O&M	O&M	Once every six months after the project	PMT/PIT Quarterly and Annual	MAFWM / MEPPPC / MOC/PMT

and industrial pollutants to international waterways in selected municipalities	improvements												effectiveness through surface and subsurface water sampling	Reports, Supervision	MAFWM / MEPPPC / PMT
BOD reduction (avg mg O <sub>2</sub> /l)	155	-	-	100	50	20							Water and soil sampling reports analyzing samples taken along site drain or runoff	PMT/PIT Quarterly and Annual Reports, Supervision	
N reduction (avg mg/l)	25	-	-	20	18	1.5									
P reduction (avg mg/l)	8	-	-	6	4	2									
Industrial pollution	200	-	-	100	40	0.5									
Cr reduction (avg mg/l)															
<b>Component 4: Increased Public participation in IWRM</b>															
Increased number of civil society activities that engage stakeholders in river basin management planning and improved use of water resources	Ad hoc meetings												Annual M&E reports		
Number of workshops	None	1 workshop	2 workshop	3 workshop	4 workshop	5 workshop							Annual	Proceedings of scientific workshops	PMT
Number of communities meeting to discuss RBMP	None	5 communities	10 communities	15 communities	20 communities	25 communities							Total of 25 communities – 5 yearly	Proceeding of community workshops	PMT
Number of small grants for NGOs for activities related to project objectives	None	X	5 grants	10 grants	20 grants	30 grants							Approved grant proposals	PMT/PIT Quarterly and Annual Reports, Supervision	PMT

**In addition the project will rate and monitor the indicators identified in the GEF-3 IW simplified Tracking Tool including: Regional Legal Agreement Adopted/Implemented; Functioning & Sustainable Regional Transboundary Waters Institutions; On-the Ground Stress Reduction Results ( Demonstrations and Investment); Functional Inter-ministry Committees (IMC).**



**Annex 4: Detailed Project Description**  
**BOSNIA AND HERZEGOVINA**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

The proposed project includes the following four components: (1) Improved transboundary water resource management; (2) Improved management and use of wetlands ecosystems and biodiversity; (3) High-priority investments for water pollution control; and (4) Public participation and management of project implementation.

GEF funds will support most, if not all, of each component together with contributions by each government entity. The components and their subcomponents are outlined in greater detail below. Since the project was designed to overlap with activities active in the region, activities supported in conjunction with parallel financing are listed by component at the end of this annex and in Annex 2.

**COMPONENT 1: IMPROVED TRANSBOUNDARY WATER RESOURCE MANAGEMENT (US\$2.65 million of which total GEF is US\$2.01 million)**

The objective of this component is to improve water resource management capacity in both countries and to strengthen the transboundary mechanisms (institutional, technical, and regulatory) and tools for effective water resource management. This component would support national and interstate institutions for transboundary river basin management; support transboundary management tools including basin-wide measurements, monitoring, modeling and database management systems along with training and capacity building; and develop an NTRB IWRM plan, following the WSSD POI and the EU WFD, which would include full consideration of nutrient reduction needs, and of maintenance of environmental flows. It has three subcomponents: (a) Institution and capacity building; (b) Measurement, monitoring, and information management; and (c) Preparation of a river basin IWRM plan.

*1.1 Institution and capacity building (GEF to FBiH US\$0.2 million, GEF to RS US\$0.1 million, GEF to Croatia US\$0.08 million for total GEF of US\$0.385 million)*

- Support and equipment for the two river basin management authorities in BiH—Mostar and Trebinje;
- Support for operations of the Coordination Committee, Adriatic subcommittee of ISWC and the ISWC itself including study tours;
- Training, including preparation of River Basin Management Plan (RBMP) and implementation of the EU WFD;
- Design of a set of appropriate regional coordination procedures for transboundary water resource management;
- Identification of necessary additional policy and institutional reforms to facilitate enhanced transboundary management tools.

*1.2 Measurement, monitoring and information management (US\$0.09 million of which GEF to FBiH US\$0.06 million, GEF to RS US\$0.03 million and GEF to Croatia US\$0.03 million for total GEF of US\$0.12 million)*

- Expand and equip the existing network of water measurement and monitoring stations in the NTRB, and training in its use;
- Develop basin-wide water information system, and training in its use.

*1.3 River basin management planning (US\$1.5 million of which GEF to FBiH US\$0.76 million, GEF to RS US\$0.38 million, and GEF to Croatia US\$0.36 million for total GEF of US\$1.5 million)*

- Preparation of background studies for development of the NTRB RBMP;
- Development of ecological management objectives for the NTRB; including definition of environmental flows (see Sub-Component 2.3);
- Conduct an economic analysis of water use in the NTRB;
- Develop the IWRM plan for the NTRB.

## **COMPONENT 2: IMPROVED MANAGEMENT AND USE OF WETLANDS ECOSYSTEMS AND BIODIVERSITY (US\$3.19 million of which total GEF US\$2.25 million)**

The objective of this component is to maintain and conserve water-dependent ecosystems and their associated biodiversity in the coastal area of the NTRB, which has been identified in the MED TDA and SAPs as critical for the health of the Adriatic-Mediterranean ecosystem. These are the wetlands in the lower part of the NTRB. The component balances conservation, mitigation, and prevention in supporting activities to maintain the wetlands, including those under protected area status in both countries; and to mitigate the impacts of saline water intrusion, which is a major threat to water quality and ecosystems in the delta region. This component will finance water infrastructure improvements in both countries, including rehabilitation of gates, weirs, riverbanks, and irrigation structures. In addition, since maintaining environmental flow requirements in the river are key to the integrity of the ecosystems, this component will also finance improvements to HPP operations to accomplish this objective. This project also supports a flood control management intervention by improving dam safety equipment on the one dam in the NTRB that does not have adequate monitoring equipment. The activities to be financed are:

*2.1 Improved management and use of water-dependent ecosystems (US\$1.6 million of which GEF to FBiH US\$0.3 million, GEF to RS US\$0.07 million, and GEF to Croatia US\$1.05 million for total GEF of US\$1.4 million)*

- Improvements in sites, services, and management tools in Hutovo Blato Nature Park in BiH and in the five protected areas in Croatia including the whole Neretva Delta area [Usce Neretve (ichthyological and ornithological reserve), Modro Oko and Desne Lake (protected landscape), Orepak, Pod Gredom, and Prud (ornithological reserves)].
- Conservation of wetlands sites used for ecotourism to mitigate potential negative environmental impacts in two tourist locations, which allow visitor access to

- sensitive ecosystems in the Neretva Delta including Bacina Lakes, and along the Trebisnjica River including Vjetrenica Cavern.
- Dissemination of information and Transboundary newsletter that would promote environmental protection and conservation.
- Pilot Scheme to Mitigate Salt Water Intrusion in the Neretva Delta. The objectives of this activity are to identify and elaborate a sustainable solution for the reduction of negative impacts through salt intrusion, and to apply recent research results and modern irrigation technology, and good agricultural practice, on a pilot area of about 400 ha to increase and maintain sustainable crop production. Because the Neretva Delta is a priority area for future countrywide irrigation development in Croatia, the GOC is ready to co-finance the rehabilitation works and eventually upscale the rehabilitation/development measures once their effectiveness and beneficial impact on crop production and environment is proven. It is understood that any intervention planned on arable (and irrigable) land in the Delta will be undertaken with the full participation of the concerned farmers. The pilot project has two tasks: a salinity assessment study and a rehabilitation/development project for sustainable land use practice in the Neretva Delta.

## *2.2 Small-Scale Water Management Infrastructure (US\$0.78 million of which GEF to FBiH US\$0.14 million)*

This subcomponent will finance investments to address the problems of saltwater intrusion, habitat loss, flood management, and erosion—each identified as priority threats to water resources and ecosystems in the NTRB. The project will finance three activities:

- Wetlands Restoration in Hutovo Blato: This activity will finance infrastructure to regulate the water regime in the Krupa River within Hutovo Blato Nature Park in order to restore natural wetlands in the Park.
- Restoration of River Banks: This activity will finance investments to reduce erosion processes along the banks of the Neretva River and its tributaries including the right river bank of the Neretva at Celina, and locations on the Bereave, Revisit, and Lade Rivers.

## *2.3 Improved operation of reservoirs, HPPs, and dams (US\$0.69 million of which GEF to FBiH US\$0.26 million, GEF to RS US\$0.28 million, and GEF to Croatia US\$0.13 million for total GEF of US\$0.67 million)*

Operation of the HPPs in NTRB serves several functions, some of them conflicting. For example, maintenance of environmental flows (which is already limited in effectiveness due to outdated recommendations) is often inadequate due to requirements of the HPP for energy production. Flood management in the Neretva River Basin, which can be handled by the existing reservoir and water management infrastructure, can be compromised by either poor operations or intentional interference to meet other water use demands. Results of the measurement, monitoring, and water information system activities will greatly improve the capacity of the HPPs to improve operational performance. This subcomponent will finance additional activities to enhance operations including:

- Conducting a study to determine the minimum environmental flow in the Neretva and Trebisnjica Rivers. This activity would be also linked and would contribute to the development of the NTRB IWRM Plan.
- Preparing a plan, guidelines, and training program for optimal management of HPP reservoirs for multipurpose use.
- Developing and testing a comprehensive dynamic management model for reservoir operations.
- Developing and implementing mathematical models for hydrological predictions, HPP operations, forecasting, and decision-making.

This subcomponent will also finance dam safety monitoring equipment for the Algonac Dam, Nevesinje municipality (RS), the one dam in the NTRB found during preparation of the dam safety report to be lacking an adequate monitoring system.

**COMPONENT 3: HIGH-PRIORITY INVESTMENTS FOR WATER POLLUTION CONTROL (US\$9.1 million of which GEF to FBiH US\$1.34 million, and GEF to RS US\$1.12 million for total GEF of US\$2.46 million)**

The objective of this component is to reduce water pollution, mainly nutrients, of the NTRB, through high-priority investments in low-cost, appropriate wastewater technology improvements in three municipalities, and small improvements of wastewater collection and treatment infrastructure in other two municipalities and one industrial sector in BiH. Each selected site discharges into the NTRB at a particularly environmentally sensitive area. The municipalities and local industry will contribute a minimum of 50 percent of the investment costs. The project will also finance capacity building for monitoring and enforcement of industrial wastewater effluents by developing effluent standards and by developing enforcements guidelines and through training. This component has the following two subcomponents:

*3.1 Municipal wastewater treatment (US\$8.51 million of which GEF to FBiH US\$1.04 million, GEF to RS US\$1.12 million for total GEF of US\$2.16)*

- This subcomponent will finance investments for wastewater treatment in the following five municipalities: Bileca, Nevesinje and Trebinje (RS), and Konjic and Ljubuski (FBiH). The following is a detailed description of the proposed activities in these five municipalities:

Rehabilitation and Upgrade of Municipal Wastewater Treatment System Bileca.

Bileca city, population 15,000, is located on Bileca Lake, an artificial reservoir built largely to provide a reliable supply of drinking water to the region. The pollution of the lake by Bileca municipality is a priority environmental and public health concern in the country. The lake is 10 km long and covers 3,300 ha. Upgrade of the wastewater treatment system has been identified as a priority concern by the local authorities of regions impacted by degradation of the water supply including Dubrovnik (Croatia), Herceg Novi (Montenegro), Trebinje, and Bileca (BiH). Fifty-five percent of the city is covered by the sewerage network.

The remaining 45 percent of the population use permeable septic tanks. The municipal wastewater collected receives minimal treatment in sedimentation tanks that are currently not functioning and is then released into Bileca Lake, the source of the Trebisnjica River. The poorly treated water causes eutrophication and algae blooms in summer and bacteriological contamination year round. The main goal of this activity is to protect the water quality of the Trebisnjica River. The wastewater treatment plant in Bileca has been included in the list of priority projects in both the Priority Action Plan of the National Environmental Action Plan and the EU CARDS Priority Environmental Infrastructure Program for Southeast Europe.

Nevesinje municipal wastewater collection and treatment infrastructure. Nevesinje municipality in RS, population 14,000, discharges its wastewater effluent into the Algovac reservoir, which is used for the drinking water supply of the town. Insufficient capacity of the collection system has resulted in emergency public health situations when septic tanks have proven inadequate to handle flows. The primary treatment facility needs upgrades to provide improved nutrient removal because eutrophication of the reservoir is a problem.

Trebinje municipal wastewater collection and treatment infrastructure. Trebinje has a population of about 32,000. Only 60 percent of the city is covered by sewerage, resulting in significant pollution of the Trebisnjica River into which it directly discharges. The project would finance extension of the collection system and upgrades to the wastewater treatment plant to provide secondary treatment and nutrient removal.

Rehabilitation and Upgrade of Konjic Wastewater Treatment System in Konjic. The city of Konjic (population 20,000) is the first major town on the Neretva River, with the wastewater releases directly impacting further, downstream settlements both in BiH and Croatia. Impacts are multiple, with regards to recreational uses, especially in the immediate downstream Jablanica Lake use for recreation, potable water use, agricultural irrigation uses, and the state of the ecosystem as a whole. Improvement of the wastewater collection system and treatment plant in Konjic has been included in the list of BiH priority projects, that is, Priority Action Plan of the NEAP (National Environmental Action Plan). Konjic municipality officials have agreed to participate in the upgrade and expansion of the entire system, through the means of completing specific works within the project. The wastewater collection system currently in place is fragmented, with outdated and provides incomplete treatment. Wastewater is collected in sedimentation tanks (enclosed lagoons), from which it is released directly into the Neretva River. The tanks have deteriorated, resulting in leaks and their use is problematic in any event posing serious difficulties with regards to system sustainability. Furthermore, certain portions of the collection system are not connected to the sedimentation tanks, but are directly discharged into the Neretva River. Konjic municipality wastewater treatment rehabilitation to reduce pollution into the upstream course of the Neretva River will include investments

to improve the current collection system and additional treatment of the wastewaters to reduce nutrient loading.

Rehabilitation and Upgrade of Wastewater Treatment System in Ljubuski. Ljubuski municipality (population 30,000) discharges its wastewater effluent into the Trebizat River. The Trebizat River and its karst basin is a very sensitive area within the NTRB, with a unique travertine ecosystem and associated ecosystem for the basin. All of the wastewater released into this river directly affects sensitive ecosystems downstream. The existing treatment plant is not functioning properly. The project will finance rehabilitation to upgrade the secondary wastewater treatment system and to provide for tertiary treatment—nutrient reduction. The existing plant’s capacity is too low, equipment is old, and a device for the removal of grease does not work.

- The high-priority investments required for wastewater treatment in the two municipalities in the Croatian part of NTRB, the lower valley, and delta (Metkovic and Opuzen) are being financed by the GOC (US\$6.50 million total government contribution) through the World Bank Croatia Coastal Cities Pollution Control Project.
- Strengthening water quality monitoring laboratories is to be financed entirely through government contributions and will strengthen the sustainability of the municipal wastewater treatment investments.

### *3.2 Industrial wastewater treatment improvements (US\$0.6 million of which GEF to FBiH US\$0.3 million)*

Upgrading of wastewater treatment system to a metallurgy company in Konjic. Konjic has identified the galvanizing sector as a primary polluter of the Neretva River. The “SurTec Eurosaj” and “Unisgal” companies deal with galvanization, primarily with application of galvanizing zinc coating, and in minor quantities of chromium and nickel. During the production process, wastewater arises from the application of technological processes in galvanization and from cleaning of both the equipment and working areas. Wastewater effluents from the plants are acidic, basic, and contain chromium. They are collected in collection ponds through special pipelines. The wastewater is primarily neutralized within the ponds and is then transferred to the sedimentation tank for sedimentation of heavy metals, neutralization, and pH measurements. There is no recycling of water within the plants and thus large quantities of wastewater are produced. The project will finance repair, and replacement as needed, of the existing equipment, and additional treatment equipment as needed. The plants are in an industrial park that has been almost abandoned since the war but which is gradually coming back into business. The project will be used as a demonstration of cleaner production to those new industries that come online and of water conservation.

#### **COMPONENT 4: PUBLIC PARTICIPATION AND MANAGEMENT OF PROJECT IMPLEMENTATION (US\$2.51 million of which total GEF is US\$1.28 million)**

The objective of this component is to increase civil society participation in the decision-making process for water resource management. The subcomponent will finance increased dissemination of scientific findings and activities to strengthen that goal. There are three subcomponents: Scientific Community Involvement, Civil Society Participation, and Project Management.

*4.1 Scientific Community Involvement (GEF to FBiH US\$0.025 million, GEF to RS US\$0.012 million, and GEF to Croatia US\$0.012 million for total GEF of US\$0.05 million)*

The project will finance support for annual multisectoral, basin-wide, workshops in the latter three years of the project to discuss and disseminate scientific findings among the wide range of local scientists and academics who conduct research on various aspects related to water resources and environment. The project will also support the following activities: (a) participation in relevant activities of the Regional Component (UNEP) of the Mediterranean Strategic Partnership, in particular those related to the regional Replication Strategy; and (b) the monitoring of projects indicators, and evaluation activities; (c) the preparation of a website following IW LEARN standards, and participation in IW LEARN relevant events.

*4.2 Civil Social Participation (GEF to FBiH US\$0.26 million, GEF to RS US\$0.13 million, and GEF to Croatia US\$0.13 million for total GEF of US\$0.52 million)*

*Support to NGOs:* The project will support NGOs and activities that reach out to civil society in order to involve them in the RBM planning process. This subcomponent would support NGO activities related to the objectives of the project including: promotional brochures on the protected areas system in the NTRB, educational material related to the other transboundary projects, public awareness, and education. This activity will also finance demonstration initiatives through programs developed by NGOs that contribute to the objectives of the project.

*Community-Based Water Pollution Control and Conservation Projects:* This subcomponent will finance a competitive financing program for grants to support sub-projects that demonstrate innovative and low-cost approaches to economic development and contribute to water pollution control and/or conservation. Both demonstration programs will be implemented over the five-year duration of the NTRB project according to guidelines provided in an Annex to the Operations Manual. The criteria for selection of sub-projects will include an examination of any potential environmental, social, and riparian issues. The objective of this subcomponent is to demonstrate links among rural development, sustainable management of water resources, and biodiversity conservation. Target groups of this component are the private sector (farmers, craftsmen, small and medium-size firms), the government sector (state companies, national, subnational, and

local government institutions, state scientific institutions), and the nongovernmental sector (national and local NGOs).

Detailed implementation arrangements including institutional arrangements for this component are included in Annex A of the Operation Manual and in the eligibility criteria and the selection process.

*4.3 Project Management (US\$1.93 million of which GEF to FBiH US\$0.2 million, GEF to RS US\$0.2 million, GEF to MOFTER US\$0.1, and GEF to Croatia US\$0.2 million for total GEF of US\$0.70)*

This subcomponent will support the agencies responsible in each country for implementing project activities and include management of the project; monitoring of the project; and training for national and local government officials on project implementation, during the five-year period of the project implementation; office equipment and vehicles; operating costs; and project management staff in BiH (for procurement and financial management only) and Croatia, as needed.

#### **Additional Funding for the Above Components:**

In addition to the GEF financing and government contributions listed above, the project was able to leverage parallel financing through related activities funded by the World Bank, the European Union, and a number of other donors. The project activities have been designed in coordination with the other donor programs, particularly the EU, to avoid overlap and to build on the results of others' programs. The additional financing from these projects is US\$3.925 million, bringing total project financing to US\$21.13 million. Donor programs are presented as they relate to components.

#### **Component 1:**

- EU CARDS Project "Development of Natura 2000" in Croatia 2006–2009 will finance biodiversity inventory, monitoring, and management planning with €2.5 million of which an estimated €50,000 will support the project objectives in the NTRB.
- The BiH EU CARDS project "Water Quality Management at River Basin Level" (€1.0 million) will provide technical assistance to the entities and/or river basin authorities. Of the total amount, it is anticipated that US\$0.25 million will be allocated for support to river basin authorities in the NTRB.
- The BiH EU CARDS project "Water Quality Monitoring Equipment" (€2.5–3.0 million) will provide monitoring equipment for surface water. Of the total amount, it is anticipated that US\$1.0 million will be allocated for installation of surface water monitoring equipment for the NTRB.
- The BiH EU CARDS project "Development of a National Environmental Monitoring System" (US\$1.0 million) will develop a management plan for establishment of environmental monitoring and reporting systems in the whole country, with an emphasis on defining the institutional responsibility. Of the total amount, it is anticipated that US\$0.2 million will finance activities that support the project's goal.



**Component 2:**

- The REC (Budapest) project “Cross-Border Cooperation through Environmental Planning and Investment” (US\$0.36 million) will allocate US\$0.09 million for the preparation of a feasibility study for the wastewater treatment plant rehabilitation in Bileca.
- The ADRICOSM project “Integrated Coastal Areas and River Basin Management System Pilot Project” (US\$1.2 million) within its subproject Assessment of the Neretva Delta Area aims at providing guidelines for prevention of environmental degradation and sustainable development of the Neretve Delta area. The ADRIACOSM project is implemented by a partnership of several governments, international organizations (including OC-UNESCO, IMO.MA, REMPEC), universities, and institutes. Of the total amount, it is anticipated that US\$0.25 million will be allocated for the NTRB.
- Spain will finance the “Rehabilitation of Agricultural Production in Popovo Polje (Ravno and Trebinje area) Project.” It will finance two irrigation/pumping stations in the project region and be implemented in 2006–2008. Cost TBD.

**Component 3:**

- The HR-Netherlands Ministry of Economy Affairs Project “Development of the Framework for Formulation of Regional Water Management Plans in the Coastal Zone of the Croatia” is financing a feasibility study for wastewater treatment in Metkovic and Opuzun (US\$0.2 million).

**Annex 5: Project Costs**  
**BOSNIA AND HERZEGOVINA AND REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

	GEF Financing	Distribution of GEF				Contributions by Governments and Beneficiaries				Project Total	Parallel financing	Project Total with parallel financing
		MOFTER	FBiH	RS	Croatia	GoFBiH	GoRS	GoCro	Bene- ficiaries			
COMPONENT 1: Improved Transboundary Water Resource Management	2,011,125	1,543,595			467,532	299,000	199,000	142,000	0	2,651,125	3,500,000	6,151,125
Institution and Capacity Building	385,000	303,750			81,250	0	0	0	0	385,000	0	385,000
Measurement, monitoring and information management	124,625	93,469			31,156	267,500	167,500	100,000	0	659,625	1,000,000	1,659,625
River basin management planning	1,501,500	1,146,376			355,126	31,500	31,500	42,000	0	1,606,500	2,500,000	4,106,500
COMPONENT 2: Improved management and use of wetlands ecosystems and biodiversity	2,252,344	0	714,250	349,375	1,188,719	151,750	57,500	434,000	200,000	3,095,594	100,000	3,195,594
Improved management and use of water-dependent ecosystems	1,443,844	0	315,000	71,000	1,057,844	6,750	50,000	120,000	0	1,620,594	100,000	1,720,594
Water Management Infrastructure	137,500	0	137,500	0	0	139,000	0	306,000	200,000	782,500	0	782,500
Improved operation of reservoirs, HPPs and dams	671,000	0	261,750	278,375	130,875	6,000	7,500	8,000	0	692,500	0	692,500
COMPONENT 3: High priority investments for water pollution control	2,461,531	0	1,338,031	1,123,500	0	1,486,969	1,594,200	3,250,000	300,000	9,105,200	325,000	9,417,700
Municipal wastewater treatment improvements	2,161,531	0	1,038,031	1,123,500	0	1,486,969	1,594,200	3,262,500	0	8,505,200	325,000	8,830,200
Industrial wastewater treatment improvements	300,000	0	300,000	0	0	0	0	0	300,000	600,000		600,000
COMPONENT 4: Public participation and Management of project implementation	1,275,000	110,000	482,500	338,750	343,750	403,600	334,600	496,000	0	2,509,200	0	2,509,200
Scientific community involvement	50,000	0	25,000	12,500	12,500	0	0	0	0	50,000	0	50,000
Civil society participation	525,000	0	262,500	131,250	131,250	0	0	0	0	525,000	0	525,000
Management of project implementation and M&E	700,000	110,000	195,000	195,000	200,000	403,600	334,600	496,000	0	1,934,200	0	1,934,200
GRAND TOTAL	8,000,000	1,653,595	2,534,781	1,811,625	2,000,000	2,341,319	2,185,300	4,322,000	500,000	17,348,619	3,925,000	21,273,619

**Annex 6: Implementation Arrangements**  
**BOSNIA AND HERZEGOVINA**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

The project will be implemented during FY2008–14. Although there are two GEF grants, the recipients intend to jointly implement some of the project activities, especially the preparation of the River Basin Management Plan to fully ensure the interstate quality and objectives of the project. At the transboundary level, the existing ISWC and a Coordination Committee (CC) will be responsible for coordinating and monitoring the joint work under the project including preparation of a water management plan, and for giving guidance on solving common problems. The CC will consist of members from BiH (representatives of Federation MAFWM, Federation MET, RS MAFWM, RS MPPCE, and the Project Implementation Team (PIT) from each entity and the Project Coordinator, and the Project Deputy Coordinator from MOFTER) and members from Croatia (representatives of MORDFWM, MOC, MEPPPC, and the Director of the PIT). The CC will report to the ISWC regularly on the progress of implementation of the project joint activities and seek ISWC guidance on any issue that may arise during implementation of the joint project activities. The CC will be chaired alternatively by a representative from each country every six months.

The names of members of CC from both countries will be determined within 3 months of effectiveness. The CC will be supported by a Technical Advisory Group (TAG), which will consist of experts from the two countries in water, environment, agriculture, and energy sectors; HPP authorities; municipal representatives; and NGOs. The TAG will be established upon request of the CC and will serve on a temporary basis to deal with thematic questions when the need arises.

In **BiH**, the overall project implementation includes:

*Component 1 – “Improved Transboundary Water Management”* – is the responsibility of the BiH state-level Ministry of Foreign Trade and Economic Relations (MOFTER), which will coordinate the activities of the implementing agencies across sectors and entities and will serve as the liaison with Croatia and the World Bank for the activities financed under this component. A Project Management Team (PMT) established within the MOFTER includes four specialists: Project Coordinator, Deputy Project Coordinator, Financial Manager, and Procurement Manager. The PMT was established in July 8, 2004, and it is responsible for fiduciary aspects of the Urban Infrastructure and Service Delivery Project. It will also be responsible for all fiduciary arrangements related to Component 1, and part of subcomponent 4.3 (management of project implementation for Component 1). The main task of the PMT is to prepare and carry out financial management, reporting, and evaluation during the project implementation period related to the above component/subcomponents. The PMT Coordinator reports to MOFTER. Staffing will be increased to cater to the additional duties related to the NTMP project.

*Component 2 – “Improved Management and Use of Wetlands Ecosystems and Biodiversity”* and *Component 3 – “High-Priority Investments for Water Pollution Control”* will be implemented by the responsible entity line ministries<sup>7</sup> in the RS and the FBiH.

*Component 4 – “Public Participation and Management of Project Implementation”* – will be implemented by MOFTER, RS, and FBiH, each according to its share of the cost and responsibilities.

To ensure that proper attention is given to project implementation, PITs will be established within two existing water management institutions: the Agency for Watershed of the Adriatic Sea (*Agencija za Vodno područje slivova Jadranskog mora*) in Mostar, FBiH, and the RS Water Directorate in Bijeljina (*Direkcija za vode Bijeljina*, RS). The PITs in each of these institutions will include representatives of relevant entity ministries responsible for water and the environment, and representatives of municipalities.<sup>8</sup> They will have a Project Director, a Financial Manager, and a Procurement Manager. The PITs will be responsible for implementation of project Components 2, 3, and 4, as stated above. They will also be responsible for all fiduciary arrangements related to Components 2 and 3, and their share of Component 4, including: the preparation of the technical part of tender documents, technical specifications for goods and services, and ToRs for consultants. The responsible entity ministries identified their representatives during the project preparation stage.

The PITs will be responsible for the day-to-day implementation of their project and be required to work closely with the BiH PMT by providing regular reports and documentation. The risk associated with the PITs is assessed as high because it is difficult to recruit and retain good-quality personnel at these levels. To mitigate this risk, a strong PMT finance and accounts unit is in place providing a sustained level of support and monitoring to PITs on a regular basis. Staffing will be increased to fulfill the additional duties related to the NTMP project. The PMT will be financed by government contribution. Procurement and financial management assistance are required and would be financed by the grant. The two entity ministries of Agriculture, Forestry and Water Management will be responsible for implementation of those project activities under their mandate of improved water resources management activities and high-priority investments for water pollution control. The two entity ministries of environment will be responsible for implementation of those project activities under their mandate for maintenance of protected areas and protection of sensitive ecosystems. Procurement and financial management assistance are required and would be financed by the grant.

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<sup>7</sup> These ministries are: (a) in RS: the Ministry of Agriculture, Forestry and Water Management, the Ministry of Spatial Planning, Civil Engineering and Environment, and RS Water Directorate in Trebinje; and (b) in FBiH: the Federal Ministry of Environment and Tourism, the Federal Ministry of Agriculture, the Ministry of Water Management and Forestry, and the Adriatic River Basin Authority office in Mostar.

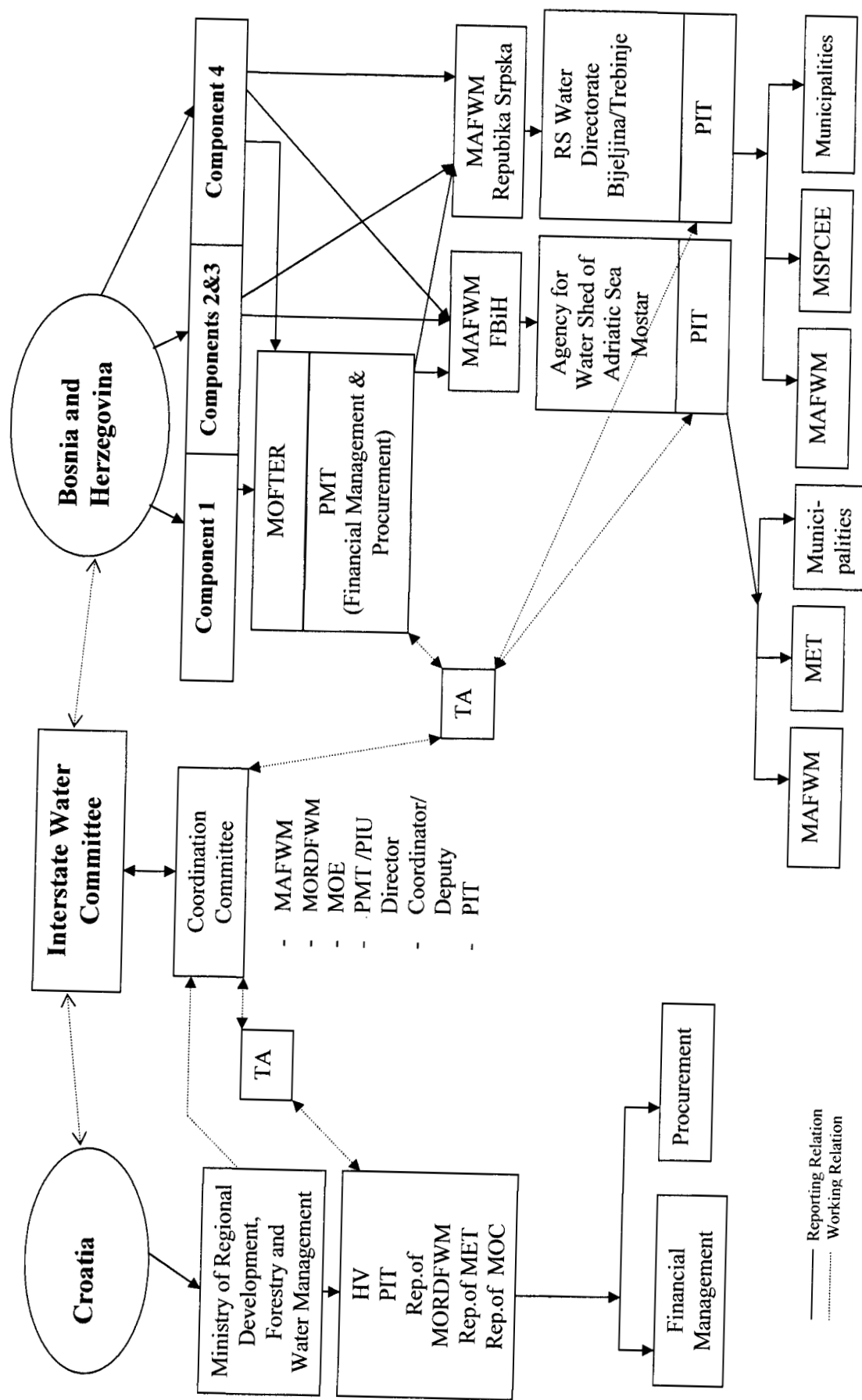
<sup>8</sup> According to new Entity Water Laws, the transformation of current institutions into new agencies for water has been executed in FBiH and is expected in RS within the next six months. This legal change does not affect project implementation.

In Croatia, the overall project implementation is the responsibility of the Ministry of Regional Development, Forestry and Water Management (MORDFWM) through Hrvatske Vode (HV) known also as Croatian Waters. A Project Implementation Team (PIT) would be established in HV with the support of experts from the four Ministries (Ministry of Regional Development, Forestry and Water Management; Ministry of Environmental Protection, Physical Planning and Construction; Ministry of Agriculture, Fisheries and Rural Development, and Ministry of Culture) that are responsible for implementation of project activities within their scope, similar to that noted above for BiH. The PIT will be financed by government contribution. The PIT will be financed by government contribution and would include three specialists (Project Manager, Financial Manager, and Procurement Manager). All three specialists will be the HV staff. The PIT will be responsible for financial management, supervision, reporting, and project implementation (including preparation of bidding documentation with technical specification, evaluation, and contracting).

During project preparation, the teams in each country developed strong working relationships with each other and across sectors, and this is expected to continue. The Operations Manual and the Memorandum of Understanding spell out the implementation arrangements and clear roles and responsibilities for each agency, including implementation arrangements for the Small Grant Program.

See figure below for an organigram.

Figure 1 – Implementation arrangements



## **Annex 7: Financial Management and Disbursement Arrangements**

### **BOSNIA AND HERZEGOVINA REPUBLIC OF CROATIA NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

#### ***1. Country Issues.***

For BiH a report providing an update on the assessment of the country's Public Financial Management (PFM) was made in 2006. Although BiH has made good progress in establishing modern PFM institutions and systems since the war ended in 1995, systemic and structural weaknesses in public sector budgeting, accounting, reporting, and auditing remain a challenge. The treasury accounting system now provides reliable information; systems are in place to record, report, and track receipt and use of funds; and there is independent audit of the budget execution reports. However, weak compliance with the existing internal control rules and procedures is further compounded by the absence of a modern internal audit system, thus weakening the internal control framework. Moreover, current public procurement practices are weak and fail to comply with the Public Procurement Law. The use of country financial management systems in BiH should begin with a pilot project subject to a separate project fiduciary assessment after progress has been made in setting up an effective internal audit function in the State and two entities. Because this project is complicated and satisfactory implementation arrangements have already been established within the relevant implementing institutions, this project will not use country systems for financial management.

The Croatia CFAA report (May 2005) concludes that the level of fiduciary risk attached to Croatia's public financial management systems is significant for the legal framework and for the institutional capacity and practices for the core financial control processes such as budgeting, treasury and cash management, accounting, financial reporting, internal control, internal audit, external audit and Parliamentary oversight.

Since the date of the report, Croatia is taking action to improve the public financial management system. For example, the authorities have, with the help of EC, established internal audit units in all line ministries, central state organizations, and extra-budgetary funds. Their establishment is also underway in local governments. The Law on Financial Management and Control Systems in the Public Sector has been enacted and controllers have been appointed for all line ministries.

#### ***2. Risk Analysis.***

The overall financial management risk for the project is substantial before mitigation measures, and with adequate mitigation measures agreed, the financial management residual risk is rated substantial due to the number of implementing entities involved in the project. The table below summarizes the financial management assessment and risk ratings of this project:

Risk	Risk Rating	Risk Mitigation Measures	Risk Rating after Mitigation Measures
<b>INHERENT RISK</b>			
<i>Country level.</i> Perceived corruption in the two countries is high. PFM systems are relatively weak. Compliance on internal controls is weak. Internal audit is not yet developed. Capacity of State Audit Institution is still low. Efficient and effective procurement practices are lacking and appropriate complaint mechanisms missing.	S	Corruption risk will be mitigated by instituting additional procedures and strengthening the system of internal controls. The internal controls to be applied in practice are described in Financial Manuals. Quarterly IFRs will be submitted to the Bank, and the Bank's FMS will perform on-site supervision. Risk imposed by low capacity of SAI will be mitigated by using private auditors acceptable to the Bank for the project audit.	M
<i>Entity level.</i> Weak financial management structure in government departments. Coordination could be difficult because there will be four implementing agencies (three in BiH and one in Croatia).	H	The risk will be mitigated by instituting additional key controls to be applied during implementation of the project by dedicated project staff. Project is divided into four specific parts and implemented using four designated accounts with separate funds flows.	S
<i>Project level.</i> Complexity of the project is high.	S	Implementation will be fragmented into four parts, but these parts will be well described and implementation will be made by experienced units knowledgeable about Bank procedures.	S
<b>Overall Inherent Risk</b>	<b>S</b>		<b>S</b>
<b>CONTROL RISK</b>			
1. <i>Budgeting and Planning.</i> Capacity for budgeting and planning is adequate, and there is substantial experience in this respect.	M	The project units will document the follow-up and corrective actions taken for any variances between budgeted and actual figures. The above will be verified by the Bank's FMS during supervision.	M
2. <i>Accounting.</i> There are four accounting systems—one in each agency.	M	No additional mitigation measures needed. Currently used accounting systems will continue being used. Separate systems will work satisfactorily due to the design, with separation of the project in well-defined parts using separate flow of funds.	M
3. <i>Internal controls.</i> Internal control procedures are already described in detail to ensure that project funds are used for intended purposes.	S	Financial Manuals may need to be revised slightly.	S
4. <i>Funds flow.</i> Project divided into four parts also for the funds flow and with four designated accounts.	S	No additional mitigation measures needed.	M
5. <i>Financial reporting.</i> Four separate financial reports will	M	No additional mitigation measures needed. Financial reporting will be based on the	M



need to be produced.		current systems used.	
6. <i>Auditing.</i> Potential delay auditing as there will be four project financial statements.	S	No additional mitigation measures needed. Private audit firm acceptable to the Bank will perform audit of the project based on existing audit arrangements.	M
7. <i>Staffing.</i> Additional staff will be needed, especially in MOFTER, BiH.	S	The project units will hire/assign additional staff to fulfill the additional tasks related to this project as needed.	M
<b>Overall Control Risk</b>	<b>S</b>		<b>M</b>
OVERALL FM RISK	<b>S</b>		<b>S (due to the number of stakeholders involved)</b>

H = High; S = Substantial; M = Moderate.

### 3. *Strengths.*

Previous experience with Bank-funded projects represents the principal strength of the project's financial management arrangements (FMAs). MOFTER in BiH, the Agency for Water Shed of the Adriatic Sea, and the HV are currently implementing Bank-financed projects.

### 4. *Weaknesses and Action Plan.*

The FMAs are satisfactory and no specific actions before Board presentation are needed.

Staff has been assigned to manage the project financial management in all four implementing units. Draft manuals have been developed from all units and existing systems will be used.

### 5. *Implementing Entity.*

In BiH a Project Management Team (PMT) was established in MOFTER to be responsible for fiduciary aspects of the Urban Infrastructure and Service Delivery Project. The main task of the PMT is to prepare and carry out financial management, supervision, reporting, and evaluation during the project implementation period for Component 1 and a part of Component 4. At the entity level, designated units in the two entities, the PIT in the Agency for Watershed of the Adriatic Sea in Mostar and the PIT in Republika Srpska Water Directorate in Bijeljina, will provide management of the fiduciary functions.

In Croatia, the overall project implementation is the responsibility of the Ministry of Regional Development, Forestry and Water Management through *Hrvatske Vode* (HV). A PMT is established within HV including three specialists (Project Manager, Financial Manager, and Procurement Manager). All three specialists are HV staff. The PMT will be responsible for financial management, supervision, reporting, project implementation including preparation of bidding documentation with technical specification, evaluation, and contracting.

## **6. *Planning and Budgeting.***

Project units will prepare annual plans based on projects approved and expected to be approved for investments. Project teams will coordinate closely with each other through the coordination mechanisms designed for the project in preparation of its annual plan and financial budgets. However, the distribution of funds managed by the four project units have been agreed as part of the project preparation and reflected in the legal agreements. The capacity to plan and budget in the existing projects is satisfactory.

The risk associated with planning and budgeting is assessed as moderate.

## **7. *Accounting.***

### **Staffing**

For BiH the PMT in MOFTER has a financial manager with extensive functional experience including experience in implementing a Bank-financed project. An additional accountant is expected to be hired to reinforce monitoring responsibilities of the PMT before the implementation starts. The Agency for Watershed of the Adriatic Sea in Mostar has staff with previous experience with Bank-financed projects and a total staff of four accountants, but FMAs are based on the arrangements used in the sister agency JP Sava in Sarajevo for the currently implemented Water Quality GEF project. The RS Water Directorate will contract FM consultants with the experience with Bank-financed projects (consultant has been selected and preliminary agreement reached). In addition, the agriculture Project Implementation Unit within the Ministry for Agriculture, Water Management and Forestry in Banjo Luke includes FM staff (an accountant plus assistant) with extensive experience with ongoing Bank-financed projects including the Small Scale Commercial Agriculture Development Project.

In terms of financial management, the Croatian project unit has one staff employed by Croatian Waters in charge of accounting, payments, and disbursement applications, FMRs, budgeting, and other finance-related activities. The accountant is employed by Croatian Waters, is on its payroll, and has been temporarily released from his previous duties for the duration of the project.

The risk associated with staffing is assessed as moderate. The project units will hire/assign additional staff to fulfill the additional tasks related to this project as needed.

### **Information Systems**

All three project units in BiH have installed and implemented a financial accounting and reporting software that is successfully being used in several Bank-financed projects. The software has the necessary capabilities to produce the required reports and maintain a trail of transactions in a verifiable manner. The finance managers have received training in the operation of the software and are comfortable with its operation. The auditor has not made any adverse comments on the accounting system in its audit reports for ongoing projects using the same software. The chart of accounts in the accounting system is classified by component and reflects the sources of funds and can be broken down into

different types of expenditures for the project. Further, it is capable of providing information on the receipt and use of funds and produces financial reports comparing budget with actual expenditures at any given time. It has adequate security levels and meets the Bank's minimum reporting requirements.

In Croatia, all records under the project are kept in an ORACLE database, named POINT 2000. The reporting requirements for the project unit are quarterly reports to HV on the uses of funds plus ad hoc reports, quarterly reports to the World Bank, monthly reports to tax authorities, and yearly submission of financial statements. The above system and the financial reports submitted have been fully acceptable for the ongoing project implemented by HV.

The risk associated with information systems is assessed as moderate.

#### Accounting Policies and Procedures

Accounting procedures are set out in the draft Financial Management Manuals. Manuals for BiH and Croatia were developed as part of the preparation of the project, while specific changes will be made to include the two entity institutions that were chosen to have implementation responsibilities. The manuals contain procedures for the flow of accounting information and records between the project units and other stakeholders.

Additional accounting policies that need to be applied to the project will include the following major assumptions:

- Cash accounting as the basis for recording transactions;
- Reporting should be done in US\$ (reporting currency);
- Quarterly Interim Financial Reports (IFRs) for each project unit should be prepared, including donors funds, if any;
- All counterpart funds should be reflected in the financial reports.

The risk associated with accounting policies and procedures is considered as moderate.

#### **8. *Internal Controls and Internal Audit.***

Robust system of internal controls and procedures are instituted for the four project units. The controls and procedures to be applied are described in the draft Financial Manual, which will be finalized and will be an integral part of Operations Manual. Key internal controls to be applied for the project include:

- Appropriate authorizations and approvals;
- Segregation of duties;
- Different people will be responsible for different phases of a transaction;
- Reconciliations between records and actual balances, and with third parties, should be performed on a regular basis;
- Complete original documentation should exist to support project transactions.

Each project unit publishes tenders for their respective part of the project. The project units are signatory to the contracts. After receiving an invoice, it is forwarded for verification to technical staff within the entity implementing the activity or other institutions as relevant responsible for checking the quality and quantity of the delivery covered by the invoice. Independent consultants in each unit will also be contracted to verify that goods, services, or works have been delivered at an acceptable level prior to payments.

After the technical staff has approved the invoice in terms of quality and quantity of the work/service, the invoice is forwarded to the project unit, where it is registered and forwarded to the head of each project unit. The invoice is immediately given to the project accountant who registers the invoice in a simple log file with name of supplier, amount, and date of payment. He or she checks the invoice and the calculation of the invoice, and finds the appropriate budget to which the amount will be charged (contract number, item number, and program [component]). The accounting codes need to be written on the invoice by the accountant. After initialing the invoice the accountant gives it to the project procurement staff. The procurement staff checks the invoice against the relevant contract number and, if necessary, attaches a copy of the relevant paragraph of the contract on which the invoice is based and signs the invoice.

All relevant documentation shall be attached to the invoice, enabling the head of the project unit to immediately see the evidence that the necessary checks have been performed. The invoice is finally received again by the project accountant. The receipt of the approved invoice is registered in the above-mentioned registry, ensuring that payment can be made per the terms of payment. Payment order and the invoice with all designated approvals and signatories (described in the Financial Manual) are submitted for payment.

Detailed description of controls and procedures are included in the Financial Management Manual, which sets out the financial management and internal control policies and procedures, and is intended to guide staff and minimize the risk of errors, omissions, and delays in recording and reporting. These written standards also clarify responsibilities, including level of authority, and clear control over assets, cash, and bank accounts, and ensure timely and accurate financial reporting.

The project units have no internal audit function and none is considered necessary given the separation of functions between contract award and contract payments and the decision to have independent construction quality supervision consultants. Moreover, activities will be subject to an audit by the Supreme Audit Institution of the two countries.

The risk associated with internal controls and internal audit is considered as moderate.

## **9. *Reporting and Monitoring.***

In BiH each project unit would maintain separate financial records for the project and would ensure appropriate accounting for the funds provided. Each unit would prepare

and submit quarterly unaudited Interim Financial Reports (IFRs) in an agreed format. The project units would also prepare annual project financial statements in the format already agreed between the Government of BiH and the auditors, which have been found to be consistent with the IFRs and acceptable to the Bank. The division of both interim and annual reporting into four parts is closely linked to the implementation, which is also divided into four distinct parts.

In Croatia the financial statements are prepared by the PMT and they will submit quarterly interim unaudited IFRs in an agreed format.

The IFRs will comprise the following reports presented in the agreed format:

- Statement of Sources and Uses of Funds
- Uses of Funds by Activity
- Designated Accounts Statement
- Unit of Output by Activity
- Narratives to the reports.

For BiH, it is planned to produce consolidated project financial reports by PMT. Legal agreements will cover each of the four project units, giving a well-defined subset of the overall activities to be implemented by each of these units. The risk associated with reporting and monitoring is assessed as moderate.

#### **10. *External Audit.***

No significant issues have arisen in the audits of the Bank-financed project implemented by the project units in BiH. The project financial statements will be audited annually using acceptable auditing standards by acceptable independent auditors. Audit arrangements for the entire portfolio are handled by the Government of BiH (State) instead of by each project. The BiH State Ministry of Finance and Treasury have a three-year contract with an international audit firm for auditing all WB-financed projects (with the exception of revenue-earning projects). According to the master audit agreement, audited project financial statements would be sent to the Bank within six (6) months of the end of the fiscal year. Audit reports include the project financial statement (including statements of expenditures), the Designated Accounts, and the project units' internal control arrangements, and cover all financial sources. The umbrella audit agreement has ensured submission of timely audit reports. The global audit arrangements have worked well and are satisfactory to the Bank. The auditors would audit consolidated project financial statements and issue management letters. The terms of reference (TORs) used would be the standard TORs covering the whole portfolio.

In Croatia current auditing arrangements for the project implemented by HV (Coastal Cities Pollution Control Project) are satisfactory to the Bank and it has been agreed that similar audit arrangements will be adopted for this project. The TORs are included in the Financial Management Manual. The audit of the project will be conducted by independent private auditors acceptable to the Bank, on TORs acceptable to the Bank, and procured by HV. The annual audited project financial statements will be provided to

the Bank within six months of the end of each fiscal year and also at the closing of the project.

All audits will be conducted in accordance with International Standards on Auditing as issued by the International Federation of Accountants (IFAC) and on TORs acceptable to the Bank.

The following table identifies the audit reports that will be required to be submitted by the project implementation agencies together with the due date for submission.

<i><b>Audit Report</b></i>	<i><b>Due Date</b></i>
Financial statements for HV	This is already required in the ongoing Coastal Cities Pollution Control Project, thus will not be required under this project.
BiH: Three Project Financial Statements (PFS), including Statements of Expenditure (SOEs) and Designated Accounts. The PFSs include sources and uses of funds by category, by components, and by financing source; SOE statements, Statements of Designated Accounts, notes to financial statements, and reconciliation statements.	Within six months of the end of each fiscal year and also at the close of the project.
Croatia Project Financial Statements (PFS), including SOEs and designated account. The PFSs include sources and uses of funds by category, by component, and by financing source; SOEs, Statements of Designated Accounts, notes to financial statements, and reconciliation statements.	Within six months of the end of each fiscal year and also at the close of the project.

In addition, the supreme audit institutions of the two countries perform ad hoc external audits of the projects.

The risk associated with external audit is considered moderate.

#### **11. *Funds Flow and Disbursement Arrangements.***

It is expected that the proceeds of the Grant would be disbursed over a five-year period. Disbursements from the GEF grant would follow the transaction-based method, that is, traditional Bank procedures including reimbursements with full documentation, Statement of Expenditures (SOEs), direct payments, and special commitments. Documentation would be retained for at least one year after receipt by the Bank of the audit report for the year in which the last disbursement was made.

Disbursements from the Grant proceeds would be administered by the four project units, which are responsible for retaining supporting documentation for SOEs and making them available to the Bank supervision missions and to the auditors.

In BiH, the Ministry of Finance (MOF) will open and manage Designated Accounts (DAs) (previously called Special Accounts) specifically for this project, in banks acceptable to the Bank. Project funds will flow from the Bank, either via a single Designated/Special Accounts, which will be replenished on the basis of SOEs or by direct payment on the basis of direct payment withdrawal applications; Three designated accounts will be needed. Withdrawal applications for the replenishments of the DAs will be sent to the Bank at least every three months, or when the balance of the DA is equal to about half of the initial deposit or the authorized allocation, whichever comes first. There is no plan to move to periodic disbursements.

In Croatia, HV will open and manage a designated account for the project, after authorization of the MOF, in a bank acceptable to the World Bank.

The risk associated with funds flow and disbursement is considered as moderate.

## **12. *Supervision Plan.***

During project implementation, the Bank will supervise the project's FMAs in two main ways: (a) review of the project's quarterly IFRs and the project's annual audited financial statements and the auditor's management letter and remedial actions recommended in the auditor's Management Letters; and (b) performance of on-site supervision in the four implementing agencies, and review of the project's financial management and disbursement arrangements to ensure compliance with the Bank's minimum requirements in accordance with the frequency and scope indicated in the Bank's RAPMAN system for risk-based supervision of the FMAs. Supervision will be performed by the Bank-accredited Financial Management Specialist.

**Annex 8: Procurement**  
**BOSNIA AND HERZEGOVINA**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

**A. General**

Procurement of contracts financed in whole or part by the Global Environment Fund of the World Bank for the proposed project would be carried out in accordance with the World Bank's *Guidelines: Procurement Under IBRD Loans and IDA Credits* dated May 2004, and *Guidelines: Selection and Employment of Consultants by World Bank Borrowers* dated May 2004 and revised October 2006, and the provisions stipulated in the Financing Agreement. The general description of various items under different expenditure categories is given below. For each contract to be financed by GEF proceeds, different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the recipient and the Bank project team in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

**Procurement of Works:** Works procured under this project will include renovations of different natural museum buildings and water management infrastructure. To the extent possible, contracts for these works will be grouped into bidding packages estimated to cost more than in case of (a) Bosnia and Herzegovina US\$500,000 equivalent, and in case of (b) the Republic Croatia US\$5,000,000 equivalent, and procured following International Competitive Bidding (ICB) procedures, using relevant Bank-issued Standard Bidding Documents for procurement of works.

Contracts for works that cannot be grouped into larger bidding packages, and are estimated to cost less than US\$500,000/US\$5,000,000 per contract (as per 2(a) and 2(b), above) may be procured using National Competitive Bidding (NCB) procedures and bidding documents for procurement of works satisfactory to the Bank.

**Procurement of Goods:** Goods procured under this project will include off-the-shelf goods, including office and computer equipment of standard specifications; measuring, monitoring, and related information equipment; wastewater treatment plant equipment; office supplies, and operational expenditure items required by the Project Implementation Unit. To the extent possible, contracts for these goods will be grouped into bidding packages estimated to cost more than, in the case of (a) Bosnia and Herzegovina US\$200,000 equivalent, and in the case of (b) the Republic Croatia US\$1,000,000, and procured following ICB procedures, using relevant Bank-issued Standard Bidding Documents (SBDs) for procurement of goods. Where appropriate, one-stage-bidding ICB procedures will be used for procurement of information systems using relevant Bank-issued SBDs.



Contracts for goods that cannot be grouped into larger bidding packages and estimated to cost less than US\$200,000/US\$1,000,000 per contract (as per 3(a) and 3(b)) may be procured using NCB procedures and national bidding documents for procurement of goods satisfactory to the Bank or, as may appropriate, shopping procedures based on a model request for quotations satisfactory to the Bank. Contracts for goods estimated to cost less than US\$100,000 per contract may be procured using shopping procedures based on a model request for quotations satisfactory to the Bank.

**Procurement of non-consulting services:** Non-consulting technical services, such as surveys, mapping and digitizing (should the need arise during project implementation) will be procured following the above-mentioned arrangements for Procurement of Works.

**Selection of Consultants:** Consulting services from firms and individuals required for the project will include technical assistance to participating state and entity institutions.

### **Firms**

Contracts with firms estimated to cost US\$100,000 equivalent or more will be procured using Quality and Cost-Based Selection (QCBS) procedures and the relevant World Bank Standard Request for Proposals (RFPs).

Small and simple contracts estimated to cost less than US\$100,000 equivalent will be procured using Consultants' Qualifications Selection (CQS), selection under a Fixed Budget (FBS), or Least-Cost Selection (LCS) procedures. CQS could be used on a case-by-case basis with Bank approval for contracts estimated to cost more than US\$100,000 but less than US\$200,000.

Single-source selection of firms will be allowed only with the previous approval of the Bank and under the exceptional cases described in paragraphs 3.9 through 3.13 of the Consultant Guidelines.

### **Individuals**

Services would be provided by individual consultants selected by comparison of qualifications of three candidates and hired in accordance with the provisions of paragraphs 5.1 through 5.3 of the Consultant Guidelines. In case of direct invitation (not publicly advertised), the list of individuals to be invited to submit curriculum vitas CVs should be determined by a committee or commission.

Sole-source selection of individual consultants will be allowed only with the previous approval of the Bank and under the exceptional cases described in paragraph 5.4 of the Consultant Guidelines.

Short-lists of consultants for services estimated to cost less than US\$100,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Universities and research centers, and government officials and civil servants in the recipient's country, may be hired as consultants only when they meet the eligibility criteria set forth in paragraph 1.11 of the Consultant Guidelines.

**Operating Costs:** Operating costs generated by project implementation, including the day-to-day operating cost for office maintenance, supplies and consumables, and incremental costs of operating and maintaining the equipment provided under the project, other sundry items, and recurrent costs of the implementing agency directly related to project implementation, would be financed by the project.

**Procurement under Grant program:** For procurement under grants provided under the project, the procurement procedures established in the Grant Program Manual and acceptable to the Bank would apply.

## **B. Assessment of the agency's capacity to implement procurement**

In **Bosnia-Herzegovina**, the project implementation will be through (a) a project management team of the state-level Ministry of Foreign Trade and Economic Relations (MOFTER), and (b) a project implementation team of the Ministry of Agriculture, Forestry and Water Management of Federation of BiH and Repunlika Srpska. Project Implementation Teams (PITs) will be financed by the government contribution.

MOFTER will coordinate the activities of: (a) the two entity ministries of Agriculture, Forestry, Water Management (MAFWM), (b) the two entity ministries of Environment (MOE), (c) the Agency for Watershed of the Adriatic Sea and Republika Srpska Water Directorate, which report to the entity's MAFWM; and (d) activities that are joint with the Republic of Croatia.

The Project Management Team (PMT) of MOFTER will implement *Component 1* of the project. The PMT will be responsible for preparing and carrying out technical, procurement, and financial management, supervision, reporting, and evaluation of *Component 1* of the project during the project implementation period. Fiduciary aspects of implementation of *Component 1* will be done by local consultants (the Financial Manager and Procurement Manager) financed by the GEF and hired by MOFTER. The PMT coordinator reports to MOFTER. If needed, staffing will be increased to fulfill the additional duties related to the NTMP project.

Project *Components 2, 3, and 4* will be implemented by the Ministry of Agriculture, Forestry and Water Management of the Federation of BiH and the Ministry of Agriculture, Forestry and Water Management of the Republika Srpska, through PITs located within the Agency for Water Shed of Adriatic Sea in Mostar and Republika

Srpska Water Directorate in Bijeljina/Trebinje, financed by the entity government contribution.

PITs will be responsible for preparing and carrying out technical, procurement, and financial management, supervision, reporting, and evaluation of *Components 2, 3, and 4* of the project during the project implementation period. If needed, staffing will be increased to fulfill the additional duties related to the NTMP project.

The issues concerning procurement management for implementation of the project have been identified and include:

- Insufficient procurement capacity in MOFTER and RS MAFWM to deal with project;
- Complexity of the current administrative structure that does not lend itself to economies of scale;
- Limited procurement capacity and irregular enforcement of the new procurement law. This law is in line with European Union procurement regulations, but the law and its enforcement, the new procurement system, and a procurement capacity and culture are still to be introduced in the country. In the above-described business environment, attempts to exert political or administrative influence on the outcome of competitive procurement processes are a real probability.

1.

Based on the findings and recommendations of the procurement assessment, the following measures are envisioned to mitigate these risks:

- The PMT of MOFTER and the PIT of RS MAFWM shall employ a procurement specialist as consultant, with suitable educational background and experience in international procurement, familiar with World Bank procurement procedures and guidelines shortly after grant effectiveness. The procurement specialist will be engaged part-time under terms of reference acceptable to the Bank.
- Based on findings of the assessment of the capacity of the MAFWM PIT of FBiH to conduct procurement, the Bank has concluded that position of a procurement specialist should be staffed with a full-time, ministry employee who has sufficient professional experience relevant to procurement under the Bank procurement procedures.
- By GEF effectiveness, a project launch workshop will be held for the PMT/PITs staff and agencies involved in the project implementation. During this project launch workshop adequate time will be spent on procurement training of the PMT/ PITs.
- During the supervision mission, the conduct of procurement under the project would be reviewed in light of the potential procurement risks, and recommendations made if necessary, to improve the procurement process.

In the **Republic of Croatia**, the project implementation is the responsibility of the Ministry of Regional Development, Forestry and Water Management) through Croatia

Waters (HV). A PMT is established within HV with the support of experts from the four Ministries (Ministry of Regional Development, Forestry and Water Management; Ministry of Environmental Protection, Physical Planning and Construction; Ministry of Agriculture, Fisheries and Rural Development, and Ministry of Culture). The project management team will be financed by a government contribution.

The procurement officer of the PMT who will be responsible for procurement under the project, must have a sufficient experience relevant to procurement under Bank procurement procedures.

Based on the assessment of the capacity of Croatian Waters to carry out and manage procurement, it is recommended that the procurement thresholds for procurement of goods, works, and consultancy contracts are set in accordance with the ECA regional thresholds of February 2006 revised for the Republic of Croatia in August 2006. The review thresholds for the project will be determined after the procurement plan is prepared prior to loan negotiations. In addition to the prior review supervision to be carried out by Bank, it is recommended two supervision missions per year visit the field to carry out post-review of procurement actions. The procurement staff in the Department of Development of Croatian Waters would properly collect and maintain the procurement documentation.

Based on the assessment of the capacity of the recipients, the Bank determines that the overall risk for procurement is average.

### **C. Procurement Plan**

A Procurement Plan for project implementation has been developed and discussed with the Recipient and provides the basis for the procurement methods. This plan will be agreed between the Recipient and the Project Team in April 2007. It will also be available in the project's database and on the Bank's external website. The Procurement Plan will be updated annually in agreement with the Project Team or as required to reflect the actual project implementation needs and improvements in institutional capacity.

### **D. Frequency of Procurement Supervision**

In addition to prior review to be carried out by the Bank, the procurement capacity assessment has recommended supervision missions to visit the field every six months to carry out post-review of procurement actions, at least for the first year of implementation. In the second year of the project, supervision missions may be reduced to once a year subject to satisfactory implementation of the project. All other contracts will be subject to selective post-award reviews in accordance with the procedures described in Appendix 1, paragraph 4 of the Procurement and Consultant Guidelines.

**Details of the Procurement Plans for Bosnia and Herzegovina and for Croatia**

**PROCUREMENT PLAN for Bosnia and Herzegovina Neretva and Trebisnjica Management Project**

		Type	Procurement method	Packages	Post / Prior	Issue	Bids received	Evaluation	Ctr. Signed	Ctr Complete
	<b>COMPONENT 1 Improved Transboundary Water Resource Management CONSULTANTS</b>									
	<b>1.1. Insitution and Capacity Building</b>									
	1.1.b Support for operation of ISWC and TWG									
	1. Meetings organization	TR	Other		Post					
	2. Study tours	TR	Other		Post					
	1.1.c Training on preparation of river basin management plans and implementation of the EU WFD	TR	Other		Post					
	<i>1. Series of workshops related to the implementation of EU WFD</i>	TR	Other		Post					
	<i>2. Workshops series related to the Water Conflicts and Negotiations Techniques</i>	TR	Other		Post					
	1.1.d Design of a set of appropriate regional coordination procedures for transboundary water resource management	CS	IC		Post	3/09	4/09	5/09	6/09	12/09
	1.1.e Identification of necessary additional policy and institutional reforms to facilitate enhanced transboundary management tools	CS	IC		Post	3/09	4/09	5/09	6/09	12/09
	<b>1.2. Measurement, monitoring and information management</b>									
	Equipment and expansion of the existing network of water measurement and monitoring stations	CS	CQ		Post	3/09	4/09	5/09	6/09	12/09
	Develop basin-wide water information system including GIS system, equipment and training	CS	CQ		Post	3/09	4/09	5/09	6/09	6/10
	Develop and implement mathematical models for hydrological predictions, HPP operations, forecasting and decision making	CS	QCBS		Prior	2/10	6/10	8/10	10/10	10/11
	<b>1.3. River basin management planning</b>									
	1.3.a Preparation of background studies for development of the NTRB RBMP	CS	QCBS		Prior	9/08	1/09	3/09	4/09	4/11
	Development of ecological management objectives for the NTRB									
	<i>Establishment of environmental objectives and development of program of measures to achieve environmental objectives</i>	CS	CQ		Prior	4/11	5/11	6/11	7/11	12/11
	1.3.c Conduct an economic analysis of water use in the NTRB	CS	QCBS		Prior	8/10	12/10	2/11	3/11	12/11
	1.3.d Develop the river basin management plan	CS	CQ		Prior	1/12	2/12	3/12	4/12	12/12
	<b>Subtotal COMPONENT 1</b>									

		Type	Procurement method	Packages	Post / Prior	Issue	Bids received	Evaluation	Ctr. Signed	Ctr Complete
<b>COMPONENT 2:</b>										
<b>Improved management and use of wetlands ecosystems</b>										
	2.1. Improved management and use of water-dependent ecosystems									
	2.1.a Improved wetlands management in Hutovo Blato Nature Park	CS	QCBS		Prior	3/09	7/09	8/09	10/09	4/11
	2.1.c Increased understanding of values of wetlands and their resources	CS	CQ		Post	3/09	4/09	5/09	6/09	12/09
	2.1.c Increased understanding of values of wetlands and their resources	CS	CQ		Post	08/09	9/09	10/09	12/09	12/12
	2.2. Water management infrastructure									
	2.3. Improved operation of reservoirs, HPPs and dams									
	2.3.a Conduct a study to determine the minimum environmental flow	CS	QCBS		Prior	11/08	3/09	4/09	5/09	12/09
	2.3.b Prepare a plan, guidelines and training program for optimal management of HPP's multi-purpose reservoirs	CS	QCBS		Prior	9/09	12/09	1/10	3/10	12/10
	2.3.c Establishment of seismological monitoring of the dam Alagovac	CS	CQ		Post	3/09	4/09	5/09	6/09	9/09
	<b>Subtotal COMPONENT 2</b>									
<b>COMPONENT 3:</b>										
<b>High priority investments for water pollution control</b>										
	3.2. Industrial wastewater treatment improvements		QCBS		Prior	2/10	6/10	7/10	9/10	3/11
<b>COMPONENT 4: Public participation and awareness</b>										
	4.1. Scientific community involvement									
	4.1.a 3 annual workshops	TR	OTHER		Post					
	4.2. Civil society participation									
	4.2.a Training and facilitation for community involvement in RMBP	TR	CQ		Post	2/09	3/09	4/09	5/09	12/09
	4.2.b Support to local NGOs activities - Grants program	G R	Grant		Post	2/09	5/09	7/09	9/09	9/10
	4.2.c Support community based demonstration projects	G R	Grant		Post	2/09	5/09	7/09	9/09	9/10
	4.3. Project Management									
	Project management staff	CS								
	Operating costs									
	<b>Subtotal COMPONENT 3</b>									
	<b>TOTAL CONSULTANTS</b>									



WORKS											
<b>COMPONENT 2:</b>											
<b>Improved management and use of wetlands ecosystems</b>											
2.1. Improved management and use of water-dependent ecosystems											
2.1.a Improved wetlands management in Hutovo Blato Nature Park											
3. Wastewater Treatment Plant for the Facilities within "Hutovo Blato" Nature Park	W	NCB		Post	2/10	3/10	4/10	5/10		12/10	
Improved use of wetlands sites for tourism											
2. Visitors' center for Vjetrenica cave	W	NCB		Post	6/09	8/09	9/09	10/09		6/10	
Increased understanding of values of wetlands and their resources											
1. Completion and Display of the Flora and Fauna Exhibit Within the Museum of Hercegovina – Trebinje	W	NCB		Post	2/10	4/10	5/10	6/10		12/10	
2.2. Water management infrastructure											
2.2.b Water management infrastructure in FBiH											
Improved water management on the Krupa River within the Hutovo Blato Nature Park	W	NCB		Post	3/11	4/11	5/11	6/11		12/11	
<b>Subtotal COMPONENT 2</b>											
<b>COMPONENT 3:</b>											
<b>High priority investments for water pollution control</b>											
3.1. Municipal wastewater treatment improvements											
3.2.a Upgrade to wastewater treatment system to a metallurgy company in Konjic	W	NCB		Prior							
3.1.a Bileca municipality wastewater treatment system	W	ICB		Prior	3/09	5/09	7/09	9/09		9/10	
3.1.b Konjic municipality wastewater treatment system	W	ICB		Prior	9/09	11/09	1/10	3/10		3/11	
3.1.c Ljubuski municipality wastewater treatment system	W	ICB		Prior	9/09	11/09	1/10	3/10		9/10	
3.1.e WWTP upgrade in Nevesinje Municipality	W	NCB		Post	9/11	10/11	11/11	12/11		6/12	
3.1.f WWTP upgrade in Trebinje Municipality	W	NCB		Post	9/11	10/11	11/11	12/11		6/12	
3.2. Industrial wastewater treatment improvements											
3.2.a Upgrade to wastewater treatment system to a metallurgy company in Konjic		NCB		Prior	4/11	5/11	6/11	7/11		4/12	
<b>Subtotal COMPONENT 3</b>											
<b>TOTAL WORKS</b>											
<b>TOTAL GEF:</b>											
<b>CONSULTANT SERVICES, GOODS &amp; WORKS</b>											
<b>UNALLOCATED</b>											
<b>GRAND TOTAL CONSULTANT SERVICES, GOODS &amp; WORKS</b>											



PROCUREMENT PLAN for Republic Croatia Neretva and Trebinjica Management Project

Item No.	PROJECT DESCRIPTION	Type	Procurem. Method	Package	Post/Prior	Issue	Bid received	Evaluation	Contr. Signed	Contr. Complete
<b>CONSULTANT SERVICES</b>										
<b>COMPONENT 1 Improved Transboundary Water Resource Management</b>										
<b>1.1. Institution and Capacity Building</b>										
1.1. b	Support for operation of ISWC and TWG									
	1. Meetings organization	TR	Other							
	2. Study tours	TR	Other							
1.1. c	Training on preparation of river basin management plans and implementation of the EU WFD	TR	CQ		Prior					
1.1. d	Design of a set of appropriate regional coordination procedures for transboundary water resource management	CS	IC		Post	03./09	04./09	05./09	06./09	10./09
1.1. e	Identification of necessary additional policy and institutional reforms to facilitate enhanced transboundary management tools	CS	IC		Post	03./09	04./09	05./09	06./09	10./09
<b>1.2. Measurement, monitoring and information management</b>										
1.2. a	Equipment and expansion of the existing network of water measurement and monitoring stations	G	Sh		Post	03./09	04./09	05./09	06./09	10./09
1.2. b	Develop basin-wide water information system including GIS system, equipment and training	CS	CQ		Post	03./09	04./09	05./09	06./09	06./10
1.2. c	Develop and implement mathematical models for hydrological predictions, HPP operations, forecasting and decision making	CS	QCBS		Prior	08./09	11./09	01./10	02./10	06./11
<b>1.3. River basin management planning</b>										
1.3. a	Preparation of background studies for development of the NTRB RBMP	CS	QCBS		Prior	09./08	01./09	02./09	03./09	12./10
1.3. b	Development of ecological management objectives for the NTRB	CS	CQ		Post	10./10	11./10	12./10	01./11	06./11
1.3. c	Conduct an economic analysis of water use in the NTRB	CS	QCBS		Prior	04./09				06./11
1.3. d	Develop the river basin management plan	CS	QCBS		Prior	01./09				12./12
	<b>TOTAL COMP 1</b>									

Item No.	PROJECT DESCRIPTION	Type	Procurem. Method	Package	Post/Prior	Issue	Bid received	Evaluation	Contr. Signed	Contr. Complete
<b>COMPONENT 2 Improved management and use of wetlands ecosystems</b>										
<b>2.1. Improved management and use of water-dependent ecosystems</b>										
2.1. c	Increased understanding of values of wetlands and their resources - Bird Museum of the Neretva Delta and Educational/Research Center in Metkovic	CS	CQ		Post	04./09	05./09	06./09	07./09	01./11
2.1. c	Increased understanding of values of wetlands and their resources - "Nasa Neretva" Transboundary Newsletter Promoting Environmental Protection	CS	CQ		Post	08./09	09./09	10./09	12./09	12./12
2.1. d	Improved wetlands management in five Croatian PAs	CS	CQ		Prior	06./09	07./09	08./09	09./09	05./10
<b>2.2. Water management infrastructure</b>										
2.2. a	Reduction of salt water intrusion	CS	QCBS		Prior	04./09	06./09	07./09	09./09	06./10
<b>2.3. Improved operation of reservoirs, HPPs and dams</b>										
2.3. a	Conduct a study to determine the minimum environmental flow	CS	CQ		Post	09./09	11./09	01./10	02./10	02./11
2.3. b	Prepare a plan, guidelines and training program for optimal management of HPPs multi-purpose reservoirs	CS	CQ		Post	03./09	04./09	05./09	06./09	03./10
<b>TOTAL COMP 2</b>										
<b>COMPONENT 4: Public participation and awareness</b>										
<b>4.1. Scientific community involvement</b>										
4.1. a	3 Annual workshops	TR	CQ		Post					
<b>4.2. Civil society participation</b>										
4.2. a	Training and facilitation for community involvement in RMBP	TR	IC		Post	02./09	03./09	04./09	05./09	12./10
4.2. b	Support to local NGOs activities - Grants program	GR	Grant		Post	02./09	05./09	07./09	09./09	12./11
4.2. c	Support community based demonstration projects	GR	Grant		Post	02./09	05./09	07./09	09./09	12./11
<b>4.3. Project Management</b>										
	Project management									
	Operating costs									

Item No.	PROJECT DESCRIPTION	Type	Procurem. Method	Package	Post/Prior	Issue	Bid received	Evaluation	Contr. Signed	Contr. Complete
	<b>TOTAL COMP 4</b>									
	<b>TOTAL CONSULTANTS SERVICES</b>									
	<b>GOODS</b>									
	<b>COMPONENT 1 Improved Transboundary Water Resource Management</b>									
1.2.	<i>Measurement, monitoring and information management</i>									
1.2. b	Develop basin-wide water information system including GIS system, equipment and training									
	2. Establishment of GIS data foundation for WIS	G	Sh		Post	02./09	03./09	04./09	05./09	05./10
	<b>TOTAL COMP 1</b>									
	<b>COMPONENT 2 Improved management and use of wetlands ecosystems</b>									
2.1.	<i>Improved management and use of water-dependent ecosystems</i>									
2.1. c	Increased understanding of values of wetlands and their resources - Bird Museum of the Neretva Delta and Educational/Research Center in Metkovic	G	Sh		Prior	01./10	02./10	03./10	04./10	11./10
	<b>2.2. Water management infrastructure</b>									
2.2. a	Reduction of salt water intrusion	G	ICB		Post	07./10	09./10	10./10	11./10	06./11
	<b>TOTAL COMP 2</b>									
	<b>COMPONENT 4: Public participation and awareness</b>									
4.3.	<i>Project Management</i>									
	Office equipment	G	Sh		Post					
	<b>TOTAL COMP 4</b>									
	<b>TOTAL GOODS</b>									



**Annex 9: Economic and Financial Analysis**  
**BOSNIA AND HERZEGOVINA**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

The project has a number of environmental and economic benefits that will be enjoyed globally, regionally, and locally. Most benefits are extremely difficult to quantify; however, this does not diminish their importance. A qualitative account is provided below.

Global benefits include the protection provided to the endangered flora and fauna of the NTRB, notably in the wetlands of the delta region. Furthermore, reduction in pollutants from land-based sources reaching the Adriatic Sea, which is part of the Mediterranean Sea, will help reverse the degradation of this globally significant body of water. Regional benefits will be shared by the citizens of BiH, Croatia, and of the Adriatic Sea littoral countries, namely Albania, Italy, Montenegro, and Slovenia. The most important benefits are related to tourism and recreation in the NTRB, including ecotourism to wetland areas, and along the Adriatic coast. Reduction of pollution from municipal and industrial sources will help improve bathing-water quality and support marine biodiversity.

Key tangible local benefits include those to the Croatian tourism sector in the vicinity of where the Neretva River drains into the Adriatic Sea, including the secondary aquaculture, agriculture, and service sectors. In the Neretva Delta, the project will also support the introduction of environmentally friendly agriculture and irrigation practices aimed at reducing salinization of the wetlands. This will lead to higher agricultural productivity (notably fruits and vegetables) and product quality, and hence increased incomes to farmers in the area. A detailed, quantitative analysis of these measures is provided in section 3. Other key local benefits are related to improved water quality in drinking water sources in upstream BiH cities along the Neretva River. Municipal and industrial water treatment will reduce costs associated with public health problems (treatment, precautionary expenses, lost workdays) and water treatment. For example, in Bileca untreated municipal and industrial wastewater is discharged into the Bileca Lake in the vicinity of drinking water intake for the city's 14,000 inhabitants.

Other important economic and financial issues related to the project include (a) fiscal sustainability of institutions tasked with cross-border river basin management, and (b) financial and economic feasibility of the pilot scheme to mitigate saltwater intrusion in the Neretva Delta.

**1. Fiscal sustainability of institutions tasked with cross-border river basin management**

This issue concerns the costs of the Technical Advisory Group (TAG) and operations of river basin authorities in both countries, including operation and maintenance (O&M) of project-supported monitoring activities. Associated costs are travel and accommodation costs for the TAG to attend these meetings and remuneration of non-government experts.

The project will provide modest funds to cover the above costs for technical assistance. Fund allocation will decline over the life of the project to be completely phased out in year 5 of the project, when it is expected that such expenses will be fully integrated into the budgetary processes. Increased integration with the EU and emphasis on the implementation of the EU Water Framework Directive (WFD) will strongly help this process, further contributing to sustainability.

## **2. Financial and economic analyses of proposed wastewater treatment (WWT) investments**

### *Economic cost-effectiveness*

The project will finance on a cost-sharing basis WWT system construction and rehabilitation planned for the municipalities of Bileća, Nevesinje, Trebinje, Konjic, and Ljubuški, and the enterprises Eurosjaj and UNIS GAL in Konjic. Selection of technology will be based on *least-cost economic analysis*. In each case the analysis will entail the following steps:

- a. Projection of demand for the collection, treatment, and safe return to the environment of wastewater.
- b. Analysis of different technical options to identify the cheapest way of collecting, treating, and safely disposing of wastewater from the project towns. Experience shows that optimizing already existing capacity is the least-cost solution.
- c. Costing of each of the technical option using economic prices. Such calculations will exclude non-economic costs, such as taxes, subsidies, and other transfer payments, and will be based on constant prices.
- d. The annual O&M costs associated with each technical option will also be determined in economic terms, discounted by the opportunity cost of capital yielding a present value figure.
- e. For each municipality, the sums of the present values of O&M and investment costs associated with different technical options will be compared and the least-cost alternative will be chosen.
- f. Environmental cost-effectiveness, in terms of the average cost of reducing nutrients and BOD, and annual amounts of nutrients and BOD reduced will also be taken into account in the selection process.

### *Financial viability*

In addition to least-cost selection of investments, the project will work with municipalities toward achieving greater financial viability by gradually decreasing inefficiencies and increasing revenues to adequately cover O&M costs. Each participating municipality will be required to develop annual business plans for their operations and services. The business plan approach has been successfully applied in the ongoing BiH Water Quality Protection Project (WQPP).

The Business Plan would show the overall targets for each year, such as the increase in 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 cubic meter and of the number of staff per 100 connections; and increases in tariffs and cost-recovery levels, up to their break-even points. The utilities would incorporate the planned improvements in institutional capacity, such as a billing 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. The practice would be new for the utilities and would assist them in managing all of their resources and defining measures toward the planned targets, and determining which ones directly affect financial performance.

The proposed project will not only implement lessons learned under the WQPP, but will also actually closely cooperate with it through, for example, joint training workshops for municipality staff tasked with designing business plans and matching of WQPP municipalities with beneficiary municipalities under this project so that the former can coach the latter.

### **3. Financial and economic analysis of pilot measures to mitigate saltwater intrusion in the Neretva Delta**

The project will pilot modern irrigation techniques, improved drainage, and good agricultural practices in an area of about 400 hectares (ha) in the Neretva Delta in Croatia. In addition to the environmental benefits, these practices are expected to result in increased yields and improved marketability and market price due to improved quality of the produce. The analysis focuses on the increased revenues to farmers in the pilot area due to improved practices (financial analysis) and their impact on the overall economy (economic analysis).

**Table A9.1. Areas and Crops in the Pilot Area of Opuzen**

	<b>Area (ha)</b>	<b>Percentage</b>
Total	400.0	100.0
Fruit	240.0	60.0
Vegetable	160.0	40.0
Citruses	216.0	54.0
Watermelon	80.0	20.0
Other fruit	24.0	6.0
Cabbage	80.0	20.0
Melon	16.0	4.0
Savoy cabbage	16.0	4.0
Tomato	16.0	4.0
Early potato	16.0	4.0

Leek	6.4	1.6
Lettuce	9.6	2.4
Swiss chard	6.4	1.6
Cauliflower	16.0	4.0
Paprika	9.6	2.4
Spinach	9.6	2.4
Eggplant	6.4	1.6

Source: "Study on Irrigation Possibilities in the River Neretva Valley," Faculty of Agriculture, Zagreb and Faculty of Construction and Architecture, Split.

### Assumptions

- The *period of analysis* is 20 years from project start.
- *Location and land allocation to crops.* The analysis is carried out for the candidate area of Opuzen where a varied combination of fruits and vegetables is grown (Table A9.1). It is assumed that the cropland allocation will remain more or less constant in the without and with project scenarios.
- *Yields* are expected to decrease by 5 to 35 percent from their current levels in the following two decades in the without-project scenario due to increased salinity and lack of proper irrigation. In the with-project scenario they are expected to increase starting in year 3 of the project, to reach 110 to 160 percent of the current levels 20 years from beginning of improved agricultural practices. For simplicity, it is assumed that the increases/decreases would occur in a linear manner. Table A9.2 presents expected values in 2027.

**Table A9.2. Expected Crop Yield**

	Average Current Yield	Reduced Yield in 2027	Possible Yield in 2027 with Irrigation and No Salinity Problem
	t/ha	t/ha	t/ha
Citruses (tangerine)	22,00	19,24	26.57
Melon and watermelon	65,40	47,50	94.16
Other fruit	20,00	16,22	26.15
Cabbage	35,00	33,25	38.15
Savoy cabbage	30,00	28,50	32.70
Tomato	60,00	38,03	78.90
Early potato	18,00	16,09	21.20
Carrot	35,00	32,57	39.23
Leek	30,00	22,98	41.32
Lettuce	25,38	22,17	30.71
Swiss chard	29,81	23,75	39.65
Cauliflower	30,00	25,07	38.06
Paprika	30,00	19,76	46.36
Spinach	25,00	23,75	27.25
Eggplant	35,00	23,06	54.09



*Source:* The study on irrigation possibilities in the river Neretva valley, Faculty of Agriculture, Zagreb and Faculty of Construction and Architecture, Split.

- *Reestablishment of fruit trees.* It is envisioned that citrus trees would be reestablished on 150 ha of the project area in Opuzen. The per-hectare cost of reestablishment is estimated at 200,000 kuna and is assumed to be borne by the farmers. Full yield of 27.1 kilograms per tree is assumed to be reached in 20 percent increments over a five-year period beginning three years after planting. It was assumed that the replanting on 150 ha would occur progressively over three years beginning in year 2 of the project.
- *Cost of inputs,* notably fertilizers, plant protection, labor, and machinery for individual crops are differentiated between the without and with project scenarios. In the with-project scenario farmers incur irrigation charges.
- *Output prices.* Most produce is sold either on the roadside or picked up by large retailers from the farmgate. Data on average prices based on surveys in 2006 were obtained from the Faculty of Agriculture, Zagreb. In the with-project scenario a price premium of 30 percent for good quality was assumed. This price increase would be realized gradually over five years as measures against water salinity, for improved irrigation and good agricultural practices are carried out and result in improved quality. Otherwise, due to lack of projections on movements in output prices due to other factors, they are assumed to stay constant over the period of analysis. Furthermore, economic prices are taken as the same as the prices farmers receive do not include the value-added tax (VAT).
- *Investment costs* related to infrastructure and drainage infrastructure and the introduction of environmentally friendly agricultural practices were taken as US\$1 million to be incurred over three years. Annual O&M costs were assumed to be equal to 10 percent of the investment cost. These costs are assumed to be borne entirely by the project.

### Methodology

*Financial analysis.* In the absence of farm-level crop-area the unit of analysis was chosen as the entire pilot area, 400 ha in Opuzen. First, per-hectare revenues were calculated for each crop under the without-project and with-project scenarios. These were then aggregated to the entire location. The incremental revenues due to tangerine tree reestablishment were added to the revenues. Overall incremental revenues due to the project were calculated by deducting without-project net revenues from with-project net revenues.

For the *economic analysis* both input and output prices were adjusted downward by 22 percent, the VAT. Other costs and benefits that are not realized/incurred by farmers, but other stakeholders, notably benefits associated with reduced water pollution from agriculture, could not be quantified and hence were not included in the analysis.

## Results

The analysis indicates that tangerine tree reestablishment on 150 ha in Opuzen is feasible financially (FIRR = 14.4 percent) and economically (EIRR = 17.0 percent). It should be noted that the EIRR would be higher if other environmental benefits associated with better agricultural and irrigation practices could be quantified and included in the calculation. The results are somewhat sensitive to the assumptions made on the price premium a kilo of high-quality tangerines would fetch over the current average farmgate level and on the increases in yield to be achieved from newly established trees (Table A9.3).

**Table A9.3. Sensitivity Analysis for the Citrus Reestablishment Model**

				<b>Base Case</b>
<b>1</b>	<b>Price Premium</b>	<b>10%</b>	<b>20%</b>	<b>30%</b>
	FIRR	9.6%	12.1%	<b>14.4%</b>
	EIRR	11.7%	14.5%	17.0%
<b>2</b>	<b>Yield Improvement</b>	<b>35% of yield increase of base case</b>	<b>70% yield increase of base case</b>	<b>Expected yield increase fully realized</b>
	FIRR	8.3%	10.4%	<b>14.4%</b>
	EIRR	12.2%	13.4%	<b>17.0%</b>

Overall, the proposed investments in the pilot area are feasible from a financial point of view as evidenced by an FIRR of 16.6 percent. The EIRR is found to be 21.4 percent. The results are highly sensitive to assumptions made on price premia for better-quality crops and to the realization of the expected yield improvements (Table A9.4).

**Table A9.4. Sensitivity Analysis of Overall Results**

				<b>Base Case</b>
<b>1</b>	<b>Price Premium</b>	<b>10%</b>	<b>20%</b>	<b>30%</b>
	FIRR	6.2%	11.7%	<b>16.6%</b>
	EIRR	9.2%	15.6%	<b>21.4%</b>
<b>2</b>	<b>Yield Improvement</b>	<b>35% of yield increase of base case</b>	<b>70% yield increase of base case</b>	<b>Expected yield increase fully realized</b>
	FIRR	6.1%	9.3 %	<b>16.6%</b>
	EIRR	10.6%	13.4 %	<b>21.4%</b>

**Annex 10: Safeguard Policy Issues**  
**BOSNIA AND HERZEGOVINA**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

The proposed NTMP project will support the joint efforts of the Government of Bosnia and Herzegovina (BiH) and the Government of Croatia to promote integrated water resource management at the river-basin level, strengthen institutional capacity for joint river basin management, reduce water pollution and prevent land degradation, improve protected area management and biodiversity conservation, and raise public awareness and involvement in river basin management. The project will also strengthen the local capacity building for monitoring and enforcement of wastewater effluents by upgrading municipal water quality laboratories at the project sites and by providing adequate training. The investment subprojects supported under the four proposed project components, including rehabilitation works to five municipal infrastructures (wastewater collection and treatment), small water management infrastructure improvements, and conservation of wetland sites, are not expected to have any major negative environmental impact.

**Environment Aspects**

The project is classified as a Category B project and therefore requires an Environmental Impact Assessment (EIA). The EA was completed on August 28, 2006, and it was disclosed in the two countries in September 2006. It evaluates the project's potential environmental risks and impacts in its area of influence, and it clearly indicates that the project environmental impact is generally positive since the project would improve the municipal wastewater treatment plants, provide better pollution control to selected industrial facilities, improve wetland management, and identify and elaborate on solutions to reduce the negative impact of saltwater intrusion in Neretva Delta. However, the EA identified minor environmental issues that may require attention and that would be related to civil works for (a) rehabilitation of existing structures, such as museums and wastewater treatment systems; (b) new facilities at tourism sites and in protected areas, such as trails; (c) the pilot scheme for mitigation of saltwater intrusion; and (d) small grant activities for nongovernmental organization (NGO) and community-based demonstration projects. An environmental management plan was also prepared to address any negative impact of the known investments. The Environmental Framework that was included in the EA will be used to guide the assessment of activities yet to be determined under (c) and (d).

The net environmental impact of the project is expected to be positive because proposed activities would help improve the water management capabilities for the basin and the quality and quantity of water resources, ensure environmental flows that maintain water-dependent ecosystems, and improve biodiversity conservation in the project region. The environmental issues that may require attention would be related to Component 2 (Improved Management and Use of Wetlands Ecosystems) and Component 3 (High-Priority Investments for Water Pollution Control). Component 2 would include small

civil works for rehabilitation of existing structures in the project area such as rehabilitation of wooden irrigation wheels, infrastructure to regulate the water regime in the Krupa River within Hutovo Blato Nature Park, improvement of tourist sites at Vjetrenica cave and at Bacina Lake, and restoration of Neretva riverbanks and its tributaries. Component 3 would finance rehabilitation works of existing municipal sewerage networks and wastewater treatment systems in Bileca, Konjic, Ljubuški, Nevesinje, and Trebinje municipalities. The community-based demonstration projects under Component 4 (Public Participation and Management of Project Implementation) through matching grants of practices that would conserve water resources, promote improved water quality, reduce pollutant loads, and maintain wetlands, would be administered according to an Operations Manual, which would include guidelines for environmental analysis and monitoring of small grants. These projects identified during project development will have relatively small financial support, and therefore will have relatively small but positive environmental impact. The project might finance restoration works of cultural or historical monuments in the Neretva delta (Croatia). Croatia's "Cultural Property" regulations, which have been reviewed under previous World Bank projects and found satisfactory (Croatia Municipal Infrastructure Project), would apply.

### **Environmental Assessment**

The EIA report establishing the project environmental framework and creating the necessary awareness on environmental issues related to project investments was prepared by the Ministry of Spatial Planning, Civil Engineering and Environment of the Republika Srpska under terms of reference (TORs) acceptable to the Bank. The EIA identified and analyzed the potential environmental impacts (on air, groundwater, surface water, soil, and fauna) during the construction and execution of the rehabilitation activities proposed under the project. Environmental Management Plans (EMPs) were prepared to address mitigation measures and monitoring activities of any negative environmental impact of the known investments, as well as the Environmental Management Framework (EMF), that was included in the project EMP to guide further assessment of activities related to the implementation of the small grants program and the salt water intrusion pilot. During the design stage at the initiation of project implementation, the EIA (and the Environmental Management Plans [EMPs]) will be revised, incorporating the technical design data and the most recent environmental data, especially related to surface water and groundwater quality in the project area.

Civil works including rehabilitation activities financed under the project could result in some adverse environmental impacts, unless appropriate design, construction, and operational practices are followed. Potential environmental impacts are expected to be local and occur during implementation/construction only. The sustainability of the environmental aspects of the proposed investments will be achieved through implementation of an EMP affiliated with selected proposed investment under Components 2 and 3, identified prior to project appraisal; this EMP described in the EIA report includes a set of specific environmental mitigation and monitoring requirements to be taken by the contractor and responsible parties (for example, municipalities) during implementation and operation. This set of requirements, meant to eliminate adverse

environmental and social impacts, should also be included in the subproject contractors' TORs.

Monitoring will focus on measuring compliance with pollution standards and requirement of related permits (wastewater discharges, air quality, construction permit, water permit, and so forth), while mitigation measures will include actions to prevent environmental hazards such as health and safety for the construction workers and the public; noise disturbance; restrictions to access; dust—leading to adverse air quality; soil and/or water pollution from fuel and oil, excavation of materials and disposal of surplus soil/earth and other materials; degradation of historical and cultural sites, and so forth. Special attention will be paid during construction works to chance findings of objects of archaeological or cultural value. As stated in the Law on Cultural Heritage, works will be suspended immediately if cultural objects are found, and the contractor will inform the relevant authorities of these find(s).

### Safeguard Policies

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP/GP 4.01)	[X]	[ ]
Natural Habitats (OP/BP 4.04)	[X]	[ ]
Pest Management (OP 4.09)	[ ]	[ X ]
Cultural Property (OPN 11.03, being revised as OP 4.11)	[ ]	[ X ]
Involuntary Resettlement (OP/BP 4.12)	[ ]	[ X ]
Indigenous Peoples (OD 4.20, being revised as OP 4.10)	[ ]	[ X ]
Forests (OP/BP 4.36)	[ ]	[ X ]
Safety of Dams (OP/BP 4.37)	[X]	[ ]
Projects in Disputed Areas (OP/BP/GP 7.60)*	[ ]	[ X ]
Projects on International Waterways (OP/BP/GP 7.50)	[X]	[ ]

\*By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas.

**Natural Habitats.** The OB/BP 4.04 is triggered since planned activities will finance some small-scale infrastructure to regulate the water regime in the Krupa River within Hutovo Blato Nature Park in order to restore natural wetlands in the park. These investments will not intend to convert the existing wetlands (protected under the Ramsar Convention) but rather to conserve their habitat through prevention of salinity impact on the park. The EIA and affiliated EMP developed during the project preparation highlighted the mitigation measures and monitoring activity necessary to be implemented during the development of these investments.

**Dam Safety.** The OP 4.37 (para. 7) provides that the Bank may finance certain types of projects that do not include a new dam but that nevertheless rely on the performance of an existing dam. In such cases, the Bank requires that the recipient arranges for one or more independent dam specialists to (a) inspect and evaluate the safety status of the existing dam, its appurtenances, and its performance history; (b) review and evaluate the owner's operation and maintenance (O&M) procedures; and (c) provide a written report of findings and recommendations for any remedial work or safety-related measures necessary to upgrade the existing dam to an acceptable standard of safety (OP 4.37, para.

8). Two elements of OP 4.37 are relevant: (a) safety, for example, the environment would be devastated in case of uncontrolled release of water from the reservoirs; and (b) reliable operation, for example, if a management river flow framework is agreed upon, the physical infrastructure should be capable of implementing it.

BiH has prepared a report that describes the inspection and evaluation procedures used to monitor dam safety and the current safety status of each dam, and makes recommendations for any remedial works or safety-related measures necessary to upgrade the existing dam to an acceptable standard of safety. This dam safety report discovered that the Alagovac Dam, Nevesinje municipality (RS), is the only dam in the NTRB lacking equipment for dam safety monitoring. This dam is located in a seismically active area. Installation of proper equipment would allow adequate response upon registration of earthquakes in the area. Accordingly, the project will finance the needed dam safety monitoring equipment. Also, the dam will not be used by any project activities.

***Cultural Property.*** Based on the project design, the project is not expected to affect any known physical cultural sites. In case the project may affect culturally sensitive areas and/or cultural sites are found during the project construction stage, the EMP for the respective site should identify procedures consistent with the local regulations on these matters. The EMP notes that archaeological chance-finds should be covered by a chance-finds procedures clause incorporated in the contractors' agreements.

***Project on International Waterways.*** The proposed project will provide a number of investments that will target improved water resource management in the Neretva and Trebisnjica River Basin which flow in the Adriatic Sea, therefore triggering the World Bank OP 7.50 – Projects on International Waterways. However, because of the rehabilitation nature of the activities financed, the project falls under the exception to the notification requirement under paragraph 7(a) of OP 7.50 (rehabilitation of an ongoing scheme). On this basis, an exemption to the notification of riparians was approved by the office of the ECA Regional Vice President on March 29, 2007.

***Involuntary Resettlement.*** No land acquisition or relocation of people will be necessary for infrastructure improvements; therefore OP 4.12 on Involuntary Resettlement is not triggered.

## **Social Assessment**

A Social Assessment was conducted for the project using a survey, in-depth interviews, and focus groups. The findings of the Social Assessment were then discussed at a workshop with stakeholders, and the resulting recommendations were incorporated into the final report. The following is a summary of key findings.

The population density in the project region, for both countries, is low, with the population settled unevenly. The higher population densities are along the coast, along traffic corridors (including the Neretva Valley), and in the area with considerable arable

agricultural land (settlements on the edge of karst fields and in the delta area). Lower population densities are found in the eastern part of the NTRB.

The highest levels of unemployment and poverty are in the upper and the middle watershed areas of the NTRB. Some stakeholders consider the upper watershed as having considerable potential for the development of activity-related tourism (such as hiking, rafting, climbing, and so forth). The upper watershed is characterized by remote rural communities with limited access to the main sources of communication and transportation; producers' groups include fishing networks and mushroom and strawberry pickers. Rafting companies in the upper watershed have engaged in clean-up projects and created a network that collaborates with other groups on small-scale environmental protection initiatives. The largest environmental group has partnered with local rafting companies to oppose the development of hydropower plants in the upper watershed. At the same time, however, there are some emerging issues about which local communities have expressed concerns that rafting companies do not dispose of their own waste adequately and litter the environment.

In the upper watershed area, divisions exist between those who focus on tourism potential versus those who focus on agricultural production. In particular, with respect to road development by the Konjic local authorities, the local community wants greater access to the main road and tourism operators and environmental groups wanted to preserve the existing setting and limit any construction.

In the middle watershed, the Regional Environmental Center has been facilitating dialogue among local environmental groups, authorities, and the hunting community with respect to resource usage. The middle watershed also includes well-organized agricultural producer groups. These have been benefited from capacity-building programs relating to business development; few, however, engage in advocacy with respect to their role as representative industry groups. Representatives from agricultural associations and cooperatives report varying degrees of responsiveness from local authorities, and some have complained about a lack of transparency in decisions over land use. There are also concerns about the water supply system in Stolac, as inefficient and losing water due to leaks in the network.

Stakeholders throughout the NTRB are concerned about resource limitation and environmental degradation. The concerns were: lack of adequate water supply for household needs, impact on subsistence hunting and fishing, and environmental degradation affecting potential for economic development through agriculture and tourism. Nearly a third of all surveyed respondents considered water one of the principal natural assets; similar percentages identified forests and natural beauty as assets. Of the respondents in the lower watershed, over 80 percent identified water as the greatest asset.

Overall, 58 percent of surveyed respondents were fearful about water quality, with considerable differences based on watershed location: 83 percent of those in the middle watershed, 79 percent of those in the Trebisnjica watershed, 44 percent from the lower watershed, and only 27 percent of the upper watershed. Issues of concern include:

contamination of water by sewage overflow from cisterns, saltwater intrusion of agricultural lands, impact due to industrial activities, and a proposal for tapping underground water that may impact the Bregava Springs.

The improper disposal of household rubbish along the river is an emerging concern in the upper watershed; in the middle and lower watersheds, it is apparently municipal and related to inadequate waste disposal sites. Stakeholders in the Trebisnjica watershed area had concerns relating to the control of and access to the water supply. In general, there has been limited cooperation among groups (primarily due to competition for funding). Donor initiatives have focused on fostering cooperation among various NGOs.

The majority of surveyed respondents had never participated in any form of environmental forum. Few stakeholders have had experience in participating in community organizations or any community forum relating to land and water issues, with the exception of the environmental groups in the upper watershed, which have campaigned against the development of hydropower plants. There was, however, interest in participating more actively among interviewed respondents.

It was agreed that simplified environmental and social assessments will be carried out during the first year of project implementation in the area of the pilot scheme for mitigation of salt intrusion in Neretva Delta, in conjunction with the technical and economic assessment.

### **Public Consultation and Disclosure**

Public consultation meetings to discuss the draft pre-EIA and related EMP have been organized in each of the project locations where rehabilitation works on infrastructure (for example, wastewater treatment plant, sewage collection works, improvement of tourist sites, and so forth) will be developed under the project. A final revised report, including minutes of the public discussions, have been disclosed in English in the World Bank's Infoshop, in the local language on the RS Ministry of Spatial Planning, Civil Engineering and Environment website on September 22, 2006, and on the internet page of the Bank in BiH on September 27, 2006.



**Annex 11: Project Preparation and Supervision**  
**BOSNIA AND HERZEGOVINA**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

	Planned	Actual
PCN review	04/19/2004	04/19/2004
Initial ISDS to PIC	02/15/2006	02/15/2006
Appraisal	11/15/2006	12/04/2006
Negotiations	03/17/2008	
Board/RVP approval	05/29/2008	
Planned date of effectiveness	10/15/2008	
Planned date of midterm review		
Planned closing date	12/31/2014	

Key institution responsible for preparation of the project: Croatia: MAFWM; BiH: MOFTER.

Bank staff and consultants who worked on the project included:

Name	Title	Unit
Usaid El-Hanbali	Team Leader	ECSSD
Rita Klees	Senior Environmental Spec.	ENV
Paula Lytle	Senior Social Dev. Specialist	ECSSD
Helen Shahriari	Senior Social Scientist	ECSSD
Ruxandra Maria Floroiu	Environmental Engineer	ECSSD
Kathy Sharrow	Program Assistant	ECSSD
Daniel Gerber	Operations Analyst	ECSSD
Anna O'Donnell	Consultant	ECSSD
Mirjana Karahasanovic	Operations Analyst	ECSSD
Vera Dugandzic	Operations Analyst	ECSSD
Nikola Kerleta	Procurement Analyst	ECSPS
Lamija Hadjic	Financial Management Specialist	ECSPS
Olav Christensen	Senior Financial Management Specialist	ECSPS
Nicholay Chistyakov	Senior Finance Officer	LOAG1
Danielle Malek	Counsel	LEGEC
Dominique Bichara	Senior Counsel	LEGEC
Viktor Simoncic	Ecologist	Consultant
Martin Schneider-Jacoby	Biologist	Consultant
Walter Klemm	Land and Water Specialist	FAO

***Bank funds expended to date on project preparation:***

1. Trust funds: GEF B Preparatory Grant US\$425,000;

***Estimated Approval and Supervision costs:***

1. Remaining costs to approval: US\$20,000
2. Estimated annual supervision cost: US\$100,000

**Annex 12: Documents in the Project File**  
**BOSNIA AND HERZEGOVINA**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

**Project Documents:**

Transboundary Assessment of the Water Dependent Ecosystems and Water Resources Management in the Neretva and Trebisnjica River Basin (NRTB) and Executive Summary

Water and Land Management in the River Basin Assessment

Social Assessment (SA)

Rapid Economic Assessment

Environmental Impact Assessment (EIA)

NTRB Media Monitoring Report in period from April 1 to August 15, 2005

Cost Tables

Pre-Feasibility studies for Konjic, Bileca, Ljubuski, and Konjic industrial plants

**Additional Documents:**

Bosnia and Herzegovina Water Quality Protection Project: Environmental Assessment  
[Final Draft] Bosna-S Oil Services Company, Sarajevo, February 2005.

Project Appraisal Document for Water Quality Protection Project for Bosnia and Herzegovina, May 9, 2005.

Report on the Assessment of the Capacity of the Proposed Implementation Agency to Conduct Procurement, Bosnia & Herzegovina: Water Quality Protection Project, December 2004

**Annex 13: Statement of Loans and Credits**  
**BOSNIA AND HERZEGOVINA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P100792	2008	ROAD INFRASTRUCTURE AND SAFETY PROJECT	0.00	25.00	0.00	0.00	0.00	25.97	0.00	0.00
P101213	2007	AGR./RURAL DEVELOPMENT	0.00	21.00	0.00	0.00	0.00	21.95	1.92	0.00
P100415	2007	AVIAN FLU – BA	0.00	5.00	0.00	0.00	0.00	5.43	2.00	0.80
P096200	2006	LAND REGISTRATION	0.00	15.00	0.00	0.00	0.00	15.43	-0.01	0.00
P090666	2006	ECSEE APL3-BiH	0.00	36.00	0.00	0.00	0.00	38.55	6.30	0.00
P088663	2005	HLT SEC ENHANC	0.00	17.00	0.00	0.00	0.00	11.23	8.18	4.82
P083353	2005	URB INFRA & SERV DEL	0.00	20.00	0.00	0.00	0.00	17.69	2.96	0.00
P079226	2005	EDUC RESTRUCTURING	0.00	10.00	0.00	0.00	0.00	9.62	6.93	2.31
P084596	2004	EMPLYMT 2	0.00	12.00	0.00	0.00	0.00	2.23	0.87	-2.01
P079161	2003	FOREST DEVT/CNSRV TA	0.00	3.75	0.00	0.00	0.00	3.92	-0.19	-0.18
P055434	2003	SM SC COM AGRIC	0.00	12.00	0.00	0.00	0.00	2.23	-2.51	0.00
P057950	2002	SOLID WASTE MGMT	0.00	18.00	0.00	0.00	0.00	17.45	4.49	1.15
P070995	2001	COMM DEVT	0.00	15.00	0.00	0.00	0.04	4.64	-2.78	-1.61
P058521	2001	ELEC PWR 3 REC N	0.00	35.00	0.00	0.00	0.00	4.80	0.25	0.00
Total:			0.00	244.75	0.00	0.00	0.04	181.14	28.41	5.28

**CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P102778	2007	Revenue Admin Modernizn Project (RAMP)	68.00	0.00	0.00	0.00	0.00	68.00	0.33	0.00
P098948	2007	INLAND WATERS PROJECT	133.41	0.00	0.00	0.00	0.00	133.41	0.00	0.00
P094341	2007	PAL 2	197.40	0.00	0.00	0.00	0.00	220.72	0.00	0.00
P093767	2007	TRADE & TRANS INTEG	75.30	0.00	0.00	0.00	0.00	79.41	5.23	0.00
P095389	2006	District Heating Project	29.80	0.00	0.00	0.00	0.00	24.14	3.08	0.00
P091715	2006	AGRIC ACQUIS COHESION	30.14	0.00	0.00	0.00	0.00	26.24	16.65	0.00
P086671	2006	EDUC SECTOR DEV PROGRAM (CRL)	85.00	0.00	0.00	0.00	0.00	80.70	32.47	0.00
P080258	2006	SCI & TECH	40.00	0.00	0.00	0.00	0.00	33.42	5.82	0.00
P076730	2005	SOC & ECON REC	45.68	0.00	0.00	0.00	0.00	39.87	21.62	0.00
P069937	2005	SOC WELF DEVT	40.00	0.00	0.00	0.00	0.00	37.37	28.86	0.00
P079978	2004	ENERGY EFF	5.00	0.00	0.00	0.00	0.00	3.52	2.73	0.12
P065416	2004	COAST CITIES POLLUT'N CONTROL (APL #1)	47.54	0.00	0.00	0.00	0.00	24.73	21.44	8.06
P043195	2004	RIJEKA GATEWAY	156.50	0.00	0.00	0.00	9.56	89.75	21.00	-8.56
P067149	2003	REAL PROP REG & CADASTRE	25.70	0.00	0.00	0.00	0.00	12.96	2.26	0.00
P063546	2003	PENSION SYS INVST	27.30	0.00	0.00	0.00	0.00	12.52	12.52	0.00

Total:	1,006.77	0.00	0.00	0.00	9.56	886.76	174.01	- 0.38
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**STATEMENT OF IFC's**  
**Held and Disbursed Portfolio**  
**In Millions of US Dollars**

FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
1999	Bosnalijek	0.00	1.84	0.00	0.00	0.00	1.84	0.00	0.00
2001	Bosnalijek	0.00	0.00	0.54	0.00	0.00	0.00	0.54	0.00
2005	Bosnalijek	9.22	0.00	0.00	0.00	7.94	0.00	0.00	0.00
1985	Energoinvest	9.93	0.00	0.00	0.00	9.93	0.00	0.00	0.00
1997	Enterprise Fund	0.00	1.48	0.00	0.00	0.00	0.95	0.00	0.00
2002	FCL	11.05	0.00	0.00	2.03	11.05	0.00	0.00	2.03
2004	HVB CPB	11.24	10.97	0.00	0.00	11.24	8.95	0.00	0.00
2005	HVB CPB	0.00	3.82	0.00	0.00	0.00	3.82	0.00	0.00
2006	MI-BOSPO	2.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	Nova Banka	12.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	ProCredit Bosnia	2.87	0.00	0.00	0.00	2.87	0.00	0.00	0.00
	Raiffeisen-BOS	19.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	Raiffeisen-BOS	14.41	0.00	0.00	0.00	14.41	0.00	0.00	0.00
2005	Raiffeisen-BOS	14.02	0.00	0.00	0.00	14.02	0.00	0.00	0.00
1998	SEF Akova	0.20	0.00	0.00	0.00	0.20	0.00	0.00	0.00
1999	SEF Lijanovici	0.90	0.00	0.00	0.00	0.90	0.00	0.00	0.00
1977	TKA Cazin	4.34	0.00	0.00	0.00	4.34	0.00	0.00	0.00
	Wood Konjuh	1.75	0.00	0.00	0.00	1.43	0.00	0.00	0.00
Total portfolio:		114.35	18.11	0.54	2.03	78.33	15.56	0.54	2.03

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic.
2002	Lukavac	0.01	0.00	0.00	0.00
2006	MI-BOSPO	0.00	0.00	0.00	0.00
2006	EKI Bosnia	0.00	0.00	0.00	0.00
2006	Nova Banka	0.00	0.01	0.00	0.00
Total pending commitment:		0.01	0.01	0.00	0.00

**CROATIA**  
**STATEMENT OF IFC's**  
Held and Disbursed Portfolio  
In Millions of US Dollars

FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
1998	Belisce	3.49	6.01	0.00	0.00	3.49	6.01	0.00	0.00
2002	Belisce	12.75	0.00	0.00	9.59	12.75	0.00	0.00	9.59
2006	Belje	50.99	0.00	0.00	0.00	50.99	0.00	0.00	0.00
1999	Croatia Capital	0.00	2.37	0.00	0.00	0.00	2.04	0.00	0.00
1999	E&S Bank	1.85	0.00	0.00	0.00	1.85	0.00	0.00	0.00
2002	E&S Bank	20.40	0.00	0.00	0.00	20.40	0.00	0.00	0.00
2005	PBZ	95.61	0.00	0.00	0.00	95.61	0.00	0.00	0.00
2004	Schwarz Group	49.40	0.00	0.00	0.00	49.40	0.00	0.00	0.00
2000	Viktor Lenac	0.06	0.00	0.50	0.03	0.06	0.00	0.00	0.03
Total portfolio:		234.55	8.38	0.50	9.62	234.55	8.05	0.00	9.62

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic.
2002	ESBank Zagreb II	0.01	0.00	0.00	0.00
2004	Viktor Lenac Exp	0.00	0.00	0.00	0.00
Total pending commitment:		0.01	0.00	0.00	0.00

## Annex 14a: Country at a Glance

### BOSNIA AND HERZEGOVINA NERETVA AND TREBISNJICA MANAGEMENT PROJECT

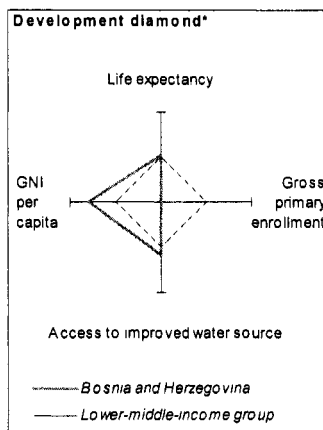
POVERTY and SOCIAL	Bosnia and Herzegovina	Europe & Central Asia	Lower-middle-income
<b>2006</b>			
Population, mid-year (millions)	3.9	460	2,276
GNI per capita (Atlas method, US\$)	3,230	4,796	2,037
GNI (Atlas method, US\$ billions)	12.6	2,206	4,635

#### Average annual growth, 2000-06

Population (%)	0.3	0.0	0.9
Labor force (%)	0.8	0.5	1.4

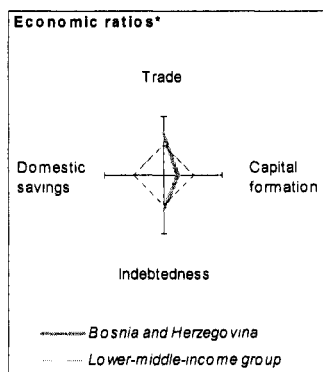
#### Most recent estimate (latest year available, 2000-06)

Poverty (% of population below national poverty line)	20	..	..
Urban population (% of total population)	46	64	47
Life expectancy at birth (years)	74	69	71
Infant mortality (per 1,000 live births)	13	28	31
Child malnutrition (% of children under 5)	4	5	13
Access to an improved water source (% of population)	97	92	81
Literacy (% of population age 15+)	97	97	89
Gross primary enrollment (% of school-age population)	..	102	113
Male	..	103	117
Female	..	100	114



#### KEY ECONOMIC RATIOS and LONG-TERM TRENDS

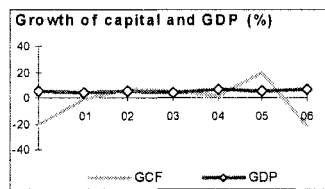
	1986	1996	2005	2006
GDP (US\$ billions)	..	2.8	10.8	12.3
Gross capital formation/GDP	..	412	22.0	16.2
Exports of goods and services/GDP	..	23.6	31.3	38.4
Gross domestic savings/GDP	..	-19.1	-17.6	-16.2
Gross national savings/GDP	..	12.2	3.2	5.0
Current account balance/GDP	..	-29.0	-19.8	-11.2
Interest payments/GDP	..	..	1.1	..
Total debt/GDP	..	..	51.7	..
Total debt service/exports	..	..	5.0	..
Present value of debt/GDP	..	..	45.6	..
Present value of debt/exports	..	..	92.6	..



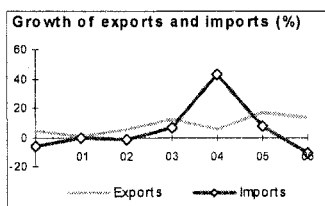
	1986-96	1996-06	2005	2006	2006-10
(average annual growth)					
GDP	..	7.6	5.0	6.0	5.7
GDP per capita	..	6.2	5.1	6.0	4.9
Exports of goods and services	..	9.2	16.2	13.7	11.2

#### STRUCTURE of the ECONOMY

(% of GDP)	1986	1996	2005	2006
Agriculture	..	25.2	10.5	10.4
Industry	..	31.3	25.1	24.7
Manufacturing	..	13.9	11.3	11.9
Services	..	43.5	64.4	64.9
Household final consumption expenditure	..	..	91.3	91.3
General gov't final consumption expenditure	..	..	26.3	23.9
Imports of goods and services	..	83.9	70.8	69.8



(average annual growth)	1986-96	1996-06	2005	2006
Agriculture	..	-1.7	8.8	1.9
Industry	..	4.6	6.9	5.3
Manufacturing	..	5.1	7.0	8.4
Services	..	11.9	4.9	6.5
Household final consumption expenditure	..	..	0.1	-0.1
General gov't final consumption expenditure	..	..	7.7	-2.4
Gross capital formation	..	-1.7	19.1	-21.9
Imports of goods and services	..	4.8	7.9	-10.6



Note: 2006 data are preliminary estimates.

This table was produced from the Development Economics LDB database.

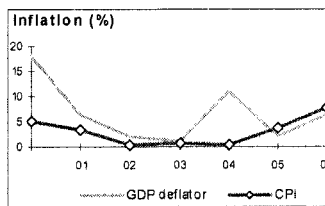
\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

Source: Development Economics LDB database, 2006. The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

## Bosnia and Herzegovina

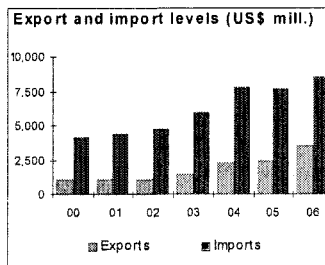
### PRICES and GOVERNMENT FINANCE

	1986	1996	2005	2006
<b>Domestic prices</b>				
(% change)				
Consumer prices	..	7.7	3.6	7.5
Implicit GDP deflator	..	-17.1	2.1	6.5
<b>Government finance</b>				
(% of GDP, includes current grants)				
Current revenue	..	36.6	46.6	47.0
Current budget balance	..	-3.8	6.2	8.8
Overall surplus/deficit	..	-4.4	1.3	2.9



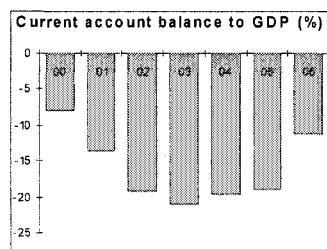
### TRADE

(US\$ millions)	1986	1996	2005	2006
Total exports (fob)	..	336	2,462	3,539
Commodity 1	..	..	320	389
Commodity 2	..	..	602	891
Manufactures	..	..	1,490	2,199
Total imports (cif)	..	2,077	7,690	8,587
Food	..	..	1,260	1,248
Fuel and energy	..	..	..	..
Capital goods	..	..	1,839	1,679
Export price index (2000=100)	..	..	..	..
Import price index (2000=100)	..	..	..	..
Terms of trade (2000=100)	..	..	..	..



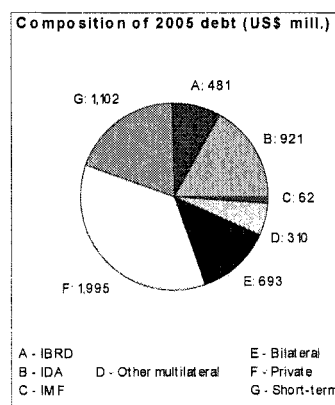
# **BALANCE of PAYMENTS**

	1986	1996	2005	2006
<i>(US\$ millions)</i>				
Exports of goods and services	..	658	3,367	4,709
Imports of goods and services	..	2,337	7,626	8,555
Resource balance	..	-1679	-4,258	-3,846
Net income	..	-222	430	485
Net current transfers	..	1094	1804	1986
Current account balance	..	-807	-2,025	-1,375
Financing items (net)	..	1050	2,470	2,186
Changes in net reserves	..	-243	-445	-811
<b>Memo:</b>				
Reserves including gold <i>(US\$ millions)</i>	..	..	2,548	3,671
Conversion rate <i>(DEC, local/US\$)</i>	..	15	16	16



# **EXTERNAL DEBT and RESOURCE FLOWS**

	1986	1996	2005	2006
<i>(US\$ millions)</i>				
Total debt outstanding and disbursed	..	..	5,564	..
IBRD	..	589	481	466
IDA	..	109	921	983
Total debt service	..	..	267	..
IBRD	..	205	41	47
IDA	..	0	7	11
<b>Composition of net resource flows</b>				
Official grants	..	..	291	..
Official creditors	..	..	98	..
Private creditors	..	..	282	..
Foreign direct investment (net inflows)	..	..	299	..
Portfolio equity (net inflows)	..	..	..	..
<b>World Bank program</b>				
Commitments	..	0	27	0
Disbursements	..	110	56	27
Principal repayments	..	25	24	27
Net flows	..	85	32	-1
Interest payments	..	180	25	31
Net transfers	..	-95	7	-31



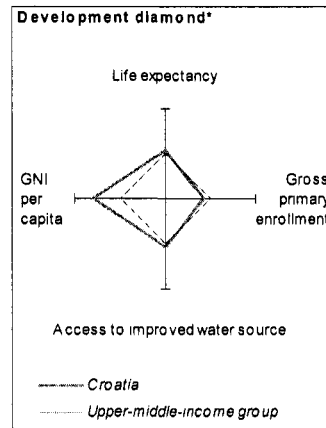
Note: This table was produced from the Development Economics LDB database.

9/28/07



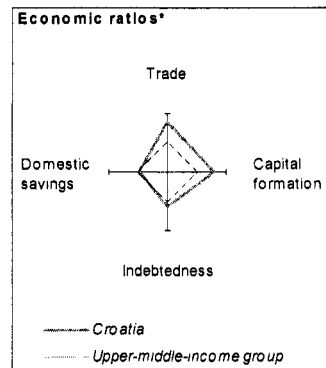
**Annex 14b: Country at a Glance**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

POVERTY and SOCIAL	Croatia	Europe & Central Asia	Upper-middle-income
<b>2006</b>			
Population, mid-year (millions)	4.4	460	810
GNI per capita (Atlas method, US\$)	9,320	4,796	5,913
GNI (Atlas method, US\$ billions)	414	2,206	4,790
<b>Average annual growth, 2000-06</b>			
Population (%)	-0.2	0.0	0.8
Labor force (%)	-0.4	0.5	1.3
<b>Most recent estimate (latest year available, 2000-06)</b>			
Poverty (% of population below national poverty line)	..	..	..
Urban population (% of total population)	57	64	75
Life expectancy at birth (years)	76	69	70
Infant mortality (per 1000 live births)	6	28	26
Child malnutrition (% of children under 5)	..	5	..
Access to an improved water source (% of population)	100	92	93
Literacy (% of population age 15+)	98	97	93
Gross primary enrollment (% of school-age population)	96	102	112
Male	..	103	106
Female	..	100	104



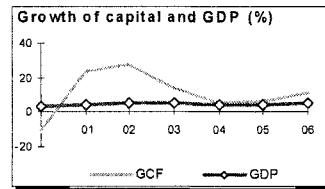
**KEY ECONOMIC RATIOS and LONG-TERM TRENDS**

	1986	1996	2005	2006	
GDP (US\$ billions)	..	19.9	38.9	42.9	
Gross capital formation/GDP	..	21.9	31.0	32.8	
Exports of goods and services/GDP	..	40.2	47.1	47.9	
Gross domestic savings/GDP	..	12.5	22.6	23.9	
Gross national savings/GDP	..	17.1	23.3	23.9	
Current account balance/GDP	..	-5.0	-6.6	-7.6	
Interest payments/GDP	..	0.4	2.2	..	
Total debt/GDP	..	26.7	77.6	..	
Total debt service/exports	..	5.8	23.0	..	
Present value of debt/GDP	..	..	76.2	..	
Present value of debt/exports	..	..	138.7	..	
	1986-96	1996-06	2005	2006	2006-10
(average annual growth)					
GDP	-3.5	3.8	4.3	4.8	4.9
GDP per capita	-3.2	4.1	4.3	4.9	5.3
Exports of goods and services	..	6.2	4.6	6.9	5.7

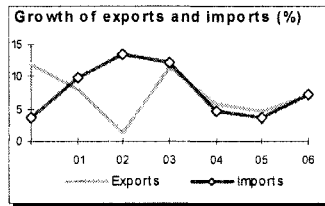


**STRUCTURE of the ECONOMY**

	1986	1996	2005	2006
(% of GDP)				
Agriculture	..	10.3	7.6	7.4
Industry	..	33.2	31.6	31.6
Manufacturing	..	22.3	20.9	20.6
Services	..	56.5	60.8	60.9
Household final consumption expenditure	..	60.5	56.9	56.0
General gov't final consumption expenditure	..	27.0	20.5	20.1
Imports of goods and services	..	49.7	55.5	56.8



	1986-96	1996-06	2005	2006
(average annual growth)				
Agriculture	-5.5	0.7	0.1	2.5
Industry	-9.3	4.2	4.8	5.4
Manufacturing	-10.2	4.5	5.8	4.5
Services	0.7	3.6	4.2	4.7
Household final consumption expenditure	..	3.9	3.4	3.5
General gov't final consumption expenditure	..	0.5	0.8	2.2
Gross capital formation	..	8.1	6.3	10.5
Imports of goods and services	..	6.4	3.5	7.3



Note: 2006 data are preliminary estimates.

This table was produced from the Development Economics LDB database.

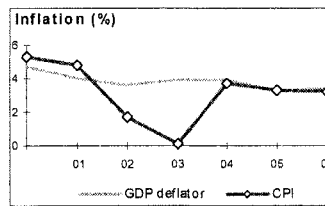
\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

Source: Development Economics LDB database, 2006. Data for 2006 are preliminary estimates.

## Croatia

### PRICES and GOVERNMENT FINANCE

	1986	1996	2005	2006
<b>Domestic prices</b>				
(% change)				
Consumer prices	50.0	4.3	3.3	3.2
Implicit GDP deflator	..	3.6	3.2	3.4
<b>Government finance</b>				
(% of GDP, includes current grants)				
Current revenue	..	48.9	44.9	45.1
Current budget balance	..	4.6	3.8	5.4
Overall surplus/deficit	..	-16	-2.8	-12



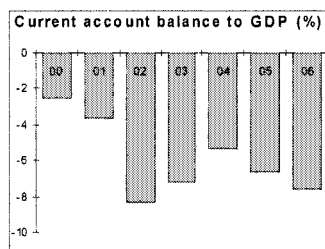
### TRADE

	1986	1996	2005	2006
(US\$ millions)				
Total exports (fob)	..	4,677	8,955	10,606
Capital goods	..	255	488	610
Chemicals	..	445	1,219	1,568
Manufactures	..	1,992	4,338	5,042
Total imports (cif)	..	8,165	18,301	21,117
Food	..	772	1,333	1,554
Fuel and energy	..	856	2,806	3,416
Capital goods	..	2,134	6,115	6,929
Export price index (2000=100)	..	72	72	70
Import price index (2000=100)	..	72	72	70
Terms of trade (2000=100)	..	100	100	100



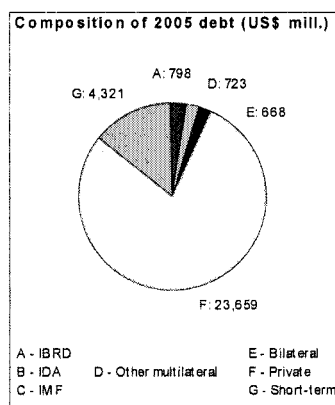
# **BALANCE of PAYMENTS**

	1986	1996	2005	2006
<i>(US\$ millions)</i>				
Exports of goods and services	..	7,974	18,876	21,415
Imports of goods and services	..	9,882	21,702	24,665
Resource balance	..	-1,908	-2,825	-3,249
Net income	..	-103	-1,225	-1,390
Net current transfers	..	1,022	1,475	1,383
Current account balance	..	-989	-2,575	-3,255
Financing items (net)	..	1,553	3,597	4,983
Changes in net reserves	..	-564	-1,022	-1,727
<b>Memo:</b>				
Reserves including gold <i>(US\$ millions)</i>	..	2,314	8,801	11,489
Conversion rate <i>(DEC. local/US\$)</i>	..	5.4	5.9	5.8



## **EXTERNAL DEBT and RESOURCE FLOWS**

	1986	1996	2005	2006
<i>(US\$ millions)</i>				
Total debt outstanding and disbursed	..	5,309	30,169	..
IBRD	..	195	798	1,028
IDA	..	0	0	0
Total debt service	..	530	4,920	..
IBRD	..	26	96	112
IDA	..	0	0	0
Composition of net resource flows				
Official grants	..	25	82	..
Official creditors	..	-6	-20	..
Private creditors	..	563	1,643	..
Foreign direct investment (net inflows)	..	511	1,761	..
Portfolio equity (net inflows)	..	-7	113	..
World Bank program				
Commitments	..	134	396	0
Disbursements	..	105	81	243
Principal repayments	..	16	70	73
Net flows	..	89	11	169
Interest payments	..	11	26	39
Net transfers	..	78	-15	131



Note: This table was produced from the Development Economics LDB database.

9/28/07

**Annex 15: Incremental Cost Analysis**  
**BOSNIA AND HERZEGOVINA**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

**Local and Global Environmental Issues in the Neretva and Trebisnjica River Basin**

Some 430,000 people live in the NTRB of which about 395,000 live in BiH and 35,000 in Croatia. The population in the upper and the middle watershed area of NTRB (BiH) is primarily the rural poor. There are high levels of unemployment ranging from 26 to 46 percent. Infrastructure to facilitate development is limited, in particular in the upper watershed. Despite the abundance in some areas of water resources, the NTRB area does not have adequate drinking water supply systems. Wastewater treatment is virtually nonexistent. Transition and war brought new causes of poverty to the NTRB, including high levels of unemployment, economic emigration, and related loss of technical expertise and an aging population.

Water pollution in the NTRB area comes from point (municipal and industrial wastewaters, solid waste dump sites) and nonpoint (agricultural) sources. One of the main threats to the water resources of the NTRB is water pollution from municipal sources. Municipal wastewater treatment plant facilities are poorly equipped, lacking water quality laboratories. Solid waste disposal is also a major issue.

In terms of hydropower energy potential the NTRB is among the richest regions in Europe, electric power being one of rare BiH export commodities. There is potential conflict between hydropower and other water resource beneficiaries and environmental NGOs. The water levels in the lower parts of the rivers drop significantly in the summer period, despite the compensatory volumes supplied by the discharge at dams. The operation of the infrastructure available on the rivers of Neretva and Trebisnjica should be coordinated to prevent potential negative effects.

Water in NTRB is also used for irrigation purposes, especially in the Neretva Delta. However, increasingly, the agricultural production potential cannot be met due to saltwater intrusion as a result of excessive groundwater extraction and the resultant soil salinity. Partially due to the failure of adopting crops with lower water requirements and more modern farm techniques, farmers, having no other water sources, keep pumping groundwater, thus increasing salinity leading to ever lower crop yields and fewer crop options.

The entire valley and delta of the lower Neretva River from Mostar municipality (in FBiH) to the river's mouth (in Croatia) contain the largest and most valuable remnants of the natural Mediterranean wetlands in the Eastern Adriatic coast, as evidenced by its designation as a Ramsar Wetlands site. A major attraction in the delta is its water and wetland birds. More than 300 bird species can be seen here, 115 of which nest in the

area. When compared to other internationally important wetlands in Europe, the Neretva Delta has a greater number of species, although not as many nesting waterfowl species. The area is most important as a significant European resting and wintering place for migratory birds.

Besides wetlands, the Dinarid karst and Adriatic coastal seawater ecosystems are other important ecosystem in the NTRB that are in need of protection. The Dinarids karst region includes hundreds of sinkholes, chasms, underground streams, and large number of caves that represent a global hotspot of subterranean biodiversity. Karstic processes are extensive and among the best examples worldwide; large blocks of forests, large enough to maintain ecological integrity; river dynamics; and large carnivore dispersion between Central and Southeast Europe. The Trebizat River has a unique travertine ecosystem for the basin.

Protection of sensitive areas in the NTRB is inadequate. The BiH portion is under protected area status in the Hutovo Blato Nature Park, which lacks human and financial sources for biodiversity monitoring and protection. The delta region is less comprehensively protected with five protected areas in Croatia with a total area of 1,620 hectares, and a further two proposed protected sites covering 777 hectares. The Croatia Biodiversity Strategic Action Plan (BSAP 2000) identifies the Neretva Delta wetlands as the most threatened ecosystem in the country

Stakeholders throughout the NTRB are concerned about resource limitations and environmental degradation, but there is not a high level of cooperation among different interest groups. Local communities feel disconnected from the decision-making process. In the absence of a transparent, participatory, multisectoral approach based on sound scientific data, there are many examples of conflicts between two or more sectors that use water as a key resource.

### *Sectoral Development Goals and Policies*

The above-mentioned issues are reflected in BiH's and Croatia's key strategic developments, international conventions signed, and harmonization with EU directives.

BiH's National Environmental Action Plan (NEAP) states the country's broad development goals in the water management sector as follows: (a) provision of sufficient quantities of high-quality water for water supply and other needs, and (b) protection of water resources and preservation of surface and groundwater quality. Development goals for ecosystems and the biodiversity sector, intended to be achieved by 2020, are: (a) protection and balanced management of biological, geological, and landscape diversity; (b) ecological classification of ecosystems as a precondition for sustainable protection and management of biodiversity; (c) improvement of legislative background for protection and sustainable management of biodiversity and geodiversity; (d) placing biodiversity and geodiversity as one of the functions of development of BiH; (e) assessment of the actual threats to bio- and geodiversity; (f) prevention of biological

terrorism; (g) preservation and protection of domesticated autochthonous genofund; and (h) promotion of environmental education and information.

The Croatia NEAP states the following basic objectives in the water management sector: (a) to ensure lasting water management based on the principles of sustainable development and the unity of the water regime; (b) to preserve waters that are still clean; (c) to stop the trend of deterioration of ground- and surface water quality in the places where it is seriously affected, and by protection measures to provide gradually the type of water as prescribed; (d) to preserve the surface water quality in categories as prescribed; (e) to make it possible, in accordance with renewable volumes, over the long term for all water users to use it in a sustainable manner; (f) to provide conditions for the protection of ecosystems of individual species, in the process of water management; (g) to examine the possibility of introducing alternative wastewater treatment technologies, taking into consideration local (geographic) features, and enabling construction by stages.

General strategic objectives of Croatia regarding biological diversity are: (a) to carry out a comprehensive inventorying of biological diversity components, (b) to map the spread of biological diversity components, (c) to assess threats to these components, (d) to formulate action plans for the protection of threatened components, (e) to monitor changes over time and measure effects of action plan implementation, and (f) to develop implementation mechanisms.

Croatia has a specific irrigation and water management strategy, relevant to the NTMP project, to systematically upgrade and develop agricultural infrastructure, consolidate agricultural lands, and introduce state-of-the-art irrigation technologies.

In July 1996, BiH and Croatia signed an agreement to establish a framework for water management and created the Interstate Water Committee (ISWC). 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. BiH and Croatia are parties to the Convention on Biological Diversity. Both countries aspire to EU accession and seek to adopt the integrated river basin management approach as prescribed by the EU Water Framework Directive (WFD). This will necessitate significant institutional and regulatory adjustments.

### *Baseline*

With regard to water management, both governments will strive to provide sufficient quantities of high-quality water for water supply and other needs, to protect water resources, and preserve surface and groundwater quality and to improve flooding protection capacities.

On the legal and institutional side, both countries have been in the process of revising their water laws to harmonize them with the EU WFD and establishing adequate institutional framework. For example, the ISWC, the key international mechanism for transboundary cooperation in the NTRB, became fully functional in 2003.

There are a number of ongoing Bank and other internationally funded projects that will achieve this goal. The BiH EU CARDS project “River Basin Management Program” is financing €2.0 million in 2005–07 to assist the government in drafting water management legislation and establishing river basin authorities. The project is funding the development of a Global Information System (GIS)-based information system for the entire country. The budget allocation for the NTRB area is estimated to US\$0.5 million. The BiH EU CARDS project “Water Quality Management at River Basin Level” (€1.0 million) will provide technical assistance to the entities and/or river basin authorities. Of the total amount, it is anticipated that US\$0.25 million will be allocated for support to river basin authorities in the NTRB.

In BiH, the World Bank Bosnia Small-Scale Commercial Agricultural Development Project is funding the rehabilitation of irrigation structures and introduction of environmentally sound agricultural practices in the Popovo Polje in RS, which is part of the NTRB. The ongoing WB GEF Water Quality Project in BiH finances a wastewater strategy for the Neretva River and a project to improve water supply and sanitation in Mostar, which is also in the NTRB. In Croatia, the World Bank-funded Croatia Coastal Cities Pollution Control Project rehabilitates the municipal wastewater treatment plants (WWTPs). Croatia is contributing US\$3.25 million for the WWTP rehabilitation in the two cities in the Neretva Delta—Metkovic and Opuzen—and extension of the sewerage network in Mali Ston Bay. Finally, the ongoing Bank-funded Croatia Cadastre Project also contributes to more effective water resources management by clarifying land tenure issues in the Neretva Delta, which currently exacerbate conversion of wetlands for agricultural production.

With regard to biodiversity conservation, in the baseline scenario the governments will attempt to carry out comprehensive inventorying and mapping of biodiversity components, to preserve highly sensitive ecosystems of great biodiversity value such as wetland and karst ecosystems, and to protect species and subspecies that are threatened.

The World Bank GEF Karst Ecosystem Conservation (KEC) Project in Croatia has introduced a number of good practices for improved protected area management, incorporating a participatory approach and transboundary cooperation with BiH on conservation issues. In BiH, the WB GEF Forest and Mountain Protected Areas Project (previously known as the BiH Biodiversity Conservation project) will work to develop different strategies for biodiversity conservation in order to reflect BiH’s complex natural and institutional structure. It will institute operational systems for sustainable land management and conservation at six priority sites. The project is planned to be implemented during 2006–10.

Both governments are faced with severe financial constraints. It is therefore expected that they will give priority to local environmental issues, although they do recognize the importance of transboundary impacts. The ability of the governments to secure external financing for environment-related projects will affect the scope of other investments and the speed with which they are addressed. The baseline therefore includes the

governments' improvement of water supply quality, increase in quantity and quality of wastewater treatment, and protection of prioritized ecosystems and species. The total amount of funds allocated to the above baseline activities is estimated at US\$45.4 million.

### *Global Environmental Objective and GEF Alternative*

Under the baseline discussed above, the governments are unlikely to be able to allocate in the short term financial resources needed to prepare harmonized River Basin Management Plans (RBMPs), taking fully into account transboundary impacts. Resulting decreasing water quality will have adverse transboundary and global environmental impacts, including: negative impacts on globally important species and subspecies; declining ecological status of wetlands of global importance; and endangered karst, coastal, and marine ecosystems and habitats.

### *GEF Alternative*

To harmonize the two countries' efforts in increasing water quality and protecting globally significant ecosystems, the alternative envisions preparation of RBMPs that will result in efficient, environmentally sound, and equitable allocation of water resources, and high-priority investments in municipal and industrial wastewater treatment that will significantly improve the quality of the water resources and their associated ecosystems. This will ensure the conservation of globally unique ecosystems by integrating ecological concerns into sectoral development plans and activities throughout the NTRB. Furthermore, the GEF alternative includes a series of measures to promote the long-term conservation of unique remnants of Mediterranean coastal wetlands. Finally, the alternative will demonstrate advantages of the sustainable use of water resources as alternative sources of livelihood for inhabitants of the basin.

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 contribution to the project of the Government of BiH is estimated at US\$4.54 million, of the Government of Croatia at US\$4.32 million, and of other donors (parallel financing) at US\$3.9 million. Out of the total project investment of US\$21.3 million, an amount of about US\$13.27 million will therefore be co-financing leveraged by the GEF grant of US\$8 million. Project results are the following:

- RBMP and Water Information System for Neretva and Trebisnjica River Basin with appropriate institutional framework for comprehensive management of the NTRB's water resources;
- Effective wetland conservation in the NTRB area including protection measures against saltwater intrusion in the Neretva Delta;
- Reduction of municipal and industrial wastewater pollution in NTRB through investments in five municipal WWTPs and two industrial WWTPs;
- Improved scientific and civil society participation in the decision-making process for water resources management.



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

- 1) **Improved Transboundary Water Resource Management** (US\$6.46 million of which GEF will cover US\$2.32 million) will cover preparation of the first transboundary River Basin Management Plan in the region; development of the NTRB Water Information System; and support to institutional and capacity building for transboundary management of the region's water resources.
- 2) **Improved Management and Use of Wetlands Ecosystems and Biodiversity** (US\$2.89 million of which GEF will cover US\$1.95 million) will finance improvements of sites, services, and management tools for the existing nature park in NTRB and five protected areas in Croatia; improvement of small-scale water management infrastructure in the area, including protection from saltwater intrusion in the Neretva Delta, wetlands restoration in Hutovo Blato and restoration of river banks of the Neretva River and its tributaries; and improved operation of reservoirs, hydropower plants, and dams.
- 3) **High-Priority Investments for Water Pollution Control** (US\$9.42 million of which GEF will cover US\$2.46 million) will reduce water pollution in the NTRB through high-priority investments in low-cost wastewater technology improvements in municipal WWTPs in Bileca, Konjic, Ljubuski, Nevesinje, and Trebinje; financing of equipment for wastewater treatment in two industrial pollution hotspots; and strengthening of three water quality monitoring laboratories in BiH.
- 4) **Public Participation and Management of Project Implementation** (US\$2.50 million of which GEF will cover US\$1.27 million) will increase the participation of a broad range of stakeholders in water resource management; demonstrate tangible benefits to the local population from the sustainable use of water resources; and enable management of the project implementation.

#### *Additionality*

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 and industrial sources, wildlife management of the wetlands, restore precious habitats, and secure long-term biodiversity protection of wetland and other ecosystems. Incorporation of these components into the proposed alternative will ensure the conservation of globally unique biodiversity by integrating biodiversity protection into the improvement of quality of life.

#### *Incremental Costs*

The difference between the cost of baseline scenario (US\$45.41 million) and the cost with the GEF alternative (US\$66.68 million) is US\$21.27 million. This represents the incremental cost for achieving sustainable global environmental benefits. Of this amount, the Government of BiH has committed to finance US\$4.54 million, the

Government of Croatia US\$4.32 million, and the project beneficiaries US\$0.50 million, while US\$3.91 is leveraged from the other donors. The amount requested from GEF is US\$8.00 million.

**Table 1: Matrix of Global Environmental Benefits and Incremental Costs**

*Benefits – Global Environmental Effects*

	<b>Baseline</b>	<b>Alternative Scenario</b>	<b>Incremental Global Environmental Benefit</b>
	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. Improvement in wastewater collection gives large local benefits.	Protect and restore endangered wetlands and other habitats; increase of biodiversity; reduction of water pollution.
<b>Total Costs (US\$ m)</b>	<b>45.41</b>	<b>66.68</b>	<b>21.27</b>
<b>Alternative GEF (US\$ m)</b>			<b>8.00</b>
<b>Alternative Co-financing (US\$ m)</b>			<b>13.27</b>
<b>Component 1.</b> Improved Transboundary Water Resource Management	Very gradual preparation of RBMPs and WISs—done on a national level only. Unharmonized transboundary river basin management.	Develop transboundary RBMP for NTRB and WISs.	Reduction of pollution of the globally important watercourses. Replication of transboundary, river-basin-level water resource management.
Cost (US\$ m)	29.58	36.04	6.46
<b>Component 2.</b> Improved Management and Use of Wetlands Ecosystems	Fragmented bilateral management of transboundary ecosystems of global importance concentrated on Hutovo Blato (BiH) and five protected areas in Croatia. Slow decrease of saltwater intrusion in the Neretva Delta by implementing specific activities of Croatian irrigation and water management action plan.	Protect and restore transboundary endangered wetlands; improved protected areas management; increase of biodiversity; improved data on saltwater intrusion into Neretva Delta; reduced agricultural pollution and salinization.	Protection of globally important species and subspecies, especially of the Mediterranean wetlands and karst subterranean. Replication of irrigation and growing techniques to reduce salinization and water pollution.
Costs (US\$ m)	11.21	14.10	2.89
<b>Component 3.</b> High-Priority Investments for Water Pollution Control	Discharge of raw untreated wastewater into rivers; slow rehabilitation of the municipal and industrial wastewater treatment facilities according to national priorities and ongoing programs; further conflicts among different water user groups.	Reduce water pollution in NTRB; harmonize water use and management for different interest groups.	Reduce water pollution in NTRB.
Costs (US\$ m)	4.22	13.64	9.42
<b>Component 4.</b> Public Participation and Management of Project Implementation	No action.	Involved communities in RBM planning; increased availability of scientific information; demonstrated links between rural development and sustainable management of water resources.	Replication of experience how sustainable use of water resources and biodiversity conservation may have tangible benefits for local community.
Costs (US\$ m)	0.40	2.90	2.50

**Annex 16: STAP Roster Review**  
**BOSNIA AND HERZEGOVINA**  
**REPUBLIC OF CROATIA**  
**NERETVA AND TREBISNJICA MANAGEMENT PROJECT**

STAP ROSTER TECHNICAL REVIEW OF THE PROPOSED GEF-IW PROJECT:  
*“INTEGRATED ECOSYSTEM MANAGEMENT OF THE NERETVA AND TREBISNJICA  
RIVER BASIN*

(BOSNIA AND HERZEGOVINA, CROATIA)

by J. A. Thornton PhD PH CLM

Managing Director

International Environmental Management Services Ltd – United States of America

**STAP Review Comments and Answers**

The STAP reviewer comments are generally highly supportive of the project objectives and design and note that the project overall is scientifically and technically sound. The reviewer draws attention primarily to issues of transboundary cooperation. Following is a summary of the key comments and the team’s replies. The PAD has been revised to address the comments, as needed.

**Key Issues**

**Key Issue 1: Scientific and technical soundness of the project**

1. *Comment:* While the overall coordination of the project is proposed to be undertaken by a single project steering committee, the division of work elements into country-specific sections is an issue of concern that could seriously affect data sharing, integrated water resources management of the basin as a whole, and the establishment of the necessary linkages to moderate transboundary threats in an upstream-downstream manner. This two-country approach is further enshrined in the two project implementing agencies defined along country boundaries.

*Response:* The division of work elements into country-specify sections is necessary administratively because there will be two separate GEF grant agreements—one to each country, and within BiH possibly two subsidiary grants to each entity in BiH, as is the practice with WB and GEF projects. Responsibility for each grant agreement entails implementation of discrete activities. Similarly, the agency responsible for implementing each grant needs to be clear about its responsibilities. However, both countries fully expect that the overall project is transboundary in nature and have established an interstate structure for oversight of project implementation that is comprised of an interstate steering committee (SC), and a joint Technical Working Group (TWG), all under the purview of the Interstate Water Committee (ISWC). These bodies will ensure overall coordination of project implementation and transboundary approaches to management and implementation. This structure has been effectively established during project preparation as is evidenced in the agreement of one PAD. The PAD has been

revised to reflect an organizational structure more strongly and to clearly present the roles and responsibilities of the national- and international-level organizations in regard to project implementation. The Operations Manual will spell out the joint, interstate approach that will be taken during implementation.

2. *Comment:* While each project unit is appropriately staffed, there is a risk that the project will develop as two national projects, rather than as one single River Basin Management Program. Note is made in the project document of the existence of the Technical Working Group, comprised of water resources and environmental professionals from both countries. It is not indicated whether this unit exists physically, as an entity, or if this unit functions as a secretariat that can direct and coordinate actions across jurisdiction boundaries. If there is a central project management office, the risk of the project developing in an uncoordinated, country-based manner is minimized. In contrast, though, lack of such a secretariat could result in country-level activities being developed without regard for, or relationship with, initiatives in other areas of the shared river basin.

*Response:* The client is invested in ensuring that the implementation structure is based on experience that this is a transboundary project. We have revised the PAD to make this clearer.

The joint TWG is an interstate technical body (whose members were appointed by relevant state administration in both of the countries) consisting of representatives of relevant ministries and public enterprises within the sectors of water, agriculture, environment, and energy. The TWG was established for the purpose of supporting project design development in the preparation phase and is now intended to support implementation. The TWG has been actively involved in the project design and was very effective in project coordination across jurisdictional boundaries at the highest administrative levels. The TWG will be one of the main monitoring/evaluation instruments for the project implementation.

The implementation structure is based on experience with transboundary projects related to the Danube River, and in terms of the TWG, with the newly established Sava River Commission, a transboundary commission that includes BiH and Croatia (but also Slovenia, Serbia, and Montenegro). The client has determined that the most effective mechanism for transboundary cooperation is the existing Interstate Water Committee (ISWC), and they do not feel a secretariat is necessary. This is because the ISWC has a history, prior to the war, of working effectively, and due to the relatively small size of the basin (compared to the Sava), the ISWC is adequate.

3. *Comment:* The project document indicates that the two countries have signed a cooperation agreement. This should provide the basis for closer cooperation, at least at the technical level, between countries in the execution of this project, and help to ensure that actions implemented at the national level are coordinated to a higher degree than would be possible based solely on the periodic steering committee meetings. Consequently, if the Technical Working Group is not a physical, functioning unit,

creation of a single project office to facilitate coordination among the national project offices is strongly recommended.

*Response:* The PAD now includes a description of the treaty that established interstate cooperation and the ISWC. The ISWC will function as the single transboundary unit to oversee the project.

4. *Comment:* Overall, the project appears to be scientifically and technically sound.

*Response:* Agreed.

5. *Comment:* The major scientific element of the project is the development of a water information system for the basin. However, this is proposed to be done piecemeal in the two countries and three jurisdictions that comprise the river system. It is unclear, aside from the use of common database development protocols, how the project will actively contribute to the dissemination and sharing of data between portions of the basin. Much of the database development is being funded through an ongoing EU project, which is considered to provide much of the counterpart contribution for the project. In addition, the proposed GEF funding is to be applied to work elements that directly address the requirements of the EU water framework directive.

*Response:* The respective Constitutions and water management legislation in Croatia and BiH entities require provision of water information systems on country/entity administrative levels and so there are elements that reflect this need. However, the project fully intends, beyond the national-level requirements, to support a transboundary water information system that provides complete operational and interchangeable databases that will include: definitions of procedures in data exchange and common use of all data within the Water Information System among entities and on the interstate level; unified cadastre format (introduced the same cadastre format in both BiH entities as in Croatia); enabled harmonization of different databases; and a common GIS structure.

6. *Comment:* The development of the River Basin Management Plan will be done within national or jurisdictional boundaries. The project document is specific that the output will be "River Basin Management Plan documents." While multiple documents may ultimately be required in the enabling legislation necessary for each country or jurisdiction to adopt the River Basin Management Plan, it is strongly urged that the River Basin Management Plan be one, single document, jointly adopted by each basin country. Development of separate documents will inevitably lead to tensions that may negate the current framework cooperation agreements signed by the countries.

*Response:* The EU WFD requirements for river basin management planning are the guide to the preparation of the RBMP. Within each country the Water Law dictates the requirements for river basin management plans. The Water Law in Croatia will be harmonized (in 2006) with the EU WFD; while the two Water Laws in BiH have already been harmonized with the WFD.

According to the WFD, even though the RBMP document that will be produced under the project is a single document and relates to the whole NTRB basin, its adoption has to be provided by each of administrative units, that is, each country and both entities in BiH, because each country is responsible to the EC for its own RBM planning. Countries that share an international river basin, for example, the Neretva, have to assure the EU that the requirements of the WFD are coordinated on the whole international river basin, and for this purpose may use existing structures resulting from international agreements, for example, the ISWC. In cases where the international river basin extends beyond the territory of the EU, the relevant states must establish appropriate coordination with relevant non-member states, but the member state is the one that has to ensure application of the rules of the WFD within their territory. This most likely will be the situation for Croatia in the near future. An output of the project is one RBMP that will have been discussed, agreed upon, and ready for approval. The approval process itself for each country will depend on internal procedures. This is explained in more detail in the PAD.

7. *Comment:* An interesting element of the project that is not well developed is the management of saltwater intrusion in the Neretva River and coastal aquifers. Unfortunately, the proposal focuses on monitoring and modeling without taking the next step in identifying potential responses to such intrusions.

*Response:* Agreed. The project has been revised to include a pilot project to demonstrate responses to salinity and methods to reduce irrigation water use and contribution to salinization. In addition, the project will finance a feasibility study of technical alternatives to remediate saltwater intrusion. Several types of hydraulic structures that have been proposed will be examined and the optimal solution proposed. It is estimated that the cost of these solutions range from €9 million to €17 million. The project can be effective in identifying financing possibilities for such investments.

## **Key Issue 2: Identification of global environmental benefits and/or drawbacks of the project, and consistency with the goals of the GEF**

8. *Comment:* Within Component 2 of the project, certain subcomponents include the construction of wastewater treatment facilities. While these facilities are clearly likely to be beneficial to the river ecosystem as a whole, it would appear that these facilities are based on known technologies and would not constitute demonstration projects. Construction of wastewater treatment facilities is not eligible for GEF funding. While such facilities can be included in the project as counterpart or co-financing, application of GEF funds for the construction of such facilities is inconsistent with GEF policies. This would apply to the Hutovo Blato Nature Park, the City of Bileca, the City of Konjic, and the City of Ljubuski treatment plants.

*Response:* The team has discussed this with the reviewer and GEF coordinator and confirmed that the wastewater treatment investments included in the project do meet the GEF criteria for inclusion. The selected sites are on international waterways; the investments are for upgrades and improvements, not new construction; the discharges are

impacting globally significant ecosystems and water resources; and the GEF funds are matched by local contributions. These include the facilities at Ljubuski, Bileca, and Konjic—all in BiH. The Croatia Coastal Cities Pollution Control Project is financing wastewater treatment improvements in the two main Croatian municipalities in the NTMP.

9. *Comment:* Certain tensions are created within the project concept as a result of the country focus adopted. These tensions are evident in activities such as completion of the museum display in the Museum of Herzegovina-Trebinje and the rehabilitation of the Bird Museum in Metkovic. These appear to be strictly local undertakings that are outside of the GEF policy of funding the incremental cost of activities of a transboundary nature. Simply indicating that there are numerous bird species in the basin, some of which are migratory, is insufficient justification for GEF involvement in these institutions. Rather, the regional or transboundary role of these institutions should be identified.

*Response:* We understand that the activities need to have global impact and have revised the PAD to be clearer about the function of the sites and the nature of the activities. These museums are not considered within the project as individual local institutions but as nodes of a future basin biodiversity network, which is to be initiated through the project. They are located in the three different administrative regions, Croatia and both entities of BiH, and thus lay the groundwork for the first trilateral cooperation in the science, education, and research community in the project region. The activities proposed are topic oriented and not locally oriented.

10. *Comment:* *Nasa Neretva*, which seems to be proposed to have a regional circulation—although it is unclear whether this is to be a web-based publication or print publication.

*Response:* This is planned to be a printed publication (newsletter). A special *Nasa Neretva* page will be included within the project website.

11. *Comment:* The ecotourism development subcomponent should focus on the development of activities as demonstration projects able to be replicated elsewhere in the Basin, rather than on the development of specific sites. The concept of demonstration projects able to be replicated elsewhere in the Basin is not well established in Component 3 activities.

*Response:* Agreed. The goals of this activity have been revised. The objective will now be to demonstrate how environmentally unfriendly tourism at sites of ecological value can be revamped to mitigate impacts and to provide an educational experience related to the area's natural and cultural resources. This approach is replicable throughout the region.

### **Key Issue 3: Regional context**

12. *Comment:* The participation in this project of two of the three riparian countries, and three of the four jurisdictional units (Montenegro, as previously noted, maintaining an observer status in this project) argues persuasively that adequate and appropriate consideration has been given to the regional context of the project. However, the opportunity to action the regional context more effectively is lost as a consequence of the country-level focus of the project. Granted, country-level units are necessary to implement the project activities; however, as has been noted above, there is a need to better integrate these activities within the framework of the basin through the creation of a basin management unit of some type. Replicating facilities within each country is not the same as integrating these facilities and creating workable linkages with the appropriate national institutions. Inclusion of actions to develop an appropriate and sustainable regional-level river management organization is recommended.

*Response:* Agreed. The project implementation structure has been revised; implementation arrangements have been developed that are joint in nature and will be detailed in the Operations Manual. As noted above, the project aims to strengthen the ISWC that will, in the long term, support bi-country river basin management.

### **Key Issue 4: Replicability**

13. *Comment:* The project as currently conceived lacks indications of how activities could be replicated, either within the Basin or elsewhere, although the clear linkages of the project concept with the Mediterranean Action Plan are identified in the project document.

*Response:* See comments under #9.

14. *Comment:* Likewise, the saltwater intrusion project element that does have clear potential for replication is not implemented to the point of generating lessons learned that can be transferred to similar areas of concern elsewhere in the world. These are missed opportunities for creating broader linkages among the project, the region, and other areas of the globe.

*Response:* See comments under #7.

15. *Comment:* The project stops short of pursuing bilateral or multilateral mechanisms through which to transfer technologies, experiences, and lessons learned either within the Basin or elsewhere. To this end, establishment of the basin organization is indicated and determination of clear linkages of the project with the IW:LEARN project of UNDP is strongly recommended.

*Response:* Bilateral/multilateral mechanisms of technology transfer will be obtained through the River Basin Management Plan Sourcebook as part of the GEF International Waterways: LEARN network. The sourcebook will transfer experiences and lessons



learned through the preparation of RBMP in the basin. This will disseminate the knowledge gained through the project.

#### **Key Issue 5: Sustainability of the project**

16. *Comment:* The key aspect of sustainability is poorly addressed in the project document. It is predicated upon the individual commitments of the countries to specific international conventions and upon the framework agreement signed by the countries in 1996. While the project is intended to build the scientific and technical basis necessary for developing more robust regional cooperation mechanisms, the country focus of the project currently limits the likely sustainability of the joint management efforts to the duration of the project.

*Response:* Agreed. The PAD has been revised accordingly. For every component/activity in the project design (within the PAD), a responsible partner has been assigned. Additional mechanisms for joint management have been added and will be detailed in the Operations Manual. A joint workshop has been organized for mid-December 2005 to define implementation procedures that are done jointly, not bilaterally.

#### **Key Issue 6: Targeted research projects**

17. *Comment:* Successful practices, well documented, will become the basis for replication elsewhere in the Basin and add to the existing best management practices database being compiled by the GEF-IW focal area within the IW:LEARN program. It is essential that the lessons learned be well documented and that both success and failure of specific management measures be recorded.

*Response:* See comments under #15.

#### **Secondary Issues**

##### **Secondary Issue 1: Linkage to other focal areas**

18. *Comment:* This project is formulated as an International Waters project under OP 9 of the GEF *Operational Strategy*. The project has been specifically linked to the biodiversity focal area, and there are clear linkages to the cross-cutting area of land degradation. The linkages to biodiversity and land degradation are not well developed, even though there is clear reference to the importance of these aspects to the Neretva River Basin in the introductory paragraphs of the project document. This lack of linkage to these very important cross-cutting focal areas should be rectified. The proposed project also has a clear linkage to the Global Program of Action for the Prevention of Marine Pollution from Land-Based Activities.

*Response:* Agreed. The PAD has been revised (a) to indicate the linkage between water resource management, protection of the ecosystems in the basin, and protected area

management, particularly within the context of the EU WFD; and (b) to indicate the linkage to the MAP and MED POL (see section “Rationale”).

### **Secondary Issue 2: Linkage to other proposals**

19. *Comment:* The project recognizes the complementarities between the implementation of the strategic actions and related initiatives being carried out in the Mediterranean region. Specifically, the project seeks to develop strong linkages with the EU in the execution of the proposed project. While these linkages bring significant international expertise to the project, they also raise the concern that the project may not adequately develop local capacity that is essential to the sustainability of the project in the long term. However, the inclusion of a role for NGOs and local stakeholders in the project could limit any risk in this regard.

*Response:* Good point. As response to this valuable remark we have revised the PAD so that the Neretva Delta Forum will be enlarged by Trebisnjica and Upper Neretva representatives. The representatives of the Neretva Delta Forum will be involved in project implementation (through the TWG, which will include NGO representatives).

### **Secondary Issue 3: Other beneficial or damaging environmental effects**

20. *Comment:* The project has no known or obvious damaging environmental impacts associated with the activities proposed to be executed. The beneficial impacts of the project have been fully identified in Annex 15. Unfortunately, given the country focus of the project, the benefits accrue largely within specific localities within the project area, and are not proposed for wider dissemination, except in the case of the transboundary newsletter, *Nasa Neretva*.

*Response:* Agreed. The PAD has been revised to include a broader range of dissemination and communication activities including sponsoring annual regional river basin management workshops.

### **Secondary Issue 4: Degree of involvement of stakeholders in the project**

21. *Comment:* Stakeholder involvement includes involvement by appropriate governmental agencies, investments in specific economic activities as identified in Component 3, and participation of NGOs. Unfortunately, specific organizations and partners are not elaborated, creating a weakness in the project design.

*Response:* Agreed. The PAD has been revised to show the responsible partner for every component/activity in the project design.

### **Secondary Issue 5: Capacity-building aspects**

22. *Comment:* Capacity building and institutional strengthening are focused on the creation of systems and activities in the participating basin countries. Development of

human resources is limited in some ways to the IWRM training proposed in Component 1, the awareness creation efforts of Component 2, and the stakeholder development activities in Component 3, with the primary focus being on investment in facilities.

*Response:* Development of the RBMP will ensure participation of a number of administration employees (from the water, environment, agriculture, and energy sectors) from BiH and Croatia, resulting in capacity building across sectors. The PAD has been revised to indicate training programs beyond those for IWRM.

#### **Secondary Issue 6: Innovativeness**

23. *Comment:* Development of appropriate management practices for the integrated management of the river basin within the context of its watershed is a continuing process in much of the world. In particular, the issue of saltwater intrusion, identified in the project document, is an area where this project could demonstrate innovation that would potentially result in not only innovative approaches but also eminently transferable approaches to addressing this serious problem. The proposed project could demonstrate an appropriate degree of innovativeness in its approach and in its anticipated results if this element of the project is further developed as recommended above.

*Response:* See comments under #7.



Map section



