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MONITORING AND EVALUATION SUPPORT ACTIVITY (MEASURE II)

**BOSNIA AND HERZEGOVINA BIODIVERSITY
ANALYSIS AND ADDRESSING THE BIODIVERSITY
NEEDS**

FAA 119 ANALYSIS

February 2020

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BOSNIA AND HERZEGOVINA BIODIVERSITY ANALYSIS AND ADDRESSING THE BIODIVERSITY NEEDS

FAA 119 Analysis

February 2020

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CONTENTS

- LIST OF EXHIBITS.....IV**
- ABBREVIATIONS..... V**
- 1 Executive Summary..... 1**
- 2 Introduction..... 6**
 - Purpose 6
 - Methodology 6
- 3 Country Context..... 7**
 - Biophysical Setting 7
 - Background on Biodiversity Issue 8
- 4 Status of the Country’s Biodiversity 9**
 - Status of Biodiversity Information 9
 - Major Ecosystem Types and Status 10
 - Species Diversity and Status..... 11
 - Genetic Diversity..... 11
 - Status and Management of Protected Areas 12
 - 4.1.1 Protected Areas 12
 - 4.1.2 Natura 2000 Areas 14
 - 4.1.3 Ramsar and IBA Sites 14
 - 4.1.4 Potential Protected Areas 14
 - 4.1.5 Economic potential of the protected area system..... 15
 - Status and Management of Key Natural Resources Outside Protected Areas 16
- 5 Value and Economic Potential..... 16**
 - Value of Biodiversity 16
 - Ecosystem Goods and Services 17
- 6 Legal Framework Affecting Conservation 19**
 - National Laws, Policies and Strategies 19
 - 6.1.1 National Legislation 19
 - 6.1.2 Entity Legislation 19
 - 6.1.3 Cantonal Legislation 20
 - 6.1.4 Strategies and Action Plans 20

International Agreements	20
Government Agencies	22
Conservation Initiatives: Current and Planned Conservation Efforts.....	22
7 Threats and Actions Necessary to Conserve Biodiversity.....	23
Direct Threats to Biodiversity.....	23
Drivers of Threats and Actions Necessary to Conserve Biodiversity	28
8 Extent to Which the Mission Meets Identified Actions Needed	32
9 Recommendations	39
Recommendations Based on Actions Necessary to Conserve Biodiversity	39
Annexes.....	41
Annex A: Literature	42
Annex B: List of Key Informant Interviews (KIIs).....	43
Annex C: List of IP Respondents to the Online Survey.....	45
Annex D: List of FGDs Participants	46
Annex E: Overview of Indicators on Biodiversity Adopted at BiH Level	47
Annex F: Protected Areas in BiH	50
Annex G: Importance of Ecosystems of BiH in Providing Key Services	54
Annex H: Legislative and Strategic Framework.....	55
Annex I: Overview of Multilateral Environmental Agreements Ratified by BiH.....	57
Annex J: Relevant Donors' Activities in a Period 2016-2020.....	60
Annex K: Overview of National Targets and Measures Contained in the NBSAP BiH (2015–2020).....	62

LIST OF EXHIBITS

Figure 1: Map of PAs in BiH	51
Figure 2: Map of Potential Natura 2000 Areas in BiH	52
Table 1: Main Groups of Threats.....	24
Table 2: Actions Necessary Linked to Drivers and Direct Threats.....	29
Table 3: Actions Necessary and Extent to Which Current USAID/BiH Programming and Other Donors' Activities Contribute to These.....	33
Table 4: Recommendations	39
Table 5. List of Key Informant Interviews	43
Table 6. Environmental Indicators Relevant for Biodiversity and UNCBD Within the List of Selected Environmental Indicators in BiH	47
Table 7. National Targets and Proposed Indicators for NBSAP BiH (2015 – 2020)	48
Table 8. Current Protected Areas in BiH.....	50
Table 9. Ramsar and IBA Sites in BiH.....	52
Table 10. Planned PAs in FBiH	53
Table 11. Importance of Ecosystems of BiH in Providing Key Services	54
Table 12. MEAs that BiH Became a Party to.....	57
Table 13. MEAs that BiH Ratified by 2016	57
Table 14. MEAs Ratified After 2016 and Planned to be Ratified.....	59
Table 15. Relevant Activities in a Period 2016-2020	60
Table 16. National Targets and Measures Contained in the NBSAP BiH (2015–2020)	62

ABBREVIATIONS

ACCOBAMS	Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area
ADS	Automated Directives System
AEWA	African-Eurasian Migratory Waterbird Agreement
BD	Brčko District
BHAS	Bosnia and Herzegovina Agency for Statistics
BiH	Bosnia and Herzegovina
BIMR	Biodiversity Information Management and Reporting
BioNET	Regional Network of Biodiversity
BMZ	The Federal Ministry of Economic Cooperation and Development
CDCS	Country Development Cooperation Strategy
CEPA	Communication, Education and Public Awareness
CEPPS	Catalyzing cross-party initiatives
CHM	Clearinghouse Mechanism
CITES	Convention on International Trade in Endangered Species
CMM	Mobilizing youth for the reconciliation - Be inspiration
CMS	Convention on the Conservation of Migratory Species of Wild Animals
CO-SEED	Civil Society Acts for Environmentally Sound Socio-Economic Development
CSO	Civil Society Organization(s)
DASHI	Dinaric Arc Sustainable Hydropower Initiative
DO	Development Objective
DPBES	National Platform for Biodiversity and Ecosystem Services
EIA	Environmental Impact Assessment
ENABLE	Enhancing and Advancing Basic Learning and Education
ESAP	Environmental Strategy and Action Plan
ESAV	Ecosystem Services Assessment and Valuation
EU	European Union
EUROBATS	Agreement on the Conservation of Bats in Europe
FAA	Foreign Assistance Act of 1961
FAO	Food and Agriculture Organization of the United Nations
FARMA II	Fostering Agricultural Markets Activity II
FASRB	Framework Agreement on the Sava River Basin
FBiH	Federation of Bosnia and Herzegovina
FGD	Focus Group Discussion
FINRA	Financial Sector Reform Activity
FMAWMF	Federal Ministry of Agriculture, Water Management and Forestry
FSC	Forest Stewardship Council
GEF	Global Environment Facility
GEPT	Supporting Political Pluralism and Good Governance Processes

GIZ	German Development Agency
HCVF	High conservation value forest
HPP	Hydropower Plant
ICZMP	Protocol on Integrated Coastal Zone Management in the Mediterranean
IPs	Implementation partners
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IR	Intermediate Result(s)
IUCN	International Union for Conservation of Nature
JACA	Judiciary Against Corruption Activity
KII	Key Informant Interview
LEIWW	Integrated Forest and Water Resources Management in Southeast Europe
MEA	Multilateral Environmental Agreement
MEASURE	Monitoring and Evaluation Support Activity
MedForVal	Network of Mediterranean Forest Landscapes of High Ecological Value
MoFTER	Ministry of Foreign Trade and Economic Relations
NBSAP	National Biodiversity Strategy and Action Plan
NGO	Non-Governmental Organization
NM	Nature Monument
NP	National Park
NRM	Natural Resource Management
NTFP	Non-timber forest products
OG	Official Gazette
ORF-BD	Open Regional Fund for Biodiversity
PA	Protected area
PA4NP	Protected area for nature and people
PES	Payment for Ecosystem Services
PPMG	Marginalized Population Support Activity
PL	Protected Landscape
RS	Republika Srpska
SEE	Southeastern Europe
SEI	Stockholm Environment Institute
SIDA	Swedish International Development Cooperation Agency
SOER	State of the Environment Report
STEM	Science, technology, engineering and math
TABLA	General Education Activity
TEIA	Convention on the Transboundary Effects of Industrial Accidents
TEEB	Study on Economics of Ecosystems and Biodiversity
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme – UN Environment
UNFCCC	United Nations Framework Convention on Climate Change

UNIDO
WHAM
WWF

United Nations Industrial Development Organization
Workforce and Higher Access to Markets Activity
World Wildlife Fund

I EXECUTIVE SUMMARY

United States Agency for International Development (USAID) is developing a new 5-year Country Development Cooperation Strategy (CDCS) for Bosnia and Herzegovina (BiH). Following the requirements under Section 119 (d) of the Foreign Assistance Act (FAA) of 1961 (as amended) and Automated Directives System (ADS) 201.3.9.2 regarding biodiversity analyses for country-level long term plans, USAID/BiH tasked Monitoring and Evaluation Support Activity II (MEASURE II) to update the 2016 Biodiversity Analysis Report for BiH. A team of consultants from the company ENOVA d.o.o. Sarajevo was engaged in the preparation of this Biodiversity Analysis Report. The analysis team has used desk research/comprehensive secondary literature review, semi-structured key informant interviews (KIIs), focus group discussions (FGDs), and statistical analysis of relevant survey data. The authors ensured systematic and efficient data collection and triangulated these methods to provide complete and impartial answers to key research questions. The report is composed of two key parts: (i) actions necessary to conserve biodiversity and (ii) extent to which current USAID/BiH's programming meets the actions necessary to conserve biodiversity.

Country Context: BiH, situated in the western part of Balkan Peninsula, is primarily a mountainous country covered in forests. In the north, BiH has access to the Sava River and in the south, in Neum, to the Adriatic Sea. BiH belongs to the Adriatic and Black Sea basins and has a high value in water resources in the Balkan Peninsula. BiH has a particularly rich biodiversity and one of the greatest diversity of species of plants and animals in Europe. On the other hand, BiH's score on Biodiversity and Habitat Protections in 2019, presented as part of the USAID's Journey to Self-Reliance Country Roadmap, is extremely low (0.16/1.0) and is lowest among all indices tracked for BiH across the Roadmap categories. In spite of the country's rich biodiversity, international obligations, and growing anthropogenic pressures, nature conservation efforts remain insufficient. Socioeconomic challenges, such as unemployment and poverty, have resulted in communities focusing on immediate economic priorities rather than environmental issues, including biodiversity. Thus, biodiversity conservation is not seen as a national priority.

Status of the Country's Biodiversity: Systematic collection and analysis of data on biodiversity in BiH and biodiversity status monitoring are almost nonexistent. Inventory of flora and fauna has not been done. Compared to 2016, some progress has been made regarding the establishment of two Information Systems for Nature Conservation for Federation of Bosnia and Herzegovina (FBiH) and Republika Srpska (RS) that have their own web applications and contain List of Endemic Taxa of SEE (only active to date). The List of Selected Environmental Indicators in BiH has been adopted containing 25 indicators relevant for monitoring the state of the biodiversity in BiH and reporting according to the UNCBD. In addition, the National Biodiversity Strategy and Action Plan (NBSAP) BiH (2015–2020) contains a list of 38 proposed indicators for the measurement of progress towards 21 National Targets defined within the Strategy.

BiH hosts 252 ecosystems and unique biotopes that are important from both the European and global conservation perspective but the status of these ecosystems is unknown, since no monitoring system is in place. There is generally neither a detailed nor recent map of types and distribution of these ecosystems. BiH's most important ecosystems are also most vulnerable and highly sensitive to climate change. No official biodiversity data repositories are established in BiH, so it is impossible to track the

status of species diversity. There is also no information that any endangered species is extinct or that the status of any endangered species has improved since 2016. Furthermore, there is no Red List at the state level. The NBSAP BiH acknowledges that there is insufficient control of the use and export of various products arising from the use of local genetic resources. There was an initiative to access the Nagoya Protocol in April 2018, but the Protocol has not been ratified to date.

Some progress has been made concerning the legal and policy framework for genetic diversity. Eleven new protected areas (PAs) were established in BiH since 2016 (1 in FBiH, 10 in RS) and current percentage of territory under protection in BiH increased to 2.28% from 1.96% in 2016. However, there is no Natura 2000 area and subsidiary legislation on Natura 2000 has not been adopted to date. The number of Ramsar and IBA sites remains unchanged (3 Ramsar and 4 IBA sites) with no planning and management. There is no national wetland inventory or inventories at the state or entities level.

NBSAP BiH aims to map and protect BiH's specific biodiversity by 2020 in accordance with the current spatial documents. Based on the analysis of available spatial plans, it can be concluded that BiH strives to protect 17% of its territory, however, the FBiH Spatial Plan (2008–2028) has not been adopted yet.

Most recognized subsistence benefits in PAs are tourism and recreation, iconic or site-specific values (i.e., river, mountain peak), water resources, preserved natural values, as well as cultural and historical heritage, while top economic benefits are jobs in the PAs, tourism, honey production, water resources, and livestock grazing. In 2018, UNECE reported that general resistance towards the establishment of new PAs still exists among local communities, due to lack of awareness about the values of PAs and the ecosystem services they provide. At the same time, there is recognition that biodiversity contributes significantly to livelihoods in rural and underdeveloped areas of BiH. Local/rural development mostly depends on following ecosystem services: tourism and recreation, availability of drinking water, pleasant climate, clean air and cultural. The biodiversity of medicinal and aromatic plants and mushrooms is also very high. The numbers of families engaged in medicinal and aromatic plants collection is estimated at approximately 50,000 in BiH of which almost 3,000 are organized in over 50 companies repurchasing medicinal herbs. However, due to the lack of mechanisms to control harvesting of medicinal herbs in RS and FBiH, some natural habitats of medicinal herbs have become quite barren.

Legal Framework Related to Conservation: According to the interviews with the entity ministries of environmental protection/ecology, amendments to the laws on nature protection are planned in both entities. The Rulebook on Strictly Protected and Protected Wild Species of the FBiH and the Decree on Strictly Protected and Protected Wild Species of the RS are currently in the process of adoption. Environmental Approximation Programs in FBiH, RS and Brčko District (BD), Habitats Directive, and the Wild Birds Directive have not been fully transposed into the legislation, and transposition of the Habitats Directive and Wild Birds Directive needs to be improved through adoption of new by-laws. Only Herzegovina-Neretva Canton has aligned their Law on Nature Protection with the law on the Federation level. NBSAP BiH (2015–2020), adopted in May 2017, is the most significant strategic document for biodiversity at the state level.

BiH acceded to, signed or ratified a number of Multilateral Environmental Agreements (MEAs) to date, which demonstrates a strong state commitment to comply with these agreements; however, there are numerous weaknesses related to ratification and implementation of MEAs in BiH. Compared to the 2016 Biodiversity Analysis, two new bilateral agreements and 3 MEAs have been ratified/signed. In 2018,

the Council of Ministers of BiH adopted the Decision on the Conditions and Method of Implementation of the Convention on International Trade in Endangered Species. In the FBiH, the Institute for Nature Protection has not been established yet, although its establishment was prescribed by the Law on Nature Protection of the FBiH. In the 2016–2019 period, many nature and biodiversity protection projects were funded and implemented by MAVA Foundation, European Union (EU), Swedish International Development Agency (SIDA), Global Environment Facility (GEF), Federal Ministry of Economic Cooperation and Development of the Federal Republic Germany (BMZ), German Development Agency (GIZ), and United Nations Environment Programme (UNEP). The most significant activity planned so far is the development of the BiH Environmental Strategy and Action Plan (ESAP) for 2030 and beyond (ESAP will include, among others, a biodiversity chapter).

Threats to Biodiversity: The analysis found that the greatest threats to biodiversity in BiH include: (i) waste mismanagement (quantities and disposal, problem of illegal landfills), (ii) climate change, (iii) excessive and illegal logging and deforestation, (iv) pollution in general, (v) energy sector – production of energy from hydropower plants (HPP) and small HPPs, (vi) invasive alien species, (vii) anthropogenic actions and economic development activities, (viii) overexploitation of resources, and (ix) conversion of habitats. The drivers of these threats are grouped into following major categories:

- Institutional arrangements: (i) insufficient human capacities such as expert associates for nature protection in all ministries (entity and cantonal level), (ii) poor environment legislation and its enforcement, (iii) lack of organizational structure and mechanism of coordination for effective implementation of the MEAs; slow process of implementing of MEAs, (iv) lack of clear strategies, local strategies and documents that are providing a clear guidance, (v) poor industrial regulations, (vi) low percentage of area under protection, and (vii) insufficient number of projects related to biodiversity protection
- Economic factors: (i) insufficient funding for biodiversity related actions/projects and research activities, (ii) insufficient funding for protected areas
- Inadequate technical capacity: (i) lack of professional institutions in the field of environmental protection (especially in FBiH) and lack of equipment (e.g. laboratory and field equipment), (ii) lack of staff experienced in gathering, storing and updating information on species of flora, fauna and fungi, habitat types, and ecosystem in all of BiH – inventory has not been carried out, (iii) lack of research on biodiversity in general, at any level, (iv) list of invasive species is not defined (at any level) and monitoring and control of invasive species is not carried out, (v) lack of systematic soil monitoring
- Inadequate management capacity: unsustainable use of biodiversity (NTFP - mushrooms, aromatic and medicinal herbs) due to lack of monitoring and control
- Socio-political factors: low level of public awareness on biodiversity value.

Actions Necessary to Conserve Biodiversity: The analysis team identified 34 “Actions Necessary” to conserve biodiversity in BiH based on the team’s consultations with relevant stakeholders (government institutions at BiH and entity levels, international organizations, including USAID/BiH IPs, PA Managers) interviewed during the analysis implementation and desk research. These Actions Necessary can be grouped as follows:

- Information and decision making: conduct inventory of flora and fauna; establish information systems and communication protocol for populating data in the system; establish monitoring system, norms and standards for monitoring; update entities red lists (and develop red list at state level)
- Policy changes: further approximation of legislation with the EU *acquis*; adopt new law on forests in FBiH that will enable forest protection.
- Improvement of multi-sectoral approach: clearly define protection measures by strategic documents to protect natural values and provide adequate monitoring system.
- Institutional issues and capacity building: improve horizontal and vertical government cooperation; equip the scientific institutions; strengthen capacities of PAs to become financially self-sustainable through development of service portfolios and finding new and innovative ways to gain revenue and raise funds; give more space to experts.
- Financing issues: increase taxes for pollutants; developing new/innovative mechanisms for securing additional revenue and raising funds that would trigger PAs' financial self-sustainability.
- Communication: reform official education to teach new generations to care about environment and natural resources; rely on cooperation with NGOs for education and awareness raising activities.
- Protected areas: start procedures for establishment of protected areas planned in spatial plans and monitor their progress; implement study trips and exchange of good practices in nature conservation; introduce integral management of PAs; establish higher control in PAs and define duties and authorizations of rangers in PAs.
- Rural development and biodiversity use: develop systemically designed program for rural development and keeping people in rural areas; keep traditional practices in agriculture; cultivate commercially valuable herbs instead of relying on natural resources.
- Project on biodiversity: implement biodiversity improvement measures (active conservation measures: habitat restoration, species reintroduction, etc.); implement best practices from regional and international levels.

Extent to Which the Mission Meets the Identified Actions Needed: Out of 54 specific actions identified through the 2016 Biodiversity Analysis, only nine (16.7%) were addressed by USAID/BiH programming in the 2016-2020 period. These include: 1) developing eco-tourism-related activities based on natural resources (Via Dinarica and Diaspora Invest Activity); 2) strengthening the capacity of NGOs in terms of writing projects and applications for international donors (Restoring Civic Mission of Education and Via Dinarica); 3) adoption of the draft FBiH Law on Forests (USAID's Fiscal Sector Reform Activity in BiH); 4) establishment of working groups (at the entity and district level) for coordination of sectors: environmental protection, water management, agriculture, forestry, spatial planning, energy, mining and industry (Fostering Agricultural Markets Activity (FARMA II)); 5) preparation of instructions (in the form of a publication) for integration of biodiversity values into other sectors, i.e., strategies and plans, as well as instructions for monitoring of their implementation, including organization of regular meetings (FARMA II); 6) improvement of horizontal harmonization of laws through organization of discussions and roundtables of expert associates from the relevant ministries at the entity and district level (FARMA II); 7) organization of educational/informational visit to protected areas (Via Dinarica); 8) construction of ecotourism infrastructure and outdoor furniture in PAs

(Diaspora Invest Activity); and 9) reduction of chemical pollution from industry by strengthening the environmental permit mechanisms and control inspections (FARMA II).

Recommendations: Based on the analysis of needs, threats, and pressures that biodiversity is facing in BiH, the analysis team developed the following set of recommendations for USAID/BiH to consider:

- Support and organize activities aimed at raising awareness and educating target groups about the importance of biodiversity, including:
 - Organize educational/informational visits to protected areas for representatives of local civil society and businesses operating in the areas that need to be protected. These visits could provide examples of best practices, and raise awareness about promoting biodiversity and good governance in the field of nature protection);
 - Implement biodiversity conservation and environmental protection campaigns by involving media and/or youth, to change the attitude and behavior of the public toward reduction of unsustainable exploitation of natural resources and nature and the general understanding of the purpose and benefits of biodiversity conservation and protection;
 - Work with political parties in BiH to include biodiversity issues into their campaigns and party programs, and help them become catalysts of biodiversity protection and promoters of natural values;
 - Continue to promote natural BiH resources, as well as traditional practices in agriculture and conservation-friendly agriculture that do not have a negative impact on natural resources and on biodiversity;
 - Include awareness-raising activities on positive impacts of the following on biodiversity; using renewable energy and natural gas and promoting mitigation measures during the implementation of investments in energy;
 - Increase knowledge and awareness of the importance of environment and biodiversity conservation (e.g. forest pedagogy and nature school programs) among BiH children and youth;
 - Support initiatives to educate BiH school-age children and youth on best practices for PA management and conservation methods;
- Ensure indirect contribution to biodiversity conservation by addressing corruption in the environmental sector;
- Build capacity for effective management of PAs and support exchange of experience and knowledge for biodiversity conservation in PAs;
- Support the development of required biodiversity- and environment-related legislation to meet EU accession and other international treaty obligations;
- Emphasize cooperation between different Activities (e.g., FARMA II and Energy Policy Activity) to support knowledge exchange, including advice on the approaches to biodiversity protection through implementation of best practices;
- Improve capacity of companies and agriculture to mitigate negative impacts of their activities on nature conservation;
- Support activities to impose, reform and/or increase fees/taxes for environment polluters;
- Continue activities in support of involvement of local communities and citizens in decision-making processes.

2 INTRODUCTION

PURPOSE

In 2016, USAID/BiH commissioned IMPAQ International LLC (IMPAQ), through USAID/BiH Monitoring and Evaluation Support Activity (MEASURE-BiH) to conduct a country biodiversity analysis for Bosnia and Herzegovina (BiH). Currently, USAID/BiH is developing a new 5-year Country Development Cooperation Strategy (CDCS). Following the requirements under Section 119 (d) of the Foreign Assistance Act (FAA) of 1961 (as amended) and Automated Directives System (ADS) 201.3.9.2 regarding biodiversity analyses for country-level long term plans, USAID/BiH tasked Monitoring and Evaluation Support Activity II (MEASURE II) to update the 2016 Biodiversity Analysis Report for BiH. The team of consultants from Company ENOVA d.o.o. Sarajevo was engaged in the preparation of the Biodiversity Analysis report. The team was composed of the following members: Fethi Silajdzic (Team Leader), Ajla Dorfer (Biodiversity Expert), and Anela Rodic, Belma Jahovic, Nadira Berbic, and Amina Gabela (Team Members).

This updated Biodiversity Analysis Report is intended to assist the USAID/BiH during the upcoming strategic planning process for the 2020–2025 period and to achieve better biodiversity outcomes by following-up on the findings and recommendations highlighted in the 2016 Biodiversity Analysis Report. This update includes the following segments: (i) identification of the current status and current and potential threats to biodiversity, (ii) report on actions necessary to conserve biodiversity in the BiH, (iii) analysis of the extent to which actions proposed by USAID under its strategy meet those conservation needs, and (iv) recommendations for integrating biodiversity in future USAID/BiH programming.

METHODOLOGY

For the purpose of the Country Biodiversity Analysis for BiH, a detailed Work Plan has been developed. The Work Plan set the goals of the biodiversity analysis, key questions, methodology, deliverables, schedule, and level of effort required for the completion of the analysis. In line with the Work Plan, the analysis team used four different methods to ensure systematic and efficient data collection. Moreover, the team triangulated these methods to provide complete and impartial answers to the following key research questions:

1. What is the status of biological diversity in BiH? Have there been any new developments since 2016 in relation to relevant multilateral agreements, international agreements, laws, bylaws, relevant policies?
2. What are the main threats to biodiversity in BiH? What social, economic, or political factors are driving those threats?
3. Based on identified threats and their drivers, what actions are needed to conserve biodiversity in BiH?
4. What support (direct or indirect) was provided by USAID that addresses biodiversity conservation needs in the country?

5. To what extent are actions proposed by USAID in their new strategy or current USAID programming meeting identified conservation needs?
6. What actions could USAID take in line with their current/planned portfolio to better support biodiversity conservation in BiH?

The ENOVA team conducted:

- desk research/comprehensive secondary literature review and 2016 Biodiversity Analysis data update,
- semi-structured key informant interviews (KIIs) with 10 important local and international stakeholders in biodiversity-related areas (including government officials) and 22 USAID/BiH Implementation Partners (IPs),
- two focus group discussions (FGDs) with a total of 19 participants (local population, resource users (e.g. hunters, forest product gatherers) and other local stakeholders) from two protected areas, Protected Landscape Bijambare (FBiH) and Protected Habitat Tišina (RS),
- statistical analysis of relevant survey data from two online surveys:
 - Survey for stakeholders on their perceptions of the value and significance of biodiversity for sustainable development in BiH (N=46, respond rate 57.5%),
 - Survey for USAID/BiH IPs (N=19, respond rate 70.4%).

The list of documents that were reviewed as part of this report is included in Annex A. The list of stakeholders and IPs interviewed/consulted as key informants is enclosed in Annex B. The list of IPs who participated in the online survey is provided in Annex C, while the list of FGDs participants is given in Annex D. All interviewed/surveyed stakeholders were identified through the Stakeholder Engagement Plan, developed as part of the analysis Scope of Work. Identified stakeholders were divided into three groups: (i) primary stakeholders, (ii) secondary stakeholders, and (iii) tertiary stakeholders. Given the long list of identified counterparts, the analysis team consulted only primary and secondary stakeholders. The primary list of stakeholders includes national and regional biodiversity institutions, BiH ministries of environment, and USAID/BiH IPs. Secondary stakeholders included environmental funds, institutes for nature protection, PAs' managers, international donors and institutions as well as national and local environmental CSOs and NGOs.

3 COUNTRY CONTEXT

BIOPHYSICAL SETTING

BiH is located at the western part of Balkan Peninsula and is surrounded by the Republic of Serbia (north-east), Republic Montenegro (south-east) and Republic Croatia (north, west, and south). BiH covers 51,209.2 km², of which 51,197 km² is land and 12.2 km² is sea. BiH is primarily a mountainous country covered in forests; According to the most recent but preliminary data from the second National Forest Inventory, 63% of BiH's total territory is covered with forest and other wooded land.¹ The average altitude is 500 m, with Mt. Maglić as the highest peak (2,387 m). Mountains and hills account

¹UNECE.2018. Environmental Performance Reviews Bosnia And Herzegovina. Third Review. Available at: https://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.184.Eng.pdf

for 42% and 24% of the country's total land surface, respectively. Karst landscapes make up 29% of the total area, while lowlands cover 5%.²

In the north, BiH has access to the Sava River and in the south, in Neum, to the Adriatic Sea. By its geographic position, BiH belongs to both the Adriatic and Black Sea basins. BiH has plentiful freshwater resources, as there are many surface and underground watercourses in the country, including seven river basins (Una, Vrbas, Bosna, Drina, Sava, Neretva with Trebišnjica and Cetina rivers), a large number of riverine lakes (on the Pliva and Una rivers), mountain lakes (in the area of the Dinarides) and thermal and geothermal groundwater resources.³

BACKGROUND ON BIODIVERSITY ISSUE

According to the 2016 Biodiversity Analysis Report, BiH has particularly rich biodiversity due to its location influenced by three distinct geological and climatic regions: (i) the Mediterranean region, (ii) the Euro Siberian-Bore American region, and (iii) the Alpine-Nordic region. As a result of unique orography, geological surface, hydrology, and eco-climate, BiH is characterized by an exceptional diversity of plant and animal species in Europe. Vascular flora accounts for about 5,000 confirmed taxa of species, subspecies, and varieties. As much as 30% of the total endemic flora in the Balkans (1,800 species) is found in BiH. The unique aspects of biodiversity are hidden in protected areas (PAs) that most likely support new, so far undiscovered, species. This argument is bolstered by several pilot studies which resulted in discovery of new species not previously known to the BiH scientific community. For example, the number of bird species increased by 14 since 2011 and the total is now 340 species, while the number of mammals increased by two since 2011 and reached a total of 87 species.⁴

According to the 2018 Environmental Performance Review for BiH, the inadequate integration of land, water, and biodiversity concerns into development planning has resulted in the emergence of threats of biodiversity loss.⁵ Moreover, 2019 Biodiversity and Habitat Protections Score for BiH, presented as part of the USAID's Journey to Self-Reliance Country Roadmap, is extremely low (0.16/1.0). It is lower than both the global average and the average of middle-income countries. In addition, this score is the lowest among all indices tracked for BiH across the Roadmap categories.⁶ The Biodiversity & Habitat issue category seeks to evaluate a country's performance in habitat conservation and species protection and reflects a composite of six underlying indicators (marine protected area, terrestrial biome protection – national weights, terrestrial biome protection – global weights, species protection index, protected area representativeness, and species habitat index). By comparison of individual country environmental performance, BiH has the lowest score in the Eastern Europe and Eurasia region and ranking 158th, out of 180 countries globally. BiH's ranking worsened since 2016 when BiH was ranked 150th. Other

² FBiH Ministry of Environment and Tourism. 2014. Fifth National Report to UNCBD of BiH. Available at: <https://www.cbd.int/doc/world/ba/ba-nr-05-en.pdf>

³ Ibid.

⁴ USAID. 2016. Country Biodiversity Analysis: Bosnia and Herzegovina. Available at: <http://measurebih.com/uiimages/Biodiversity%20Assessment.pdf>

⁵ UNECE. 2018. Environmental Performance Reviews Bosnia And Herzegovina. Third Review. Available at: https://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.184.Eng.pdf

⁶ USAID's Journey to Self-Reliance: FY 2020 Country Roadmap – Bosnia and Herzegovina. Available at: <https://selfreliance.usaid.gov/country/bosnia-and-herzegovina>

neighboring and Southeastern European (SEE) countries have significantly higher scores and ranking: Albania (40), Croatia (41), Montenegro (65), North Macedonia (68), and Serbia (84).⁷

Data on biodiversity in BiH is scarce, fragmented, and often outdated. In the face of growing anthropogenic pressures, nature conservation efforts remain insufficient, despite international obligations assumed by BiH. Socioeconomic challenges, such as unemployment and poverty, have resulted in communities focusing on immediate economic priorities rather than on environmental issues, including biodiversity. For example, when the general population is asked about government priorities, less than 5% mention environmental protection.⁸ Consequently, biodiversity conservation is not seen as a national priority.⁹

4 STATUS OF THE COUNTRY'S BIODIVERSITY

STATUS OF BIODIVERSITY INFORMATION

As reported in the 2016 Biodiversity Analysis, systematic collection and analysis of data on biodiversity in BiH and biodiversity status monitoring are almost nonexistent. No inventory of flora and fauna has been conducted. The Strategy and Action Plan for Protection of Biological Diversity of BiH (NBSAP BiH) 2015–2020, adopted by the Council of Ministers of BiH in May 2017, put as a national target no. 12 to complete the inventory of: (i) flora, fauna and fungi in BiH and (ii) ecosystems and types of habitats in BiH by 2020. The Sixth National Report to the UNCBD stated that the current data on flora, fauna, fungi, ecosystems and habitat inventories was incomplete, and the data varied significantly depending on the categories of organisms in question.¹⁰

According to the current laws on nature protection of the entities and BD, the entities and district are obliged to establish information systems for nature protection. Compared to the 2016 Biodiversity Analysis Report, the progress in implementation of this legal provision in the entities is evident in the establishment of two respective Information Systems for Nature Conservation for the FBiH and RS that contain information/databases on the entities' respective natural heritage. The systems are mutually and regionally compatible and unified with systems in Montenegro and North Macedonia because all were developed through the regional sub-project “Regional Network for Biodiversity Information Management and Reporting (BIMR)”, supported by the Open Regional Fund for South-East Europe – Biodiversity (GIZ/ORF-BD). These information systems have their own web applications¹¹ and will contain databases on PAs, Lists of Endemic Taxa of SEE, Protected Species, indices of plant and animal species, and the Red List. At the moment, only the module of Endemic Taxa of SEE is functional both in the FBiH and RS, while other modules will be brought online in the near future. In the interview with the RS Institute for Protection of Cultural and Natural Heritage, it was found out that the University of

⁷ Environmental Performance Index (EPI). 2018 Results. Available at: <https://epi.envirocenter.yale.edu/epi-topline>

⁸ USAID/MEASURE-BiH. 2019. National Survey of Citizens' Perceptions 2018. USAID/BiH. Available at: <http://measurebih.com/uimages/201820NSCP-BiH20Final20Report.pdf>

⁹ UNECE.2018. Environmental Performance Reviews Bosnia And Herzegovina. Third Review. Available at: https://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.184.Eng.pdf

¹⁰ FBiH Ministry of Environment and Tourism. 2019. Sixth National Report of BiH to the Convention on Biological Diversity. Sarajevo

¹¹ Available at: <http://e-prirodafbih.ba/> and <http://e-priroda.rs.ba/>

Banja Luka's Forestry Faculty had developed the module Index of RS Plant Species to be integrated and available at: <http://e-priroda.rs.ba/>.

Compared to the 2016 Biodiversity Analysis Report, it is important to highlight that the Council of Ministers of BiH adopted the List of Selected Environmental Indicators in BiH in September 2019 with 59 indicators in 4 thematic areas (biodiversity, land degradation, air quality, and climate change), relevant for monitoring the state of the environment in BiH and reporting according to the three Rio Conventions.¹² The indicators were developed within the project "Capacity Building for the Integration of Global Environmental Commitments into National Policies and Development Decision-Making in BiH" implemented by United Nations Environment Programme (UNEP). The full list of 25 environmental indicators relevant for biodiversity and UNCBD is provided in Annex E.

In addition, the NBSAP BiH (2015–2020) contains a list of 38 proposed indicators for the measurement of progress towards 21 National Targets defined in the Strategy. The list of proposed indicators is also provided in Annex E.

MAJOR ECOSYSTEM TYPES AND STATUS

BiH hosts 252 ecosystems and unique biotopes that are important from both the European and global conservation perspective.¹³ Unfortunately, the status of these ecosystems is not known, since no monitoring system is in place. Generally, there is neither a detailed nor recent map of types and distribution of these ecosystems. Compared to terrestrial and aquatic ecosystems in BiH, coastal and marine ecosystems are especially neglected and insufficiently studied.

The recent project "Supporting Decision Making and Capacity Building to Support the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) through National Ecosystem Assessment" (2018–2023), implemented by the "Academician Sulejman Redžić" Center for Ecology and Natural Resources, aims to prepare an assessment of ecosystems and ecosystem services in BiH, including the development of ancillary tools for policy makers, establish conditions for effective utilization of the Assessment, and develop and make available policy support tools and methodologies.¹⁴

According to NBSAP BiH (2015–2020), the distinctive types of biological diversity of BiH are canyon, mountain, alpine and wetland ecosystems, karst fields, and alluvial plains. Furthermore, according to the 2018 Environmental Performance Review for BiH, high mountain landscapes, mountain landscapes and relict and refugial landscapes are ecosystems which are highly sensitive to climate change. The ecosystems situated in karst landscapes are also vulnerable to climate change and, at the same time, they

¹² Rio Conventions: United Nations Framework Convention on Climate Change – UNFCCC, United Nations Convention on Biological Diversity – UNCBD and the United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa – UNCCD

¹³ UNECE. 2018. Environmental Performance Reviews Bosnia and Herzegovina. Third Review. Available at: https://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.184.Eng.pdf

¹⁴ Available at: <https://www.procenapriode.ba/>

are also strongly affected by other anthropogenic pressures (among these, the wetlands in karst fields are particularly sensitive).¹⁵

According to the Survey of stakeholders, ecosystems with the best rated conditions are meadow ecosystems (with an average rating of 3.38 out of 5 - the highest possible rating), followed by pasture ecosystems (3.28), forest ecosystems (3.12), and agro-ecosystems (3.00). The most degraded ecosystems are water ecosystems (2.61), followed by wetlands ecosystems (2.74), and urban ecosystems (2.80).¹⁶

SPECIES DIVERSITY AND STATUS

There are no established official biodiversity data repositories in BiH, which makes it impossible to track the status of species diversity. For example, although stakeholders from the focus groups and interviews reported that there has been a decline in number of bees and the loss of honeybee species in BiH, there is no information that any endangered species is extinct or that any endangered species has improved its status since 2016.¹⁷ While the Red Lists have been developed and approved at the entity level (the RS approved the Red List of Endangered Species of Flora and Fauna¹⁸ in 2012 and the FBiH approved its Red List of Endangered Wild Species and Subspecies of Plants, Animals and Fungi¹⁹ in 2014), there is no red list at the state level. Recognizing the need for revision and harmonization of the entities' red lists, UNEP is developing the guidelines for revision of red lists in BiH. They have already organized the two training sessions for stakeholders with the help of international experts from the International Union for Conservation of Nature (IUCN). This process is conducted under the umbrella of the project "Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building."²⁰

Both the NBSAP BiH (national goal 12) and Fifth and Sixth National Reports to the UNCBD specifically mention the need for enhanced biodiversity management in the country. The Fifth National Report to the UNCBD, for example, praises initial attempts by the conservation authorities in BiH to list endangered plant and animal species and emphasizes "the importance of spatial protection of valuable ecosystems and sites and finding the most appropriate regimen of protection."

GENETIC DIVERSITY

The NBSAP BiH acknowledges that there is insufficient control of the use and export of various products based on local genetic resources, medicinal, vitaminized, and aromatic species, as well as other ecosystem products to which BiH claims its sovereign rights and recognizes the need to regulate profits

¹⁵ UNECE.2018. Environmental Performance Reviews Bosnia and Herzegovina. Third Review. Available at: https://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.184.Eng.pdf

¹⁶ The survey respondents were asked to answer the question "How would you evaluate the status of the ecosystems listed in your area? Please circle the answer for every type of ecosystem in your area" by using the following scale: 1 = absolutely unsatisfactory; 2 = unsatisfactory; 3 = neither satisfactory nor unsatisfactory; 4 = satisfactory, 5 = absolutely satisfactory.

¹⁷ FBiH Ministry of Environment and Tourism. 2019. Sixth National Report of BiH to the Convention on Biological Diversity. Sarajevo

¹⁸ OG of RS, No. 124/12

¹⁹ OG of FBiH, No. 7/14

²⁰ Available at: <https://www.thegef.org/project/achieving-biodiversity-conservation-through-creation-effective-management-and-spatial>

generated by exploitation of local biodiversity. Therefore, the initiative to accede to the Nagoya Protocol submitted by the BiH Ministry of Foreign Trade and Economic Relations to entity-level ministries of environment in April 2018 is particularly important. Ratification can be initiated after both entities in BiH give positive opinions. In June 2018, the Federation Ministry of Environment and Tourism issued a positive opinion, after obtaining approvals from the cantons. However, since the RS Ministry of Physical Planning, Civil Engineering and Ecology has not yet provided a positive opinion, the Protocol has not yet been ratified.²¹

Compared to the 2016 Biodiversity Analysis, some improvements have been observed in terms of genetic diversity in BiH. As already described in the 2016 Biodiversity Analysis, gene banks were established at the level of the entities in BiH. In the RS, the plant gene bank is with the Genetic Resources Institute of the University of Banja Luka, and in the FBiH the plant gene bank is with the Faculty of Agriculture and Food Sciences of the University of Sarajevo. Additionally, the RS deposited reserve copies of their seeds at the Svalbard Global Seed Vault in Norway.

At the state level, the Strategic Plan for Rural Development of BiH (2018–2021) addresses plant and animal genetic resources in a separate chapter on agro-ecological conditions. Although the programs for conservation of animal genetic resources (specific breeds and varieties) have not been adopted yet in either entity, it is worth mentioning that the RS adopted two relevant programs for domestic animals, the 2016–2022 Cattle Breeding Program and the 2016–2022 Goat and Sheep Breeding Program in the RS. Both programs focus on the existence and importance of indigenous breeds as animal genetic resources and underline the importance of their conservation. In the FBiH, two rulebooks were adopted in 2018, the Rulebook on Organic Plant and Livestock Production²² and the Rulebook on Beekeeping.²³

An overview of the state of plant and animal genetic resources in BiH, as well as of the current efforts on their conservation, was conducted within the Project "Rural Development through Integrated Forest and Water Resources Management in Southeast Europe (LEIWW)" implemented by GIZ from 2015 to 2018.²⁴

STATUS AND MANAGEMENT OF PROTECTED AREAS

4.1.1 Protected Areas

Pursuant to the entity legislation on nature protection, the system of protection of natural areas foresees establishment of PAs (in line with IUCN categorization) and Natura 2000 sites. However, IBA²⁵ and Ramsar sites²⁶ are not integrated into the national PA system, as they are not recognized in the legislation on nature protection in either the FBiH or RS.

²¹ FBiH Ministry of Environment and Tourism. 2019. Sixth National Report of BiH to the Convention on Biological Diversity. Sarajevo

²² OG of FBiH, No. 14/18

²³ OG of FBiH, No. 31/18

²⁴ Available at: <http://seerural.org/wp-content/uploads/2018/09/Agrobiodiversity-Study-BiH-RS.pdf> and <http://seerural.org/wp-content/uploads/2018/09/Agrobiodiversity-Study-BiH-Federation.pdf> (last accessed on January 9, 2020).

²⁵ IBA is an area identified using an internationally agreed set of criteria as being globally important for the conservation of bird populations.

²⁶ Wetlands protected by national governments to fulfil their obligations under the Convention on Wetlands of International Importance (commonly called the Ramsar Convention).

The current percentage of territory under protection in BiH is 2.28% (compared to 1.96% in 2016), with 3.24% and 1.30% in the FBiH and RS, respectively. Coastal and sea areas in BiH have not been protected so far. **Error! Reference source not found.** in Annex F shows existing PAs in BiH.

Eleven new PAs were established in BiH since 2016. Annex F presents the officially established PAs in BiH (PAs established in and after 2016 are highlighted in the text).

FBiH: The FBiH has 121 PAs of which only one is a National Park (NP), Una, four are Natural Monument (NMs) and six are Protected Landscapes (PLs). The majority of PAs are managed by dedicated management institutions. Only one new PA has been established since 2016, the Bentbasa Protected Landscape in 2017.

RS: At present, the RS has 26 PAs, of which three are NPs (Kozara, Sutjeska, and Drina), 14 are NMs, two are SNRs, three are PAs with sustainable use of natural resources, two are PLs, and two are Habitat/Species Management Area. The following ten new PAs have been created since 2016: Monument of Park Architecture University City (2016), Slatina Forest Park (2016), Drina National Park (2017), Kuk Cave Natural Monument (2018), Gromizelj Protected Nature Reserve (2018), Cicelj Nature Park (2018), Jelića brdo Forest Park (2018), Lijevčanski Knez Natural Monument (2018), Una Nature Park (2019) and Tišina Protected Nature Reserve (2019).

BD: There are no PAs in BD.

The responsibility for establishing, managing, and financing PAs is regulated by legislation on nature protection of both entities. PAs are financed from the budgets of both entities. The legal framework for nature protection provides many opportunities for revenue generation. These include revenue from the use of natural resources in PAs, fees (souvenirs, parking, camping), grants, subsidies, and cash incentives. However, few PA managers are able to generate sufficient resources from these types of revenues, as there is no green funding system for financing nature protection in BiH and the entities' funds for environmental protection do not allocate sufficient resources to PAs.²⁷ In the case of the FBiH, most protected areas are funded by the cantons while the federation level is responsible for funding only the Una NP, which is an area of federation importance in the FBiH. Another funding exception is the Vjetrenica cave, which is funded by the municipality, since it is not formally recognized as a protected area in the FBiH. Finally, both environmental ministries and environmental protection funds in FBiH and RS have public calls for funding for projects related to biodiversity and protected areas.

According to UNEP (2016), a total of 2,727,207 KM was allocated for PAs of FBiH in 2016. An overview of the PA funding in 2016 is provided below:

- FBiH government allocated 500,000 KM for the Una NP (and 400,000 KM for co-financing other PAs at cantonal level)
- The Sarajevo Canton allocated a total of 1,421,209 KM for the Protected Natural Areas of the Sarajevo Canton,
- The Canton 10/Herceg-Bosna County co-funded the Blidinje Nature Park with 20,000 KM,
- The Canton of West Herzegovina/Canton did not finance the Blidinje Nature Park,

²⁷ UNEP. 2019. Analysis of Financial Mechanisms for Protected Areas in BiH and the Region. Sarajevo

- The Herzegovina-Neretva Canton/County co-funded Nature Park Blidinje with 36,000 KM and allocated 13,000 KM for the Hutovo Blato Nature Park,
- Tuzla Canton allocated 200,000 KM from the budget for the needs of the Konjuh PL,
- Central Bosnia Canton/County allocated 80,000 KM for the needs of the Prokoško Lake Nature Monument,
- The Zenica-Doboj Canton allocated around 140,000 KM for the Tajan Nature Monument.

For the PAs in the RS, the government allocated a total of 1,958,088 KM. 1,800,000 KM or 91.93%, were transferred to the Sutjeska and Kozara NPs, while the remaining 158,088 KM, or 8.07%, was used to co-fund the Banja Luka Genetic Resources Institute. The RS Government did not fund other PAs in 2016.²⁸

4.1.2 Natura 2000 Areas

Although the entity laws on nature protection allow for the possibility to establish Natura 2000 areas, currently, no such areas have been officially created.²⁹ Protection is proposed for 122 areas (about 19% of the territory of BiH), including 200 species and 60 habitats, as well as establishment of an environmental network in BiH.³⁰ **Error! Reference source not found.** in Annex F shows potential Natura 2000 areas in BiH. No subsidiary legislation on Natura 2000 has been adopted to date.

4.1.3 Ramsar and IBA Sites

The number of Ramsar and IBA sites remains the same compared to the 2016 Biodiversity Analysis. There are 3 Ramsar and 4 IBA sites in BiH, as shown in Annex F. The question of management and funding of these areas is difficult, since they are not recognized by entity laws on nature protection nor integrated into the national protected areas network/system. Even though some activities have been developed in recent years, in particular in the promotion of wetlands awareness, scientific research and monitoring, none of the Ramsar sites have a management plan and there is no national wetland inventory at the state or entities level. No planning and management is available for the IBA sites as well.

4.1.4 Potential Protected Areas

The NBSAP BiH aims to map and protect BiH's specific biodiversity by 2020 in accordance with the current spatial planning documents (legislation on nature protection stipulates that protected areas are established on the basis of spatial plans). According to the Sixth National Report to UNCBD and based on the analysis of available spatial plans, BiH is trying to protect 17% of its territory. A Draft Proposal of

²⁸ UNEP. 2019. Analysis of Financial Mechanisms for Protected Areas in BiH and the Region. Sarajevo

²⁹ **FBiH Law on Nature Protection** (OG of FBiH, No. 66/13) recognizes Natura 2000 sites and affirms that certain areas may be designated for the European program Natura 2000 to be included in an international environmental network for conservation of natural habitats and habitats of species by a regulation of the FBiH Government. The FBiH Government will compile a list of the types of habitats widespread on the FBiH territory in a decree, on the basis of submitted relevant scientific information. The list can be amended. Measures for conservation of such habitat types in favorable conservation status will be prescribed by the Federation Minister of Environment and Tourism after receiving approval from the Federation Ministry of Agriculture, Water and Forestry. Measures for conservation of habitat types in a favorable state shall be integrated in spatial planning documents and management plans of protected natural areas.

Pursuant to the **RS Law on Nature Protection of** (OG of RS, No. 20/14), the RS Government shall adopt a regulation that establishes the environmental network and the method of its management and funding, and identifies environmentally important areas for the EU, which will become part of the European Environmental Network Natura 2000.

³⁰ As available at: <https://www.fmoit.gov.ba/bs/okolis/ekoloska-mreza-natura-2000>

the FBiH Spatial Plan (2008–2028), which is still in the adoption process, provides for establishment of 14 new PAs with a total area of about 4,488 km² which represents 18.5% of the total surface area of the FBiH. The RS Spatial Plan till 2025 set the goal to protect 15 to 20% of the entire RS territory.

The abovementioned UNEP/GEF Project “Achieving Biodiversity Conservation through Creation and Effective Management of Protected Areas and Capacity Building for Protection of Nature in BiH”³¹ actively works to officially protect nine new areas:

1. Livanjsko Polje,
2. Orjen-Bijela Gora,
3. Mts. Bjelašnica–Visočica–Treskavica–Rakitnica River Canyon,
4. Mt. Zvijezda,
5. Cave at the spring of the Mokranjska Miljacka River,
6. Tišina (already proclaimed as protected),
7. Mediteranetum Botanical and Floral Reserve,
8. Vjetrenica cave system,
9. Govjestica cave system.

4.1.5 Economic potential of the protected area system

Little analysis of the economic potential of the PAs has been conducted to date. In 2016, the WWF Adria NGO conducted a benefit assessment³² using the PA-BAT methodology (Protected Areas Benefits Assessment Tool³³) in three national parks (Una, Sutjeska and Kozara), as well as in three additional areas in different protection categories (Hutovo blato Nature Park, Bijambare Protected Landscape and Vrelo Bosne Natural Monument). According to this assessment, there is a difference in the recognition and valuation of subsistence benefits (non-economic benefits that contribute to well-being such as health, nutrition, clean water and shelter) and economic values (benefits that provide the ability to earn an income, consume and have assets). Tourism and recreation, iconic or site-specific values (i.e., rivers, mountain peaks), water resources, preserved natural assets, as well as cultural and historical heritage, are the best recognized subsistence benefits, while jobs in the PAs, tourism, honey production, water resources and livestock grazing are most significant in economic terms.

In 2018, the UNECE reported that local communities still tend to oppose establishment of new PAs, because there is insufficient awareness about the value of PAs and the ecosystem services they provide. Based on the experience of the analysis team, local communities often oppose establishment of new PAs for three main reasons: (i) a lack of awareness of the potential economic opportunities associated with PAs, (ii) concerns that PAs will limit access to natural resources and existing natural-resource based

³¹ Available at: <https://www.thegef.org/project/achieving-biodiversity-conservation-through-creation-effective-management-and-spatial>

³² WWF. 2016. Protected Areas Benefit Assessment (PA-BAT) in Bosnia and Herzegovina available at https://natureforpeople.org/protected_areas/bih_bat_report_2016_eng_web_3_.pdf

³³ More info on the PA-BAT methodology on https://wwf.panda.org/wwf_news/?174401/PABAT (last accessed on January 3, 2020)

livelihoods, and (iii) PAs will affect the sale and market value of their properties. Information sharing is extremely limited and data on biodiversity is scattered among several academic institutions.³⁴

STATUS AND MANAGEMENT OF KEY NATURAL RESOURCES OUTSIDE PROTECTED AREAS

Beside the legislation on nature protection, which is primarily important for the establishment of PAs in both entities, certain aspects of the natural world are protected by other laws, in particular the laws on forests (protective forests and special purpose forests) and laws on water (water protection zones) in both the entities and in the cantons (in the case of the FBiH).

The 2018 BiH Environmental Performance Review established that 7,600 ha of the country's forests are registered as protected forests and 14,800 ha as special purpose forests. These forests are managed by public forestry enterprises in accordance with specific measures set out in the forest management plans.³⁵

The concept of high conservation value forest (HCVF) came into focus with the introduction of the Forest Stewardship Council (FSC) standards in the country. HCVFs in a forest management area are identified based on their significance, biodiversity concentration, rare and endangered ecosystems they host and importance of providing basic needs to local communities. Based on the FSC certification reports of four certified forest companies, 75,530 ha (or around 2.5% of the total forest cover) of BiH forests is of high conservation value.³⁶

5 VALUE AND ECONOMIC POTENTIAL

VALUE OF BIODIVERSITY

There is no available assessment of economic value of the country's biodiversity and natural resources. The NBSAP BiH's national goal no. 15 is that, by the end of 2020, benefits from forest, agricultural and water ecosystems should be mapped and evaluated, and the environmental permit mechanism and supervisory inspection within protected areas, areas of special interest, and areas from the Natura 2000 ecological network plan strengthened. The measure no. 2.I. of the NBSAP BiH is also important from this standpoint, as it refers to preparation of The Economics of Ecosystems and Biodiversity (TEEB) study. The aim of TEEB is for decision-makers to recognize the value of ecosystem services and biodiversity.³⁷ The NBSAP BiH also noted that there was no professional institution in charge of the

³⁴ UNECE.2018. Environmental Performance Reviews Bosnia And Herzegovina. Third Review. Available at: https://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.184.Eng.pdf

³⁵ UNECE.2018. Environmental Performance Reviews Bosnia And Herzegovina. Third Review. Available at: https://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.184.Eng.pdf

³⁶ FAO. 2015. The Forest Sector in BiH. Available at: <http://www.fao.org/3/a-au015e.pdf>

³⁷ BiH Council of Ministers. 2017. Strategy and Action Plan for the Protection of Biological Diversity of Bosnia and Herzegovina for the 2015-2020 period. Available at: http://www.vijeceministara.gov.ba/akti/prijedlozi_zakona/default.aspx?id=25304&langTag=hr-HR

issues of evaluation and reevaluation of natural assets and heritage in BiH, nor of the development of legislative and institutional frameworks for sustainable management.³⁸

In 2018, the UNECE reported that one of the major barriers to nature conservation in the country was a widespread lack of awareness of biodiversity issues among the population. Knowledge and awareness of the value of biodiversity and protected areas, as well as about sustainable use of resources, are rather limited.³⁹

The only significant ecosystem services assessment was conducted in 2018 by the GIZ for the Neretva and Trebišnjica River Basins (the area that spans three economies and four political entities: RS and FBiH, Croatia and Montenegro). This study underlined the magnitude of economic value at stake:

- Gross primary returns from water use are almost USD492 million a year,
- Tens of thousands of jobs – and hundreds of thousands of livelihoods – depend directly on freshwater ecosystems (e.g., hydropower facilities generate around 4,400 GWh of electricity a year from the waters of the Neretva and Trebišnjica, earning revenues of almost USD416 million),
- About 16% of cropland in the FBiH is irrigated from the two rivers, generating more than USD25 million in income and supporting around 5% of the population and in the RS, up to 80% of commercial wine production in the area covered by the study, almost USD4.4 million depends on irrigation,
- Municipal water utilities distribute some 18 million m³ a year of water from the Neretva and Trebišnjica basins in BiH and Montenegro alone, and collect more than USD17 million in public revenues,
- Tourism is still a small but rapidly growing sector. By 2016, some 83% of tourists (more than 122,000 people) came specifically to enjoy freshwater-based activities such as rafting, kayaking, caving and bird-watching, which generated direct spending of almost USD8 million.⁴⁰

ECOSYSTEM GOODS AND SERVICES

The NBSAP BiH singled out three groups of ecosystems with essential services:

- Forest ecosystems, which cover around 27,000 km², or 53% of the country's territory. From the perspective of timber production, as one of the first essential services to the population of BiH, forest ecosystems can be broadly divided into highly productive and low productive forests. From the standpoint of protective functions of forests as special ecosystem services, alpine forests and riparian forests have an essential role but both are under severe pressure due to urbanization and road construction along rivers. Other, no less important benefits of forests are reduced flooding risks, absorption of CO₂, climate regulation, air purification, and regulation of soil erosion.

³⁸ Ibid.

³⁹ UNECE.2018. Environmental Performance Reviews Bosnia and Herzegovina. Third Review. Available at: https://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.184.Eng.pdf

⁴⁰ GIZ. 2018. STREAMS OF INCOME AND JOBS: The Economic Significance of the Neretva and Trebišnjica River Basins. Available at: <https://balkangreenenergynews.com/wp-content/uploads/2018/05/The-Economic-Significance-of-the-Neretva-and-Trebi%C5%AInjica-River-Basins.pdf>.

- Freshwater ecosystems or ecosystems of rivers, mountain streams, glaciers, lakes and wetland habitats, where moorland ecosystems are particularly valuable, as well as marine ecosystems. Some of these ecosystems are threatened by negative effects of HPPs, which is the cause of one of the major conflicts in sustainable water management in the country's policy and environmental community.
- Agricultural ecosystems in BiH are very important for food production and ecosystem services derived from agrobiological diversity. Food production in agrobiological systems is an ecosystem service whose potential is underused, which indicates the need for serious and organized rehabilitation of neglected agro-ecosystems. Of the total land area of BiH, around 2,572 million ha, or 50.3%, is suitable for agriculture. Arable land accounts for 1,009,000 ha, or 20.0%, of total land, of which 478,000 ha, or 47%, is currently uncultivated.⁴¹

According to the assessment provided in the publication “Ecosystems of BiH for the Purpose of Sustainable Development,”⁴² BiH ecosystems are grouped in 19 large groups of ecosystems characterized by great diversity. Each of the 19 groups of ecosystems provides different type of ecosystem services. This publication provides an assessment of importance of 17 groups of main ecosystem services in each of the 19 ecosystem groups. Annex G illustrates the importance of BiH ecosystems in providing these key services.

As stated in the 2016 Biodiversity Analysis Report, biodiversity contributes significantly to livelihoods in rural and underdeveloped areas of BiH and has potential to give a noticeable boost to rural development of certain mostly protected areas.⁴³ According to the Stakeholder Survey, 87.8% of respondents stated that biodiversity contributes to local rural development (with 41.5% stating that biodiversity absolutely contributes to local rural development). In their view, local/rural development mostly depends on the following ecosystem services: tourism and recreation (73.1%), availability of drinking water (31.7%), pleasant climate, clean air and cultural heritage (29.3%), followed by aesthetic value of these areas and existence of numerous rare or endemic species of flora and fauna (26.8%) and availability of wild medicinal herbs, forest fruits, ornamental plants (17%). Curiously, they put a greater emphasis on the cultural and regulatory rather than on the provisioning group of ecosystem services even though provisioning ecosystem services bring direct benefits for population.

Gathering/natural habitat harvesting and cultivation of medicinal and aromatic plants, forest fruits and mushrooms has a long tradition in BiH. The biodiversity of medicinal and aromatic plants and mushrooms is high, making the country very competitive on the international market. According to the BiH Foreign Trade Chamber, exports of medicinal plants, forest fruits, and honey in 2018 reached 39 million KM (USD 22 million), which was a 55% increase relative to 2017.⁴⁴ The number of families engaged in gathering medicinal and aromatic plants BiH is estimated at approximately 50,000, and almost

⁴¹ BiH Council of Ministers. 2017. Strategy and Action Plan for the Protection of Biological Diversity of Bosnia and Herzegovina for the period 2015–2020. Available at:

http://www.vijeceministara.gov.ba/akti/prijedlozi_zakona/default.aspx?id=25304&langTag=hr-HR

⁴² Barudanović, S., Macanović, E., Topalić-Trivunović, Lj., Cero M. (2015): Ecosystems of Bosnia and Herzegovina for the purpose of sustainable development, PMF, UNSA; Fojnica d.d. Fojnica

⁴³GIZ. 2018. STREAMS OF INCOME AND JOBS: The Economic Significance of the Neretva and Trebišnjica River Basins. Available at: <https://balkangreenenergynews.com/wp-content/uploads/2018/05/The-Economic-Significance-of-the-Neretva-and-Trebi%C5%AInjica-River-Basins.pdf>.

⁴⁴ Foreign Trade Chamber of BiH. Available at: <http://www.bhepa.ba/analiza-razmjene-za-2018-godinu-sektor-ljekovitog-bilja-etericnih-ulja-sumskih-plodova-i-meda/>

3,000 of them are organized in more than 50 companies which purchase and resale medicinal herbs. Most collectors earn their incomes by collecting herbs, mushrooms and forest fruits.⁴⁵ Local communities use their traditional knowledge and practices in production of food and medicine from homemade and natural products. However, due to the lack of mechanisms to control harvesting of medicinal herbs in the RS and FBiH, some natural habitats of medicinal herbs have become quite barren.⁴⁶

6 LEGAL FRAMEWORK AFFECTING CONSERVATION

NATIONAL LAWS, POLICIES AND STRATEGIES

6.1.1 National Legislation

Pursuant to the BiH Constitution,⁴⁷ environmental policies and use and management of natural resources are a competence of the entity and BD governments, which adopt laws, regulations and standards to regulate environmental matters. Almost all relevant legislation is adopted and enforced at the entity and BD level.

6.1.2 Entity Legislation

Given that the competences in the sector of nature protection in BiH are entrusted to the entity level (RS, FBiH and BD), the FBiH Law on Nature Protection (OG of the FBiH, No. 66/13), RS Law on Nature Protection (OG of RS, No. 20/14) and BD Law on Nature Protection (OG of BD of BiH, No. 24/04, 1/05, 19/07, and 9/09) are the principal biodiversity legislation. In addition, the RS Law on National Parks (OG of RS, No. 75/10) regulates in detail the issues of importance for protection, development, promotion, management, financing, and sustainable use of national parks in the RS territory. A list of by-laws adopted in the RS and FBiH is provided in Annex H. No environmental by-law has been adopted in the BD. According to the interviews with entity ministries of environment protection/ecology, amendments to the laws on nature protection are planned in both entities. The Rulebook on Strictly Protected and Protected Wild Species of the FBiH and the Decree on Strictly Protected and Protected Wild Species of the RS are currently in the process of adoption in both entities.

According to the entity and BD Environmental Approximation Programs, the Habitats Directive and Wild Birds Directive have not been fully transposed into the abovementioned legislation in the FBiH, RS and BD, and transposition of these two directives needs to be enhanced through adoption of new by-laws.

In the RS, two new by-laws were adopted in 2016 and 2017, and the Law on Proclamation of the Drina National Park⁴⁸ was passed in 2017, and five decisions on proclamation of five new PAs were adopted in

⁴⁵ Ministry of Foreign Trade and Economic Relations, 2017. Strategic Plan for Rural Development of BiH (2018–2021), Available at: http://www.mvteo.gov.ba/data/Home/Dokumenti/Poljoprivreda/Strategic_Plan_for_Rural_Development_of_BiH_Eng.pdf

⁴⁶ FBiH Ministry of Environment and Tourism. 2019. Sixth National Report of BiH to the Convention on Biological Diversity. Sarajevo

⁴⁷ Available at: <http://www.ccbh.ba/osnovni-akti/ustav/?title=preambula> (accessed on 24 December, 2019)

⁴⁸ OG of RS, No. 63/17

the 2016–2019 period (Slatina Forest Park (2016), Gromizelj Protected Nature Reserve (2018), Cicelj Nature Park (2018), Una Nature Park (2019), Tišina Protected Nature Reserve (2019)).

Beside these specific laws, environmental legislation includes numerous laws and by-laws relevant to environmental protection in general, as well as water, air, and solid waste management. These define and set goals, principles, measures, responsibilities, documents, funding, and supervision of environmental protection in BiH that has direct impact on the status of biodiversity. The overview of the abovementioned legislation is provided in Annex H.

Out of all these laws, the matter of adoption of the FBiH Law on Forests is of special importance for biodiversity conservation in the FBiH, as confirmed through the Sixth National Report to UNCBD as well as through this analysis (survey and interviews).⁴⁹

6.1.3 Cantonal Legislation

Only two cantons have adopted laws on nature protection (Central Bosnia Canton and Herzegovina-Neretva Canton), but only the Herzegovina-Neretva Canton has aligned their Law on Nature Protection⁵⁰ with the FBiH Law on Nature Protection.

6.1.4 Strategies and Action Plans

The NBSAP BiH (2015–2020) is the most significant strategic document for biodiversity at the state level, and it was developed under the UNEP/GEF Project “Support to BiH in Revising Strategy and Action Plan for Protection of Biological Diversity and Development of the Fifth National Report under Biological Diversity Convention.” By adopting the NBSAP at the BiH level, the institutions have committed to implementation of the measures it contains to achieve national targets from the NBSAP and implement the provisions of UNCBD in BiH. As already mentioned, the NBSAP BiH was adopted in May 2017 when many prescribed measures were supposed to have already been implemented, so at this time it is impossible to evaluate how effective the implementation was.

INTERNATIONAL AGREEMENTS

BiH acceded, signed or ratified a number of MEAs to date, which demonstrates a strong state commitment to comply with these agreements; but the process of ratification and implementation of MEAs in BiH suffers from numerous weaknesses:⁵¹ (i) weak or absent organizational structures and mechanisms of coordination for effective implementation of the MEAs; (ii) obligations of the entity and

⁴⁹ The Federal Ministry of Agriculture, Water Management and Forestry (FMAWMF) has developed the Preliminary Draft of the Law on Forests and submitted it for consideration to the Government of FBiH in November 2011. After submission of the Preliminary Draft, between 2012 and 2015 the FMAWMF has requested in several occasions for the Government of FBiH to take it into consideration. In September 2015, the Government of BiH passed a conclusion based on which a working group was established to provide technical assistance to the FMAWMF in producing Draft Law on Forests. After the new preliminary draft has been completed, and public discussion held, the FMAWMF submitted the new Preliminary Draft of the Law on Forest to the Government of FBiH, and the Government adopted it on 27th of May 2016, and submitted it in the form of Draft to the parliamentary procedure. The Draft Law is still in the parliamentary procedure. In the meantime, nine cantons have adopted their own legislation on forestry.

⁵⁰ OG of the Herzegovina-Neretva Canton, No. 12/17

⁵¹ UNEP. 2014. Legal analysis on ratification and implementation of Multilateral Environmental Agreements (MEAs) in BiH. Sarajevo

BD level institutions to bring their legislation in line with the ratified MEAs, (iii) coordination of the activities of the BiH level, entity level and BD institutions on the implementation of MEAs, (iv) reporting obligations of the entity- and BD-level institutions towards Ministry of Foreign Trade and Economic Relations (MOFTER) on the status of progress made on implementation of the activities agreed upon during coordination meetings, (v) nomination procedure for Focal Points, which should also regulate the rights and obligations of nominated Focal Points in the conduct of their activities, (vi) procedure for coordination of the activities on implementation of different MEAs. Some of these issues concerning implementation of MEAs have been confirmed through interviews conducted within the framework of this analysis.

The list of international agreements, treaties, and conventions of which the country is a member and that are specifically related to biodiversity is presented in Annex I. Since the 2016 Biodiversity Analysis, two new bilateral agreements and 3 MEAs have been ratified/signed:⁵²

- Agreement Between the BiH Council of Ministers and the Government of the Republic of Croatia on Cooperation in the Field of Environmental Protection and Sustainable Development (OG of BiH, No. 2/17),
- Agreement Between the BiH Council of Ministers and the Government of the Republic of Serbia on Cooperation in the Field of Environmental Protection and Sustainable Development (OG of BiH, No. 2/16),
- Decision on the Ratification of the Paris Agreement (OG of BiH, No. 1/17),
- Decision on the Ratification of the Protocol on Strategic Environmental Assessment (OG of BiH, No. 3/17),
- Decision on the Ratification of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) (OG of BiH, No. 8/17).

With regard to specific MEAs, such as the Convention on Biological Diversity, it is worth mentioning that, in accordance with the Sixth National Report of BiH to the UNCBD (2019), the following mechanisms have been established to support the implementation of the Convention in BiH:

- Cooperation between the entities and BD,
- Major legislation on the protection of nature has been adopted,
- Funding measures related to biological diversity are implemented at the entity- BD-, cantonal and local level (although without a common database that would integrated all funding allocated to this purpose),
- Activities on establishing two information systems at the entity level are in progress,
- A BiH portal, with a mechanism for sharing the biological diversity information, i.e., CHM BiH, was established in 2013.⁵³

The implementation of the Convention on International Trade in Endangered Species (CITES) has been improved since 2016. In 2018, the BiH Council of Ministers adopted the Decision on the Conditions and Method of Implementation of the Convention on International Trade in Endangered Species (OG of BiH, No. 31/18).

⁵² MOFTER Website with the list of ratified conventions available at <http://www.mvteo.gov.ba/Content/Read/vodni-resursi-zastita-okoline-konvencije-sporazumi?lang=bs> (accessed on 14 January, 2020)

⁵³ Available at <http://www.bih-chm-cbd.ba> (accessed on 14 January, 2020)

GOVERNMENT AGENCIES

At the BiH level, environmental matters are the responsibility of the Sector for Natural Resources, Energy and Environment of the MOFTER. MOFTER is responsible for the implementation of environmental protection programs that result from international treaties and for cross-sectoral coordination between other sectors of environment.

At the entity level, the primary ministries in charge of biodiversity conservation are the Federation Ministry for Environment and Tourism and RS Ministry of Urban Planning, Civil Engineering and Ecology. According to the interview conducted with the representative of the Federation Ministry for Environment and Tourism, only two persons work on biodiversity protection in this Ministry, even though the job classification envisages a total of 4 employees. In the RS, only one staff member works on biodiversity protection issues in the RS Ministry of Urban Planning, Civil Engineering and Ecology, even though job classification requires two employees for these tasks. During the interview with the RS Ministry of Urban Planning, Civil Engineering and Ecology representative, it was highlighted that this Ministry needs more than one employee for these tasks based on their current and future needs.

In the RS, the Department for Natural Heritage within the RS Institute for Protection of Cultural, Historical and Natural Heritage is responsible for protection and conservation of nature, conservation of biological, geological and landscape diversity. Of seven employees in this department as required by the job classification, six are actually employed. According to the RS Law on Nature Protection, this Institute is responsible for nature monitoring, collection and processing of data on the state of nature, preparation of reports and updates for the RS Information Systems for Nature Conservation. In the FBiH, a similar institute has not been established yet, although its establishment is stipulated by the FBiH Law on Nature Protection. For this reason, the FBiH Information Systems for Nature Conservation will be maintained and updated by the FBiH Environmental Protection Fund.⁵⁴ According to the interview with the Federation Ministry of Environment and Tourism (FMET), the capacity of the Fund will be increased by creation of a professional department within the Fund which will operate the Information Systems.

At the cantonal level in the FBiH, in each of its 10 cantons one ministry is responsible for environmental protection. The cantonal ministries have competence over environmental and nature protection issues, as well as the establishment and management of PAs of categories III, IV, V, and VI.⁵⁵

CONSERVATION INITIATIVES: CURRENT AND PLANNED CONSERVATION EFFORTS

In the 2016–2019 period, numerous nature and biodiversity protection projects were funded and implemented by both international and national institutions and organizations. Most active among the donors and international NGOs were: MAVA, EU, SIDA, GEF, BMZ, GIZ, and UNEP. Relevant activities that have been implemented since 2016 are shown in Annex J.

⁵⁴ Additional information is available on the following link: <http://e-prirodafbih.ba/en/> (accessed on 26 January, 2020)

⁵⁵ FBiH Law on Nature Protection (OG of FBiH, No. 66/13), Article 134.

The most significant planned activity is the development of the BiH Environmental Strategy and Action Plan (ESAP) for 2030 and beyond with support from the Stockholm Environment Institute (SEI), Swedish Embassy in BiH, and SIDA. The ESAP will include a biodiversity chapter. During the two-and-a-half-year project, the SEI will work with the authorities at the BiH and entity levels. The BiH ESAP 2030+ will be developed collaboratively and its launch is scheduled for 2022.⁵⁶

7 THREATS AND ACTIONS NECESSARY TO CONSERVE BIODIVERSITY

DIRECT THREATS TO BIODIVERSITY

This section elaborates direct threats to biodiversity. Each direct threat to degradation or loss to biodiversity may have several drivers (indirect threats).

The BiH Fifth National Report to the UNCBD⁵⁷ and 2016 Country Biodiversity Assessment Report⁵⁸ emphasized that most intensive threats/pressures to biodiversity in BiH include: conversion of habitats, over-exploitation of resources, pollution, climate change, invasive species, and anthropogenic actions and economic development activities. The analysis team confirmed that identified biodiversity threats in 2016 still apply today while additional threats have also been identified. These include waste mismanagement, excessive and illegal logging and deforestation, and energy generation. Specifically, almost half of surveyed stakeholders consider waste mismanagement to be a biodiversity threat. The predominant method for waste disposal in BiH is landfilling, which many citizens oppose (mostly due to health issues associated with landfilling). Hence, waste mismanagement was a motive for number of public demonstrations that gained substantial media attention and raised this topic as an important issue among the general population. However, differences in the perception of threats or at least the level of prioritization of threats identified by the biodiversity experts (e.g. those engaged in reporting to the CBD) and surveyed stakeholders are evident. Specifically, some threats were emphasized more strongly among the surveyed stakeholders than in the available public reports that address biodiversity issues. For example, excessive deforestation is not mentioned in the reports reviewed as part of the extensive desk research the analysis team conducted. However, 22 percent of the surveyed stakeholders consider it to be a very serious issue. On the other hand, the conversion of habitats was not mentioned among surveyed stakeholders although it was recognized as a biodiversity threat in the available literature. A possible explanation for this divergence could be stakeholders' understanding that habitat conversion is a consequence of anthropogenic actions and economic development activities (mostly infrastructure construction and urbanization) that are identified as biodiversity threats by 7 percent of survey respondents. Table I provides an in-depth overview of biodiversity threats and pressures in BiH among the surveyed stakeholders.

⁵⁶ Available at: <https://news.cision.com/stockholm-environment-institute/r/bosnia-and-herzegovina-developing-new-environmental-strategy-and-action-plan-with-swedish-support.c2956176>

⁵⁷ FBiH Ministry of Environment and Tourism. 2014. Fifth National Report of BiH to the Convention on Biological Diversity of BiH. Available at: <https://www.cbd.int/doc/world/ba/ba-nr-05-en.pdf>

⁵⁸ USAID. 2016. Country Biodiversity Analysis: Bosnia and Herzegovina. Available at: <http://measurebih.com/uiimages/Biodiversity%20Assessment.pdf>

Table 1: Main Groups of Threats

Threat	Percentage of stakeholders who identified this issue to be a threat	Elaboration ⁵⁹
Waste mismanagement (volumes and disposal, problem of illegal landfills)	47	The predominant method for waste disposal in BiH is landfilling. According to the BiH Agency for Statistics, between 2011 and 2015, the share of waste permanently disposed of in landfills fluctuated between 67% and 79%. The recovery rate was increasing during this period, but by end-2019 it still did not reach 1% of the waste that is generated. Although waste statistics are hardly reliable, there is a huge difference between the amounts of generated municipal solid waste (MSW) and disposed waste, which suggests that about 20–30% of the collected MSW ends up in illegal dumpsites. Even though several regional sanitary landfills have been constructed, more are needed. The completion of their construction would be one of the most important steps towards creating a sustainable MSW disposal system. There are deficiencies with the management of other types of waste, most significantly for medical waste – even the quantities are unknown. Significant funds and investments will certainly be required for the development of adequate facilities for proper disposal of medical waste.
Climate change	25	Extreme climate events in BiH have become more frequent. In the 2003–2014 period, 6 of the 12 years were either very dry or extremely dry. In 2001, 2002, 2009, 2010, and 2014, extraordinarily disastrous floods hit large portions of the country. These extreme climate and weather episodes have caused substantial material and financial damages, as well as casualties. Meteorological data shows that the problem of drought and drought periods is increasingly shifting toward the continental and hilly-mountainous region of BiH, and that an evident need for adaptation to the new situation is emerging. Droughts started to occur regularly in the winter period, which can significantly affect not only the provision of soil moisture reserve in spring, but also water supply. It is important to highlight that, for species that constitute most mountain forest ecosystems, such as fir, Norway spruce and Scots pine, BiH is situated at their areal's southern limit. The increase in average temperatures could have a negative impact primarily on the size of the population of these species, which, in combination with other anthropogenic factors may lead to their vulnerability and, ultimately, complete loss in the region. The loss of wetlands, such as the Hutovo Blato NP, which is one of the two main bird resting areas in BiH, could lead to the disappearance of bird and turtle populations that inhabit swamps during the year or are present only during migrations.
Excessive and	22	According to publicly available reports, there is no overcutting of the forest by state forest management companies in

⁵⁹ UN Environment. 2019. State of the Environment Report (SoER) for BiH. Final draft. Sarajevo UNECE. 2018. Environmental Performance Reviews Bosnia And Herzegovina. Third Review. Available at: https://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.184.Eng.pdf
 FBiH Ministry of Environment and Tourism. 2019. Sixth National Report of BiH to the Convention on Biological Diversity. Sarajevo

Threat	Percentage of stakeholders who identified this issue to be a threat	Elaboration ⁵⁹
illegal logging and deforestation		<p>BiH; 5.7 million m³ of timber is harvested per year and an annual increment is more than 11 million m³, so wood production uses up only around 50 percent of the annual incremental increase. However, reports show that there is excessive logging in certain forest categories (especially the high forest) and in certain locations, such as more accessible areas in terms of terrain and proximity to forest transport infrastructure). Some other categories and locations are not logged. Logging data for private forests are not reported.</p> <p>The issue of illegal logging in BiH has been widely recognized by both entity governments. Illegal logging is conducted by private individuals for subsistence needs (especially for firewood) and by organized groups for illegal logging, transporting and processing. Aggregate data on illegal logging are not available at neither the state nor entity level. Rural poverty is a driver of illegal logging, but inadequate supervision and control of the forests as well as the level of crime and corruption in forestry sector are problems of equal magnitude.^{60,61} The Cantonal Forest Office in the Central Bosnia Canton reported a decreasing trend in illegal logging because of the increased number of employed forest guards. Other major challenges in the forestry sector include: forest fires; powerful attacks of pathogens and insect pests; large areas of mined forests and forest lands; a large accumulation of waste in forests and watercourses; poor openness of forest areas to communications; and poor forest road infrastructure. Deforestation is largely linked to urbanization (conversion of forest land into construction land), and construction of new roads and other infrastructure. Forest protection (e.g. from fires) as well as a small degree of afforestation remain a problem.</p>
Pollution in general	17	<p>Pollution directly impacts the quality of air, water, and soil and indirectly affects biodiversity. Air pollution in BiH mostly comes from industrial activities, domestic heating, and traffic. Constant increases in traffic also increase the emissions of exhaust gases, which is most evident in major urban centers. Due to the specific climatic conditions and temperature inversions, air pollution is significantly higher in winter months in many major urban centers, especially in cities located in the valleys where pollution is "captured" for a longer period. Some BiH cities are among the most polluted cities in all of Europe. The most commonly used fuel in individual household heating systems is the cheapest coal and sometimes even waste, which also has a major impact on air pollution. About water in BiH, there is a clear problem of inadequate domestic and industrial wastewater discharge. Based on data on wastewater discharge for 2012, only 4% of all wastewater is delivered to the treatment plant. During 2017, this percentage significantly increased and amounted to 42% of the total wastewater discharged into water recipients (in relation to the increase in the sewage network coverage). In 2017, the share of treated water was 63.1% of all released wastewater, the share of polluted water was 16.6%, and the share of non-polluted wastewater was 20.3%. Soil degradation is also on the rise. Changes in the land use patterns and</p>

⁶⁰ FAO. 2015. The forest sector in BiH. Available at: <http://www.fao.org/3/a-au015e.pdf>

⁶¹ Available at: http://illegallogging.rec.org/publications/BiH_IL%20Fact%20Finding_Final.pdf

Threat	Percentage of stakeholders who identified this issue to be a threat	Elaboration ⁵⁹
		the loss of agricultural land were caused by sudden urbanization, industrialization and changes in commercial development. A wide range of pesticides and fertilizers are used, especially in agriculture, but the data on quantities used is not available.
Energy sector – electricity generation from HPPs and small HPPs	15	BiH is a net exporter of electricity. Around 35% of electricity is generated from hydropower, and the remaining 65% is generated in six brown coal/lignite-fired thermal power plants (TPPs). The combined share of wind, solar, and biofuels in electricity generation in BiH is below 0.5%. In both entities, there are cases where construction of multiple small HPPs is planned on the same watercourse. The assessment of their cumulative effect on the environment is rarely made although it is a requirement included in the Environmental Impact Study. Moreover, an Environmental Impact Assessment (EIA) is not required for HPPs with a capacity up to 5 MW; for such facilities environmental permits can be issued without an EIA. The lack of cumulative effect assessment, combined with no mandatory EIA, is particularly worrying where there are multiple small HPPs in one area. In 2018, the BiH Council of Ministers adopted the BiH Framework Energy Strategy until 2035. This strategic document contains a table with planned projects for new electricity generation plants, including HPP and new blocks for TPPs. However, no SEA was performed for this strategic document. Only the HPP that will be constructed by public electric power utility companies are encompassed by the strategy, and it does not include information on HPPs (especially small HPPs) that will be constructed by private entities.
Invasive alien species	12	There is no inventory of invasive species nor any strategy to combat invasive alien species. The list of existing invasive species and data on distribution and population size of these species are fragmented and produced as results of various studies. Invasive species are found in almost all biological categories, but most data refer to invasive plant and animal species. Decisions have been made and action plans adopted providing for monitoring, control and reduction of negative effects of some of these species, primarily those that exert harmful effects on human health, e.g., the weed plant species ambrosia.
Anthropogenic actions and economic development activities	7	<p>The data on anthropogenic pressures on natural resources refer to the following economic development activities:</p> <ul style="list-style-type: none"> • construction of infrastructure facilities (construction of a traffic transport network, construction of electric power plant especially HPPs and their accumulations, electric power stations, power transmission plants, pipelines, gas lines, construction of water supply/catchment areas, ditches, artificial lakes with dams, water gates, dams), • agricultural activities (reclamation, exhaustion of habitats by monoculture, use of pesticides and mineral fertilizers-nutrition load), • uncontrolled urbanization and realization.

Threat	Percentage of stakeholders who identified this issue to be a threat	Elaboration ⁵⁹
Overexploitation of resources (unsustainable use)	7	Overexploitation of certain species of plants and animals stands out as one of the main reasons for the loss of biodiversity in general. BiH has over 700 species of medicinal and aromatic plants, of which 200 are harvested. ⁶² Various non-wood forest products (NTFPs) are extensively utilized by the local population and by private companies, which hire local people in the rural areas to collect mushrooms, medicinal plants, berries, etc. There are no clear statistics on the collection of NTFPs. It is estimated that around 100,000 people collect various types of NTFPs organized in companies registered for their collection and processing. Exploitation of freshwater resources in BiH primarily relates to fishing of economically important fish species. Overexploitation of natural resources in this sense implies both uncontrolled overfishing and the degradation of aquatic habitats, which lowers the rate of natural reproduction and renewal of populations, and has potential to impoverish and destabilize ecosystems.
Conversion of habitats	n/a	Habitat conversion (change in purpose) is recognized as one of the major drivers of biological diversity loss in the secondary literature, but not perceived as such in other sources of information. Adoption and implementation of spatial planning documents at all levels in BiH has been slow, which resulted in uncontrolled urbanization and fragmentation and loss of agricultural, forest, wetland and other habitats. Forest fires are the main cause of degradation and loss of forest habitats, while other causes include natural disasters, cattle, insects and plant diseases, illegal use and land acquisition. The biggest threat to fertile agricultural lands with agrobiological diversity is the process of urbanization and conversion into construction land. When it comes to degradation and fragmentation of land, it happens because of urbanization, construction of infrastructure facilities, fire, erosion, discharge of pollutants into the ground, and illegal construction of facilities.

⁶² Foreign Trade Chamber of BiH. Available at: <http://www.bhepa.ba/analiza-razmjene-za-2018-godinu-sektor-ljekovitog-bilja-etericnih-ulja-sumskih-plodova-i-meda/>

DRIVERS OF THREATS AND ACTIONS NECESSARY TO CONSERVE BIODIVERSITY

This section discusses the drivers⁶³ that give rise to the identified biodiversity threats and proposes actions necessary to conserve biodiversity in BiH. All threat drivers are confirmed in secondary literature (primarily in the NBSAP BiH and the Fifth and Sixth National Reports to the UNCBD) or through surveys, interviews, and focus groups. The drivers were grouped into the following major categories:

1. institutional arrangements,
2. economic factors,
3. inadequate technical capacity,
4. inadequate management capacity, and
5. socio-political factors.

The analysis team identified 34 actions necessary based on the team's consultations with the relevant stakeholders (government institutions at BiH and entity levels, international organizations, including USAID/BiH IPs, PA Managers) interviewed during the analysis implementation. The actions necessary are also derived from the NBSAP BiH and aligned with its National Targets and measures. All National Targets and measures included in the NBSAP BiH are listed in Annex K.

It is important to note that one driver may affect more than one threat with varying degrees of intensity. Also, one or more actions necessary are needed to address any single identified threat. The correlation between drivers, threats, and actions necessary is explained in Table 2.

⁶³ A *driver* is a constraint, opportunity or other important variable that positively or negatively influences direct threats. Drivers are commonly referred to as indirect threats, factors or forces that influence the direct threats.

Table 2: Actions Necessary Linked to Drivers and Direct Threats

Drivers	Links to Direct Threats ⁶⁴	Actions Necessary
Institutional arrangements		
Absence of the Law on Forests in FBiH	<ul style="list-style-type: none"> • Excessive and illegal logging and deforestation • Overexploitation of resources • Conversion of habitats • Anthropogenic actions and economic development activities • Climate change 	FBiH has not had a Law on Forests in place for more than 10 years. The draft Law has been stuck in the parliamentary procedure for several years already. Adoption of the new law on forests in FBiH should enable forest protection; improvement of horizontal and vertical government cooperation.
Insufficient capacity of expert associates for nature protection in all entity and cantonal ministries	<ul style="list-style-type: none"> • Conversion of habitats • Overexploitation of resources • Invasive species • Excessive and illegal logging and deforestation 	Strengthen capacities of PAs to become financially self-sustainable; implementation of good practices from the regional and international level – study trips.
Horizontal legislation is not fully aligned with the EU environmental <i>acquis</i> and the existing environmental legislation is not fully implemented	<ul style="list-style-type: none"> • Pollution • Anthropogenic actions and economic development activities • Waste mismanagement • Excessive and illegal logging and deforestation • Conversion of habitats • Overexploitation of resources • Climate change • Invasive species • Electricity generation in HPPs and small HPPs 	Policy changes and further approximation of legislation with the EU <i>acquis</i> ; improvement of horizontal and vertical government cooperation.
Lack of organizational structure and coordination mechanisms for effective implementation of MEAs; slow process of implementation of MEAs	<ul style="list-style-type: none"> • Climate change • Overexploitation of resources • Pollution • Invasive species 	Improvement of horizontal and vertical government cooperation; Improvement of multi-sectoral approach; policy changes and further approximation of legislation with the EU <i>acquis</i> .
Lack of strategies at the entity level, municipal level strategies and planning documents containing specific measures for protection and improvement of natural values and biodiversity	<ul style="list-style-type: none"> • Conversion of habitats • Overexploitation of resources • Pollution • Climate change • Anthropogenic actions and economic development activities • Waste mismanagement • Excessive and illegal logging and deforestation 	Develop systemically designed program for rural development and keeping people in rural areas; clearly define protection measures by strategic documents to protect natural values and provide adequate monitoring system; improvement of the multi-sectoral approach; improvement of horizontal and vertical government cooperation.

⁶⁴ Prioritized – sorted by strength and significance of the link or impact.

Drivers	Links to Direct Threats ⁶⁴	Actions Necessary
	<ul style="list-style-type: none"> • Invasive species • Electricity generation in HPPs and small HPPs 	
Poor industrial regulations	<ul style="list-style-type: none"> • Pollution • Climate change • Anthropogenic actions and economic development activities • Waste mismanagement 	Increase taxes for polluters; policy changes and further approximation of legislation with the EU <i>acquis</i> ; provide private sector with information on mitigation measures which will improve environmental performances of the companies and public-private cooperation.
Low percentage of area under protection	<ul style="list-style-type: none"> • Conversion of habitats • Overexploitation of resources • Anthropogenic actions and economic development activities • Electricity generation of hydropower dams and mini hydropower dams 	Enable communication, education and public awareness activities related to value of biodiversity and importance of PAs for local sustainable development; involve local communities in all activities; conduct valuation of ecosystem services and integrating them into decision making; start procedures for establishment of protected areas planned in spatial plans, and monitor their progress; ⁶⁵ introduce stronger control in PAs and define duties and powers of rangers in PAs; introduce integral management of PAs.
Insufficient number of projects related to biodiversity protection	<ul style="list-style-type: none"> • Conversion of habitats • Overexploitation of resources • Invasive species 	Implement biodiversity improvement measures (active conservation measures: habitat restoration, species reintroduction, etc.) and biodiversity conservation measures (pressure reduction, current status preservation).
Economic factors		
Insufficient funding for biodiversity – related actions/projects and research activities	<ul style="list-style-type: none"> • Conversion of habitats • Overexploitation of resources • Invasive species 	Increase taxes for polluters; find new mechanisms for financing projects for biodiversity conservation, such as the inclusion these issues in the portfolio of environment protection funds; supply private sector with information on mitigation measures which will improve environmental performances of the companies and public-private cooperation; strengthen the funds for environment to finance inter-sectoral projects (e.g., green infrastructure).
Insufficient funding of Pas	<ul style="list-style-type: none"> • Conversion of habitats • Overexploitation of resources • Invasive species 	Find new mechanisms to finance biodiversity conservation, such as the inclusion of these issues in the portfolio of environment protection funds; strengthen capacities of PAs to become financially self-sustainable.
Inadequate technical capacity		
Lack of information on species of flora, fauna and fungi, habitat types and ecosystems in the entire area of BiH – no inventories have been	<ul style="list-style-type: none"> • Conversion of habitats • Overexploitation of resources • Invasive species 	Capacity building of scientific institutions and NGO sector, provision of equipment for the scientific institutions; establishment of a monitoring system and acting based on collected data; inventory and research; updating of red lists; help in establishing of information

⁶⁵ Measure 11.2 from the NBSAP BiH (2015–2020)

Drivers	Links to Direct Threats ⁶⁴	Actions Necessary
conducted		systems and communication protocols for populating data in the system.
Lack of research on biodiversity in general, at any level	<ul style="list-style-type: none"> • Conversion of habitats • Overexploitation of resources • Invasive species 	Strengthening of NGO sector and scientific institutions, provision of equipment for the scientific institutions; inventory and research; providing more space for experts' input and involvement.
List of invasive species is not defined (at any level) and there is no monitoring or control of invasive species.	<ul style="list-style-type: none"> • Invasive species • Conversion of habitats 	Inventory and research; clearly define protection measures by strategic documents to protect natural assets and provide an adequate monitoring system; implementation of awareness raising activities; strengthening of NGO sector; strengthening and equipping scientific institutions with necessary instruments/tools (e.g. laboratory, field equipment etc.); providing assistance in establishing of information systems and communication protocols for populating data in the system.
Lack of systematic soil monitoring	<ul style="list-style-type: none"> • Pollution • Anthropogenic actions and economic development activities • Waste mismanagement • Conversion of habitats 	Strengthening of NGO sector and scientific institutions, provision of equipment for scientific institutions to enable them to conduct field-related inventory and research; providing more space for experts' input and involvement.
Inadequate management capacity		
Unsustainable use of biodiversity (NTFP – mushrooms, aromatic and medicinal herbs) due to lack of monitoring and control	<ul style="list-style-type: none"> • Overexploitation of resources • Excessive and illegal logging and deforestation • Conversion of habitats • Anthropogenic actions and economic development activities 	Cultivation of commercially valuable herbs instead of reliance on natural resources; development of systemically designed rural development programs to keep people from leaving rural areas; preservation of traditional practices in agriculture; involvement of local communities in all activities.
Socio-political factors		
Low level of public awareness of the value of biodiversity	<ul style="list-style-type: none"> • Conversion of habitats • Overexploitation of resources • Pollution • Climate change • Invasive species • Anthropogenic actions and economic development activities • Electricity generation in HPPs and small HPPs • Waste mismanagement • Excessive and illegal logging and deforestation 	Better quality education on environmental issues; involvement of local communities in all activities; involvement of media in awareness raising campaigns; reform of official education – teach new generations to care about environment and natural resources; rely on cooperation with NGOs for education and awareness-raising activities.

8 EXTENT TO WHICH THE MISSION MEETS IDENTIFIED ACTIONS NEEDED

The Country Biodiversity Analysis conducted in 2016 identified 54 specific actions needed to conserve biodiversity in BiH. According to the survey conducted with IPs, 9 out of 54 specific actions identified (16.7%) have been addressed, directly or indirectly, through current USAID programming, as follows:

1. Development of eco-tourism-related activities based on natural resources (Via Dinarica: Rural Incomes and Sustainable Enterprises and Diaspora Invest Activity),
2. Strengthening of the capacity of NGOs in terms of writing projects and applications for international donors (Restoring Civic Mission of Education and Via Dinarica: Rural Incomes and Sustainable Enterprises),
3. Adoption of the draft FBiH Law on Forests (USAID's Fiscal Sector Reform Activity in BiH),
4. Establishment of working groups (at the entity and district level) for coordination of sectors: environmental protection, water management, agriculture, forestry, spatial planning, energy, mining and industry (Fostering Agricultural Markets Activity II – FARMA II),
5. Preparation of instructions (in the form of a publication) for integration of biodiversity values into other sectors, i.e., strategies and plans, as well as instructions for monitoring of their implementation, including organization of regular meetings (FARMA II),
6. Improvement of horizontal harmonization of laws through organization of discussions and roundtables of expert associates from the relevant ministries at the entity and district level (FARMA II),
7. Organization of educational/informational visit to protected areas (Via Dinarica: Rural Incomes and Sustainable Enterprises),
8. Construction of ecotourism infrastructure in PAs (Diaspora Invest Activity),
9. Reduction of chemical pollution from industry by strengthening the environmental permit mechanisms and control inspections (FARMA II).

USAID/BiH's contribution to addressing updated list of actions necessary as presented in the previous chapter, is presented in Table 3 below. Table 3 also provides an overview of other donors' activities targeting identified actions necessary.

Table 3: Actions Necessary and Extent to Which Current USAID/BiH Programming and Other Donors' Activities Contribute to These

Actions necessary to achieve conservation of biodiversity	Extent to which the current USAID programming contributes to sustainable management and conservation of biodiversity	Relevant activities performed by other donors/ organizations
1. Clearly define protection measures by strategic documents to protect natural assets and establish an adequate monitoring system	The mission does not currently address development of the strategic documents to protect natural assets or the adequate monitoring system.	BiH is preparing an environmental strategy (including entity level strategies) and action plan for 2030 and beyond, with support of the SEI, the Swedish Embassy in BiH and the SIDA. This strategy will be developed during the two-and-a-half-year period and will contain chapters related to nature protection issues. The development of these strategies has not started yet.
2. Better quality education on environmental issues	Two USAID Activities are focused on the education sector (Enhancing and Advancing Basic Learning and Education (ENABLE) and General Education Activity (TABLA)). Although both focus on integrating STEM education into the basic education system in BiH, including Biology as one of the primary subjects, none of these Activities directly addresses the country's environmental issues.	According to the analysis of activities performed by other organizations listed in Annex J, there are no activities that address education on environmental issues.
3. Cultivation of commercially valuable herbs instead of reliance on natural resources	Activities under IR 2.1 addresses the agriculture sector capacity to mitigate the effects of climate change. Through USAID's Agribusiness Development Project experts in agriculture help loan borrowers apply the best techniques in agriculture to minimize negative impacts on environment. The same is done by FARMA II Project, which fosters environmentally sustainable production and processing and supports production of value-added food products, as well as medicinal and aromatic plants and honey.	According to the analysis of activities performed by other organizations listed in Annex J, there are no activities focused on cultivation of commercially marketable herbs and similar agricultural activities which could have positive impact on biodiversity and nature conservation, as well as on sustainable use of natural resources.
4. Government needs to provide private sector with information on mitigation measures which will improve environmental performances of the companies and cooperate with companies	The IR 2.2 helps improving capacity of local authorities to strategically plan local economic development and prioritize policy changes necessary to accomplish economic transformation of local communities. Activities related to the cooperation of government and private sector on biodiversity could be addressed through this IR.	According to the analysis of activities performed by other organizations listed in Annex J, there are no activities focused on cooperation between government and private sector aimed at mitigating negative effects of private sector activities and improve environmental performances of companies. In 2015–2016 UNIDO implemented a project in BiH “National Cleaner Production Program,” which trained 10 companies on how to improve their environmental performances and resource efficiency. However, it is necessary to establish a continuous exchange of information on these issues and help government on how to manage it.
5. Increase taxes for polluters	Activities under IR 2.2 through the Financial Sector Reform Activity (FINRA) help BiH bring financial supervision in line with the EU standards and review fees and taxes. However, no increases of taxes and fees for polluters have resulted.	According to the analysis of activities performed by other organizations listed in Annex J there are no activities focused on increasing taxes for polluters.
6. Strengthening the funds for environment to fund inter-sectoral projects (e.g., green infrastructure)	Activities under IR 2.2 through the Financial Sector Reform Activity (FINRA) help BiH bring its financial supervision systems in line with the EU standards and consider fees and taxes, however without strengthening funds for environment.	According to the analysis of activities performed by other organizations listed in Annex J, there are no activities focused on strengthening the funds for environment.

Actions necessary to achieve conservation of biodiversity	Extent to which the current USAID programming contributes to sustainable management and conservation of biodiversity	Relevant activities performed by other donors/ organizations
7. Strengthen capacities of PAs to become financially self-sustainable	The DO I foresees several programs which will focus on sustainable development of local capacities both through direct cooperation with local organizations in implementing USAID-funded projects. However, PAs' financial self-sustainability is not covered by any USAID-funded activity.	WWF Adria is implementing a project to support development of environmentally responsible business in the Una NP, which will improve the capacity of this PA to become financially self-sustainable. However, this project is focused only on one PA.
8. Policy changes and further approximation of relevant legislation with the EU <i>acquis</i>	The DO I encourages policy changes, however it does not currently address policy changes in the environmental and nature protection sectors.	WWF Adria is implementing the project "Dinaric Arc Sustainable Hydropower Initiative (DASHI) Phase II" which focuses on policy changes related to HPP (improvement of the legal framework for strategic planning, including declaration of exclusion zones for hydropower development). However, it does not take into consideration further approximation of horizontal legislation with EU <i>acquis</i> .
9. Develop systemically designed rural development programs to help retain people in rural areas	Activities under IR 2.1 address the capacity of the agriculture sector to mitigate the effects of climate change. The USAID's Agribusiness Development Project helps generate jobs and increase household incomes in targeted rural regions of BiH by supporting the development and expansion of cornichon, vegetable, and berry production and sales for small-scale farmers.	According to the analysis of activities performed by other organizations listed in Annex J, there are no activities focused on developing rural development programs.
10. Preservation of traditional practices in agriculture	Activities under IR 2.1 addresses the capacity of the agriculture sector to mitigate the effects of climate change. Through USAID's Agribusiness Development Project agriculture experts help loan recipients apply the best agricultural techniques to minimize negative impacts on environment. The same is done by FARMA II Activity, which fosters environmentally sustainable production and processing.	According to the analysis of activities performed by other organizations listed in Annex J, there are no activities directly focused on preservation of traditional practices in agriculture.
11. Strengthening multi-sectoral approach.	The mission frequently takes the multi-sectoral approach in the current CDCS and cooperation between activities in different sector is well-established and diverse. For example, the Energy Investment Activity Project and FARMA II cooperated to educate farmers on using the animal production and poultry sector waste and turning it to profitable uses). Waste created from animal production can be used as fuel without negative impact on environment and on biodiversity, if the energy generation plants are designed in accordance with the existing laws and standards. In addition, considering the possibility of electricity generation and application for quotas, this kind of investment can help improve farmers' economic position. It is necessary to improve cooperation between different sectors and integrate nature protection and biodiversity issues. For example, development of eco-tourism can be linked to improvement of traditional agricultural practices which have less negative impact on natural resources compared to other farming practices.	According to the analysis of activities performed by other organizations listed in Annex J, there are no activities that focus on strengthening of the multi-sectoral approach.

Actions necessary to achieve conservation of biodiversity	Extent to which the current USAID programming contributes to sustainable management and conservation of biodiversity	Relevant activities performed by other donors/ organizations
12. Adoption of a new FBiH Law on Forests that will include forest protection	The DO I addresses drafting and adopting of legislation (such as the adoption of the Law on Forests).	According to the analysis of activities performed by other organizations listed in Annex J, there are no activities related to adoption of the new FBiH Law on Forests.
13. Construction of infrastructure for mitigation of climate change impacts	The IR 2.1 addresses assistance in promoting clean and efficient energy technologies in BiH with mitigation of climate change impacts. The Energy Investment Activity promotes investment in the renewable energy and gas sector. In addition, the Project “Solar Energy as the Future of Sustainable Development in BiH” financed under DGP promoted the construction of solar collectors, whose use has mitigation effects on climate change.	According to the analysis of activities performed by other organizations listed in Annex J, there are no activities related to construction of infrastructure for mitigation of climate change impacts. Only WWF Adria, through the DASHI Phase II project, implements activities on reducing negative environmental impact from the construction of HPPs. In BiH, GIZ and UNDP are implementing several activities aimed at the construction of infrastructure for mitigation of climate change impacts related to the energy sector.
14. Implementation of awareness raising activities	USAID’s “Fair Play, Fair Childhood” Activity implements education workshops with children and educational workshops on safeguarding environment and collection of the plastic bottles and caps will be held in 2020. Through these activities, children’s awareness of environment, and indirectly of biodiversity, will be increased. Additional awareness-raising activities could be implemented in the future through this and other USAID Activities.	WWF Adria implements the project “Civil Society Acts for Environmentally Sound Socio-Economic Development – CO-SEED.” Implementation of this project also contributes to raising public awareness through direct media involvement. In addition, this organization implements the “MedForVal”, another project that includes a component on awareness-raising of local population on the need for protection and sustainable management of freshwater forests in Livanjsko Polje. Even if there are biodiversity awareness-raising projects, many stakeholders interviewed explained that the awareness of local communities about the protection of nature is low. Communities still tend to oppose the establishment of new PAs due to a lack of awareness of the potential economic opportunities associated with PAs and concerns that PAs will limit access to natural resources. For these reasons, awareness-raising campaigns continue to be necessary.
15. Environmentally friendly solutions for electricity generation	The IR 2.1 addresses assistance in promoting clean and efficient energy technologies in BiH. Through the Energy Investment Activity, it promotes investment in the renewable energy and gas sector considered as environmentally friendly solutions for electricity generation. In addition, the Project “Solar Energy as the Future of Sustainable Development in BiH” funded under DGP and implemented by the MCF Partner contributed to environmentally friendly energy generation, as it promoted the manufacturing and installation of solar collectors.	In BiH, GIZ and UNDP are implementing several projects that promote electricity generation from environmentally friendly sources.
16. Strengthening of NGO sector and scientific institutions; providing equipment to scientific institutions	USAID/BiH provided technical assistance to help NGOs with grant-writing for international donors through two Activities (Restoring Civic Mission of Education – Window of Opportunity for Change and VIA DINARICA: Rural Incomes and Sustainable Enterprises. However, the mission does not help scientific institutions by providing equipment for them.	WWF Adria implements the Project “Civil Society Acts for Environmentally Sound Socio-Economic Development – CO-SEED” which aims to contribute to sustainable management of natural resources by ensuring more participatory and transparent decision making processes that includes an active group of civil

Actions necessary to achieve conservation of biodiversity	Extent to which the current USAID programming contributes to sustainable management and conservation of biodiversity	Relevant activities performed by other donors/ organizations
		society organizations and a number of media outlets. But, although this Project contributes to the strengthening of NGO sector, it does not support scientific institutions, nor does it provide equipment for their work.
17. Involvement of local communities in all activities	The IR 1.2 addresses involvement local communities and citizens in decision-making processes and implements activities in strengthening local communities to be better involved in all decisions. One of USAID Activity to be mentioned here is the Local Works Project, which supports local actors to take the lead in addressing their local development challenges.	According to the analysis of activities performed by other organizations listed in Annex I, mainly the projects implemented by WWF Adria (such as Civil Society Acts for Environmentally Sound Socio-Economic Development – CO-SEED, MedForVal, Protected area for nature and people (PA4NP) – UNA and Sutjeska field projects, DASHI Phase II) envisage participation of local communities in all activities.
18. Establishment of the monitoring system and acting in accordance with obtained data	The mission does not currently implement projects that could help with establishment of a monitoring system in the biodiversity sector.	The UNEP's project "Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building" contains three components and one of them is biodiversity monitoring in BiH. This component will help upgrade the established nature protection information systems in the FBiH and RS, while the UNEP will support the development of one module on biodiversity protection.
19. Involvement of media in awareness-raising campaigns	The IR 1.2 addresses involvement of media in awareness-raising campaigns. In addition, the project "Independent Media Empowerment Program" aims to increase the role of the media in social responsibility and raise citizens' awareness of the importance of independent journalism.	WWF Adria implements the project "Civil Society Acts for Environmentally Sound Socio-Economic Development – CO-SEED" which involved an active group of civil society organizations and place greater media focus on sustainable management of natural resources.
20. Integral management of protected areas	The mission does not currently address the management of PAs.	Through its project "Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building," UNEP implements activities related to efficiency of management of the protected area system, which contributes to the improvement of management of PAs.
21. Implementation of projects that help development of biodiversity	The mission implements activities with indirect impact on development of biodiversity. Some of these are: the Energy Investment Activity (on environmentally friendly energy sources), or Fair Play, Fair Childhood (implementation of education activities on environment protection).	All projects performed by other organizations listed in Annex I help improve and develop biodiversity.
22. Inventory and research	The mission does not currently address inventory and research in biodiversity.	UNEP through its project "Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building" established guidelines and performs training activities for experts which will be involved in development of revised red lists. In addition, GIZ through the project "Open regional funds for

Actions necessary to achieve conservation of biodiversity	Extent to which the current USAID programming contributes to sustainable management and conservation of biodiversity	Relevant activities performed by other donors/ organizations
		South-East Europe – Biodiversity” developed Entity level established nature protection information systems which need to be upgraded by developing all modules foreseen within the information systems (only one module has been developed today).
23. Reform of education - teach new generations to care about environment	The DO I contains a component related to the education. Two USAID Activities are focused on education sector (Enhancing and Advancing Basic Learning and Education (ENABLE), General Education Activity (TABLA)), This project develops key science, technology, engineering, and math (STEM) educational competencies in BiH.	According to the analysis of activities performed by other organizations listed in Annex J, there are no activities related to the reform of education sector in BiH.
24. Rely on cooperation with NGOs for education and awareness raising activities	The DO I foreseen improvement of financial viability and enabling legal environment needed for the NGO sector to operate in BiH. Through the implementation of the USAID’s “Fair Play, Fair Childhood” project, cooperation with NGOs for education has been established. Similar activities could be done in biodiversity sector.	WWF Adria is an NGO and the project performed by this NGO, like Civil society acts for environmentally sound socio-economic development (CO-SEED), rely on awareness raising activities performed by this NGO.
25. Update red lists	The mission does not currently address biodiversity and updating of red lists.	UNEP through its project “Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building” established guidelines and performs training activities for experts which will be involved in development of revised red lists.
26. Improvement of horizontal and vertical government cooperation	Through the implementation of Energy Policy Activity USAID assists BiH stakeholders to reform and restructure the internal natural gas sector in accordance with the Energy Community Treaty obligations and best international practices. In addition, implementation of good practices from region and international level is performed through FARMA II Project.	UNEP through its project “Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building” works on establishing new PAs which involves horizontal and vertical government cooperation.
27. Implementation of good practices from region and international level - Study trips	The mission does not currently address the transfer and implementation of good practices from region and international level (including study trips) in nature protection sector.	GIZ Open Regional Funds for South-East Europe – Biodiversity Project is implemented at the regional level and include the implementation of good regional practices.
28. Give more space to experts	The IR 1.2 support technical expertise to government decision-makers, <u>however</u> , there are no concrete activities in nature protection sector.	Through its project “Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building”, UNEP supports an expert who will revise red lists by performing training on developed guidelines for revision of red lists.
29. Help in establishing of information systems and communication protocol for populating data in the system	The mission does not currently address the establishment of nature protection and biodiversity information systems.	Through the project “Open regional funds for South-East Europe – Biodiversity” developed at the Entity level, GIZ established nature protection information systems which need to be upgraded by developing all modules foreseen within the information systems (only one module has been developed today).
30. Establish higher control in PAs and define duties and	The mission does not currently address PAs management and measures to improve monitoring within PAs.	UNEP through its project “Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of

Actions necessary to achieve conservation of biodiversity	Extent to which the current USAID programming contributes to sustainable management and conservation of biodiversity	Relevant activities performed by other donors/ organizations
authorization of rangers in Pas		Protected Areas and Capacity Building” implements activities related to efficiency of management of the protected area system which contributes to the improvement of management of PAs. However, issues related to the duties and authorization of rangers in PAs are not subject to this Project.
31. Implementation of biodiversity improvement measures (active conservation measures: habitat restoration, species reintroduction, etc.)	The mission does not currently address biodiversity improvement measures.	WWF Adria through the project “Adriatic Rivers” works on restoration and protection of transboundary Trebisnjica/Neretva and Cetina river basins which contributes to habitat restoration.
32. Implementation of biodiversity conservation measures (pressure reduction, current status preservation)	The mission does not currently address biodiversity conservation measures.	Through its project “Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building”, UNEP implements activities related to establishment of new protected areas which will contribute to pressure reduction and current status preservation in such areas.
33. Start procedures for establishment of protected areas planned in spatial plans, and monitor their progress. ⁶⁶	The mission does not currently address activities on establishing new PAs.	UNEP through its project “Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building” implements activities related to establishment of new protected areas which will contribute to pressure reduction and current status preservation in such areas.
34. Find new mechanisms for financing projects for the biodiversity conservation such as the inclusion of these issues in the portfolio of environment protection funds.	Activities under IR 2.2 through the Financial Sector Reform Activity (FINRA) is helping BiH bring financial supervision in line with EU standards and considers fees and taxes, however without having as outcome inclusion of new mechanisms for financing projects for the biodiversity conservation in the portfolio of environment protection funds.	According to the analysis of activities performed by other organizations listed in Annex J, there are no activities focused on establishing new mechanisms for financing projects for biodiversity conservation.

⁶⁶ Measure 11.2 from the NBSAP BiH (2015–2020)

9 RECOMMENDATIONS

RECOMMENDATIONS BASED ON ACTIONS NECESSARY TO CONSERVE BIODIVERSITY

This section presents recommendations derived from the “actions necessary” and “extent to which” analyses. Table 4 provides the developed recommendations that actively integrate biodiversity conservation into democracy and governance, economic growth, and in sectors pertaining to current USAID/BiH stand-alone activities. The recommendations are divided into three categories, as follows:

- **Opportunistic:** Working within the boundaries of Activities to improve the extent to which the Mission is meeting the actions necessary to reduce threats.
- **Proactive:** Adapting Activities to improve the extent to which the Mission is meeting the actions necessary to reduce threats.
- **Direct Threat Reduction:** Designing with an explicit objective of reducing threats or otherwise contributing to biodiversity conservation.

Table 4: Recommendations

Category	Recommendation
Democracy and Governance	
Opportunistic	<ul style="list-style-type: none"> – Organization of educational/informational visits to protected areas as an awareness-raising approach in promoting biodiversity and natural values. USAID should consider integrating such an approach through the implementation of its existing Activities, including the Restoring Civic Mission of Education – Window of Opportunity for Change Activity.
Proactive	<ul style="list-style-type: none"> – Implement campaigns on biodiversity conservation and environmental protection by including media and/or youth with the aim to change public behaviors toward reducing the unsustainable consumption of natural resources and nature and biodiversity conservation and protection. USAID should consider integrating these advocacy and dissemination initiatives through its existing (e.g., Fair Play, Fair Childhood) or upcoming Activities. – Work with political parties in BiH to include biodiversity issues into their campaigns and party programs and help them become the catalysts of biodiversity protection and promoters of natural values (e.g., Catalyzing Cross Party Initiatives in BiH, Supporting Political Pluralism and Good Governance Processes in BiH).
Direct Threat Reduction	<ul style="list-style-type: none"> – Ensure indirect contribution to biodiversity conservation by addressing corruption in the environment sector. USAID should consider using its existing anti-corruption related Activities (e.g., Investigative Journalism Program and Assistance to Citizens in Fight against Corruption) as a means to work towards combating and preventing corruption in the environment sector (e.g., in forestry) and therefore contribute to the biodiversity conservation.

Category	Recommendation
	<ul style="list-style-type: none"> – Build capacity for effective management of PAs and support exchange of experience and knowledge for biodiversity conservation in PAs. Since the analysis team did not recognize any existing USAID Activity which could encompass the aforementioned, USAID should consider designing a new Activity that would focus on building capacities of BiH's PAs.
Economic Growth	
Opportunistic	<ul style="list-style-type: none"> – Continue to promote natural BiH resources, as well as traditional practices in agriculture and conservation-friendly agriculture that does not have negative impact on natural resources and on biodiversity. USAID should consider integrating or continuing to use such approach as part of its ongoing Via Dinarica, FARMA II, and Agribusiness Development Activity. – Support the development of required biodiversity and environment related legislation to meet EU accession and other international treaty obligations. USAID should consider doing so through its FARMA II, as well as other USAID Activities that contribute to improve the harmonization of legislation with EU acquis (e.g., Energy Policy Activity).
Proactive	<ul style="list-style-type: none"> – Include awareness raising activities on positive impacts on biodiversity by using renewable sources of energy and natural gas and promote mitigation measures to be implemented during the implementation of investments in energy. USAID should consider integrating described activities into its Energy Policy Activity. – USAID should consider emphasizing cooperation between different Activities (e.g., FARMA II and Energy Policy Activity) to support knowledge exchange, including advice on how to protect biodiversity by implementing best practices.
Direct Threat Reduction	<ul style="list-style-type: none"> – Raise awareness among staff and farmers working with agricultural companies about the negative impacts on nature conservation caused by their activities. The recommended action could be implemented through the ongoing FARMA II, Agribusiness Development Activity, Diaspora Invest in BiH, and BiH Workforce and Higher Access to Markets Activity. – Support activities aimed at imposing, reforming and/or increasing fees/taxes to environment polluters (e.g. payment for ecosystem services (PES)) and developing new/innovative mechanisms for securing additional revenues and raising funds that would enable PAs to become financially sustainable. USAID should consider supporting such initiatives through its upcoming Activities.
Other/Stand-Alone Activities	
Opportunistic	<ul style="list-style-type: none"> – Continue with activities which support involvement of local communities and citizens in decision-making processes. USAID should consider supporting domestic resource mobilization to achieve greater environment awareness and protection through the implementation of the Local Works Activity.
Proactive	<ul style="list-style-type: none"> – Strengthen the knowledge and increase awareness of BiH children and youth on the importance of environment and biodiversity conservation. USAID should continue supporting these activities through its existing ENABLE and TABLA Activities.
Direct Threat Reduction	<ul style="list-style-type: none"> – USAID should consider supporting initiatives aimed at raising the awareness of the general population about the importance of the natural environment and actions needed to protect it. USAID should also consider supporting the introduction of university programs on best practices for PA management and conservation methods for future PA managers.

ANNEXES

Annex A: Literature

Annex B: List of KIs

Annex C: List of IP respondents to the online survey

Annex D: List of FGDs participants

Annex E: Overview of indicators on biodiversity adopted at BiH level

Annex F: Protected areas in BiH

Annex G: Importance of ecosystems of BiH in providing key services

Annex H: Legislative and Strategic Framework

Annex I: Overview of Multilateral Environmental Agreements ratified by BiH

Annex J: Relevant donors' activities in the period 2016-2020

Annex K: Overview of national targets and measures contained in the NBSAP BiH (2015-2020)

ANNEX A: LITERATURE

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ANNEX B: LIST OF KEY INFORMANT INTERVIEWS (KIIS)

Table 5. List of Key Informant Interviews

No.	Institution	Sub-theme	Category	Location
1.	Ministry of Foreign Trade and Economic Relations of BiH – MOFTER	Environment and EU integration	Government	Sarajevo
2.	Federal Ministry of Environment and Tourism – CBD Focal point	Environment and tourism	Government	Sarajevo
3.	Ministry of Physical Planning, Civil Engineering and Ecology of RS	Physical planning, civil engineering and ecology	Government	Banja Luka
4.	Institute for protection of Cultural, Historical and Natural Heritage of RS	Natural heritage	Government	Banja Luka
5.	Federal Ministry of Physical Planning	Physical planning	Government	Sarajevo
6.	Ministry of Agriculture, Forestry and Water Management of Republika Srpska	Agriculture, water management and forestry	Government	Banja Luka
7.	Public Institution “Protected Nature Areas of Canton Sarajevo” (PAs: Skakavac, Vrelo Bosne, Bijambare, Trebevic, Bentbasa)	Protected areas	Government	Sarajevo
8.	RS Institute for Genetic Resources (PA Manager: Sustainable Resource Management Area Univerzitetski grad)	Genetic diversity	Government	Banja Luka
9.	UN Environment	Nature protection	International	Sarajevo
10.	GIZ	Nature protection	International	Sarajevo
11.	Catalyzing Cross Party Initiatives in BiH (CCPI) – NDI/IRI	USAID/BiH IP	International	Sarajevo
12.	Victim-centered Approach to Prevention of Trafficking in Persons in BiH – EMMAUS	USAID/BiH IP	International	Sarajevo
13.	Marginalized Populations Support Activity – KULT	USAID/BiH IP	International	Sarajevo
14.	Independent Media Empowerment Program – CPCD	USAID/BiH IP	International	Sarajevo
15.	Restoring Civic Mission of Education – Window of Opportunity for Change – Helsinki Committee for Human Rights Bijeljina	USAID/BiH IP	International	Bijeljina
16.	PRO Future (II) Trust, Understanding and Responsibility for the Future – Step by Step	USAID/BiH IP	International	Sarajevo
17.	Fair Play Fair Childhood Activity – YSG	USAID/BiH IP	International	Sarajevo
18.	Mobilizing Youth for Reconciliation – NDI	USAID/BiH IP	International	Sarajevo
19.	Fostering Agricultural Markets Activity II (FARMA II) – Cardno Emerging Markets	USAID/BiH IP	International	Sarajevo
20.	Diaspora Invest (DI) – Financial Markets International, Inc. (FMI)	USAID/BiH IP	International	Sarajevo
21.	Workforce and Higher Access to Markets Activity in	USAID/BiH IP	International	Sarajevo

	BiH (WHAM) – IESC			
22.	Agribusiness Development Activity (ADA) – Partner Microcredit Foundation	USAID/BiH IP	International	Sarajevo
23.	Fiscal Sector Reform Activity (FSRA) – FINIT Consulting	USAID/BiH IP	International	Sarajevo
24.	Financial Reform Agenda Activity (FINRA) – Financial Markets International, Inc. (FMI)	USAID/BiH IP	International	Sarajevo
25.	Enhancing and Advancing Basic Learning and Education in Bosnia-Herzegovina (ENABLE-BIH) – Save the Children	USAID/BiH IP	International	Sarajevo
26.	Supporting Political Pluralism and Good Governance Processes in BiH – NDI/IRI	USAID/BiH IP	International	Sarajevo
27.	General education Activity TABLA – Save the Children	USAID/BiH IP	International	Sarajevo
28.	Judiciary against Corruption Activity (JACA) – Development Partners	USAID/BiH IP	International	Sarajevo
29.	Assistance to Citizens in Fight against Corruption – CCI	USAID/BiH IP	International	Sarajevo
30.	Investigative Journalism Program (IJP) - CRMA	USAID/BiH IP	International	Sarajevo
31.	Energy Policy Activity (EPA) – Advanced Engineering Associates International	USAID/BiH IP	International	Sarajevo
32.	Local Works Network Analysis Platform Activity – Mreza Mira	USAID/BiH IP	International	Sarajevo

ANNEX C: LIST OF IP RESPONDENTS TO THE ONLINE SURVEY

1. USAID's Judiciary Against Corruption Activity (JACA)
2. Via Dinarica: Rural Incomes and Sustainable Enterprises
3. Investigative Journalism Program
4. USAID's Fiscal Sector Reform Activity in BiH
5. Supporting Political Pluralism and Good Governance Processes (GEPT)
6. Catalyzing cross-party initiatives (CEPPS)
7. Mobilizing youth for the reconciliation - Be inspiration (CMM)
8. Fostering Agricultural Markets Activity II (FARMA II)
9. USAID's Assistance to Citizens in Fight against Corruption
10. Prevention of Trafficking in Persons in Bosnia and Herzegovina: Improving Awareness, Identification and Access to Justice
11. Financial Reform Agenda Activity
12. USAID Diaspora Invest Activity
13. USAID WHAM
14. USAID Marginalized Population Support Activity (USAID/PPMG)
15. Energy Investment Activity/Energy Policy Activity
16. General Education Activity TABLA
17. School at the Heart of Community
18. Agriculture Development Activity
19. Restoring civic mission of education

ANNEX D: LIST OF FGDS PARTICIPANTS

List of FGD participants in PA Tišina:

1. Šamac Municipality (4 participants)
2. Society for Biodiversity Research and Conservation
3. Tišina MZ.S.
4. "Fazan" Hunting Association
5. Šamac Civil Protection Šamac
6. "Maslačak" Beekeepers Association, Šamac
7. Public Company "Slobodna zona" Šamac

List of FGD participants in PA Bijambare:

1. Halilović d.o.o. Ilijaš
2. Eco house, rural household
3. Cantonal Public Institution for Protected Natural Areas (3 participants)
4. IPP "Gradnja"
5. "Srednje" Hunting Association
6. Ilijaš Municipality

ANNEX E: OVERVIEW OF INDICATORS ON BIODIVERSITY ADOPTED AT BIH LEVEL

Error! Reference source not found.6 shows the environmental indicators relevant for biodiversity and UNCBD within the List of Selected Environmental Indicators in BiH adopted by the Council of Ministers of BiH in September 2019.

Table 6. Environmental indicators relevant for biodiversity and UNCBD within the List of Selected Environmental Indicators in BiH⁶⁷

No.	Indicator Code	Indicator Title	UNECE	EEA
1.	BR1	Public awareness on nature protection		SEBI026 Public awareness
2.	BR10	Ex situ plants collection		
3.	BR2	Endangered and protected species		SEBI003, CSI007 Species of European interest
4.	BR3	Endangered and protected species condition and index		SEBI002 Red List Index for European Species
5.	BR4	Selected species population trends in protected areas		
6.	BR5	Representation of certain types of ecosystems		SEBI004 Ecosystem coverage
7.	BR6	Invasive alien species	BHAS reporting to UNECE	SEBI010 Invasive alien species in Europe
8.	BR7	Fragmentation of natural and semi/natural areas		SEBI 013 Fragmentation of natural and semi-natural areas
9.	BR8	Protected areas surface	BHAS reporting to UNECE	CSI008 Designated areas SEBI007 Nationally designated protected areas
10.	BR9	Financing of protection and preservation of the biological diversity		SEBI025 Financing biodiversity management
11.	KAVI	Amount of nutrients in rivers and lakes		CSI020, WAT003 Nutrients in freshwater
12.	MEI	Amount of nutrients in transitional, coastal and marine waters	BHAS reporting to UNECE	CSI021, MAR005 Nutrients in transitional, coastal and marine waters
13.	P1	*Mineral fertilizers consumption	BHAS reporting to UNECE	
14.	P2	*Surface under the organic farming production		CSI026 Area under organic farming production
15.	P3	*Pesticide consumption quantity		Nitrogen balance SEBI019
16.	ROI	Number of environmental licenses		
17.	Š1	*Surface of forests and forest areas		SEBI017 Forest: growing stock, increment and fellings and deadwood
18.	Š2	Health condition of the forests		
19.	Š3	Burnt forest areas		CLIM035 Forest fires

⁶⁷ List of Selected Environmental Indicators in BiH adopted by the Council of Ministers of BiH in September 2019

20.	S4	Surface of the forest areas under sustainable management		
21.	BR11	Trend of economically important fish density in rivers		
22.	BR12	Number of fishponds		Aquaculture production (CSI 033)
23.	KAV3	Number of lakes restored		
24.	KAV2	Wastewater treatment facilities	BHAS reporting to UNECE	CSI 024 – Urban wastewater treatment
25.	BR13	Number of monitoring inspections		

*Joint indicators for UNFCCC, UNCBD, UNCCD

Error! Reference source not found.7 shows the established national targets and proposed indicators for NBSAP BiH (2015–2020).

Table 7. National Targets and Proposed Indicators for NBSAP BiH (2015 – 2020)⁶⁸

National Targets	Proposed Indicators
GLOBAL STRATEGIC GOAL A: Address the underlying causes of biological diversity loss by mainstreaming biological diversity across government and society	
1. By 2020, increase the public awareness level in the field of biological diversity protection	1. The number of projects related to protection of biological diversity 2. A trend of reporting biological diversity notions in the media
2. By 2020, integrate biological diversity values into development strategies and strategic plans, with an emphasis on rural development	3. The number of strategic documents that have integrated biological diversity values into strategic plans
3. By 2020, reduce negative and increase positive incentives and subsidies in order to conserve biological diversity	4. The number and types of positive and negative incentives and subsidies for biological diversity
4. By 2019, prepare and adopt plans for sustainable production and consumption of natural resources	5. The number of adopted sectoral plans for sustainable use of natural resources 6. The number of passed laws and bylaws in the domain of biological diversity or other closely related domains
GLOBAL STRATEGIC GOAL B: Reduce the direct pressures on biological diversity and promote sustainable use	
5. By 2020, prepare and implement sustainable management programs for all fishing waters (fisheries basis)	7. Proportion of fishing waters with implemented sustainable management plans 8. The trend of population density for indigenous, endemic and invasive fish species
6. By 2019, prepare and implement strategies for development of aquaculture and ranching of commercially significant fish species (for water ecosystems that are not habitats for rare and endemic species)	9. The trend of population density for commercially significant fish species in water courses 10. Number of fish farms
7. By 2020, certify all state-owned forests in BiH	11. Areas of certified state-owned forests
8. By 2020, establish and develop a system for sustainable agricultural production, especially organic and integral production, and conservation and breeding of indigenous species	12. Areas under organic and integral production
9. By 2020, establish a system for treatment of industrial and utility wastewaters and monitoring of pesticide and	13. The quality and types of pesticides and fertilizers used

⁶⁸ Council of Ministers. 2017. Strategy and Action Plan for the Protection of Biological Diversity of Bosnia and Herzegovina for the period 2015-2020. Available at: http://www.vijeceministara.gov.ba/akti/prijedlozi_zakona/default.aspx?id=25304&langTag=hr-HR

fertilizer consumption	14. The number of wastewater treatment systems installed
10. By 2018, prepare strategies for invasive species	15. Number of strategies implemented for invasive species
GLOBAL STRATEGIC GOAL C: Improve the state of biological diversity by safeguarding ecosystems, species and genetic diversity	
11. By 2020, map and urgently protect the specific biological diversity of BiH (canyon, mountain, alpine and wetland ecosystems, karst fields and alluvial plains) in compliance with the applicable spatial planning documents	16. Percentage of each habitat under protection status
12. By 2020, complete the inventory of: (i) flora, fauna and fungi in BiH; (ii) ecosystems and types of habitats in BiH	17. The number of species and ecosystems in the inventory
13. By 2020, develop the red books of plants, animals and fungi, and adopt action plans for protection of the most endangered taxa	18. The number of measures implemented for protection of endangered taxa 19. The number of species under protection
14. By 2020, prepare and implement in situ and ex situ programs for protection of domestic varieties, breeds and their animal relatives, including their inventory and establishment of indigenoussness parameters	20. The number of local sorts and breeds and their wild relatives under ex situ and in situ protection
GLOBAL STRATEGIC GOAL D: Enhance the benefits to all from biological diversity and ecosystem services	
15. By 2020, map and evaluate the benefits from forest, agricultural and water ecosystems, and strengthen the environmental permit mechanism and supervisory inspection within protected area spaces, areas of special interest and areas from the Natura 2000 ecological network plan	21. Published reports of the benefits from forest, agricultural and water ecosystems 22. Number of environmental permits and supervisory inspections
16. By 2020, restore 30 strip-mine lakes into wetland habitats, increase the productivity of all categories of forests, preserve the existing area of flood alder and willow forests, and increase the regulated urban green areas by 20 %	23. The number of restored lakes 24. The size of urban green areas 25. Volume of forests by categories
17. By 2018, prepare the legislation and establish the conditions for ratification and implementation of the Nagoya Protocol	26. The number of legislative documents harmonized with the requirements of the Nagoya Protocol
GLOBAL STRATEGIC GOAL E: Enhance implementation through participatory planning, knowledge management and capacity building	
18. By 2017, establish centers for preservation and implementation of traditional knowledge and practices, particularly in rural areas of interest	27. The number of scientific and expert references on traditional knowledge and practices
19. By 2020, strengthen the role of the scientific research and professional institutions, NGO sector and media including improvement of scientific technologies	28. A registry of scientific research and expert institutions, NGOs and media in the domain of biological diversity
20. By 2017, prepare and adopt the strategy for mobilization of financial resources for conservation of biological diversity	29. Earmarked financial resources (local and international) for protection and sustainable use of biological diversity
21. By 2020, establish and strengthen cooperation for improved protection and sustainable use of biological diversity in the countries of the Western Balkans	30. The number of cross-border cooperation projects aimed at protection and sustained use of biological diversity

ANNEX F: PROTECTED AREAS IN BIH

Error! Reference source not found.⁸ indicates the officially established PAs in BiH with where PAs established in and after 2016 are bolded in the text. As shown in table below, eleven new PAs have been proclaimed since 2016.

Table 8. Current protected areas in BiH

No.	PA	Entity	Year	IUCN category	Category (according to the Law on Nature Protection in RS and FBiH)
1.	Janj Primeval Forest	RS	1956	Ia	Strict Nature Reserve
2.	Sutjeska NP	RS	1962	II	NP
3.	Kozara NP	RS	1967	II	NP
4.	Blidinje	FBiH	1995	V	PL
5.	Hutovo Blato (Ramsar Site)	FBiH	1995	V	PL
6.	Skakavac Waterfall NM	FBiH	2002	III	NM
7.	Bijambare PL	FBiH	2003	V	PL
8.	Prokosko Lake NM	FBiH	2005	III	NM
9.	Una NP	FBiH	2008	II	NP
10.	Ljubacevo Cave NM	RS	2008	III	NM
11.	Tajan Park NM	FBiH	2009	III	NM
12.	Konjuh PL	FBiH	2009	V	PL
13.	Vrelo Bosne (Spring of the Bosnia River) NM	FBiH	2010	III	NM
14.	Orlovaca Cave NM	RS	2011	III	NM
15.	Rastusa Cave NM	RS	2012	III	NM
16.	Ledana Pit NM	RS	2012	III	NM
17.	Lom Primeval Forest	RS	2012	Ia	Strict Nature Reserve (SNR)
18.	Zuta Bukva NM	RS	2012	III	NM
19.	Vagan Cave NM	RS	2013	III	NM
20.	Pavlova Cave	RS	2013	III	NM
21.	Djatlo Cave	RS	2013	III	NM
22.	Trebevic PL	FBiH	2014	V	PL
23.	Ledenjaca Cave	RS	2015	III	NM
24.	Velika Cave	RS	2015	III	NM
25.	Girska Cave	RS	2015	III	NM
26.	“Pod Lipom” Cave	RS	2015	III	NM
27.	"University City" Monument of Park Architecture	RS	2016	VI	Protected area with sustainable use of natural resources
28.	Forest Park “Slatina”	RS	2016	VI	Protected area with sustainable use of natural resources
29.	Bentbasa PL	FBiH	2017	V	PL
30.	Drina NP	RS	2017	II	NP
31.	Kuk Cave	RS	2018	III	NM
32.	“Jelica Brdo” Forest Park	RS	2018	VI	Protected area with sustainable use of natural resources

No.	PA	Entity	Year	IUCN category	Category (according to the Law on Nature Protection in RS and FBiH)
33.	“Gromizelj“Protected Nature Reserve	RS	2018	IV	Habitat/Species Management Area:
34.	Nature Park “Cicelj“	RS	2018	V	PL
35.	Lijevcanski Knez	RS	2018	III	NM
36.	“Una“Nature Park	RS	2019	V	PL
37.	“Tišina“Protected Nature Reserve	RS	2019	IV	Habitat/Species Management Area

Figure I: Map of PAs in BiH

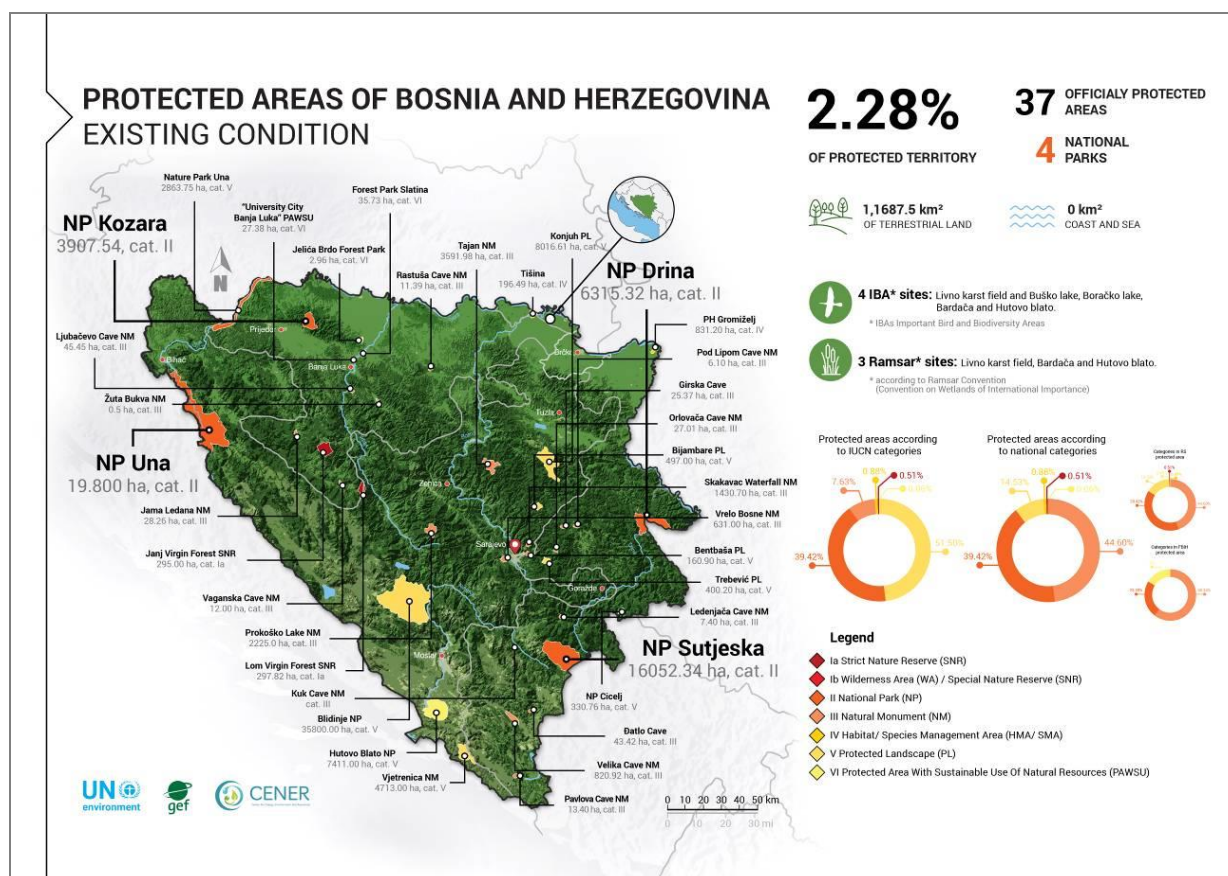


Figure 2: Map of potential Natura 2000 areas in BiH⁶⁹

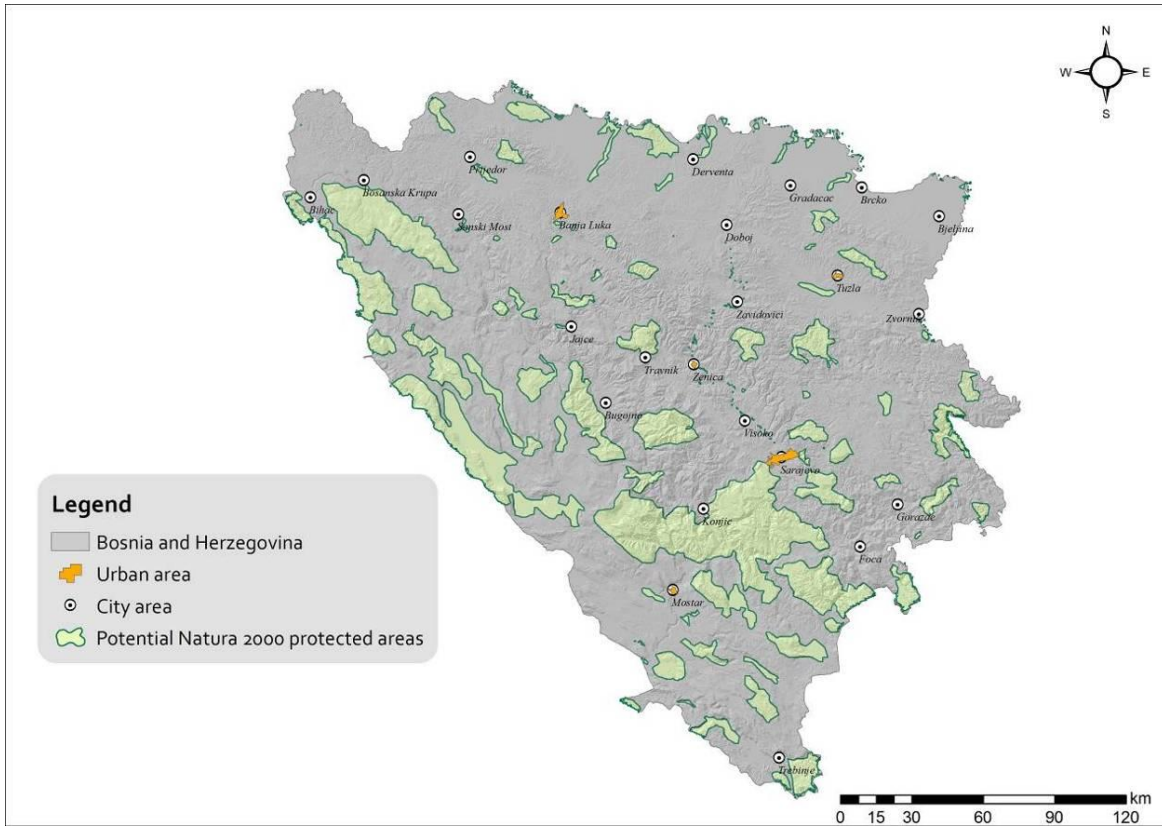


Table 9. Ramsar and IBA Sites in BiH⁷⁰

Ramsar sites	Year	Surface (ha)
Hutovo blato (FBiH)	2002	7,411
Bardača (RS)	2007	3,500
Livanjsko polje (FBiH)	2008	45,800
IBA ⁷¹	Year	Surface (ha)
Boračko jezero (FBiH)	2000	26
Bardača (RS)	2000	3,500
Hutovo blato (FBiH)	2011	7,411
Livno karst field and Buško Lake	2011	45,868

⁶⁹ FBiH Ministry of Environment and Tourism. 2019. Sixth National Report of BiH to the Convention on Biological Diversity. Sarajevo

⁷⁰ Available at: http://nasljedje.org/sr_RS/prirodno-nasljedje/266

⁷¹ Available at: <http://datazone.birdlife.org/country/bosnia/ibas>

Table 10. Planned PAs in FBiH⁷²

No.	Name of protected area	Surface (ha)
1.	Igman – Bjelasnica – Treskavica – Visocica – Rakitnica River Canyon	95,032.4
2.	Prenj – Cabulja – Cvrstica – Vran	101,744.3
3.	Mt. Vranica	25,078.1
4.	Mt. Grmec	78,939.8
5.	Radusa – Stozer – Crni Vrh	42,415.5
6.	Mt. Sator	29,736.3
7.	Mt. Dinara	26,314.9
8.	Mt. Pljesevica	5,094.7
9.	Livanjsko Field	19,833.8
10.	Mt. Vlasica	12,382.9
11.	Popovo Field – Vjetrenica	3,572.5
12.	Canyons of Neretva, Doljanka, Ribnica and Drezanka	7,357.3
13.	Pliva Lakes	633.9
14.	Una River Basin	34,685.8

⁷² Spatial Plan of the FBiH (2008-2028)

ANNEX G: IMPORTANCE OF ECOSYSTEMS OF BIH IN PROVIDING KEY SERVICES

Legend: 1—ecosystem is not important for a given service, 3—ecosystem is of moderate importance for providing a given service, 5—highest importance for a given service

Table 11. Importance of Ecosystems of BiH in Providing Key Services⁷³

Ecosystems	Food	Raw materials	Drinking water	Medicinal and vitamin resources	Regulation of local, regional and global climate	Carbon sequestration and storage	Preventing and mitigating of natural disasters	Wastewater treatment	Soil erosion control	Disease regulation and control	Production of organic matter	Pollination	Circulation of matter	Recreation, mental and physical health	Tourism	Aesthetic appreciation and inspiration for culture, art and design	Spiritual experience and sense of place
Snow patches	1	1	2	2	4	1	4	2	2	3	1	1	1	5	5	5	5
Rock crevices	2	3	1	2	2	1	2	1	3	1	1	1	1	4	5	5	4
Tiny pebbles	2	3	1	2	2	1	3	1	3	1	1	1	1	4	5	5	4
Mountain meadows	2	1	2	5	4	2	3	2	4	2	3	4	2	5	5	5	5
Mountain heaths	4	1	2	5	4	2	4	2	4	2	4	3	2	5	5	5	5
Mountain pine	2	2	2	3	4	4	5	3	5	3	4	3	3	5	4	5	4
Spruce forests	3	4	3	3	5	5	5	4	5	4	5	3	4	5	5	4	4
High greens	2	1	4	4	4	5	5	5	4	4	5	4	5	4	5	4	4
Beech forests	4	5	4	3	5	5	5	4	5	4	5	3	5	5	4	4	4
Chestnut forests	5	4	4	4	5	5	4	4	5	4	5	3	4	3	3	3	4
Oak forests	4	5	4	4	5	5	5	4	5	4	5	3	5	5	4	4	4
Black hornbeam and oriental hornbeam forests	3	3	3	4	4	4	4	3	5	4	3	4	4	3	4	5	4
Pine forests	3	5	3	4	5	5	5	4	5	4	4	3	4	5	5	5	5
Thermophilous meadows and stones	2	2	2	5	3	2	3	3	5	3	3	5	4	4	4	4	5
Mesophilous, hygro-mesophilous and flooded meadows	3	2	4	4	3	4	3	3	4	3	4	5	4	4	4	4	5
Alder forests	1	3	4	3	5	5	5	5	5	4	4	3	5	3	5	4	3
Wetlands	4	2	5	3	5	5	5	5	4	5	5	3	5	4	5	5	3
Sea and freshwater	5	3	5	3	5	4	4	5	4	5	4	2	4	5	5	5	4
Tertiary vegetation	5	1	1	1	2	2	2	3	3	3	5	5	2	2	2	2	2

⁷³ Barudanović, S., Macanović, E., Topalić-Trivunović, Lj., Cero M. (2015): Ecosystems of Bosnia and Herzegovina for the purpose of sustainable development, PMF, UNSA; Fojnica d.d. Fojnica

ANNEX H: LEGISLATIVE AND STRATEGIC FRAMEWORK

List of by-laws adopted on the basis of the Laws on Nature Protection of FBiH and RS

List of by-laws adopted on the basis of the FBiH Law on Nature Protection (OG of FBiH, No. 66/13):

- Red List of Endangered Wild Species and Subspecies of Plants, Animals and Fungi in FBiH (OG of FBiH, No. 7/14),

List of by-laws adopted on the basis of the Law on Nature Protection of RS (OG of RS, No. 20/14) and the Law on National Parks (OG of RS, No. 75/10) (new by-laws and amendments are highlighted):

- Rulebook on Special Technical-Technological Solutions to Enable Undisturbed Movement and Safe Communication of Wild Animals (OG of RS, No. 66/17),
- Rulebook on the Nature Protection Label, Procedures and Conditions for Its Use (OG of RS, No. 50/16),
- Rulebook on the Contents, Establishment and Enforcement of the Management Measures in Protected Areas (OG of RS, No. 83/15),
- Rulebook on the Register of Protected Natural Resources (OG of RS, No. 55/15),

List of laws related to biodiversity and natural resource use:

Legislation at BiH level indirectly related to biodiversity and natural resource use, is the following:

- Law on Concessions (OG of BiH, No. 32/02, 56/04),
- Law on Veterinary Medicine (OG of BiH, No. 34/02),
- Law on Plant Protection (OG of BiH, No. 23/03),
- Law on Genetically Modified Organisms (OG of BiH, No. 23/09),
- Law on Animal Protection (OG of BiH, No. 25/09),
- Law on Agriculture, Food and Rural Development (OG of BiH, No. 50/08).

Legislation in FBiH, related to biodiversity (new laws and amendments are highlighted):

- Law on Nature Protection (OG of FBiH, No. 66/13);
- Law on Environmental Protection (OG of FBiH, No. 33/03, 38/09),
- Law on Una NP (OG of the FBiH, No. 44/08),
- Law on Waste Management (OG of FBiH, No. 33/03, 72/09, 92/17),
- Law on Air Protection (OG of FBiH, No. 33/ 03, 4/10),
- Law on Waters (OG of FBiH, No. 70/06),
- Law on Veterinary Medicine (OG of the FBiH, No. 46/00),
- Law on Concessions (OG of FBiH, No. 40/02, 61/06),
- Law on the Fund for Environmental Protection (OG of the FBiH, No. 33/03),
- Law on Freshwater Fisheries (OG of FBiH, No. 64/04),
- Law on Hunting (OG of FBiH, No. 4/06, 8/10, 81/14);
- Law on Agriculture (OG of FBiH, No. 88/07, 4/10, 7/13),
- Law on Agricultural Land (OG of FBiH, No. 52/09)

- Law on Spatial Planning and Land Use (OG of tFBiH, No. 2/06, 72/07, 32/08, 4/10, 13/10, 45/10).

Legislation in RS related to biodiversity (new laws and amendments are highlighted):

- Law on Nature Protection (OG of RS, No. 20/14),
- Law on the Environmental Protection (OG of RS, No. 71/12, 79/15),
- Law on National Parks (OG of RS, No. 75/10),
- Law on Proclamation of “Sutjeska“ NP (OG of RS, No. 121/12),
- Law on Proclamation of “Kozara“ NP (OG of RS, No. 121/12),
- Law on Proclamation of “Drina” NP (OG of RS, No. 63/17),
- Law on Forests (OG of RS, No. 75/08, 60/13),
- Law on Forest Reproductive Material (OG of RS, No. 60/09),
- Law on Water (OG of RS, No. 50/06, 92/09, 121/12),
- Law on Air Protection (OG of RS, No. 124/11, 46/17),
- Law on the Environmental Protection Fund (OG of RS, No. 117/11, 63/14, 90/16),
- Law on Waste Management (OG of RS, No. 111/13, 106/15, 16/18),
- Law on Animal Protection and Welfare (OG of RS, No. 111/08),
- Law on Hunting (OG of RS, No. 60/09, 50/13),
- Law on Fishing (OG of RS, No. 72/12),
- Law on Concessions (OG of RS, No. 59/13, 16/18),
- Law on Agricultural Land (OG of RS, No. 93/06, 80/07, 14/10, 5/12, 58/19),
- Law on Agriculture (OG of RS, No. 70/06, 20/07, 86/07),
- Law on Veterinary Medicine (OG of RS, No. 75/17),
- Law on Spatial Planning and Construction (OG of RS, No. 40/13, 106/15, 84/19)

Legislation in BD related to biodiversity (new laws and amendments are highlighted):

- Law on Nature Protection (OG of BD BiH, No. 24/04, 1/05, 19/07, 9/09),
- Law on Environment Protection (OG of BD BiH, No. 24/04, 1/05, 19/07, 9/09),
- Law on Waste Management (OG of BD BiH, No. 04/25, 1/05, 19/07, 02/08, 09/09),
- Law on Air Protection (OG of BD BiH, No. 25/04, 1/05, 19/07, 9/09),
- Law on Water Protection (OG of BD BiH, No. 25/04, 01/05, 19/07),
- Law on Spatial Planning and Construction (OG of BD BiH, No. 29/08 18/17),
- Law on Forests (OG of BD BiH, No. 14/10, 26/16),
- Law on Agricultural Land (OG of BD BiH, No. 32/04, 20/06, 10/07, 19/07),
- Law on Freshwater Fisheries (OG of BD BiH, No. 35/05, 19/07),
- Law on Incentives in Agricultural Production (OG of BD BiH, No. 11/06, 19/07, 15/10),
- Law on Hunting of BD (OG of BD BiH, No. 1/15, 52/18),
- Law on Concessions (OG of BD BiH, No. 41/06, 19/07, 2/08).

ANNEX I: OVERVIEW OF MULTILATERAL ENVIRONMENTAL AGREEMENTS RATIFIED BY BIH

Error! Reference source not found.12 shows conventions of importance to biodiversity, that BiH became a Party by succession from Former Yugoslavia.

Table 12. MEAs that BiH Became a Party to⁷⁴

No.	MEA	Place and year of adoption	Date of ratification (by succession)	OG No.
1.	Convention on Wetlands of International Importance especially as Waterfowl Habitat	Ramsar, 1971	2001	Notification of succession ²
2.	Protocol Concerning Mediterranean Specially Protected Areas	Geneva, 1982	22 October 1994	SFRJ: 9/85 R BiH: 13/94
3.	Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean Sea	Barcelona, 1995	12 December 1999*	n/a
4.	Convention Concerning the Protection of the World Cultural and Natural Heritage	Paris, 1972	12 July 1993	R BiH: 25/93
5.	Convention on Fishing and Conservation of the Living Resources of the High Seas	Geneva, 1958	12 January 1994	n/a
6.	Convention on the Territorial Sea and the Contiguous Zone	Geneva, 1958	1 September 1993	n/a
7.	Convention on the Continental Shelf	Geneva, 1958	12 January 1994	n/a
8.	Convention on High Seas	Geneva, 1958	12 January 1994	n/a

Error! Reference source not found.13 includes a list of environmental conventions and agreements of importance to biodiversity ratified so far in line with the provisions of the BiH Law on the Procedures for the Conclusion and Implementation of International Agreements (OG of BiH, no. 29/00).

Table 13. MEAs that BiH Ratified by 2016⁷⁵

No.	MEA	Place and year of adoption	Date of ratification (by succession)	OG No.
1.	Convention on the Transboundary Effects of Industrial Accidents (TEIA)	N/a	2012	13/12
2.	UN Convention on Biological Diversity	Rio de	2002	12/02

⁷⁴ USAID. 2016. Country Biodiversity Analysis: Bosnia and Herzegovina. Available at: <http://www.measurebih.com/uimages/Biodiversity%20Assessment.pdf>

⁷⁵ USAID. 2016. Country Biodiversity Analysis: Bosnia and Herzegovina. Available at: <http://www.measurebih.com/uimages/Biodiversity%20Assessment.pdf> and MOFTER Website with the list of ratified Conventions available at: <http://www.mvteo.gov.ba/Content/Read/vodni-resursi-zastita-okoline-konvencije-sporazumi?lang=bs>

No.	MEA	Place and year of adoption	Date of ratification (by succession)	OG No.
		Janeiro, 1992		
3.	UN Convention to Combat Desertification in Those Countries Experiencing Drought and/or Desertification, Particularly in Africa	Paris, 1994	2002	12/02
4.	International Plant Protection Convention	Rome, 1951	2003	8/03
5.	Framework Agreement on the Sava River Basin (FASRB)	Kranjska Gora, 2002	2003	8/03
6.	Protocol on the Navigation Regime to the FASRB	Kranjska Gora, 2002	2003	8/03
7.	Convention on Protection and Sustainable Use of the Danube River	Sofia, 1994	2005	65/05
8.	Convention for the Establishment of the European and Mediterranean Plant Protection Organization	Paris, 1955	2005	8/08
9.	Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	Rotterdam, 1998	2006	14/06
10.	Cartagena Protocol on Biosafety	Cartagena, 2000	2008	12/08
11.	Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters	Aarhus, 1998	2008	8/08
12.	Convention on the Conservation of European Wildlife and Natural Habitats	Bern, 1979	2008	8/08
13.	Convention On International Trade in Endangered Species Of Wild Fauna and Flora (CITES)	Washington D.C., 1973	2008	11/08
14.	Bonn Amendment	Bonn, Germany, 1979	2008	11/08
15.	European Outline Convention on Transfrontier Co-operation between Territorial Communities or Authorities	Madrid, 1980	2008	n/a
16.	Protocol on Prevention of the Water Pollution Caused by Navigation to the FASRB	Belgrade, Serbia, 2009	2009	10/09
17.	Convention on the Protection and Use of Transboundary Watercourses and International Lakes	Helsinki, 1992	2009	8/09
18.	Council of Europe Framework Convention on the Value of Cultural Heritage for Society	Faro, 2005	2009	n/a
19.	Convention on Safety and Health in Agriculture	Geneva, 2001	2010	n/a
20.	Convention Concerning Work in the Fishing Sector	Geneva, 2007	2010	n/a

No.	MEA	Place and year of adoption	Date of ratification (by succession)	OG No.
21.	Protocol on Flood Protection to the FASRB	Gradiška, BiH, 2010	2011	07/11
22.	European Landscape Convention	Florence, 2000	2011	9/11

Error! Reference source not found. 14 lists all MEAs of importance to biodiversity ratified after 2016 and planned to be ratified in near future.

Table 14. MEAs Ratified After 2016 and Planned to be Ratified⁷⁶

No.	Convention	Date of adoption	Place	OG No.	Proposal for ratification
1.	Protocol on Strategic Environmental Assessment	2003	Kiev	3/17	Ratified
2.	Convention on the Conservation of Migratory Species of Wild Animals (CMS)	1979	Bonn	8/17	Ratified
3.	Paris Agreement	2016	Paris	1/17	Ratified
4.	Protocol to Amend the Convention on Wetlands of International Importance Especially as Waterfowl Habitat	1982	Paris		2016 in cooperation with the Ramsar Convention Focal Point
5.	Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention)	1995	Barcelona		Ratification in progress
6.	Protocol on Integrated Coastal Zone Management in the Mediterranean (ICZM Protocol)	2008	Madrid		Ratification in progress
7.	Agreement on the Conservation of Bats in Europe (UNEP/EUROBATS)	1991	London		Ratification in progress
8.	African-Eurasian Migratory Waterbird Agreement (AEWA)	1995	The Hague		Ratification in progress
9.	Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS)	1996	Monaco		Ratification in progress

⁷⁶ Ibid.

ANNEX J: RELEVANT DONORS' ACTIVITIES IN A PERIOD 2016-2020

Table 15. Relevant Activities in a Period 2016-2020

No.	Organization	Project name	Project description	Donor	Period	Budget
1.	GIZ	Open regional funds for South-East Europe – Biodiversity	Objective of the project: Increased regional cooperation in South-East Europe is contributing to the implementation of the EU Biodiversity Strategy 2020. The project had 4 sub-projects: <ul style="list-style-type: none"> • Biodiversity Information Management and Reporting (BIMR) • Ecosystem Services Assessment and Valuation (ESAV) • Regional Network of Biodiversity CSOs (BioNET) • Transboundary Management of Ecosystems Each of these sub-projects has achieved a significant number of results.	German Federal Ministry of Economic Cooperation and Development (BMZ)	2015 – 2018	3,000,000 EUR
2.	UNEP	Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building	The project consists of 3 components, as follows: <ul style="list-style-type: none"> • Establishment and effective management of protected areas and biodiversity • Efficiency of management of the protected area system • Biodiversity monitoring 	GEF	2017 – 2019	1,397,260 USD
3.	Center for Ecology and Natural Resources	Supporting decision making and building capacity to support IPBES through national ecosystem assessments	The objectives of the project are: <ul style="list-style-type: none"> • Prepare an Ecosystem and Ecosystem Services Assessment in BiH, including the development of ancillary tools for policy makers • Develop and make available policy support tools and methodologies • Establish a National Platform for Biodiversity and Ecosystem Services (DPBES) in IPBES • Establish conditions for effective use of the Assessment • Provide guidance to national project teams in other countries. 	IKI	2018 – 2023	N/a
4.	WWF Adria BiH	Adriatic Rivers	Goal is to secure restoration and protection of transboundary Trebisnjica/ Neretva and Cetina river basins.	MAVA/GIZ	2017 – 2020	150,000 EUR
5.	WWF Adria BiH	Civil society acts for environmentally sound socio-economic development - CO-SEED	The CO-SEED Project aims to contribute to sustainable management of natural resources by improving regulatory framework, ensuring more participatory and transparent decision making processes that include active group of civil society organizations and more media focus on this topic, which should ultimately contribute to the whole society. Implementation of this project also contributes to raising public awareness through direct media	EU	2016 – 2019	178,416 EUR

No.	Organization	Project name	Project description	Donor	Period	Budget
			involvement.			
6.	WWF Adria	MedForVal	To set scientific basis, empower local administration and raise awareness of local population on need for protection and sustainable management of freshwater forest in Livanjsko Polje.	MAVA	2016 – 2017	29,000 EUR
7.	WWF Adria	Protected area for nature and people (PA4NP) - Field project UNA	In the Una National Park (UNA NP), WWF is implementing the development of a model for parks as generators of development of environmentally responsible business. Field Project Una activities includes establishment and support to Una Tourism Cluster (UNA TC)	SIDA	2015 – 2019	322,530 EUR
8.	WWF Adria	Protected area for nature and people (PA4NP) - Field project Sutjeska	Tithe development of the sustainable tourism product that may be used as an alternative to non-sustainable models	SIDA	2015 – 2019	204,663 EUR
9.	WWF Adria	Dinaric Arc Sustainable Hydropower Initiative (DASHI) Phase II	The DASHI project aims to change the behavior of key stakeholders in hydropower development (developers, financial institutions, legislators), improve the legal framework for strategic planning including declaration of exclusion zones for hydropower development, and strengthen the capacity and mobilize civil society in preventing unsustainable hydropower projects, especially in sensitive areas with high biodiversity.	MAVA	2015 – 2018	67,674 EUR

ANNEX K: OVERVIEW OF NATIONAL TARGETS AND MEASURES CONTAINED IN THE NBSAP BiH (2015–2020)

Error! Reference source not found.6 shows the established national targets and measures in the NBSAP BiH (2015–2020).

Table 16. National Targets and Measures Contained in the NBSAP BiH (2015–2020)⁷⁷

National Target	1. By 2020, increase the public awareness level in the field of biological diversity protection
Measures	1.1. Public surveys and media monitoring
	1.2. Secure financial resources for biological diversity protection projects
	1.3. Formation of a database with implemented projects
	1.4. Prepare and adopt the CEPA Strategy for BiH
National Target	2. By 2020, integrate biological diversity values into development strategies and strategic plans, with an emphasis on rural development
Measures	2.1. Prepare the Study on Economics of Ecosystems and Biodiversity (TEEB)
	2.2. Harmonize the existing and new development strategies, including poverty reduction, with national biological diversity targets
	2.3. Integrate national biological diversity targets into existing and new spatial plans
National Target	3. By 2020, reduce negative and increase positive incentives and subsidies in order to conserve biological diversity
Measures	3.1. Define and calculate positive and negative incentives and subsidies
	3.2. Secure financial resources for positive incentives and subsidies
	3.3. Introduce the monitoring system for positive and negative incentives and subsidies, and prepare annual reports
National Target	4. By 2019, prepare and adopt plans for sustainable production and consumption of natural resources
Measures	4.1. Establish a functioning institutional and legal framework for sustainable production and consumption of natural resources
	4.2. Draft and adopt action plans for sustainable production and consumption of natural resources
National Target	5. By 2020, prepare and implement sustainable management programs for all fishing waters (fisheries basis)
Measures	5.1. Draft programs for sustainable management of all fishing waters
	5.2. Implementation of programs for sustainable management of all fishing waters
National Target	6. By 2019, prepare and implement strategies for development of aquaculture and ranching of commercially significant fish species (for water ecosystems that are not habitats for rare and endemic species)
Measures	6.1. Map areas and determine commercially significant species for ranching and breeding
	6.2. Prepare and implement strategies for development of aquaculture and ranching of commercially significant species
National	7. By 2020, certify all state-owned forests in BiH

⁷⁷ Council of Ministers. 2017. Strategy and Action Plan for the Protection of Biological Diversity of Bosnia and Herzegovina for the period 2015-2020. Available at: http://www.vijeceministara.gov.ba/akti/prijedlozi_zakona/default.aspx?id=25304&langTag=hr-HR

Target	
Measures	7.1. Passage/adoption of the Law on Forestry of FBiH
	7.2. Secure financial resources and involve companies accredited for certification
	7.3. Ensure controls during the certification implementation process itself
	7.4. Develop forest certification schedule plans
National Target	8. By 2020, establish and develop a system for sustainable agricultural production, especially organic and integral production, and conservation and breeding of indigenous species
Measures	8.1. Adopt the Law on Organic Food Production of Food in FBiH
	8.2. Analyze the current status and market in the area of organic and integral production
	8.3. Select potential agencies for certification of organic and integral production
	8.4. Continually increase incentives and subsidies for organic and integral production, and for in situ on farm breeding of indigenous species
	8.5. Draft the action plan for development of organic and integral agricultural production in BiH
National Target	9. By 2020, establish a system for treatment of industrial and utility wastewaters and monitoring of pesticide and fertilizer consumption
Measures	9.1. Establish the system for prioritization in construction of the largest and most significant treatment facilities
	9.2. Establish wastewater quality monitoring and form databases
	9.3. Analyze the types and quantities of pesticides and fertilizers used
	9.4. Establishment of the system for monitoring of pesticides, fertilizers and soil fertility
National Target	10. By 2018, prepare strategies for invasive species
Measures	10.1. Identification of species and populations of invasive animals, plants and fungi, and formation of databases
	10.2. Preparation of strategy for invasive species
	10.3. Formation of the system for monitoring and definition of methods for control of spread of invasive species
National Target	11. By 2020, map and urgently protect the specific biological diversity of BiH (canyon, mountain, alpine and wetland ecosystems, karst fields and alluvial plains) in compliance with the applicable spatial planning documents
Measures	11.1. Prepare the analysis (including mapping) of planned protected areas
	11.2. Start procedures for establishment of protected areas planned in spatial plans, and monitor their progress
	11.3. Establishment or appointment of existing institutions to manage the protected area
National Target	12. By 2020, complete the inventory of: (i) flora, fauna and fungi in BiH; (ii) ecosystems and types of habitats in BiH
Measures	12.1. Conduct the inventory of ecosystems and types of habitats in BiH
	12.2. Conduct the inventory for flora, fauna and fungi in BiH
National Target	13. By 2020, develop the red books of plants, animals and fungi, and adopt action plans for protection of the most endangered taxa
Measures	13.1. Identify the endangered species and their localities
	13.2. Form the in situ and ex situ protection of endangered species
	13.3. Completion, adoption and implementation of action plans and red books
National Target	14. By 2020, prepare and implement in situ and ex situ programs for protection of domestic varieties, breeds and their animal relatives, including their inventory and establishment of indigenesness parameters

Measures	14.1. Identification and evaluation of the state of existing indigenous genetic resources in BiH
	14.2. Improvement of existing and drafting of new laws and bylaws dealing with genetic resources issues
	14.3. Drafting and implementation of programs for sustainable use of genetic resources
	14.4. Favoring of agricultural practice based on breeding of indigenous domesticated plant varieties and breeds of domestic animals
National Target	15. By 2020, map and evaluate the benefits from forest, agricultural and water ecosystems, and strengthen the environmental permit mechanism and supervisory inspection within protected areas, areas of special interest and areas from the Natura 2000 ecological network plan
Measures	15.1. Secure human and technical capacities for assessment of ecosystem services in BiH
	15.2. Complete the analysis of the state of ecosystem services in BiH
	15.3. Strengthen the environmental permit mechanism and supervisory inspection
National Target	16. By 2020, restore 30 strip-mine lakes into wetland habitats, increase the productivity of all categories of forests, preserve the existing area of flood alder and willow forests, and increase the regulated urban green areas by 20 %
Measures	16.1. Establish cooperation and synergy among the relevant institutions
	16.2. Secure funding and other capacities for restoration of lakes and existing flood forests, and implement the restoration measures
	16.3. Conduct reforestation of degraded forest ecosystems with indigenous species
	16.4. Secure funding for increase of urban green areas
National Target	17. By 2018, prepare the legislation and establish the conditions for ratification and implementation of the Nagoya Protocol
Measures	17.1. Ratify the Protocol
	17.2. Harmonize domestic legislation with the Nagoya Protocol requirements
National Target	18. By 2017, establish centers for preservation and implementation of traditional knowledge and practices, particularly in rural areas of interest
Measures	18.1. Document traditional knowledge and practices for sustainable use of biological diversity
	18.2. Establish monitoring of traditional knowledge and practices
National Target	19. By 2020, strengthen the role of scientific research and expert institutions, the NGO sector and media including improvement of scientific technologies
Measures	19.1. Ensure maintenance of the CHM website
	19.2. Organization of symposia/conferences in the domain of conservation of biological diversity
	19.3. Enhancement of scientific technologies
National Target	20. By 2017, prepare and adopt the strategy for mobilization of financial resources for conservation of biological diversity
Measures	20.1. Prepare and adopt the strategy for mobilization of financial resources
National Target	21. By 2020, establish and strengthen cooperation for improved protection and sustainable use of biological diversity in the countries of the West Balkans
Measures	21.1. Holding of annual meetings between NFPs and scientific community representatives on potential cross-border projects
	21.2. Exchange of information, data and good practices in the domain of biological diversity management

**MONITORING AND EVALUATION
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