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FAA 119 Analysis Prepared By: ENOVA, Consultants and Engeeners

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The USAID Bosnia and Herzegovina submits the attached FAA 119 analysis for E&E Bureau Environmental Officer approval in preparation for the development of our new strategy.

This analysis addresses: (1) the actions necessary in that country to conserve biological diversity; and (2) the extent to which the actions proposed for support by the Agency meet the needs thus identified (FAA, Sec. 119(d)).”

The Mission requests the BEO approval for the report.

Clearance:

Mission Director:

[Signature]

Date:

6/07/2011

Mission Environmental Officer:

[Signature]

Date:

May 22, 2011

Program Office Director:

[Signature]

Date:

June 6, 2011

Biodiversity Expert Reviewer:

[Signature]
Jeff Ploetz

Date:

6/22/2011

Concurrence:

Bureau Environmental Officer:

[Signature]
Barbara Britton

Date:

6/22/2011

Approved:

Disapproved:



Biodiversity Analysis Update

for Bosnia and Herzegovina

Sarajevo, May 2011

BiH FAA119 Biodiversity Analysis (2012 – 2016)

Client: USAID/Bosnia and Herzegovina
Roberta C. Frasuera1
Sarajevo, Bosnia and Herzegovina 71000
Contact person: Samir Dizdar
sdizdar@usaid.gov

Prepared by: Enova, Consultants and Engineers (Enova d.o.o. Sarajevo)
Franca Lehara b.b. Sarajevo 71000, BiH
T + 387 (0) 33 561 995
F + 387 (0) 33 561 990
[Info@nova.ba](mailto:info@nova.ba)
www.nova.ba

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List of Acronyms

BiH	Bosnia and Herzegovina
CAPP II	Civic Advocacy Partnership Program II
CARDS	EU Community Assistance, Reconstruction, Development and Stabilization Program
CAS	Country Assistance Strategy
CBABDA	Capacity Building of Agriculture Businesses in Drought Adaptation in BiH
CBD	Convention on Biological Diversity
CCSP	Center for Civil Society Promotion
CDCS	Country Development Cooperation Strategy
CPE	Clean Productive Environment
CSR	Corporate Social Responsibility
DAC	Development Assistance Committee
DCA	Development Credit Authority
DCF	Development Assistance Committee
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EEA	European Environment Agency
EI	Excellence in Innovation
FAA	Foreign Assistance Act
FARMA	Fostering Agricultural Markets Activity
FBiH	Federation of Bosnia and Herzegovina
FIRMA	Fostering Interventions for Rapid Market Advancement
FLEGT	Forest Law Enforcement Governance and Trade
FMAWMF	The Federation Ministry of Agriculture, Water Management and Forestry
FMCS	The Federation Ministry of Culture and Sports
FMOIT	The Ministry of Environment and Tourism of Federation of Bosnia and Herzegovina
FMPAP	Forest and Mountain Protected Area Project
FMPPE	The Federation Ministry of Physical Planning and Environment
FSC	Forest Stewardship Council
GEF	Global Environmental Facility
IBRD	International Bank for Reconstruction and Development
IPA	Instrument for Pre-accession Assistance
IPR	Intellectual Property Rights and Trade Capacity Development
MOFTER	Ministry of Foreign Trade and Economic Relations
NEAP	National Environmental Action Plan

NGO	Non-Governmental Organization
NP	National Park
PA	Protected Area
PARE	Partnership for Advancing Reforms in the Economy
PDO	Protected Designation of Origin
PGI	Protected Geographic Indication
REAP	Regulatory and Energy Assistance Project
REGA	Rural Employment Generation Activity
RS	Republika Srpska
RSMEC	The RS Ministry of Education and Culture
RSMTT	The RS Ministry of Trade and Tourism
RSMUPCEE	The RS Ministry of Urban Planning, Civil Engineering and Ecology
SDNPS	Sustainable Development of the Non-Profit Sector in BiH
SIDA	Swedish International Development Cooperation Agency
TSG	Traditional Specialty Guaranteed
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environmental Programme
USAID	United States Agency for International Development
USG	United States Government
WB	World Bank
WBN	Women's Business Network
BiH	Bosnia and Herzegovina
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UNECE	United Nations Economic Commission for Europe
USAID	United States Agency for International Development
USG	United States Government
WBN	Women's Business Network

List of Experts Involved in Preparation of the Report

Company	Name	Position
Enova, Consultants and Engineers	Fethi Silajdzic	Team Leader
Enova, Consultants and Engineers	Elmedina Krilasevic	Biodiversity Policy Expert
Enova, Consultants and Engineers	Lejla Tabakovic	Legal Expert
Enova, Consultants and Engineers	Amra Sehovic	Economic Expert
Enova, Consultants and Engineers	Mak Mijatovic	Legal Expert

Introduction

The Biodiversity Analysis Update has been prepared in order to address the requirements of the United States (US) Foreign Assistance Act (FAA) Section 119, which specifies that: “Each country development strategy or other country plan prepared by United States Agency for International Development (USAID) shall include analysis of: (i) the actions necessary in that country to conserve biological diversity, and (ii) the extent to which the actions proposed by USAID meet the needs identified”. The aim of the Analysis is to ensure that threats to biodiversity are taken into consideration and addressed to the extent practicable by USAID in the next strategy period for Bosnia and Herzegovina (BiH). It is also meant to ensure that USAID projects planned for implementation under the new strategy have no adverse impacts on biodiversity.

The work on the preparation of Biodiversity Analysis Update 2011 - 20016 for BiH has been divided into two phases. Within the first phase, the project team prepared a report that included a brief description of the Country Development Cooperation Strategy (CDCS) and relevant current and planned USAID projects; assessed the extent to which the projects meet the perceived biodiversity conservation needs; and provided recommendations for incorporating biodiversity conservation considerations into the strategy, ongoing projects, and future USAID projects. Recommendations focused on strengthening cross-sectoral links. In the second phase, the project team provided a detailed overview of the current status of biodiversity in the country; ongoing principal threats to biodiversity; the country’s legal and institutional framework to address biodiversity issues; activities of host government and donors, civil society and other stakeholders with regards to environment and biodiversity conservation; and other relevant biodiversity information. The overview and analysis carried out within these two phases are jointly presented in the final report: BiH FAA119 Biodiversity Analysis (2012 – 2016).

To assure consistency with USAID guidelines, the *FAA 118-119 Lessons Learned & Best Practices* (USAID, 2005) and *Biodiversity Conservation: A Guide for USAID Staff and Partners* (USAID, 2005) were taken into consideration in framing the assessment design.

Methodology

This document was prepared by collecting primary data and analyzing the available secondary data related to biodiversity conservation in BiH. Collection of secondary data has been carried out by the review of the available analytical, reporting and strategic documents prepared in BiH with regards to biodiversity conservation, review of project information and documents of USAID programs in BiH, and other relevant USAID guidelines for biodiversity. Primary data were collected through key informant interviews with representatives and managers of USAID projects, their implementing partners, and the key host government representatives. No site visits were conducted for the purpose of preparing this report since the experts involved in preparation have already spent considerable time working at various sites in BiH relevant for biodiversity conservation, and hence they were able to draw on those experiences for the report preparation.

The key documents used for identifying the biodiversity threats, root causes, and conservation needs for BiH are the following:

- National Environmental Action Plan (NEAP) for BiH (2003);
- Biodiversity Strategy and Action Plan for BiH (2005);
- National Reports to the United Nations Convention on Biological Diversity (CBD), especially the latest report: Bosnia and Herzegovina Fourth Report to the CBD (2010);
- United Nations Economic Commission for Europe (UNECE) Environmental Performance Review Report for BiH (2010).

The key documents used to identify and assess USAID's programs are the following:

- USAID's Country Assistance Strategy for BiH (2009);
- Available sections of the new draft of USAID's Country Strategy for BiH;
- USAID Biodiversity Analysis for BiH (2003);
- USAID Biodiversity Analysis for BiH (2009);
- Websites of the USAID programs.

Interviews were held with the representatives of state and entity institutions responsible for environmental and biodiversity issues, as well as representatives of the non-governmental sector. In addition, interviews were held with representatives of USAID programs and project implementers in the period of March 15 to April 1, 2011. The aim of the interviews was to further investigate possible impacts and established links of the ongoing projects to the biodiversity agenda in order to provide recommendations for strengthening cross-cutting links to biodiversity, and for ensuring that USAID's strategy and forthcoming projects have no adverse effect on biodiversity. The organizations interviewed during this period are the following:

- Chemonics International Inc;
- Emerging Markets Group, Ltd;
- Advanced Engineering Associates International, Inc;
- MI-BOSPO Micro credit organization;
- Association Centre for Development and Support Partner(CRP);
- Center for Civil Society Promotion;
- Academy for Educational Development;

- Deloitte.

This report used the USAID Biodiversity Analysis from 2009 as a basis for initial findings and for the evaluation approach for the USAID programs. In addition, in the current analysis, the 2009 findings were expanded to include currently identified problems, threats, and needs. The team made an extra effort to compare evaluation findings from the 2009 report with the most recent findings.

Executive Summary

BiH is considered very rich in specie and landscape diversity. The species richness is the result of ecological heterogeneity, geomorphologic and hydrological diversity, specific geological past and its eco climate diversity. Flora, fauna and fungi in BiH are considered to be among the most diverse in Europe. They are especially important in terms of global biodiversity due to its high level of endemism and relicts. However, this richness is often exposed to various threats resulting from human activities. We have identified that most prominent threats to biodiversity in BiH at present are the following: (i) rapid non-balanced economic growth, including hydropower sector development, resulting in conversion of habitats; (ii) pollution, including poor water waste and solid waste management system; (iii) unsustainable exploitation of natural resources, including ecosystems – forestry and wildlife management; (iv) weak national policy framework and incomplete legislative framework; (v) weak institutional capacity; (vi) undeveloped economic instruments for financing of conservation and environmental protection; (vii) poor access to information system and a weak environmental education system, (viii) limited public awareness and non-willingness to initiate changes; and (ix) invasive alien species.

The assessment of current projects supported by USAID in BiH shows that these projects are well-designed from an environmental sustainability standpoint. They are not expected to cause serious environmental degradation. Generally, all USAID projects are intended to accomplish environmental sustainability.

However, biodiversity conservation is not currently considered a high priority issue in BiH due to the fact that BiH, a country in transition, is struggling with a number of crucial challenges. Therefore, the programs and projects implemented in BiH are not focused on biodiversity protection in terms of directly targeted activities to support the biodiversity agenda.

Nonetheless, many of USAID´s projects contribute indirectly to environmental and biodiversity conservation through the endorsement of the capacity of the society to adequately respond to the country's current challenges. If observed in the broader context, overall USAID contributions towards democracy, institutional reforms, stability, and economic growth have indirect positive benefits to conservation and biodiversity. The positive impacts of current USAID projects can be further reinforced through the implementation of specific recommendations for each project as outlined in this report. In general, all projects could additionally benefit from the following:

- More active dissemination and communication of guidelines and tools for biodiversity conservation among project implementers in order to enable them to mainstream biodiversity aspects into their projects more effectively;
- Consider more effectively the inclusion of safeguards for biodiversity conservation into the procedures and criteria for awarding various types of assistance to local beneficiaries.

Future USAID activities can benefit from the following recommendations:

- Promote environmental sustainability and biodiversity conservation;
- Encourage private sector to integrate environmental safeguards and marketing and promotion based on environmental certification;
- Build capacities of the government and civil sector, while emphasizing their role in the environmental sustainability of the country;

- Explore the links with environment and biodiversity in the aspects of health, safety, sustainable development, and EU accession;
- Link concern for environment and biodiversity with issues of high importance on domestic and local levels, such as: (i) development, income generation, (ii) EU accession, (iii) future funding opportunities, (iv) ecotourism development, (v) building a better image for BiH.

Country Background Information

Bosnia and Herzegovina is a country in the Western Balkans and is located in southern Europe. BiH covers an area of 51,129 square kilometers (19,741 mi²). Formerly one of the six federal units constituting the Socialist Federal Republic of Yugoslavia, BiH gained its independence during the Yugoslav wars that began in 1992. The country went through three years of war that left its industry, infrastructure and economy in shambles. The last official census in 1991 recorded 4.4 million people, which was prior to the 1992 - 1995 war, while an unofficial census in 1996 by UNHCR recorded a post-war population of 3.9 million. Its 2007 residential population is estimated at approximately 4 million.

Although it remains one of the poorest countries in the region, BiH has made considerable progress in the decade since the war. Economic recovery was significant immediately after the war, but the current economic outlook is very weak and faces systemic challenges. More than one million refugees and Internally Displaced Persons (IDPs) have returned to their pre-war homes, and the government has administered two free and fair elections. BiH still has an international protector in the Office of the High Representative (OHR), which in the past acted as the ultimate governing authority. Although this international presence has driven reforms, it has also slowed political maturation and impeded local ownership of the reform process. Although the power of OHR has diminished, OHR is still a guarantee of stability in the country.

All post-war achievements in BiH were made possible by the Dayton Peace Accords, which ended the war and provided a political structure for normalization. However, the country has an ineffective and inefficient government: Dayton created a fragmented, multi-layered government that consists of a state and two entity governments (Republika Srpska and the Federation of BiH) with an un-harmonized structure and an astonishing number of local/municipal governments. Republika Srpska, populated predominantly by Serbs, is highly centralized, while the FBiH, populated mostly by Bosniaks and Croats, has a decentralized government with ten cantons organized into their own mini-governments. Such a structure is ultimately unsustainable, and is impeding economic growth.

Despite all issues, BiH has achieved a high degree of macroeconomic stability, including low inflation and a stable currency, but its high current account deficit is a mark of its persistent lack of competitiveness. Large but declining foreign assistance flows have been essential to maintaining its economic stability. And, while industrial production grew steadily during the past several years (recorded increase of 9.8% from 2004 to 2005, and approximately 3% in the last two years), as a contra-effect, there was increased pollution in certain areas of the country. The economy, which should be the strongest generator and promoter of environmental protection and biodiversity conservation, is fragmented, over-regulated, and dominated by state-owned enterprises. The official unemployment rate is around 40%, but it is estimated that some 24% of those accounted as unemployed work in the informal economy. BiH's poor infrastructure and weak rule of law discourage foreign investment. Corruption continues to plague all aspects of government and society and severely impedes reforms. Environmental concerns deter economic growth, particularly in tourism, agriculture, electric power, forestry and wood processing - all sectors with high potential for increasing exports.

Status of Biodiversity

Sources of Biodiversity Information

The capacity of BiH to collect and provide reliable statistical data is generally considered poor by the European standards, while environmental statistics are not yet a part of the national statistics system. The main sources of biodiversity data are coming from research and a number of publications prepared by different institutions. However, no central or coordinating institution responsible for collecting, registering and analyzing biodiversity data has been designated neither at the entity nor at the state levels. The team has identified some progress in compiling the information on biodiversity status since the last Biodiversity Analysis carried out in 2009. Recent National Reports to CBD contain detailed information on diversity of species, ecosystems and landscapes. Some of that data is used in this Report to describe the current status of biodiversity in BiH. Several strategic documents outline the status of environment including biodiversity in the past years and are presented below:

Table 1. Relevant strategic documents as a source of biodiversity information in BiH

Timeline	Documents	Commentary
2003	The National Environmental Action Plan (NEAP)	Identified the first set of environmental priorities on the national level for BiH
2004	The Environmental Performance Review by the UN	Identified priorities for environment and conservation
Late 2007 and early 2008	The entity Strategies for Protection of Nature and Environment	Both produced by the FBiH and the RS, they identified short, medium-term goals for the development of the environmental sector
2008	The Environmental Status Report for BiH	Produced by the Embassy of Switzerland and the NGO Green Visions, which also identified priorities in the environmental sector
2010	Bosnia and Herzegovina Fourth Report to the United Nations Convention on Biological Diversity	Provides detailed information about the state of genetic, specie and ecosystem biodiversity
2010	Biodiversity Targets National Assessments, DRAFT, (October 2009)	-
November, 2010	Bosnia and Herzegovina, UNECE Environmental Performance Review Report	-
2010	State of the Environment for FBiH	-

At present, there are no Red Data Books (RDB) and lists of flora, fungi and fauna according to the World Conservation Union (IUCN) methodology. There are various scientific papers containing information on biodiversity which could be a source of information in preparing RDBs. In the absence of RDBs in both entities, the following table listing rare and endangered species may provide the necessary foundation for further RDB development.

Table 2. Documents that serve as a basis for further RDB development

BIH	FBIH	RS
2009 List of freshwater fish with conservation status and distribution - no legal power	List of rare and endangered species prohibited for hunting (Law on Hunting, 2006), covers only mammals and birds - legally binding	List of rare and endangered species prohibited for hunting (Law on Hunting, 2008), covers only mammals and birds - legally binding preliminary list of rare plants - no legal power.
2009 Overview of some threatened mosses - no legal power	List of plant species having conservation status (forest legislation), - legally binding	
2009 List of stenoendemic plants, with proposed threat status - no legal power		

Definition and Elements of Biological Diversity

BiH has 1,459 km of border, with Croatia to the north and west, Serbia to the east and south, and Montenegro to the south; it also has 20 km of coastline on the Adriatic Sea, though it is otherwise landlocked. All major watersheds and bio-geographical regions in the country are shared with its neighbors; thus the natural resources and biodiversity conservation challenges of BiH are transboundary not only in nature but also in importance (see Annex 2 for the composition of the BiH territory/habitats by Corine land cover database).

BiH's biodiversity is founded on a heterogeneous geological foundation that has undergone major tectonic change since the Pleistocene and Cretaceous periods and that has been further complicated more recently by extensive glaciation. Carbonate rocks like limestone and dolomite predominate, but silicate rocks and alluvia of various ages are common in the central and the eastern parts of the country. The southern portion of the country contains 4,400 square kilometers of karst topography. Owing to its wide range of altitudes and its situation between European and Mediterranean weather systems, BiH also has very diverse climatic zones and precipitation characteristics. The geology and weather together, and the resultant microclimates and soil types, have created a rich mosaic of biodiversity. Of the 11 main primary watersheds in the country, eight drain into the Black Sea basin through the Danube River system; the other three drain into the Adriatic basin through the Neretva River. The Sava River is the backbone of the area draining into the Black Sea; most major waterways in the country flow into the Sava. Fresh water springs are the dominant hydrologic feature in this area. It clearly illustrates the dependence of neighboring countries on sensible water resources management in BiH, which has thus far failed to materialize.

The climate is moderately wet, with an average annual precipitation of 61.5 billion cubic meters, some 43 billion cubic meters of which drains to surface waters (rivers, streams and lakes). The highest rainfall occurs in the winter, the least in the summer. The surface water discharges of the main river basins in BiH reflect seasonal variations in precipitation.

Diversity of species

The species richness on the territory of BiH is the result of ecological heterogeneity of BiH, its geomorphologic and hydrological diversity, specific geological past and its eco climate diversity. Flora, fauna and fungi in BiH are considered to be among the most diverse in Europe (FMoET, 2010), and are especially important in terms of global biodiversity due to their high level of endemism and relicts. Bosnia and Herzegovina's Fourth Report

to the United Nations Convention on Biological Diversity gives a brief description of elements of biological diversity in BiH. This Report has been vastly used in this document to provide the description of the biodiversity in the country.

Flora. In order to portray the diversity of plant species in BiH it is enough to mention that 5,134 different plant species have been identified on its territory. A high portion of it (1,859) belongs to the division of cyanophytes and algae, while the remaining falls into division of mosses (bryophyta), fern (pteridophyta) and seed plants (spermatophyta). For further reference please see Annex 1.

Fauna. Fish fauna are relatively well investigated and comprises 119 fish species in total. Diversity of amphibian fauna is characterized by 7 genera, 21 species and 22 subspecies. Reptiles inhabit freshwater, ponds, marshes and almost all terrestrial ecosystems (especially extreme habitats, such as rocky grassland) belonging to 40 species (45 sub-species) from 12 families. The highest reptile diversity in BiH is evident in the Mediterranean region and Supra-Mediterranean belt. Bird fauna comprises 326 species within 60 families. Most of them are stationary (nesting), while the migratory ones are present only in certain seasons usually at wetlands (i.e. Busko blato, Bardaca, Hutovo Blato) and certain river flows (lower flow of River Drina). Mammal fauna comprises of 85 identified species and most of them inhabit terrestrial habitats.

Fungi. They inhabit both terrestrial and aquatic ecosystems. 15,000–20,000 mushroom species are estimated as present in BiH. However, only 552 species of higher fungi have been identified.

Ecosystem and Landscape Diversity

The country has very diverse ecosystems due to many factors, such as climate, elevation, different types of bedrocks etc. There are several different type of ecosystems which break down to even more diverse groups of ecosystems. The ecosystem types are the following:

- Ecosystems of Mediterranean landscapes;
- Ecosystems in modified Mediterranean climate;
- Ecosystems of Mediterranean-Mountain (Mediterraneo-montane) landscapes;
- Ecosystems occurring in upland hills and mountains;
- Ecosystems of central to north BiH in the hilly belt;
- Ecosystems of the mountains in south edge of Pannonia (peri-Pannonia);
- Ecosystems of Pannonia in BiH (northern BiH).

In addition to the mentioned landscapes and types of ecosystems, the highest level of biodiversity and endemism occurs in specific group of landscapes, such as: high mountain landscapes, refugio-relict landscapes of canyons, cliffs and steep slopes, landscapes of karst fields and wetlands.

Please see Annex 2 for more information on ecosystem diversity.

Genetic Diversity

BiH is considered rich in genetic diversity of its domestic species that have obtained special genetic attributes as a result of adaptation to the local environment and specific conditions. High diversity of genetic resources in BiH is also reflected in a great number of original animal breeds and plant sorts. As many animal breeds were domesticated in the previous centuries, some of them evolved in distinct ecotypes of species representing a separate form at present. For instance, high genetic diversity occurred among the breeds of livestock and domesticated animals (i.e. Bosnian hill horse, Busa and Gatacko cows, Pramenka sheep, Tornjak (Bosnian

Tornjak) dog etc.). High genetic diversity is present in specific forest ecosystems. An example of this is the forest of Pendiculate Oak (*Quercus robur*) in Livanjsko polje.

Threatened Species

As previously stated, RDB for BiH is still not developed and adopted. However, Dr. Cedomil Silic prepared the list of plant species for the National RDB during the recent war, following a request of BiH Ecological Society in 1990. This work is published in the Gazette of the Museum of Natural History in Sarajevo (p. 31 (1992-1995): 323-367 (1996)). Based on the information of Plant Europa, it is considered that BiH hosts in total 64 globally threatened species - Extinct: 1; Endangered: 0; Vulnerable: 3; Rare: 59; Indeterminate: 2.

Invasive Species

Alien flora and fauna with the tendencies to occupy the living space of native one (which lead to the endangerment or even extinction of native species and ecosystems) are considered invasive species. Among invasive species in BiH, the most common are: *Asclepias siriaca*, *Helianthus tuberosus*, *Solidago gigantea*, *Tagetes minuta*, *Amorpha fruticosa*, *Robinia pseudacacia*, *Phytolaca americana*, *Impatiens glandulifera*. The most invasive species are the following: *Ambrosia artemisifolia*, *Bidens bipinata*, *B. frondosus*, *B. subalaternus* and *Echinocystis lobata* (they invade the habitats of moist and flooded woods, as well as rural and urban areas). Alien animal species of aquatic ecosystems are most frequently fish species originally introduced for fish farming. Gudgeon (*Gobio gobio*) is one of the most invasive fish species in the country.

Biodiversity Trends

In the BiH's 4th Report to CBD, the state of biodiversity was assessed through an analysis of trends and intensity of known existing pressures. The results of this analysis show that conversion of habitats, followed by overexploitation of resources and pollution, represents the most intensive pressures on biodiversity. In the group of ecosystems under intensive processes of habitat conversion, the majority of ecosystems belong to specific landscapes of BiH. Overexploitation of resources prevails in the most productive ecosystems that are located in landscapes with easy access. Pollution is a very common type of pressure to environment and biodiversity near and around human settlements. It is likely that the climate change will most dramatically influence sensitive ecosystems of great importance for conservation of ecosystem diversity. Invasive species are considered serious to the state of biodiversity in the country. Please see Annex 3 for further reference to existing biodiversity pressures.

Institutions, Policies, and Laws Affecting Conservation

Institutional framework

According to Annex IV of the Dayton Peace Accords, and following the BiH Constitution, all environmental issues are the responsibility of entities. Since constitutional provisions allow entities to transfer a portion of their responsibilities to the state level bodies (e.g., international cooperation and harmonization of state affairs), a number of state institutions took over the authority for environment when a state competence is required.

State-level institutions. At the state level, environmental matters are the responsibility of the Sector on Natural Resources, Energy and Environment of the Ministry of Foreign Trade and Economic Relations (MOFTER). MOFTER is responsible for the implementation of environmental protection programs resulted from international treaties, as well as cross-sectoral coordination between other sectors of environment. The Sector is divided into three departments dealing with Natural Resources, Energy and Environment, respectively.

The Inter-Entity Steering Committee for the Environment (IESCE) was originally established by the entities and consists of coordination and harmonization of environmental law and policy between the two entities. Each entity is represented by four members, who are elected for four-year terms.

The National Steering Committee for Environment and Sustainable Development (NSCESD) is no longer operational. The Inter-Entity Commission for Water is no longer active.

Since the last report was prepared in 2009, the team has noted that BiH has made limited progress in improving efficiency of the institutions involved in biodiversity protection. The lack of a functional institution on a state level remains the main priority for BiH to improve biodiversity conservation efforts. Lack of coordination, weak information exchange, lack of funds, and inadequate experience in environmental management of ministerial staff remain the main problems in dealing with biodiversity conservation. The role of MOFTER is limited and constrained by the fact that it does not have the necessary legal authority to formulate policy and legislation. Building capacity for coordination on a state level should be a priority in order to create efficient environment/biodiversity management. The team will elaborate this issue further in the light of biodiversity identified threats (Chapter on Brief Overview of Threats, Problems and Needed Activities for Biodiversity in BiH).

Entity-level institutions in FBiH. The ministry primarily in charge of biodiversity conservation in FBiH is the Federation Ministry of Environment and Tourism. Other ministries at this level are given certain responsibilities over the biodiversity issues, and these are as follows: the Federation Ministry of Physical Planning, the Federation Ministry of Agriculture, Water Management and Forestry (FMAWMF), the Federation Ministry of Culture and Sports (FMCS) and other relevant institutions. The ministries and organizations in question are described below.

Ministry of Environment and Tourism of FBiH (FMOIT). This Ministry performs “administrative, expert and other tasks falling under competence of the Federation BiH related to: air, water and soil protection; drafting environmental strategy and policy; air, water and soil quality standards; environmental monitoring and control

of air, water and soil; drafting of development strategies and policies in area of tourism and catering activity; monitoring of tourist flows and trends in local and international markets; directing the long-term development of tourism within the economic system and other tasks as set out by the applicable legislation (Article 20a of the Law on Modifications and Amendments to the Law on FBiH Ministries and Other Organs of FBiH Administration, Official Gazette of FBiH 8/06). There are five sectors within this Ministry: Sector for the Environment, Sector for Licensing, Sector for Tourism, Sector for Project Implementation and Sector for Legal, Financial and General Affairs. This Ministry acts as the National Focal Point¹ of Bosnia and Herzegovina in the European Environment Agency (EEA).

The Federation Ministry of Physical Planning (FMPP) carries out administrative, professional and other tasks from within the responsibility of the FBiH with regards to planning and development of space and policy of use of land the level of FBiH; development, implementation and application of physical plan of FBiH; and development of geological background for urban planning.

The Federation Ministry of Agriculture, Water Management and Forestry (FMAWMF), among other duties, carries out administrative, professional and other tasks from within the responsibility of the FBiH with regards to protection and use of agricultural land; improvement of production in forestry; development and improvement of forests, forestation of degraded forests, bare land and karst; hunting and hunting grounds, water sources, inspection in the area of agriculture, water management and forestry (Parliament of Federation BiH, 2003, Article 19).

The Federation Ministry of Culture and Sports (FMCS) carries out administrative, professional and other tasks from within the responsibility of FBiH, with regards to academic and research activity and protection and use of cultural and historical heritage (Parliament of Federation BiH, 2003, Article 16).

A description of other institutions related to biodiversity conservation is given in the next table.

Table 3. Additional FBiH institutions related to biodiversity conservation

Institution	Description of Institution's Tasks and Responsibilities
FBiH Institute for Agriculture	Responsible for land consolidation and zoning; soil contamination monitoring; land permitting; land GIS system establishment; and land use certificate issuance.
FBiH Institute for Geology	Responsible for investigation and analysis related to geology, hydro-geology, seismology, mining, construction, urban planning, or similar activities.
FBiH Administration for Surveying	Responsible for all works related to the establishing and maintaining the cadastre of land and property and the cadastre of public utilities; mapping the Federation territory; consolidating land; surveying and producing maps and plans; and inspecting surveying works.
Public Enterprise for Management of River Basins of Sava River and Adriatic Sea	Works under the FBiH Ministry for Agriculture, Waterworks and Forestry and works through two agencies, one which is responsible for the Sava river, and the other which is responsible for the Adriatic sea. All together, the two agencies have six field offices. The agencies were financed and established under the EU/CARDS project (2003-2005) and are responsible for water management, quality control, water analysis, water classification, and strategies for water use and management. The legal framework for establishment and work of the agencies is provided by the new Law on Water, adopted in 2006.
FBiH Institute for Statistics	Responsible for all statistical research in the Federation; development and maintenance of a statistical IT system; and information exchange with other countries and international organizations relevant to bilateral agreements and other international treaties.

¹ Bosnia and Herzegovina is a cooperating country to EEA

FBIH Hydro-Meteorological Institute	Responsible for the establishment and operation of meteorological services; investigative works related to air, water, seismic processes; and quality of the environment.
FBIH Administration for Civil Protection	Responsible for all legal, consulting and other activities prescribed by the Law on Protection of People, Property, and Environment for Natural Catastrophes and Other Disasters.

FBiH consists of 10 cantons and 84 municipalities. Environmental policy and natural resource use are the responsibility of both the FBiH Government and the cantons. Where responsibility is not expressly granted to FBiH, the cantons have full responsibility (article 3.4 of the Constitution of FBiH) for the provision of public services, local land use, local energy production facilities, and cantonal tourism. These responsibilities may be performed jointly or separately, or by the cantons in coordination with FBiH. There is no formal coordination of environmental activities between municipalities or between the cantons.

Table 4: List of Cantonal Environmental Ministries in FBiH

No.	Canton	Responsible Ministry for Environment
1	Una-Sana Canton	Ministry of Civil Engineering, Physical Planning and Environmental Protection
2	Posavina Canton	Ministry of Transport, Communications, Tourism and Environmental Protection
3	Tuzla Canton	Ministry of Urbanism, Physical Planning and Environmental Protection
4	Zenica-Doboj Canton	Ministry of Physical Planning, Transport and Communications and Environmental Protection
5	BiH Podrinje Canton	Ministry of Urbanism, Physical Planning and Environmental Protection
6	Central BiH Canton	No environmental Ministry
7	Herzegovina-Neretva Canton	Ministry of Commerce, Tourism and Environmental Protection
8	West Herzegovina Canton	Ministry of Physical Planning, Natural Resources and Environmental Protection
9	Sarajevo Canton	Ministry of Physical Planning and Environmental Protection
10	Canton 10 (Western BiH Canton)	Ministry of Civil Engineering, Reconstruction, Physical Planning and Environmental Protection

Entity-level institutions in the RS. Ministries in charge in the RS of environmental protection are: the RS Ministry of Urban Planning, Civil Engineering and Ecology, the RS Ministry of Agriculture, Forestry and Water Resources, the RS Ministry of Trade and Tourism, and the RS Ministry of Education and Culture.

The RS Ministry of Urban Planning, Civil Engineering and Ecology (RSMUPCEE). This Ministry is responsible for carrying out “administrative activities and other professional tasks related to the following: integral planning, space planning and structuring; drawing up and implementing the Regional Plan of the RS in accordance with the BiH space plan; revision, administrative supervision and approval of the regional plans of towns, municipalities, special territories and urban planning; revision of regional planning documentation, development programs, investment and technical documentation of special interest for Republic; urban planning and building; building sites arrangements; manufacturing of mechanical engineering materials; development and services in mechanical engineering area; housing building and its financing; housing cooperatives, housing relations and gaining property over residential buildings and social property apartments; maintenance and management of buildings and apartments; utilities; overall protection of the quality of the environment and its improvement through research, planning management and protection measures; protecting assets of general interest, natural resources, natural and cultural heritage; inspection supervision in the field of urban planning, civil engineering, utilities and environment protection, realizes action of cooperation with relevant ministries and institutions of the Federation of BiH; provides information through the

media and other public means and performs other tasks in accordance with the law and other regulations of the RS and BiH” (Article 15 of the Law on Ministries of RS, Official Gazette of RS 70/02). There are five sectors within this Ministry: Secretariat, Sector for Urbanism and Physical Planning, Sector for Civil Engineering, Sector for Environmental Protection, Sector for Project Implementation, Development and European Integration.

The RS Ministry of Agriculture, Forestry and Water Resources (RSMAFWR) carries out administrative activities and other professional tasks related to improvement of production in forestry, raising, protection, keeping and improvement of forests; status of forest resources; forest exploitation, afforesting degraded and sprout forests, bare mountainous terrain and karst; communications in forest; hunting and hunting industry; integral management over field of forestry; hunting and water industry (Parliament of the Republika Srpska, 2002, Article 16).

The RS Ministry of Trade and Tourism (RSMTT) carries out administrative activities and other professional tasks related to general tourist information and promotion activities (Parliament of the Republika Srpska, 2002, Article 17). Also, the respective Ministry is responsible for the supervision of implementation of RS Law on National Parks.

The RS Ministry of Education and Culture (RSMEC) performs administrative and other professional activities of culture related to protection and usage of cultural-historical and natural heritage (Parliament of the RS, 2002, Article 18).

Institutions in Brcko District. In Brcko District, environmental protection is the responsibility of the Department for Urban Planning and Property Affairs. Other Government departments are involved in environmental protection through their participation in the adoption of laws and by-laws, issuing environmental permits and resolving various issues related to the environment. These include the Departments of Public Works; Health and other services; Education; Economic Development, Sport and Culture. There is also an inspectorate in Brcko which employs one environmental inspector.

Policy framework

Strategic documents and reporting. The five-year National Environmental Action Plan (NEAP) was adopted by both entities in 2003 for the period 2003-2008, while no new NEAP has been adopted since the expiration of the first one from 2003. Some progress has been identified in some of the NEAP’s identified priorities e.g., air-quality monitoring network, water monitoring, monitoring of polluters (through setting up a Register of polluters in FBiH), public participation, protected area management, publishing of information by statistic agencies², and creating a public system of environmental education.

A comprehensive Federation Strategy for Environmental Protection 2008-2018 and Action Plan was adopted at the end of 2009. This Strategy encompasses three areas: air, nature protection and waste management.

In 2008, FMOET has published a “state of the Environment” report (SOER), which provides a detailed assessment of the natural environment in FBiH and the effectiveness of the environmental protection measures that have been adopted. This is the first in a series of planned reports on the environment, which aim to establish environmental information systems and to facilitate the exchange of environmental data. At present, no central or coordinating institution responsible for collecting, registering and analyzing biodiversity data has been designated, neither at the entity nor at the state levels. New SOER is under preparation and is expected to be available in 2012.

² The National Agency for Statistics has increased the scope of environment statistics published in its national statistical yearbooks.

No or little progress has been made in the area of comprehensive monitoring system, spatial planning and cross-sectoral linkages that should ensure sustainability of other related sectors. Environmental health information is still not available on the website of the entity health ministries.

Environmental Impact Assessment (EIA). Even though EIA tools have been adopted in both entities, they have not yet been implemented due to the fact that secondary legislation is inadequate. The implementation of EIAs began in 2008, and since then 70 EIAs have been carried out in the RS. The majority of them relate to the extraction industry and energy production facilities. In the F BiH, the environmental permitting based on EIAs started in 2004. The competent authorities for issuing environmental permits are entity-level and cantonal ministries in F BiH, and municipalities in the RS. The Rulebook for Education and Certification of Experts for Environmental Permits was adopted in 2010. The list of environmental permits issued is available on the FMOIT website. In F BiH, all facilities have to have an environmental permit by the end of 2011. The existing environmental permit system is based on the concept of best available techniques.

Register of Polluters. The Register of Polluters for F BiH was adopted in 2010. The Register should be a basis for reporting in accordance with legal obligations and international agreements, including those arising from the Kiev Protocol and the Aarhus Convention on Access to Information. The Register should contribute to effectiveness of economic instruments for biodiversity protection. In the F BiH, the permit registries at the cantonal levels are linked together in a network. In the RS, the entity environmental permit registry is not linked to the municipality registries.

Environmental monitoring. There have been some positive developments in the area of air quality monitoring, both in the F BiH and RS. Both entities have recently adopted rules for air quality monitoring but no institution has been designated for ensuring regular monitoring of air quality and up-to-date information for public. There is lack of co-ordination and communication between competent institutions and there are some gaps in parameters measured. In the RS, a Strategy and Action Plan for Air Protection is in the process of adoption.

In addition, gaps in river monitoring exist; more significantly in monitoring of lakes, bathing waters, coastal waters, ground waters and harmful and toxic matters. There appears to be no legal basis for monitoring of bathing waters in BiH. There is no overall system of groundwater monitoring in BiH.

Awareness and public participation. Insufficient improvement has been made in policies related to NGO participation in decision making processes. The involvement of NGOs in governmentally-established working groups that influence the formulation and implementation of environmental policy continues to be low. Progress has been made in public participation in the process of issuing environmental permits. NGOs and the local community participate in the issuance of permits. Non-technical summaries of EIA are made available to the public. However, there is still a lack of financial support for NGOs dealing with environmental protection; the majority of funds for NGOs come from international donors.

There have been positive changes in the level of awareness of environment-related economic instruments and their use among government officials at the state as well as at the entity level. However, this has not yet been translated into action in the different environmental protection sectors. The economic instruments currently in use include water abstraction and water pollution charges; municipal user charges for water supply and sewerage; municipal waste charges (water laws of the entities); excise and customs duties on fuels (annual registration fees for vehicles); taxes on use of natural resources; and taxes on forest use (for the latter, see chapter 9). The air emissions charges, although included in the relevant laws of the entities, are not applied because the secondary legislation defining the level of charges has not been adopted. Generally, economic instruments for biodiversity conservation are underdeveloped: they do not stimulate eco-friendly business and do not provide funds for biodiversity conservation. Secondary legislation should be developed to specify the amount of fees and charges to be paid by polluters and users of natural resources. Development and implementation of these by-laws should be a priority.

PA Management. Even though BiH is one of the countries with the highest level of biodiversity in Europe, it is also one with the lowest in percentage of protected areas in Europe. No significant improvement in PA management has been made since the last Report. There are no reliable government statistics at either the state or entity level on existing PAs, due to the absence of a specially designated competent authority with the responsibility for collection, aggregation and integration of environmental and biodiversity data. Adjustments to the list of proposed PAs and revision of the categories have not been made yet.

Within the WB-GEF-supported Forest and Mountain Protected Areas Project (FMPAP), a feasibility study for formal protection of new PA (Prenj-Cvrsnica-Cabulja-Vran) and management plans for existing PAs, namely National Park Una and Nature Park Blidinje, are being developed in the FBiH. In the RS, new management plans are being prepared for the existing NPs (Kozara and Sutjeska), as well as several ecological/biodiversity studies. A brief description of activities performed related to PAs within the FMPAP is given within this Report.

Forest Management. A National Forestry Strategy has not been developed since the last Report. The Forest Law in FBiH has been developed but not yet adopted. Both entities are in the process of developing their forestry strategies and action plans that should ensure sustainable use of forest resources.

Illegal logging has been widely recognized as a threat to forests in BiH. Even though the degree and data on illegal activities in the forest sector has not been exactly specified, the common opinion prevailing among the local stakeholders is that this issue should receive particular attention (REC, 2010). The European Union's policy to fight illegal logging and associated trade was defined back in 2003 with the Forest Law Enforcement Governance and Trade (FLEGT) Action Plan that has led two key pieces of legislation: FLEGT Regulation and EU Timber Regulation. EU Timber Regulation targeting illegal logging was originally proposed by the European Commission in October 2008 and adopted by the European Parliament and by the Council in October 2010 as an overarching measure to prohibit placing of illegal timber and timber products on the internal market. The European Parliament suggested sanctions at the EU level, much more detailed guidance on the supplier risk assessment procedures to be applied, and for compulsory certification of all wood products traded in the EU within two years. In December 2009, the European Council rejected the more radical proposals of the European Parliament. Certification would not become compulsory and is recommended only as one possible due diligence mechanism to be used where the risk of illegal logging is high. Certification of forests is considered as one of the mechanisms to prevent illegal timber use in its products.

The Action Plan to Combat Illegal Activities in Forest and Wood Processing Sectors in BiH has been developed for both entities in 2005. The Action Plan aimed to embrace all types of illegal activities in the forest sector including theft and corruption-related crime. The Action Plan encouraged conducting independent assessments on the type and volume of illegal cuts, export of illegally cut timber, and an assessment of government's financial losses. Regardless of this, no significant improvements have been made since 2005, while the cause for the persistence of this problem is seen in the poor living standards by most of the stakeholders. Certification of forests remain voluntary in BiH. The highest level of progress in the forestry has been made in the process of certification of forests, but only in the RS. In the FBiH, based on the information from 2009, the FSC certification was carried out in: Forest management enterprise Sarajevo sume Sarajevo, (forest management area Gornjebosansko, 14,554 ha); Forest management enterprise Unsko-sanske sume B. Krupa (forest management area Ključko, 14,759 ha); Forest management enterprise Hercegbosanske sume Kupres (forest management area Kupreško, 26,607 ha). The public company JPS Sume RS, Sokolac holds a group certificate for its 23 organizational parts. At present, Sarajevo sume and Hercegbosanske sume have lost their certificates for not being able to comply with the demands of the certification body. The number of

FSC Chain of Custody (CoC) certified companies in BiH is low³, even though the demand for it (mostly for export) is increasing.

Although various non-timber forest products (NTFP) are extensively used by the local population and private companies, neither entity has clear statistics on NTFP production and trade, nor any data on the NTFP resource base. The RS Forest Agency is attempting to develop a program for NTFP.

Legal framework

Legal framework at the state level. Since the last Report, no significant changes have been made in environmental legislation. The draft state-level Law on Environmental Protection has not been adopted. The draft Law addresses the following issues: preparation and authorization of implementing international and inter-entity documents related to the environment; coordination between institutions with respect to the environment; development of a long-term environmental protection policy that will merge policy from all the entities; creation of a state-level “state of the environment” report; and transboundary environmental impacts. The draft Law does not foresee the establishment of a state-level agency for environmental protection as a separate body.

The first set of environmental laws in BiH was prepared with the financial and technical assistance of the EU Community Assistance, Reconstruction, Development and Stabilization Program (CARDS). The intention was to develop laws that would be in accordance with the relevant EU Directives and harmonized for both Entities and Brcko District. This set has been discussed and approved by the Inter-Entity Steering Committee⁴ for Environment and contains the following laws: The Framework Law on Environmental Protection, The Law on Air Protection, The Law on Water Protection, The Law on Waste Management, The Law on Nature Protection, and The Law on the Environmental Fund. These laws were adopted in the RS in 2002, in the FBiH in 2003 and in Brcko District in 2004. Their contents are not identical for both Entities and Brcko District, but are very similar and there are no crucial differences among them. However, the Law on Water Protection is no longer in force and has been replaced in both entities by a new Law on Waters in 2006. A table with the list of state-level laws related to the environment is provided in Annex 4.

Legislation in the FBiH. Un update of the current status of legislation in FBiH with regards to environment compared to the status given in the previous Biodiversity Analysis is as follows: Amendments to the Law on Air Protection and Amendments to the Law on Waste Management in FBiH have been adopted, while the draft Law on Noise Protection and the draft Law on Nature Protection are in parliamentary procedure for adoption. The new draft Law on Nature Protection defines new categories of protected areas in greater accordance with the IUCN categories. The FBiH Forest Law (FBiH Official Gazette 20/02, 20/03 and 37/04) was abolished. A draft Forest Law has been prepared and submitted to the Government of FBiH but has not been adopted yet. The proposed text of the draft also provides for the preparation of secondary legislation within one year of the date of entry into force of the new Law.

The Spatial Plan for FBiH has not been adopted yet. The new Law on Physical Planning (Official Gazette F BiH 52/2002) and the Law on Construction (Official Gazette FBiH 55/2002) include strategic environmental assessments.

³ FSC CoC certification is a powerful marketing tool and a way of demonstrating the companies' ability to satisfy the most advanced ecological, economical and social requirements.

⁴ This Committee was operational from 1998 until 2006, when replaced by the Inter-Entity Committee for the Environment.

Out of the 23 by-laws called for under the Law on Environmental Protection, only six have been adopted so far, despite the fact that the deadlines for their adoption have long since passed.

Cantonal laws were adopted prior to the year 2003; many provisions in these laws are inconsistent with the 2003 entity environmental laws. Only seven out of ten cantons have adopted cantonal laws on environmental protection, and only three are fully harmonized with the relevant entity law. Please see Annex 4 for the list of environmental laws in FBiH.

Legislation in the RS. A large number of regulations and secondary legislation have been adopted in accordance with the framework laws, but implementation of this legislation continues to be a challenge. One third of all secondary legislation remains to be drafted and adopted. Since last Report some new laws has been adopted in RS, including the following:

- Law on Amendments to the Law on Nature Protection, No. 34/08, consolidated text 113/08;
- Law on Waste Management, No. 53/02, amended 65/08;
- Law on Reproductive Material of Forest Trees, No. 60/09.

The Law on Forests (Official Gazette number No. 75/08) is the key legal document in the area of forestry, with 32 subsequent regulations adopted during 2009-2010. In 2009, additional by-laws related to air protection were adopted. Proposals for a Law on National Parks, a new Law on Energy Efficiency, and a Decision on Packaging and Packaging Waste are being developed in RS.

Legislation in Brcko District. In 2006 and 2007 the Brcko District Government adopted 18 by-laws related to environmental protection and air and water management, which have also been harmonized with those of the entities. The draft by-laws in process of adoption are: Rulebook on Conditions for Legal Entities Conducting Activities in the Field of Environmental Protection, Rulebook on Air Quality Limit Values, Rulebook on Registers of Plants and Pollutants, Rulebook on Amendments to the Rulebook on Air Pollutants Emission Limit Values. See Annex 4 for the list of environmental legislation in Brcko District.

A list of international treaties signed and ratified. The Law on Signing and Implementation of International Legal Instruments defines the procedure for signing, ratification and implementation of international treaties and conventions. The proposal to initiate procedure for signing of international legal instruments can be submitted by state institutions of BiH, entities, cantons, local communities, business associations and NGOs. The proposal is submitted to the Council of Ministers through competent Ministries which evaluate the initiative, after which the proposal is submitted to the Council of Ministers.

Since 2008, BiH ratified the following conventions:

- Aarhus Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters (1998);
- Convention on Use of Trans-Boundary Watercourses and International Lakes, 2009;
- The Convention on Environmental Impact Assessment (EIA) in Trans-boundary Context (ESPOO), 2010;
- Convention on the Trans-boundary Effects of Industrial Accidents, ongoing;
- Stockholm Convention on Persistent Organic Pollutants (POPs) (2010);
- Cartagena protocol on Biosafety (2008).

The following international agreements concerning environment still remained to be ratified by BiH:

- Rotterdam Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides;
- Bonn Convention on Preservation of Wild Animals and Migrant Species;

- Bern Convention on Conservation of European Wildlife and Natural Habitats;
- Convention on International Trade in Endangered Species of Wild Fauna and Flora.

A list of international treaties signed and ratified is provided Annex 4.

Protected Area System

The size of the protected areas in BiH is generally small. Apart from a great number of areas with high natural values on one hand, but with severe developmental effects on the other hand, the status of protected areas in the country is awarded for an extremely small part of the territory (in 2005 it amounted to 0.67%). Such a low percentage of protected territories places BiH at the very bottom of the European scale.

According to the Law on Nature Protection of the FBiH and the Law on Nature Protection of Republika Srpska, there are four types of defined protected areas in BiH:

- Protected Nature Areas (IUCN categories Ia, Ib and IV);
- National Park (IUCN category II);
- Natural Monument or Feature (IUCN category III);
- Protected Landscape/Seascape (IUCN category V).

The National Environmental Action Plan, the Spatial Plan of Bosnia and Herzegovina and the Medium-Term Development Strategy all recommend the enlargement of the territories of protected areas.

National parks. Currently there are the three national parks in BiH: the National Park “Kozara” and the National Park “Sutjeska” on the territory of RS, and the National Park “Una” on the territory of FBiH. According to the level of biological diversity of species and ecosystem within their boundaries, the existing national parks constitute unique spaces at the national and international levels. The main purpose of the existing national parks is, under the national legislation, harmonized with the IUCN categorization. The surface covered by the existing national parks is 40.525 ha. It should be emphasized that there is an enlargement plan designed for the National Park “Sutjeska”, but also, like in the National Park “Una”, there is a tendency of integration with the existing neighboring national parks in Serbia and the Republic of Croatia (Durmitor and Plitvice). The most recently designated national park is the National Park “Una”, which was established in 2008. At this time, the National Park “Una” is at the stage of establishing a public institution and implementing a management plan. The national parks have defined their internal zones and in these zones certain types of activities are allowed. In the heartland of the National Park “Sutjeska”, there exists one of the most renowned virgin forests in the Balkan Peninsula – the virgin forest of Perućica.

Public institutions established by competent entity ministries manage the NPs in BiH. The internal bodies of organization, protection, operations and other activities in the protected areas are all regulated by applicable legal acts of the public institutions, adopted by the competent authorities. NPs are managed by their management bodies (supervisory and management board) according to the management plan, or according to the annual plan of activities, which is proposed to the management by the National Park Director. The National Park management is supervised by a competent entity-level ministry.

Natural monuments. There are currently four areas in BiH protected as natural monuments and all four are situated on the territory of the FBiH: the Natural Monument “Skakavac”, the Natural Monument “Prokoško Jezero”, the Natural Monument “Vrelo Bosne” and the Natural Monument “Tajan”). The total size of this protected category amounts to 7,744.05 ha. In the FBiH, a natural monument is the responsibility of the cantonal authorities in the territory of which the monument is situated. The proposal to designate an area as a natural monument is provided by a competent cantonal ministry. In the FBiH, the cantonal legislatures are the

authorities enacting the designation laws, whereas in the RS, the Government is the authority issuing a separate act to designate a certain area as a protected natural monument.

Protected landscapes. Currently, there are two areas in BiH that are protected as the Protected Landscape/Seascape category and both of them are situated on the territory of FBiH (Bijambare and Bentbaša). These areas are managed on the basis of zoning and the Management Plan with separate regulations enacted by the internal acts of the institution managing the particular area. Recreational use of these spaces is allowed on the condition that it is not detrimental for natural values of the protected area. This category protects 515.06 ha out of the total territory of BiH.

Nature reserve parks. In the Federation there are also two protected areas in the category Nature Reserve Parks (Blidinje and Hutovo Blato). These protected areas were designated on the basis of the Cantonal Law on Nature Protection ("Official Gazette of Herzegovina-Neretva Canton", no. 04/05). Since the category Nature Reserve Park does not exist in the Federation Law, it would be necessary to harmonize the current categories and the Law. Blidinje and Hutovo Blato both have their own budgets. They are funded from the cantonal budget, but in part by generating their own revenues. Currently, the Nature Reserve Park "Hutovo Blato" covers 7,411 ha, but the plan to expand its boundaries to 11,300 ha is about to be prepared. The Nature Reserve Park "Blidinje" covers the area of 358 km².

Ramsar sites. Due to its importance for migrations and habitats of a great number of swamp birds, Hutovo Blato is included on the list of specially protected Mediterranean areas according to the 1964 Barcelona Convention. The International Council for the Protection of Birds (ICPB) included Hutovo Blato into the list of internationally recognized areas of importance for birds (1998). Since 2002, Hutovo Blato has been on the list of swamps of international importance, which was created through the work of the Ramsar Convention. Bardača, the second Ramsar area in BiH, which was designated as such in 2007, is situated in the north of the country on the alluvial plane of the Sava River. The third internationally recognized area of importance for birds is the Livanjsko Field, designated as such in 2008. Currently, more areas of BiH are in the designation procedure.

Loss of formerly protected areas. Recent developments in the history of BiH have also had an extremely strong impact on the area of natural resource management. In the period before 1992, the 1965 Law on Nature Protection provided protection to 144 areas of different sizes and levels of protection in the territory of BiH. This Law established 16 strict nature reserves, nine administered (managed) nature reserves, two national parks, six special reserves, 10 reserves of natural landscapes and even 110 nature monuments, among which there were numerous waterfalls, streams, springs, wells, mountain lakes, grottoes and caves. The practical measures for protection of biological diversity have no longer been implemented in most of these areas even since 1992. In the post-war period, BiH failed to take any appropriate actions towards re-establishing the status on the formerly protected areas and restarting the implementation of the appropriate protective measures.

Until the new Laws on Nature Protection (2002-2003) were put in place at the entity level, the protected areas had been completely neglected in its capacity as the area of special interest. Regrettably, even the adoption of the new laws has not changed the situation significantly for the existing protected areas, since the law did not foresee their revision and transformation into new categories introduced. Thus, many of the areas have remained outside the legislative framework. Even the data and relevant documentation about the formerly protected areas is insufficient or lacking today.

Inconsistent implementation of the applicable spatial plan has enabled the use and planning of the protected areas for some other purposes, such as the planned construction of hydro dams, construction of small hydroelectric power plants, opening of quarries, construction of traffic infrastructure, forest logging, and other

activities contributing to the conversion of the primary types of habitats, which as a result leads to the loss of biological diversity and particularly the loss of its specific forms indigenous to BiH.

In the post-war period, a certain number of new protected areas were established. However, even this process was beset with problems being, including the complex administrative structure of BiH, which prevents the efficient management of nature.

The lack of conformity of the legislation at the cantonal levels within the Federation legislation constitutes one of the problems in the territory of the Federation. Such legislation in some of the cantons is practically fully independent from the Federation legislation, which is reflected first and foremost in the non-conformity of the protection categories.

Another problem is related to non-conformity and lack of cooperation of the entity level laws. This situation resulted in inadequate reporting to the European Environment Agency (EEA), but more importantly, incapability of planning any uniform protection of biological diversity at the level of the state. Economic mechanisms that are supposed to ensure sustainability of the protected areas are either underdeveloped or absent. The largest protected area in BiH, the NP Sutjeska, as a public company, is forced to provide a greater part of its profit through forestry-related activities, which also runs counter to the very definition of the given protection category. The gravity of the current problems encountered in the establishment of protected areas, or protection of biological diversity at the state level, constitutes an extremely unfavorable ground for opening of the 2000 Natura process, which, from the point of view of European integration, has an immense importance for BiH.

The list containing all protected areas is given as Annex 5 in this document. A detailed description of existing and proposed PAs is provided in Annex 6.

Government, NGO, and Donor Programming

The following provides a description and level of funding of current and planned projects intended to support the conservation of biodiversity in BiH.

BiH does not have a system for collecting data on environmental expenditures. After the end of the war, almost all environmental projects were financed by international donors. As of recently, entities participate in financing projects for biodiversity conservation. Competent ministries described in the sections above have increased their participation in projects for biodiversity conservation. Other ministries also participate in financing of environmental protection, as do their municipalities and the cantons in the Federation. The entity-level Laws on Environmental Protection outline the environmental protection goals and the means of financing them.

The Federation Law on the Environmental Fund (Official Gazette F BiH 33/2003) and the Republika Srpska Law on the Environmental Fund (Official Gazette RS 51/2002) identify sources of revenue for the funds. These include charges for environmental pollution and the use of natural resources, transfers from the entities' budgets, bank loans and grants from donors. In both entities, the funds are independent bodies. Their statutes and regulations are developed in consultation with the Environment Ministries and approved by the Governments.

Donor activities. As reported by the DCF (Donor Co-ordination Forum)⁵, the total allocation to the environmental protection sector in 2009 was €19.45 million (all in the form of grants) and €16.90 million in 2010. Based on the Development Assistance Committee definition, the Environmental Protection sector comprises the following elements: environmental policy, laws, regulations and economic instruments; administrative institutions and practices; environmental and land-use planning and decision-making procedures; air pollution control, ozone layer preservation, marine pollution control; natural reserves and actions in the surrounding areas; other measures to protect endangered or vulnerable species and their habitats; environmental education, training and environmental research; water resource protection; waste management and disposal; and biomass energy.

Donor allocations for the environmental protection from 2007-2009 showed some commitment, although these allocations are steadily decreasing. Donor environmental programs in 2009 and 2010 were focused on various aspects of environmental protection. Major donors/IFIs active in environmental protection include: the EC, the World Bank, Italy/IC, Norway, the Netherlands, Sweden/Sida, UNDP (through MDG and GEF), and Hungary. Hungary is the newest donor in 2010, while Japan/JICA expressed interest in entering the sector. The leading donors/IFIs active in the Environmental Protection sector in 2009 were the EC and the World Bank followed by Norway, the Netherlands and Italy/IC. In 2010, the leading donors/IFIs were the World Bank, UNDP and Sweden/Sida. The IPA 2009 national contribution for implementation of the environmental programs in BiH is €16.5 Million. These funds will be used for development of environmental infrastructure. Project support, which started in February 2010, assists in the implementation of the EU Directive Integrated Pollution Prevention and Control.

⁵ The DFC was established in December 2005 to act as a platform for information exchange amongst major donor agencies active in Bosnia and Herzegovina.

Together with MoFTER, respective entity ministries and non-governmental sector donors/IFIs supported programs and projects in 2009-2010 focused on the following:

- Formulation of environmental legislation and procedures;
- Rehabilitation and building of new environmental infrastructure for water and sewage;
- Local Environmental Action Plan (LEAP) preparation;
- Conservation of globally significant biodiversity in critical forest and mountain ecosystems;
- Development of a model for embedding karst biodiversity conservation concerns into policies and regulations governing spatial planning;
- Improving solid waste management in BiH municipalities;
- Water supply and sanitation;
- Control of pollution;
- Raising awareness of the green agenda;
- Energy efficiency, renewable energy and job creation;
- Climate change (mitigation and adaptation);
- Tourism development;
- Management System of corporate waste assimilated with urban waste;
- Strengthening of the environmental NGOs;
- Remediation of high priority hot spots;
- Strengthening national capacities for sustainable environmental management and land use planning;
- Strengthening capacity of local communities in strategic environmental management, including preparation of the Local Environmental Action Plan (LEAP);
- Regional cooperation programs aimed at the establishment of a network among universities;
- Capacity building and interactions among policy makers and scientists on the Stockholm Convention;
- Preparation of the Initial National Communication to the United Nations Framework Convention on Climate Change – UNFCCC;
- Enhancement of national capacities for sustainable environmental management and implementation of Multilateral Environmental Agreements (MEAs);
- Support implementation of the Aarhus Convention in BiH;
- Implementation of the Integrated Pollution Prevention and Control Directive.

Environmental programs overlap with several sectors, such as infrastructure, energy, agriculture and forestry. Some donors such as UNDP and the World Bank have jointly undertaken activities with the Global Environmental Facility (GEF).

Table 5. Donor Projects Related to Environment and Biodiversity in BiH

Project title	Donor/ Financial institution	Project value (in million euros)	Description
Rehabilitation and construction of the water and waste infrastructure in F BiH	EC	12.0	The overall objective is to contribute to environmentally sustainable economic development through infrastructure development in co-operation with IFIs to achieve EU environmental standards.
Municipal solid waste management program	Sweden/Sida	10.0	Planned activities within the project include analyzing program documents, monitoring implementation of work plan and activities, assessing whether municipalities fully understand and are ready to fulfil all terms of the cooperation, and monitoring accomplishment of all milestones and predefined outcomes. Project duration: March 2010 – December 2011

Global Environment Facility (GEF) Water Quality Protection	The World Bank	6.32	The Neretva River is important to the economy of BiH and the regional environment. It is the largest river draining the Adriatic karst zone and is one of the most beautiful and picturesque rivers in south eastern Europe. Its estuary, the Neretva Delta, is one of the few remaining Mediterranean wetlands. The Neretva is 225 km long, out of which 203 km is on the territory of BiH and the last 22 km on the territory of Croatia. The Bosnia River originates in BiH and flows to Sava River into the Danube. Urban growth and industrial, agricultural and power development have had a negative impact on the ecology of the Neretva basin, in particular the Delta wetlands. Untreated municipal wastewater from communities along the Neretva is responsible for about a third of the Neretva and its tributaries being classified as polluted. Industrial wastewater from metal processing industries in the Mostar area, harbor operations in the Delta and intensive farming along the river banks have also contributed to the pollution. The project's aim is to improve water quality in the Neretva drainage basin and Bosnia river basin through: (a) the development of a water quality management plan to be used as a guide for future water management decisions in each basin; (b) the establishment of a Joint Bosnian/Croatian Commission with coordination from Montenegro to implement the plan; and (c) the development and implementation of high priority, low cost water capital investments in sewage treatment to accompany the IDA operation. This project has two parts: one for \$4.35 mil GEF and another for \$4.15 GEF. This one, for Mostar and the Neretva Basin, will be submitted to the Council while the other part will be submitted under the Danube/Black Sea Basin Partnership Fund. The Bank wants these kept under one project since they both support one client. Expedited review procedures would then be waived in this case since both parts (money for one already approved in Danube/Black Sea Partnership) would go to the Council. Only \$4.15 in new GEF funding would be sought.
Global Environment Facility (GEF) – Neretva and Trebišnjica Management Project	The World Bank	4.24	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.
Mainstreaming environmental governance: linking local and national action in BiH (planned)	UNDP	4.26	This program aims to address and overcome the significant barriers faced in effectively delivering environmental services and management at the local level in BiH. The specific objectives are: to improve local level environmental planning by developing effective participatory environmental methods; enhance management of environmental resources and delivery of environmental services by improving environmental service delivery mechanism, and increase national environmental awareness and action by assisting the public institutions to assess the existing legal institutional framework in order to produce the new "road map".
Securing Access to Water through Institutional Development (MDG-F funded)	UNDP	3.05	The goal of the program is to increase involvement of the citizens in participatory municipal administration in the water access sector, improvement of the economic governance in water companies and strengthening of administrations' policy making capacities. This program was established to address the weak economic governance and infrastructure in the water access sector in BiH. These issues are preventing duty bearers and service providers to provide access to high-quality water.

Global Environment Facility (GEF) - Forest and Mountain Protected Areas	The World Bank	2.40	The Global Environmental Facility objective is to strengthen conservation and management of the country's globally significant forest and mountain landscapes. The Development Objective of the Forest and Mountain Biodiversity Conservation Project (FMBCP) is to increase the area in forest and mountain ecosystems under formal protection status, and to develop mechanisms in order to conserve these ecosystems while ensuring that these natural assets provide a basis for improved livelihoods in rural areas and for increased tourism revenues. The proposed Forest and Mountain Biodiversity Conservation Project will achieve these objectives through: (a) the expansion and strengthening of the protected areas network; (b) the restoration or enhancement of the capacity of national institutions and other actors to manage protected areas and to preserve biodiversity within production landscapes (forest and agricultural land); (c) more sustainable management of resources outside protected areas (integrated land-use of productive landscapes); and (d) the integration of BiH into transnational biodiversity conservation initiatives. While doing so, the project is expected to provide benefits to local communities through improved livelihoods and increased revenues from tourism.
Strengthening capacities in BiH to address environmental problems through remediation of high priority hot spots	The Netherlands	1.57	This project is part of a regional program in the Western Balkans, an area suffering from the legacy of polluting industries and requiring industrial renewal, environmental cleanup and new economic initiative. The project in BiH cleaned up hotspots in Tuzla municipality, including connecting the Tuzla Clinic and the Hospital for Pulmonary Diseases. Capacity development for energy efficient practices covered 21 municipalities and involved in constructive discussion representatives from 90 different institutions/companies. A database of qualified experts was developed and made available to local and national authorities.
Bio-diversity and Water Management	Norway	1.32	n/a
Construction of the sewage collectors in Živinice	EC	1.29	The purpose of this project is to protect the environment from the adverse effects of urban waste water by providing waste water collection systems in Živinice. At present untreated waste water and sewage produced in the municipality of Živinice flows into the river Oskova and Lake Modrac, a source of water for the wider region, including the town of Tuzla, with a total population of more than 250,000.
Support to the creation and promotion of environmental and sustainable touristic itineraries in BiH	Italy/Italian Cooperation	3.3	The project will categorize ecotourism facilities and services based on their eco-touristic appeal. The project aims to add value to tourism by creating a network among the areas which, united, could present a viable product on the tourism market, and could be sustainable as a single product. The general objective is that of improving the life conditions of the rural population through an integrated strategy to fight poverty and de-population of rural areas and safeguarding the natural environment. The specific objective is that of supporting the creation and promotion of a macro product of environmental and sustainable tourism of BiH through the valorization of the three Valleys (Valley of Neretva, Drina and Una Sana).
Support to Implementation of the Integrated Pollution Prevention and Control Directive (Grant – Technical Assistance and Supply of Equipment)	EC	1.20	The primary aim of this program is to overcome the gaps between the actual situation in reform areas and the progress expected in the framework of the European partnership and the Stabilization and Association process. The overall objective of the project is strengthening the administrative capacity of the institutions involved in environmental protection and ensuring the implementation of the already transposed EU legislation.
Support to Implementation of BiH Water Policy (Grant – Technical Assistance)	EC	1.0	n/a
Biomass Energy for employment and	GEF/UNDP	0.73	The key project objective is the reduction of CO2 equivalent emissions through a transformation of the biomass energy market in BiH. The project aims to achieve it

energy security			in a sustainable way, generating domestic job creation, and improved quality of heating.
Mainstreaming karsts peat lands conservations concerns into key economic sectors	GEF/UNDP	0.73	The project's goal is to ensure long-term conservation of the internationally important natural karst systems in BiH and set an example of their conservation across the region. The project objective is to strengthen the policy and regulatory framework for mainstreaming the requirements for conservation of karst biodiversity into productive sectors (mining, water use) and spatial planning at the cantonal level. Specifically, the project will: (i) assist in preparation of biodiversity-minded policy instruments; (ii) introduce municipal-level regulations for karst field biodiversity use by local population parallel to strengthening enforcement capacity of municipal and cantonal officers and inspectors; (iii) develop by-laws and methodological guidance on ecologically safe peat mining, and test it at 750 ha of karst peatlands; and (iv) promote an international (Croatia-BiH) formal agreement and plan for cross-border water management plan. In addition, the project will support collecting information and initial capacity development for monitoring CO2 storage in peatlands and will apply carbon measurement methodology in its monitoring framework. The project objective is the generation of knowledge applicable to the conservation and sustainable use of ecosystems in BiH through the demonstration of conservation practices and techniques in the Livanjsko Polje.
Management System of Corporate Waste assimilated with Urban Waste	Italy/Italian Cooperation	1.67	The specific objective of the project is that of establishing a virtuous cycle of interception, differentiation, valorization and disposal of waste from production and commercial activities in the Hercegovacko-Neretvanski Canton. A network model will be established for collection through which it will be possible to pick up packages and leftovers from work assimilated to urban waste, originating from various production and commercial activities, to benefit local entrepreneurship, partners of LINK and the Association for Entrepreneurship and Work. The collection centers will be located in the Municipality of Capljina and Jablanica. The project, furthermore, foresees the realization of five formational courses destined to representatives and technicians of the Municipality and business associations, on EU themes regarding industrial waste management.

Brief Overview of Threats, Problems and Needed Activities for Biodiversity in BiH

In order to adequately present the link between assessment of USAID programs and BiH biodiversity issues, this section provides a brief overview of the main biodiversity threats, the root causes of the threats, and the actions needed to address the threats.

Current Threats to Biodiversity

The UNECE Environmental Performance Review Report for BiH (2010) has largely synthesized the results of key biodiversity reports and strategies prepared for BiH⁶ to date in order to provide an overview of the key problems and identified threats to biodiversity. In addition, the identified threats were discussed and confirmed with the key stakeholders in the country. These are listed below.

Threats to biodiversity (UNECE 2010):

- Conversion of habitats, followed by overexploitation of resources;
- Hydropower sector development with wide array of impacts (e.g., destruction of pristine canyons with high level of biodiversity and endemism, destruction of habitats due to the changes in the hydrological regimes, eutrophication, accumulation – siltation);
- Pollution;
- Invasive alien species;
- Uncontrolled hunting and trade in wildlife.

The foregoing identified threats are also pointed out in the BiH Fourth Report to the United Nations Convention on Biological Diversity prepared in 2010 (4th CBD Report). This report goes into further details, providing the specific threats identified for the genetic, species, habitats and landscape diversity.

Furthermore, the Biodiversity Analysis for BiH (USAID 2009) has also laid out macro and immediate threats to biodiversity and environment, most of which is still relevant today. These are:

Micro-level threats (USAID 2009)

- Rapid non-balanced economic growth;
- Weak institutional capacity;
- Weak national policy framework, and incomplete legislative framework;
- Limited public awareness and unwillingness to initiate changes.

Immediate threats (USAID 2009)

- Fast urbanization and development;
- Insufficiently developed waste watertreatment management system;

⁶ NEAP, Biodiversity Strategy for BiH, national reports to the CBD etc.

- Poor solid waste management system;
- Poor forest management system;
- Incomplete register and monitoring system of polluters;
- Undeveloped economic instruments for financing of conservation and environmental protection;
- Poor access to information system and weak environmental education system.

All above stated threats to biodiversity are relevant to the present state of biodiversity in BiH, which is confirmed also by the interviews and expert opinion of the team. They served as a basis for more detailed analysis for current threats. The list can be amended by an additional threat that is not clearly stated above, but deserves further elaboration: **insufficient allocation of BiH territory to the system of protected areas (PAs)** as one of the most important tools for biodiversity conservation.

Table 6. Current threats to biodiversity in BiH

Threat category	Specific Threats
Economic growth and urban development	<ul style="list-style-type: none"> - Rapid non-balanced economic growth, including hydropower sector development, resulting in conversion of habitats
Pollution	<ul style="list-style-type: none"> - Insufficiently developed waste water treatment management system - Poor solid waste management system - Incomplete register and monitoring system of polluters
Natural resources management	<ul style="list-style-type: none"> - Unsustainable exploitation of natural resources - Poor forest management system - Invasive alien species - Uncontrolled hunting and trade in wildlife
Institutional and financial capacities for biodiversity and environment	<ul style="list-style-type: none"> - Weak national policy framework and incomplete legislative framework - Weak institutional capacity - Undeveloped economic instruments for financing of conservation and environmental protection - Insufficient allocation of BiH territory to the system of protected areas - Poor access to information system and weak environmental education system - Limited public awareness and non-willingness to initiate changes

Threats are discussed in more detail below:

Economic growth and urban development. Even if this issue is very important for the country, economic activities can have significant negative impact to environment and biodiversity if appropriate safeguards are lacking. With the increase of economic capacities, there is a demand for land to build new facilities and infrastructure, which often takes the form of conversion of agricultural land, pastures and forests into construction land. Illegal construction represents a major issue in the country, especially due to the lack of enforcement measures. Although some enforcement measures – such as tearing down illegal facilities and other penalties - are legally prescribed in the domestic legislation, such measures are rarely being implemented. This threat is greatly related to the lack of institutional capacities.

On the other hand, adverse effects to biodiversity from conversion of habitats can also occur due to lack of economic growth. One such example is the natural succession of forest vegetation due to abandonment of pastures and agricultural land in rural areas, as rural areas undergo continuing depopulation due to poor livelihood opportunities, especially for young people. Loss of pasture land to forest succession is a threat to

biodiversity, as pastures can be very important source of biological diversity, especially rare, endemic and endangered plant species.

As previously stated, the hydropower sector, and its lobby in some cases, represent a very serious threat to biodiversity conservation, as hydropower development can lead to significant deterioration and change of natural habitats, some of which are unique to this part of the world. The environmental lobby opposes the hydropower lobby in many cases, while public opinion is divided (nature conservation vs. development and job creation). A good example is the case of National Park (NP) Una where the public electropower company in the FBiH presented their plans to turn the canyon of River Unac – which belongs to the territory of the NP - to hydro accumulation with a hydropower plant. This is one of the main reasons why the process of preparation of spatial plan for NP Una is pending at the moment.

Pollution. Main threats from pollution are related to insufficiently developed waste water treatment management system, poor solid waste management system, and poor monitoring system of polluters. Lack of appropriate waste water treatment, beside the fact that is an environmental threat with adverse effects to human health and environment, in many cases may have adverse effects to the flora and fauna of fragile and unique habitats. A good example for this would be the area of Igman-Bjelasnica Mountains with high biodiversity values and a candidate for future national park, as well as Una NP. For both areas, water is defining characteristic⁷. Even though there have been many activities throughout the country to improve the solid waste management system by the introduction of sanitary landfills, so far most of it is at the planning phase (e.g. the selection of the landfill location). Illegal and inadequate landfills represent a serious problem in the country and a direct threat to environment and biodiversity. Monitoring of polluters is insufficient and there is an evident lack of mechanisms to implement the appropriate measures to decrease pollution coming from industry.

Natural resources management. Exploitation of mineral resources and stone still remains one of the prominent economic activities in the country. Within those activities, biodiversity considerations are almost non-existent. This can represent a serious threat to the unique and valuable ecosystems from which the minerals are taken, since there is no systematic way to respond to such threats coming from mineral exploitation. A good example for this situation is the north-west part of Livanjsko polje, namely the Zdralovac area, where exploitation of peat is currently being carried out. Zdralovac is a part of the peat excavation area, while also being a very important location of transitory birds of international importance. Peat itself is considered internationally as an important habitat type for biodiversity conservation and climate change mitigation due to its carbon sequestration capacities, while the Livanjsko polje is a Ramsar site. At present, the peat is considered simply as a mineral resource (such as coal) by the local legislation, and there are no adequate safeguards to biodiversity with regards to peat exploitation activities to ensure the sustainability of peatland.

BiH's forest management system requires better consideration of biodiversity aspects, in terms of planning and execution of forestry activities, especially to avoid overcutting in fragile forest ecosystems⁸. While the state forest inventory showed that the forest cover has increased, this is mainly due to the natural succession of abandoned pastures and agricultural land to forests. In the RS, the public forest company introduced a group Forest Stewardship Council (FSC) certification, while the cantonal forest management companies in the FBiH tried to introduce the FSC. This was successful for the pilot areas, but the companies later lost the certificate in

⁷ Igman-Bjelasnice is the source of potable water for the capital city Sarajevo, while Una River is the main natural phenomenon of the Una NP.

⁸ Prenj Mountain is considered as a part of "endemic center of Herzegovina (Redzic at al., 2008)" while the forest ecosystems are being overexploited by wood harvesting.

subsequent audits. Currently, only Una-Sana Sume cantonal forest management company holds the FSC certificate.

Threats to wildlife are mainly related to poaching, and illegal export of trophies from the country, since BiH has just recently joined the CITES convention. As confirmed in the interview with the Ministry of Foreign Trade and Economic Relations, transposition of the CITES into local legal and institutional system has not yet taken place. The implementation of clear and transparent system of monitoring is missing. The team identified through the interviews that wildlife stock in the country has significantly decreased, especially when compared to the pre-war time.

Institutional and financial capacities for biodiversity and environment. Inadequate institutional and financial capacity of the state to deal with environmental and biodiversity issues is an overarching problem with numerous adverse manifestations to the environmental and biodiversity state, out of which the team enumerates only the most prominent ones. The BiH Constitution assigns the responsibility over environment and biodiversity to the Entities, while some state-level bodies kept a portion of such responsibility solely for the needs of international cooperation and the EU requirements. However, the work of the state-level bodies is often disrupted due to the political struggles of the Entities. The same can be stated for the adoption of policies and strategies on the state level. There is a lack of a unified approach of the Entities in respecting international obligations with regards to environmental conventions and EU environmental accession requirements. State-level ministries responsible for environmental issues often lack the legal authority and human capacities to implement environmental provisions, while there is no unified interest by the Entities to strengthen their position since it would be considered as strengthening the position of the state of BiH.

On the issue of effectiveness of the existing administrative setup, one respondent in previous research on biodiversity policy implementation in BiH by Krilasevic (2009) described it as “ideal for dispersion of responsibility and lack of accountability”, followed by the example on how nature protection activities in Hutovo Blato Nature Park were troubled by conflicting agendas of hydropower companies belonging to different Entities.

Example. Deficiency in Maintaining the Environmental Flow of Water for Hutovo Blato Nature Park

Common practice in water management, which is also in line with EU directives, is to treat an entire river basin as a discrete management unit. The two rivers Neretva and Trebisnjica belong to the same water basin, but due to the current administrative setup and borders between the entities they are managed as two separate units, and the hydropower firms belonging to different BiH entities regulate the amount of released water into the riverbanks without mutual coordination. The shortage of released water from the dams' water accumulations on both rivers is seriously threatening the maintenance of the main ecological functions of Hutovo Blato Nature Park.

The hydropower system made on these rivers had been designed and implemented very successfully in the previous times of Yugoslavia, and it required a coordinated work of all its elements. After the fall of Yugoslavia, the parts of this system have been assigned to different administrative bodies – three separate companies with different interests. Those are Dubrovnik hydropower plant in Croatia, Capljina hydropower plant in the FBiH and Trebinje plants in the RS. All protection activities in Hutovo Blato are considered in the frame of Neretva River water management activities, while all events related to Trebisnjica River affect the Hutovo Blato as well. On the attempt of Hutovo Blato management authorities to provide a more appropriate (i.e. a higher) amount of release for the park, the hydropower company in FBiH claimed that they would be willing to do so if the company in the RS was releasing a sufficient amount of water, while the RS company claimed that they were releasing a sufficient amount of water as prescribed by the regulations.

Neither side wants to take the responsibility while the serious endangerment of the Hutovo Blato basic ecosystem performance continues. The two companies are stuck in a typical coordination dilemma and, thus, do not have an interest in cooperation. Trebinje authorities, in charge of Trebisnjica River management, do not have the incentive to be concerned about anything that is happening outside of their management unit, including how their management affects Hutovo Blato. In addition to that, the RS company is interested in providing for the needs of their local communities, which is, in this case, providing electricity to the households on their territory for affordable prices. The electricity for Trebinje is provided by a Croatian company located in Dubrovnik which also benefits from water accumulation releases for Trebinje River. It is therefore only logical that the Trebinje authorities would provide the necessary water for Dubrovnik hydropower plant, instead of the FBiH plant and Hutovo Blato, as they don't buy electricity from it nor have any benefits.

The team identified that lack of human capacities for environment and biodiversity in the country is not solely related to the number of staffing, but to a large extent to their present knowledge and skills. Public institutions on all levels often fail to fully address the problems due to the lack of up-to-date technical knowledge, understanding of EU policies and requirements, skills to write project proposals and implement and monitor projects in accordance with the donors' requirements as well as foreign language skills. A major problem pointed out by the representatives of Ministry of Foreign Trade and Economic Relations (MOFTER) is the institutions' absorption capacity for the funds already approved by donors and development banks.

Complex and inefficient administrative structure, followed by weak disincentives for poor performance of government bodies at state and entity levels, has led to a very slow pace in adoption of necessary legislation and preparation and adoption of bylaws that are meant to enable the implementation of laws (for further reference see the Chapter on Legal and Administrative Framework).

Existing PAs in BiH are faced with unstable and unpredictable funding. The administration of two NPs in the RS in recent years was given a status of public companies and required to be self-sustainable. This situation has recently improved by the change of previous funding status and providing more opportunities for public funding. The amount and frequency of funding for NP Una in FBiH from the Federation Budget is not clearly determined. Along with this situation, BiH is still far from reaching the goals established by the NEAP to have 18% of its territory under official protection status. The current status, somewhat improved by the formal protection of NP Una in 2008, is approximately 1.5%.

It is important to note that sometimes it can be difficult to make a full distinction in terms of cause-effect relationships between identified threats and their underlying causes. This is due to the fact that they are not fully independent phenomena, and often the manifestation of a certain threat (with its own underlying cause) can at the same time represent an underlying cause of other identified threat. The activities for improving the state of biodiversity should be focused on mitigating the underlying causes, as this approach is more effective in obtaining long-term results and sustainability, while the identified threats are important for understanding the effects on biodiversity caused by human activities. The underlying causes will be further elaborated in the next section below.

Root Causes of Threats to Biodiversity in BiH

The key problems facing the country when dealing with the conservation of biodiversity, as pointed out in the Second Report to the United Nations Convention on Biological Diversity (2nd CBD Report) and further explored by the UNECE Report from 2010 (UNECE, 2010) are the following:

- Lack of integrated information system on biodiversity objectives;
- Ineffective institutional framework;
- Inadequacy of existing coordination mechanism between entities, and insufficient capacity at the state level to provide appropriate guidance to the entities on implementation of international obligations relating to biodiversity.

The team can further amend this list with the following issues:

- Low allocation of country's area to nature protection;
- Low capacities for planning and management of protected areas and integrating biodiversity considerations into the operations of other sectors;
- Uncertain funding for biodiversity conservation agenda.

The USAID Biodiversity Analysis (2003 and 2009) identified the causes of the biodiversity problems in the following manner:

- Poor economic performance that limits access to acceptable livelihoods;
- Limited public awareness of and education in the role of environmental health and conservation;
- Incomplete legislative framework and inadequate regulatory capacity;
- Institutional structure and [low] capacity precludes effective environmental management;
- Policy and market failures combining to substantially undervalue environmental goods and services;
- Land mines effectively reducing access to natural resources and accelerating localized over-harvesting.

Although there has been slight progress in some areas in the list presented above (e.g., public awareness and education, legislative framework, etc.), the majority still remain as root causes of biodiversity threats. Based on the reviewed root causes in these documents, local research carried out in the past years to identify the underlying causes of biodiversity problems and manners to address them, as well as the expert opinion of the team, the root causes will be further explored under the “3C framework” that has proven as effective for this type of analysis. This approach is taken from the previously conducted research (in 2009) of one of the team members⁹ on biodiversity issues in BiH, and is still relevant for the current status of biodiversity.

The 3C framework is based on the approach that, in terms of policy and engagement of International Organizations, biodiversity problems can be observed through the lens of concern, contracting, and capacity (hence the 3C). The concern represents the level of concern for biodiversity in society, expressed by government bodies, civil society sector and the general public. Contracting reflects on the capability of the state to implement biodiversity-related commitments. Capacity is regarded as institutional, financial, legal and professional capacities to achieve biodiversity goals. In addition, the evaluation of International Donors effectiveness in supporting the country to achieve biodiversity goals can be evaluated through their supporting in boosting these three factors. In practice it is not always possible to make a clear distinction between the 3Cs because they interact and affect each other. However, it is a useful analytical tool.

Concern for biodiversity. Concern for biodiversity in BiH is relatively low, although somewhat increasing in the recent years. The lack of concern for biodiversity in BiH is caused by: (i) high priority given to development; (ii) poverty; (iii) lack of knowledge and awareness about biodiversity conservation; (iv) lack of institutional and human capacities of responsible ministries; and (v) lack of cross-sectoral cooperation and exchange of information.

The lack of concern by government is, in most cases, associated with a low degree of priority of biodiversity conservation for the BiH society in general. Biodiversity is not considered as unimportant, but developmental issues are considered as far more important for fulfilling present societal needs. This situation is a consequence of a high unemployment rate, basic infrastructure not being fully recuperated after the war, as well as the economy being in stagnation or, in some cases, even in deterioration. The entity governments are pushing far more towards delivering full-scale development projects for the BiH public than towards projects for protecting the environment. This is best portrayed in the statement of a project officer employed by a donor organization in BiH: “In the last fifteen to twenty years, there has not been a major infrastructure-building project in BiH.” Therefore, a large pressure has been built up on the politicians to start delivering. Politicians are keen on large construction projects that are supposed to stimulate economic development, such as building highways and hydropower dams.

⁹ Krilasevic (2009): The Role of International Organizations in the Implementation of Biodiversity Conservation Policies: The Case of Bosnia-Herzegovina

The main domestic advocates for environmental protection in BiH are environmental NGOs. Nevertheless, the environmental NGO sector is insufficiently developed, and often lacks technical capacities and other necessary skills and resources. The NGOs, in general, are dealing with environmental protection on a non-selective manner, adjusting their goals and programs to the next available source of funding. In many cases the NGO sector is fund driven, and therefore may not be focusing on the most critical threats to biodiversity.

Contractual environment for biodiversity issues. Increasing accountability for biodiversity considerations in BiH can be obtained by: (i) increasing government's transparency; (ii) enhancing government's legal responsibility for biodiversity protection, and (iii) employment of mechanisms to ensure government's compliance with agreed responsibilities.

The main problem in this respect is a weak environmental policy-making administration at the state-level, which has to-date made it difficult to come up with coherent policies for the whole state. It has been proved in the past that without organizing a general framework at the top level, it is hard to have a coherent vision for development of the overall system (this is included as an "action needed" in Section XX). Entities could possibly have the opportunity to jointly define common policies that would be applicable for the whole state, but they lack the incentive to do so. This issue has been pointed out as a threat to biodiversity in the UNECE Report.

Monitoring is an integral element of contractual environment. Both entities are significantly lacking in capacity to monitor environmental quality. In the FBiH at present, there is no system set in place for monitoring environmental quality. The Federation environmental ministry has a goal of setting up a professional organization, called an 'institute for nature protection' which is planned to have responsibility for all professional tasks with respect to the state of environment, including monitoring, reporting, and database maintenance, in the near future. This institution would also be responsible for preparing public reports on the state of environment, as well as fulfilling reporting requirements towards international convention bodies. The RS has already established such a professional institution, but it is still not providing the outputs expected. The most urgent problems in terms of monitoring are serious lack of institutional capacities, lack of common databases, and nonexistent exchange of information. Within the Biodiversity Strategy and Action Plan for BiH, plans for monitoring were envisaged. Nevertheless, there has not been much progress made towards operationalizing those plans, as they require meeting several preconditions that are not possible to meet yet. At present, there is no monitoring of environmental quality at the state level, as the previous attempts to establish state-level monitoring system had failed. This is included as an "action needed" in Table 10.

Capacity to achieve biodiversity goals. The term capacity refers to capacities to implement policies designed to protect the natural environment and assure sustainability. Building of national capacities can be achieved by: (i) strengthening the institutional capacities for biodiversity conservation; (ii) increasing financing for biodiversity conservation; (iii) building capacities to implement legal framework; (iv) building professional and technical capacities for biodiversity; and (v) networking for technical and management expertise.

Actions Necessary to Conserve Biodiversity

USAID's 2009 Biodiversity Analysis. USAID's Biodiversity Analysis from 2009 expanded the identified threats to biodiversity in comparison to those in the USAID Biodiversity Analysis from 2003 and grouped them around institutional, management and public awareness threats. In addition to this, the Assessment from 2009 defined concrete activities needed to be carried out in order to address the identified threats (please see Table 9, p.61 of BiH Biodiversity Analysis 2009). All related USAID programs are evaluated based on their contribution to carrying out these activities, all in order to support integration of biodiversity into all segments

of USAID’s programming, as practicable, in the future (please see Table 10, p.64 of Bosnia and Herzegovina Biodiversity Analysis 2009). The team will revisit these activities in the current evaluation of USAID programs, and amend it as a result of the analysis of identified threats, and problems discussed in the previous paragraphs.

Current Actions Necessary. In compliance with FAA 119, Table 2 identifies the actions necessary to conserve biodiversity in BiH. It lists the root causes of the threats and identifies actions that address them. The Biodiversity Assessment team derived the actions necessary to conserve biodiversity based on interviews, document review and personal knowledge of the biodiversity situation in BiH.

Table 7. Root Causes and Actions Necessary to Address Biodiversity Needs in BiH

Identified Problems /Root Causes	Conservation Approach Applicable to the Identified problems ¹⁰	Threats to Biodiversity, as defined in USAID Biodiversity Analysis (2009), amended by additional items ¹¹		
		Threat	Action Area	Actions Necessary
Weak environmental policy-making at the state level	Policy and Reform	Institutional	Government Capacity	<i>Establish state bodies for environment and biodiversity</i>
Low awareness for biodiversity	Environmental Communication	Institutional and Public Awareness	Government Capacity and Public Perception, Education Curricula	<i>Develop sustained, country-wide environmental campaigns for the general public and targeted user groups Institute environmental education in primary and secondary schools</i>
Inadequacy of existing coordination mechanism between entities	Policy and Reform	Institutional	Inter/Intra Government Cooperation/ Coordination	<i>Develop an integrated communication plan to inform the various and complicated system of government in BiH State-level reforms to assume greater responsibility for coordination and implementation of environmental legislation Establish a Donor coordination body</i>
Weak capacities to ratify, transpose and enforce environmental treaties	Policy and Reform	Institutional	International Treaties	<i>Ratify and enforce all relevant treaties Build human and technical capacities of state bodies responsible for the ratification of international treaties and transposition of local legislation</i>
Incomplete legislative framework and inadequate regulatory capacity	Policy and Reform	Institutional	Legislative Reform	<i>Continue development of required legislation to meet EU accession and other international treaty obligations</i>
Ineffective institutional framework	Policy and Reform	Institutional	Government Capacity	<i>Institutional reform to increase efficiency and effectiveness of administration at the state and entity levels Build human and technical capacities</i>
Lack of integrated information system on biodiversity	Environmental Communication	Management	Species/Protection Abatement	<i>Develop conservation clearinghouse or database of endangered species</i>
Lack of monitoring for biodiversity on entity and state levels	Environmental Communication	Institutional and Management	Government Capacity, Inter/Intra Government Cooperation/ Coordination	<i>Introduce an organizational setup and system for the monitoring of environment, especially for the biodiversity Train and equip the staff for monitoring and include NGOs in the monitoring</i>
Uncertain funding for biodiversity conservation agenda	Policy and Reform (to some extent)	Institutional	Government Capacity	<i>Increase government commitments on all levels to provide steady financing of PA protection Carry out targeted PA support programs</i>
Low capacities for planning and management of	PA management	Institutional Management	Government Capacity, Spatial	<i>Promote the development of a national spatial plan which includes proposed protected areas</i>

¹⁰ Conservation Approaches based on the recommendations of *Biodiversity Conservation: A Guide for USAID Staff and Partners* (USAID, 2005), please see Table 3 of this report for further reference

¹¹ New items amended to initial Action Areas and Actions Necessary from the USAID Biodiversity Analysis 2009 are shown in italics

Identified Problems /Root Causes	Conservation Approach Applicable to the Identified problems ⁴⁰	Threats to Biodiversity, as defined in USAID Biodiversity Analysis (2009), amended by additional items ⁴¹		
		Threat	Action Area	Actions Necessary
protected areas and integrating biodiversity considerations into the operations of other sectors	and Cross-sectoral linkages to biodiversity conservation		Planning and Land Use, PA development	<p>Require the immediate completion of cantonal or municipal level spatial plans which incorporate natural resource use and biodiversity values</p> <p>Promote staff development and additional hiring to spatial planning departments</p> <p>Finalize current PA plans and begin appropriate implementation and management</p>
Policy and market failures combining to substantially undervalue environmental goods and services	Economic incentives for conservation	Management	Economics and Markets Certification/ISO Requirements	<p>Enforce the polluter pays mechanism</p> <p>Value the environmental goods and services and support establishment of market mechanisms for them where possible</p> <p>Develop and implement transparent tender process for forest resources and non-timber forest products</p>
Poor economic performance that limits access to sustainable livelihoods	Economic incentives for conservation	Management	Economics and Markets	<p>Rural development</p> <p>Develop and support small and medium-sized enterprises (SMEs), with the emphasis on sustainability and environmental criteria for their day-to-day operations</p> <p>Introduce environmental and quality management certification to SMEs</p>
Lack of cross-sectoral cooperation and exchange of information	Cross-sectoral linkages to biodiversity conservation	Institutional	Inter/Intra Government Cooperation/Coordination	<p>Strengthen cross-sectoral dialogues</p> <p>Inform and increase capacities of other sectors to integrate biodiversity safeguards into their operation</p> <p>Harmonize sector policies and strategies</p>
Lobby of other commercial sectors (e.g. hydropower)	Cross-sectoral linkages to biodiversity conservation	Institutional Management	Inter/Intra Government Cooperation/Coordination Economics and Markets	<p>Enforce independent and adequate evaluation of activities of other sectors that may have significant adverse impacts to biodiversity (especially for the hydropower projects), and cost-benefit analysis that will be communicated to all interested stakeholders</p>
Unsustainable use of natural resources	Sustainable use of natural resources	Management	Forest Management Certification/ISO Requirements Economics and Markets	<p>Assist forest management units and companies in obtaining or meeting certification requirements for forest products and other industry standards</p> <p>Develop and implement policies to support national certification and compliance with ISO standards</p>
Weak capacities of local environmental NGOs to represent the biodiversity conservation interests	-	Public Awareness	NGO Capacity and Coordination	<p>Form NGO working group or coordination council for environmental and nature protection issues,</p> <p>Increase capacity of NGOs to help manage and protect natural resources and related heritage sites, and raise public awareness through partnerships with local governments and tourism clusters</p> <p>Develop internal capacity of local groups to increase their sustainability and reach</p>
Weak capacities to implement legal framework with regards to biodiversity	Policy and Reform (to some extent)	Institutional	Enforcement	<p>Develop secondary legislation to empower Inspectorates</p> <p>Strengthen internal capacity of inspectorates</p> <p>Create state-level department to coordinate inspections and enforcement</p>
Weak professional capacities and professional networking, and technical management expertise for biodiversity and PAs	-	Public Awareness	Education Curricula Networking	<p>Develop an inter-governmental education coordination committee</p> <p>Empower Ministries of Education to implement programming</p> <p>Support scientific and applied research</p>

USAID's Program in BiH

USAID Country Strategy for Bosnia and Herzegovina

In this section of the document, the Country Assistance Strategy (CAS) from 2009 and Country Development Cooperation Strategy CDSCS for 2012 – 2016 will be discussed with a focus on biodiversity. Even though the CAS 2009 is not longer up-to-date because the new strategy is being prepared, we have provided its brief overview since the relevant USAID programs that will continue to implement under the new strategy had been developed under the old strategy.

CAS (2009). USAID assisted BiH in achieving its potential to become a peaceful, democratic, forward-looking, prosperous country through the Economic Growth, Democratization and Peace and Security Program. A CAS for BiH was prepared in 2009, for the period of four years, in order to define the overall strategic approach and priorities. In identifying priority goals, the United States Government (USG) personnel took into account factors specific to the country which will affect the stability and sustainability of BiH as a state. The CAS for BiH defines those priority goals:

Goal 1. Defense - BiH's Military meets requirements for NATO integration, meets BiH's broader security needs and has a stable and transparent integrated command structure;

Goal 2. Justice - Increased effectiveness, accountability and transparency in law enforcement and the justice sector, upholding rule of law equally for all BiH citizens, thereby strengthening these state level institutions;

Goal 3. Democracy - Increased accountability, transparency, effectiveness and active citizen involvement in government institutions and processes;

Goal 4. Economy - Progress achieved toward the creation of a single economic space, able to provide better economic opportunities for all its citizens;

Goal 5. Tolerance - A society that increasingly values tolerance and respects diversity.

As outlined in the CAS BiH, the selected goals reflect the USG's belief in where its assistance can be most effective in advancing these priorities. CAS BiH acknowledges the existence of many other important and worthy goal areas toward which the USG could (and occasionally does) program assistance funds. An example is the conducted Biodiversity Report update in September 2008 which identified problems facing the environment.

CAS BiH clearly states that it was specifically decided not to include issues such as the environment among the highest priority goals. While this issue can play a role in the ultimate sustainability of a country, it was determined that in the context of BiH, these issues were less likely to be critical factors contributing to BiH's stability in the near future. The USG instead chose to incorporate environmental issues into two related goals – developing a single economic space (Goal 4) and strengthening civil society and government institutions (Goal 3). Other factors which affected the choice of goal areas included a shrinking SEED budget, work of other

donors, past performance of programs, and the need to target sectors where the USG believes it can have the most impact.

Even though environmental NGOs are not specifically targeted, the CAS BiH expects that USG civil society activities may be beneficial to such type of NGOs, and hence increase their ability to effect change on BiH's conservation and environmental policy. The USG sees its efforts in this goal as directly benefiting conservation and environmental NGOs and therefore broader biodiversity goals and the USG's environmental program.

CAS BiH declares that biodiversity and environmental protection will remain an indirect objective of USG activities, addressed where biodiversity and private sector/civil society development intersect, as seen in goals three and four.

The CAS BiH will be replaced by a new strategy in 2012 – the CDCS.

The CDCS (2012-2016). In the future, USAID in BiH intends to continue supporting the country on various levels. USAID contributes to the USG objective in BiH by carrying out assistance programs that help BiH progress towards a harmonized economic space, effective and transparent government institutions with a strong civil society, and a multi-ethnic, tolerant society.

USAID's strategic goal is that BiH becomes a stable, prosperous, democratic, market-oriented, multi-ethnic state that is progressing toward Euro-Atlantic integration. Reaching this objective includes functional state-level Rights, GDP and FDI growth, increased economic competitiveness, and a clear strategy for EU accession. Specific benchmarks for measuring impact of achieving the overarching goal include the following:

- 2014 General Elections – an increase in voter participation and issue-based platforms rather than strictly ethno-nationalistic platforms;
- Progress in the path to EU accession;
- Progress in constitutional reform;
- Economic progress – higher competitiveness rankings, increased investment, GDP growth.

USAID/BiH's CDCS proposes two development objectives (DOs) to achieve the overarching goal. The democracy/governance DO focuses on participatory and inclusive democratic society, and the economic growth DO focuses on a market-oriented economy. The approaches of both DOs reinforce each other and support the achievement of USAID/BiH's overarching goal.

The US foreign assistance priority is to help BiH solidify its future within the Euro-Atlantic community, ensuring that BiH makes the necessary reforms to gain EU and NATO membership. To reach this goal, the following objectives are necessary:

- Effective government institutions and civil society that encourage and enable active citizen involvement;
- Effective, transparent and accountable state-level institutions and processes, namely in the justice and security sector, which uphold the law equally for all citizens;
- Greater economic growth through investment and enactment of EU standards;
- Vibrant society that values tolerance and diversity, and where women and minorities flourish.

In the economic growth sector, USAID will continue to support improved capacities of the private sector to compete in the market economy, while focusing on the SMEs and agricultural producers. The expected results of USAID activities in supporting the private sector are seen in regulation and policies, and improving microeconomic aspects of governance relevant for business (such as business regulation, property rights, rule

of law, etc.). Achievements are also expected in improved capacity of regulators and government bodies in trade, energy, labor and financial, and other markets. The support for energy sector reform will continue.

The activities of the justice sector reform in line with the EU accession principles will continue to be supported, with the expectations that the USAID will support more effective, independent and accountable justice actors, as well as improvements of the legislative process and legal framework. It is expected that USAID will continue to strengthen civil society organizations in policy development, advocacy and monitoring. Professionalization of the media is also an important aspect of USAID's engagement in the future.

Brief Description of USAID/BiH Ongoing Programs and Projects with Links to Biodiversity

A brief overview of the goals and activities of a number of USAID programs and projects currently being implemented in BiH, which have been taken into consideration due to the likelihood of their having a certain level of impact on biodiversity conservation issues, is provided below.

Fostering Agricultural Markets Activity (FARMA), September 2009 - September 2014. FARMA is providing technical assistance in BiH agricultural sub-sectors through demand-driven assistance aimed at improved competitiveness of BiH agricultural products. FARMA is expanding environmentally sustainable production, processing, and sales of value-added agricultural products. In order to aid BiH in meeting several objectives - such as increasing agricultural competitiveness, meeting EU accession standards, reducing poverty by expanding environmentally sustainable production, and increasing sales, exports, and employment - FARMA is focused on four integrated components. Those are the following: (i) building sustainable market linkages for BiH producers, (ii) increasing access to finance, (iii) building the capacity of producer organizations and other counterparts and, (iv) enhancing the policy environment to benefit competitiveness of BiH agricultural goods.

Fostering Interventions for Rapid Market Advancement (FIRMA), September 2009 - September 2014. FIRMA's overall goal is to help BiH improve "the capacity to cope with competitive pressure and market forces within the European Union", a critical component of the Copenhagen Economic Criteria for EU accession.

Activities supported by FIRMA include the following: Facilitating networking among sector firms and stakeholders; Providing training and technical assistance to improve product quality, operational productivity, and managerial effectiveness; Supporting workforce development; Facilitating access to finance and promoting investment; Improving connections to global markets, and Advancing the policy, legal, and regulatory environment for doing business.

FIRMA (Wood Cluster) works with forest companies, the private and government sector, providing direct support to forest companies attempting to receive forest certification through: Organization of the FSC Conference and development of Action Plans for certification (FSC SFM and CoC), FMC training and preparation for FSC SFM certification, and identification of funding sources and models for preparation and certification of FMCs. FIRMA works with producers in order to help them to accomplish added value of wood products through raising awareness on importance of quality certification process, necessary standards, costs, and market requirements. It provides training, seminars and workshops for staff for quality and certification systems.

Within the Tourism Cluster, BiH branding strategy and marketing strategy has been developed. Other activities within this cluster include raising awareness of importance of traditional products as tourism products, development and identification of specific tourism locations in BiH (Herzegovina, Sarajevo, Jajce etc.), improvement of quality of promotion tools, and stimulating the presentation of BiH tourism at key global tourism industry trade fairs.

Activities within the Manufacturing Cluster include supporting activities in organizing production technologies and processes for new product development, raising awareness of the need for quality certificates and CE sign, development of capacity for implementation, branding BiH products, providing information and training on fulfilling requirements for receive environmental permits, supporting sustainable public-private dialog (PPD) mechanisms to develop and renew the development strategy for the BiH metal sector.

Regulatory and Energy Assistance Project (REAP), March 2007 - September 2013. The purpose of this activity is to provide continued technical assistance to the BiH to fully integrate energy sector into the regional and EU markets and to restructure and commercialize its energy companies via implementation of high priority energy reforms that has already commenced through the Regulatory and Energy Assistance Project (REAP).

Enterprise Energy Efficiency (3E), May 2010 - September 2013. USAID's 3E assists BiH to promote energy efficiency (EE) technologies by developing pilot projects in buildings and structures that are co-funded by public and private counterparts. It is also intended to increase the capacities of municipal public sector counterparts and SMEs, as well as to increase public awareness with regards to the benefits arising from energy efficiency. 3E goals are closely related to the energy efficiency goals of the EU by 2020. Some of the E3 activities include: organization of EE Knowledge Days, presentations on the topics of energy efficiency at the four faculties of the University of Sarajevo intended for the interested students and general public.

Excellence in Innovation (EI) December 2007 - December 2012. EI strengthens the competitiveness of SMEs in six selected sectors by increasing their use of value-added information and communications technology (ICT) as part of USAID's overall efforts to promote growth and competitiveness of SMEs in BiH. More specifically, the program works with agriculture, wood, die and tools, and tourism sector. Within the program, E-biz centers have been developed to promote innovative technologies, namely the Agrolink, Exploring BiH, Arteco and MTTC.

Governance Accountability Project II (GAP II) December 2007 - December 2012. The aim of the program is to strengthen democratic local governance in BiH by dramatically and visibly improving the ability of municipalities to serve the citizens, and to support a policy and fiscal framework which is conducive to accountable, democratic governance. To achieve these objectives, the project is comprised of two major components: Local Interventions, and Policy Interventions. The Local Interventions component provides direct technical and material assistance to 41 legacy municipalities from the first phase of GAP, and 31 new partner municipalities. The support is oriented towards improving municipal service delivery, administration, budgeting and financial management, and improving municipal capacity to administer capital improvement projects.

Capacity Building of Agriculture Businesses in Drought Adaptation in BiH (CBABDA), September 2010 - March 2012. The program increases the capacity of the agricultural sector (fruit and vegetable sector) to adapt to droughts that have occurred as a result of climate change. The project's activities include: (i) technical solutions for farm adaptations to drought; (ii) testing the most suitable actions on five demonstration farms; (iii) training and technical assistance to farmers, agricultural cooperatives and relevant government officials; and (iv) capacity building and awareness raising. Different innovative technical solutions will be defined and tested during the project. The Project also seeks to lobby for subsidies for adaption to climate changes.

Sustainable Development of the NGO Sector in BiH (SDNGOS), August 2008 - August 2011. The project is creating an enabling framework for sustainable development of the NGO sector through partnership with the government at all levels and full local ownership. The four program components include: improving the legal and regulatory framework for NGOs, increasing the financial sustainability of NGOs, increasing public support for civil society, and strengthening capacity of Center for Civil Society Promotion CCSP as an intermediary service organization.

Agreement on Cooperation between the Council of Ministers and the NGO sector in BiH was signed in May 2007 and represents the first step of building new relationships between governmental and nongovernmental

sectors. Two main bodies - the Council of Ministers and the Council for the Development of Civil Society - have been formed.

An important aspect of the project's work is establishment of the NGO network "Agreement Plus", which is a loose and open coalition of NGOs committed to working on promotion and implementation of the above-mentioned agreement on cooperation between NGOs and the government on all levels.

This project will not be continuing into the new strategy period.

Women's Business Network (WBN), September 2010 - September 2013. WBN is creating better opportunities for start-up and operation of microenterprises owned by women. It is expected that the WBN activities will result in an increase in employment and income generation for women. The project activities include the following: (i) facilitate market connections and channels for distribution (integration in value-chains), (ii) train in financial/business management and mentoring for business growth; (iii) present opportunities for financing of women-owned businesses and education on fundraising; and (iv) provide business advocacy tools through cooperation with existing business associations and chambers of commerce. Members of WBN can obtain free trainings, agronomic help, free consulting with management and free information centers.

Rural Employment Generation Activity (REGA II), December 2008 - December 2013. The goal of the REGA II is to increase the amount and quality of agricultural production of soft fruits through increasing and improving financial services along the value chain. In addition, REGA II is strengthening the cooperation between all participants in the value chain to create a sustainable, equitable, and quality-oriented soft fruits sector in BiH.

REGA II provides berry producers and processors technical assistance, marketing support, and access to micro loans. REGA II help farmers to better understand the importance of obtaining GLOBALGAP certifications, which will better prepare producers and processors for EU accession, and enable them to compete more effectively in domestic, regional and international markets. GLOBALGAP certification ensures that the product does not contain any contaminants that could cause a health hazard and at the same time guarantees that the workers and the environment are not harmed during production. Farmers get commodity loans in the form of seedlings for growing berries, irrigation system, etc. All farmers are required to follow the instructions in order to meet GLOBALGAP standards. Free technical assistance has been provided by the REGA II.

Table 8. Summary of Information on USAID/BiH's Programs with Links to Biodiversity

Project	Project duration	Funding (total)	Implementer	Goals and key activities
FARMA	Sep 2009 - Sep 2014	21 million USD	Emerging Markets Group	Project provides technical assistance in BiH agricultural sub-sectors through demand driven assistance aimed at improved competitiveness of BiH agricultural products.
FIRMA	Sep 2009 - Sep 2014	21 million USD	Emerging Markets Group	The overall goal is to help BiH improve "the capacity to cope with competitive pressure and market forces within the European Union", a critical component of the Copenhagen Economic Criteria for EU accession, while focusing on the three sectors of the BiH economy (wood processing, tourism, and light metal manufacturing).
REAP	Mar 2007 - Sept 2013	7.79 million USD	Advanced Engineering Associates International (AEAI)	The project supports restructuring of the country's energy sector to become consistent with the Energy Community Treaty, which sets the parameters for creation of regional electricity and gas market.
3E	May 2010 - Sep 2013	4.26 million USD	Advanced Engineering Associates International (AEAI)	The project goal is to promote energy efficient technologies in BiH, in line with the EU goals on energy efficiency.
EI	Dec 2007 - Dec 2012	7.3 million USD	Academy for Educational Development	The project strengthens the competitiveness of SMEs in six selected sectors by increasing their use of value-added information and communications technology
GAP II	Dec 2007 - Dec 2012	4.9 million USD	Chemonics International Inc.	The aim of the program is to strengthen democratic local governance in BiH by dramatically and visibly improving the ability of municipalities to serve the citizens and to support a policy and fiscal framework, which is conducive to accountable, democratic governance.
CBABDA	Sep 2010 - Mar 2012	350,000 USD	Association Centre for Development and Support (CRP)	The program increases the capacity of the agricultural sector to adapt to droughts that have occurred as a result of climate change.
SDNGOS	Aug 2008 - Aug 2011	1 million USD	Center for Civil Society Promotion (CCSP)	The project creates an enabling framework for sustainable development of the NGO sector through partnership with the government at all levels and full local ownership.
WBN	Sept 2010 - Sep 2013	1.5 million	MI-BOSPO	The project creates better opportunities for start-ups and operation of microenterprises owned by women.
REGA II	Dec 2008 - Dec 2013	722,000 USD	Microfinance Organization (MCO)	The goal of the REGA II is to increase the amount and quality of agricultural production of soft fruits through increasing and improving financial services along the value chain. In addition, REGA II aims to strengthen the cooperation between all participants in the value chain to create a sustainable, equitable, and quality-oriented soft fruits sector in BiH.

*Please note that USAID plans to add new programs in 2011 and 2012.

Extent to Which Proposed USAID Actions Meet Needs

According to USAID's Definition of Biodiversity Programs, in order to be considered as a biodiversity program, four key criteria must be met: (i) The program must have an explicit biodiversity objective¹²; (ii) Activities must be identified based on an analysis of threats to biodiversity; (iii) The program must monitor associated indicators for biodiversity conservation; and (iv) Site-based programs must have the intent to positively impact biodiversity in biologically significant areas. According to these criteria, and taking into account the USAID actions in BiH, it can be said that there is no USAID biodiversity conservation program in BiH.

However, the CDCS and many of the USAID projects that will be implemented during the CDCS period contribute to the biodiversity conservation needs identified in this report. Most of USAID's contributions to biodiversity conservation are through cross-sectoral linkages. If observed in the broader context, overall USAID contributions towards democracy, institutional reforms, stability, and economic growth have indirect positive benefits to conservation and biodiversity. The management and protection of natural resources is predicated on a stable government, sound policy frameworks, transparency, accountability, active civil society, vibrant private sector, and a free independent media. For these reasons and in the absence of direct and concrete USAID activities for biodiversity conservation in BiH, this report is focused on exploring impacts of USAID activities in the broader context by identifying the links with biodiversity goals.

This section of report responds to FAA 119 (2):

(d) Country Analysis Requirements - Each country development strategy statement or other country plan prepared by the Agency for International Development shall include an analysis of-

(2) the extent to which the actions proposed for support by the Agency meet the needs thus identified.

The following table was developed by the Biodiversity Assessment Team based on the review of implemented and current activities being carried out within the individual USAID projects. It shows the extent to which each ongoing project meets the needs identified. The team notes that there is no requirement for each project to meet the needs; the section below provides recommendations to enhance cross-sectoral linkages based on the scope of the project and on actions that may be practicable within that scope (recommendations are presented in the next section).

¹² It is not sufficient to have biodiversity conservation as the result of a positive externality from another program.

Table 9. Evaluation of USAID Programs in Meeting Biodiversity Needs

Actions Necessary	3E	FAR MA	FIR MA	REG A II	CPE	SDN GO	WBA	REA P	GAP II
1. Establish state bodies for environment and biodiversity	1	1	1	1	1	1	1	1	1
2. Develop sustained, country-wide environmental campaigns for the general public and targeted user groups	3	2	4	1	2	1	1	1	2
3. Institute environmental education in primary and secondary schools	1	1	1	1	1	1	1	1	1
4. Develop an integrated communication plan to inform the various and complicated system of government in BiH	2	1	1	1	1	1	1	1	1
5. State-level reforms to assume greater responsibility for coordination and implementation of environmental legislation	1	3	2	1	1	1	1	1	1
6. Establish a Donor coordination body	1	1	1	1	1	1	1	1	1
7. Ratify and enforce all relevant treaties	1	1	1	1	1	1	1	1	1
8. Build human and technical capacities of state bodies responsible for the ratification of international treaties and transposition of local legislation	1	1	1	1	1	1	1	1	2
9. Continue development of required legislation to meet EU accession and other international treaty obligations	1	4	3	2	1	1	1	1	2
10. Institutional reform to increase efficiency and effectiveness of administration at the state and entity levels	1	2	2	1	1	1	1	1	5
11. Build human and technical capacities	1	2	2	1	1	1	1	1	5
12. Develop conservation clearinghouse or database of endangered species	1	1	1	1	1	1	1	1	1
13. Introduce an organizational setup and system for the monitoring of environment, especially for the biodiversity	1	1	2	1	1	1	1	1	1
14. Train and equip staff for monitoring	1	1	2	1	1	1	1	1	1
15. Strengthen capacity and include NGOs in the monitoring	1	1	1	1	1	1	1	1	1
16. Increase government commitments on all levels to provide steady financing of PA protection	1	1	2	1	1	1	1	1	1
17. Carry out targeted PA support programs	1	1	2	1	1	1	1	1	1
18. Promote the development of national spatial plan which included proposed protected areas	1	1	1	1	1	1	1	1	4
19. Require the immediate completion of cantonal or municipal level spatial plans which incorporate natural resource use and biodiversity values	1	1	1	1	1	1	1	1	3
20. Promote staff development and additional hiring to spatial planning departments	1	1	1	1	1	1	1	1	4
21. Finalize current PA plans and begin appropriate implementation and management	1	1	1	1	1	1	1	1	1

22. Enforce the polluter pays mechanism	2	2	1	1	1	1	1	1	1
23. Value the environmental goods and services and support establishment of market mechanisms for them where possible	2	3	3	1	1	1	1	1	1
24. Develop and implement transparent tender process for forest resources and non-timber forest products	1	1	2	1	1	1	1	1	1
25. Rural development	1	3	1	3	1	1	1	1	1
26. Develop and support SMEs, with the emphasis on sustainability and environmental criteria for their day-to-day operations	2	4	3	1	1	1	1	1	1
27. Introduce environmental and quality management certification to SMEs	1	5	4	4	1	1	1	1	1
28. Strengthen cross-sectoral dialogues	2	1	2	1	2	1	3	3	1
29. Inform and increase capacities of other sectors to integrate biodiversity safeguards into their operation	1	2	2	1	1	1	1	1	1
30. Harmonize sector policies and strategies	1	1	1	1	2	1	1	3	1
31. Enforce independent and adequate evaluation of activities of other sectors that may have significant adverse impacts to biodiversity (especially for the hydropower projects), and cost-benefit analysis that will be communicated to all interested stakeholders	1	1	1	1	1	1	1	1	1
32. Assist forest management units and companies in obtaining or meeting certification requirements for forest products and other industry standards	1	1	3	1	1	1	1	1	1
33. Develop and implement policies to support national certification and compliance with ISO standards	1	1	4	1	1	1	1	1	1
34. Form NGO working group or coordination council for environmental and nature protection issues	1	1	1	1	1	1	1	1	1
35. Increase capacity of NGOs to help manage and protect natural resources and related heritage sites, and raise public awareness through partnerships with local governments and tourism clusters	1	1	1	1	2	4	1	1	1
36. Develop internal capacity of local groups to increase their sustainability and reach	1	3	1	1	2	4	1	1	1
37. Develop secondary legislation to empower inspectors	1	2	2	1	1	1	1	1	1
38. Strengthen internal capacity of inspectors	1	1	3	1	1	1	1	1	1
39. Create state-level department to coordinate inspections and enforcement	1	1	1	1	1	1	1	1	1
40. Develop inter-governmental education coordination committee	1	1	1	1	1	1	1	1	1
41. Empower Ministries of Education to implement programming	1	1	1	1	1	1	1	1	1
42. Support scientific and applied research	1	1	1	1	1	1	1	1	1

- 1 – No Impact
2 – Minimal Impact (limited indirect project activities)
3 – Limited Impact (project addresses related or supporting measures)
4 – Moderate Impact (some direct activities)
5 – Significant Impact (targeted direct assistance)

Recommendations

As shown in Table 4, USAID's new strategy will contribute to biodiversity conservation needs identified in this report. Most contributions will be through cross-sectoral linkages, i.e., contributions will be from projects that are not biodiversity projects. As described in the Chapter on other donors activities, other donors, the GoBiH, and the NGO sector will also contribute to many of these biodiversity conservation needs. However, key gaps remain in meeting biodiversity conservation needs. Recommendations to USAID are provided below, which focus on these key gap areas, and which are within USAID/BiH's manageable interest. The recommendations focus on strengthening cross-sectoral linkages. If these are implemented, they will strengthen USAID's contributions to biodiversity conservation in BiH.

Links between specific activities of individual projects and positive impacts on biodiversity conservation have been identified and described in the table below. In addition, recommendations for each ongoing project have been provided in order to facilitate the implementers in exploring further the possibilities for strengthening the positive impacts on biodiversity of their projects by fine-tuning or readjusting existing plans and activities to the extent allowed by the project goals and scope.

Table 10. Project activities linked with biodiversity and suggested activities to increase biodiversity consideration

Project	Identified project activities that are linked with biodiversity	Suggested activities that might aid the project to increase the consideration of biodiversity conservation in their ongoing programs ¹³
<i>Economic growth programs</i>		
FARMA	<p>The project may reduce the pressure on ecosystems and mainly on endangered species that are currently being used as medicinal and aromatic plants¹⁴ (e.g. <i>Gentiana lutea</i>, <i>Arnica montana</i>, <i>Arctostaphylos uva ursi</i>, and <i>Orchiss spp.</i>) by stimulating their cultivation and commercial production.</p> <p>Project activities that support sustainable agriculture incorporate important environmental considerations, and hence may have positive impact on the biodiversity conservation in the long-run. These activities are:</p> <ul style="list-style-type: none"> - Support to preparation of state regulations in accordance with EU requirements - Preparation of procedures to promote standardization of agricultural products - Certification, branding and promotion of fruit and vegetable organic products and GLOBALGAP standards 	<p>Raise awareness on endangered medicinal and aromatic plant species among the producers (AN2),</p> <p>Raise awareness on importance of protection of autochthonous plants and their production methods (AN2),</p> <p>Support reform of economic instruments, especially co-financing or grants in agriculture, in order to include environmental criteria when qualifying for co-financing or grants (AN23, 26),</p> <p>Provide clearer inclusion of environmental impact assessment criteria when evaluating proposals for grants (AN31).</p>

¹³ Suggested activities are linked to previously established Actions Necessary (AN). Each activity has assigned AN to it related to the actions named in Table x (e.g. AN1, AN2).

¹⁴ Bosnia and Herzegovina has over 700 species of medicinal and aromatic plants, of which are 200 exploited (Gatarić, Đ., 1988.).

Project	Identified project activities that are linked with biodiversity	Suggested activities that might aid the project to increase the consideration of biodiversity conservation in their ongoing programs ¹³
FIRMA	<p>The project's contribution to biodiversity goals is mainly through strengthening capacities in BiH for sustainable forest management. These activities included:</p> <ul style="list-style-type: none"> - Support to forest inventory in BiH - Support to adaptation of FBiH forest law - Support to addressing the problems of inefficient inspection and control system - Support to forest and wood-processing companies interested in obtaining the FSC certificate - Raising awareness about forest certification, and environmental protection (e.g. "Clean is beautiful" public campaign) <p>Development of sustainable tourism, supported by the project, may have positive impacts on the consideration of natural and biodiversity values and importance of conservation as a tourism development tool.</p>	<p>Support implementation of eco-standards in tourism industry (AN 23),</p> <p>Promote sustainable tourism in protected areas (PA) that would ensure biodiversity protection and financial sustainability of PA (AN 11, 17, 21, 25),</p> <p>Support the reform of state subsidies for relevant sectors in order to include environmental safeguards (AN 23, 26),</p> <p>Explore the possibilities to promote Corporate Social Responsibility (CSR) for SMEs in forestry, tourism and light metal industry (AN27).</p>
3E	<p>The project assists BiH to promote energy efficiency (EE) and to reduce greenhouse gases, including CO₂. Improving energy efficiency could be defined as having an impact on biodiversity conservation considering that climate change is a direct threat for biodiversity. It could also decrease the reliance on unsustainably collected wood as a source of fuel.</p>	<p>Raising awareness campaign on EE on the territory of the whole country (AN2).</p>
REAP	<p>No activities for biodiversity conservation have been done within the REAP. However, harmonization of the electricity market, and EU application of standards is a precondition for effective incorporation of safeguards towards biodiversity into the operation of the energy sector.</p>	<p>Lobby for increase in energy consumption from RES in order to reduce CO₂.(AN9, 23, 28)</p> <p>Strengthening of enforcement of the instrument of EIA (assessment, action plans and effective monitoring), especially for new hydropower plants and wind power plants (AN22, 31).</p>
REGA II	<p>Project promotes GLOBALGAP¹⁵ certification. Promoting these practices in agriculture contributes to environmental protection through decrease in land pollution.</p>	<p>Promote traditional knowledge and practice in agriculture and farming (AN25,26),</p> <p>Support control of seed production, in order to preserve the genetic funds of domestic agricultural species (AN11, 14).</p>
CBABDA	<p>The project may contribute to biodiversity agenda through its support to climate change mitigation mechanisms – mostly through adaptation of economic tools aimed at supporting climate change activities.</p>	<p>Support state subsidies reform in agriculture and other relevant sectors in order to introduce new incentives to help manage climate change (AN26)</p>
<i>Democracy & Governance programs</i>		
GAP II	<p>GAP II activities create conditions for reform of traditional decision-making processes through building capacities of local government in urban planning, budgeting and encouraging citizen participation in the selection of capital projects. This is an excellent basis for increasing awareness of local governments of the biodiversity conservation goals, and safeguard tools, that can be employed.</p>	<p>Build the capacities of municipalities to fulfill their mandate vis-à-vis spatial planning, in order to mainstream environmental and biodiversity protection (AN 19, 20),AN</p> <p>Build awareness of and capacity for</p>

¹⁵ GLOBALGAP certification ensures that a given product does not contain any contaminants that could cause a health hazard and at the same time guarantees that the workers and the environment are not harmed during production.

Project	Identified project activities that are linked with biodiversity	Suggested activities that might aid the project to increase the consideration of biodiversity conservation in their ongoing programs ¹³
	Investment project in sewage systems is of great importance for environmental protection.	environmental screening, including EIAs, at the municipal level (AN2, 31)
SDNGOS	Strengthening the NGO sector in BiH is defined as one of priority activities for biodiversity conservation. So far this project has not had specifically targeted activities to support NGO development for biodiversity conservation, while the benefits of the project can be seen in building capacities for public participation in decision making process.	Build capacities of and strengthen environmental NGOs (AN15), Build capacities of NGOs to get funds to finance biodiversity conservation (AN11), Continuous strengthening of public participation in decision making process for projects that have environmental impact (AN 11,15).

Recommendations at the Strategy Level

Recommendations for DO: Economic Growth, within the CDCS

IR 1 – Improved Capacity of the Private Sector to Compete in the Market Economy - could have adverse environmental effects if safeguards are not implemented. This IR will promote growth in private enterprises in the following sectors: wood processing, tourism, light metal processing, and agriculture and agri-business. Safeguards could include the following: in wood processing, a mechanism to ensure that only enterprises that use sustainably harvested wood are supported; in tourism, sustainable tourism criteria should be established and implemented; in light metal processing, clean production technology should be promoted; and in agriculture/agri-business, USAID should support compliance with EureGAP criteria, implementation of clean production technology, and safe use of pesticides/integrated pest management. In addition, the support of FTF could result in converting natural areas to agricultural production. Although, the intent is to improve productivity of environmentally sustainable commercial agricultural production, land conversion could be an inadvertent result. USAID should explore measures to monitor land use and should discourage conversion.

This IR could contribute to biodiversity conservation by: raising awareness of sustainable use practices and endangered medicinal and aromatic plant species, including measures to cultivate these plants; and promoting sustainable tourism in protect areas to generate funds for PA management. In addition, climate change could be mitigated/addressed through awareness raising campaigns on energy efficiency and other EE support under the DCA.

IR 2.2 – Improved capacity of regulators and government bodies in trade, energy, labor, financial and other markets - could have an adverse effect on the environment. Stimulation of economic growth, investment and jobs, including SME development could have a positive effect on the environment if clean production and sustainable use practices are promoted alongside other policies, strategies and practices. Support in the energy sector could have positive environmental effects if this support is directed at renewables and energy efficiency. This could help mitigate climate change impacts and address potential effects of climate change.

Recommendations for DO-1: A More Participatory, Inclusive, Democratic Society, within the CDCS

IR 1 – Justice Sector reformed in line with EU accession principles - is not expected to have any adverse effects on the environment in general or on biodiversity in particular. This IR could have a positive effect on biodiversity conservation: (1) by building capacities of environmental NGOs to help advocate for environmental justice, and (2) by strengthening the justice sector and legal framework covering the protection of human rights

in environmental cases (e.g., ensure private business and government are held accountable in case of environmental pollution and impacts to health and welfare).

IR 2 – More effective, accountable and representative governance at all levels – is not expected to adversely affect the environment or biodiversity. This IR could have positive effects on the environment by (1) building capacities of municipalities in environmental protection and biodiversity conservation; and (2) building capacities for EIA/environmental screening at the municipal level.

IR 3 – Increased engagement of citizens in governance - Positive effects on the environment could be enhanced by: (1) building capacity of environmental NGOs to raise funds to build sustainable financing and programming; (2) strengthening public participation in decision making, especially for projects that may have environmental impacts; and (3) strengthening media (print, radio, TV) capacity to report on environmental issues and to educate about biodiversity and the environment.

In the light of recommendations provided for the ongoing activities, it can be said that all future USAID projects can also benefit from these recommendations. All future projects can integrate the following set of recommendations/activities that would benefit the biodiversity:

- Promote environmental sustainability and biodiversity conservation
- Encourage private sector to integrate environmental safeguards, and marketing and promotion, based on environmental certification
- Build capacities of the government and civil sector, while emphasizing their role in the environmental sustainability of the country
- Explore links with environment and biodiversity in the aspects of health and safety, sustainable development and EU accession.

The concern for environment and biodiversity on the local level can be raised by linking biodiversity with other issues that are considered of high importance on domestic and local levels. Such issues are for instance the following:

- Development, income generation;
- EU accession;
- Future funding opportunities (especially for non-profit sector);
- Ecotourism development;
- Building a better image for BiH.

Sources

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Annex 1. Diversity of Species in BiH

Numerous plant communities and ecosystems are present in BiH which are specific for this area, the Balkan Peninsula and entire Europe. The main factors responsible for the high diversity of BiH's terrestrial habitats are caused by: occurrence of rocks of different age, diversity of bedrocks, diversity of soil types, unique and diverse forms of relief, and diversity of climate conditions. Diversity of aquatic habitats is reflected by rich and diverse hydrological network (mountain lakes, springs, mountain torrents, brooks, rivers, sinking streams, ponds, marshes, underground water, thermal sources, brakish water and sea). A high level of floristic diversity is based upon diversity of cyanophytes, algae and vascular plants. 1,859 species from 217 genera within groups of cyanophytes and algae has been identified until now. The most diverse groups are Charophyta, i.e. Charophyceae and Chlorophyceae classes, and Heterokontophyta, i.e. Bacillariophyceae class.

Table A1.1 Diversity of cyanophytes and algae

Taxon	Genus	Species	Variety	Form
Cyanobacteria	36	303	1	4
Rodophyta	7	20	1	-
Charophyceae	33	319	31	5
Chlorophyceae	65	242	25	2
Euglenophyta	4	21	-	-
Dinophyta	5	20	-	2
Bacillarioph.	57	881	222	15
Xanthophyceae	4	21	-	-
Chrysophyceae	12	32	4	-
Total	217	1859	284	28

Source: BiH Fourth Report of to the United Nation Convention on Biological Diversity

Table A1.2 Taxonomic diversity of higher plants

	Family	Genus	Species	Sub-species	Total
Bryo-phyta	52	187	565	0	565
Pterido-phyta	14	26	61	8	71
Spermatophyta	161	858	3256	1078	4498
Total	227	1071	3882	1086	5134

Source: BiH Fourth Report of to the United Nation Convention on Biological Diversity

The fact that 5,134 taxa were identified underlines the floristic richness of BiH and places it among the richest ones in Europe.

Within Spermatophyta, families with the highest species diversity are: composites, pea family, grasses, roses, crucifers, parsley family, mint family, sedges, figworts, pinks, lilies and buttercups. A special diverse character of this group is reflected through a great number of families with only one genus and species (approximately 30% of the total number).

The most specific characteristic of BiH's flora is a great deal of paleo and neo endemic species, tertiary and glacial relicts maintained in refugial habitats, such as cliffs, canyons and mountain cirques. Most endemic forms are recognized within the flora of higher plants, which is currently estimated to 450 endemic taxa. Newly

undertaken investigations indicate that this number is much bigger, especially as far as poorly investigated genera are concerned, such as: *Alchemilla*, *Potentilla*, *Rosa*, *Rubus*, *Hieracium*, *Centaurea*, *Carex*, *Festuca*. Within the group of steno endemic plant species that has been recognized as threatened are: *Acinos orontius* (K.Maly) Šilić, *Alyssum moellendorffianum* Aschers. ex G.Beck, *Asperula hercegovina* Degen, *Barbarea bosniaca* Murb., *Campanula hercegovina* (Degen) and *Centaurea bosniaca* (Murb.) Hayek, *Dianthus freynii* Vandas, *Edraianthus niveus* G.Beck, *Minuartia handelli* Mattf., *Oxytropis prenja* G.Beck, and *Symphyandra hofmanni* Pantocsek.

Due to the abundance and diversity of certain animal groups, BiH is considered among the richest European countries in biodiversity. This is also confirmed by the high number of endemic and relict species. BiH's fauna is characterized by the occurrence of refugia and development centers, and has a very unique fauna of karst areas, mountains and canyons.

Table A1.3. Diversity of certain groups of invertebrates

Arthropoda: Chelicerata: Arachnida:Acarina	208	Arthropoda: Insecta: Heteroptera	705
Arthropoda: Crustacea: Malacostraca: Decapoda	5	Arthropoda: Ins.: Col., Adepaga	701
Arthropoda: Chilopoda	9	Arthropoda: Ins.: Col., Polyphaga: Lymexylidae	1
Arthropoda: Diplopoda	55	Arthropoda: Ins.: Col., Polyphaga: Buprestidae	129
Arthropoda: Paupoda	23	Arthropoda: Ins.: Col., Polyphaga: Hydrophilidae	47
Arthropoda: Symphyla	12	Arthropoda: Ins.: Col., Polyphaga: Sphaeridiidae	30
Arthropoda: Insecta: Colembola	224	Arthropoda: Ins.: Col., Polyphaga: Sphaeritiidae	1
Arthropoda: Insecta: Ephemeroptera	58	Arthropoda: Ins.: Col., Polyphaga: Dascillidae	1
Arthropoda: Insecta: Plecoptera	74	Arthropoda: Ins.: Col., Polyphaga: Trogidae	3
Arthropoda: Insecta: Trichoptera	215	Arthropoda: Ins.: Col., Polyphaga: Geotrupidae	9
Arthropoda: Insecta: Protura	18	Arthropoda: Ins.: Col., Polyphaga: Scarabaeidae	159
Arthropoda: Insecta: Diplura	15	Arthropoda: Ins.: Col., Polyphaga: Lucanidae	7
Arthropoda: Insecta: Zygentoma	2	Arthropoda: Ins.: Col., Polyphaga: Chrysomelidae	322
Arthropoda: Insecta: Mantodea	4	Arthropoda: Ins.: Col., Polyphaga: Cerambycidae	218
Arthropoda: Insecta: Blattodea	17	Arthropoda: Ins.: Col., Polyphaga: Scolytidae	55
Arthropoda: Insecta: Ensifera	85	Arthropoda: Insecta: Lepidoptera	1.622
Arthropoda: Insecta: Hymenoptera	353	Arthropoda: Insecta: Caelifera	70
Arthropoda: Insecta: Ensifera	85		

Source: BiH Fourth Report of to the United Nation Convention on Biological Diversity

Due to the diversity of aquatic habitats, and the occurrence of different kind of watercourses, limnofauna of invertebrates of BiH is presumed as very diverse (50 species of annelids that belong to 19 genera; 8 species of leaches belonging to 7 genera, etc). River crustaceans encompass 31 species, of which 16 are endemic.

For freshwater ecosystems in BiH, the most characteristic is fauna of aquatic insects, with a high level of diversity and endemism. Thus, fauna of mayflies comprise 58 species belonging to 20 genera, of which five are Dinaric, Balkan or Dinaric-alpine endemic species. In the fauna of stoneflies, 74 species from 15 genera have

been described. Water moths are presumed as numerous groups with 215 detected species from 78 genera. 50 of these species possess attributes of endemism, while 24 of them are endemic within the Dinaric distribution range. The most interesting is genus *Drusus*.

It is considered that the most interesting life forms in BiH are those inhabiting Herzegovina caves. The following within this group are endemic: *Eremulus simplex* Willmann, 1940, *Autognata willmanni* Willmann, 1941, *Chamobates petrinjensis* (Willmann, 1940) and *Carabodes bosniae* (Frank, 1965).

Fauna of vertebrates represented by the following groups: fish (Pisces), amphibians (Amphibia), reptiles (Reptilia), birds (Aves) and mammals (Mammalia).

Table A1.4. Fauna of vertebrates in BiH

Animal group	Number of families	Total number of species	Threatened species	Endemic species
Fish	27	119	?	12
Amphibians	7	20	3	6
Reptiles	12	38	11	12
Birds	60	326	97	-
Mammals	19	85	24	9
Total	125	588	135	39

Source: BiH Fourth Report of to the United Nation Convention on Biological Diversity

Fish fauna is relatively well investigated. There are 119 fish species in total. The highest diversity is recognized within the family Cyprinidae (26 genera and 51 species) and Salmonidae (5/8). More than one species comprise families: Acipenseridae (2/7), Mugilidae (1/6), Percidae (4/7), Cobitidae (3/6), Clupeidae (1/3), Gasterosteidae (2/2), Gobiidae (5/7) and Cottidae (1/ 2). From 27 families, 7 live exclusively in the Black Sea and 12 in the Adriatic Sea confluence.

Diversity of amphibians in BiH consists from 7 genera, 21 species and 22 subspecies. Among tail-less, the most abundant is genus *Rana* with 7 species and among caudate amphibians this is genus *Triturus* with 5 species.

Reptiles inhabit freshwater, ponds, marshes and almost all terrestrial ecosystems (especially extreme habitats, such as rocky grassland) belonging to 40 species (45 sub-species) from 12 families. The highest reptile diversity in BiH is evident in the Mediterranean region and supra-mediterranean belt.

Birds diversity comprises 326 species within 60 families and 18 orders. Most of them are stationary (nesting), while migratory ones spend some time in ecosystems of BiH only by seasons (wetlands: Buško Blato, Hutovo Blato, Bardača, lower flow of Drina river etc.). Five endemic species nest in BiH: Pygmy Cormorant (*Phalacrocorax pygmaeus*), Ferruginous Duck (*Aythya nyroca*), Saker Falcon (*Falco cherrug*), White-tailed Eagle (*Haliaeetus albicilla*), Corncrake (*Crex crex*). There are three globally endangered species identified (*Aegypius monachus*, *Pelecanus crispus* and *Aquila clanga*).

The fauna of mammals comprises 85 identified species within 51 genera and 19 families. Most of the species inhabit terrestrial habitats, while a small number inhabit aquatic ecosystems on secondarily or only occasionally. High abundance and diversity characterize the family Vespertilionidae with 20 identified species from 8 genera.

Fungi inhabit both terrestrial and aquatic environment. It is estimated that BiH has between 15,000 – 20,000 mushroom species. However, only 552 species of higher Fungi have been identified. There are many species of

macromycete fungi which have high economic potential and value. They are an important source of income for local communities. The most important among them are: *Morchella* sp., *Boletus* sp, *Cantarellus cybarius*, *Macrolepiota* sp., *Lactarius deliciosus*, *Psaliota procera* and others.

Annex 2. Diversity of Ecosystems in BiH

The ecosystems of the Mediterranean landscape are Maquis, Pseudo-Maquis and Garrigues, ecosystems in the littoral sea belt and ecosystems of rock crevices and screes.

The main groups of ecosystems in modified Mediterranean climates are: ecosystems of supra-mediterranean rocky grassland and xeric meadows, ecosystems of karst caves, holes and abysses and ecosystems of thermophilous woods and shrubs of supra-mediterranean landscapes.

Mediterraneo-montane landscapes have specific ecosystems: ecosystems of mediterraneo-montane sessile and turkey oak woods, ecosystems of mediterraneo-montane frigophilous-thermophilous turkey oak woods, ecosystems of mediterraneo-montane thermophilous flowering ash and turkey oak woods, ecosystems of thermophilous pubescent oak woods, ecosystems of low forests and shrubs with maple and oriental hornbeam, ecosystems of hazel, ecosystems of mediterraneo-montane rocky grassland, ecosystems of mesophilous meadows and ecosystems of rock crevices and screes

In upland hills and mountains of BiH, biodiversity is very rich. Regarding eco climate and geomorphology, this part of BiH is recognized as a highly dynamic area. All geomorphologic structures exceed 900 (1,000) meters above sea level. The main ecosystems are: mixed broadleaved-conifer forests with Illyrian beech, fir and spruce; acidophilous forests with beech, fir and melicgrass; mixed broadleaved-conifer forests with moesian beech and dinarci fir; forests with illyrian beech and autumn moor grass; with moesian beech and autumn moor grass; sycamore and european ash; conifer forests with spruce and fir; balkan alder buckthorn and fir; conifer woods with spruce and Scot's pine; Serbian spruce; mountain heaths with blue berry; with common heather; with birch and european aspen; with hazel and hawthorn; mountain thermophilous meadows with brome; tall herb communities; mountain temperate humid meadows; hygrophilous meadows with illyrian purple moorgrass; raised and blanket bogs; lakes, ponds and marshes; mountain springs and rivulets; hygrophilous woods and shrubs with grey alder and rock crevices and screes.

From the central part of BiH toward the North, there are hilly belts which cover significant area. Habitats are scattered over very dynamic and pronounced relief, up to 900 meters above sea level. The most important is diversity of broadleaved deciduous woods and meadows, where main group of ecosystems are:

- ecosystems of hornbeam and sessile oak in several floristic and geo-pedologic variants (with sedges, dog's tooth violet, bladdernut);
- montane beech woods with alpine barrenwort;
- montane beech woods with melicgrass;
- beech and *Acer obtusatum*;
- black pea and sessile oak;
- acidophilous sessile oak woods.

The mountains of Peri-pannonia (northwestern Kozara, northern Prosara and Motajica, northeastern Trebovac and Majevisa) are the product of specific oro- and geo genesis. The entire area, up to 400 (600) meters above sea level, is splashed by warm pannonian climate which is under strong influence from the continental climate of steppes. The main ecosystems of this landscape are the following:

- Woods with sessile oak and *Ruscus hypoglossum*;
- Sessile oak and silver linden;
- Sessile and turkey oak;

- Italian and turkey oak in northeastern region;
- Beech woods with hart's tongue fern;
- Acidophilus beech - melicgrass woods,
- Woods with hornbeam, sessile oak and butcher's broom and
- Hornbeam, sessile oak and bladdernut.

Today, besides the significant area under hygro-mesophilous meadows, substantial woodland area is converted into agricultural ecosystems.

The pannonian area of BiH takes the lowest position (between 100 and 200 meters above sea level). The ground is more or less flattened with deep alluvial kind of soils, pseudo-gley and moulder, and high water table. The climate is continental. Warm summers, deuce relief and hydro-geological conditions enabled the emergence of very specific wildlife of the pannonian landscapes.

Plain landscapes of northern BiH are dominated by vast fields covered by cereals, maize, watermelons, different sorts of vegetables and fruits, but also forests of willow, poplar, and common oak.

Beside the landscapes on the horizontal profile, after the highest level of biodiversity and endemism, one specific group of BiH landscapes and ecosystems is recognized. This specific group consists of the following: high mountain landscapes, refugio-relict landscapes of canyons, cliffs and steep slopes, landscapes of karst fields and wetlands of BiH.

The mountain landscapes in BiH differentiate in two major units:

- Sub-alpine belt comprising low woodland and mountain pine woods;
- Alpine belt above mountain pine woods.

The biodiversity of the sub-alpine belt of BiH mountains is dominated by ecosystems: of sub-alpine woods with illyrian beech and sycamore; of acidophilous woods with moesian beech and melicgrasses; of sub-alpine woods with moesian beech and greek maple; of sub-alpine spruce woods with mountain pine and blueberry.

The upper limit of the forest vegetation zone with typical mountain landscape ecosystems include the following: ecosystems of alpine grassland on alkaline ground with elyna and sedges; ecosystems of alpine grassland on acid ground with sedge and rush; ecosystems around snow patches on alkaline ground with silesian willow; ecosystems around snow patches on acid ground with white buttercup; ecosystems of alpine screes on carbonate bedrock; ecosystems of alpine screes on silicate bedrock; ecosystems of carbonate rock crevices; ecosystems of silicate rock crevices; ecosystems with lichens on both carbonate and silicate bedrock.

Refugio-relict habitats represent the most unique in BiH's environment and were created in a stormy process of the Earth's crust formation, geo genesis, and evolution of both climate and living world. Those places have been least altered in a period between pre- and post-glaciations having preserved their natural ecologic values. In these habitats, one can find many tertiary plant and animal species which have endured drastic climate changes in the last glaciations period. These habitats have been a shelter for many plant and animal species during the Ice Age. They are positioned in the basins of Una, Vrbas, Bosna, Drina and Neretva rivers.

Relict pine woods are differentiated on: ecosystems of dalmatian black pine, ecosystems of white-bark pine and ecosystems of illyrian black pine in a series on peridote, serpentine, dolomites and limestone.

Within the group of relict serpentiphytes are: *Halacsya sendtneri* (Boiss.) Doerfl., *Potentilla visianii* Panc., *Fumana bonapartei* Maire et Petitm., *Haplophyllum boissierianum* Vis. et Panc., *Gypsophila spergulaefolia* Gris. f. *serbica* Vis. et Panc., while dolomitophytes are: *alyssum* (*Alyssum moelendorffianum*), thyme (*Thymus aureopunctatus*) and *acinos* (*Acinos orontius*).

Today, in the canyons of Una, Vrbas, Bosna, Drina and Neretva, endemic and refugial-relict ecosystems are still present which are in syntaxonomic view belonging mostly to *Asplenietea rupestris* (H.Meier) Br.-Bl. 1934 and *Thlaspeetea rotundifoliii* Br.-Bl. 1947.

Karst fields are another unique phenomena that reflect specific patterns of the Earth's crust development. It is a specific relief with special, mainly underground, water circulation ongoing within soluble rocks (limestone, dolomite, and tuff). Karst fields of BiH are differentiated in several groups, following the extension direction of Dinaric Alps. Many of them are endemic centers of flora and fauna of BiH. The largest of them (surface of 400 square kilometers) is Livanjsko field, where specific conditions brought together very different types of ecosystems. Here, especially in Ždrlovac area (field's northwestern part), are ongoing post-glacial processes of alkaline bogs formation. The unique type of hydromorphous soil which occurs here, planohystosol, is vitally important for the survival of wilderness in swamps.

Rare plant species on karst fields are: *Helleborus hercegovinus*, *Ranunculus croaticus*, *Corydalis leiosperma*, *Hesperis dinarica*, *Rhamnus intermedius*, *Bupleurum karglii*, *Athamanta haynaldii*, *Scrophularia bosniaca*, *Onosma visianii i druge*, while to the category of vulnerable belong: *Salvia bertolonii*, *Utricularia vulgaris*, *Scilla litardierei*, *Narcissus radiiflorus*, *Iris illyrica* etc.

It is necessary to point out that the rocky fields play an integral part in the path of migratory birds. Even globally threatened bird species are finding their habitats here, such as *Anthy nyroca*, *Aquila pomarina*, *Falco Neumann*, *Crex crex* and related species.

Wetlands, which are often with local character in BiH, are induced by specific orographic and edaphic conditions. At present, that kind of ecosystems in BiH occur along large watercourses (Una, Vrbas, Bosna, Drina, Neretva) with hygrophylous woods and shrubs of willow, alder, purple and marsh willow.

On BiH's Dinaric Alps emerges a special kind of wet habitat around springs and brooks. On some of these places one can find bog ecosystems.

At lower altitudes low alkaline peatlands exist, while in the area of dark coniferous forests (at an altitude over 1,000 m) raised peat bogs are dominated by mosses karst.

Special wetland ecosystems are developed around mountain lakes of BiH's Dinaric Alps (Šatorsko, Kukavičko, Rastičevsko and Turjača on plateau of Kupres, Prokoško jezero on Vranica Mountain, Blatačko jezero on Bjelašnica Mountain, Idovačko jezero on Raduša Mountain, Blidinje jezero in Dugo Polje between Čvrsnica Mountain and Vran Mountain, Uloško jezero on Crvanj Mountain, Boračko jezero beneath Prenj Mountain, Veliko, Blatno, Crno and Bijelo jezero on Treskavica Mountain, Kotlaničko, Orlovačko, Crno, Bijelo, Štirinsko, Kladopoljsko, Donje Bare and Gornje Bare on Zelengora Mountain).

Annex 3. Biodiversity Trends in BiH

Results of the analysis carried out within the BiH 4th Report to BDC is presented in Table A3 where it is shown that conversion of habitats, followed by overexploitation of resources and pollution, represent the most intensive pressures on biodiversity. In the group of ecosystems under intensive processes of habitat conversion the majority of ecosystems belong to specific landscapes of BiH, such as: ecosystems of Sub-alpine grassland on carbonate, Sub-alpine grassland on acid ground, meadows on karst fields, Sub-mediterranean rocky-grasslands and karst, marshes and wetlands, fresh waters, polydominant refugial communities, endemic pine forests etc.

Table A3. Intensity and trend of pressures on various types of ecosystems (evaluated as increasing, no change in trend or decreasing)

Intensity and trend of pressure	Conversion of habitats	Climate change	Invasive species	Unsustainable use	Pollution
Ecosystems of rock crevices within Mediterranean landscapes	→	↗	↗	↗	→
Ecosystems of rock crevices within continental landscapes	↗	↗	↗	↗	→
Ecosystems of rock crevices within alpine landscapes	→	↑	→	→	→
Ecosystems of screes	→	↑	→	→	→
Ecosystems around snow patches	→	↑	→	→	→
Ecosystems of alpine grassland on carbonate	→	↑	→	→	→
Ecosystems of Sub - alpine grassland on carbonate	↗	↑	↗	↗	↗
Ecosystems of alpine grassland on acid ground	→	↑	→	→	→
Ecosystems of alpine shrubs	↗	↑	↗	↗	↗
Ecosystems of raised bogs	↗	↗	↗	→	→
Ecosystems of xerophilous grasslands within continental landscapes	→	↑	→	→	→
Ecosystems of mesophilous meadows of continental valleys	↗	↗	↗	→	↗
Ecosystems of mesophilous meadows of continental valleys	↑	↗	↑	↑	↑
Ecosystems of mesophilous meadows of inner mountains	→	↗	↗	↘	→

Ecosystems of meadows on karst fields	↑	↑	↑	↑	↗
Ecosystems of hygrophilous meadows within continental landscapes	↗	↗	↑	↑	↑
Ecosystems of hygrophilous meadows within pannonic landscape	→	↗	↑	→	↗
Ecosystems of Mediterranean wetlands	↑	↗	↗	↑	↑
Ecosystems of brakish waters	↗	↗	↗	↑	↑
Ecosystems of Mediterranean rocky-grasslands and karst	↗	↗	↗	↗	↗
Ecosystems of sub-Mediterranean rocky-grasslands and karst	↑	↗	↑	↗	↑
Ecosystems of mediterraneo-montane rocky-grasslands and meadows	↗	↗	→	→	→
Ecosystems of rocky-grasslands and serpentine	↗	↗	↗	↗	↗
Ecosystems of sea cliffs	↗	↗	↗	→	→
Ecosystems of littoral sea belt	↗	↗	↗	↑	↑
Ecosystems of blanket bogs	↗	↗	↗	→	↗
Ecosystems of marshes and wetlands	↑	↗	↗	↑	↑
Ecosystems of fresh waters	↑	↗	↗	↑	↑
Ecosystems of riparian areas of fresh waters	↑	↗	↑	↑	↑
Ecosystems with flowering macrophytes	↗	↗	↗	↗	↑
Ecosystems around springs and brooks (rivulets)	↗	↗	→	→	→
Ecosystems of tall herb communities	→	↗	→	↗	→
Ecosystems of Sub-Mediterranean oak forests	↗	↗	↗	↗	↗
Ecosystems of oak forests with continental landscapes	↑	↗	↗	↑	↑
Ecosystems of pannonic oak forests	↗	↗	↗	↗	↗

Source: BiH Fourth Report of to the United Nation Convention on Biological Diversity

Annex 4. Legal Framework for Environment in BiH

Table A4.1 State-level laws related to the environment

BOSNIA AND HERZEGOVINA	
Full name of the Law	Official Gazette of BiH No.
Law on Concessions	32/02
Law on Modifications to the Law on Concessions	56/04
Law on Veterinary Medicine	34/02
Law on Plant Health Protection	23/03
Law on Genetically Modified Organisms	23/09
Law on Protection and Welfare of Animals	25/09
Law on Agriculture, Food and Rural Development of BiH	50/08
Law on Radiation and Nuclear Safety	88/07

Table A4.2 Environmental Laws in the Federation of Bosnia and Herzegovina

FEDERATION OF BOSNIA AND HERZEGOVINA	
Full name of the Law	Official Gazette of FBiH No.
Law on Conditions for and Manner of Carrying Out the Wood-Cutting Activity	27/97
Law on Modifications and Amendments to the Law on Conditions for and Manner of Carrying Out the Wood-Cutting Activity	25/06
Law on Waters	18/98
Law on Waters	70/06
Law on Protection from Ionizing Radiation and Radiation Safety	15/99
Law on Veterinary Medicine	46/00
Law on Forests	20/02
Law on Modifications and Amendments to the Law on Forests	32/03, 37/04
Law on Concessions	40/02
Law on Amendments to the Law on Concessions	61/06
Law on Physical Planning	52/02
Law on Waste Management	33/03
Law on Modifications and Amendments to the Law on Waste Management	72/09
Law on Air Protection	33/03
Law on Modifications and Amendments to the Law on Air Protection	4/10
Law on Water Protection	33/03
Law on Environmental Protection	33/03
Law on Modifications and Amendments to the Law on Environmental Protection	38/09
Law on Nature Protection	33/03
Law on Environmental Fund of FBiH	33/03

Law on Freshwater Fishery	64/04
Law on Inspectorates in FBiH	69/05
Law on Physical Planning and Land Utilization on the Level of FBiH	2/06
Law on Modifications and Amendments to the Law on Physical Planning and Land Utilization on the Level of FBiH	72/07, 32/08, 4/10, 13/10
Hunting Law	4/06
Law on Modifications and Amendments to the Hunting Law	8/10
Law on Waters	70/06
Law on Agriculture	88/07
Law on Modifications and Amendments to the Law on Agriculture	4/10
Law on Una National Park	44/08
Law on Agricultural Land	52/09
Law on Geological Research	9/10

Table A4.3 Environmental Laws in RS

REPUBLIC SRPSKA	
Full name of the law	Official Gazette of RS No.
Law on Waters	10/98, 51/01
Law on Water Protection	53/02
Law on Forests	19/94
Law on Environmental Protection	53/02
· Law on Modifications and Amendments to the Law on Environmental Protection	109/05, 29/10
· Law on Modifications to the Law on Environmental Protection	41/08
Law on Environmental Protection (Clarified Text ¹⁶)	28/07
Law on Nature Protection	50/02
· Law on Modifications and Amendments to the Law on Nature Protection	34/08
Law on Air Protection	53/02
Hunting Law	4/02
Law on Waste Management	53/02
· Law on Modifications and Amendments to the Law on Waste Management	65/08
Law on Environmental Fund	51/02
· Law on Modifications to the Law on Environmental Fund	53/07
Law on Physical Planning	84/02
· Law on Modifications to the Law on Physical Planning	14/03, 112/06, 53/07
Hunting Law	4/02
· Law on Modifications and Amendments to the Hunting Law	34/08
Law on Concessions	25/02
· Law on Modifications and Amendments to the Law on Concessions	91/06, 92/09
Law on Natural Parks	21/96

¹⁶ The clarified text of the law or another act includes only integral text of the law/act.

· Law on Modifications and Amendments to the Law on Natural Parks	74/05
Law on Agricultural Land	14/04
Law on Organic Food Production	75/04
· Law on Modifications and Amendments to the Law on Organic Food Production	71/09
Law on Geological Research	51/04
Law on Protection from Non-Ionizing Radiation	2/05
Law on Waters	50/06
· Law on Modifications and Amendment to the Law on Waters	92/09
Law on Agriculture	70/06
· Law on Amendments to the Law on Agriculture	20/07
· Law on Modifications to the Law on Agriculture	86/07
· Law on Modifications and Amendments to the Law on Agriculture	71/09
Law on Agricultural Land	93/06
· Law on Amendments to the Law on Agricultural Land	86/07
· Law on Modifications and Amendments to the Law on Agricultural Land	14/10
Law on Veterinary Medicine in RS	42/08
Law on Forests	75/08
Law on Genetically Modified Organisms	103/08
Law on Protection and Welfare of Animals	111/08
Law on Nature Protection (Clarified Text)	113/08
Law on Chemicals	25/09
Law on Plant Health Protection in RS	25/09
Law on Biocides	37/09
Law on Energy	49/09
Hunting Law	60/09
Law on Fishery	4/02
· Law on Modifications and Amendments to the Law on Fishery	58/09
Law on the Means of Plant Protection	52/10
Law on Agriculture	52/10
Law on Physical Planning and Construction	55/10

Table A4.4 Environmental Laws in Brcko District

BRCKO DISTRICT	
Full name of the law	Official Gazette of BD No.
Law on Air Protection	25/04
· Law on Modifications to the Law on Air Protection	19/07
· Law on Modifications and Amendments to the Law on Air Protection	1/05, 9/09
Law on Environmental Protection	24/04
· Law on Modifications to the Law on Environmental Protection	19/07
· Law on Modifications and Amendments to the Law on Air Protection	1/05, 9/09
Law on Concessions	41/06

· Law on Modifications and Amendments to the Law on Concessions	19/07, 2/08
Law on Physical Planning and Construction	29/08
Law on Freshwater Fishery	35/05
· Law on Modifications and Amendments to the Law on Freshwater Fishery	19/07
Law on Forests of Brcko District BiH	14/10
Law on Waste Management	25/04
· Law on Modifications to the Law on Waste Management	19/07
· Law on Modifications and Amendments to the Law on Waste Management	1/05, 2/08, 9/09
Law on Nature Protection	24/04
· Law on Modifications to the Law on Nature Protection	19/07
· Law on Modifications and Amendments to the Law on Nature Protection	1/05, 9/09
Law on Agricultural Land	32/04
· Law on Modifications to the Law Agricultural Land	20/06, 19/07

Table A4.5. Multilateral agreements in the area of environment in BiH

Convention		Signed	Signed at	Status	Official Gazette
1.	Convention on Public Participation, Access to Information and Access to Justice in Environmental Matters (AARHUS)	25.04.1998	Aarhus Denmark	ratification 15.09.2008.	BiH-MU 8/08
2.	The Convention on Environmental Impact Assessment (EIA) in Trans-boundary Context (ESPOO)	25.02.1991	Espoo Finland	ratification 14.03.2010.	BiH-MU 8/09
3.	Convention on the Trans-boundary Effects of Industrial Accidents	17.03.1992.	Helsinki Sweden	ratification in progress	-
4.	United Nations Framework Convention on Climate Change (UNFCCC)	13.06.1992	Rio de Janeiro Brazil	ratification 20.07.2000.	BiH 19/00
6.	Kyoto Protocol (KP)	01.12.1997.	Kyoto Japan	ratification 22.04.2008.	BiH-MU 3/08
7.	Convention on Long-Range Trans-boundary Air Pollution (CLRTAP)	13.11.1979.	Geneva Switzerland	succession 06.03.1992.	Sl. list SFRJ-MU 11/86 i R BiH 13/94 (source: NEAP BiH)
8.	Protocol to the 1979 Convention on Long-Range Trans-boundary Air Pollution on Long-Term Financing of the Co-operative Program for	28.09.1984.	Geneva Switzerland	ratification	Sl. list SFRJ-MU 2/87 i R BiH 13/94

	Monitoring and Evaluation of the Long Range Transmission of Air Pollutants in Europe (EMEP)				(source: NEAP BiH)
9.	Vienna Convention for the Protection of the Ozone Layer	22.03.1985.	Vienna Austria	succession	Sl. list SFRJ-MU 1/90 i R BiH 13/94 (source: NEAP BiH)
10.	Montreal Protocol on Substances that Deplete Ozone Layer	16.09.1987.	Montreal Canada	succession	Sl. list SFRJ-MU 16/90 (source: NEAP BiH)
11.	London Amendments and Adjustments to the Montreal Protocol on Substances that Deplete the Ozone Layer	29.06.1990.	London United Kingdom	ratification 08.2003.	BiH-MU 8/03
12.	Copenhagen Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer	25.11.1992.	Copenhagen Denmark	ratification 08/ 2003.	BiH-MU 8/03
13.	Vienn amendments to the Montreal Protocol on Substances that damage the ozone layer	1985.	Vienna Austria	ratification 08/2003.	BiH- MU 8/03

Annex 5. List of Protected Areas

Protected Area	Category	IUCN Category	
Bardaca	Special Reserve	Not known	Terrestrial
Bozurevac	Strict Nature Reserve	Not known	Terrestrial
Crni izvor rijeci Uncu	Nature Monument	Not known	Terrestrial
Crno jezero na Treskavici	Nature Monument	Not known	Terrestrial
Durmisevica	Managed Nature Reserve	IV	Terrestrial
Gastilja	Strict Nature Reserve	Not known	Terrestrial
Hutovo Blato	Special Reserve	IV	Terrestrial
Janj	Managed Nature Reserve	IV	Terrestrial
Kanjon Rakitnice	Landscape Park	Not Known	Terrestrial
Kozara	National Park	V	Terrestrial
Lom	Managed nature reserve	IV	Terrestrial
Mastna Luka	Strict Nature Reserve	IV	Terrestrial
Novo brdo	Strict Nature Reserve	Not known	Terrestrial
Panjak	Strict Nature Reserve	Not known	Terrestrial
Perucica	Managed Nature Reserve	IV	Terrestrial
Plistina-Igrisnik	Strict Nature Reserve	Not known	Terrestrial
Plijesivica	Managed Nature Reserve	IV	Terrestrial
Prokosko Jezero	Nature Monument	Not known	Terrestrial
Rijeke Stavnje	Nature Monument	Not known	Terrestrial
Rujiste	Strict Nature Reserve	IV	Terrestrial
Satorsko Jezero	Nature Monument	Not known	Terrestrial
Sokolina	Strict Nature Reserve	Not known	Terrestrial
Strbacki Buk	Nature Monument	Not known	Terrestrial
Strugovi	Strict Nature Reserve	Not known	Terrestrial
Stula-Karaula	Strict Nature Reserve	Ib	Terrestrial
Sumski predjel Bukov Dol	Managed Nature Reserve	IV	Terrestrial
Sutjeska	National Park	Not known	Terrestrial
Tisovljak	Strict Nature Reserve	Not known	Terrestrial
Trebevic	Nature Monument	Not known	Terrestrial
Veliki Stolac	Strict Nature Reserve	Not known	Terrestrial
Veliko jezero na Treskavici	Nature Monument	Not known	Terrestrial
Viogor-Sahdani	Strict Nature Reserve	Not known	Terrestrial
Bliha waterfall	Nature Monument	Not known	Terrestrial
Jajce waterfall	Nature Monument	Not known	Terrestrial
Zuca ribnica	Managed Nature Reserve	IV	Terrestrial

Annex 6. Detailed description of existing and proposed protected areas in BiH

1. Igman-Bjelasnica-Treskavica-Visocica Protected Area

The proposed Igman-Bjelasnica-Visocica National Park is situated in central BiH and within the Federation of BiH at latitude 43°30'05" – 43°50'03" and longitude 17°58'12" – 18°24'33". It is located within the administrative boundaries of Sarajevo Canton and Herzegovina - Neretvanski Canton. The main entrance to the site is located 15 km SW of Sarajevo. The area comprises three main mountain massifs (Igman, Bjelasnica, and Visocica) formed largely of Triassic limestone with dolomite to the west. The area lies between 495 m above sea level (Vrelo Bosne) and 2,067m (at the summit of Mt. Bjelasnica). The area is largely mountain plateau, with widespread karst features and some glacial phenomena. It is bordered and dissected by deeply incised river canyons including those of the Rivers Rakitnica and Neretva. The area proposed within this project will extend to approximately 85,000 ha and is located wholly within the boundary of the FBiH.

According to a study of European forest cover by UNEP-WCMC (2000) and CORINE II data, five forests types occur on Igman-Bjelasnica-Visocica these are: F2 Mixed Oak-Ash forests (*Fraxinus excelsior*, *F. angustifolia*, *Quercus robur*, *Ulmus glabra*, *Quercus petraea*); F3 Mixed Oak-Hornbeam forests (*Carpinus betulus*, *Quercus robur*, *Q. petraea*, *Tiliacordata*) ; F5 Beech and mixed Beech forests (*Fagus sylvatica*, *F. moesiaca*, *Abies alba*); K1 Pine forests and woodlands (*Pinus sylvestris*, *P. nigra*, *P. pinea*, *P. halepensis*, *P. brutia*, *P. pityusa*, *P. heldreichii*); C(DI) Dinarian Mountain Pine Scrub group.

On a European scale, the Beech and mixed Beech forests (F5), and the mixed Oak-Hornbeam forests (F3) are still amongst the most extensive types despite having suffered the greatest absolute loss, which is also fairly high in proportional terms. They also have amongst the largest protected areas, but because of their large current areas, these proportions are low. Pine forests and woodlands (K1) are moderately extensive (although note that natural stands of *Pinus nigra* and *P. heldreichii* are fairly rare) and have undergone less loss, but they are also only moderately protected in absolute and percentage terms. Mixed Oak-Ash forests (F2) have undergone significant loss particularly in proportional terms (where only continental Willow alluvial forests (*Populus nigra*, *P. alba*, *Salix alba*) and Tamarisk alluvial scrub (*Tamarix ramosissima*) suffered worse percentage loss) but the amount protected is still very low. Finally, Dinarian mountain Pine scrub (C(Di)) is naturally a very rare European habitat, which apparently has undergone no loss (although the area potentially afforested under this type is too difficult to be determined). Internationally, only 24 km² is protected although because of its rarity, this is proportionally quite high (UNEP-WCMC 2000). Located within the area are remnant virgin forest at Durmisvica amounting to 50 ha and areas of forest in Rakitnice Canyon and other areas with poor accessibility. Such virgin forests are rare in a European context and therefore of great value. The biological information base for the area is deficient with most available information centered on Igman and Bjelasnica Mountains and the Rakitnica Canyon. Information for the wider area including Visocica is much less available. There is no large scale vegetation map available for the area. The fauna lists are incomplete in both the vertebrate and non-vertebrate groups and undertaking the necessary survey work is considered a priority. However, based on the information which is available, a list of 3,000 plant species is known to be present. This represents 66% of all species recorded in BiH. Of these species, the area does support at least 32 globally-threatened plants and at least 430 endemic species many of which are montane/glacial relict species. Of

these, 194 are endemic to BiH and 61 endemic to the Dinaric Alps. Important fauna include a number of globally threatened bats and rodents, and larger mammals include Brown Bear, Wolf, Lynx and Chamois. A variety of birds including the globally threatened Corncrake, and European threatened species including Griffon Vulture, Golden Eagle, Peregrine Falcon, Eagle Owl, Rock Partridge, Capercaillie, Hazlehen and various woodpeckers; and the globally threatened Meadow Viper and Cave Salamander, both categorized as endangered. The Igman-Bjelasnica-Visocica area has long been inhabited and contains remains from the prehistoric period onwards. There is evidence to suggest that the area was completely covered by forest up to the 14th century and that subsequent actions cleared land for grazing pastures, the Bjelasnica mountain plateau representing the farthest borderline of Herzegovina and therefore the furthest area utilized by the cattle breeders from Herzegovina. Evidence of Roman occupation is found along with tombs from II – VI centuries. Clearly by the medieval period the area was well populated given the number of necropolis dating from that period. All present settlements of this area are young in their origin and they date from the period of the second half of the 19th century. They were created by gradual transition of temporary settlements of farmers into permanent settlements. The area was significantly affected by the 1990's conflict and many villages sustained heavy damage. However, many archaeological remains and artifacts remain which make the area important in cultural terms and requiring added protection. The area under consideration for designation as a PA has a history extending back through approximately thirty years of previous feasibility studies and proposals.

A National Park Igman- Bjelasnica-Visocica appears on a list of potential new national parks in the territory of BiH made by the IUCN dated 1984 and this proposal was re-affirmed in the Physical Plan of BiH dated 1986 which is still currently in force. In 1986, the City of Sarajevo adopted the Physical Plan for the period 1986 – 2000 (extended to 2015). Within the Plan it was proposed to designate a 'Regional Park SARAJEVO'. This comprised of the mountainous area around the city and totaled 1,092 km². This Regional Park included (according to the nomenclature of the period) National Park Treskavica (5.810 ha), Nature Park Bjelasnica (25.402 ha), Visocica (2.625 ha), Nature Resort Rakitnica (2.137 ha). However, due to hostility from the forest industry at that time, these proposals were largely unaccomplished. Various other studies have been undertaken by specialists in BiH to propose and define protected areas within the vicinity of Igman-Bjelasnica, most notable of these was a proposal to include an area comprising of Igman, Bjelasnica, Treskavica, the Rakitnica Canyon and the northern edge of Visocica (Lakusic et al. 1986). Redzic et al. provided justification for protecting an area whose southern boundary was defined by the border of Sarajevo Canton and thereby omitted the Rakitnica Canyon (Redzic et al. 1999), and Fukarek suggested a wider area including the Rakitnica Canyon and parts of Treskavica but draws the southern and eastern boundaries according to the entity boundary with the Republika Srpska (HTS 2001).

In 2001, the European Union / World Bank National Forestry Programme undertook the preparation of a Feasibility Study for Igman-Bjelasnica National Park. This study proposed a larger area than previously considered which measured 117,700 ha and included the mountains of Igman, Bjelasnica, Visocica and Treskavica. The boundary selection was based on the premise that the integrity of eco-systems should not be compromised by artificial political boundaries. This approach was based on the IUCN criteria for maintaining the integrity of eco-systems and by defining the proposed parks borders by physical attributes. Thus the area proposed in the 2001 study provided a continuous area of mountain massifs and forest eco-systems not significantly fragmented by human infrastructure and activities. These boundaries further extended the ecological network in BiH by abutting, in the southeast, the Zelengora and Lelija plateaux, which were protected as a hunting zone under the management of the Sutjeska National Park, and in the southwest bounded by the Prenj and Cvrsnica massifs. Also in June 2001, the World Bank / EU funded 'Study on the

Effect of Forestry on Biologically Sensitive Areas' was published by the Institute for Protection of Cultural, Historical and Natural Heritage. This institute is responsible for proposing protected areas within the Federation. As part of this study a proposal was made to establish a National Park Igman Bjelasnica covering an area of 62800 ha. The boundaries given for this proposal broadly follow those of the 2001 Feasibility Study insofar as the proposed area is within the Federation. Land is excluded within the Republika Srpska, and the boundaries have been pulled back from recognizable natural and physical features, thus the 'on ground boundaries' for this proposal will be unclear. The final boundaries for the National Park will be determined through the participatory process during the development stages of the proposed National Park and Natural Resources Management Plan. In 1984 the Winter Olympics were held in Sarajevo. The Igman-Bjelasnica area hosted a number of events and ski runs and cableways were constructed on Bjelasnica Mountain. This required the felling of areas of forest for their construction. The reconstruction of the 1984 Winter Olympics tourism resort center on Igman and Bjelasnica is ongoing. This includes the construction of new hotels and apartment buildings within the main skiing center at Babin Dol. According to FBiH Law, because the proposed PA extends across two Canton areas, designation of the PA will be undertaken at the state level, the requirement for a feasibility study to be undertaken prior to designation has been complied with, and a statement of intent has been made by the FBiH Parliament to declare Igman-Bjelasnica-Treskavica-Visocica as a protected area. According to estimates, about two thirds of the land in the proposed park area will be in state ownership, and one third in private ownership. The arable land, meadows and orchards are almost completely in private ownership. The pastures, forests and infertile land are mostly in state ownership. The designation of the National Park will not affect the current ownership pattern of private land. It is intended that state land be passed to the National Park for management purposes after an initial two year interim period from declaration of the National Park Law. There are no plans to privatize land within the proposed park area and no data exists regarding land previously nationalized and which may be subject to privatization laws in the future. The following development scenario for the PA is considered achievable:

The PA Igman-Bjelasnica-Trepskavica-Visocica (Landscape Park) will be categorized overall as IUCN V with other categories protecting individual natural and cultural sites. A zoning plan will be developed as part of the management plan process which will identify, where appropriate, core areas etc. Emphasis will be placed on maintaining scenic landscapes and traditional land use patterns (cultural landscape). Within the PA, specific connecting corridors will be identified to link sites of high ecological value within the park. The PA will also serve as a cornerstone in the national/international network specifically linking the Sutjeska N.P. and associated hunting area Zelengora with the proposed PA Prenj-Cvrtnica-Cabulja. The proposed area is a "living landscape" with a large resident population. As a landscape park, maintaining the cultural attributes as well as scenic value will be important. This will require, on the one hand, a development control structure to ensure that the erosion of cultural character as a result of building activities which do not conform to the local vernacular style is prevented and all building and other development activities such as skiing facilities are undertaken in a sensitive manner. To achieve a sensitive development approach and support local economic development, the establishment of the Eco-Activity Incubator along with developing links and partnerships with existing NGO activities such as Foundation for the Protection of Bjelasnica, Igman Treskavica and Rakitnica and the Foundation for Sustainable Development are considered to be essential.

Overall, there would be a continuation of normal land use activities but with some restrictions. For example, the identification and management of wildlife corridors may require some forest areas to be taken out of commercial production. Greater emphasis on sustainable forest management will be required in remaining commercial areas (these could be used as examples of good forest management.) Areas contaminated with mines will remain out of production for the foreseeable future. Encouragement will be given to maintain

traditional farming activities and/or new farming activities which are “ecologically friendly” and which maintain landscape character. Support, regulations/local agreements to regulate livestock numbers in sensitive areas will be considered as a part of the management plan activities. Igman Flagship Project will concentrate on activities that encourage maintenance of the land use practices, which have maintained the traditional landscape and its ecological richness. As a result of agricultural activities over a prolonged period, the pattern of the landscape has been shaped and cultural values created. The prolonged maintenance of traditional agricultural practices has created rich ecosystems such as wild flower meadows along with their associated invertebrate species, especially Lepidoptera of which there are 127 species recorded. Within the Feasibility Study 2001, it was proposed that two centers would be established which would provide knowledge on traditional farming techniques needed to maintain the diversity of landscape ecology in the PA. These centers would serve as resource centers for the study of the traditional agriculture of the area, and associated ecology. They would provide a living ‘data bank’ of old varieties of agricultural livestock (Pramenka and Humnjacka sheep and Busha cows). Local people will be encouraged through seminars, courses and on farm visits to undertake tasks in their day to day activities which will ensure the conservation of nature for the future. This may include help with marketing organic products through eco-labeling or other means. Visitors, tourists, school groups etc. to the centers would be able to experience aspects of past rural life in the area through interpretation and a ‘living’ museum encounter. The center would also provide an outlet for local people to sell food products and crafts produced in the 40 local areas. One center would be established in the village of Lukomir and a second in Ledici. These two centers represent the principal traditional farming types of the areas, transhumance farming in Lukomir and permanent farming in Ledici. Historically, the area is important for recreational activities, especially skiing. Redevelopment/refurbishment of existing facilities is not incompatible with the landscape park designation, but expanding secondary facilities such as guest houses etc. may have impacts that need to be determined. As a landscape park, the area could absorb a significant number of “managed” visitors undertaking a wide range of activities. During the development of the management plan process, the various land uses and recreational activities with associated infrastructure will be linked to a zoning plan and carrying capacity study. A strategically placed visitor center will play an important role in visitor management, including spreading activities into specific areas, interpretation and education.

2. National park Una

The Law on Una National Park was adopted in 2008. The PA Una is located in the North-West of BiH near Bihac and comprises in general the upper flow of the Una River. Una springs from the northeast side of the Strazbenica Mountain in Croatia and flows through the following places and towns in BiH: Martin Brod, Kulen Vakuf, Ripac, Bihac to Dubica. Then Una leaves BiH and flows into the Sava River near Jasenovac in Croatia. The main tributaries are the Unac, Sana, Klokot and Krusnica rivers. The highest Mountain in the area is Pljesevica that rises up to 1,657 m above sea level and straddles the border between BiH and Croatia. The area of PA Una is approximately located as follows:

north: 44° 44' 33" N; 15° 57' 58" E

south: 44° 21' 02" N; 16° 13' 05" E

west: 44° 43' 46" N; 15° 54' 12" E

east: 44° 23' 46" N; 16° 20' 42" E

The area covered is approximately 19,800 ha and lies within the Una Sana Canton (in the municipality of Bihac). The biodiversity value of PA Una is characterized by a high number of endemic and relict species. Unsustainable exploitation of natural resources such as forests, non-timber forest products, grazing, land mines and planned hydropower stations with dams endanger this unique biodiversity which contains over 170 types of medicinal herbs; a rare plant, *Campanile unensis*, the Una blue-bell, was named after the Una Rivers bright blue colors. The particular value of this area is "Strbacki buk", a unique waterfall and cascade arising from the effects of biological, chemical and physical factors.

Furthermore, Una is famous for Tufa, a mineral deposit formed by the deposit of calcium carbonate from mineral rich water. Calcium carbonate is the same mineral that makes up limestone. Deposits are formed around springs that can range from cold to hot. Tufa is described as spongy or cellular and is characterized by numerous, irregular, open spaces resulting in a relatively lightweight rock. Minute amounts of other minerals result in colors of grey, buff, yellow and red. A layered or bedded appearance is not uncommon resulting from the precipitation of calcium carbonate in shallow pools on terraces. The calcium that forms tufa originates from two primary sources. The first is from areas underlain by limestone rock. In areas, groundwater dissolves the limestone forming calcium rich solutions that upon surfacing become springs that can rapidly precipitate calcium carbonate and tufa deposits. The second source is from springs that can originate from considerable depths and derive their calcium from dissolution of minerals from virtually any rock type. Tufa rock was utilized for thousands of years and is now almost extinct. Many buildings in Rome, BiH and elsewhere in Europe are still standing that have utilized this rock for construction because it is light weight and easy to cut and handle. This porous rock creates insulation from hot weather as well as cold weather.

Additionally, the area is rich in cultural heritage and within the boundaries of the foreseen PA will be the historical sites of Ostrovica and Havalala and Rmanj monastery in Martin Brod. The area also includes important karst features, including submerged karst cave systems. In the 1960's the Former Yugoslavian Government, supported by the initiative of the association "Unski Smaragdi" (the Una Emeralds), tried to register a part of the Una valley in the UNESCO World Heritage List but did not succeed due to missing environmental assessments and studies. Later, the Institute of Cultural, Historical and Natural Heritage Protection of Bosnia and Herzegovina made a proposal for starting the procedure for the Una river area to be established as a Nature Park.

Within the FMPAP, a management plan (MP) for NP Una was prepared. The MP defines the vision of NP Una, the main objectives of Una National Park, permitted activities in protection zones and an action plan for next ten years. The MP also defines the responsibilities and funding sources for identified activities. One of the priorities defined in the MP is the establishment of the functional public enterprise NP Una. The public enterprise was formally established in 2008. The decision was published in the Official Gazette of FBiH No. 71/08 by Federation. The Supervisory Board for NP Una is already functional and participated in the MP preparation. The MP defines development of this area through protection and conservation of biodiversity values of this area as priority.

The Municipality Bihac and local communities strongly support the PA idea and are willing to provide premises for administration and a visitor center.

MP suggests creation of a link towards the Plitvice National Park in Croatia. However, co-operation does exist

between the two governments with regard to these PAs and establishing the links is considered to be feasible by both parties. Una has a long tradition in water based activities, such as canoeing, kayaking and rafting, and developing the water theme will be a strong component of management. Small water mills have an old tradition in Una Canyon. The Una is also considered to be an important rafting center and is also a popular tourist destination.

3. Sutjeska National Park

SNP is situated in the forested, mountain region, in the South East of entity Republic of Srpska, in the border between BiH and Monte Negro. By car, it is two hours to Sarajevo and 3 hours to Dubrovnik. The Park is extended on about 17,250 ha of hilly terrain and is situated at approximately 43°19` north latitude and 18°37` east longitudes. Mountains that surround the Park are: Maglić (2.386 m-the highest peak in BiH), Volujak (2.337 m), Zelengora (2.014 m), Lelija (2.032 m) and Vučevo (400-1.700 m), and they are part of Dinaridi mountain range (or Dinaric Alps). East from the Park are Piva mountains and canyon of Piva river, as well as the Tara canyon.

Beautiful stands of fir, beech and spruce which standing up to 1000 cubic meters per hectare, and over 50 meters in height. Not only according to volume and height, but also according to structure, appearance, and beauty in general, these stands in Perućica stream basin are not equal to the forest stands of Dinaric Mountains. Those were the main reasons for these forests, with a surface of 1,234 ha, by the decision of the Government of the People's Republic of Bosnia and Herzegovina on May 17, 1952 to be "extracted from the regular forest management as forest objects for scientific research and education purpose", and by the decision of the State Bureau (Zemaljski zavod) for the Protection of Culture Monuments and National Rarities of BiH from June 03, 1954 to be "put under the state protection as nature reserve".

In 1962, SNP was established with 17,250 ha and it is the most important PA of BiH. A management plan (MP) was created in 2003 but due to limited resources by manpower and finances, only part of this plan has been implemented so far. The project will assist in implementing many issues outlined in the management plan. Tara Canyon is the deepest, longest and visually the most spectacular canyon in Europe. Proposals to extend boundaries of Sutjeska N.P. along the line of the Tara Canyon and thereby linking with Durmitor N.P. in Montenegro to create an international cross border link is recommended in the MP. The extension is also a stated IUCN priority in the strategic plan 'Conservation without frontiers - towards a new image for the Balkans'. This new area will be approximately 7,500 ha. As part of the expansion process, a management plan for the extended area will be developed and assimilated into the existing park plan.

Natural characteristics of this area have direct impact on the appearance and distribution of flora and vegetation. Representatives of both continental (hilly and mountain) and sub-Mediterranean (karst) landscapes are present in this area. The climate of this area is suitable for the mix structure of forest vegetation communities, assigned into 4 height vegetation belts: hilly (with beech forests and stands of hop-hornbeam), highland (with beech, fir and spruce forests), premountain (with beech and spruce forests) and mountain (with mountain pine). Twelve basic vegetation zones that are determined in SNP are shown on the special map (see the folder SNP MAPS). Flora of SNP and surroundings are very well researched. From river Sutjeska valley up to the highest tops of Maglić, in the height span of almost 2,000 meters, numerous communities of meadow and forest ecosystems are spread, as well as ecosystems of lathes, rocks, and mountain turfs. One can find in this area almost all flora species of high mountains within the Dinaric mountain system. In SNP, more than 2,600 vascular plant species classified in 670 genus, 123 families, 52 orders and 7 classes are present. Of this

number, 21 species in 11 genera are steno endemic species. Ninety-nine flora species are poisonous and 436 edible. The park is situated in the mountain area well known by the huge number of endemic species and sub species (*Crepis bosniaca*, *Crepis dinarica*, *Achillea serbica*, *Acer heldreichii*, *Orchis bosniaca*, *Eryngium palmatum*, *Oxytropis dinarica*, *Lonicera borbasiana*, *Amphoricarpus autariatus*, *Viola zoysii*, *Teucrium arduinii*, *Sorbus chamaemespilus*, *Iris bosniaca*, *Cerastium dinaricum*, *Knautia sarajevoensis*, *Hesperis dinarica*, *Geum molle*, *Edroianthus sutjeskae*, *Berberis illyrica* etc.).

Within SNP there are localities overgrown with relict Arcto-Alps species *Dryas octopetala* that points on tracks of glaciations on Dinarids. Of special interest are interesting fragments of the community of glacial relict – *Salix serpyllifolia* 2,100-2,300 meters above sea level, where besides the stated species, we also find the rare orchid species *Gymnadenia friwaldii*. On the outermost ranges of Maglić, there are endemic species *Silene balcanica* and *Aubrietia croatica* and in the cracks of vertical rocks of Sniježnica there are communities of *Daphne maliana* with number of rare and endemic species. Besides an extraordinary flora resource, SNP also contains a list of 100 species of edible mushrooms. According to the IUCN Red Data List in SNP, there appears a great number of endangered, sensitive and rare species. Their diversity in the Park is the reflection of diversity of wild flora, which represents their food source. Though there is no comprehensive research, recent observations points to an exceptional number of species (over 30 species of butterflies) within the mentioned order. In SNP, four fish species from two families naturally appear: *Salmo trutta*, *Salvelinus alpinus*, *Tymallus tymallus* (family Salmonidae) and *Phoxinus phoxinus* (family Cyprinidae). The fish population was not carefully studied and so scientific data on life of fish species are rather poor.

In the Park, many endemic species of amphibians and reptiles also exist including three lizard species: *Lacerta horvathi*, *L. mosorensis* and *L. oxycephala*.

114 bird species were recorded in SNP, and they constitute 36% of the total number of known species in BiH. Of these, 61 species live and nest in the Park. 32 species inhabit the Park only during the summer time, but they also build their nests there. 16 species belong to migratory birds passing through the Park in the spring and autumn on their way north/south. 5 species usually appear only in the winter. It is assumed that with systematical observation throughout the year, the final list of bird species in the SNP could reach 150. In the beech and fir forests (the middle height above the sea level around 1,150-1,600 m) the largest number of species was registered, while the smallest number was registered on the petrified habitats. Very recognizable group of species, which are linked to high heights above the sea level and petrified terrains, includes *Alectoris graeca*, *Montofringilla nivalis*, *Prunella collaris*, *Pyrrhocorax graculus*, *Sitta neumeyer* and *Monticola saxatilis*. Bird species with very specific requests concerning the habitat (vertical rocks blocks) is the *Tichodroma muraria*. Two species, *Tetrao urogallus* and *Crex crex*, could be set aside due to specific needs. *Crex crex* is on the list of endangered species in various parts of Europe and is necessary to be protected with special protection measures (IUCN Red List). The list of birds in the SNP includes also nine species from the family Picidae. That number represents 90% of this family in Europe and could be explained by favorable habitat conditions, namely forest ecosystems. Bird species within this family depends on old, ill and dead trees as a source of food as well as the environment for building nests and reproduction. Six orders of mammals founded in the SNP include 36 species and 18 families. In Sutjeska N.P., the project will focus on big mammal conservation, focussing primarily on the large carnivores and bear population as endorsed in the Sutjeska N.P. Management Plan 2003. Experience will be drawn from the work of the WWF Large Carnivore Project in Romania and the European Union LIFE projects from other European countries, including Croatia, Slovenia, Greece and Spain. BiH is an eligible LIFE Third Country and additional support assistance will be sought especially in targeting research and implementation for improving the human-carnivore relations. Developing a

project of this nature will provide a catalyst for the exchange of ideas through meetings, conferences and research among national and international ecologists and scientists to improve the sustainable management of mammal populations throughout the Balkans, and to encourage the protection of internationally threatened species. Furthermore, the wider benefits of establishing conservation based projects of this kind will provide opportunities to develop nature based tourism activities. Similar successful projects which provide benefits to the PAs and local populations have been undertaken by other European countries. These tourism activities will have a strong educational component for both the domestic population and international tourists, utilizing both educational interpretation and providing viewing opportunities to promote the conservation message.

4. Kozara National Park

The Park is located in the NW part of the Republika Srpska, around 50 km west of Banja Luka. It stretches over the territories of the municipalities of Prijedor, Kozarska Dubica and Gradiska, and is bounded with rivers Sava to the north, Una to the West, Vrbas to the east, and Sana to the south. Proclaimed as “Historical Forests of Kozara” in 1957 by the Government of the National Republic of BiH, the Park extends to a total area of 3,494 ha; 3,049 ha are dedicated to commercial forestry, 429 ha are reserved for a tourist development zone and 17 ha for a general development zone. Additional to this is a special hunting area of 16,728 ha.

The development of the Park was based on the historical events of World War II. The memorial complex Mrakovica is one of the tourist attractions. A shifting emphasis towards nature conservation will be the primary management task over the next ten years. Apart from the WWII interest, the area does have important cultural and archaeological remains from prehistoric times, and interesting monasteries and churches that are frequently visited by worshippers and tourists. The area has not been well researched for either flora or fauna, however, a wide range of endemic species have been recorded within the Park boundaries. Less is known about fauna species in zoogeographic terms: Kozara belongs to the Middle-European bio-geographic area and only the occurrence of Viper smodytes is represented from the Mediterranean bio-geographic area. There are no large carnivores permanently resident in the Park. There is currently no active management plan for the National Park, The existing plan dates from 1971, and covers the period from 1971–1990. A Forest Management Plan (Sumskoprivredna osnova) covering the Park area for the period 2002–2012 has been adopted by the RS Government and a Hunting Management Plan (2002-2012) for the hunting area. The plans do not take full account of the conservation interest and follow the traditional forestry utilization approach. The project will fund a ‘New Management Plan for Kozara National Park’. This will refocus activities further towards conservation, education and recreation and will set out a 10 year Action Plan for the Park taking into account the necessity to move away from the reliance of the Park on timber sales and hunting fees towards receiving income from conservation compatible activities such as sustainable forms of tourism. Within the context of the management plan will be a feasibility study for the extension of the park.

Nevertheless the first step must be an extension “within the existing borders” as Kozara NP actually uses 3,049 ha for commercial forestry activities. A reduction of these commercially used forests by 50% was discussed and would be a start to increase the fully protected area and its biodiversity value. Because of the Parks proximity to urban areas, there is an opportunity to develop both educational and recreational activities. Within the Park are a number of recreational facilities, including a hotel complex and lodges, although current use is low and investment is required to refurbish and market these facilities. The flagship WB financed project for Kozara N.P. will be the development of a National Center of Excellence for Nature Protection and Environmental Education. This project will assist with the renovation and conversion of an existing building to a Nature Education Center for schools, further education establishments and a Visitor Center. The center will

consist of classroom space, an indoor nature study area, a small conference facility and public display areas incorporating interactive display and materials. Because emphasis is placed on education and 'nature' recreation activities, facilities within the park to pursue nature based activities will be upgraded, interpretation boards, signed tracks, bird/mammal watching hides and platforms will be developed, marketing and information materials produced and a web page for information and events promoted. To further encourage an appreciation of nature in young people, an area will be set aside for 'land art' activities where school children can work with local and sponsored international artisans.

5. & 6. Janj & Lom Virgin Forests

Janj and Lom forest areas are located in the RS, within the Western BiH Mountains of the inner Dinaric Alps chain. Remnant virgin forests such as these are rare in a European context and therefore of great ecological interest. They have been primarily protected for their scientific value and provide examples of natural forest processes which can offer examples for future research into sustainable forest management techniques for beech/spruce/fir forests in BiH.

Lom virgin forest was declared in 1956 and extends 298 ha. Janj was declared in 1954 and extends 295 ha (the core zone is 57 ha). Both forest areas are located on the entity border with the Federation and forestry activities have impinged on the forest from the FBiH side. Developing co-operation between the two managing forest enterprises to ensure the undisturbed conservation of these areas will be a significant output of this project. Approximately sixty different plant species have been recorded in Janj and Lom. The inventory is incomplete and it is reasonable to expect this number to be considerably higher; therefore seed collection is one of the opportunities for Janj and Lom. The forests also represent permanent or occasional habitat of different mammals and birds, such as Ermine (*Mustela erminea* L.), Squirrel (*Sciurus vulgaris* L.), occasionally Lynx (*Lynx lynx* L.), Brown bear (*Ursus arctos* L.), Roe deer (*Capreolus capreolus* L.) and Hare (*Lepus europaeus* Pall.), Dormouse (*Glis glis* L.), Wolf (*Canis lupus* L.), Fox (*Vulpes vulpes* L.), Grouse hen (*Tetrao urogallus* L.), Hazel hen (*Tetrastes bonasia* L.), Hawk (*Accipiter gentilis* L.) and Peregrine Falcon (*Falco peregrinus* T.). There are a large number of different insects and micro-fauna. In virgin forests, around 30 different fungi are found. It is considered that virgin forest reservations contain a significant amount of genetic variability and therefore additional research will be undertaken as part of the development of the management plan proposed in the BCP. The forests are sensitive to anthropogenic activity. Developing attractions for visitors is very limited. The WB project will provide assistance to the local forest enterprises to train and equip forest rangers, ensure that the forests remain undisturbed from illegal activities and offer a guide service to limited groups. Also studies will be supported to evaluate extension opportunities of these two virgin forests.

Alternative: Zvijezda- Konjuh-Tajan

The area is located as follows: Longitude 18°08'22" – 18°37'02" and latitude 44°04'02" – 44°19'48". The maximum size of this potential PA is 44,200 ha and would cover parts of Sarajevo and Zenica-Doboj cantons. The biodiversity value of this region is characterized by a large extent of karst plateau areas with associated composition of species (watershed of Bosna River). Presently, the area is threatened by an unsustainable exploitation of natural resources (forests, non- timber forest products, grazing, etc.) and land mines.

Annex 7. List of interviewed organizations and people

USAID PROJECTS

Project	Implementer	Interviewed
Fostering Agricultural Markets Activity (FARMA)	Chemonics International Inc.	Bruce Bower, COP
Fostering Interventions for Rapid Market Advancement (FIRMA)	Emerging Markets Group, Ltd.	David King, COP
Enterprise Energy Efficiency (3E)	Advanced Engineering Associates International, Inc	Zoran Morvay, COP
Regulatory and Energy Assistance Project (REAP)	Advanced Engineering Associates International, Inc.	Ognjen Marković, COP
Governance Accountability Project GAP II	Chemonics International Inc.	Meliha Arslanagić, Capital Projects Planning and Implementation Mevludin Hadžić
Women's Business Network	MI-BOSPO Micro credit organization	Elmedina Bećirović, Acting Project Coordinator
Capacity Building of Agriculture Businesses in Drought Adaptation in BiH CPE	Association Centre for Development and Support (CRP)	Alenka Savić, Director
Rural Employment Generation Activity	Partner	Selma Jahić, Assistant Director for Marketing
Sustainable Development of the NGO Sector in BiH	Center for Civil Society Promotion	Aida Daguda, Director
Excellence in Innovation	Academy for Educational Development	Sanscho Ramhorst
Intellectual Property Rights and Trade Capacity Development	Deloitte	Almedina Šuvalija, Chief of Party

COUNTRY INSTITUTIONS AND REPRESENTATIVES

Institution	Representative
Ministry of Foreign Trade and Economic Relation	Nermine Skejovic-Huric, Senior Adviser for Programms and Projects Azra Rogovic-Grubic, Senior Adviser for International Cooperation
FBiH Ministry of Environment and Tourism	Azra Korac, Adviser
Ministry of Agriculture, Forestry and Water Management of the RS	Pero Balotic, Adviser
Regional Environmental Center	Office in Sarajevo
The RS Ministry of Physical Planning, Civil Engineering and Ecology	Ozren Laganin, Adviser