United Nations Development Programme

Project Document for projects financed by the various GEF Trust Funds

Project title: "Improved Financial Sustainability and Strengthened Resilience of Protected Areas Through Development of Sustainable Recreation and Partnership With Private Sector"		
Country(ies): Bosnia and Herzegovina	**Implementing Partner (GEF Executing Entity):** UNDP	**Execution Modality***:* DIM
Contributing Outcome (UNSDCF/CPD, RPD, GPD)*:* Outcome 1. By 2025, people benefit from resilient, inclusive and sustainable growth ensured by the convergence of economic development, and management of environment and cultural resources **Related Strategic Plan Outcome***:* Outcome 1: Advance poverty eradication in all its forms and dimensions; Outcome 2: Accelerate structural transformations for sustainable development		
UNDP Social and Environmental Screening Category: Moderate	**UNDP Gender Marker:** GEN 2	
Atlas Award ID: *00128336*	**Atlas Project/Output ID:** *00122351*	
UNDP-GEF PIMS ID number: 6439	**GEF Project ID number:** 10344	
LPAC meeting date: *20 April 2022*		
Latest possible date to submit to GEF: *03 December 2021*		
Latest possible CEO endorsement date: *03 June 2022*		
Project duration in months: *60 months*		
Planned start date: *01 July 2022*	**Duration / Planned end date:** *30 June 2027*	
Expected date of Mid-Term Review: *31 January 2025*	**Expected date of Terminal evaluation:** *31 March 2027*	
Brief project description: The project objective is to achieve practical improvement in management of protected area estate of BiH, providing for better biodiversity status through strengthened resilience of key biodiversity values to climate change impact and increased revenues to protected areas from sustainable recreation. The project is called to reduce the gap between the current capacities of protected areas (PAs) with their increasing vulnerability to emerging threats, on the one hand, and the growing needs to preserve and sustainably maintain the biological and ecosystem diversity that is among the top five in Europe, on the other. The project will aim to reduce newly emerging threats to the key biodiversity values, and provide for sustainable management options and increased funding for PAs. The project will make an incremental effort in assisting the protected area management with tools and instruments aimed at diversifying and improving the sustainable, nature-based tourism offering in targeted PAs and neighbouring communities, thus providing for sustainable incremental income and a development option that will valorise the unique nature values without further threatening them. The project will also link the PAs to the funding opportunities provided by the governmental grant programmes for tourism development. Under Component 1, the project will work to reduce vulnerability of key biodiversity values and strengthen the resilience of target protected areas in BiH to climate change		

and support climate-neutral and BD-sensitive PA management and business planning. Component 2 will develop and test mechanisms for increased PA revenues from sustainable tourism.

FINANCING PLAN	
GEF Trust Fund grant	USD 2,640,000
UNDP TRAC resources	USD 150,000
(1) Total budget administered by UNDP	**USD 2,790,000**
CONFIRMED CO-FINANCING NOT ADMINISTERED BY UNDP	
FBiH Ministry of Environment and Tourism	USD 6,178,600
Ministry of Spatial Planning, Civil Engineering and Ecology of Republika Srpska	USD 6,560,500
Ministry of Trade and Tourism of Republika Srpska	USD 168,750
Environmental Protection Fund of FBiH	USD 2,500,000
Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina	USD 116,600
Municipality of Šamac	USD 24,375
Municipality of Ravno	USD 200,000
Sarajevo Canton PE for PAs	USD 150,000
Comitato Internazionale per lo Sviluppo dei Popoli, Rome, Italy (CISP)	USD 1,365,000
UNDP	USD 1,100,000
(2) Total confirmed co-financing not administered by UNDP	**USD 18,363,825**
(3) Grand total project financing (1)+(2)	**USD 21,153,825**

SIGNATURES		
Signature:	**Agreed by UNDP[1]**	**Date/Month/Year:**
DocuSigned by: Steliana Nedera AF106929161D46E...	**Steliana Nedera** **Resident Representative**	13-Jun-2022

[1] For NIM projects this is the Resident Representative. For DIM projects in a single country this is the Resident Representative. For global, regional DIM projects this is BPPS.

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Acronyms

BD	Biodiversity
BAU	Business-as-usual
BiH	Bosnia and Herzegovina
BMZ	Bundesministerium für wirschaftliche Entwicklung und Zusammenarbeit/ Federal Ministry for Economic Development and Cooperation
BPPS	Bureau for Policy and Programme Support
CBD	Convention on Biological Diversity
CEO	Chief Executive Officer
CESD	Centre for Environmentally Susutainable Development
CC	Climate Change
CISP	International Committee for the Development of Peoples (Comitato Internazionale per lo Sviluppo dei Popoli) , Rome, Italy
CO	Country Office
CPD	Country Project Document (UNDP)
CSO	Civil Society Organisation
CTA	Chief Technical Advisor
DIM	Direct Implementation Modality
DOA	Delegation of Authority
DRR	Deputy Resident Representative
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ERC	Evaluation Resource Center
EPF FBIH	Environmental Protection Fund of Federation of Bosnia and Herzegovina
EP EEF RS	Environmental Protection and Energy Efficiency Fund of Republika Srpska
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organisation
FBiH	Federation of Bosnia and Herzegovina
FSP	Full Sized Project
GAP	Gender Action Plan
GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
GIS	Geographic information system
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH/ German Corporation for International Cooperation
HCVFs	High Conservation Value Forests
ICF	Internal Control Framework
IGO	International Government Organisation
IUCN	International Union for Conservation of Nature
JSC	Joint Stock Company
KBA	Key Biodiversity Area
KM	Knowledge Management
LLC	Limited Liability Company
LLP	Limited Liability Partnership
LPAC	Local Project Appraisal Committee
M&E	Monitoring & Evaluation
MEA	Multi-lateral Environmental Agreement
METT	Management Effectiveness Tracking Tool
MET FBIH	Ministry of Environment and Tourism of Federation of Bosnia and Herzegovina
MOFTER	Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina
MSPCE RS	Ministry of Spatial Planning Construction and Ecology of Republika Srpska

MTT RS	Ministry of Trade and Tourism of Republika Srpska
MoU	Memorandum of Understanding
MSP	Medium-Sized Project
MTR	Mid-Term Review
NFP	National Focal Point
NCE	Nature, Climate and Energy
NIM	National Implementation Modality
NM	Nature Monument
NP	National Park
NTFP	Non-Timber Forest Product
OFP	Operational Focal Point
PA	Protected Area
PCA	Project Cooperation Agreement
PE	Public Enterprise
PH	Protected Habitat
PIF	Project Identification Form
PIMS+	Project Management Information System (UNDP)
PIR	GEF Project Implementation Report
PN	Park of Nature
PL	Protected Landscape
POPP	Programme and Operations Policies and Procedures
PPG	Project Preparation Grant
PTA	Principal Technical Advisor
RR	Resident Representative
RTA	Regional Technical Advisor
RS	Republika Srpska
SBAA	Standard Basic Assistance Agreement
SEE	South-Eastern Europe
SESP	UNDP Social and Environmental Screening Procedure
SIDA	Swedish International Development Agency
SLM	Sustainable Land Management
SME	Small-and-medium Enterprise
SoW	Scope of Work
SWOT	Strengths Weaknesses Opportunities Threats
TE	Terminal Evaluation
ToC	Theory of Change
ToR	Terms of Reference
STAP	GEF Scientific Technical Advisory Panel
SoER	State of Environment Report
SOW	Climate Threat Assesment
UNSDCF	United Nations Sustainable Development Cooperation Framework
UNCBD	United Nations Convention for Biodiversity
UNDP	United Nations Development Programme
UNDP-GEF	UNDP Global Environmental Finance Unit
UNECE	UN Economic Commission for Europe
UNEP	UN Environment
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention for Climate Change
UNSMS	United Nations Security Management System
USAID	United States Agency for International Development
WB	The World Bank
WWF	World Wide Fund for Nature

I. DEVELOPMENT CHALLENGE

1.1 Overall development context and challenge (socio-economic, sustainable development) and environmental context

1. Bosnia and Herzegovina (BiH) is located in South-Eastern Europe (SEE), in the central part of the Balkan Peninsula, and covers an area of 51,129 km^2. Bosnia and Herzegovina is a multi-ethnic state with a rich yet difficult historical background and a complex political and administrative system. It administratively consists of two entities (the Federation of Bosnia and Herzegovina and Republika Srpska) and the autonomous Brčko District of Bosnia and Herzegovina. The Federation of Bosnia and Herzegovina (FBiH) is further administratively made of 10 cantons (regions), which are then made of 79 municipalities. Republika Srpska (RS) is divided administratively into 62 municipalities.[2]

2. BiH is an upper middle-income country with 3.5 million population with the main population trends of gradual declining and aging. Bosnia and Herzegovina has experienced steady economic growth in the past two decades, yet its population has declined 20 percent. Unemployment remains high, at 15.7 percent in 2019 and 19.1% in the first quarter of 2021. The youth unemployment rate, at 47.3 percent (2019) and 20.3 percent (2021), is one of the highest in the world. BiH is ranking 75th according to the Human Development Index[3], but is still below the average for the Europe and Central Asia region. Poverty is strongly associated with high unemployment, and over 17 percent of the population is estimated to live below the national poverty line[4].Inequality and poverty remain a concern, particularly in rural areas and among minorities[5]. A more detailed description of the socio-economic context for the country is presented in the Annex 16 to this document.

3. Bosnia and Herzegovina is susceptible to natural disasters and environmental shocks. Natural and man-made hazards represent a significant risk with over 20% of the country's territory prone to flooding. Land and ecosystem degradation typical for a transitioning country remain to threaten the sustainability of the country's development efforts. Capacities to effectively address hazards and crisis need to be further strengthened, as confirmed by the unfolding COVID-19 crisis.

4. The biological diversity of the country is represented by over 450 species of higher plants, several hundred invertebrates (predominantly insects), 12 fish species, 2 species of amphibians, 4 species of reptiles and numerous species of birds and mammals. The country is home to a number of endemic species and habitats as well as a series of relict ecosystems; species diversity has the highest level of endemism in Europe. A more detailed description of the biodiversity context for the country is presented in the Annex 16 to this document.

5. In spite of the country's rich biodiversity, international obligations, and growing man-induced pressures, nature conservation efforts remain insufficient. Socioeconomic challenges, such as unemployment and poverty, have resulted in both the government communities focusing on immediate economic priorities rather than environmental issues, including biodiversity. Thus, biodiversity conservation is not seen as a national priority[6]. Although, in the long run, biodiversity used in a sustainable manner can contribute to economic growth and poverty alleviation, it is now being used mostly as a source of resource exploitation.[7] According to the UNECE (2018), the inadequate integration of land, water, and biodiversity concerns into development planning has resulted in the emergence of threats of biodiversity loss.[8]

1.2 Threats and their immediate and root causes

6. The major threats to threats to biodiversity in BiH include conversion of habitats, overexploitation of valuable biological resources, degradation of forests and loss of valuable forest resources, and climate change-induced effects and threats for valuable and/or vulnerable forests, freshwater ecosystems and wetlands, karst fields and natural caves.

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. Various non-wood forest products (NTFPs) are extensively utilized by the local population and by private companies, which hire local

[2] Voluntary Review - Implementation of Agenda 2030 and the Sustainable Development Goals in Bosnia and Herzegovina. The United Nations .April 2019

[3] Measuring average levels of income, health and education, the Human Development Index of BIH was at 0.769 in 2019, ranking it 75th among the countries with a high level of human development. Human Development Indices and Indicators, 2019 Statistical Update, UNDP.

[4] https://data.worldbank.org/country/bosnia-and-herzegovina

[5] According to the latest available official data from 2015, the poverty is at 17% based on earnings below 60% of median national income. Household Budget Survey, 2015, BIH Agency of Statistics. The World Bank is predicting that the poverty in BIH is expected to rise from estimated 11.8% in 2019 to 12.9 to 14.6 % in 2020.

[6] Bosnia and Herzegovina Biodiversity Analysis and Addressing the Biodiversity Needs. USAID/Bosnia and Herzegovina, February 2020

[7] Bosnia and Herzegovina Environmental Performance Reviews. Third Review. UNECE. 2018

[8] Same as above

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.

8. The conversion of habitat is recognized as one of the major drivers of biological diversity loss due to uncontrolled urbanization and poor spatial planning, leading to fragmentation and loss of agricultural, forest, wetland and other habitats. Habitat degradation and fragmentation happens as a result of urbanization, construction of infrastructure facilities, fire, erosion, discharge of pollutants into the ground, and illegal construction of facilities. The biggest threat to fertile agricultural lands with agri-biological diversity is the process of urbanization and conversion into construction land.

9. For forest habitats, forest fires are the main cause of degradation and loss of forests, while other causes are illegal use, natural disasters, cattle, insects and plant diseases. Illegal logging is recognized by the governmental authorities as one of the most severe threats to valuable forests. The illegal logging is done by private people for subsistence needs (especially for firewood) and by organized groups of people for harvesting, transporting and processing at facilities without a permit. Forests in the country are vastly affected by forest fires and destructing attacks of pathogens and insect pests. The latter threats are closely associated with and aggravated by climate change.

10. The rich biodiversity of BiH – particularly the flora and fauna of protected areas situated near or at the Dinarides mountain range, karst fields and wetland areas – faces a range of potential climate impacts, including but not limited to: habitat shifts, loss and fragmentation; spread of invasive species; disrupted species migration patterns, changes in water level and quality; increased risk of water fires and increased vulnerability of forests to vermin and pathogens. Climate change and increased frequency and intensity of extreme climate events in Bosnia and Herzegovina have caused increased pressure in the sectors of agriculture, water management, health, forestry and tourism, as well as in management of water resources and protected areas. There is a record of an increase in variability and intensity of extreme weather conditions (heat waves, intense rainfall, windstorms, days with hail, etc.). In 2001, 2002, 2009, 2010, and 2014, extraordinarily disastrous floods hit large portions of the country.

11. The northeastern region of the country is most prone to drought. The worst drought in 120 years occurred in 2002 and resulted in a 60% drop in the country's agricultural production, which generated a serious food crisis. Landslides are a continuous and well-known hazard in BiH and represent a complex and ever-increasing problem for authorities at all levels, as well as for the affected communities. The Risk Assessment for BiH adopted by the Council of Ministers in 2012 registers more than 1,800 active landslides in the country. The lack of land use planning and geological analysis lead to unsustainable territorial development and infrastructure investments, which in the long-term aggravate the landslide risk.

12. Bosnia and Herzegovina is increasingly facing with several significant extreme climate and weather episodes that have caused substantial material and financial deficits, as well as casualties (Third National Communication to UNFCCC, 2017). 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.

13. A number of protected areas were recently struck by natural hazards including the following examples:

• National Park Sutjeska suffered a major landslide due to the heavy rainfalls in February, 2018, and

• the cave system of Vjetrenica, which is part of the Popovo Polje and Trebišnjica freshwater KBA and one of the finest examples of subterranean biodiversity in the world, was heavily flooded and damaged in October, 2015.

14. The 2018 Environmental Performance Review for BiH outlines high altitudinal communities, mountain landscapes and relict and refugial ecosystems as highly sensitive to climate change. The 6th National Report to UNCBD outlines the following specific ecosystems as most vulnerable to climate change:

a) high-mountain landscapes (ecosystems of mountain pine forests, subalpine forests of Bosnian pines, firm snow areas and alpine grasslands on basic and acidic soils, and ecosystems of alpine rock-slides and in joints of carbonate and silicate rocks) such as those found in national parks Sutjeska and Drina;

b) mountain landscapes (ecosystems of mixed deciduous and coniferous forests of beech and fir with spruce, spruce and fir forests, Serbian spruce, mountain moderately moist meadows, high and low cretaceous, mountain springs and streams, etc.), such as those found in PAs Konjuh, Trebevic, Kozara, Skakavac, Cicelj;
c) relict-refugial landscapes (ecosystems in canyons and river cliffs, limestone, dolomite, silicate and ultrabasic rock joints, rock creep ecosystems, sub-Mediterranean and continental rocky grounds, xerophilic meadows, bright coniferous forests, forests of Bosnian pines, Illyrian black pine, thermophilic deciduous forests and thickets, mesophilic and hygrophylicpolidominant forest communities, beech forests in canyons and cliffs, alder forests, thermal springs around habitats in semi-shadows, etc.), such as those found in NPs Sutjeska, Drina, Konjuh, Orlovaca, Vjetrenica;
d) karst fields and wetlands, such as Hutovo Blato, Livanjsko Polje and Tisina.

15. Four national reports of BiH to the UN Framework Convention on Climate Change (2009, 2013, 2016, 2020) identify a significant impact of climate change on plants whose habitats are in the mountainous areas of BiH. In the long run, one can expect the migration of some woody plants in the direction of the Dinarides to the northwest and a decrease in the number of herbaceous plants of narrow ecological valence of the highest mountain areas. Possible causes are increases in average temperatures and stronger temperature extremes. In addition, the high sensitivity of fir forests was determined due to the narrow ecological valence in relation to temperature. 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 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[9].

16. Climate change models predict that, as a result of rising temperatures, significant changes in precipitation levels will occur. This will have a strong effect on the distribution of plant species. Climate change is expected to have a significant impact on the flora of mountainous areas, resulting in the migration of certain tree species along the Dinarides, as well as a local reduction in the number of species. Grass species are likely to disappear in the high mountains. In addition, it is likely that wetlands, with their bird and turtle populations, and karst regions, will be particularly affected by the loss of flora and fauna. Some endemic species are also expected to disappear. The most affected ecosystems will be the high mountain areas in BiH at altitudes of more than 1,500 m, which corresponds to the border of the subalpine zone[10].

17. Negative effects of climate change on forest ecosystems have already been significant. The negative impact is manifested through increased droughts, forest fires, drying of certain species and declining groundwater levels. In addition, there are certain complex stress agents in forests and forest systems: insects, diseases, droughts, floods, landslides, unplanned logging, fires, etc.

18. Climate change factors contribute significantly when it comes to the reported increase in the number of forest fires. In some parts of BiH, an increased risk of forest fires caused by rising temperatures and changes in precipitation is expected, which calls for an expansion of fire protection capacity. Wildfires occur more intensively in the period before the vegetation in March-April, and in the period of drying of the vegetation, the end of summer, July-August and the first half of September. Open fires, and thus forest fires, endanger the population, property, infrastructure, and especially the environment. Areas under coniferous forests of pine, fir and spruce are especially endangered. Climate change leads to significantly longer and more intense drought periods with increase the fire risk index. In BiH, fire hazard indices are not calculated, nor are early warnings of dangerous occurrences issued, unlike in neighbouring countries, Serbia and Croatia.

19. Numerous natural lakes and wetlands of Bosnia and Herzegovina, including Nature Park Hutovo Blato and Livanjsko Polje Ramsar site, suffer from regular disturbances in the water regime that gravely affect fish stocks and migratory birds. Adaptation and resilience measures are not incorporated in conservation legislation nor management plans of affected protected areas, and funding is more often available for recovery than for risk reduction and prevention. Previous research has shown that the lakes in the area of high Herzegovina are already affected by the increase in temperature, which caused eutrophication and the accelerated disappearance of the lake. An increase in temperature was observed in all lakes of high Herzegovina (Orlovačko, Crno, Bare, Štirinsko, Kotlaničko).

[9] UN Environment. 2019. State of the Environment Report (SoER) for BiH. Final draft. Sarajevo UNECE. 2018. Environmental Performance Reviews Bosnia And Herzegovina.

[10] Climate Change Adaptation and Low-Emission Development Strategy for Bosnia and Herzegovina, 2014.

II. STRATEGY

2.1The long-term solution

20. The proposed project is called to reduce the gap between the current capacities of protected areas with their increasing vulnerability to emerging threats, on the one hand, and the growing needs to preserve and sustainably maintain the biological and ecosystem diversity that is among the top five in Europe, on the other. The project will offer a sustainable alternative to the current functional model for the PA system in Bosnia and Herzegovina, aiming to reduce newly emerging threats to the key biodiversity values and providing for sustainable management options and increased funding for protected areas.

2.2 Key past and ongoing interventions

21. A large number of nature and biodiversity protection projects have been funded and implemented by both international and national institutions and organizations. Most active donors and international NGOs were: GEF, EU, SIDA, BMZ, GIZ, and MAVA Foundation. Annex 17 summarizes key past and ongoing interventions in the field of relevance.

The project will be built upon the key achievements of the two recently completed UNEP/GEF MSP "Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building". The project supported the proclamation of national protection status for the part of the transboundary Dinaric Mediterranean limestone mountain range Mt. Orjen – Mt. Bijela Gora, a key sub-centre for mountain flora in the Coastal-Adriatic Dinaride, as Ramsar site and KBA. The project also supported the expansion of Vjetrenica protected landscape that now includes Popovo Polje – one of the most beautiful karst fields in the region. Both internationally recognized KBAs are now proclaimed as national PAs with the BD conservation and sustainable tourism development as key management priorities. The new GEF project will come to assist the new PA management with the tools and practical instruments for better protection, resilience and adaptation of vulnerable ecosystems, and sustainable development of eco-tourism potential. The current project proposal used and updated the PA finance data that was collected by the UNEP/GEF MSP, and expands on the recommendations developed by the project regarding the long-term financial sustainability of the PA system. Lessons learned through the implementation of the advocacy activities and communication of natural values and benefits of PAs to PA staff, conservation authorities, and decision-makers, will be utilised by the new GEF project; the latter will also focus on further, site-based promotion of different aspects of nature protection to local communities around the country, including gender–sensitive advocacy and public outreach programmes. During the final year of the UNEP/GEF project implementation and the PPG for the new project, the two teams under the leadership of UNDP CO communicated regularly to ensure complementarity, provide for synergies, and avoid duplication of activities and inputs. Conceptually, the new project builds upon the UNEP/GEF MSP's interventions aimed at enhanced coverage and protection status, as well as system-level PA management improvement, and will focus on testing and actual implementation of PA financial sustainability options and tools, in line with the evolution of the GEF programming priorities.

The proposed project was developed in close synergy with another major and well-renowned project of a regional scale – Via Dinarica. Via Dinarica is a regional platform created to connect the countries and communities of the Dinaric Alps by creating a unique and diversified tourist offer. The first phase of the national Via Dinarica Project (October 2014 – August 2017) was sponsored by USAID with a total value of US $ 1.6 million, has contributed to placing Bosnia and Herzegovina on the world tourism map as a nature-based tourism hotspot, changing the war-related negative image of the country. Over 2,800 km of trails have been assessed and GPS-marked, with more than 700 accommodation facilities, services and points of interest identified and recorded for three Via Dinarica trails. Significant improvements were made in tourism infrastructure and services, by offering over 1,000 beds in upgraded mountain huts and bed and breakfast accommodation, diversifying outdoor tourism offer by way of 20 new tourism services (e.g. hiking, mountain biking, rafting, etc.). The project has contributed to the development of the local community, the enterprises, supported creation of new jobs and the economic empowerment of local communities in mountainous and rural areas. Via Dinarica gained global visibility through publications in the world's prestigious worldwide media and others that glorified its beauty and uniqueness. The Project's Phase II was implemented in 2018-2020 has further affirmed and sustain Via Dinarica as a safe and internationally recognised tourism brand, and supported further development of Via Dinarica as a tourism platform offering economic development opportunities for local communities. Virtually all of BiH's protected areas are situated on the Via Dinarica trails but their natural values have yet to be adequately promoted or capitalized by providing appropriate levels of customer service. This will be one of the key tasks for the UNDP/GEF project that will focus its intervention on the development of eco-tourism options within and in the vicinity of protected areas.

2.3 The projected baseline scenario

22. Nature conservation in a spatial context in Bosnia and Herzegovina, although not historically new (the first protected area was designated in 1962), is still a rather undervalued concept. The protected area network is the smallest in Europe, covering some 2.8% of the territory. It consists of 40 individual areas, with several more recently preparing for designation, both through the support from GEF and local governments. The underdevelopment of PA system in BiH is in sharp contrast to the conservation needs. The biological, climatic and landscape diversity of the country are among top five on the continent and have been a source of sustenance for its people throughout its history. The country is home to a number of endemic species and habitats as well as a series of relict ecosystems. BiH belongs to the Mediterranean Basin Biodiversity Hotspot, which is well known for its globally important biodiversity and is home to several key biodiversity areas (KBAs), important bird areas (IBAs), Ramsar sites and primeval forests.

23. The respective government authorities are making procedural steps required for expansion of PA network in the country. The National Ramsar Administrative Authority in Sarajevo works to prepare environmental legislation for proper recognition of Ramsar sites in the national PA system. The Spatial Plan of Republika Srpska and draft Spatial Plan of FBIH include PAs in the process of establishment (2.16% of total area planned for protection by the respective spatial plans), however, there are no detailed programmes on the designation of new areas.

24. In the baseline scenario, the current coverage and configuration of the PA network makes it extremely vulnerable to an increasing number of natural hazards. Conservation objectives of designated PAs are often not met: the lack of appropriate adaptive management measures combined with funding gaps and “invisibility” of protected areas lead to loss of habitat, species and further environmental degradation that is difficult to reverse. The climate change effects on the biodiversity values are not assessed per se; the climate change aspects are only formally touched upon in the proclamation studies and management planning framework of the protected areas. Very minimal efforts have been made so far to include key biodiversity values and vulnerable ecosystems, including the ones in protected areas, in current disaster risk management activities and risk mapping country-wise.

25. Protected areas in BiH are managed by public entities and institutions, while financing of those institutions is provided via the governmental (FBiH/RS) and/or cantonal environmental funds, revenues and income from fees (entry fee, fee for recreational fishing and sports activities, souvenirs, parking fees, camping etc), as well as grants and subsidies. The four national parks’ baseline financing comes from entity environmental ministries’ budgets; the public financing of PAs of cat. III and below wildly differs. In RS, those PAs usually stay with little to no financing from municipal budgets, while in FBiH the majority of PAs of lower category have a dedicated management authority with at least some funding from the cantonal level. Further on, nature conservation can and often is funded from the dedicated grant schemes of entity and cantonal environmental ministries and the entity environment funds. However, there is no guaranteed funding from the Environmental Funds of the entities dedicated solely for nature or nature-based tourism development. Both Environmental Funds do not provide continuous financial support to PA management authorities (public enterprises/institutions) in their establishment and operation, nor do they fund activities for protecting and improving the state of biodiversity according to adopted management plans. The funds operate through open calls for requests for funding of specific focused environment projects that may or may not be linked to the PAs. The overall capacity of PA managers to apply for competitive public funding remains low and public funding opportunities are often underutilized by PAs. The same goes for tourism development grants, as the PA managers rarely apply for this funding and have been continuously expressing the need for project management cycle trainings and more human resources to support the public and ODA funds absorption capacity. Annex 16 to the project document presents an overview of the BD conservation and PA management framework in the country, and Annex 18 analyses the PA finance pattern and provides data on PA baseline finance in detail.

26. Despite their relatively small number and small coverage, protected areas in Bosnia and Herzegovina have an enormous potential in eco-tourism development. However, the lack of well-developed tourist infrastructure, including lodging, is evident, as most of the visits to the protected areas are one-day visits. Only several protected areas in BiH offer consumer service to tourists and although the country has been experiencing a visitation increase every year until COVID-19 pandemic, there is very few tourism products that deal with the natural values of PAs. The PA network of BiH can offer a year-round set of attractive activities, such as trekking, winter sports, bird watching, water safaris, rafting, camping or rock climbing. Having different types of climates, the country is a prime example of weather diversity and a range of different ecosystems in a relatively small territory and is thus exemplary for the development of nature-based tourism products.

27. Protected areas in BiH have yet to become self-sustaining and are often closing financing gaps by unsustainable natural resource use (commercial logging, issuing hunting permits etc). Only one protected area in BIH, National Park Una, managed to have positive cash-flow for the last three consecutive years. Overall, the current funding levels barely close the PA staff

salary, and the majority of PAs is already understaffed. The conservation measures are often funded only through extra-budgetary allocations, third party-led projects or international assistance. Increasing the financial health of country's PAs and strengthening the own income generation through sustainable tourism development would have multiple positive effects on both conservation efforts in PAs and sustainable post-pandemic recovery of country's economy.

28. The majority of PAs including some nature parks and natural monuments still have not introduced visitor ticketing or other income-generating practices and a significant number of PAs (particularly cat. III-VI in the entity of Republika Srpska) exist without any funding allocations. Given the current number of visits, the baseline tourism offerings in the PAs, and the low growth trends for most of the PAs in BiH recently, a level of self-sustainability will be difficult to achieve in most PAs in the next few years without investing in content that will attract more visitors. Yet the PAs of BiH have a great potential to be the generators of local sustainable development, especially from the aspect of the sustainable tourism offer. The structure of expenses of the protected area management, which shows that promotion and information expenses range from 0% to 2% for many protected areas, indicates that in order to be self-sustainable and to increase their own income in their future business operations, the protected area managements will have to increase the investment in promotional activities, from the current percentage to 10-20%, in accordance with best practices in terms of promotion expenses.

29. The report on the impact of the COVID-19 pandemic on the work of protected areas in Bosnia and Herzegovina produced by UNEP and WWF in June 2020[11] showed a significant effect of the public health crises on the overall management of PAs in the country, primarily related to a decrease in the number of visitors and budget cuts. Some of the managements that prior to the pandemic had significant visitation numbers reported a decrease of income as large as 80%. Most of the PAs have not received any recovery assistance from the governments apart from Sutjeska National Park. The implementation of conservation measures was hampered, and poaching rates increased in some protected areas due to insufficient control and monitoring.

30. According to the report, though a majority of PA managers did not plan for any alternative approaches to bridge the financing gaps caused by the COVID pandemic lockdowns, some saw the crisis as an opportunity and introduced new tourism packages focused on domestic tourists (e.g. Una National Park). Many PAs felt that more attention should be given to building stronger and more attractive local destinations out of protected areas and hope to receive support for these efforts in the future. Managers also felt that they lacked in capacity to apply for economic recovery schemes available in the country and stressed the need for more collaboration with the civil society and the private sector to overcome the financing gaps and access recovery funds.

31. In the baseline of the post-COVID recovery period, distorted government interventions in the sectors of nature conservation and sustainable tourism development can be expected. Already in 2020, the country slipped into its worst recession in 25 years. Real GDP growth contracted by 5.5 percent in 2020 and projected 2021 growth is 3.5% (MMF). The economic downturn of 2020 has most prominently affected the services sector, including tourism. However, a rise in domestic visits to – primarily – outdoor destinations in BiH provides a glimpse of hope for future openings of nature-based tourism. An increment to the baseline tourism development pattern and recovery strategy is required to ensure that the recovery efforts by the governments are streamlined towards increased attention to the considerations of nature, circular and sustainable economy and environmentally positive tourism.

2.4 Barriers and Theory of Change

32. As has been acknowledged in the Climate Change Adaptation and Low-Emission Development Strategy for Bosnia and Herzegovina, 2014, climate change adaptation measures should be centred on expanding the network of protected areas in Bosnia and Herzegovina, and improving the management of the existing protected areas. A gap between the conservation and CC adaptation needs and the PA system capacity is one of the key barriers to the effective conservation effort and successful climate change adaptation nation-wide.

33. The "Protected Areas Benefit Assessment in Bosnia and Herzegovina" (WWF, 2016) identifies low capacities of PA management for income diversification as one of the principle PA management weaknesses. Other limitations of the PA management refer to the absence of effective cooperation between PA management bodies and local communities, limited outreach to stakeholders in general, and an overall low level of awareness of PA values and benefits. The third Environmental Performance Review for Bosnia and Herzegovina (UNECE, 2018) outlines missing or inadequate conservation measures as

[11] Impact of the COVID 19 pandemic on the work of the protected areas in Bosnia and Herzegovina. UNEP BIH / WWF ADRIA, June 2020

one of the greatest issues in biodiversity conservation in the country, as well as the lack of capacity and resources to implement the existing ones. Further on, the 3rd Environment Performance Review (EPR) for BiH recognized that one of the major barriers to nature conservation in the country is a widespread lack of awareness regarding biodiversity issues among the population. In particular, knowledge and awareness about biodiversity values and benefits provided by protected areas, as well as sustainable use of resources, is assessed as being rather limited.

34. With the third highest tourism growth rate in the world before the COVID-19 pandemic, the baseline development agenda leaves the PA system behind the tourism development trends. The current recession in the tourism sector due to COVID-19 pandemic has set the protected areas further behind the financial sustainability and diversification of income; at the same time, the project stems form the assumption that it can be seen as an opportunity to explore new sustainable paths of tourism development that would integrate the protected areas and the nearby communities and green business in the new nature-based tourism offering focused on domestic tourists and the outstanding values and attractions of the PAs. A related assumption here is that the COVID-19 restriction are likely to continue impacting the return of international tourism. Europe predicts that internatila flights alone would not return to the pre-pandemic level before 2026. Apart from internaitnational travel, we assume that the pandemic has more impact on larger companies with respect to their wilinigness to engage in novel partnerhsips. This assumption is based on the fact that we have seen impact on the private sector engagement, especially since the first two waves, and a lot of uncertainties in economic development at the macro level during the PPG phase. As discussed in the private sector engagement strategy, it affected the project in one of its activities, namely on the PA private concession, which led to the fact that the deal to conclude the PA private concession contract, while not discarded, requires more time to finalize and will be completed during the inception phase of the main project itself. As discussed in the private sector engagement strategy, this further required a certain correction of the approach under Outcome 2, namely to make sure that activities are not focused on international travel and big private companies alone, but rather are generally focussing on supporting sustainable local businesses.

35. As of November 2022, the country is actively developing the paths towards COVID-19 recovery, with specific focus on the tourism sector. The assumption is that recovery programming by the Government is very likely to continue and that it is going to focus on domestic nature-postiive outdoor activities. Indeed, it is recognized that international tourism is unlikely to reach even pre-COVID19 levels during the life of the project, and both the Government and the project team recognize that “domestic” tourism should be the key audience, and products should be designed accordingly. The underlying theory of change for the proposed intervention relies on the sustainable nature-based tourism development as a principal vector for the country and its PA estate, and assumes that eventually the COVID-19 crisis ceases and transits to the “green recovery” phase, presenting opportunitis for tourism development. Whle the country does plan to gradually re-establish itself as an destination destination, the focus is on setting new standards for domestic nature-based tourism as a key recovery strategy. The project strategy to focus on the domestic market is fully in line with this philosophy, and can be considered the mitigation strategy for risk of continued effects of COVID-19 as raised by the PTA and the STAP. BIH, as part of Europe, went through four waves of the pandemic, and the 3 and 4 waves were not involving shutting down the economy. Movement within the country was not heavily restricted, and with rising vaccination percent, the assumption is that it is quite likely to ensure domestic tourism market robustness in the projected continuation of COVID-19 effects. Specifically, nature tourism involves a lot of “staying outside”, and for accommodation – staying in small, isolated community-held local accommodation places, as opposed to massive congregations at international destinations. Promotion of domestic nature tourism, as envisaged in Outputs 2.1-2.3, therefore, highly correlates with the recovery directions of the Government, which thus enables project interventions stemming from our assumptions.

While support to domestic nature tourism is the best response to recovery, it is a complex process that requires a shift in the thinking and behaviour of both providers and consumers of tourism services, and this is where this project comes handy. The rewards of such a shift would be multiple: tourism in Bosnia and Herzegovina would develop in a more sustainable and non-intrusive direction by promoting slow tourism characterized by longer stays and shorter distances, while ensuring minimal contribution to any potential spread of COVID-19. Indeed, activities under Output 2.4 (participation in the government grant program) will help PAs and local communities to apply for recovery funding enabled by the Government.

Promotion of nature-positive local livelihoods such as collection of NTFP and beekeeping is a separate line of operation under the project, while it is an example of concrete mechanism of engagement with the private-sector. Here, we agree with the PTA that similar nature focused activities are positively correlating with COVID-19 recovery, they can and should be promoted regardless of the severity of the pandemic, since they involve single individuals working in the open, and are extremely unlikely to cause spread of virus (provided basis safety regulations are observed). Support of such activities is envisaged by the Government in the recovery plans and project Output 2.4 will help potential beneficiaries apply and operate such assistance.

36. With the above approaches, the project will still be able to achieve its objective of increasing profits for communities and local business operators while focussing solely on biodiversity-positive impacts. This seems a plausible economic scenario, and it also greatly contributes to sustainable development. The GEF project was designed to be aligned with the tourism sector recovery priorities mentioned above, and the proposed project will contribute an essential increment to boost the high-yield low impact tourism development focused on the domestic tourist and boosting the PA role in the green recovery strategy for the tourism sector recovery. The second pillar of work in the recovery context is related to support of nature-based local liveihoods living in or around protected areas, focussing on non-timber forest resource collection and beekiping. The main assumptions in this discussion can be summarized as: (1) full recovery to enable reinstallation of profits from international travel is unlikely before 2026, (2) Government continues to support nature-based domestic tourism as a key element of recovery.

37. The proposed solution to the barriers and constraints related to PA finance would be to address the system-wide funding gap for the management of protected areas through the development of nature-based tourism activities. The proposed intervention is designed to build ecotourism capacity and create a network of community-based destinations for birding, caving and other nature-based tourism activities, by developing a product package for pilot PAs as a tool to assist the PA management authorities and PA managers.

38. The proposed intervention will bring in the innovative elements in PA finance: a PA tourism concession pilot as a mechanism for strengthening PA sustainability and increasing financing for PA management, and modifications to the existing mechanism for governmental grant allocation that will include eco-tourism development within the protected areas as a priority funding window. Both will be introduced with the assumption that the relevant stakeholders are ready to cooperate in testing and eventual adoption of the innovative finance elements; for that, the institutional barriers and the risks should be factored, the adaptive management scenarios developed and capacity development actions planned to ensure the enabling environment and stakeholders buy-in.

39. Another innovative solution that will be tested on-the-ground is wetland and associated aquatic habitat restoration within a category IV-VI protected area. The main assumption related to the restoration activities proposed for the project are that a) the required regulations and permissions are either in place or can be arranged for with an incremental support from the project, and b) the relevant experience from abroad would be applicable for the specific locations identified as wetland restoration pilots.

40. Before any management innovations are supported with the required level of ownership and commitment, the planned intervention should make sure that the basic needs and requirements, as in Maslow's hierarchy of needs, are fulfilled. For this, the project planning relies on the baseline management and PA finance agenda, the stakeholder commitments confirmed at the project preparatory phase, and the parallel donor activities related to PA management support, tourism infrastructure development, capacity building, community engagement etc.

III. RESULTS AND PARTNERSHIPS

3.1 Project description and expected results

41. The proposed project will make an incremental effort in assisting the PA Management with tools and instruments aimed at diversifying and improving the sustainable tourism offering and enhanced visibility and promotion of the targeted PAs, thus providing for sustainable incremental income and a development option that will valorise the unique nature values without further threatening them. The proposed scenario aims at ultimately turning the PA system from a burden on the government budget to the locomotive of sustainable tourism development. The project will also capacitate the PAs and work with the public sector stakeholders to ensure a sustainable link to the funding opportunities provided by the governmental grant programmes for tourism development. At the same time, better biodiversity status will be achieved through strengthened resilience of key biodiversity values to climate change impact.

42. The project Objective is to achieve practical PA management improvement and better biodiversity status through strengthened resilience of key biodiversity values to climate change impact and increased revenues from sustainable recreation. The project's work will be implemented through three components. Under the Component 1, the project will work to reduce the vulnerability of key biodiversity values and strengthen the resilience of target protected areas in BiH to climate change. Component 2 will develop and test mechanisms for increased PA revenues from sustainable tourism. Project Component 3 groups the project knowledge management activities. The proposed structure of the project addresses the two most pressing needs in the area of nature conservation in BiH in the next 5 years. One is associated with the climate-

induced threats that, according to the latest country communication to the UN CBD, pose a key external risk. Failure to incorporate resilience solutions for PA functioning would in the long run render the PA system unable to support the biodiversity it hosts and attract people to it. While addressing the climate resilience issue, the next important area of focus is the administrative and financial capacity of nature conservation and specifically PA management, which requires innovative solutions including private-public partnerships and other measures proposed in this GEF project. Implementing just the climate resilience without strengthening the financial viability of the PAs would deprive the conservation sector of long-term resources to sustain itself. Ignoring the climate risks and focusing solely on the financial and administrative capacities of PAs in a small country such as BiH would pose the ecosystems at risk of losing their ecological qualities/functions/services and ultimately disabling the conservation industry from attracting people to it. Therefore, the two components of the project will work in synergy to address the most imminent needs and gaps of PA management in the country.

Component 1: Strengthening PA resilience to climate change threats

Outcome 1: Managerial and technical capacities of targeted PAs in place helping ensure resilience of key biodiversity values to climate change

Output 1.1: Comprehensive climate threat assessment conducted for pilot PAs

43. A desk climate threat analysis for the pilot PAs was performed during the project preparatory phase (PPG) and is presented in Annex 20 to the Project Document. The PPG desk analysis was focused on four National Parks in BiH – Drina, Sutjeska, Una, and Kozara – and several PAs of lower category where the climate change effects were either documented or possible to qualify based on the data available for targeted landscapes, ecosystems, and species: Skakavac Nature Monument, Prokosko Lake Nature Monument, Bijambare Protected Landscape, Vjetrenica-Popovo Polje Protected Landscape, Blidinje Park of Nature, and Orjen Park of Nature. The desk analysis is more detailed for the national parks that have a longer observation record supported by targeted research. The climate change effects on mountainous forest ecosystems are best documented, with the rising temperatures and changes in precipitation causing the drastic change in the plant species composition, migration of vulnerable species along the Dinarides, and a local reduction in the number of species, and increased vulnerability of small and fragmented populations of keystone coniferous species. Based on the data available and the expert assessment of the key climate impacts and pressures on the key biodiversity values within the targeted PAs, possible response scenarios and adaptation measures were proposed by the PPG experts. The emphasis of the analysis on the coniferous forest ecosystems is also justified by the fact that for particular species of spruce, fir, and white pine (which are building numerous communities in mountain landscapes), BiH represents the southern limit of distribution. Inclusion into the desk analysis of the PAs with the domination of lowland areas such as Vjetrenica-Popovo Polje, Blidinje, and Prokoško Lake is attributed to the unique and vulnerable karst and glacial lake ecosystems they host..

44. Building on the key results of the PPG desk analysis, and further focusing on the PAs with the management capacities and resources available for more focus on the climate change response and adaptation, in the first year of implementation the Project will commission a comprehensive climate threat assessment of the pilot PAs (National Parks Sutjeska, Kozara, Drina, and Una, Prokosko Lake Nature Monument, Blidinje Park of Nature, Vjetrenica Protected Landscape and Orjen Park of Nature), with the aim to:

- Identify the key climate impacts on biodiversity within the PAs;
- Identify species and ecosystems that enable resilience and adaptation;
- Assess the synergies between a variety of threats;
- Conduct species and ecosystem climate vulnerability assessments; and
- Develop threat response scenarios.

45. Reflective of the key findings of the PPG desk analysis, for Sutjeska NP, the scope for climate threat assessment (SOW) should include a detailed assessment of threats and ecosystem health for the targeted beech-coniferous forest communities located in the area of Zelengora, Perućica and other specific locations within the National Park that will help determine the status and the management measures for these critical ecosystems. An analysis of the condition of fir forests will be commissioned for National Park Kozara to support the elaboration of management, monitoring and control measures to improve the condition. For Blidinje PN, SOW should include an assessment of the impact of climate change on the growth

of Bosnian pine (*Pinus heldreichii*). For Prokosko Lake NM and Una NP, SOW should include a status assessment for flagship species of ichtyofauna and key aquatic habitats.

46. The climate threat assessment will be planned to take into account UNDP SES requirements (project SESP risk)related to the susceptibility of project endeavours to climate and the extreme climate conditions, and will be responsive to the SES Standard 2.

47. The climate threat assessment will be accompanied by the development of an information system that would provide digital coverage of PAs ecosystem "inventory" as a tool for the management of climate change effects in these areas. For the climate threat assessment, many open sources of information will be considered, including historical data on climate, climate-related events, wildfires, floods, etc. In addition, the climate threat assessment will also include information on the vulnerability and exposure of the local communities (including increased vulnerabilities of ethnic minorities, women, youth, disabled, veterans etc) in the project area to a changing climate and details on how climate and non-climate stressors might interact to exacerbate climate risk, within the targeted PAs and their surrounding geographies. A customized geographic information system supporting the narrative climate threat assessment will be maintained and enhanced throughout the project lifetime to become a tool to identify drivers of vulnerability in specific areas, by combining public information data sources and remote sensing data (using IoT sensors). All data needed to complete the climate threat assessment would be candidates for gathering and processing in this system. Accompanied by ecosystem monitoring, the results of the comprehensive threat assessment will be incorporated in the future adaptive management actions and updated PA management framework (Output 1.2 below).

Output 1.2: PA management framework developed/updated and under implementation with due account of climate threats

48. The project will assist the pilot PAs with the preparation of management plans, as well as management guidelines and tools for taking into account the CC threats, threat response scenarios, ecosystems and local livelihoods resilience, and adaptation measures.

49. For the National Parks Sutjeska and Kozara, a climate threat management module will be developed to serve as the basis for the new 5-year management plans to be supported by the project after its mid-term. For the National Parks Drina and Una, the project will support the development of new management plans with due account of climate threats and climate neutrality objectives/indicators. For the new management entities of the Prokosko Lake Nature Monument, Vjetrenica Protected Landscape, and Una Park of Nature, the project will support prioritization of the management objectives and advanced management planning based on the comprehensive analysis of threats and pressures to the PA values, and the new development objectives. Based on the outcomes of the PPG desk climate threat analysis, a status assessment and an action plan for the endangered spruce forest and vulnerable peatland communities will be developed for Bijambare Protected Landscape. A comprehensive Management Plan will be developed for Orjen Park of Nature in follow-up to the initial 2-year management programme. The BD-sensitive and CC-neutral management planning for Vjetrenica Protected Landscape will be based on the new valorisation study (commissioned within the UNEP MSP Project to support re-classification of the area) and will include specific monitoring, assessment and management measures for rare/endangered habitat types (karst caves, basins and abyss ecosystems) and species sensitive to climate change (reducing water level, changes in water temperature, changes in water regime etc. It should be noted that the project supported PAs management plans will be developed in line with the UNDP SES requirements. The Management Plans will include measures for patrolling and enforcement of environmental regulation with an emphasis on collaborative methods, with respect to human rights and understanding of community rights and needs.

50. Under this output the project will implement the Process Framework (as indicated under ESMF Annex 23 and SESP Annex 5) in order to facilitate the consultations with local communities and avoid any potential risk of economic displacement resulting from the new PAs management plans and a stricter enforcement of environmental regulations. The Process framework will cover the following PAs: National Parks Sutjeska and Kozara; National Parks Drina and Una; Prokosko Lake Nature Monument, Vjetrenica Protected Landscape, and Una Park of Nature; Bijambare Protected Landscape; Orjen Park of Nature; Vjetrenica Protected Landscape.

51. The climate threats assessments (commissioned under Output 1.1.) will also include information on the climate vulnerabilities and exposures of local communities, thus enabling PAs managers to meaningfully engage with local municipal authorities and local communities representatives in devising appropriate adaptation measures that would equally benefit natural PAs ecosystems as well as the local livelihoods that depend on them.

Output 1.3: A portfolio of adaptation and resilience solutions for targeted species and ecosystems developed and set under implementation

52. Following the results of the desk climate threat analysis, the project PPG phase has offered a portfolio of climate change adaptation and resilience solutions developed for the targeted vulnerable forest ecosystems and flagship species in the targeted PAs presented below. The list of interventions may be amended following the outcomes of the Comprehensive climate threat assessment under Output 1.1, and will be designed in accordance with the UNDP SES requirements. The project team will conduct site-specific screening and appropriately scoped ESIAs applied to these measures in order to identify prevent and mitigate potential impacts on ecologically sensitive habitats (please see ESMF, Annex 23).

53. A species management plan for the alpine newt (*Triturus alpestris*) will be developed to complement the enhanced management planning for Prokosko Lake NM (Output 1.2 above).

54. An adaptation plan for Serbian spruce (*Picea omorica*) with measures to improve status in natural populations, support to regeneration, monitoring of tree health, and pest control will be offered for Drina National Park. Targeted support to regeneration (planting near the natural habitats, collecting seeds from healthy trees and transferring them to suitable locations, with prior analysis and the necessary permits; production of seedlings on plantations) to Drina National Park Management.

55. An adaptation plan for Bosnian pine (*Pinus heldreichii*) will be developed for Blidinje Park of Nature; the public enterprise managing the area will be equipped with data and indicators, monitoring tools and a species management plan specific for the habitats located in the park and the pressure from the multiple land use and tourism activities.

56. The project will directly support activities in support to fire preparedness, prevention and response within the pilot protected areas. Forest fire management capacity building, including development and operationalisation of an early warning system and development of Fire Protection Action Plans with priority prevention measures will be offered to the national parks Sutjeska, Kozara and Drina, Orjen and Blidinje parks of nature, and Skakavac Nature Monument. The project will provide a targeted investment in fire-fighting equipment and tools for suppression of initial fires (water backpack pumps, fire-fighting brooms, face masks, goggles, helmets, gloves, mobile water pumps, petrol leaf blowers, etc.). The GEF incremental funding will be used for the installation of reservoirs/pools for water storage near the most fire endangered areas and repair of critical watchtowers. Screening (as per UNDP SES) and appropriately scoped ESIA (as needed) will be conducted by the project team and experts.

57. The project will contribute to the municipal effort for fire safety/prevention campaign – an awareness measure involving visitors and local communities.

58. The project will contribute to improving the coordination of the forest fire management activities (i.e. planning and implementation of wildfire preparedness, wildfire suppression, hazardous fuels reduction, landscape restoration and rehabilitation, fire reporting and communication and education) being undertaken by each of by the different fire-fighting agencies and units responsible for fire control and response within the protected areas and across the wider landscape. The project will facilitate the establishment of local rapid-response community fire-fighting teams who could be deployed by any of the responsible authorities to assist in controlling the outbreak of small, localised fires. If feasible, the project may further develop the capacity of these rapid response community fire-fighting teams to locally support more proactive fire management measures (e.g. block control burning, fire education and awareness, fire records, etc.) in forests. The capacity building for prevention and mitigation of fire hazards will be conducted by specialised experts and will adhere to the UNDP SES requirements and applicable national regulations (please see UNDP SES requirements under ESMF Annex 23).

59. Management guidelines with mechanisms of bark beetle outbursts control and the early response measures compatible with the PA regime will be developed for the management authorities of Sutjeska, Kozara, and Drina national parks, and the Sarajevo Canton PA public enterprise (Skakavac NM). For the bark beetle outburst control, particular pest control methods (pheromone traps) will be offered in accordance with the PA regulations and best practice available. UNDP will engage technical expertise (as part of SES implementation and quality assurance) to ensure that pheromones and/or other specific insecticides and harmful substances will be handled, stored, applied and disposed of in accordance with international good practice such as the FAO International Code of Conduct on the Distribution and Use of Pesticides.

60. Through the implementation of the targeted solutions above, the project will provide necessary capacity building for PAs to better understand and better react to the effects of climate change, and provide a better connection with the national CC adaptation planning and funding. The proposed solutions will make case-studies to be submitted to the PA management authorities and conservation authorities for replication.

Output 1.4: Demonstration of innovative restoration approaches

61. The restoration options will be offered for ecosystems severely affected by various negative climate factors. The restoration activities will be designed in accordance with the UNDP SES requirements. The project team will conduct site-specific screening and appropriately scoped ESIA as needed, in order to identify prevent and mitigate potential impacts on ecologically sensitive habitats and culturally important sites. Permissions for the wetlands restoration activities from affected land owners will be sought in a manner consistent with the UNDP SES requirements (please see ESMF, Annex 23).

62. The project will assist respective management authorities with the following sequence of actions:

- Demo sites for restoration screened and selected based on ecosystem types/threat imminence/current damage to ecosystem/its representativity and value;
- Restoration methodology and plan developed for the pilot sites to demonstrate options for its threatened ecosystems;
- Targeted support for selected restoration pilots provided;
- Engagement of local communities, landowners, private sector stakeholders, municipal authorities ensured;
- Restoration effects documented, pilots evaluated and proposed for dissemination and replication.

63. The rewetting of the Prokoško Lake Natural Monument (IUCN cat. III) was proposed as a restoration pilot in the project concept (PIF). During the PPG phase, numerous documents were analyzed as well as consultation meetings with relevant stakeholders (in particular PA management) where conducted. Key findings of the PPG feasibility analysis can be summarised as follows:

- The viability and sustainability of the restoration effect in the face of the growing pressures on the ecosystem is questionable. The enormous pressure of infrastructure development and the profit-oriented development agenda are the key factors in support to the development scenario when a full-scale rehabilitation and revitalization of the natural ecosystem and processes is not possible.

- According to Spahić et all, 2015, scientific and professional discourse was focused on the assessment of recent conditions of Prokosko Lake, which was not determined as satisfactory. Paper confirms the significant modification from the purely natural to the almost completely artificial habitat and stated that artificial interventions that were done on the lake and anthropogenic usurpation of the lake's basin contributed to the impossible denaturalization of this aqua complex.

- The manager is the Public Utility Company "Šćona" Fojnica. They have recently (in 2020) took over the management role having limited capacities and no experience in PA management and nature protection. Restoration activities are not a priority and are not currently defined and envisaged in the next 5-year period by the current PA Management. The reason for that is certainly lack of financial resources (in general the poor governmental financial support for this protected area), as well as the recent management change.

64. While re-considering the initially proposed pilot, the PPG consultations confirmed that the primary ecosystem type for piloting restoration would be wetlands within the PAs affected by multiple threats and CC-induced effects. The project will support wetland restoration and rehabilitation of wetland habitat at Tišina pond PL and Gromiželj PH. For both cases, revitalization of wetlands and wetland-marsh complexes will help preserve key species and restore the natural water regime, as well as help developing ecotourism in the area. The pilots will demonstrate a relatively simple and cost-effective way of improving the ecological status of the wetland habitats including aquatic communities (Tišina pond) and surrounding forests (Tišina and Gromiželj). For both cases, the PAs are at risk of losing their key values and characteristics without a restoration/revitalization effort. The methods and approaches to be tested in both pilots will be replicable to similar locations within the pilot areas and to other areas with similar landscape and biodiversity features.

The pre-feasibility analysis for the restoration pilots is presented as Annex 21 to the Project Document. A summary of the proposed restoration demos is presented below.

Gromiželj

Gromiželj swamp is located in Semberija, in the north-eastern part of BiH, in the Municipality of Bijeljina. It is protected as protected habitat (IUCN cat IV) since 2018, with area of 831.3 ha (of which 67,39 ha is lowland peat). PA Manager is Gromiželj Association for the Protection of Flora and Fauna. The PA main values are rare and endangered species of birds (western marsh harriers, black storks, purple heron and little egret), fish (mudminnow) and their habitats, as well as habitats of endangered plant species – water violet, the marsh fern, yellow water lily and marsh fern. A total of 104 bird species were registered in the wider area of Gromiželj; there are two SPEC 1 species (Haliaetus albicilla and Aythya nyroca), five SPEC 2

species, 43 strictly protected species from Annex II and seven protected species from Annex III of the Bern Convention. The area has a significant role in the migratory corridor to the Mediterranean and is an important wintering site for birds residing in the Sava and Drina valley. Swamp (locality Laketića vir) "guards" approx. 400 vascular plant species and is either one of the few remaining in Europe, or the only habitat for some species in BiH (e.g. fish Umbra krameri). The major threat to the BD values is associated with the wetland water regime: the pond dries following changes in water supply, when water is reducing both in total volume and depth.

The project will directly invest into the demo restoration for an area of 3.5 ha (clean-up of sediments) and a wider area of app. 50 ha of biodiversity rehabilitation. The prioritized list of activities required for stabilisation of the water regime includes:

- Revitalization of demo plots (wider area of Laketić vir that is still under water, in state ownership, app.3.5 ha), which includes: removal of fallen trees, removal of trees in the part that is being revitalized, removal of invasive willow species, removal of humus-mud i at depths of maximum 2 meters. This wider area was once under water (swamp) and now there is only moist soil full of silt-humus.

- Targeted afforestation of vulnerable plots around agricultural land (repression of acacia, and afforestation with ash, poplar and willow, 50 ha).

Tišina

The main values of “Tišina” wetland are swamps “Mala Tišina” and “Velika Tišina”, Odmut marsh and Žandrak seasonal stream. This complex represents one of the continental wetlands in the Sava river (northern part of BiH) floodplain which is a significant factor of hydrological stability and flood protection, but also the important habitat for numerous species of plant and animal world, many of those being listed in the annexes of the EU Habitats Directive and the Birds Directive. It is a protected habitat (IUCN cat IV) since 2019, with an area of 196.49 ha. PA Manager is the Municipality of Šamac. 10-year Management Plan is under development). The complex is famous for its vast diversity of wetland flora and avifauna. The complex is an important breeding site for Whiskered Tern (35-45 pairs), Black-crowned Night Heron (30-40 pairs), Ferruginous Duck (2-4 pairs), Common Pochard (3-5 pairs) and several other bird species. During the migration, the flocks of Black Stork (up to 60 individuals), Little Egret, Great White Egret, Eurasian Spoonbill and other birds rest in the silty and shallow parts of the ponds. As part of the marsh complex Tišina and Odmut, 175 plant species are registered, as well as 123 bird species, 8 species of amphibians, 4 species of reptiles and 21 fish species. Out of the total number, 1 plant species, 1 amphibian species, 1 reptile species, 4 fish species and 33 bird species are endangered at the level of Europe and protected by international conventions. When it comes to birds, 7 internationally endangered species are recorded.

Intensive agriculture, construction of drainage channels and land drainage, expansion of settlements, industry and roads resulted in the fact that the former wetlands subsisted only on small areas, and as such do not provide many opportunities for the development and survival of plants and animals that are linked to them. Once wet areas have dried up and are walkable during the summer (which was not the case before). The marshes Mala and Velika Tišina and Odmut were separated from the Sava River due to the construction of channels and embankments, the natural hydromorphological processes such as meandering are lost, the river is neither hydrologically nor ecologically connected with the marshes to such an extent, the level of underground waters that the marshes supplied declined, and many habitats and species were lost. Bearing this in mind, it is evident that the protection of both river and marshland ecosystems requires active measures of protection, revitalization and sustainable use. The channels are largely neglected and overgrown by vegetation due to irregular maintenance, which significantly reduced their capacity and flow. In collaboration with Šamac Municipality, fishermen take care of the swamp by pumping in water during high summer temperatures to prevent the annihilation of fish.

For each marsh and swamp, the inflow of an adequate amount of water influences and supports the survival and development of many plant and animal species and it is very important for the circulation of matters and relations between aquatic and terrestrial living communities. Tišina and Odmut marshes do not necessarily require a constant amount of high levels of water, and that the occasional drainage of some parts, even the entire marsh, is not devastating from the ecological standpoint. The increased level of water and area under the water is required during the summer months.

The watercourses have unpronounced and highly abandoned and overgrown beds, so certain engineering and construction works are required to improve the inflow and amount of water that could be used for the marsh water supply. The project will finance the pilot restoration of the water inflow through the improvement of hydro-technical infrastructure for a demo plot of approx. 50 ha. Revitalization measures will include cleaning of the supply and drainage channels; cleaning and sludge removal from natural springs, supply and drainage channels of sediments and organic matter; overall improvement of the

hydrotechnical structure. The proposed demo site is mostly covered with water, according to the cadastral class it is characterized as a swamp and it is in public ownership.

Output 1.5: Replication and adaptation of pilot PAs solutions and demos to other sites

65. The project will work on the institutional and financial prerequisites for replication of innovative solutions piloted through Outputs 1.1.-1.4, to other sites. The lessons learned studies, the cost-benefit analyses, and the short- and long-term impact assessments will be made available for the respective authorities to inform of technical, financial and environmental viability of suggested solutions. Stakeholder consultations with the PA management authorities and municipal governments will facilitate the incorporation of successfully tested instruments into land use planning framework, municipal development programmes and PA management strategies, and catalyse replication of PA management planning models, threat response action planning, adaptation solutions for targeted species and ecosystems.

66. To provide sustainability and up-scale to the species management instruments targeting a wider landscape around the protected areas, the project will work with sectoral stakeholders responsible for resource use practices that are not imposed or managed by PAs. Expert proposals and justifications for the inclusion of vulnerable/threatened species, such as Balkan Chamois (*Rupicapra hydro morphological balcanica*), into the climate change regulations prohibiting hunting and encouraging species protection inside PAs (NPs Sutjeska, Drina).

67. The species management and adaptation scenarios to protected landscapes developed for the targeted PAs and ecosystems have been planned with a view of their replication and upscale potential. Specifically, the adaptation plans for valuable spruce and pine forest stands and the associated HCVF management measures will be designed with a view of further adaptation to other PAs with similar BD values but lower protection category – such as PLs Trebević and Konjuh.

68. The demo restoration effort for Gromizelj will be upscaled to tackle the effects of eutrophication due to the negative impact of agriculture in the wider area (local residents, privately owned land). The project will contribute to raising awareness of the importance of the area and the impact of anthropogenic activities on it; will support the promotion of ecotourism and the potential models of agroforestry among local farmers, and propose concrete mechanisms to ensure broader involvement of the population in non-agricultural activities and diversification of the offer of the area through e.g. bird watching services, promotional and educational activities for tourists, etc.

69. To upscale and provide a landscape dimension to the restoration demo activities for Tisina, the project will work in synergy with the parallel restoration activities funded by EuroNatur (meadows and pastures) – with a focus on sustainable grazing and community benefits. The project will offer the management planning instruments and practical solutions to ensure regular mowing of the rehabilitated floodplain meadows, removal of shrubs, and sustainable livestock management on damp meadows. Thus, the GEF 7 effort will be upscaled to include both the aquatic complexes and wet meadows, and a stronger linkage to the broader landscape and nearby community livelihoods will be ensured.

Component 2: Improving financial sustainability of targeted PAs through sustainable tourism development

Outcome 2: Financial sustainability of targeted PAs improves

Output 2.1: Sustainable tourism products developed for pilot PAs

70. The project will provide a follow-up to the PA financial sustainability analysis commissioned by UNEP-GEF MSP and the PPG expert team for the current project, and will offer incremental assistance to the PA management authorities helping them to update the business plans for individual PAs, design marketing plans, and develop optimisation schemes for the PA recurrent costs.

71. The project will build ecotourism capacity and create a network of community-based destinations for sustainable and safe tourism activities within PAs, by developing high quality conservation-focused ecotourism products for pilot PAs as a tool to assist the PA management authorities and local tourism operators to actively promote PA managers as tourism destination managers in the 4C tourism model (Conservation, Compassion, Connection, Community). The UNDP BiH Accelerator Lab, as the innovation team, will support these efforts, bringing global good practices and innovative approaches.

72. The following key steps will lead to the expansion of their sustainable tourism development effort:

- Conduct a Socio-Economic Assessment (in coordination with the Climate threat assessment under Output 1.1.) in order to identify local sustainable tourism and alternative livelihood strategies in the targeted project areas, including highlighting the measures to benefit the poorest and marginalised groups. This assessment will also feed into the Stakeholders Engagement Plan and will be based on identifying and consulting with representatives of stakeholders groups, local authorities, local communities representatives, local associations and NGOs. Based on these analyses, the project will offer equal opportunities for the local communities, including the vulnerable groups, for participation in the project activities and in the envisaged community-based network for sustainable tourism.
- Conduct a COVID-19 Risk Assessment and mitigation measures, associated with the promotion of the envisaged sustainable tourism product and support to the local community-based tourism network;
- Identify specific tourism products that are both sustainable and economically viable. This will include an estimate of the initial investment, operational cost, and projected returns;
- Conduct social and environmental screening aligned with UNDP SES requirements during the development of each tourism product and associated infrastructure improvements (please see SESP Annex 5 and ESMF instructions under Annex 23).
- Outline possible financial models, quantify potential direct financial and indirect economic benefits;
- Suggest packaging of the selected products and models for branding and marketing;
- Develop environmental guidance for tourism development in the pilot areas;
- Establish connection and partnership with tourism clusters or other tourism-oriented organizations.

73. The project will assist PA managements in development and packaging of tourism products tailored to fit individual values, capacities, opportunities and limitations of the targeted PAs. To encourage demand for local entrepreneurs' services, the project will target areas where a nature-based vacation could help to enrich important ecosystems for both people and the environment.

74. As requested by the respective PA management authorities and responsible ministries, the following targeted support will be made available for the pilot PAs:

Drina NP: sustainable tourism offer packaging and targeted support for infrastructure development consistent with UNDP SES requirements

Bijambare PL: development of programmes for eco-tourism, eco-agriculture, environmental awareness and education, with targeted implementation support

Vjetrenica PL: Co-financing of tourism infrastructure consistent with UNDP SES requirements;

Orjen PN: A roadmap for traditional businesses and tourism development - beekeeping, use of medical plants, and ecotourism. Support to local community engagement aligned with UNDP SES requirements and Stakeholders Engagement Plan.

75. The following activities will be supported across the PA system:

- Good harvesting practices for NTFP collected and a hands on training on the use and control of NTFP for the PA management, ranger services, and adjacent communities
- Capacity building measures aimed to assist the PA management authorities and local tourism operators to actively promote PA managers as tourism destination managers and to meaningfully engage with the local communities and vulnerable groups.

Output 2.2: Functional partnerships with the private sector stakeholders are in place to provide community engagement and increased income streams from legal nature resource use activities (incl. recreation) occurring in the targeted PAs

76. While both Outputs 2.1 and 2.2 aim to improve the PA tourism offer, Output 2.2 looks outside the PAs at the broader landscape and wider stakeholder engagement for multiple benefits to the PAs, the adjacent communities, and green businesses. The stakeholder consultations and feasibility analyses during the PPG phase were focused on the identification of possible pilot(s) that would demonstrate enhanced finance opportunities for the PAs associated with a unique tourist offer that could be developed in cooperation with the municipal governments, local community organizations and private sector partners, will expand the "baseline" PA tourism offer with no harmful effects on the BD values of the PA and the adjacent landscape, and produce community benefits. The project team in the project implementation phase will ensure that the proposed tourist offers/ products will be aligned with UNDP SES requirements and will include opportunities for all

the community groups, including women and marginalised groups to benefit from increased economic and social opportunities that these demonstrative partnership will bring to the communities. The demo partnership project identified for the GEF funding under Output 2.2 is described below.

Cooperation with the privately-owned sustainable business for the development of a tourism product as for the PA and adjacent landscape: Popovo Polje mills restoration

As a result of the recent expansion of Vjetrenica PL it now includes a larger area of Popovo Polje (Popovo karst field); the management objectives for the expanded areas include wider community engagement and diversification of the tourist offer. For the last several years, the PA income is generated solely from the entrance fee they collect and does not have a sufficient secured budget to manage an expanded area. To implement the management objectives and secure more stable funding from a diversified tourism product, the following pilot activity was suggested as a result of consultations with the relevant stakeholders.

Ponor mills are a unique feature along the riverbanks of the Trebisnjica river, Popovo Polje, combining cultural heritage and nature value associated with karst processes (oscillating level of underground water). The area of Popovo Polje is a unique hydrological and geological object and is also an important productive landscape with a rich grain-bearing area. Mills were there for centuries, built over the mouth of a karst ponor (= karst sink or swallow hole), harnessing the hydropower of the surface-water which is naturally discharging from a surface stream or river into the ponor and caves beneath. This ingenious use of hydro-energy was employed to drive the flour mills which processed the grain cultivated in Popovo Polje. Nowadays, all of 43 originally existing mills are abandoned and the majority is ruined or inaccessible.

The project will co-finance the restoration of an existing mill nearby the Vjetrenica cave in ownership of Ravno municipality, to enhance the tourism offering for the nearby PA and contribute to the preservation of the cultural heritage of the area. The pilot will ensure partnership with the Ravno Municipality and will possibly engage a private sector partner in case the mill is put under a long-term concession. The project will support the promotion of the site and the linkage between the private tourist business and the Vjetrenica PL to ensure increased revenues for the PA directly, the enhanced visitation and quality of tourist program at Vjetrenica, and provide economic and social benefits to the wider landscape of Popovo Polje. Such a model would increase the local community involvement and help identify the PA as a booster of the local sustainable development and would contribute to the attractiveness of the area and longer retention of tourists through the enrichment of the offer.

77. The project in the main phase will look for other opportunities to have tourism sector stakeholders engaged to encourage sustainable tourism development and income generation for PA management authorities and people living in the vicinity of protected areas. The project is expected to foster activities aimed at developing tourism offer and increasing the self-sustainability of PAs through cooperation with regional tourism clusters (Herzegovina and Krajina regions), mountain ski tourism operators, and whitewater rafting operators and small businesses along the Via Dinarica that operate in or nearby pilot protected areas.

Output 2.3: Eco-tourism concession model developed and piloted in Sutjeska National Park

78. Project Output 2.3 offers a unique opportunity to test a first ever concession model for the eco-tourism development within a model protected area (Sutjeska National Park) in the country. The PPG phase updated the feasibility study of options for long-term outsourcing of Sutjeska National Park Assets and Services that was prepared in early 2018 by a consortium of consulting and legal service companies and financed by UNDP[12]. The updated analysis and a tentative roadmap for the pilot concession at Sutjeska National Park is presented as Annex 19 to this document.

79. In 2020 during the project PPG phase, an initial mapping of the potential private sector companies potentially interested in and eligible for partnering in the NP Sutjeska tourism concession model showed a somewhat discouraging result, as no partner was ready to express a firm interest as the potential concession bidder. One initially considered private partner has not made any commitment or readiness for an agreement on the implementation of the concession model due to political reasons and uncertainty at the tourism market caused by the new normality of COVID-19 restrictions and implications. However, the Ministry of Spatial Planning, Construction and Ecology of Republika Srpska, being the competent

[12] Deloitte d.o.o. Belgrade, ENOVA Engineering and Consulting Company d.o.o. Sarajevo, AdvokatskakancelarijaStevanDimitrijevic (2018). Study of Options for Long-Term Outsourcing of Sutjeska National Park Assets and Services

institution for implementation of the model, as well as Sutjeska National Park expressed their interest in the implementation of the concession model and declared their readiness to actively cooperate in this process.

80. Through the initial screening, it became clear that the potential private sector investors are not likely to materialize before the Ministry for Spatial Planning, Construction and Ecology of Republika Srpska releases the official information about the future concession pilot at the feasible level of detail. On the other hand, the absence of potential partners on the ground is a primary reason why the competent Ministry does not consider the concession pilot as an immediate priority for the moment and is reluctant to express any commitment in this regard. The GEF project in the main phase will step in to moderate the process and stimulate all potential partners towards more active engagement. For this purpose, a comprehensive assessment of the concession benefits was prepared to inform further consultation process with the competent Ministry and the National Park. The PPG experts also presented a road-map listing the activities to be implemented to operationalize the concession process, summarised below.

81. Due to limited opportunities for comprehensive stakeholder consultations and business engagement in 2020, the desk study performed at the PPG stage should be completed with a comprehensive feasibility assessment to be performed by a contractor and result in formulation of a business case for the first pilot concession at Sutjeska National Park in the FSP phase. The contractor, in cooperation with relevant stakeholders, should present a clear business case and plan outreach and communication activities to get the market ready and attract high-quality concessionaires to take on the proposed business opportunity.

82. The PPG analysis confirmed the feasibility of concessions for assets and services for a model protected area located in Republika Srpska. The Concession Law of RS provides straightforward regulations for the procedure for awarding the concession agreements. The Concession Law allows for up to 50-year concessions for the use of areas and buildings of natural, cultural and historical heritage, and hotel and restaurant services. Republika Srpska has accumulated a positive practice of concession agreements concluded mostly for energy facilities and mining; there are examples of concession agreements in tourist and hospitality activities.

83. All of the existing assets within the territory of the National Park are owned by the Government of Republika Srpska (RS). The park management authority (a public institution) does not generate sufficient revenues to cover basic operational costs, nor does it have the financial capacity to invest in upgrading/modernization of tourism infrastructure and service improvement. The primary financial benefits are associated with an outsource of the tourist assets which are currently in half-ruined state and almost unusable, would be revitalized and reconstructed by a private partner, and after a concession period would be returned to RS in a completely functional state. It is expected that the tourist flow and the duration of stay will increase as the tourist facilities are reconstructed. There are examples of concession agreements in tourist and hospitality activities; the staff costs of the NP can be reduced following a stable income generation by the improved tourist facilities once the concession is implemented; the NP staff will get hands-on experience in successful tourism business organisation. The concession will produce local benefits associated with higher local employment and self-employment, both through the NP and the development of local businesses associated with the improved tourist offer of the National Park.

84. One essential element that is currently missing in the legal and regulatory framework of BiH, the reinvestment of the financial return to the Government from the revenues generated through a specific concession, back to the protected area. Although these provisions may not be stipulated in the Concession Law and respective regulations, the UNDP/GEF project will lobby for fair and transparent financial arrangements regarding the concession benefits.

85. One regulatory obstacle that should be tackled before the concession is conceived is associated with property maintenance. The property subject to the potential concession vests with the RS Government. The RS Government would need to withdraw these assess from NP Sutjeska books. Also, the asset management issues should be regulated through an agreement between the RS and JUNP before the concession is granted.

86. Some NP assets are located in Commemorative Complex Tjentiste, established by the decision of the RS National Assembly („Official Gazette of RS“ No. 90/09). This decision prescribes a specific regime of protection in the complex:

- prohibiting further construction in the narrow zone of the complex (including construction on buildings located on the land parcels Nos. 129 and 133, Cadastral Municipality Tjentište, which includes Hotel Mladost) and
- restricting construction activities in the wider zone only to ancillary facilities to constructed objects such as parking lots (including buildings located on the land parcel No. 140, Cadastral Municipality Tjentište).

Therefore, if the exploitation of outsourced assets would include work exceeding restrictions prescribed by the decision of the RS National Assembly, the decision should be amended in order to allow further works or these assets by excluding them from the area of Commemorative Complex Tjentiste or, alternatively, the asset in question should be excluded from the list of outsourced assets.

87. Finally, land parcels where the assets are located will also be subject to the concession. As the area of land parcels includes different types of land and the size of parcels may significantly exceed the needs of the potential concessionaire, it is advisable to divide some land parcels into smaller land lots prior to the outsourcing.

88. The assets for the concessions have been defined in consultation with the National Park as presented in Annex 19. Once confirmed, the asset list will be finalised for the concession proposal; possibly, Hotel Mladost and other identified assets from the Commemorative Complex Tjentiste will be excluded from the concession; land parcels could be reduced to ease the terms of the concession agreement.

89. Prior to the formalisation of the concession package, the optimal concession management options will be described to support the informed opinion of the competent ministry. The subjects of the concession will be clearly defined; the direct and indirect financial benefits and the community benefits will be confirmed; the mechanisms for the adequate reflection of community interests in the future concession agreement will be proposed in consultation with the local stakeholders. Finally, the risks associated with the concession pilot will be identified and the risk management scenarios developed.

90. As mentioned above, a UNDP contractor will be responsible for outreaching the potential private sector partners and informing them about the proposed business opportunity. Pre-screening of the potential concessionaires will be performed together by the contractor, UNDP, the project team, and the representatives from the competent Ministry and the National Park.

91. Based on the overall PA strategy on marketing and branding of the ecotourism product, a UNDP contractor will prepare the promotional package and also assist the competent Ministry with the preparation of the bidding documents. Its key role would be to help defining the criteria and methodology for the assessment of concession bids.

92. Once the concession agreement is signed, UNDP-GEF project team will be involved in the technical monitoring and oversight as agreed with the competent Ministry. The project experts will provide protected area managers with tools and skills for concession management, compliance monitoring and enforcement. The project team will liaise with the concessionaire, the local businesses and the NP responsible staff in order to ensure the engagement and capacity building for the PA staff and community representatives engaged in concession business. The UNDP-GEF project will make sure that the monitoring and control over the concession activities is performed according to the agreed methodology and criteria, and will document lessons learned from the applied processes.

93. During the project implementation the project team will also conduct screening and appropriately scoped ESIA as part of the finalisation of the Concession Agreements, feasibility studies and Guidelines for further replication of this experience; the risk management measures will be embedded in these agreements and guidelines.The concession activities will be designed to avoid adverse indirect/consequential impacts to critical and/or sensitive habitats and/or ecosystems and ecosystem services. The concession agreement will be very specific regarding the social and environmental concerns and limitations related to any infrastructural changes on the site. Any significant infrastructure developments (e.g. construction of a mountain chairlift) are subject to EIA and will not be carried out in conflict with the PA regime. The project implementation team and Output 2.2 experts will check national requirements (e.g. for EIA) meet or exceed the requirements of the SES, and, with support and guidance from UNDP CO, consider if any specific SES assessments management plans are required for the Ouput 2.2. Specific conditions regarding the cultural and historical values of the park will be embedded into the concession criteria (please see Annex 5 SESP and Annex 23 ESMF) .

94. The project will prepare a case-study from the concession pilot in Sutjeska National Park and ensure its presentation and distribution to relevant stakeholders in BiH as well as to partner projects in the region. Once the first concession pilot is implemented, the project will engage an expert group to suggest replication scenarios for relevant PAs in the system. As a follow-up to the pilot concession experience, Sustainable Concession Management Guidelines will be developed based on best available practice applicable to the existing legislative framework. The Guidelines will identify strategic opportunities for investment, and suggest partnerships between the tourism industry, PA authorities and the community affected by tourism development. The Guidelines will be developed in full alignment with UNDP SES requirements, and will be expected to promote transparent governance mechanism and equitable share of concession benefits between the central government, the PA management and the local community. Based on international practice standards, such as Global Sustainable Tourism Criteria and Guidelines for tourism partnerships and concessions for protected areas: Generating

sustainable revenues for conservation and development (CBD, IUCN, 2017), the Guidelines will define key requirements for the concessionaires, suggest the methodology and criteria for monitoring of concession activities, and assessments of the end results, impacts and benefits.

Output 2.4: PA participation in the governmental grant programmes is ensured in a sustainable manner

95. Both entities of Bosnia and Herzegovina regularly support local tourism development through significant annual budgetary transfers aimed at co-financing of infrastructure development and tourism products or services. The government grants are channelled annually by the two line ministries: RS Ministry of Trade and Tourism and FBiH Ministry of Environment and Tourism. However, no amount of said budgetary allocations are directed towards protected areas *per se*. In cooperation with responsible authorities in both entities, the UNDP-GEF project will support modifications to the existing mechanism for grant allocation that will include eco-tourism development within the protected areas as a priority funding window to boost both the absorption capacity of PA management authorities and their interest in positioning as operative tourism destination managers. The project-supported criteria will be prepared in a manner that is aligned with SES requirements. The project will also address the lack of capacities of PA managers and conservation authorities for accessing other available external funding and start taking part in the competition process for the available grant funding for tourism development. Focused training activities will be designed to increase understanding and interest in external funding sources. The existing networks of PAs in the country (such as the PA Managers Day and communities of practice) will be utilized to mobilize wider interest in non-budgetary income streams for PAs.

Output 2.5: Promotion of natural values, products and services in the targeted PAs is improved

96. The project, together with its key partners, will support a series of activities aimed at enhanced PA visibility and promotion of PA content and values in sustainable tourism development initiatives in the country. The project-supported products and services under this Output will be prepared in a manner that is aligned with SES requirements.

97. Under this Output, the project will build its intervention strategy on the most recent and internationally recognized regional effort at enhanced visibility, promotion and marketing of nature values in the Balkan region, Via Dinarica. Via Dinarica is a regional platform created to connect the countries and communities of the Dinaric Alps by creating a unique and diversified tourist offer. The Via Dinarica is a mega trail with three main trails (White, Green, and Blue) that stretches across the Western Balkans from Slovenia to Albania. The first phase of the national Via Dinarica Project (October 2014 – August 2017) has made a significant contribution to promoting Bosnia and Herzegovina as a nature-based tourism hotspot, and highlighting the protected areas along Via Dinarica trails as sustainable tourist destinations. The project has contributed to the development of the local community, the enterprises, supported creation of new jobs and the economic empowerment of local communities in mountainous and rural areas. Via Dinarica gained global visibility through publications in the world's prestigious worldwide media such as *National Geographic*, *The Guardian*, *Lonely Planet*, *Outside Magazine*, *The Vogue*, *The Independent* and others which glorified its beauty and uniqueness. Via Dinarica Project's Phase II was implemented in 2018-2020 with an overall objective to seek further economic development opportunities in Bosnia and Herzegovina by supporting sustainable nature-based tourism development. The project invested directly into the enhanced promotion, marketing and visibility of Via Dinarica trails and Via Dinarica tourism offer, and supported connections and experience exchange with the leading international initiatives and tourism businesses (such as Via Alpina international trails). Virtually all of BiH's protected areas are situated on the Via Dinarica trails but their natural values have yet to be adequately promoted or capitalized by providing appropriate levels of customer service. This will be one of the key tasks for the UNDP/GEF project that will focus its intervention on the development of eco-tourism options within and in the vicinity of protected areas.

Via Dinarica is a project that has proven to be successful in the development of sustainable tourism in mountainous, rural and other areas that includes certain trails along the way. The project primarily initiated basic activities for the development of sustainable tourism in such a way that traveling along the trail, users in certain locations have available basic conditions for vacation within households (farm Mešić, Household Bosniak, hunting lodge, etc.) or separate accommodation (motels and mountain lodges that provide accommodation services) which encouraged the involvement of the local population. Domestic activities and services to Via Dinarica users included the development of local products, gastronomy, souvenirs, indigenous products, etc. Due to the demands and the best possible presentation of certain areas, traditional (Bosnian Katun houses in Lukomir) were restored, traditional culture and customs were developed, traditional way of working and returning old crafts (Lukomir, Ravno, Blidinje) as part of the attractive offer of this area. All these activities have an impact on stopping emigration and improving the basic infrastructure in mountain villages (road repairs, internet). Through support to

households in product development with the aim of tourism development, the Va-Dinarica project already shows a public-private partnership (Ravno).

98. The activity plan for Output 2.5. will include the development of promotion packages and marketing of products and services in the targeted PAs. The GEF-7 project effort at enhanced visibility and promotion of PA content will ensure the sustainability of EU-funded work for the PAs in BiH covered by Via Dinarica, and expand and upscale the impact to the PAs outside the Dynaric Alps. The project will contribute to the improved visibility and connectivity of targeted PAs through joint promotion efforts for the following groups of PAs linked geographically with a view of providing a more comprehensive offer to visors and promote longer visitation periods: Kozara - Una PN (RS) - Lijevčanski knez - Jelića Brdo Forest - Žuta Bukva; Tajan - Konjuh – Bijambare; Skakavac - Orlovača cave - Trebević - River Prača Canyon - Bentbaša; Cicelj - Sutjeska – Kuk.

99. The Project will develop promotion packages and implement action plans for enhanced PA visibility and outreach and co-financing outreach activities for recently established/re-classified PAs: Vjetrenica PL and Orjen PN.

100. The project will work together with the Public enterprise "Nature Park Blidinje" and attract expertise and resources to support the tourist platform development and "Visit Blidinje" brand.

101. A web-based Via Dinarica Platform will be sustained as a comprehensive virtual resource featuring key nature values of Via Dinarica trails. A sub-platform dedicated to the national protected areas of BiH within Via Dinarica trails will be developed as a GEF 7 increment to this major visibility and outreach instrument developed by Via Dinarica.

102. The project will facilitate a discussion of a unified branding effort for the PAs under the jurisdiction of FBiH and RS, to provide a system-level dimension, synergy, and efficiency of the PA branding effort. The project will use the example of Croatia and suggest replication of the "Parkovi Hrvatske" experience for PAs in Bosnia and Herzegovina. This country-level effort will also be built on Via Dinarica success in affirmation of Via Dinarica as a tourism brand, replicating and up-scaling this experience to BiH. A unified branding effort will be piloted for cave nature monuments and delivered in a package with the joint promotion support for the caves.

103. The project will provide an increment towards the improvement of the management of the PA visitors, supporting the use of tourism products to expand the visitor experience. The project will co-finance the establishment and equipment of visitor facilities for the national parks Drina and Una. Specifically for Una National Park, as requested by the FBiH Ministry of Environment and Tourism, the project will commission a regulatory (urban) plan for visitor zones in the area of NP Una (Martin Brod, Kulen Vakuf and visitor zone Štrbački buk-Lohovo).

104. The project will build its PA-system level intervention targeting the PA visibility and enhanced outreach effort on the key results and outcomes of the PA public campaign that was organized under the UNEP/GEF MSP in 2020.

105. The project will organise a series of workshops, hands-on trainings and other KM activities aimed at PA staff capacity building for enhanced communication, promotion, and marketing of PA content, values, products and services. Before organizing workshops and activities, a short survey will be organized via the distribution of questionnaires, to get the opinion of local community representatives and visitors, which can help understand the level of satisfaction with the offer, service, and client attitude. In this way, tourist (dis) satisfaction would be investigated, but guidelines would be given to the staff on what they should pay attention to. As part of the preparation of the workshops, it would be good to explore or involve the local community as it is an important stakeholder in the development of the destination. The developmental role of a protected area, however, depends on the degree of recognition or rejection by the local population, especially due to the importance of public and private sector development in order to expand and create content in the PA.

106. In order to improve media presentation, i.e. relations with the media and influential people (influencers and bloggers), project communication specialist should be included in the KM and outreach activities in order to inform project and PA staff about the importance of communication, stakeholders and other visitors and the way of presenting the protected area assets and tourism products. The importance of social networks in the promotion of the area should not be underestimated.

Component 3: Knowledge management and communication

Outcome 3: Knowledge management and communication

Output 3.1: Knowledge management and communication ensured throughout project implementation

107. The project will ensure the documentation of lessons learnt from the implementation of activities aimed at: (i) PA climate threat assessment and climate impact monitoring, (ii) PA management planning including a more effective engagement with local communities in order to raise awareness on the climate-induced threats and devise appropriate adaptation measures that would benefit natural ecosystems and local livelihoods; (iii) participative ecosystem restoration, (iv) tourism concessions, etc., (v) and the collation of the guidelines and tools developed. The knowledge database will be made accessible to different stakeholder groups in order to support better future decision-making processes in protected areas and more consistent adoption of best practice. Results from the project will be disseminated within and beyond the project intervention zone through existing regional information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyse, and share lessons learned that might be beneficial in the design and implementation of similar future projects. The project will also contribute to, and make best use of, the digital transformation of both the tourism and conservation work in BiH and will engage in the digital promotion and dissemination of project's results and lessons learned.

108. Knowledge products commissioned by the project, such as threat assessments, innovative management tools for protected areas, results of ecosystem restoration demos, etc. will be made available on Information System for Nature Conservation in both entities of BiH, managed by FBiH Environmental Fund and Republic Institute for Protection of cultural, historical and natural heritage of RS.

109. The project will be built on the GEF 6 UNEP MSP effort in capacity building for PA managers. The project will invest in capacity building for fundraising and preparation of proposals for external funding; introduction of user charges and other market-based sources of PA finance; advanced management planning; promotion of PA values and awareness, etc. A PA Manager Day established under the GEF 6 project can serve as a platform for knowledge management, experience exchange, learning and individual capacity building.

Component 4: Monitoring and Evaluation

Outcome 4: Project results properly monitored and evaluated

110. The project monitoring and evaluation arrangements are described below in Section V.

3.2 Stakeholder engagement, partnerships and coordination

For the needs of this project, the Comprehensive Stakeholder Engagement Plan (hereinafter referred to as "the SEP") is developed and available as Annex 12.

The indicative information on the key stakeholders' roles and means of engagement, that will be necessary to ensure stakeholder engagement throughout the project duration, is presented below. Full stakeholder list with stakeholder's power/importance analysis and full stakeholder engagement program is available in the SEP.

Stakeholder/ stakeholder group	Stakeholder interests and role for the project	Concrete areas for cooperation and synergy defined through PPG consultations
Ministry of Foreign Trade and Economic Relations (MoFTER) of Bosnia and Herzegovina	The Ministry defines policies, basic principles, coordinating activities and harmonizing plans of the Entity authorities and institutions at the international level. The Ministry will have the coordination role for the project at the level of the state. The Ministry will be invited to participate in joint decision-making for the project	MoFTER will play a coordination role in the project as a liaison between different governmental levels in BiH, and will dedicate staff time and expertise to the project. The Ministry shall assist the project execution by harmonizing plans of the Entity environmental authorities and manage/provide fulfilment of the international level obligations and collaborations since it has the competence for the implementation of multilateral and bilateral international treaties and conventions on environmental protection on the level of BiH.

	and nominate their representative for the Project Steering Committee.	
Ministry of Environment and Tourism, Federation of Bosnia and Herzegovina	The Ministry covers recurrent operating expenditures for the existing national parks in FBiH and allocates grants for sustainable tourism development. The Ministry will provide strategic guidance, validate project results and reports, coordinate project activities within its mandate, ensure liaison to federal level project partners. The Ministry will provide technical expertise through its personnel and networks, facilitate access to sites and locations, address logistical issues, e.g. through organization of meetings and provision of relevant facilities, support project management and regular project reporting. The Ministry will be directly involved in project strategic oversight and decision-making as the key development partner, through participation in the work of the Project Steering Committee. The Ministry will provide co-financing for the project and will ensure complementarity between its baseline and parallel activities with the project plans, and cooperate with the project to ensure sustainability, replicability and scale-up of project results.	The Ministry will cooperate with project plans that have Una National Park as a pilot. The Ministry will ensure access to historical data and analysis of the existing information to support a comprehensive climate threat assessment for National Park Una, and elaboration of the targeted management measures for affected/vulnerable ecosystems and species, including enhanced monitoring of aquatic habitats and ichthyofauna. The Ministry will make sure that the threat response scenarios and ecosystem resilience and adaptation measures are prioritized in the management framework that will be developed/updated as planned by the project. The Ministry requested the project to support the GIS management model introduction for Una NP. The Ministry requested that the project supports the development of visitor zones in the area of Una National Park. The Ministry will ensure coordination and synergy with USAID "Tourizam" project plans to develop a sustainable visitor management plan and community engagement plan for Una National Park. The Ministry will make sure that the efforts of the two donor projects are coordinated with the Una National Park Management. The direct co-financing for the project from the Ministry will include support to advanced management planning for Una National Park, capacity building, development of partnerships for PA sustainable income generation, sustainable tourism infrastructure, and enhanced visibility activities that include the development of the visitor center for Una National Park. The Ministry will also cooperate with the project within Output 2.4 by channelling the tourism development grants to PAs in FBiH more systematically.
Public Enterprise "National Park Una"	The Public Enterprise (PE) is in charge of the management of Una National Park and reports to the Ministry of Environment and Tourism, Federation of Bosnia and Herzegovina. The National Park is one of the project pilot protected areas and the PE is therefore project beneficiary. The PE will work directly with the project implementation team to ensure ownership of relevant project results and capacity building for the utilization of PA management and planning instruments developed within the project.	As the management authority for Una National Park, the PE will cooperate with the project in the development of the new Management Plan for the Park, which will include innovative response to the newly emerging threats, including those associated with climate change effects, strengthened cooperation with the local tour operators, and increased visitation as the key priorities for the area. The PE will ensure necessary capacity building, maintenance, and utilization of the GIS instrument in management planning for the national park. The PE will work directly with the project implementation team and cooperate with project development partners to ensure cooperation and synergies between various inputs aimed at sustainable tourism development in and around Una National Park, business planning, marketing and promotion of the tourism product of the park. Together with the project implementation team, the PE will collect knowledge and experience in sustainable tourism development, PA income generation, and green business development, for possible application for other PAs in and outside the country.
Ministry of Spatial Planning, Construction and Ecology of the Republika Srpska	The Ministry covers recurrent operating expenditures for the existing national parks in Republika Srpska. The Ministry will provide strategic guidance, validate project results and	The Ministry will cooperate with project plans that have three national parks in RS, namely Sutjeska, Kozara, and Drina as project pilot PAs. The Ministry will ensure access to historical data and analysis of the existing information to support a comprehensive

	reports, coordinate project activities within its mandate, ensure liaison to federal level project partners. The Ministry will provide technical expertise through its personnel and networks, facilitate access to sites and locations, address logistical issues, e.g. through organization of meetings and provision of relevant facilities, support project management and regular project reporting. The Ministry will be directly involved in project strategic oversight and decision-making as the key development partner, through participation in the work of the Project Steering Committee. The Ministry will provide co-financing for the project and will ensure complementarity between its baseline and parallel activities with the project plans, and cooperate with the project to ensure sustainability, replicability and scale-up of project results.	climate threat assessment for the three national parks, and elaboration of the targeted management measures for affected/vulnerable ecosystems and species. The Ministry will make sure that the threat response scenarios and ecosystem resilience and adaptation measures are prioritized in the management framework that will be developed/updated as planned by the project. The annual budgetary funds channelled through the Ministry will be allocated to co-finance project efforts at forest fire management capacity building, including the development and operationalization of an early warning system and development of Fire Protection Action Plans with priority prevention measures. The Ministry will cooperate with the project on forest pests' outbursts control and the early response measures compatible with the PA regime, for the three national parks in RS. The Ministry will coordinate the national effort and the GEF increment for the sustainable tourism development in the three national parks and co-finance diversification of the tourist offer, promotion of the parks' content and attractions, marketing of the tourism product, and enhanced visibility for the national parks. The Ministry will contribute to knowledge management and replication of positive PA management experience to other PAs in the country, using domestic expertise, working contacts, and information channels. The Ministry requested the inclusion of management planning and PA promotion support for the recently established protected areas in Republika Srpska: Orjen, Vjetrenica, and Una Park of Nature.
Public enterprise "National Park Sutjeska"	The Public Enterprise (PE) is in charge of the management of Sutjeska National Park and reports to the Ministry of Spatial Planning, Construction and Ecology of the Republika Srpska. The National Park is one of the project pilot protected areas and the PE is therefore project beneficiary. The PE will work directly with the project implementation team to ensure ownership of relevant project results and capacity building for the utilization of PA management and planning instruments developed within the project.	As the management authority for Sutjeska National Park, the PE will cooperate with the project in the preparation of a comprehensive climate threat assessment (Output 1.1.) and a climate threat management module development for the new Management Plan for the Park. The latter will be supported by the project after its mid-term and will include innovative response to the newly emerging threats, climate change adaptation measures for vulnerable species and ecosystems, strengthened financial sustainability and diversified financial flows, and enhanced tourism offer as key priorities for the area. The PE will make sure that the human capacities are in place to utilise new management planning instruments. The PE will participate in the development of Fire Protection Action plan and forest fire management capacity building. The PE will make sure that the in-house expertise and experience in pest control is available to contribute to the development of the management guidelines for bark beetle outbursts control and early response measure compatible with the PA regime. Together with the project implementation team, the PE will collect knowledge and experience in sustainable tourism development, PA income generation, and green business development, for possible application for other PAs in and outside the country. For the concession pilot (Output 2.3.), the PE will be engaged in concession management, compliance monitoring and enforcement. The PE will contribute to knowledge management related to the concession pilot implementation and will participate in the preparation of the case-study, discussion of replication scenarios, and preparation of Sustainable Concession Management Guidelines.

Public enterprise "National Park Kozara"	The Public Enterprise (PE) is in charge of the management of Kozara National Park and reports to the Ministry of Spatial Planning, Construction and Ecology of the Republika Srpska. The National Park is one of the project pilot protected areas and the PE is therefore project Beneficiary. The PE will work directly with the project implementation team to ensure ownership of relevant project results and capacity building for the utilization of PA management and planning instruments developed within the project.	The PE will cooperate with the project in the preparation of a comprehensive climate threat assessment (Output 1.1.) and a climate threat management module development for the new Management Plan for the Park. The latter will be supported by the project after its mid-term and will include innovative response to the newly emerging threats, climate change adaptation measures for vulnerable species and ecosystems, strengthened financial sustainability and diversified financial flows, and enhanced tourism offer as key priorities for the area. The PE will make sure that the human capacities are in place to utilise new management planning instruments. The PE will participate in the development of Fire Protection Action plan and forest fire management capacity building. The PE will make sure that the in-house expertise and experience in pest control is available to contribute to the development of the management guidelines for bark beetle outbursts control and early response measure compatible with the PA regime.
Public enterprise "National Park Drina"	The Public Enterprise (PE) is in charge of the management of Drina National Park and reports to the Ministry of Spatial Planning, Construction and Ecology of the Republika Srpska. The National Park is one of the project pilot protected areas and the PE is therefore project beneficiary. The PE will work directly with the project implementation team to ensure ownership of relevant project results and capacity building for the utilization of PA management and planning instruments developed within the project.	the PE will cooperate with the project in the preparation of a comprehensive climate threat assessment (Output 1.1.) and the development of a new management plan with due account of climate threats and climate neutrality objectives/indicators (Output 1.2). The PE will provide technical expertise and knowledge in the preparation of an adaptation plan for Serbian spruce (*Picea omorica*) with measures to improve status in natural populations, support to regeneration, monitoring of tree health, and pest control. The PE will make sure that the human capacities are in place to utilise new management planning instruments. The PE will participate in the development of Fire Protection Action plan and forest fire management capacity building. The PE will make sure that the in-house expertise and experience in pest control is available to contribute to the development of the management guidelines for bark beetle outbursts control and early response measure compatible with the PA regime. The PE will work together with the project on the sustainable tourism offer packaging (Output 2.1) and oversee the establishment and equipment of visitor facilities.
Ministry of Trade and Tourism of Republika Srpska	The Ministry allocates grants for sustainable tourism development. The Ministry will be a member of the Project Steering Committee, will ensure coordination of project activities within Outcome 2 dedicated to sustainable tourism development for the PAs, and the policy and regulatory support for the protected area concession model in Republika Srpska.	The Ministry will cooperate with the project under its Outcome 2 and our parallel co-financing for the project through annual grants in support of local tourism development, including infrastructure and tourism products and services. The Ministry has agreed to redesign the criteria with the project support in order to enhance PA participation in the grant scheme. As the project will have its concession model tested first at the national park Sutjeska in Republika Srpska, the Ministry will also support this endeavour with necessary policy and regulatory developments.
Environmental Protection Fund of FBiH	The Fund takes care of conservation fundraising, as well as preparation, implementation and development of programs, projects and on-the-ground activities supporting the sustainable use of nature resources and environment protection. The Fund provides PA finance opportunities in the form of annual calls for grants on tourism development, biodiversity conservation, research, promotion, etc. The PAs have no special	Output 2.4

	window or preference criteria for such granting schemes.	
Environmental Protection and Energy Efficiency Fund of Republika Srpska	The Fund takes care of conservation fundraising, as well as preparation, implementation and development of programs, projects and on-the-ground activities supporting the sustainable use of nature resources and environment protection	Output 2.4
Concession Commission for Republika Srpska	An independent regulatory body established for concession management in Republika Srpska	The Commission will ensure the concession award for the Sutjeska NP tourism assets and services, in accordance with the Concession Law of the Republika Srpska (Output 2.3). The project will cooperate with the Commission for the development of the concession criteria and guidelines. It is expected that the Concession Commission will provide their technical expertise for the development of the legal and regulatory framework of BiH a the reinvestment of the financial return to the Government from the revenues generated through a specific concession, back to the protected area. The Commission will be invited to participate in the optimal concession management options and risk management scenarios. The Commission will be expected to review the final concession package before the official concession call, and ensure quality assurance and adherence to the relevant rules and regulations at the level of RS.
Other governmental authorities: • Cantonal ministries and other institutions competent for environmental protection and tourism • Inter-Entity Steering Committee for the Environment		The Ministry of Trade, Tourism and Environment of Herzegovina-Neretva Canton supports local tourism development through annual calls for projects, making funds available for tourism infrastructure development and packaging of tourism products and services.
Cantonal Public Institution for Natural protected areas of the Sarajevo Canton	The Cantonal Public Institution for Natural protected areas of the Sarajevo Canton is in charge of the management of protected areas of the Canton of Sarajevo. Bijambare Protected Landscape, Skakavac waterfall Nature Monument, Trebević Protected Landscape are project pilot protected areas and the PE is therefore project beneficiary. The PE will work directly with the project implementation team to ensure ownership of relevant project results and capacity building for the utilization of PA management and planning instruments developed within the project.	The Cantonal Public Institution for Natural protected areas of the Sarajevo Canton is interested in the inclusion of all cantonal PAs in the comprehensive climate threat assessment and threat response planning under project Output 1.1. The PE will ensure the baseline data and research results available for a status assessment and an action plan for the endangered spruce forest and vulnerable peatland communities within Bijambare Protected Landscape (Output 1.2). Skakavac Nature Monument was confirmed as the pilot for forest fire management capacity building, including development and operationalisation of an early warning system and development of Fire Protection Action Plans with priority prevention measures. The PE will co-finance targeted investment in fire-fighting equipment and tools for suppression of initial fires. The PE is interested in the methodology and management guidelines with mechanisms of bark beetle outbursts control and the early response measures compatible with the PA regime (Output 1.3). For Bijambare PL, the project will cooperate with the PE on the development of programmes for eco-tourism, eco-agriculture, environmental awareness and education, with targeted implementation support (Output 2.1). The PE is interested in participation in the training

		on the use and control of non-timber forest products (NTFP) for the PA management, ranger services, and adjacent communities (Output 2.1). The PE managers will participate in capacity building measures aimed to promote PA managers as tourism destination managers (Output 2.1), trainings of PA managers for generation of non-budgetary income streams for PAs; building capacities of PAs for their successful participation in the competition process for the available grant funding for tourism development, and successful implementation and reporting on such projects (Output 2.4). The project will cooperate with the PE in capacity building for the development of promotion packages and marketing of products and services in the targeted PAs (Output 2.5)
Public Enterprise (PE) "Nature Park Blidinje"	The Public Enterprise (PE) is in charge of the management of Blidinje Nature Park which is the project pilot protected area and the PE is, therefore, project beneficiary. The PE will work directly with the project implementation team to ensure ownership of relevant project results and capacity building for the utilization of tourism development and increased visitation techniques and instruments developed within the project.	The PE will cooperate with the project in the preparation of a comprehensive climate threat assessment (Output 1.1.) The PE will make sure that the human capacities are in place to utilise the results of the threat assessment in management planning for the area. The PE will participate in the development of Fire Protection Action plan and forest fire management capacity building. The project will work together with the Public enterprise "Nature Park Blidinje" and attract expertise and resources to support the tourist platform development and "Visit Blidinje" brand.
Municipality of Novi Grad	The Municipality is in charge of the management of Una Park of Nature which is the project pilot protected area and the Municipality is, therefore, project beneficiary. The Municipality will work directly with the project implementation team to ensure ownership of relevant project results and capacity building for the utilization of PA management and planning instruments developed within the project.	The Municipality will cooperate with the Project in the development of the PA management plan with due account of climate threats and climate neutrality objectives/indicators
Municipality of Fojnica	The Municipality is in charge of the management of Prokosko Lake Nature Monument which is the project pilot protected area and the Municipality is, therefore, project beneficiary. The Municipality will work directly with the project implementation team to ensure ownership of relevant project results and capacity building for the utilization of PA management and planning instruments developed within the project.	The Municipality will cooperate with the Project in the development of the PA management plan with due account of climate threats and climate neutrality objectives/indicators
Municipality of Šamac	The Municipality is in charge of the management of Tišina Protected Landscape which is the project pilot protected area and the Municipality is, therefore, project beneficiary. The Municipality will work directly with the project implementation team to ensure ownership of relevant project results and capacity building for the	The Municipality will cooperate with the project on the implementation of the wetland restoration pilot activity. The Municipality will support the wetland restoration project with the data and expertise available locally, and ensure expert assessment and discussion of the proposed activities with the Institute for the Protection of Cultural and Historical Monuments and Natural Heritage of the Republika Srpska, and obtaining of necessary permits. The Municipality will coordinate the UNDP-GEF wetland restoration activities with

	implementation of wetland restoration techniques. The Municipality will provide technical expertise for knowledge management related to the restoration pilot, for its replication to other locations within Tišina Protected Landscape.	the work of the grassland habitat restoration financed by Euronatur, in order to utilise experience of wetland pasture restoration and extend the restoration effort to aquatic habitat restoration within the protected landscape under their management.
Public Enterprise "Vjetrenica"	The Public Enterprise (PE) is in charge of the management of Vjeternica PL which is the project pilot protected area and the PE is, therefore, project beneficiary. The Municipality will work directly with the project implementation team to ensure ownership of relevant project results and capacity building for the utilization of PA management and planning instruments developed within the project.	Together with the project, the PE will develop a management plan for the recently expanded protected area. Together with the GEF 7 project, the PE will make sure that the new management plan is based on the recent valorisation study (commissioned within the UNEP MSP Project in 2020) and will prioritize specific monitoring, assessment and management measures for rare/endangered habitat types (karst caves, basins and abyss ecosystems) and species sensitive to climate change. The PE will contribute their technical and administrative capacities to the Comprehensive Climate Threat Assessment and the development of a climate threat management module to complement the management plan for the protected area, and ensure the institutional ownership and local capacities in place to implement the new management planning instruments. The PE will co-finance tourism infrastructure development for the protected area (viewpoint and an educational trail. The PE will cooperate with the project under Output 2.2. aimed at piloting wider community engagement and diversification of the tourist offer for Vjetrenica – Popovo Polje; the PE will ensure partnership with the Ravno Municipality, support the community engagement effort and provide a platform for joint work with the local communities and private businesses in the wider area of Vjetrenica – Popovo Polje. The PE will co-finance the project activities on enhanced promotion, PA visibility, and outreach.
Association for the Protection of Flora and Fauna Gromiželj	The Association is in charge of the management of Gromiželj Protected Habitat which is the project pilot protected area and the Municipality is, therefore, project beneficiary. The Association will work directly with the project implementation team to ensure ownership of relevant project results and capacity building for the implementation of wetland restoration techniques. The Municipality will provide technical expertise for knowledge management related to the restoration pilot, for its replication to other locations within Tišina Protected Landscape.	The Association will cooperate with the project on the implementation of the wetland restoration pilot activity. The Municipality will support the wetland restoration project with the data and expertise available locally, and ensure expert assessment and discussion of the proposed activities with the Institute for the Protection of Cultural and Historical Monuments and Natural Heritage of the Republika Srpska, and obtaining of necessary permits.
Cultural centre Pale Municipality of Ribnik Municipality of Šipovo Municipality of Gacko Municipality of Trebinje Municipality of Foča Municipality of Bileća Municipality of Sokolac	Tourist organisations of the Municipalities organize and promote tours to the cave nature monuments	Output 2.5
Institute for the Protection of the Cultural, Historical	The Institute is an administrative organization within the Ministry of Education and Culture of the Republic of	The institute will partner with the project and co-finance the activities related to climate change issues, research, monitoring and restoration. The Institute will be requested

and Natural Heritage of Republika Srpska	Srpska. The Institute participated in many projects related to environmental conservation and restoration, analyses and studies for the proclamation of protected areas of natural and cultural heritage.	by the Government to ensure technical quality assurance for project plans (relevance) and results (technical components and outputs, mostly within Outcome 1). The Institute has a continuous cooperation with relevant academic institutions and international organisations, such as the Institute for Protection of Monuments of the Republic of Serbia, Institute for Nature Protection of the Republic of Serbia, University of Banja Luka, UNESCO, IUCN. These connections will be used to attract best available knowledge and expertise to project innovative developments, such as climate-smart PA management planning and GIS-based climate threat/effect modelling, climate adaptation for vulnerable species and ecosystems, and wetland restoration.
National and local environmental CSOs and NGOs: Center for Environment, Banjaluka Ornithological Society "NašePtice", Sarajevo Society for Biological Research and Protection of Nature "Bio.Log", Sarajevo Society for Research and Protection of Biodiversity Banjaluka	The Center for the Environment is a non-profit association established to advocate changes in society by influencing relevant policies and public awareness of the environment in Bosnia and Herzegovina and internationally. The Ornithological Society "Našeptice" is involved in protection and monitoring of birds and birds' habitats, relevant awareness-raising, conservation programs, research and educational programs. The Ornithological Society "Našeptice" has experience in productive restoration of pastures and meadows, and promotion of bird watching in BiH. Bio.Log is a non-governmental, non-profit, organisation of young experts in the field and volunteers with aims to environmental protection, habitats conservation, research in the field, education and raising public awareness on biodiversity values and protection. Bio.Log has extensive experience in research and in situ conservation of species in high mountain ecosystems and karst freshwater ecosystems. Society for Research and Protection of Biodiversity Banjaluka biological has carried out research, protection, inventory of species, biodiversity monitoring for selected areas, estimation of vulnerability of species for Red List	The NGOs have relevant competencies and experience related to scientific research, species assessments and conservation, capacity building, awareness-raising and environmental education. They also have network of partners in local communities connected to PAs.
Community based organisations (CBOs): Culture Center of Pale Municipality Tourist organisation of Foča Municipality	Culture Center of Pale Municipality manages Orlovača cave as an administrative unit of the Municipality. The cave is located on land in private ownership, so the Center will help the project team outreach the land managers. Tourist organisation of Foča municipality cooperates with National Park Sutjeska offering tours in rafting, mountain climbing, hiking, cycling, canoeing etc.	Output 2.5
Private sector stakeholders: Tourism Cluster Una-Sana	The Tourism Cluster Una-Sana undertakes activities aimed to advocate for better	The project will cooperate with the Tourism Cluster Una-Sana within Output 2.1 where it concerns the promotion of

Tourism Cluster Herzegovina Visit Sarajevo – Tourism Association of Canton Sarajevo	business conditions for the development of sustainable tourism sector. The Tourism Cluster Herzegovina plays an important role in incorporating protected areas of Herzegovina region in the tourism offer. Visit Sarajevo – Tourism Association of Canton Sarajevo works to respond to the needs of development, preservation and protection of tourist and cultural values in the Sarajevo Canton	the BD values of the National Park "Una" as a principal tourist destination. The Tourism Cluster Herzegovina can be a key partner for capacity building of PA management authorities on destination management. Visit Sarajevo – Tourism Association can be a partner for promotion of the natural values of six protected areas within Sarajevo Canton (Output 2.5)
Communities/people who may be directly affected by the project	Local communities will be informed of the project's plans and results through official communication handled by the project team/Implementing Partner and channelled through municipal resources as well as project-based communication means such as regular project newsletters, and coverage in social media, website, national, municipal press and TV. As part of SES risk mitigation, the project will ensure early disclosure of information and engagement on all activities that may affect local communities. A Grievance Redress Mechanism (see below) will be developed as a mechanisms for addressing possible grievances and complaints associated with the direct project impact or co-financing activities. Local community representatives and institutions will be informed and asked for inputs where their livelihoods are concerned, such as enhanced compliance with the PA regime, local nature-based tourism development, support to sustainable use of NTFPs.	Outcome 2

For other specific activity packages as well as aspects of the project, different stakeholder will be closely engaged and consulted, as follows:

- **Climate change- related activities and restoration**: the project will be working closely with representatives of the scientific community (faculties of science and forestry), professional institutions/institutes for nature protection and NGOs dealing with these issues. For restoration pilot(s) engagement of local communities, landowners, private sector stakeholders, municipal authorities is envisaged, as well as potential involvement of visitors in these activities (in line with IUCN best practice).
- **Forest fire management set of activities, including early warning system:** the project will be working closely with the Coordination Body of BiH for Protection and Rescue and the Ministry of Security, the civil protection authorities at entity and district level, as well as the civil protection services within the municipalities along with the municipal civil protection headquarters, including the mayors as leaders of these headquarters. Equally important stakeholders will be the relevant departments within the entities ministries of forestry (Federal Ministry of Agriculture, Water-Management and Forestry and Ministry of Agriculture, Forestry and Water Management of Republika Srpska). Municipal governments will also facilitate cross-sectoral collaboration for integrated fire/fighting response for the areas within and in the vicinity of the targeted PAs.
- **Sustainable tourism products development**: the project will be working closely with the tourism operators, local businesses in tourism and other private sector representatives (e.g. organizations involved in collecting NTFPs),

local communities as well as community-based organisations and associations (e.g. beekeeping associations). Municipal and cantonal (sub-entity level) governments will play a key role for the project activities dedicated to a) community engagement and b) collaboration with the private sector to ensure the long-term economic sustainability of the targeted PAs. The project will partner with the respective municipal and cantonal authorities in community support and promotion of local agro-tourism and ecotourism through the production and marketing of high-quality local agri-products and conservation-focused tourism packages. Special attention will be paid to cooperation with municipalities that are in charge of cave nature monuments in RS.

Engagement of civil society: Relevant national and local CSOs such as the Centre for Environment from Banja Luka, NašePtice (Our birds), Centre for Environmentally Sustainable Development (CESD), BIO.LOG will be encouraged to take an active role in implementing project activities, notably in the involvement of the local communities to ensure enhanced collaboration for the long-term economic sustainability of the targeted PAs. National and local CSOs will actively participate in the stakeholder engagement processes for project activities.

Private sector engagement and partnerships: The project is expected to foster activities aimed at developing tourism offerings and increasing the self-sustainability of PAs through cooperation with regional tourism clusters (Herzegovina and Krajina regions), mountain ski tourism operators, water rafting operators and small businesses along the Via Dinarica that operate in or near pilot protected areas. Specifically, project Output 2.3 offers a unique opportunity to test a first ever concession model for the eco-tourism development within a model protected area (Sutjeska National Park) in the country. In 2020 during the project PPG phase, an initial mapping of the potential private sector companies potentially interested in and eligible for partnering in the NP Sutjeska tourism concession model showed a somewhat discouraging result, as no partner was fully ready to express a firm interest as the potential concession bidder. An element of hesitation from the private sector was connected to uncertainty in the tourism market caused by the new COVID-19. However, the Ministry of Spatial Planning, Construction and Ecology of Republika Srpska, being the pertinent institution for implementation of the model, as well as Sutjeska National Park, expressed strong interest to retain the private PA concession model under the GEF project and declared firm support to conclude the search for a private operator during the inception phase of the GEF project. Through the initial screening, it became clear that the potential private sector partners for the concession are counting on the Ministry for Spatial Planning, Construction and Ecology of Republika Srpska to releases official government conditions for the future concession pilot with a reasonable level of detail, which was barred by the COVID pandemic. The GEF project in the main phase will aim to help conclude the negotiations process and launch the concession. For this purpose, a comprehensive assessment of the concession benefits prepared as input during the PPG phase will be used. The PPG experts also presented a road-map listing the activities to be implemented to operationalize the concession process during the inception phase of the project.

There are feasibility constraints associated with the concession pilot, and the project strategy, therefore was made responsive to this, suggesting more “dispersed” approach to working with private sector representatives, i.e. through a diversity of options for private sector engagement in sustainable tourism development for the benefit of the PAs and the local communities. Specifically, the project will work with the private sector stakeholders enhancing the domestic ecotourism capacity sector, ensuring collaboration between private sector tourism operators and protected areas, and facilitating the creation of a network of community-based destinations for sustainable and safe domestic tourism activities with the PAs at its core. This includes development of high quality conservation-focused ecotourism products (Output 2.1), and tourism product management partnerships with the private sector (Outputs 2.2 and 2.3). The PPG demonstrated high willingness and potential for the governmental stakeholders and PA administrations to engage in functional partnerships with the private sector which means that private business goals can be pursued at the same time as deriving local community benefits and social and biodiversity goals. The project is focusing on removing barriers to increased income opportunities from sustainable tourism development, primarily focusing on the domestic market (partly due to COVID-19 situation) and addressing legal aspects for promotion of nature resource use activities, with focus on targeted PAs. Tourism operators and local businesses are expected to cooperate, with the help of the project, in sustainable economic activities such as collection of NTFPs, and beekeeping. Municipal and cantonal (sub-entity level) governments will play a key role in setting up regulatory incentives for community engagement and collaboration with the private sector to ensure the long-term economic sustainability of demonstrated activities.

The stakeholder consultations and feasibility analyses during the PPG phase were focused on the identification of such offerings that could (1) generate profit while (2) supporting local community organizations and (3) having no harmful effects on the BD values. One such partnership, a model that is new to the country, will be developed between the Vjetrenica-

Popovo Polje PA and the adjacent businesses (Output 2.2). Specifically, the project will co-finance a public-private partnership for restoration of an existing mill nearby the Vjetrenica cave, which is owned by the Ravno municipality, to enhance the tourism offerings for the nearby PA and contribute to the preservation of the cultural heritage of the area. GEF funds will be used incrementally for the marketing of the site thus supporting potential revenue streams. GEF funds will be useful for enhanced visitation and quality of the tourist products at Vjetrenica.

As to due diligence, that is yet to take place. In accordance with the POPP private sector due diligence policy (undp.org) UNDP undertakes due diligence of its private sector partners before both parties commit to a partnership. As no solid partnership, even in the case of Vjetrenica-Popovo Polje was possible to form at the PPG stage, the due diligence procedures will take place during project implementation. In accordance with the policy, and as part of the PPG stakeholder engagement process, an initial prescreening ensuring that the potential partner does not fall under the exclusionary criteria and is not involved in a high-risk sector and/or any significant controversies) took place before reaching out the potential partners for Outputs 2.2 and 2.3.

3.3 Gender equality and women's empowerment

111. The Gender Action plan for the project is presented as Annex 13 to the Project Document. The gender issues which are of the importance of the project implementation can be summarized as follows:

- Women are underrepresented among high-level decision-makers in national and local institutions in charge of PA management and BD conservation in general. It compromises the possibility to take into account the diversity of opinions, ideas and experiences in the decision-making process.
- Women are underrepresented as beneficiaries when it comes to access to innovations, best available knowledge and practice, capacity building and training.
- Women remain substantially underrepresented as leaders in tourism sector development; the private businesses run be women are rare and lack access to best business development practice and opportunities to enhance skills and promote businesses.

112. Based on the results, recommendations and best practices, as well as in accordance with GEF guidance on gender equality[13], the project will focus on the following gender aspects:

- Balanced representation and meaningful participation of women and men in key project activities, including those related to capacity building and management planning for protected areas, BD threat and risk assessments, PA management and business planning, introduction of climate-smart PA management solutions and responses to CC threats and effects, sustainable tourism development with PA engagement, PA promotion and marketing;
- Engagement and mobilization of individuals, local women groups, women NGOs, etc. to participate in its implementation of the Project and to benefit from business opportunities that are created under the particular Project components;
- Encouragement of and better access for women entrepreneurs and women's businesses.

113. Development of ecotourism products and involvement of the private sector in the PA management work will primarily impact more remote rural communities where women are traditionally underrepresented where it comes to the economic and empowerment opportunities. The project will ensure that the decision-making, local capacity development and economic incentives are sensitive to these gender issues and will actively promote women and girls participation in relevant project activities in the field.

114. The project will seek to enhance social inclusion in all stages of the implementation, thus contributing to the creation of equal opportunities when it comes to access and use to natural values, public infrastructure and services in protected areas, employability and access to knowledge. The socially excluded groups in Bosnia and Herzegovina are unemployed women and youth and long-term unemployed people, Roma representatives, persons with disabilities, returnees and internally displaced persons.

[13] GEF Guidance to Advance Gender Equality GEF Projects and Programs. - Available online: https://www.thegef.org/sites/default/files/publications/GEF%20Guidance%20on%20Gender.pdf

115. During the project implementation, the output products will consider gender mainstreaming and inclusion and representation of all ethnic and religious groups found in the region of implementation. In line with the Results Architecture for GEF-7, the project will report on direct project beneficiaries disaggregated by gender, as a co-benefit of the GEF investment.

3.4 Risks to project success and social/environmental safeguards

Risks to project success and the mitigation measures could be summarized as follows:

Risk	Rating	Mitigation
1. One of the most significant institutional risks relates to the complex institutional structure and division of authorities and responsibilities between the state government, the two entities in BiH, the line ministries of both entities, and the municipal authorities. Also, the different management arrangements for PAs according to their category, spatial belonging and mandate might provide complications for the implementation of targeted project activities and cause coordination challenges for the project.	M	This risk will be mitigated through close collaboration with relevant stakeholders from the outset and by determining collaborative strategies and focal points in each of the key institutions for the Project Steering Committee. The project implementation team and UNDP will use the relevant experience from the previous projects and will rely on the Comprehensive Stakeholder Engagement Plan to make sure that the institutional barriers are tackled timely and efficiently.
2.For the project interventions focused on the newly established/expanded protected areas, the future project activities, inputs and effects will be much determined by the management capacities in place. This is particularly relevant for Orjen Park of Nature that, at the time of the project submission, does not yet have a management authority	M	The planned project interventions involving the PAs under establishment/re-classification will be subject to adaptive management depending on the development of adequate institutional, financial and capacity building solutions for these PAs.
3.Project impact on the status of biodiversity and ecosystems might be limited by climate change as a direct driver of habitat conversion and biodiversity loss in the country.	L	Climate change adaptation and resilience is a core of the project strategy. Under Component 1, the project will work to reduce the vulnerability of key biodiversity values and strengthen the resilience of target protected areas in BiH to climate change. A desk climate threat analysis for the pilot PAs was performed during the project preparatory phase (PPG). Based on the data available and the expert assessment of the key climate impacts and pressures on the key biodiversity values within the targeted PAs, possible response scenarios and adaptation measures were proposed by the PPG experts. Building on the key results of the PPG desk analysis, and further focusing on the PAs with the management capacities and resource available for more focus on the climate change response and adaptation, in the first year of implementation the Project will commission a comprehensive climate threat assessment of the pilot PAs. The threat assessment will be planned to take into account the project SESP risk related to the susceptibility of project endeavours to climate and the extreme climate conditions and will be responsive to the SES Standard 2. The project will further assist the pilot PAs with the preparation of management plans, as well as management guidelines and tools for taking into account the CC threats, threat response scenarios,

		ecosystem resilience and adaptation measures. The CC-sensitive management planning will also be responsive to the requirement of the UNDP SES Standard 2. A portfolio of adaptation and resilience solutions for targeted species and ecosystems will be developed and set under implementation under project Output 1.3. Pilot restoration options will be offered for ecosystems severely affected by various negative climate factors. Finally, stakeholder consultations with the PA management authorities and municipal governments will catalyse replication of climate threat response action planning, adaptation and resilience solutions for targeted species and ecosystems. Thus, a comprehensive response to the CC impact has already been embedded in the project strategy. Although the project will obviously not be able to prevent extreme climate events during climate events, it was designed to provide incremental steps towards building the long-term CC resilience.
4.There is a risk that the mechanisms and solutions to be offered by the project for the sustainable PA finance will not prove their desired financial effect, and the mobilized additional finance may not be sufficient to supplement the PA government budgetary contributions in the long term. This risk takes into account the effects of the COVID19 to the budgetary allocations of the respective ministries and funds that will be considered in achieving sustainability of the PA finance.	M	In response to this risk, the project will perform a comprehensive cost-benefit analysis of the proposed PA finance opportunities, develop the mechanisms to ensure the long-term sustainability of the financial models, and ensure political buy-in.
5.There is a risk that the planned partnerships with the private sector partners will fail to yield the expected benefits. The private sector stakeholders may be reluctant to take on financial commitments and new partnerships due to negative implications of COVID-19 pandemic and the overall economic recession on their businesses.	M	The project will do its best to mitigate this risk via the development of a detailed private sector engagement strategy, planning of private sector engagement models with multiple benefits, performing thorough cost-benefit analyses and assessment of financial risks, and implementing early awareness raising among potential private sector partners. This risk particularly applies to Output 2.3 being a concession model for the eco-tourism development within a model protected area (Sutjeska National Park). In 2020 during the project PPG phase, an initial mapping of the potential private sector companies potentially interested in and eligible for partnering in the NP Sutjeska tourism concession model showed a somewhat discouraging result, as no partner was ready to express a firm interest as the potential concession bidder. The feasibility assessments and the preparatory work performed at the project PPG stage do not guarantee that the concession pilot will be implemented for sure; it is possible that the mechanism of concessions will not be confirmed as being realistic within the project timeframe as well as being suited to the local context at the moment (including the private sector affected by the COVID-19 pandemic); it is possible that not only the initial potential partner cannot confirm their interest in the concession, but no other partner is willing to commit to the concession arrangements and/or is able comply with the concession criteria and requirements. There

		are feasibility constraints associated with the concession pilot, and if the risk materialises as described above, an adaptive management scenario where the project strategy will focus on other options for private sector engagement in sustainable tourism development for the benefit of the PAs and the local communities (Output 2.2), while still providing for increased capacities to implement a PA tourism concession in the future.
6.The negative effects of the post-COVID recession may hamper project plans towards increased financial sustainability of the pilot PAs, increased visitation, improved tourism offering, and enhanced management capacities	M	The project intervention strategy will be sensitive to the effects of COVID-19 crisis on the overall management of PAs in the country. The target indicator level for increased visitation will be re-visited at project MTR following the recovery scenarios available for the PAs. The project will apply an extra capacity building effort to make sure that the PA managers are able to apply for economic recovery funds and develop collaborations and partnerships with the private sector to overcome the financing gaps and access recovery funds. Last but not least, the GEF increment for promotional activities for the pilot PAs will hopefully become one of the principal risk management measures and will help mitigating the obstacles towards self-sustainability and enhanced operational management. The tourism development sector has been severely affected by the COVID-19 crisis. The focus of the recovery strategy for the sector would be on the development of domestic tourism in a sustainable, efficient manner. Thus, the project objective coincides with the tourism recovery priorities. No significant adaptive management and strategic change would be required as the tourism sector and the project with its increment will have to focus on developing and promoting the tourism product that has the PA values at its core and is focused on the domestic market. The adaptive management scenarios for the project strategy under Outputs 2.1, 2.2, and 2.3 will depend on the covid lockdown/restriction arrangements set by the Government as a major factor determining the severity and the magnitude of the negative economic impact, as well as the tourism sector response to the crisis. A total lockdown will of course be a reason for major changes in the project strategy. However, given the current trends, it is highly unlikely that the Government should consider lengthy lockdowns as a viable measure; it is a well-known fact that no country in Europe has imposed a lockdown during the second and subsequent pandemic waves (due to improvements with the cases registered, availability of vaccines and economic considerations). The restriction arrangements are likely to impact the international tourism which result in the reduction of visitation rates for the PAs; this will impact one particular indicator of the Project logframe but does not involve any changes to the project strategy. The covid restrictions negatively affect the tourism destinations with a high concentration of visitors; again, the social distancing as a visitation requirement for sustainable tourism within and around the PAs can easily be maintained and the particular safety requirements can be met without a major change in the way the tourist services had been provided before the epidemics. Thus, the covid recovery towards less-impact higher-efficiency domestic tourism development, even hampered by the economic consequences of the covid crisis, seems a very probable scenario.

Social and environmental risks and safeguards

Eleven risks were identified in the SESP (Annex 5 to this project document), of which ten were assessed as moderate risk, and one risk assessed as low risk. Therefore, the project overall in relation to SESP measures is considered moderate risk.

As per standard UNDP requirements, the Project Manager will monitor risks quarterly and report on the status of risks to the UNDP Country Office. The UNDP Country Office will record progress in the UNDP ATLAS risk log (Annex 6 of this Prodoc). Risks will be reported as critical when the impact and probability are high (i.e. when impact is rated as 5, and when impact is rated as 4 and probability is rated at 3 or higher). Management responses to critical risks will also be reported to the GEF in the annual PIR. The social and environmental safeguards are further detailed in the Environmental and Social Management Framework (ESMF) developed at the PPG stage, annexed to this Project Document (Annex 23) to specify the processes that will be undertaken by the project for the additional assessments of potential impacts and identification and development of appropriate risk management measures, in line with UNDP's Social and Environmental Standards (SES). The ESMF also details the roles and responsibilities for its implementation and includes a budget and Monitoring and Evaluation plan.

3.5 Innovativeness, sustainability and potential for scaling up

116. Innovativeness.

The project will assist the PA management authorities with the innovative management planning that will take into account the climate-induced threat response pattern, and offer customized management planning options for lower category PAs, to be adopted for the first time in the national PA system.

The project will capacitate the PA management, conservation practitioners, experts and PA planners to perform site-specific climate threat analysis, develop threat response scenarios, design and implement adaptation and enhanced resilience solution for vulnerable species and ecosystems. The project will offer ecosystem-based comprehensive practical responses to climate change threats for the targeted PAs, ecosystems and species. A totally innovative element, a climate threats management model to support BD-sensitive and CC-neutral PA management planning will be offered to the pilot PA and the institutions in charge of their management.

One significant innovation in terms of institutional capacities and collaborative governance will be offered within Outcome 1 as the project will develop the cross-sectoral collaboration models for fire-fighting / flood response within and in the vicinity of protected areas. . Also, a customized geographic information system supporting the narrative climate threat assessment will be maintained and enhanced throughout the project lifetime to become a tool to identify drivers of vulnerability in specific areas, by combining public information data sources and remote sensing data (using IoT sensors).

The project Output 1.4 will be dedicated to innovative restoration approaches. The restoration of freshwater ecosystems and rehabilitation of wetland habitats will be implemented at full scale for the first time in the country; there is some experience in restoration of wetland meadows and pastures (which in general are in a considerably better shape than the degraded wetlands, marshes, ponds and aquatic associations) but none targeting the hydrotedhnical facilities and water inflow regime. The stakeholder consultations at the PPG stage confirmed a unique innovation value of and considerable interest in the suggested restoration of the wetland habitats including aquatic communities (Tišina pond) and surrounding forests (Tišina and Gromiželj).

The project will test an innovative private sector engagement modality for sustainable PA finance. Although the country has examples of concession agreements in tourism sector, for the first time a concession model will be tested for a protected area. Based on the pilot concession experience, the project will develop a system-wise reference tool for ecotourism concession management and private sector engagement in PA sustainable finance.

117. Sustainability.

The proposed project interventions will be incremental to the baseline PA management scenarios in the country, and will be implemented in collaboration and synergy with the sectoral authorities and institutions. The project intervention strategy will ensure early buy-in and ownership at the level of individual PAs and key stakeholders, for the long-term effect interventions such as innovative PA management planning, system-wise climate change resilience solutions, ecosystem restoration demos, sustainable tourism development plans for PAs, and private sector engagement mechanisms and models. The project efforts at enhanced PA visibility, promotion of PA value and content in sustainable tourism development will be sustained and up-scaled by the relevant authorities and partner initiatives.

118. Replication and potential for scaling up:

The project will propose "packaged" adaptation and resilience solutions for targeted ecosystems within the individual PAs that will be applicable to similar PAs in the system, transboundary PAs in the Dinaric region, and will be available for the regional community of practice as case-studies for possible adaptation and replication.

The methods and approaches to be tested in the restoration pilots will be replicable to similar locations within the pilot areas and to other areas with similar landscape and biodiversity features.

Sustainable tourism business models, although not new for the tourism sector in the country, will be for the first time focused on protected areas.

The project will assist the pilot PA managements in development and packaging of tourism products which elements and approaches to expansion and diversification of the tourist offer can be replicable to non-pilot PAs for the project.

The concession model at Sutjeska National park can potentially be adapted and replicated for other national parks in RS and Una National Park in BiH. The project will organize experience-sharing exercises on a regular basis; the climate impacts research and monitoring module will be replicated in PAs beyond the initially selected pilots, and once updated with relevant data, the DRAS software would be open to include the entire national PA network. The project will work on establishing a close relationship with the tourism clusters and private sector to ensure that PAs are recognized as valuable tourism destinations, providing for their sustained interest in active BD conservation. The project will map relevant regional initiatives and organize a lessons learned exchange with them and the transboundary PAs.

3.6 Knowledge management

119. The project activities include extraction and dissemination of lessons learned and good practices to enable adaptive management and upscaling or replication at local and global scales. The PA management practices and tools will be captured, analysed and discussed at experience sharing events, as well as shared and recommended through the existing communication links between the PAs and the governmental authorities in charge of their management in the country. The project will contribute to scientific, policy-based and/or any other networks as appropriate (e.g. by providing content, and/or enabling participation of stakeholders/beneficiaries).

120. Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to the project. The project will identify, analyse and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projects of similar focus in the same country, region and globally.

3.7 South-south and triangular cooperation

121. Learning opportunities and technology transfer from peer countries will be further explored during project implementation. To present opportunities for replication in other countries, the project will codify good practices and facilitate dissemination through global ongoing South-South and global platforms, such as Africa Solutions Platform, the UN South-South Galaxy knowledge sharing platform and PANORAMA[14].

122. In addition, to bring the voice of Bosnia and Herzegovina to global and regional fora, the project will explore opportunities for meaningful participation in specific events where UNDP could support engagement with the global development discourse on biodiversity conservation, PA estate management and building PA resilience to climate-induced threats. The project will furthermore provide opportunities for regional cooperation with countries that are implementing initiatives on innovative PA management planning and sustainable PA finance models.

[14]https://panorama.solutions/en

IV. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s): *SDGs 12, 13, and 15*				
This project will contribute to the following country outcome (UNSDCF /CPD, RPD, GPD): Outcome 1. By 2025, people benefit from resilient, inclusive and sustainable growth ensured by the convergence of economic development, and management of environment and cultural resources. RELATED STRATEGIC PLAN OUTCOME: Outcome 1: Advance poverty eradication in all its forms and dimensions; Outcome 2: Accelerate structural transformations for sustainable development.				
	Objective and Outcome Indicators **(no more than a total of 20 indicators)**	**Baseline**	**Mid-term Target**	**End of Project Target**
Project Objective: To achieve practical PA management improvement and better biodiversity status through strengthened resilience of key biodiversity values to climate change impact and increased revenues from sustainable recreation	**Mandatory** Indicator 1 (GEF Core Indicator 11): # direct project beneficiaries disaggregated by gender (individual people)	*0*	*100,000 (incl. 50,000 women)*	*314,900 (incl. 157,260 women)*
	Mandatory Indicator 2 (GEF Core Indicator 1.2): *Indicator 2:* Terrestrial protected areas under improved management effectiveness (Hectares)	*0 (as project impact is zero)*	*113,451 ha*	*113,451 ha*
	Mandatory Indicator 3 (GEF Core Indicator 3.4): Area of wetlands restored	*0*	*0*	*120 ha*
Project Component 1	**Strengthening resilience of targeted PAs to climate change impacts**			
Project Outcome 1: Managerial and technical capacities of targeted PAs in place helping ensure resilience of key biodiversity values to climate change impacts	*Indicator 4:* At least 15% increase in METT score for the targeted national PAs	*0 (see baseline METT scores in the METT scorecard)*	*10% increase (on average) from the baseline METT scores*	*15% increase (on average) from the baseline METT scores*
	Indicator 5: At least 5 PA management planning instruments with due account of climate threats developed and set under implementation	*0*	*5*	*9*
	Indicator 6a: Non deterioration of population of Serbian spruce (*Picea omorika*) population within Drina NP	*2020 avaialble data on population*	-	*Non-deterioration as compared to 2020 data.*

	Indicator 6b: Non-deterioration of Alpine newt (*Triturus alpestris*) population in Prokosko Lake NM stable or increasing *Indicator 6c:* Non-deterioration of Bosnian pine (*Pinus heldreichii*) within Blidinje PN	*distribution of the indicator species*		
	Indicator 7a: % reduction in extent (ha/annum) of forests detrimentally impacted by fires: Orjen PN, Sutjeska NP, Kozara NP, Drina NP, Skakavac PL, Blidinje PN *Indicator 7b:* At least two functional community-based fire-fighting units established and functional	*7a: baseline data and viable end-of-project target (%reduction) to be obtained in the Year 1* **7b: 0**	-	*7a: 15% from baseline* *7b: 2*
Outputs to achieve Outcome 1	Output 1.1: Comprehensive climate threat assessment conducted for pilot PAs Output 1.2: PA management framework developed/updated and under implementation with account of climate threats Output 1.3: A portfolio of adaptation and resilience solutions for targeted species and ecosystems developed and set under implementation Output 1.4: Demonstration of innovative restoration approaches Output 1.5: Replication triggered through incorporation of project solutions into forestry, land-use and disaster risk management programmes at other sites			
Project Component 2	**Improving financial sustainability of targeted PAs through sustainable tourism development**			
Outcome 2: Financial sustainability of targeted PAs improves	*Indicator 8:* At least 20% reduction of the funding gap for targeted PAs	*0*	-	*20%*
	Indicator 9: At least 1 mutually beneficial public-private agreement (including concessions, leases, rentals) formalised and operational	*0*	*0: All prerequisites for concession operationalization ensured*	*1: Concession formalized and operational*
	Indicator 10: At least 4 PAs participate in governmental tourism grant programmes	*1*	*2*	*4*
	Indicator 11: At least 20% increase in the annual number of visitors and service users in targeted PAs (data disaggregated by gender)	*0*	*5%*	*20%*
Outputs to achieve Outcome 2	Output 2.1: Sustainable tourism products developed for pilot PAs Output 2.2: Cooperation with the private sector in place to provide increased income streams from legal nature resource use activities (incl. recreation) occurring in the targeted PAs			

	Output 2.3: Eco-tourism concession model developed and piloted in Sutjeska National Park Output 2.4: PA participation in the governmental grant programmes is ensured in a sustainable manner Output 2.5: Promotion of natural values, products and services in the targeted PAs is improved			
Project Component 3	**Knowledge management**			
Outcome 3: Knowledge management	*Indicator 12:* At least 3 knowledge products related to PA climate threats assessment and climate impact monitoring, PA integration into sustainable tourism, and tourism concessions developed and disseminated	*0*	*0*	*3*
	Indicator 13: Number of women and men getting access to innovations, best available knowledge and practice, through project-supported capacity building, training, and knowledge building	*0*	*tbd*	*tbd*
Outputs to achieve Outcome 3	Output 3.1: Knowledge products and lessons learned documented and disseminated			
Project Component 4	**M&E**			
Outcome 4: Monitoring and Evaluation	*Indicator 14:* Project M&E requirements and plans implemented in a timely and comprehensive manner	*M&E has not started*	*n/a*	*Project M&E aspects receive positive assessment and satisfactory range rating by the Terminal Evaluation*
Outputs to achieve Outcome 4	Output 4.1: Set of project activities to ensure proper monitoring and evaluation of the project			

V. MONITORING AND EVALUATION (M&E) PLAN

123. The project results, corresponding indicators and mid-term and end-of-project targets in the project results framework will be monitored annually and evaluated periodically during project implementation. If baseline data for some of the results indicators is not yet available, it will be collected during the first year of project implementation. The Monitoring Plan included in Annex 7 details the roles, responsibilities, and frequency of monitoring project results.

124. Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy. The UNDP Country Office is responsible for ensuring full compliance with all UNDP project monitoring, quality assurance, risk management, and evaluation requirements.

125. Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the GEF Monitoring Policy and the GEF Evaluation Policy and other relevant GEF policies[15]. The costed M&E plan included below, and the Monitoring plan in Annex 7, will guide the GEF-specific M&E activities to be undertaken by this project.

126. In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report.

Additional GEF monitoring and reporting requirements

Inception Workshop and Report

127. A project inception workshop will be held within 60 days of project CEO endorsement, with the aim to:

a. Familiarize key stakeholders with the detailed project strategy and discuss any changes that may have taken place in the overall context since the project idea was initially conceptualized that may influence its strategy and implementation.
b. Discuss the roles and responsibilities of the project team, including reporting lines, stakeholder engagement strategies and conflict resolution mechanisms.
c. Review the results framework and monitoring plan.
d. Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP and other stakeholders in project-level M&E.
e. Update and review responsibilities for monitoring project strategies, including the risk log; SESP report, Social and Environmental Management Framework and other safeguard requirements; project grievance mechanisms; gender strategy; knowledge management strategy, and other relevant management strategies.
f. Review financial reporting procedures and budget monitoring and other mandatory requirements and agree on the arrangements for the annual audit.
g. Plan and schedule Project Board meetings and finalize the first-year annual work plan.
h. Formally launch the Project.

GEF Project Implementation Report (PIR)

128. The annual GEF PIR covering the reporting period July (previous year) to June (current year) will be completed for each year of project implementation. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR. The PIR submitted to the GEF will be shared with the

[15] See https://www.thegef.org/gef/policies_guidelines

Project Board. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

GEF Core Indicators

129. The GEF Core indicators included as Annex 8 will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Note that the project team is responsible for updating the indicator status. The updated monitoring data should be shared with MTR/TE consultants prior to required evaluation missions, so these can be used for subsequent groundtruthing. The methodologies to be used in data collection have been defined by the GEF and are available on the GEF website.

130. The required Protected Area Management Effectiveness Tracking Tool (METTs) have been prepared and the scores include in the GEF Core Indicators.

Independent Mid-term Review (MTR)

131. The terms of reference, the review process and the final MTR report will follow the standard templates and guidance for GEF-financed projects available on the UNDP Evaluation Resource Center (ERC).

132. The evaluation will be 'independent, impartial and rigorous'. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review.

133. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate.

134. The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC by 31 January 2025. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report's completion.

Terminal Evaluation (TE)

135. An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance for GEF-financed projects available on the UNDP Evaluation Resource Center.

136. The evaluation will be 'independent, impartial and rigorous'. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated.

137. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate.

138. The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC by 31 March 2027. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report's completion.

Final Report

139. The project's terminal GEF PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information

140. To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy[16]and the GEF policy on public involvement[17].

Monitoring and Evaluation Plan and Budget:		
GEF M&E requirements	**Indicative costs (US$)**	**Time frame**
Inception Workshop	2,000	Within 60 days of CEO endorsement of this project.
Inception Report	None	Within 90 days of CEO endorsement of this project.
M&E of GEF core indicators and project results framework indicators	40,000	Annually and at mid-point and closure
GEF Project Implementation Report (PIR) and other regular project reporting as required by IP and UNDP	4,000	Annually typically between June-August
Risk monitoring, including SESP risks, SES screening, ESMP development and monitoring	6,000	On-going
Monitoring of Gender Action Plan indicators	10,000	On-going
Mid-term and Terminal GEF Tracking Tool (an independent assessor)	4,000	Prior to MTE PIR and TE PIR
Supervision missions	None	Annually
Independent Mid-term Review (MTR)	26,000	31 January 2025
Independent Terminal Evaluation (TE)	26,000	31 March 2027
Translation cost associated with M&E	4,000	MTR and TE
TOTAL indicative COST	122,000	

VI. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

Roles and responsibilities of the project's governance mechanism:

Implementing Partner

141. The Implementing Partner for this project is UNDP. Based on consultations with the Government and Global Environment Facility at the PIF and PPG stages and as discussed with GEF Secretariat upstream (record of communications with GEF is uploaded in PIMS and available on request), this project will be executed through the Direct Implementation Modality (DIM). The project implementation modality with UNDP as an Implementing Partner

[16] See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/
[17] See https://www.thegef.org/gef/policies_guidelines

was endorsed at the project concept stage. The reasons behind the request for DIM implementation modality are associated with the extremely complex administrative and governance structure of the country, and the absence of a single entity or government partner that can take over the responsibility for the overall implementation of the project. The DIM implementation modality is considered as a risk mitigation measure, considering the complexity and specificity of the country's governance structure. According to the communication from the GEF Operational Focal Point, the PPG consultations with the key governmental partners for the project and UNDP confirmed that DIM remains the most realistic and risk-free modality for the implementation of the above-mentioned project in the country. UNDP was, therefore, requested to carry out the full range of execution services for the project, on an exceptional basis. UNDP Country Office (CO) in Bosnia and Herzegovina has the required capacities to provide implementation / execution support to national project partners in line with DIM rules. The CO is fully equipped to do so in full compliance with UNDP rules and regulations and GEF policies.

142. The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of donor resources and the delivery of outputs, as set forth in this document. UNDP as the Implementing Partner is responsible for executing this project. Specific tasks include:

- Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used and generated by the project supports national systems.
- Risk management as outlined in this Project Document;
- Procurement of goods and services, including human resources;
- Financial management, including overseeing financial expenditures against project budgets;
- Approving and signing the multiyear workplan;
- Approving and signing the combined delivery report at the end of the year; and,
- Signing the financial report or the funding authorization and certificate of expenditures.

143. UNDP is accountable to the GEF for the implementation of this project. This includes overseeing project execution undertaken by the Implementing Partner to ensure that the project is being carried out in accordance with UNDP and GEF policies and procedures and the standards and provisions outlined in the Delegation of Authority (DOA) letter for this project. The UNDP GEF Executive Coordinator, in consultation with UNDP Bureaus and the Implementing Partner, retains the right to revoke the project DOA, suspend or cancel this GEF project. UNDP is responsible for the Project Assurance function in the project governance structure and presents to the Project Board and attends Project Board meetings as a non-voting member.

144. The GEF OFP has requested UNDP to provide full range of execution support services in line with DIM modality. This mechanism has been discussed and agreed with the GEF. UNDP, therefore, combines the role of a GEF agency in charge of the project implementation with that of an implementing partner for this project. A strict firewall will be maintained between the delivery of project oversight and quality assurance performed by UNDP and project execution undertaken by UNDP. “Project management” will be undertaken by personnel on non-staff contracts (i.e. Service Contract holders) specifically hired for the management of this project, forming the so-called Project Management Unit. In line with standing ICF, their financial and legal accountability will not involve any actions from the category of “execution support”, or “oversight”; it will be limited to preparing TORs, specifications, requests, and arranging for a proper process for all project management activities. Separation of functions and reporting lines between those at UNDP providing oversight with those at UNDP providing execution support has been planned for in line with relevant POPP. UNDP will not charge GEF any cost for execution support. The cost of oversight will be recovered solely from the GEF fee.

145. The execution services provided by UNDP include:

- Procurement of goods, services, and works on a transparent and competitive basis, including preparation of procurement plans, terms of reference, and procurement packages, ensuring procurement processes,

contracting and contract management, required to implement all technical outputs and manage the project properly.

- Identification and/or recruitment of project personnel and consultants according to UNDP norms and requirements, management of consultant activities, other HR-related services, to enable implementation of all technical outputs and proper project management.

- Financial services, including processing of payments for the project under all technical outputs and project management activities, creating vendors, payment reconciliation, and preparation of expenditure reports to partners and donors;

- Logistics support services, including duty travel for project personnel and consultants working under technical outputs, project event management;

- Equipment and Asset Management services, including IT equipment maintenance, licenses and ICT support for the project team and project activities;

- Maintenance of records of all project-related documentation.

Execution support staff reports to relevant Heads of Operations Units who report to CO Operations Manager.

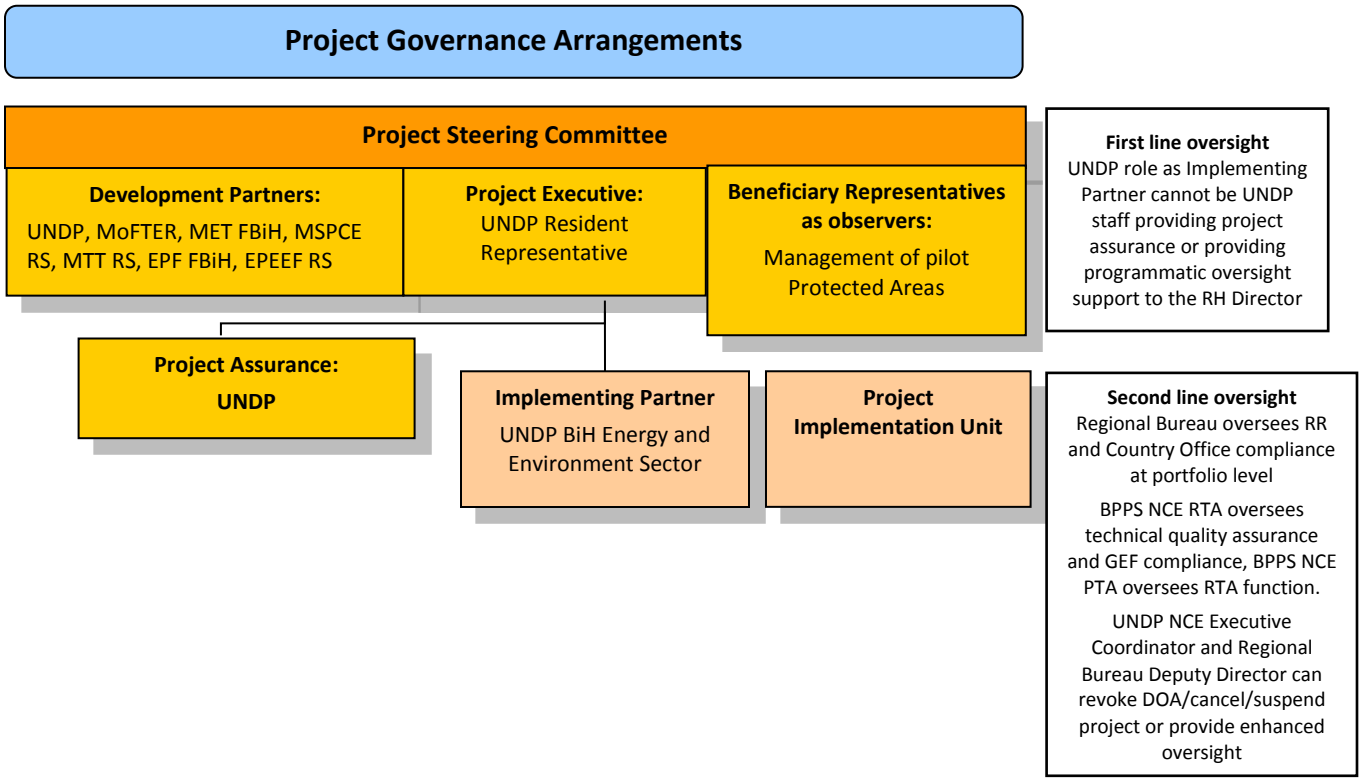
Project stakeholders and target groups:

146. The participation and contribution of stakeholders and key target groups are critical for the success of the project, for stakeholders at both the national and local levels. The project applies multiple strategies and mechanisms to ensure stakeholder engagement. First and foremost is the Project Steering Committee, or the Project Board (as discussed further below), involving the Ministry of Foreign Trade and Economic Relations (MoFTER) of Bosnia and Herzegovina, FBIH Ministry of Environment and Tourism (MET FBiH), Ministry of Spatial Planning, Construction and Ecology of the Republika Srpska (MSPCE RS), Ministry of Trade and Tourism of Republika Srpska (MTT RS), Environmental Protection Fund of FBiH (EPF FBiH), Environmental Protection and Energy Efficiency Fund of Republika Srpska (EPEEF RS), and UNDP.

147. The project will provide for transparent decision-making, facilitate participatory planning processes and support the capacity development of stakeholders and partners. Formal and informal partnerships will be developed and established with gender balance, and gender mainstreaming approaches in mind.

148. The project will highlight at various points the mechanisms and channels of communication that stakeholders may employ if they have any grievances related to the social and environmental impacts of the project. For example, this point will be indicated during the project inception workshop, and through the project education and awareness activities.

Project organisation structure:



149. The UNDP Resident Representative assumes full responsibility and accountability for oversight and quality assurance of this Project and ensures its timely implementation in compliance with the GEF-specific requirements and UNDP's Programme and Operations Policies and Procedures (POPP), its Financial Regulations and Rules and Internal Control Framework. A representative of the UNDP Country Office will assume the assurance role and will present assurance findings to the Project Board, and therefore attends Project Board meetings as a non-voting member.

Segregation of duties and firewalls vis-à-vis UNDP representation on the project board:

150. As noted in the Minimum Fiduciary Standards for GEF Partner Agencies, in cases where a GEF Partner Agency (i.e. UNDP) carries out both implementation oversight and execution of a project, the GEF Partner Agency (i.e. UNDP) must separate its project implementation oversight and execution duties, and describe in the relevant project document a: 1) Satisfactory institutional arrangement for the separation of implementation oversight and executing functions in different departments of the GEF Partner Agency; and 2) Clear lines of responsibility, reporting and accountability within the GEF Partner Agency between the project implementation oversight and execution functions.

151. UNDP's implementation oversight role in the project – as represented in the project board and via the project assurance function – is performed by Head of Energy and Environment Sector within the UNDP BiH CO. UNDP's execution role in the project is performed by the respective staff of Finance, Procurement, and HR Units, who will report to CO Head of Operations and the DRR.

Roles and Responsibilities of the Project Organization Structure:

152. Project Board (also called Project Steering Committee): All UNDP projects must be governed by a multi-stakeholder board or committee established to review performance based on monitoring and evaluation, and implementation issues to ensure quality delivery of results. The Project Board (also called the Project Steering Committee) is the most senior, dedicated oversight body for a project.

The two main (mandatory) roles of the project board are as follows:

1) **High-level oversight of the execution of the project by the Implementing Partner** (as explained in the "Provide Oversight" section of the POPP). This is the primary function of the project board and includes annual (and as-needed) assessments of any major risks to the project, and decisions/agreements on any management actions or remedial measures to address them effectively. The Project Board reviews evidence of project performance based on monitoring, evaluation and reporting, including progress reports, evaluations, risk logs and the combined delivery report. The Project Board is responsible for taking corrective action as needed to ensure the project achieves the desired results.
2) **Approval of strategic project execution decisions of the Implementing Partner** with a view to assess and manage risks, monitor and ensure the overall achievement of projected results and impacts and ensure long term sustainability of project execution decisions of the Implementing Partner (as explained in the "Manage Change" section of the POPP).

Requirements to serve on the Project Board:

- ✓ Agree to the Terms of Reference of the Board and the rules on protocols, quorum and minuting.
- ✓ Meet annually; at least once.
- ✓ Disclose any conflict of interest in performing the functions of a Project Board member and take all measures to avoid any real or perceived conflicts of interest. This disclosure must be documented and kept on record by UNDP.
- ✓ Discharge the functions of the Project Board in accordance with UNDP policies and procedures.
- ✓ Ensure highest levels of transparency and ensure Project Board meeting minutes are recorded and shared with project stakeholders.

Responsibilities of the Project Board:

- ✓ Consensus decision making:
  - The project board provides overall guidance and direction to the project, ensuring it remains within any specified constraints, and providing overall oversight of the project implementation.
  - Review project performance based on monitoring, evaluation and reporting, including progress reports, risk logs and the combined delivery report;
  - The project board is responsible for making management decisions by consensus.
  - In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.
  - In case consensus cannot be reached within the Board, the UNDP representative on the board will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.
- ✓ Oversee project execution:
  - Agree on project manager's tolerances as required, within the parameters outlined in the project document, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded.
  - Appraise annual work plans prepared by the Implementing Partner for the Project; review combined delivery reports prior to certification by the implementing partner.
  - Address any high-level project issues as raised by the project manager and project assurance;
  - Advise on major and minor amendments to the project within the parameters set by UNDP and the donor and refer such proposed major and minor amendments to the UNDP BPPS Nature, Climate and Energy Executive Coordinator (and the GEF, as required by GEF policies);
  - Provide high-level direction and recommendations to the project management unit to ensure that the agreed deliverables are produced satisfactorily and according to plans.
  - Track and monitor co-financed activities and realisation of co-financing amounts of this project.

- Approve the Inception Report, GEF annual project implementation reports, mid-term review and terminal evaluation reports.
- Ensure commitment of human resources to support project implementation, arbitrating any issues within the project.

✓ Risk Management:
- Provide guidance on evolving or materialized project risks and agree on possible mitigation and management actions to address specific risks.
- Review and update the project risk register and associated management plans based on the information prepared by the Implementing Partner. This includes risks related that can be directly managed by this project, as well as contextual risks that may affect project delivery or continued UNDP compliance and reputation but are outside of the control of the project. For example, social and environmental risks associated with co-financed activities or activities taking place in the project's area of influence that have implications for the project.
- Address project-level grievances.

✓ Coordination:
- Ensure coordination between various donor and government-funded projects and programmes.
- Ensure coordination with various government agencies and their participation in project activities.

Composition of the Project Board:

153. The composition of the Project Steering Committee must include individuals assigned to the following three roles:

a. Project Executive: As this project is implemented by UNDP, the role of the Project Executive is vested with UNDP.

b. Beneficiary Representative(s): Individuals or groups representing the interests of those who will ultimately benefit from the project. Their primary function within the board is to ensure the realization of project results from the perspective of project beneficiaries. Often civil society representative(s) can fulfil this role. The Beneficiary representative (s) is/are the Management of the project pilot protected areas. They will be invited, during the project inception phase, to participate as observers in the project Steering Committee meetings.

c. Development Partner(s):Individuals or groups representing the interests of the parties concerned that provide funding and/or technical expertise to the project. The Development Partner(s) is/are the members of the project Steering Committee.

154. The key development partners for the project, namely the Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina, the Ministry of Environment and Tourism of the Federation of Bosnia and Herzegovina, the Ministry of Spatial Planning, Construction and Ecology of the Republika Srpska, the Ministry of Trade and Tourism of Republika Srpska, the Environmental Protection Fund of FBiH, and the Environmental Protection and Energy Efficiency Fund of Republika Srpska, will form the Project Steering Committee, together with UNDP as Project Executive and Project Assurance. The Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina (MOFTER) will be invited to chair the project Steering Committee, and the FBiH Ministry of Environment and Tourism and the RS Ministry of Spatial Planning, Construction and Ecology will are expected to nominate their representatives as co-chairs.

155. Project Assurance: Project assurance is the responsibility of each project board member; however, UNDP has a distinct assurance role for all UNDP projects in carrying out objective and independent project oversight and monitoring functions. UNDP performs quality assurance and supports the Project Board (and Project Management Unit) by carrying out objective and independent project oversight and monitoring functions, including compliance with the risk management and social and environmental standards of UNDP. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. Project assurance is totally independent of project

execution. A designated representative of UNDP playing the project assurance role is expected to attend all board meetings and support board processes as a non-voting representative. It should be noted that while in certain cases UNDP's project assurance role across the project may encompass activities happening at several levels (e.g. global, regional), at least one UNDP representative playing that function must, as part of their duties, specifically attend board meeting and provide board members with the required documentation required to perform their duties.

156. Project Management – Execution of the project: The Project Implementation Unit will be formed of high-qualified national professionals selected and recruited based on an open competitive process. The PIU will consist of the Project Manager – Principal Technical Coordinator (PM), Project Technical Officer, Project Communication and KM consultant, and Project Assistant. The PM is the senior-most representative of the PIU and is responsible for the overall day-to-day management of the project on behalf of the Implementing Partner, including the mobilization of all project inputs, supervision over project staff, responsible parties, consultants and sub-contractors. The PM presents key deliverables and documents to the board for their review and approval, including progress reports, annual work plans, adjustments to tolerance levels and risk registers. The Project Manager – Principal Technical Coordinator will provide technical leadership and guidance to the Project Implementation Unit and will be technically supervising project staff, consultants and sub-contractors. The Project Technical Officer will be providing technical input for the implementation of the project, supporting the Project Manager / Principal Technical Coordinator in the technical supervision over implementation of project technical Outcomes, KM and M&E, as well as with substantive reporting. The Project Assistant will support operational and programmatic management of the project according to the project document, GEF corporate rules and UNDP standards & procedures. The PIU will be further strengthened by a part-time Coordination Officer function outposted from the Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina (MOFTER), to perform a liaison role with the Government and be responsible for meeting government obligations under the project and making sure that project plans and activities are implemented in coordination and synergy with the parallel initiatives undertaken by the project development partners, PAs and other project stakeholders.

VII. FINANCIAL PLANNING AND MANAGEMENT

157. The total cost of the project is USD 21,153,825. This is financed through a GEF grant of USD 2,640,000 administered by UNDP, USD 150,000 in cash co-financing as UNDP TRAC resources to be administered by UNDP and USD 18,363,825 in parallel co-financing not administered by UNDP. UNDP, as the GEF Implementing Agency, is responsible for the oversight of the GEF resources and the cash co-financing transferred to UNDP bank account only.
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158. Confirmed Co-financing: The actual realization of project co-financing will be monitored during the mid-term review and terminal evaluation process and will be reported to the GEF. Note that all project activities included in the project results framework that will be delivered by co-financing partners (even if the funds do not pass through UNDP accounts) must comply with UNDP's social and environmental standards. Co-financing will be used for the following project activities/outputs is presented in detail in Annex 23 to the Project Document.

159. Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Board.

160. Should the following deviations occur, the Project Manager/CTA and UNDP Country Office will seek the approval of the BPPS/GEF team to ensure accurate reporting to the GEF:

a) Budget re-allocations among components in the project budget with amounts involving 10% of the total project grant or more;

b) Introduction of new budget items that exceed 5% of original GEF allocation.

161. Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

162. Audit: The project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies. Audit cycle and process must be discussed during the Inception workshop.

163. Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. All costs incurred to close the project must be included in the project closure budget and reported as final project commitments presented to the Project Board during the final project review. The only costs a project may incur following the final project review are those included in the project closure budget.

164. Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. **Operational closure must happen with 3 months after posting the TE report to the UNDP ERC**. The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

165. Transfer or disposal of assets: In consultation with the Implementing Partner and other parties of the project, UNDP is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project. In all cases of transfer, a transfer document must be prepared and kept on file[18]. The transfer should be done before Project Management Unit complete their assignments.

166. Financial completion (closure): The project will be financially closed when the following conditions have been met: a) the project is operationally completed or has been cancelled; b) the Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

167. The project will be financially completed **within 6 months of operational closure or after the date of cancellation**. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the BPPS/GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

168. Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the BPPS/GEF Directorate in New York. No action is required by the UNDP Country Office on the actual refund from UNDP project to the GEF Trustee.

18 See https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=default.

VIII. TOTAL BUDGET AND WORK PLAN

TOTAL BUDGET AND WORK PLAN			
Atlas Proposal (Award) ID:	00128336	Atlas Primary Output Project ID:	00122351
Atlas Proposal or Award Title:	Biodiversity Protected Areas		
Atlas Business Unit	BIH10		
Atlas Primary Output Project Title	Improved Financial Sustainability and Strengthened Resilience of Protected Areas Through Development of Sustainable Recreation and Partnership With Private Sector		
UNDP-GEF PIMS No.	6439		
Implementing Partner	UNDP		

Atlas Activity (GEF Component)	Atlas Implementing Agent (Responsible Party , IP or UNDP)	Atlas Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Account Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	*See Budget Note:*
COMPONENT 1: Strengthening PA resilience to climate change impacts (Outcome 1)	**UNDP**	**62000**	**GEF**	71200	International Consultants	3,000	10,000	10,000	-	-	23,000	*1*
				71300	Local Consultants	15,000	60,000	45,000	45,000	40,000	205,000	*2*
				71400	Contractual Services - Individual	11,600	11,600	11,600	11,600	11,600	58,000	*3*
				71600	Travel	2,000	2,000	2,000	4,000	5,000	15,000	*4*
				72100	Contractual Services-Companies	40,000	200,000	160,000	180,000	115,000	695,000	*5*
				72200	Equipment and Furniture	-	-	35,000	35,000	8,000	78,000	*6*
				75700	Training, Workshops and Confer	-	-	-	30,000	30,000	60,000	*7*

				Total Component 1		**71,600**	**283,600**	**263,600**	**305,600**	**209,600**	**1,134,000**	
COMPONENT 2: Improving financial sustainability of targeted PAs through sustainable tourism development (Outcome 2)	**UNDP**	**62000**	**GEF**	71200	International Consultants	-	20,000	30,000	30,000	10,000	90,000	*8*
				71300	Local Consultants	20,000	40,000	40,000	30,000	25,000	155,000	*9*
				71400	Contractual Services - Individual	11,600	11,600	11,600	11,600	11,600	58,000	*10*
				71600	Travel	2,000	2,000	2,000	3,000	5,000	14,000	*11*
				72100	Contractual Services-Companies	25,000	95,000	150,000	170,000	135,000	575,000	*12*
				72200	Equipment and Furniture	-	10,000	10,000	10,000		30,000	*13*
				75700	Training, Workshops and Confer	5,000	20,000	40,000	40,000	15,000	120,000	*14*
				Total Component 2		**63,600**	**198,600**	**283,600**	**294,600**	**201,600**	**1,042,000**	
COMPONENT 3: Knowledge Management (Outcome 3)	**UNDP**	**62000**	**GEF**	71400	Contractual Services - Individual	29,000	29,000	29,000	29,000	29,000	145,000	*15*
				71600	Travel	-	2,000	2,000	2,000	2,000	8,000	*16*
				74200	Audio Visual&Print Prod Costs	1,000	2,000	5,000	7,000	10,000	25,000	*17*
				75700	Training, Workshops and Confer	-	6,000	6,000	12,000	15,000	39,000	*18*
				Total Component 3		**30,000**	**39,000**	**42,000**	**50,000**	**56,000**	**217,000**	
COMPONENT 4: Monitoring and Evaluation (Outcome 4)	**UNDP**	**62000**	**GEF**	71200	International Consultants	-	-	20,000	-	20,000	40,000	*19*
				71300	Local Consultants	-	-	8,000	-	8,000	16,000	*20*
				71400	Contractual Services - Individual	12,000	12,000	12,000	12,000	12,000	60,000	*21*
				74200	Audio Visual Print Prod Costs			2,000		2,000	4,000	*22*
				75700	Training, Workshops and Confer	2,000	-	-	-	-	2,000	*23*
				Total Component 4		**14,000**	**12,000**	**42,000**	**12,000**	**42,000**	**122,000**	
COMPONENT 5: Project	**UNDP**	**62000**	**GEF**	71400	Contractual Services - Individual	20,000	20,000	20,000	20,000	20,000	100,000	*24*

management costs				72200	Equipment and Furniture	10,000		-	-	-	10,000	*25*
				74100	Professional Services	3,000	3,000	3,000	3,000	3,000	15,000	*26*
					Subtotal GEF	**33,000**	**23,000**	**23,000**	**23,000**	**23,000**	**125,000**	
	UNDP	**04000**	**TRAC**	71400	Contractual Services - Individual	28,000	28,000	28,000	28,000	28,000	140,000	*27*
				73200	Premises Alternations	2,000	2,000	2,000	2,000	2,000	10,000	*28*
					Subtotal UNDP	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**150,000**	
					Total Component 5	**63,000**	**53,000**	**53,000**	**53,000**	**53,000**	**275,000**	
					SUBTOTAL GEF	**212,200**	**556,200**	**654,200**	**685,200**	**532,200**	**2,640,000**	
					SUBTOTAL UNDP	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**150,000**	
					PROJECT TOTAL	**242,200**	**586,200**	**684,200**	**715,200**	**562,200**	**2,790,000**	

Summary of Funds:

Summary of Funds	Amount Year1	Amount Year 2	Amount Year 3	Amount Year 4	Amount Year 5	**Total**
GEF	212,200	556,200	654,200	685,200	532,200	**2,640,000**
Donor 2 (UNDP)	30,000	30,000	30,000	30,000	30,000	**150,000**
Subtotal Co-finance	1,200,000	3,400,000	4,600,000	4,800,000	4,363,825	**18,363,825**
TOTAL	1,442,200	3,986,200	5,284,200	5,515,200	4,926,025	**21,153,825**

Budget note	Description
1	International Consultant for CC Resilience; **USD 23,000**
2	PA management planning specialist **USD 30,000** years 1-2; PA capacity building coordinator **USD 60,000** years 2-5; BD and CC Adaptation/Resilience specialist **USD 60,000** years 2-5; Restoration Consultant USD **40,000** years 2-5; Output 1.2-1.3 Species management plan for alpine newt (Triturus alpestris) integrated with the PA management plan: Prokosko Lake NM **(USD 15,000**) years 2-4;
3	Project Manager-Principal Technical Coordinator NPSA 9 10% of the cost **(USD 18,000)**; Project Technical Officer NPSA 8 25% of the cost **(USD 40,000)**
4	Travel Outcome 1; **USD 15,000**
5	Output 1.1: Comprehensive climate threat assessment conducted for NPs Sutjeska, Kozara, Drina, Una, Prokosko lake NM, Blidinje PN, Vjetrenica PL, Orjen PN, and Vrelo Bosne NM (**USD 30,000**); Output 1.2: Climate threat management module and support to development of the new MP: Sutjeska NP (**USD 20,000**); Climate threat management module and support to development of the new MP: Kozara NP (**USD 20,000**); PA management plan developed with due account of climate threats and climate neutrality objectives/indicators: Drina NP (USD **15,000**); PA management plan developed with due account of climate threats and climate neutrality objectives/indicators; should include enhanced monitoring of aquatic habitats and ichtyofauna: Una NP (USD **15,000**); PA management plan developed with due account of climate threats: Prokosko Lake NM (**USD 10,000**); PA management plan based on the new valorisation study , integrated with a climate threat management module: Vjetrenica PL (**USD 10,000**); Support to climate-neutral and BD-sensitive PA management and business planning: Canton Sarajevo PAs (incl. Status assessment and an action plan for the endangered spruce forest and vulnerable peatland communities for Bijambare Protected Landscape) (**USD 20,000**); PA management plan developed with due account of climate threats and climate neutrality objectives/indicators: Orjen Park of Nature (**USD 10,000**); PA management plan developed with due account of climate threats and climate neutrality objectives/indicators: Una Park of Nature (RS) **(USD 10,000**) Output 1.3: Adaptation plan for Serbian spruce (Picea omorica) with measures to improve status in natural populations. Targeted support to regeneration (planting near natural habitats collecting seeds from healthy trees and transferring them to suitable locations, with prior analysis and the necessary permits; production of seedlings on plantations): Drina NP **(USD 35,000**); Adaptation plan for Bosnian pine (Pinus heldreichii) with measures to improve status in natural populations. Targeted support to regeneration: Blidinje PN **(USD 20,000**); Forest fire management capacity building, incl early warning system and Action plan with priority prevention measures: Orjen PN, Sutjeska NP, Kozara NP, Drina NP,Blidinje PN, Sarajevo Canton PAs **(USD 45,000**); Management guidelines with mechanisms of bark beetle outbursts control and the early response measures compatible with the PA regime: NPs Sutjeska, Kozara, Drina, Sarajevo Canton PAs **(USD 20,000)**; Output 1.4: Wetland restoration in Tisina and Gromizelj: Demo sites for restoration selected based on ecosystem types/threat imminence/current damage to ecosystem/its value; Restoration methodology and plan developed for the pilot sites to demonstrate options for its threatened ecosystems;Targeted support for selected restoration pilots provided;Engagement of local communities, private sector stakeholders, municipal authorities ensured; Restoration effects documented, pilots evaluated and proposed for dissemination and replication **(USD 400,000**); Output 1.5 Targeted replication measures **(USD 15,000**)
6	Output 1.2: GIS for CC threat management module: Una NP (**USD 10,000)**; Output 1.3: Forest fire management capacity building, fire fighting equipment: Orjen PN, Sutjeska NP, Kozara NP, Drina NP, Blidinje PN (**USD 48,000)**; Technical assistance and capacity building for bark beetle outbursts control: NPs Sutjeska, Kozara, Drina, Skakavac NM **(USD 20,000)**;
7	Forest fire management capacity building, incl fire preparedness and fighting training: Orjen PN, Sutjeska NP, Kozara NP, Drina NP, Sarajevo Canton PAs, Blidinje PN **(USD 60,000**);
8	International Consultant for PA Finance Mechanisms (**USD 40,000)** years 1-4; International Consultant for nature based tourism development (**USD 30,000)** years 1-3; International Consultant for PA communication and branding **(USD 20,000**) years 2-3
9	PA sustainable tourism devt specialist **(USD 45,000**); Private sector engagement consultant (**USD 45,000**); Tourism concession support specialist (incl.legal and regulations) **(USD 45,000)**; Output 2.3 Clarification of policies and elaboration of Sustainable Concession Management Guidelines based on best available practice applicable to the existing legislative framework (**USD 10,000**); Development of concession proposal **(USD 10,000**);
10	Project Manager-Principal Technical Coordinator NPSA 9 10% of the cost **(USD 18,000)**; Project Technical Officer NPSA 8 25% of the cost (**USD 40,000**)
11	Travel Outcome2; **USD 14,000**
12	Output 2.1: Update of business plans for individual PAs, design of marketing plans, justification of proposals for clustering of PAs under a single management authority, development of optimisation schemes for the PA recurrent costs **(USD 35,000)**; Sustainable tourism offer packaging for Drina NP; targeted support for tourism infrastructure devt **(USD 30,000)**; Bijambare PL: development of programmes for eco-tourism, eco-agriculture, environmental awareness and education, with targeted implementation support **(USD 30,000)**; Blidinje PN: Support to tourist platform devt and "Visit Blidinje"brand, visitor management plan and tourism business plan **(USD 30,000);** Orjen PN: A roadmap for traditional businesses and tourism

	development - beekeeping, use of medical plants, and ecotourism. Support to local community engagement **(USD 30,000);** Good harvesting practices for NTFP collected and a hands on training on the use and control of NTFP for the PA management, ranger services, and adjacent communities **(USD 25,000)**; Output 2.2.: Co-financing of mill restoration on Popovo Polje (cooperation with the privately owned sustainable business as a tourist attraction for the PA and adjacent landscape), promotion of the site and linkage between the municipal development, private business and the Vjetrenica-Popovo Polje PA management objectives **(USD 55,000)**; Ouotput 2.3: Support to concession management, compliance monitoring and enforcement **(USD 30,000)**; Capacity building for PA staff and community representatives engaged in concession business **(USD 25,000);** Monitoring of concession activities according to the agreed methodology and criteria, document lessons learned from the applied processes. Case-study from the concession pilot. Based on the pilot concession experience, amendments to the Sustainable Concession Management Guidelines **(USD 35,000);** Replication package for FBiH **(USD 10,000)**; Output 2.4: Modifications to the existing mechanism for grant allocation that will include eco-tourism development within the protected areas as a priority funding window to boost both the apsorption capacity of PA management authorities and their interest in positioning as operative tourism destination managers **(USD 20,000)**; Output 2.5: Improved visibility and connectivity of targeted PAs through joint promotion and branding for cave nature monuments **(USD 115,000)**; Drina NP: support to visitor facilities and PA promotion **(USD 35,000)**; Una NP: Development of detailed Regulatory (urban) plans for visitor zones (Martin Brod, Kulen Vakuf and visitor zone Štrbački buk-Lohovo),Improved connectivity with Una Park of Nature (RS) **(USD 45,000);** Promotion package and co-financing outreach activities for recently established/re-classified PAs: Vjetrenica PL and Orjen PN **(USD 25,000)**
13	Output 2.1: Co-financing of tourism infrastructure ("Viewpoint with an educational trail") for Vjetrenica **(USD 30,000).** Co-financing of a viewpoint and educational trail development in Vjetrenica PL together with Ravno Municipality, including educational boards and benches for tourists along the 4 km long route walk as well as a safe tourist infrastructure at the Vjetrenica Cave Viewpoint.
14	Output 2.1: Capacity building measures aimed to assist the PA management authorities and local tourism operators to actively promote PA managers as tourism destination managers **(USD 25,000);** Output 2.4: Training and capacity building for PA managers and conservation authorities for accessing other available external funding and start taking part in the competition process for the available grant funding for tourism development (**USD 30,000)**; Output 2.5: Experience exchange, communication, promotion, and marketing capacity building **(USD 65,000)**
15	Project Communication and KM consultant NPSA 6 **(USD 105,000)**; Project Technical Officer NPSA 8 25% cost **(USD 40,000)**
16	Travel Outcome 3; **USD 8,000**
17	Web design, layout, presentation costs, KM product distribution, connectivity costs and other KM-related costs; **USD 25,000**
18	KM&experience sharing events (PA Manager Day as a platform for experience sharing, "corporate" training and knowledge building on fundraising, best practice for diversification of financial flows etc); **USD 39,000**
19	MTR and Final Evaluation - intl team lead **(USD 40,000)**
20	MTR and Final Evaluation - national consultant **(USD 12,000)**; METT assessment **(USD 4,000)**
21	Project Assistant Admin/Finance/M&E NPSA 6 15% of the cost **(USD 20,000)**; Project Technical Officer NPSA 8 25% of the cost **(USD 40,000).**
22	Translation costs related to M&E; **USD 4,000**
23	Inception Workshop; **USD 2,000**
24	Project Manager - Principal Technical Coordinator NPSA 9 30% of the cost **(USD 55,000)**; Project Assistant Admin/Finance/M&E NPSA 6 40% of the cost **(USD 45,000)**;
25	Office Equipment; **USD 10,000**
26	DIM audit; **USD 15,000** (US$3,000*5 years)
27	Project Manager - Principal Technical Coordinator NPSA 9 50% of the cost **(USD 90,000)**; Project Assistant Admin/Finance/M&E NPSA 6 45% of the cost **(USD 50,000);**
28	Office premises maintenance (not rent); **USD 10,000**

IX. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Bosnia and Herzegovina and UNDP, signed on 07.12.1995. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

This project will be implemented by UNDP ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

X. RISK MANAGEMENT

1. UNDP as the Implementing Partner will comply with the policies, procedures and practices of the United Nations Security Management System (UNSMS.)

2. UNDP as the Implementing Partner will undertake all reasonable efforts to ensure that none of the [project funds][19] [UNDP funds received pursuant to the Project Document][20] are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

3. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (http://www.undp.org/ses) and related Accountability Mechanism (http://www.undp.org/secu-srm).

4. UNDP as the Implementing Partner will: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

5. In the implementation of the activities under this Project Document, UNDP as the Implementing Partner will handle any sexual exploitation and abuse ("SEA") and sexual harassment ("SH") allegations in accordance with its regulations, rules, policies and procedures.

6. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

19 To be used where UNDP is the Implementing Partner

20 To be used where the UN, a UN fund/programme or a specialized agency is the Implementing Partner

7. UNDP as the Implementing Partner will ensure that the following obligations are binding on each responsible party, subcontractor and sub-recipient:

    a. Consistent with the Article III of the SBAA *[or the Supplemental Provisions to the Project Document]*, the responsibility for the safety and security of each responsible party, subcontractor and sub-recipient and its personnel and property, and of UNDP's property in such responsible party's, subcontractor's and sub-recipient's custody, rests with such responsible party, subcontractor and sub-recipient. To this end, each responsible party, subcontractor and sub-recipient shall:
        i. put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
        ii. assume all risks and liabilities related to such responsible party's, subcontractor's and sub-recipient's security, and the full implementation of the security plan.

    b. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the responsible party's, subcontractor's and sub-recipient's obligations under this Project Document.
    c. In the performance of the activities under this Project, UNDP as the Implementing Partner shall ensure, with respect to the activities of any of its responsible parties, sub-recipients and other entities engaged under the Project, either as contractors or subcontractors, their personnel and any individuals performing services for them, that those entities have in place adequate and proper procedures, processes and policies to prevent and/or address SEA and SH.

    d. Each responsible party, subcontractor and sub-recipient will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, subcontractors and sub-recipients in implementing the project or programme or using the UNDP funds. It will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.

    e. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to each responsible party, subcontractor and sub-recipient: (a)UNDP Policy on Fraud and other Corrupt Practices and (b)UNDP Office of Audit and Investigations Investigation Guidelines. Each responsible party, subcontractor and sub-recipient agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.

    f. In the event that an investigation is required, UNDP will conduct investigations relating to any aspect of UNDP programmes and projects. Each responsible party, subcontractor and sub-recipient will provide its full cooperation, including making available personnel, relevant documentation, and granting access to its(and its consultants', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with it to find a solution.

    g. Each responsible party, subcontractor and sub-recipient will promptly inform UNDP as the Implementing Partner in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

        Where it becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, each responsible party, subcontractor and sub-

recipient will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). It will provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

h. UNDP will be entitled to a refund from the responsible party, subcontractor or sub-recipient of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of this Project Document. Such amount may be deducted by UNDP from any payment due to the responsible party, subcontractor or sub-recipient under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail any responsible party's, subcontractor's or sub-recipient's obligations under this Project Document.

   Where such funds have not been refunded to UNDP, the responsible party, subcontractor or sub-recipient agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to such responsible party, subcontractor or sub-recipient for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

   Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

i. Each contract issued by the responsible party, subcontractor or sub-recipient in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from it shall cooperate with any and all investigations and post-payment audits.

j. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project or programme, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.

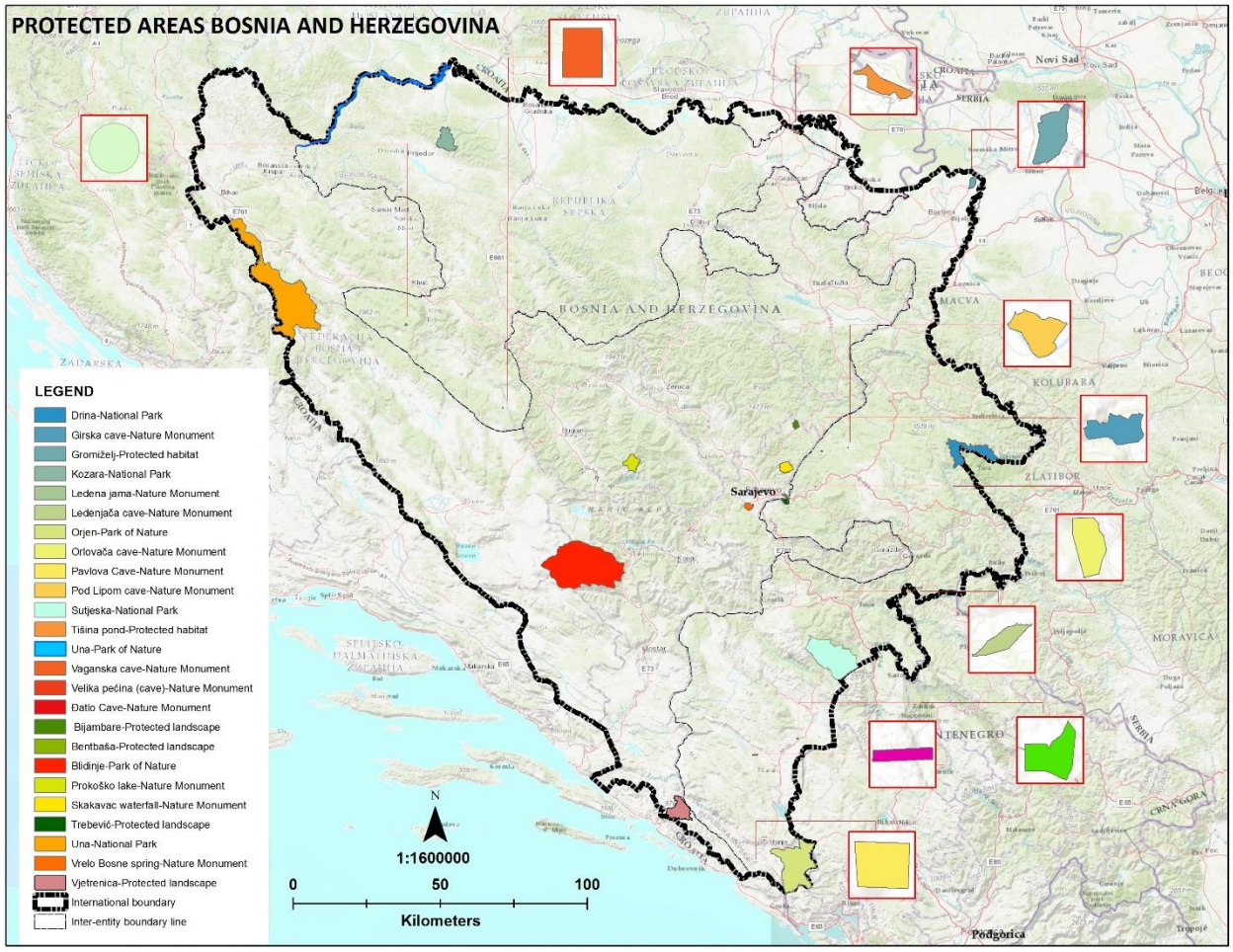
k. Each responsible party, subcontractor and sub-recipient shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to its subcontractors and sub-recipients and that all the clauses under this section entitled "Risk Management Standard Clauses" are adequately reflected, *mutatis mutandis*, in all its sub-contracts or sub-agreements entered into further to this Project Document.

XI. ANNEXES

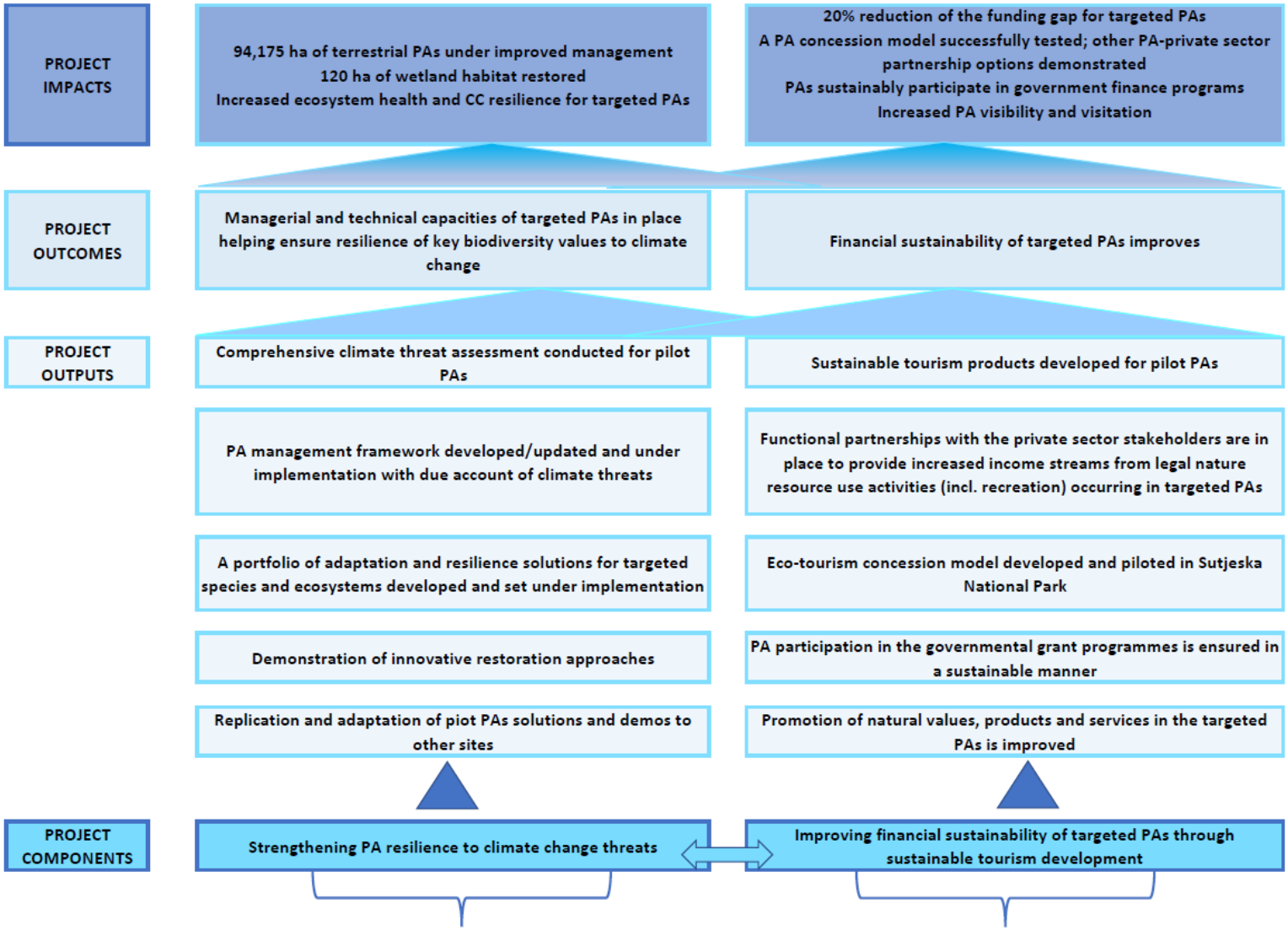
Annex 1: GEF Budget

Presented as a separate file

Annex 2: Project map



Annex 3: Project Theory of Change diagram



SYSTEMIC CHALLENGES/ BARRIERS	PA capacities not adaquate to support conservation needs aggravated by CC	PA funding gaps resulting in poor performance, "paper park" functioning, or unsustainable resource use
	Adaptation and resilience measures not incorporated in regulations nor PA management plans	Invisibility of PAs, poor visitor management, limited role of PAs in sustainable tourism devt
THREATS/ PROBLEMS	Increased frequency and intensity of extreme climatic events	Loss, conversion, fragmentation and shift of habitats
	Forest fires, increased vulnerability of forests to vermin and pathogens	BD threatened by unsustainable practices and overexploitation of valuable resources, incl.NTFP
	Eutrophication of lakes, degradation of karst fields and associated wetlands	Conservation is not recognized as an immediate priority in government funding

Annex 4: Multi-Year Work Plan

Project Output Description	Year 1	Year 2	Year 3	Year 4	Year 5
Component 1: Strengthening PA resilience to climate change threats					
Outcome 1: Managerial and technical capacities of targeted PAs in place helping ensure resilience of key biodiversity values to climate change					
Output 1.1: Comprehensive climate threat assessment conducted for pilot PAs					
Comprehensive climate threat assessment conducted for NPs Sutjeska, Kozara, Drina, Una, Prokosko lake NM, Blidinje PN, Vjetrenica PL, Orjen PN, and Vrelo Bosne NM					
Output 1.2: PA management framework developed/updated and under implementation with account of climate threats					
Climate threat management module and support to development of the new MP: Sutjeska NP					
Climate threat management module and support to development of the new MP: Kozara NP					
PA management plan developed with due account of climate threats and climate neutrality objectives/indicators: Drina NP					
PA management plan developed with due account of climate threats and climate neutrality objectives/indicators; should include enhanced monitoring of aquatic habitats and ichtyofauna: Una NP					
GIS for CC threat management module: Una NP					
PA management plan developed with due account of climate threats: Prokosko Lake NM					
PA management plan based on the new valorisation study , integrated with a climate threat management module: Vjetrenica PL					
Support to climate-neutral and BD-sensitive PA management and business planning: Canton Sarajevo PAs (incl. Status assessment and an action plan for the endangered spruce forest and vulnerable peatland communities for Bijambare PL)					
PA management plan developed with due account of climate threats and climate neutrality objectives/indicators: Orjen Park of Nature					
PA management plan developed with due account of climate threats and climate neutrality objectives/indicators: Una Park of Nature (RS)					
Output 1.3: A portfolio of adaptation and resilience solutions for targeted species and ecosystems developed and set under implementation					
Species management plan for alpine newt (*Triturus alpestris)* integrated with the PA management plan (Output 1.2): Prokosko Lake NM					

Adaptation plan for Serbian spruce (*Picea omorica*) with measures to improve status in natural populations. Targeted support to regeneration (planting near natural habitats collecting seeds from healthy trees and transferring them to suitable locations, with prior analysis and the necessary permits; production of seedlings on plantations): Drina NP					
Adaptation plan for Bosnian pine (*Pinus heldreichii*) with measures to improve status in natural populations. Targeted support to regeneration: Blidinje PN					
Forest fire management capacity building, incl early warning system and Action plan with priority prevention measures, equipment and training: Orjen PN, Sutjeska NP, Kozara NP, Drina NP,Blidinje PN, Sarajevo Canton PAs					
Management guidelines with mechanisms of bark beetle outbursts control and the early response measures compatible with the PA regime: NPs Sutjeska, Kozara, Drina, Sarajevo Canton PAs					
Tecnical assistance and capacity building for bark beetle outbursts control: NPs Sutjeska, Kozara, Drina, Skakavac NM					
Output 1.4:Demonstration of innovative restoration approaches					
Wetland restoration in Tisina and Gromizelj: Demo sites for restoration selected based on ecosystem types/threat imminence/current damage to ecosystem/its value; Restoration methodology and plan developed for the pilot sites to demonstrate options for its threatened ecosystems;Targeted support for selected restoration pilots provided;Engagement of local communities, private sector stakeholders, municipal authorities ensured; Restoration effects documented, pilots evaluated and proposed for dissemination and replication.					
Output 1.5:Replication triggered through incorporation of project solutions into forestry, land-use and disaster risk management programmes at other sites					
Targeted replication measures implemented (pls refer to project strategy for detail)					
Component 2: Improving financial sustainability of targeted PAs through sustainable tourism development					
Outcome 2: Financial sustainability of targeted PAs improves					
Output 2.1: Sustainable tourism products developed with community support for pilot PAs					
Update of business plans for individual PAs, design of marketing plans, justification of proposals for clustering of PAs under a single management authority, development of optimisation schemes for the PA recurrent costs					
Sustainable tourism offer packaging for Drina NP; targeted support for tourism infrastructure devt					
Bijambare PL: development of programmes for eco-tourism, eco-agriculture, environmental awareness and education, with targeted implementation support					

Blidinje PN: Support to tourist platform devt and "Visit Blidinje"brand, visitor management plan and tourism business plan					
Co-financing of tourism infrastructure ("Viewpoint with an educational trail") for Vjetrenica					
Orjen PN: A roadmap for traditional businesses and tourism development - beekeeping, use of medical plants, and ecotourism. Support to local community engagement					
Good harvesting practices for NTFP collected and a hands on training on the use and control of NTFP for the PA management, ranger services, and adjacent communities					
Capacity building measures aimed to assist the PA management authorities and local tourism operators to actively promote PA managers as tourism destination managers					
Output 2.2: Cooperation with the private sector in place to provide increased income streams from legal nature resource use activities (incl. recreation) occurring in the targeted PAs					
Co-financing of mill restoration on Popovo Polje (cooperation with the privately owned sustainable business as a tourist attraction for the PA and adjacent landscape), promotion of the site and linkage between the municipal development, private business and the Vjetrenica-Popovo Polje PA management objectives					
Output 2.3: Eco-tourism concession model developed and piloted in Sutjeska National Park					
Clarification of policies and elaboration of Sustainable Concession Management Guidelines based on best available practice applicable to the existing legislative framework					
Development of concession proposal					
Support to concession management, compliance monitoring and enforcement					
Capacity building for PA staff and community representatives engaged in concession business					
Monitoring of concession activities according to the agreed methodology and criteria, document lessons learned from the applied processes. Case-study from the concession pilot. Based on the pilot concession experience, amendments to the Sustainable Concession Management Guidelines					
Replication package for FBiH					
Output 2.4: PA participation in the governmental grant programmes is ensured in a sustainable manner					
Modifications to the existing mechanism for grant allocation that will include eco-tourism development within the protected areas as a priority funding window to boost both the apsorption capacity of PA management authorities and their interest in positioning as operative tourism destination managers					

Training and capacity building for PA managers and conservation authorities for accessing other available external funding and start taking part in the competition process for the available grant funding for tourism development					
Output 2.5: Promotion of natural values, products and services in the targeted PAs is improved					
Improved visibility and connectivity of targeted PAs through joint promotion efforts: Kozara - Una PN (RS) - Lijevčanski knez - Jelića Brdo Forest - Žuta Bukva Tajan - Konjuh - Bijambare Skakavac - Orlovača cave - Trebević - River Prača Canyon - Bentbaša Cicelj - Sutjeska - Kuk Joint promotion and branding for cave nature monuments					
Drina NP: support to visitor facilities and PA promotion					
Una NP: Development of detailed Regulatory (urban) plans for visitor zones (Martin Brod, Kulen Vakuf and visitor zone Štrbački buk-Lohovo) Improved connectivity with Una Park of Nature (RS)					
Promotion package and co-financing outreach activities for recently established/re-classified PAs: Vjetrenica PL and Orjen PN					
Communication, promotion, and marketing capacity building					
Outcome 3: Knowledge management					
Project Communication, KM and replication support					
KM&experience sharing events (PA Manager Day as a platform for experience sharing, "corporate" training and knowledge buiulding on fundraising, best practice for diversification of financial flows etc)					
Outcome 4: M&E					
MTR and Final Evaluation					

Annex 5: UNDP Social and Environmental Screening Procedure (SESP)

Draft Social and Environmental Screening Report

The draft Social and Environmental Screening Report presented below was generated as a result of the pre- Social and Environmental Screening Procedure (SESP) procedure and was finalized during the PPG process with a due reference to the Social and Environmental Screening Procedure and Toolkit.

Project information

Project Information	
1. Project Title	**Improved Financial Sustainability and Strengthened Resilience of Protected Areas Through Development of Sustainable Recreation and Partnership With Private Sector**
2. Project Number	PIMS 6439
3. Location (Global/Region/Country)	Bosnia and Herzegovina
4. Project stage (Design or Implementation)	Design
5. Date	September 2021

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?
Briefly describe in the space below how the Project mainstreams the human-rights based approach
In line with UNDP's human-rights based approach, the project directly empowers right holders in the persons of public authorities/ duty bearers, SMEs, smallholders, owners of production lands, and communities so that they are the principal facilitators and decision makers for restoration and sustainable use of PAs biodiversity resources on which local livelihood resilience depend. The project fully support's UNDP's commitment to human-rights based approach, and supports the universal respect for, and observance of, human rights and fundamental freedoms for all, but particularly in the case of this project, for the people living in/around the targeted protected areas landscape. The project does this broadly by supporting the sustainable use of natural resources, including innovative wetland restoration techniques to secure the ecological integrity of critical habitats, access to and sustainable use of wetlands, reforestation around agricultural land- with environmental and socio-economic benefits for the rural communities, including the rural poor, in the project's targeted landscape. In addition, the project will ensure and support the human rights principles of participation, inclusion and non-discrimination. The project is aligned with the new UNDP

CPD 2021-2025, which is supporting sustainable and inclusive growth, with benefits that are more widely and fairly shared, leveraging and integrating the environment and economic development sectors towards a low carbon economy, environment protection and resilience. The project's components are linked and will facilitate targeted measures for ecosystems and livelihoods resilience in the targeted PAs and surrounding geographies:

Component 1: Contributes to strengthening PAs resilience to climate change induced threats, through a targeted Climate threat assessment for pilot PAs that will include information on climate vulnerabilities and exposure of local communities including the most vulnerable groups (Output 1.1.) based on which adequate adaptation measures will be devised and introduced in the PAs management plans (Output 1.2.) and a portfolio of adaptation and resilience solutions will be developed and supported in several pilot PAs (Output 1.3). Innovative restoration of critical habitats will include meaningful and inclusive methods for community engagement (Output 1.4). This component will generate lessons learned and adaptation measures that could be replicated to other PAs whereas the generated knowledge and guidelines will be scaled up to also support biodiversity mainstreaming in production landscapes outside PAs (Output 1.5) .

Component 2: contributes to improved financial sustainability of targeted PAs through sustainable tourism development, it will support measures for the creation of community-based destinations for sustainable and safe tourism within the targeted PAs. The project will use GEF resources to support assessments of suitable sustainable tourism products (Output 2.1) including socio-economic/livelihoods assessments and COVID-19 risk assessments, in order to identify equal opportunities for local communities to participate in the project activities and benefit from the promotion of a network of safe and sustainable tourism destination in the pilot PAs. Facilitation of partnerships with the private sector and local community based organizations will promote local tourism products based on valorization of unique PAs features including valuable natural habitats, historic or culturally rich areas offering unique tourist experiences, increasing their awareness and appreciation of the targeted PAs and supporting local development (Output 2.2.). The demonstration of the benefits of sustainable concessions in Sutjeska National Park (Output 2.3) will bring together decision makers, legal experts, local authorities, PAs managers, local communities and private investors to actively engage in enriching the attractiveness and diversity of the local tourism potential. The project will ensure that local communities have equal opportunities to benefit from these activities and PAs are capacitated to participate in the grant programmes (Output 2.4). The promotion of targeted PAs through various KM platform and publications (Output 2.5) will increase PAs visibility and will also increase tourists interests for the area.

Component 3 Knowledge management and Communication will ensure appropriate systematization of lessons learned, knowledge and scalable business models generated by the project, including a more effective engagement with the local communities and ensure inclusive and fair approaches for the local communities to benefit from tourism activities and other alternative livelihood opportunities supported/promoted by the project and its partners.

Component 4: is all about proper monitoring and evaluation of the results, and sharing the evaluative knowledge with the national counterparts, including it in the process of learning and adaptive management.

The project Stakeholder Engagement Plan summarizes the methods and mechanisms aimed at ensuring the meaningful, effective and informed participation of stakeholders in implementation, monitoring and evaluation, aligned with UNDP SES requirements. The plan will include monitoring of compliance with the respective policies of the state-level duty bearers. The PPG process informed the SEP through targeted consultations with all relevant stakeholders, including local communities, to ensure fair distribution of planned development opportunities and benefits.

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

The Gender Action Plan was developed to ensure that the future project is gender-responsive in its implementation. The Gender Action Plan was prepared as a result of close consultations with local communities in the target municipalities to identify gender mainstreaming opportunities for the project design. Based on the Gender Assessment and

Gender Action Plan, the project intervention strategy and workplans were designed to identify and integrate the different needs, constraints, contributions and priorities of women, men, girls and boys.

The most important gender considerations related to women underrepresentation in the decision making over natural resource use and as entrepreneurs in the tourism business, have been taken into account in the project design to facilitate measures that are likely to improve gender quality and women's empowerement e,g,

- Balanced representation and meaningful participation of women and men in key project activities, including those related to capacity building and management planning for protected areas, biodiversity threat and risk assessments, PA management and business planning, introduction of climate-smart PA management solutions and responses to CC threats and effects, sustainable tourism development with PA engagement, PA promotion and marketing;
- Engagement and mobilization of individuals, local women groups, women NGOs, etc. to participate in its implementation of the Project and to benefit from business opportunities that are created under the particular Project components;
- Encouragement of and better access for women entrepreneurs and women's businesses.
- The targeted assessments such as Climate Threats Assessments commissioned under Output 1.1. will take into consideration the marginalised groups' heightened vulnerability to climate risks and the differentiated ways that men and women use natural resources; furthermore, the Socio-Economic assessment commissioned under Output 2.1. will identify the local sustainable tourism and alternative livelihood strategies in targeted protected areas including identifying measures that could benefit women, youth and other marginalised local groups.

Development of ecotourism products and involvement of the private sector in the PA management work will primarily impact more remote rural communities where women are traditionally underrepresented and have less chances for accessing economic and capacity building opportunities.

The project will ensure that the decision-making, local capacity development and economic incentives are gender-sensitive and will actively promote women and girls participation in relevant project activities in the field. The project will seek to facilitate inclusive consultations and fair participation of women in the project implementation, thus contributing to the creation of equal opportunities regarding the access to natural resources, public infrastructure and services in protected areas, employability and access to knowledge.

The socially excluded groups in Bosnia and Herzegovina are usually represented by unemployed women and youth and long-term unemployed people, Roma representatives, persons with disabilities, returnees and internally displaced persons During the project implementation, the output products will consider gender mainstreaming and inclusion and representation of all ethnic and religious groups identified in the project areas. The Stakeholder Engagement Plan will be updated during the Inception stage in order to ensure identification of all vulnerable groups in the project area. In line with the Results Architecture for GEF-7, the project will report on direct project beneficiaries disaggregated by gender, as a co-benefit of the GEF investment.

The project will prepare a Process Framework to support project activities that may result in restrictions to access to natural resources in legally designated parks and protected areas (under Components 1 and 2), during which it will make sure that the marginalized groups such as women and youth will be able to participate in the decision making processes and community consultations, and that any potential limitations to access to natural resources will be identified and addressed appropriately.

Briefly describe in the space below how the Project mainstreams sustainability and resilience

The project aims to strengthen resilience of protected areas to climate change threats, to implement a portfolio of climate change adaptation and resilience solutions developed for the targeted vulnerable forest ecosystems and flagship species in the targeted protected areas, and to demonstrate restoration options for ecosystems severely affected by various negative climate factors. The project will also improve the quality of the tourism product offered by the targeted protected areas while taking into account the conservation and sustainable development objectives of the areas.

The project will capacitate the PA managers and technical staff to perform site-specific climate threat analysis, develop threat response scenarios, design and implement adaptation and enhanced resilience solution for vulnerable species and ecosystems. The project will offer ecosystem-based comprehensive practical responses to climate change threats for the targeted PAs, ecosystems and species, building long term ecosystem resilience.Capacitating the relevant institutions to implement fire-fighting / flood response in the PAs and surrounding geographies will ensure ecosystems and livelihood resilience . In addition, a customized geographic information system supporting the targeted climate threat assessments will be maintained and enhanced throughout the project lifetime to become a tool that will identify drivers of vulnerability in specific areas, by combining public

information data sources and remote sensing data (using IoT sensors).The tailored innovative restoration approaches under Output 1.4 , including restoration of freshwater ecosystems and rehabilitation of wetland habitats will be implemented for the first time in the country and will ensure valuable wetalnds resilience including aquatic communities (Tišina pond) and surrounding forests (Tišina and Gromiželj) that not only harbour a rich biodiversity but are vital to local livelihoods.

The project will generate many scalable approaches and business models that would ultimately lead to an increased resilience of the PA system in the country. The climate impacts research and monitoring module will be replicated in PAs beyond the initially selected pilots, and once updated with relevant data, the used software could be updated/upgraded to include data on the entire national PA network. The project's adaptation and resilience solutions for targeted ecosystems within the individual PAs, are applicable to similar PAs in the system, transboundary PAs in the Dinaric region, and will be available for the regional community of practice as case-studies for possible adaptation and replication.The methods and approaches to be tested in the restoration pilots will be replicable to similar locations within the pilot areas and to other areas with similar landscape and biodiversity features.

The proposed project interventions will be incremental to the baseline PA management scenarios in the country, and will be implemented in collaboration and synergy with the sectoral authorities and relevant institutions. The project strategy ensures early buy-in and ownership at the level of individual PAs and key stakeholders, for the long-term effect interventions such as innovative PA management planning, system-wise climate change resilience solutions, ecosystem restoration demos, sustainable tourism development plans for PAs, and private sector engagement mechanisms and models. The concession model at Sutjeska National park can potentially be adapted and replicated for other national parks in RS and Una National Park in BiH. The project efforts at enhanced PA visibility, promotion of PA value and content in sustainable tourism development will be sustained and up-scaled by the relevant authorities and partner initiatives.

Briefly describe in the space below how the project strengthens accountability to stakeholders

The project SEP elaborates on the mechanisms for joint and transparent decision-making for the project, suggest concrete areas and mechanisms for meaningful participation and inclusion of all stakeholders, information on how the affected stakeholders and individuals would be enabled to raise concerns and/or grievances including a redress processes for local communities when activities may adversely impact them. The stakeholders will be informed about availably of the UNDP Social and Environmental Compliance Review and Stakeholder Response Mechanism.

Through its various activities the project promotes accountability to project partners and stakeholders:

a) The project deploys multi-stakeholders participatory mechanisms that increases accountability. Good examples of participatory mechanisms are demonstrated within the framework of the Comprehensive Stakeholders Engagement Plan and under the Output 1.2 through the Process Framework, that will facilitate consultations with the local communities in order to avoid any potential risk of limitations of the access to natural resources resulting from the project's supported PAs management plans and a stricter/improved enforcement of environmental regulations and PAs zoning. The project's innovative restoration activities (Output 1.4) will be implemented together with the local communities and local authorities, fostering participation and replication of generated knowledge and experience (Output 1.5) and further promotion of the network of BiH PAs through partnerships with other initiatives and PAs branding (Output 2.5). Other project activities are leveraging stakeholders' engagement for improved PA financing and increased accountability of duty-bearers to secure more resources towards PAs financing under different governmental grant programmes Output 2.4). The project promotes a greater accountability of the private sector, through the promotion of sustainable concession models in Sujetska National Park (Output 2.3). The project will further promote stakeholders' accountability through facilitating active local community engagement including rural poor, actively promoting participation of women, youth and disadvantaged groups. These are all major project milestones, implemented with embedded mechanisms for meaningful participation of all the stakeholders affected, particularly those at risk of being left behind.

b) The project ensures that everyone has access to information, through transparency of all the programmatic interventions, provision of timely and accessible information regarding supported activities (primarily captured under Component 3) but also through partnerships with the local authorities, public enterprises managing the PAs, different NGOs that will leverage their technical knowledge and experience in working with local communities and in the protected areas, different Community Based Organizations throuogh which the project will strengthen its community outreach, including consultations on potential environmental and social risks and impacts and necessary management measures that will be implemented based on local consensus. Transparency and access to information and coordination with other local initiatives, will empower stakeholders to accelerate transition towards accountable decision making processes and more sustainable and resilient ecosystems and livelihoods.

c) The project ensures that all the stakeholders can communicate their concerns and have access to rights-compatible complaints redress processes and mechanisms. In cases where there is a risk of economic displacement (such as the PAs management planning and implementation of specific species management measures, or the piloting of the concession agreement) the Process Framework will be deployed, in an inclusive and participative manner, supported at local level by project experts and local authorities including representatives of local governing bodies, local NGOs and groups or associations and the project will ensure inclusiveness. The project will ensure that in all interactions with stakeholders (consultations, meetings, web sites) information is available on how to access complaints processes. The Project's Stakeholder Engagement Plan will ensure the stakeholder's are engaged and informed about all activities. In addition to the UNDP Stakeholder Response Mechanism[21] which is embedded in all UNDP projects, this project will inform about the Grievance Redress mechanism(GRM) and will designate the Project Board as the project-GRM to ensure first of all that all the people and communities are informed of project-level grievance entry points and avoid/minimize risks of retaliation and reprisal against people who may seek information on project activities or express concerns and/or access project level grievances.The project will monitor environment and social risk management measures through effective and where possible, participatory engagement of the stakeholders

Part B. Identifying and Managing Social and Environmental Risks

[21] https://www.undp.org/accountability/audit/secu-srm

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Complete SESP Attachment 1 before responding to Question 2*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5 below before proceeding to Question 6*			**QUESTION 6: Describe the assessment and management measures for each risk rated Moderate, Substantial or High**
Risk Description ***(broken down by event, cause, impact)***	***Impact and Likelihood (1-5)***	***Significance*** ***(Low, Moderate Substantial, High)***	***Comments (optional)***	***Description of assessment and management measures for risks rated as Moderate, Substantial or High***
Risk 1: Within the overall country context, it is possible that the duty bearers fail to fully realize their obligations and responsibilities to respect, promote and mainstream human rights in relation to the proposed project activities, especially where it concerns effective equality for the major ethnic groups and minorities, as well as gender equality and women empowerment. Vulnerable minority groups could be excluded from project decision-making that may affect them and/or may be unable to claim their rights. Project-born outputs may not fully incorporate or reflect views of women and ensure equitable opportunities for their involvement and benefit. SES Principle 2 Human Rights P2, P3, P4, P5 SES Principle 3 Gender P10, P11, SES Principle 5 Accountability P13, P14	I = 2 L =3	**Moderate**	Bosnia and Herzegovina is home to what is arguably the most complicated system of government in the region. The very nature of the post-war Constitution of the country sets up a system of ethnic-based power-sharing at almost all levels of government. There are problems with the implementation of the principles of non-discrimination and effective equality for the three major ethnic groups; the problems are even greater for minority groups. Gender equity is another significant issue for the country. While the proposed project poses no direct risks of human rights violation and has no activities directly dealing with equity considerations or gender disparities, the decision-making and local capacity development processes within the project should be sensitive to these issues.	The risk is managed as follows: • The project strategy's inclusive **governance arrangements** for the project (e.g. the Project Steering Committee), as well as **capacity building activities** are designed with respect to human rights, ethnic and gender equality principles, embedding participatory approaches, balanced representation and meaningful participation of women and youth as well as other vulnerable groups At the PPG stage targeted consultations were conducted to identify all relevant stakeholders and ensure adequate engagement and representation of various stakeholder interests and these consultations will continue throughout the project implementation aligned with the Stakeholder Engagement Plan and UNDP SES requirements • A comprehensive **Stakeholder Engagement Plan** was developed as one of the key outcomes of the PPG stage to ensure appropriate engagement and representation of all relevant stakeholder interests. The Stakeholders Engagement Plan **will be updated** upon the Inception Stage in order to identify all the stakeholders and vulnerable groups, conduct consultations and prioritize their involvement- all of which was not always possible during the PPG stage due to the COVID-19 limitations. • A detailed **Gender Analysis** was carried out during the PPG phase to fully consider the different needs,

				roles, benefits, impacts, risks, differential access to and control over resources of women and men given a project's context, and to identify appropriate measures to address these and promote gender equality and women's empowerment. The analysis formed the basis of a **Gender Action Plan** and Budget to guide gender mainstreaming during project implementation. • **Specific assessments** are included in the project strategy in order to further identify and appropriately address the needs of the marginalised communities : e.g under Output 1.1. the envisaged Climate threat assessment will include analysis of the heightened vulnerability and exposure of marginalised groups to climate-induced threats and differentiated ways men and women use/have access to natural resources; and under Output 2.1 within the Socio-economic analysis and COVID-19 risk assessments- the project experts will highlight opportunities to include vulnerable groups in project activities. • **A Process Framework (PF)**[22] will be prepared by the project team for different activities that may affect local communities' access to natural resources, as described in the ESMF(Annex 23). • The **activities that are not yet fully identified**, are reflected under a distinct category in the **ESMF** and will include further risk mitigation measures as necessary. Additional explanations: At the same time, the level of activity planning that was possible at the PPG stage and limitations for site-based meetings and consultations based by COVID-19 pandemic

[22] A Process Framework is prepared when UNDP-supported projects may cause restrictions in access to natural resources in legally designated parks and protected areas. The purpose of the process framework is to establish a process by which members of potentially affected communities participate in the design of project components, determination of measures necessary to address the requirements of SES Standard 5, and implementation and monitoring of relevant project activities.

				restrictions have determined the focus of the PPG stakeholder consultations on governmental authorities at all levels, and field experts. Therefore, additional analyses and risk assessments are therefore required as per the project detailed workplanning during the project implementation to identify vulnerable groups and communities and prioritize them in planning and implementation (please see ESMF). During the PPG phase, the following specific project activities were identified for further detailed screening and site-based planning of meaningful participation and equal access to project-born benefits the major ethnic groups, vulnerable communities and minorities : - a fire safety/prevention campaign; - establishment of local rapid-response community fire-fighting teams; - restoration of ecosystems and ecosystem services associated with the traditional bioresources use and land management practices by local communities; - development of programmes for eco-tourism, eco-agriculture, environmental awareness and education, with targeted implementation support; - a hands-on training on the use and control of non-timber forest products (NTFP) for the PA management, ranger services, and adjacent communities; - development of sustainable tourism opportunities in partnership with the protected areas, municipal authorities and local green businesses. UNDP will support the project implementation team in the development and implementation of the procedure to fully screen the project activities in relation to social risks and safeguards. Specific details on stakeholder engagement and response to social risks and safeguards are reflected in the ESMF and will be updated as neccesary in the detailed planning process for the above activities during the project implementation.
Risk 2. The project supported PA management plans and decisions related to concession agreements with private	I=3 L=3	**Moderate**	**Under Output 1.2** the project will assist the targeted PAs with the preparation or update of their	The risk management measures are listed in the ESMF (Annex 23/ Project Document) and will be implemented **through the Process Framework(PF)**, **Stakeholder Engagement Plan**,

entrepreneurs, guidelines for the use of non-timber forest products (NTFP), local habitat restoration activities may lead to potential limitations and/or restrictions of the use of natural resources. Strengthening the management capacity of the PAs including a better enforcement of environmental regulations could further restrict local communities' access to biodiversity resources. SES Principle 2 Human Rights, P5 SESP Principle 2 Human Rights, P6 SES Principle 3, Gender, P10 SES Principle 3, Gender, P11 Principle 5, Accountability, P13 Principle 5, Accountability, P14 Standard 5 Displacement; 5.2; 5.4			management plans, including information based on the project supported climate change induced threat assessments: -For the National Parks **Sutjeska and Kozara**, the management plans will be developed starting with the third year of the project and will be informed by the climate threat assessments and a climate threat based management module that the project will develop ; In addition, in **Sutjeska National Park** under Output 2.3 the project will support a sustainable concession model; -For the National Parks **Drina and Una**, the project will support the development of new management plans with due account of climate threats and climate neutrality objectives/indicators -For the new management entities of the **Prokosko Lake Nature Monument, Vjetrenica Protected Landscape, and Una Park of Nature,** the project will support prioritization of the management objectives and advanced management planning based on the comprehensive analysis of threats and pressures to the PA values, and the new development objectives -For the **Bijambare Protected Landscape** the project will develop an Action Plan and management measures for the	**Gender Action Plan** and **project level GRM and through the activities under Output 1.2 and Output 1.4.** In addition, the Project strategy includes provisions based on which the **PAs Management Plans** will be developed in line with SES requirements and will include patrolling and legal enforcement measures that are centered on human rights principle. The Management Plans will include measures for patrolling, and improved enforcement of environmental regulation with an emphasis on collaborative methods, with respect to human rights and understanding of community rights and needs. The **Process framework** is embedded in the project strategy and it is part of the project's work on the PAs (Output 1.2) and will also address the potential economic displacement risk for the project's work on the pilot concession model in Sutjeska National Park (Output 2.3) . (Please see Annex 12 Stakeholder Engagement Plan – it includes a template for the Process Framework).The PF will engage local population in the targeted areas. These local meeting will create awareness on the work on PAs and will discuss the PAs management plans/objectives, including the use of natural resources and non-timber forest products (NTFP) and address and reconcile any real or perceived economic limitations that the PAs management plans may impose. The project will ensure that the permission of the affected landowners for restoration of **Gromiželj and Tisina wetlands** under Output 1.3. will be sought in a manner consistent with UNDP SES requirements. The potential **compensatory mechanisms** and eligibility criteria, describing the measures that will assist the potentially affected persons to improve their livelihoods will be identified/implemented as the result of these discussions and a Livelihood Action Plan could be drafted if necessary.

			endangered spruce forest, use of NTFP, and vulnerable peatland communities **-For Orjen Park of Nature**, a Management Plan will be developed as a follow-up to the existing initial 2-year management programme -For **Vjetrenica Protected Landscape** the project supported management plan will be based on the UNEP new valorisation study and will include specific monitoring, assessment and management measures for rare/endangered habitat types (karst caves, basins and abyss ecosystems) and species sensitive to climate change **Under Output 1.4 Restoration activities involve the need of landowners permission** -Restoration of a demonstration area at **Gromiželj wetlands** -Cleaning of supply and drainage canals, sludge removal, improvements in the hydrotechnical system at**Tisina wetlands**	The project manager will ensure that Information and guidance to local communities about the UNDP Conflict resolution and grievance mechanism is provided. Furthermore, the **Stakeholders Engagement Plan** (Annex 12) contains meaningful engagement measures and stakeholders roles and responsibilities. During the project implementation, the Stakeholder Engagement Plan will be updated to fulfill the requirements of Standard 5 (or a Livelihood Action Plan will be developed if needed for SES compliance, based on the findings of the screenings etc) **The Gender Action Plan** contains measures that will be implemented in order to ensure that women have equal opportunities to participate and benefit from the project activities.
Risk 3 The project supported adaptation and restoration measures intended to reduce threats to critical habitats and environmentally sensitive areas could potentially end up harming them. SES Standard 1 Biodiversity and NRM, 1.1; 1.2; 1.4; 1.7; 1.8; 1.10; 1.11; 1.13	I=3 L=2	**Moderate**	The risk assessment is associated with the following activities: A. Adaptation activities (Output 1.3): -Species managemen plans for Serbian spruce -Adaptation Plan for the Bosnian pine	The risks will be managed through site-specific **screening (using SESP) and appropriately scoped ESIA applied by the project team and experts,** in order to identify, prevent and mitigate potential impacts on ecologically sensitive habitats through the proposed adaptation measures, restoration activities and any constructions, repairs, insecticides use, biological material handle or ongoing use of facilities. Please see ESMF (Annex 23).

SES Standard 8 Pollution Prevention and Resource Efficiency 8.2 Standard 5 Displacement; 5.1;5.2;5.4			-Fire management and prevention activities e.g. the installation of reservoirs/ponds for water storage and repair of watch towers - Demonstrative management of bark beetle outburst , particularly pest control method and installation of pheromone traps B. Restoration activities (Output 1.4): -Restoration of a demonstration area at Gromiželj wetlands -Cleaning of supply and drainage canals, sludge removal, improvements in the hydrotechnical system atTisina wetlands In both cases, revitalization of wetlands and wetland-marsh complexes will help preserve key species and restore the natural water regime, as well as help developing ecotourism in the area. The pilots will demonstrate a relatively simple and cost-effective way of improving the ecological status of the wetland habitats including aquatic communities (Tišina pond) and surrounding forests (Tišina and Gromiželj). For both cases, the PAs are at risk of losing their key values and characteristics without a restoration/revitalization effort.	The qualified project team and project experts will work with UNDP CO to properly identify risks and proposed management measures. The Project Manager and Experts as well as Implementing Partner representatives and local authorities will facilitate local consultations with community representatives on the proposed restoration measures, targeted locations and the implementation of the necessary risk mitigation measures.
Risk 4. The project supported demonstration activities may inadvertently be implemented at/in proximity of significant cultural and historical significance sites, leading to	I=3 L=3	**Moderate**	The risk relates to activities under Output 2.2 -the Popovo Mills restoration which are implemented in the proximity of	The risk is managed through the project strategy that is aligned with the SESP and application of measures under Standard 4 to protect cultural heritage sites from damage/disruption. Where potential adverse impact cannot be avoided, as a last resort

possible harmful impact on the site and/or possible failure to consider procedures for chance finds of valuable cultural heritage sites. SES Standard 4 Cultural Heritage and Sites 4.1; 4.2, 4.3, 4.5			culturally significant sites; and activties under Output 2.3- tourism infrastructure development within the framework of piloting sustainable concession model in Sutjeska National Park.	appropriate mitigation measures will be designed under a **Cultural Heritage Management Plan** to be included in the overall Environmental and Social Management Plan and other plans and guidelines (such as those related to concessional agreements) as necessary. In addition, the project will ensure that **chance find procedures** are included in the concession documentation (piloted in Suketska National Park) and all plans and contracts regarding project-related restoration works, construction, including excavations, demolitions, movement of earth, flooding, or other changes in the physical environment; such procedures will establish how chance finds of tangible Cultural Heritage shall be managed, including notification of relevant authorities and stakeholders, avoidance of further disturbance or damage, protection, documentation and assessment of found objects by relevant experts
Risk 5 The project supported tourism products and concession models may pose environmental and/or social risks SES Standard 1 Biodiversity and NRM, 1.1; 1.2; 1.4; 1.7. SES Standard 3 Community Health, Safety and Security, 3.1; 3.2; 3.3; 3.6;3.8 Standard 4, 4.1; 4.3; 4.4. Standard 8 Pollution Prevention and Resource Efficiency ; 8.2	I=3 L=3	**Moderate**	The risk is considered in connection with activities under **Output 2.2** e.g. cofinancing of the restoration of the Popovo Polje mills outside the Protected area, near Vjetrenica cave (managed by Ravno municipality) **Output 2.1.** Sustainable tourism products development e.g. Drina NP: sustainable tourism offer packaging and targeted support for infrastructure development; Vjetrenica PL: Co-financing of tourism infrastructure. **Output 2.3** Eco-tourism concession model piloted in Sujetska National Park and associated infrastructure refurbishment and/or new	The risk will be mitigated through the SES, using the UNDP social and environmental screening procedures and appropriately scoped ESIAs in order to identify and avoid possible risks (Please see ESMF Annex 23). Activities that are co-financing different outputs are also included in the scope of the screening/assessment procedures. Activties funded from co-financing (not GEF resources) need to **be consistent** with the UNDP SES requirements. Activities that are funded by GEF resources through UNDP accounts need to **adhere** to UNDP SES requirements. Additional specifications regarding the Concession model piloted under **Output 2.3:** The concession activities will be designed to avoid adverse indirect/consequential impacts to critical and/or sensitive habitats and/or ecosystems and ecosystem services. Monitoring of tourism concession activities will be performed according to the agreed methodology and SES requirements; protected area managers will be capacitated with tools and skills for concession management, compliance monitoring and enforcement. The

			constructions (that could be considered at some point)	concession agreement will be very specific regarding the social and environmental concerns and limitations related to any infrastructure changes at site. Any significant infrastructure developments (e.g. construction of a mountain chairlift) are subject to EIA and will not be carried out in conflict with the PA regime. The project implementation team and Output 2.2 experts will check the national requirements (e.g. for EIA) meet or exceed the requirements of the UNDP SES, and, with support and guidance from UNDP CO and SES experts, consider if any specific SES assessments management plans are required for the Ouput 2.2. Specific management measures related to the cultural and historical values will be embedded in the concession documents (as per safeguards measures under Risk 4).
Risk 6 The project may inadvertently contribute to potential perpetuation of discriminations against women and gender based violence. There are lingering disparities between men and women, particularly at local level and in rural areas including in the patriarchal cultures of some of the ethnic minority communities, which could be inadvertently replicated. *SES Principle 3, Gender, P10, P12*	I=3 P=3	**Moderate**	The Project could potentially perpetuate discriminations against women based on gender, especially regarding participation in design and implementation of activties or access to different capacity building and/or potential economic opportunities. Women remain substantially underrepresented in leadership and entrepreneurial positions for example in tourism sector, with low influence in decision making processes, and in many cases economically dependent on men. Violence against women is often tolerated as "socially accepted behaviour".[23]	The management of this risk will be done through the implementation of the **Gender Action Plan (GAP)** and will be monitored by the project team. Further risk management measures will be implemented through the **Process Framework** for the project work in the PAs making sure that marginalized/vulnerable groups (such as women and youth) are able to participate in decision-making processes. Methods of consultation and participation will be devised in a form appropriate for affected communities. The project design has consistently mainstreamed gender sensitive approaches and has created opportunities for tackling women's needs and the differentiated ways men and women use natural resources. The project will also **gather gender-disaggregated data** for evaluation purposes and use gender sensitive indicators (particularly around beneficiaries) to facilitate planning, implementation and monitoring.

[23] As in many contexts, violence against women is tolerated as "socially acceptable behavior" (Jelin-Dizdar 2012), occurring in a triangle framed by "a patriarchal environment, silence and struggle for the family" (Matić 2017). https://blogs.lse.ac.uk/wps/2020/03/12/the-political-economy-of-gender-based-violence-in-bosnia-and-herzegovina/

				Complaints will be addressed and managed through the **Grievance Redress Mechanism** and the **Project Board.**
Risk 7: Project impact on the status of biodiversity and ecosystems might be limited by climate change as a direct driver of habitat conversion and biodiversity loss in the country. There is a risk of increased incidence of climate-induced wildfires in targeted project sites. Project endeavors related to the implementation of PA management plans, PA capacity building and other on-the-ground activities may be susceptible to extreme climatic conditions and events (e.g. landslides) SES Standard 2 Climate Change Vulnerability, 2.2 SES Standard 2 Climate Change Vulnerability, 2.3	I = 3 L = 3	**Moderate**		The risk will be mitigated through the proejct activities e.g. **screening and assessments** (under Output 1.1). Climate change adaptation and resilience is at the core of the project strategy. Under Component 1, the project will work to reduce the vulnerability of key biodiversity values and strengthen the resilience of target protected areas in BiH to climate change. A desk climate threat analysis for the pilot PAs was performed during the project preparatory phase (PPG). Based on the data available and the expert assessment of the key climate impacts and pressures on the key biodiversity values within the targeted PAs, possible response scenarios and adaptation measures were proposed by the PPG experts. Building on the key results of the PPG desk analysis, and further focusing on the PAs with the management capacities and resource available for more focus on the climate change response and adaptation, in the first year of implementation the Project will commission a comprehensive climate threat assessment of the pilot PAs. The Climate threat assessment will be planned to take into account the project SESP risk related to the succeptibility of project endeavours to climate and the extreme climate conditions, and will be responsive to the SES Standard 2. The project will further assist the pilot PAs with the preparation of management plans, as well as management guidelines and tools for taking into account the CC threats, threat response scenarios, ecosystem resilience and adaptation measures. The CC-sensitive management planning will also be reseponsive to the requirement of the UNDP SES Standared 2. A portfolio of adaptation and resilience solutions for targeted species and ecosystems will be developed and set under implementation under project Output 1.3. Pilot restoration options will be offered for ecosystems severely affected by various negative climate factors. Finally, stakeholder consultations with the PA management authorities and

				municipal governments will catalyse replication of climate threat response action planning, adaptation and resilience solutions for targeted species and ecosystems. Thus, a comprehensive response to the CC impact has already been embedded in the project strategy. Although the project will obviously not be able to prevent extreme climate events during climate events, it was designed to provide incremental steps towards building the long-term CC resilience.
Risk 8: Generation of non-hazardous waste as a result of tourism development and increase influx of tourists. Standard 8 Pollution Prevention and Resource Efficiency 8.2	I = 3 L = 2	**Low**	Generation of waste can be a side effect of the increased tourism activity within the protected areas (including construction of the tourism infrastructure such as a visitor center). Although the waste generation and disposal is controlled by the PA authorities, the project will assist, where required, with an additional control over increased tourism impacts, which may adversely affect the quality of nature values in and around protected areas, and create waste and noise. Project activities aimed at tourism development will be focused on the protected areas with strict regulations regarding waste generation and management. The capacities of protected areas to ensure adequate monitoring and enforcement of tourism activities will be enhanced.	n/a (low risk)
Risk 9: The project will support the development of specific management guidelines that will define the mechanisms of bark beetle outbursts control that might be associated with the use of insecticides	I = 3 L = 3	**Moderate**	This risk relates to the bark beetle outburst control activties under Output 1.3. A typical scenario for the commercial forests affected by severe bark beetle outbursts includes the use of insecticides	The project team and UNDP CO will make sure that adequate safeguards related to Standard 8.5 will be put in place.

Standard 8 Pollution Prevention and Resource Efficiency 8.5			and semiochemicals. For the forests within protected areas, the mechanisms of bark beetle outbursts control and the early response measures should be compatible with the PA regime. It is unlikely that the practice for the commercial forests will be applied to the PA forests without modification, since the PA regime does not allow for use, cause use of, or manage the use, storage or disposal of hazardous materials and chemicals, including pesticides. For the bark beetle outburst control, particular pest control methods (pheromone traps) will be offered in accordance with the PA regulations and best practice available.	These additional risk management measure related to the project supported measures for bark beetle outburst control that are included here, refer specifically to the handling of harmful substances/pesticides in relation to Standard 8. UNDP project team will engage technical expertise to ensure that activities related to the bark beetle outburst control under Output 1.3. will ensure safe use of the chemicals, including use of pheromones and/or other specific insecticides and substances which will be handled, stored, applied and disposed of in accordance with international good practice such as the FAO International Code of Conduct on the Distribution and Use of Pesticides.
Risk 10: The project may fail to provide appropriate labor and safety conditions for workers and community participants during the fire fighters capacity building activities and drills. Standard 3 Community Health, Safety and Security 3.1; 3.2; 3.3; 3.6; 3.7; 3.8 Standard 7 Labour and Working Conditions 7.1; 7.6 Standard 8. Pollution Prevention and Resource Efficiency 8.3	I = 3 L = 3	**Moderate**	Under Output 1.3. the project will directly support activities in support to fire preparedness, prevention and response within the pilot protected areas. The project involves capacity building of firefighters within the PAs, and the establishment of local rapid-response community fire-fighting teams potentially involving local communities. The project will support construction of basic tourism infrastructure within the protected areas (such as visitor center and tourist trail) and will possibly be involved in restoration of a traditional water-operated	The risk will be managed as follows: **Community safety** measures will be managed through screening (SESP) and appropriately scoped ESIA during the development of (i) the early warning system and (ii) Fire Protection Action Plans in PAs e.g. such as Sutjeska, Kozara and Drina, Orjen and Blidinje parks of nature, and Skakavac Nature Monument as well as for the (iii) installation of reservoirs for water storage and repairs of watchtowers. The risks will be further managed through hiring specialized experts for building capacity of the community fire fighting teams. With regard to the workers safety, the **management measures will be devised on case by case basis.** The project will ensure that national working standards (Labor Code) are respected for all the project activities. The requirements of this Standard are to be applied in an appropriately-scaled manner based on the nature and scale of the project, its specific activities, the project's associated social and environmental risks and

			mill. These infrastructure projects might be associated with risks to local builders involved, as a result of force majeur or violation of constuctions norms and standards.	impacts, and the type of contractual relationships with project workers. **The project will ensure implementation of risk management/safeguards measures related to Standard 7 (7.6) the Occupational safety and health (OSH) which include** necessary processes and measures that address the safety and health of project workers that must be in place to support project implementation. These processes and measures may be encompassed and implemented through the applicable party's occupational safety and health management system[17] or processes (please see ESMF Annex 23). **For safeguards triggered by Standard 8 (8.3)** the project team and project experts will make sure to avoid the use of hazardous materials for the fire fighting capacity building activities.The fire-fighting capacity-building supported by the project will be based on the existing experience and best practices available; the best practice does exist and it includes safety issues as a primary priority. Training programmes are standardized and include safety issues. These processes are strictly regulated in accordance with the existing law; there is long-term practice that's collected, analyzed, and used for trainings.
Risk 11 Project activities involving local/field interventions and close engagement with local communities may inadvertently contribute to the spread of COVID-19. Standard 3 Community Health, Safety and Security, 3.4	I=3 P=3	**Moderate**	Activities at local level are based on participatory approaches, and most of the times will include meetings and local consultations. There are a number of training workshops and awareness events, round table meetings etc.	The risk will be mitigated through **adequate safeguards** that the project team and UNDP CO will put in place at the Project Inception such as: (i) clear procedures in place in case of COVID19 reinstatement of restrictions, approved during project inception (ii) use of protective equipment, maintaining social distancing and using remote methods of engagement whenever possible (iii) if adequate safeguards cannot be put in place, activities that entail close local communities engagement will be put on hold if necessary, and work programme/budget will be revised as needed. Wherever possible on-line meeting platforms will be used and travel decreased. All project meetings will be organized mindful of government regulations and healthy standards and other appropriate safeguards (including those of UNDSS).

	QUESTION 4: What is the overall Project risk categorization? *Note: Project categorization is determined by the highest level of significance of identified risks across all potential risk areas (as rated in Question 3).*				
	Select one (see SESP for guidance)		**Comments**		
	Low Risk	☐			
	Moderate Risk	**X**	The overall social and environmental risk category is identified as **Moderate,** as determined by the highest level of significance of identified risks. The SESP assessment at the PPG stage confirmed the overall Moderate risk rating. Detailed Moderate risks management measures are summarized in this SESP document and further detailed in the ESMF attached to the Project Document (Annex 23). The safeguards measures are also mainstreamed in the Project strategy associated with a limited impact that will be avoided or mitigated via straightforward management instruments, such as a comprehensive Stakeholder Engagement Plan and a Gender Action Plan, appropriately scoped ESIAs, Process framework and further screening using SESP.In addition, non-conventional risk mitigation instrument will developed during the project implementation phase such as the set of tourism concession criteria for the Sutjeska National Park pilot, to make sure that those are responsive not only to the protected area regime limitations, but also to the environmental, social and cultural risk areas identified by the SESP.		
	Substantial Risk	☐			
	High Risk	☐			
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered? (check all that apply)				
	Question only required for Moderate, Substantial and High Risk projects.				
	Is assessment required? (check if "yes")	**X**			***Status? (completed, planned)***

	if yes, indicate overall type and status		**X**	Targeted assessment(s)	**Completed during PPG:** Climate screening; feasibility analysis; gender analysis, stakeholder analysis **Planned during the Project Implementation:** ocio-economic assessments and climate vulnerability assessments and management measures to be included in the PAs Management Plans
			X	ESIA (Environmental and Social Impact Assessment)	**Planned during implementation:** to be determined based on site-specific screening
			☐	SESA (Strategic Environmental and Social Assessment)	
	Are management plans required? (check if "yes)	☐			
	If yes, indicate overall type		**X**	Targeted management plans (e.g. Indigenous Peoples Plan, Resettlement Action Plan, others)	**Completed during PPG:** Gender Action Plan, Stakeholder Engagement Plan **Planned during implementation:** Process Framework, Livelihood Action Plan (if needed), Cultural Heritage Management Plan (if needed) others as needed per site-specific

					screening and assessments
			X	ESMP (Environmental and Social Management Plan)	**Planned during implementation:** to be determined based on site-specific screening
			X	ESMF (Environmental and Social Management Framework)	**Completed during PPG**
	Based on identified <u>risks</u>, which Principles/Project-level Standards triggered?		**Comments (not required)**		
	Overarching Principle: Leave No One Behind	---			
	Human Rights	**X**	While the proposed project poses no direct risks of human rights violation and has no activities directly dealing with equity considerations or gender disparities, given the overall country context the project will be designed with due sensitivity to human rights, ethnic and gender equality principles.		
	Gender Equality and Women's Empowerment	**X**	See above		
	Accountability	**X**			
	1. Biodiversity Conservation and Sustainable Natural Resource Management	**X**	Many project activities are currently proposed within or adjacent to nature protected areas and areas proposed for protection. The design and implementation of particular project interventions, primary of which are associated with tourism development within the protected areas, will make sure to avoid adverse environmental effects on the sensitive habitats.		
	2. Climate Change and Disaster Risks	**X**	Climate change effects and consequences, such as extreme climatic events and habitat conversion may become a significant factor determining the project impact on biodiversity and ecoststems.		
	3. Community Health, Safety and Security	**X**			
	4. Cultural Heritage	**X**			

	5. Displacement and Resettlement	**X**	
	6. Indigenous Peoples	☐	
	7. Labour and Working Conditions	**X**	
	8. Pollution Prevention and Resource Efficiency	**X**	

Final Sign Off

Signature	***Date***	***Description***
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks	
INSTRUCTIONS: The risk screening checklist will assist in answering Questions 2-6 of the Screening Template. Answers to the checklist questions help to (1) identify potential risks, (2) determine the overall risk categorization of the project, and (3) determine required level of assessment and management measures. Refer to the SES toolkit for further guidance on addressing screening questions.	
Overarching Principle: Leave No One Behind	**Answer (Yes/No)**
Human Rights	**Answer (Yes/No)**
P.1 Have local communities or individuals raised human rights concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
P.2 Is there a risk that duty-bearers (e.g. government agencies) do not have the capacity to meet their obligations in the project?	Yes
P.3 Is there a risk that rights-holders (e.g. project-affected persons) do not have the capacity to claim their rights?	Yes
Would the project potentially involve or lead to:	---
P.4 adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	Yes
P.5 inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups, including persons with disabilities? 24	Yes
P.6 restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalized individuals or groups, including persons with disabilities?	Yes
P.7 exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Gender Equality and Women's Empowerment	
P.8 Have women's groups/leaders raised gender equality concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
Would the project potentially involve or lead to:	---
P.9 adverse impacts on gender equality and/or the situation of women and girls?	No
P.10 reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	Yes
P.11 limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being	Yes
P.12 exacerbation of risks of gender-based violence?	Yes

[24] Prohibited grounds of discrimination include race, ethnicity, sex, age, language, disability, sexual orientation, gender identity, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender and transsexual people.

For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc.	
Sustainability and Resilience: Screening questions regarding risks associated with sustainability and resilience are encompassed by the Standard-specific questions below	
Accountability	
Would the project potentially involve or lead to:	---
P.13 exclusion of any potentially affected stakeholders, in particular marginalized groups and excluded individuals (including persons with disabilities), from fully participating in decisions that may affect them?	Yes
P.14 grievances or objections from potentially affected stakeholders?	Yes
P.15 risks of retaliation or reprisals against stakeholders who express concerns or grievances, or who seek to participate in or to obtain information on the project?	No
Project-Level Standards	
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management	
Would the project potentially involve or lead to:	---
1.1 adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? *For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes*	Yes
1.2 activities within or adjacent to critical habitats and/or environmentally sensitive areas, including (but not limited to) legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	Yes
1.3 changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4 risks to endangered species (e.g. reduction, encroachment on habitat)?	Yes
1.5 exacerbation of illegal wildlife trade?	No
1.6 introduction of invasive alien species?	No
1.7 adverse impacts on soils?	Yes
1.8 harvesting of natural forests, plantation development, or reforestation?	Yes
1. 9 significant agricultural production?	No
1. 10 animal husbandry or harvesting of fish populations or other aquatic species?	Yes
1.11 significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	Yes
1.12 handling or utilization of genetically modified organisms/living modified organisms?[25]	No
1.13 utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)[26]	No
1.14 adverse transboundary or global environmental concerns?	No
Standard 2: Climate Change and Disaster Risks	
Would the potentially involve or lead to:	---

[25] See the Convention on Biological Diversity and its Cartagena Protocol on Biosafety.

[26] See the Convention on Biological Diversity and its Nagoya Protocol on access and benefit sharing from use of genetic resources.

2.1	areas subject to hazards such as earthquakes, floods, landslides, severe winds, storm surges, tsunami or volcanic eruptions?	Yes
2.2	outputs and outcomes sensitive or vulnerable to potential impacts of climate change? *For example, through increased precipitation, drought, temperature, salinity, extreme events*	Yes
2.3	direct or indirect increases in vulnerability to climate change impacts or disasters now or in the future (also known as maladaptive practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	No
2.4	increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	No
Standard 3: Community Health, Safety and Security		
Would the potentially involve or lead to:		---
3.1	construction and/or infrastructure development (e.g. roads, buildings, dams)? (Note: the GEF does not finance projects that would involve the construction or rehabilitation of large or complex dams)	Yes
3.2	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	Yes
3.3	harm or losses due to failure of structural elements of the project (e.g. collapse of buildings or infrastructure)?	Yes
3.4	risks of water-borne or other vector-borne diseases (e.g. temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	Yes
3.5	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.6	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g. food, surface water purification, natural buffers from flooding)?	Yes
3.7	influx of project workers to project areas?	No
3.8	engagement of security personnel to protect facilities and property, or to support project activities?	Yes
Standard 4: Cultural Heritage		
Would the project potentially involve or lead to:		---
4.1	activities adjacent to or within a Cultural Heritage site?	Yes
4.2	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	Yes
4.3	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	Yes
4.4	alterations to landscapes and natural features with cultural significance?	No
4.5	utilization of tangible and/or intangible forms (e.g. practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	Yes
Standard 5: Displacement and Resettlement		
Would the project potentially involve or lead to:		---
5.1	temporary or permanent and full or partial physical displacement (including people without legally recognizable claims to land)?	Yes
5.2	economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	Yes

5.3	risk of forced evictions?[27]	No
5.4	impacts on or changes to land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	Yes
Standard 6: Indigenous Peoples		
Would the project potentially involve or lead to:		---
6.1	areas where indigenous peoples are present (including project area of influence)?	No
6.2	activities located on lands and territories claimed by indigenous peoples?	No
6.3	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? *If the answer to screening question 6.3 is "yes", then the potential risk impacts are considered significant and the project would be categorized as either Substantial Risk or High Risk*	No
6.4	the absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources? *Consider, and where appropriate ensure, consistency with the answers under Standard 5 above.*	No
6.7	adverse impacts on the development priorities of indigenous peoples as defined by them?	No
6.8	risks to the physical and cultural survival of indigenous peoples?	No
6.9	impacts on the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices? *Consider, and where appropriate ensure, consistency with the answers under Standard 4 above.*	No
Standard 7: Labour and Working Conditions		
Would the project potentially involve or lead to: (note: applies to project and contractor workers)		---
7.1	working conditions that do not meet national labour laws and international commitments?	Yes
7.2	working conditions that may deny freedom of association and collective bargaining?	No
7.3	use of child labour?	No
7.4	use of forced labour?	No
7.5	discriminatory working conditions and/or lack of equal opportunity?	No
7.6	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	Yes
Standard 8: Pollution Prevention and Resource Efficiency		
Would the project potentially involve or lead to:		---

[27] Forced eviction is defined here as the permanent or temporary removal against their will of individuals, families or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection. Forced evictions constitute gross violations of a range of internationally recognized human rights.

8.1	the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
8.2	the generation of waste (both hazardous and non-hazardous)?	Yes
8.3	the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	Yes
8.4	the use of chemicals or materials subject to international bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Montreal Protocol, Minamata Convention, Basel Convention, Rotterdam Convention, Stockholm Convention*	No
8.5	the application of pesticides that may have a negative effect on the environment or human health?	Yes
8.6	significant consumption of raw materials, energy, and/or water?	No

Annex 6: UNDP Risk Register

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
1	One of the most significant institutional risks relates to the complex institutional structure and division of authorities and responsibilities between the state government, the two entities in BiH, the line ministries of both entities, and the municipal authorities. Also, the different management arrangements for PAs according to their category, spatial belonging and mandate might provide complications for the implementation of targeted project activities and cause coordination challenges for the project.	Organizational	I = 3; L = 3 Moderate	This risk will be mitigated through close collaboration with relevant stakeholders from the outset and by determining collaborative strategies and focal points in each of the key institutions for the Project Steering Committee. The project implementation team and UNDP will use the relevant experience from the previous projects and will rely on the Comprehensive Stakeholder Engagement Plan to make sure that the institutional barriers are tackled timely and efficiently.	UNDP, Project Team, key governmental stakeholders, pilot PAs
2.	For the project interventions focused on the newly established/expanded protected areas, the future project activities, inputs and effects will be much determined by the management capacities in place. This is particularly relevant for Orjen Park of Nature that, at the time of the project submission, does not yet have a management authority	Organizational	I = 3; L = 3 Moderate	The planned project interventions involving the PAs under establishment/re-classification will be subject to adaptive management depending on the development of adequate institutional, financial and capacity building solutions for these PAs.	UNDP, PA authorities temporarily in charge of management (line ministries, municipalities)
3.	Project impact on the status of biodiversity and ecosystems might be limited by climate change as a direct driver of habitat conversion and biodiversity loss in the country. There is a risk of increased incidence of climate-induced wildfires in targeted project sites.	SE(SESP Risk 7)	L=3, I=3 Moderate	The risk will be mitigated through the proejct activities e.g. screening and specific assessments (under Output 1.1). Climate change adaptation and resilience is at the core of the project strategy. Under Component 1, the project will work to reduce the vulnerability of key biodiversity values and strengthen the resilience of target protected areas in BiH to climate change. A desk climate threat analysis for the pilot PAs was performed during the project preparatory phase (PPG). Based on the data available and the expert assessment of the key climate impacts and pressures on the key biodiversity values within the targeted PAs, possible response scenarios and adaptation measures were proposed by the PPG experts. Building on the key	UNDP, line ministries, PA management, Project Team

				results of the PPG desk analysis, and further focusing on the PAs with the management capacities and resource available for more focus on the climate change response and adaptation, in the first year of implementation the Project will commission a comprehensive climate threat assessment of the pilot PAs. The Climate threat assessment will be planned to take into account the project SESP risk related to the succeptibility of project endeavours to climate and the extreme climate conditions, and will be responsive to the SES Standard 2. The project will further assist the pilot PAs with the preparation of management plans, as well as management guidelines and tools for taking into account the CC threats, threat response scenarios, ecosystem resilience and adaptation measures. The CC-sensitive management planning will also be reseponsive to the requirement of the UNDP SES Standared 2. A portfolio of adaptation and resilience solutions for targeted species and ecosystems will be developed and set under implementation under project Output 1.3. Pilot restoration options will be offered for ecosystems severely affected by various negative climate factors. Finally, stakeholder consultations with the PA management authorities and municipal governments will catalyse replication of climate threat response action planning, adaptation and resilience solutions for targeted species and ecosystems. Thus, a comprehensive response to the CC impact has already been embedded in the project strategy. Although the project will obviously not be able to prevent extreme climate events during climate events, it was designed to provide incremental steps towards	

				building the long-term CC resilience.	
4.	There is a risk that the mechanisms and solutions to be offered by the project for the sustainable PA finance will not prove their desired financial effect, and the mobilized additional finance may not be sufficient to supplement the PA government budgetary contributions in the long term. This risk takes into account the effects of the COVID19 to the budgetary allocations of the respective ministries and funds that will be considered in achieving sustainability of the PA finance.	Financial	L=3, I=3 Moderate Invested project funds fail to deliver intended results in the context of biodiversity conservation, mobilisation of resources to ensure sustainable PA finance.	In response to this risk, the project will perform a comprehensive cost-benefit analysis of the proposed PA finance opportunities, develop the mechanisms to ensure the long-term sustainability of the financial models, and ensure political buy-in.	line ministries, PA management, Project Team
5.	There is a risk that the planned partnerships with the private sector will fail to yield the expected benefits. The private sector stakeholders may be reluctant to take on financial commitments and new partnerships due to negative implications of COVID-19 pandemic and the overall economic recession on their businesses.	Financial	I = 3; L = 2 Moderate Invested project funds fail to deliver intended results in the context of biodiversity conservation, mobilisation of private sector resources.	The project will do its best to mitigate this risk via the development of a detailed private sector engagement strategy, planning of private sector engagement models with multiple benefits, performing thorough cost-benefit analyses and assessment of financial risks, and implementing early awareness raising among potential private sector partners. This risk particularly applies to Output 2.3 being a concession model for the eco-tourism development within a model protected area (Sutjeska National Park). In 2020 during the project PPG phase, an initial mapping of the potential private sector companies potentially interested in and eligible for partnering in the NP Sutjeska tourism concession model showed a somewhat discouraging result, as no partner was ready to express a firm interest as the potential concession bidder. The feasibility assessments and the preparatory work performed at the project PPG stage do not guarantee that the concession pilot will be implemented for sure; it is possible that the mechanism of concessions will not be confirmed as being realistic within the project timeframe as well as being suited to the local context at the moment (including the private sector affected by the COVID-19	UNDP, line ministries, IDF, PA management, project team

				pandemic); it is possible that not only the initial potential partner cannot confirm their interest in the concession, but no other partner is willing to commit to the concession arrangements and/or is able comply with the concession criteria and requirements. There are feasibility constraints associated with the concession pilot, and if the risk materialises as described above, an adaptive management scenario where the project strategy will focus on other options for private sector engagement in sustainable tourism development for the benefit of the PAs and the local communities (Output 2.2), while still providing for increased capacities to implement a PA tourism concession in the future.	
6.	The negative effects of the post-COVID recession may hamper project plans towards increased financial sustainability of the pilot PAs, increased visitation, improved tourism offering, and enhanced management capacities	Financial	I = 3; L = 2 Moderate	The project intervention strategy will be sensitive to the effects of COVID-19 crisis on the overall management of PAs in the country. The target indicator level for increased visitation will be re-visited at project MTR following the recovery scenarios available for the PAs. The project will apply an extra capacity building effort to make sure that the PA managers are able to apply for economic recovery funds and develop collaborations and partnerships with the private sector to overome the financing gaps and access recovery funds. Last but not least, the GEF increment for promotional activities for the pilot PAs will hopefully become one of the principal risk management measures and will help mitigating the obstacles towards self-sustainability and enhanced operational management. The tourism development sector has been severely affected by the COVID-19 crisis. The focus of the recovery strategy for the sector would be on the development of domestic tourism in a sustainable, efficient manner. Thus, the	

				project objective coincides with the tourism recovery priorities. No significant adaptive management and strategic change would be required as the tourism sector and the project with its increment will have to focus on developing and promoting the tourism product that has the PA values at its core and is focused on the domestic market. The adaptive management scenarios for the project strategy under Outputs 2.1, 2.2, and 2.3 will depend on the covid lockdown/restriction arrangements set by the Government as a major factor determining the severity and the magnitude of the negative economic impact, as well as the tourism sector response to the crisis. A total lockdown will of course be a reason for major changes in the project strategy. However, given the current trends, it is highly unlikely that the Government should consider lengthy lockdowns as a viable measure; it is a well-known fact that no country in Europe has imposed a lockdown during the second and subsequent pandemic waves (due to improvements with the cases registered, availability of vaccines and economic considerations). The restriction arrangements are likely to impact the international tourism which result in the reduction of visitation rates for the PAs; this will impact one particular indicator of the Project logframe but does not involve any changes to the project strategy. The covid restrictions negatively affect the tourism destinations with a high concentration of visitors; again, the social distancing as a visitation requirement for sustainable tourism within and around the PAs can easily be maintained and the particular safety requirements can be met without a major change in the way the tourist services	

				had been provided before the epidemics. Thus, the covid recovery towards less-impact higher-efficiency domestic tourism development, even hampered by the economic consequences of the covid crisis, seems a very probable scenario.	
7 (SESP risk 1)	Within the overall country context, it is possible that the duty bearers fail to fully realize their obligations and responsibilities to respect, promote and mainstream human rights in relation to the proposed project activities, especially where it concerns effective equality for the major ethnic groups and minorities, as well as gender equality and women empowerment. Vulnerable minority groups could be excluded from project decision-making that may affect them and/or may be unable to claim their rights. Project-born outputs may not fully incorporate or reflect views of women and ensure equitable opportunities for their involvement and benefit.	SE	I = 2, L =3 Moderate	The risk is managed as follows: • The project strategy's inclusive governance arrangements for the project (e.g. the Project Steering Committee), as well as capacity building activities are designed with respect to human rights, ethnic and gender equality principles, embedding participatory approaches, balanced representation and meaningful participation of women and youth as well as other vulnerable groups At the PPG stage targeted consultations were conducted to identify all relevant stakeholders and ensure adequate engagement and representation of various stakeholder interests and these consultations will continue throughout the project implementation aligned with the Stakeholder Engagement Plan and UNDP SES requirements • A comprehensive Stakeholder Engagement Plan was developed as one of the key outcomes of the PPG stage to ensure appropriate engagement and representation of all relevant stakeholder interests. The Stakeholders Engagement Plan will be updated upon the Inception Stage in order to identify all the stakeholders and vulnerable groups, conduct consultations and prioritize their involvement- all of which was not always possible during the PPG stage due to the COVID-19 limitations. • A detailed Gender Analysis was carried out during the PPG phase to fully consider the different	UNDP, Project Team

				needs, roles, benefits, impacts, risks, differential access to and control over resources of women and men given a project's context, and to identify appropriate measures to address these and promote gender equality and women's empowerment. The analysis formed the basis of a Gender Action Plan and Budget to guide gender mainstreaming during project implementation. • Specific assessments are included in the project strategy in order to further identify and appropriately address the needs of the marginalised communities : e.g under Output 1.1. the envisaged Climate threat assessment will include analysis of the heightened vulnerability and exposure of marginalised groups to climate-induced threats and differentiated ways men and women use/have access to natural resources; and under Output 2.1 within the Socio-economic analysis and COVID-19 risk assessments- the project experts will highlight opportunities to include vulnerable groups in project activities. • A Process Framework (PF) will be prepared by the project team for different activities that may affect local communities' access to natural resources, as described in the ESMF(Annex 23). • The activities that are not yet fully identified, are reflected under a distinct category in the ESMF and will include further risk mitigation measures as necessary.	
8. (SESP Risk 2)	The project supported PA management plans and decisions related to concession agreements with private entrepreneurs, guidelines for the use of non-timber forest products (NTFP), local habitat restoration activities may lead to potential limitations and/or restrictions of the use of natural resources.	SE	I = 3, L =3 Moderate	The risk management measures are listed in the ESMF (Annex 23/ Project Document) and will be implemented through the Process Framework(PF), Stakeholder Engagement Plan, Gender Action Plan and project level GRM and through the activities under Output 1.2 and Output 1.4.	UNDP, Project Team

	Strengthening the management capacity of the PAs including a better enforcement of environmental regulations could further restrict local communities' access to biodiversity resources.			In addition, the Project strategy includes provisions based on which the PAs Management Plans will be developed in line with SES requirements and will include patrolling and legal enforcement measures that are centered on human rights principle. The Management Plans will include measures for patrolling, and improved enforcement of environmental regulation with an emphasis on collaborative methods, with respect to human rights and understanding of community rights and needs. The Process framework is embedded in the project strategy and it is part of the project's work on the PAs (Output 1.2) and will also address the potential economic displacement risk for the project's work on the pilot concession model in Sutjeska National Park (Output 2.3) . (Please see Annex 12 Stakeholder Engagement Plan – it includes a template for the Process Framework).The PF will engage local population in the targeted areas. These local meeting will create awareness on the work on PAs and will discuss the PAs management plans/objectives, including the use of natural resources and non-timber forest products (NTFP) and address and reconcile any real or perceived economic limitations that the PAs management plans may impose. The project will ensure that the permission of the affected landowners for restoration of Gromiželj and Tisina wetlands under Output 1.3. will be sought in a manner consistent with UNDP SES requirements. The potential compensatory mechanisms and eligibility criteria, describing the measures that will assist the	

				potentially affected persons to improve their livelihoods will be identified/implemented as the result of these discussions and a Livelihood Action Plan could be drafted if necessary. The project manager will ensure that Information and guidance to local communities about the UNDP Conflict resolution and grievance mechanism is provided. Furthermore, the Stakeholders Engagement Plan (Annex 12) contains meaningful engagement measures and stakeholders roles and responsibilities. During the project implementation, the Stakeholder Engagement Plan will be updated to fulfill the requirements of Standard 5 (or a Livelihood Action Plan will be developed if needed for SES compliance, based on the findings of the screenings etc) The Gender Action Plan contains measures that will be implemented in order to ensure that women have equal opportunities to participate and benefit from the project activities.	
9. (SESP Risk 3)	The project supported adaptation and restoration measures intended to reduce threats to critical habitats and environmentally sensitive areas could potentially end up harming them.	SE	I = 3, L =2 Moderate	The risks will be managed through site-specific screening (using SESP) and appropriately scoped ESIA applied by the project team and experts, in order to identify, prevent and mitigate potential impacts on ecologically sensitive habitats through the proposed adaptation measures, restoration activities and any constructions, repairs, insecticides use, biological material handle or ongoing use of facilities. Please see ESMF (Annex 23). The qualified project team and project experts will work with UNDP CO to properly identify risks and proposed management measures. The Project Manager and Experts as well as Implementing Partner representatives and local	UNDP, Project Team

				authorities will facilitate local consultations with community representatives on the proposed restoration measures, targeted locations and the implementation of the necessary risk mitigation measures.	
10 (SESP Risk 4)	The project supported demonstration activities may inadvertently be implemented at/in proximity of significant cultural and historical significance sites, leading to possible harmful impact on the site and/or possible failure to consider procedures for chance finds of valuable cultural heritage sites.	SE	I = 3, L =3 Moderate	The risk is managed through the project strategy that is aligned with the SESP and application of measures under Standard 4 to protect cultural heritage sites from damage/disruption. Where potential adverse impact cannot be avoided, as a last resort appropriate mitigation measures will be designed under a Cultural Heritage Management Plan to be included in the overall Environmental and Social Management Plan and other plans and guidelines (such as those related to concessional agreements) as necessary. In addition, the project will ensure that chance find procedures are included in the concession documentation (piloted in Suketska National Park) and all plans and contracts regarding project-related restoration works, construction, including excavations, demolitions, movement of earth, flooding, or other changes in the physical environment; such procedures will establish how chance finds of tangible Cultural Heritage shall be managed, including notification of relevant authorities and stakeholders, avoidance of further disturbance or damage, protection, documentation and assessment of found objects by relevant experts	UNDP, Project Team
11. (SESP Risk 5)	The project supported tourism products and concession models may pose environmental and/or social risks	SE	I = 3, L =3 Moderate	The risk will be mitigated through the SES, using the UNDP social and environmental screening procedures and, if needed, appropriately scoped ESIAs or targeted assessments, in order to identify and avoid possible risks (Please see ESMF Annex 23).	UNDP, Project Team

				Activities that are co-financing different outputs are also included in the scope of the screening/assessment procedures. Activties funded from co-financing (not GEF resources) need to be consistent with the UNDP SES requirements. Activities that are funded by GEF resources through UNDP accounts need to adhere to UNDP SES requirements. Additional specifications regarding the Concession model piloted under Output 2.3: The concession activities will be designed to avoid adverse indirect/consequential impacts to critical and/or sensitive habitats and/or ecosystems and ecosystem services. Monitoring of tourism concession activities will be performed according to the agreed methodology and SES requirements; protected area managers will be capacitated with tools and skills for concession management, compliance monitoring and enforcement. The concession agreement will be very specific regarding the social and environmental concerns and limitations related to any infrastructure changes at site. Any significant infrastructure developments (e.g. construction of a mountain chairlift) are subject to EIA and will not be carried out in conflict with the PA regime. The project implementation team and Output 2.2 experts will check the national requirements (e.g. for EIA) meet or exceed the requirements of the UNDP SES, and, with support and guidance from UNDP CO and SES experts, consider if any specific SES assessments management plans are required for the Ouput 2.2. Specific management measures related to the cultural and historical values will be embedded in the concession documents (as	

				per safeguards measures under Risk 4).	
12 (SESP Risk 6)	The project may inadvertently contribute to potential perpetuation of discriminations against women and gender based violence. There are lingering disparities between men and women, particularly at local level and in rural areas including in the patriarchal cultures of some of the ethnic minority communities, which could be inadvertently replicated.	SE	I = 3, P =3 Moderate	The management of this risk will be done through the implementation of the Gender Action Plan (GAP) and will be monitored by the project team. Further risk management measures will be implemented through the Process Framework for the project work in the PAs making sure that marginalized/vulnerable groups (such as women and youth) are able to participate in decision-making processes. Methods of consultation and participation will be devised in a form appropriate for affected communities. The project design has consistently mainstreamed gender sensitive approaches and has created opportunities for tackling women's needs and the differentiated ways men and women use natural resources. The project will also gather gender-disaggregated data for evaluation purposes and use gender sensitive indicators (particularly around beneficiaries) to facilitate planning, implementation and monitoring. Complaints will be addressed and managed through the Grievance Redress Mechanism and the Project Board.	UNDP, Project Team
13. (SESP Risk 8)	The project involves capacity building of firefighters and the establishment of local firefighting crews. The project will also support "patrolling" and "enforcement" within the pilot protected areas. These activities might be associated with safety risks.	SE	I = 3, L =2 Low	n/a (low risk)	n/a (low risk
14. (SESP Risk 9)	The project will support the development of specific management guidelines that will define the mechanisms of bark beetle outbursts control that might be associated with the use of insecticides	SE	I = 3, L =3 Moderate	The project team and UNDP CO will make sure that adequate safeguards related to Standard 8.5 will be put in place. These additional risk management measure	UNDP, Project Team

				related to the project supported measures for bark beetle outburst control that are included here, refer specifically to the handling of harmful substances/pesticides in relation to Standard 8. UNDP project team will engage technical expertise to ensure that activities related to the bark beetle outburst control under Output 1.3. will ensure safe use of the chemicals, including use of pheromones and/or other specific insecticides and substances which will be handled, stored, applied and disposed of in accordance with international good practice such as the FAO International Code of Conduct on the Distribution and Use of Pesticides.	
15. (SESP Risk 10)	The project may fail to provide appropriate labor and safety conditions for workers and community participants during the fire fighters capacity building activities and drills	SE	I = 3, L =3 Moderate	The risk will be managed as follows: Community safety measures will be managed through screening (SESP) and appropriately scoped ESIA during the development of (i) the early warning system and (ii) Fire Protection Action Plans in PAs e.g. such as Sutjeska, Kozara and Drina, Orjen and Blidinje parks of nature, and Skakavac Nature Monument as well as for the (iii) installation of reservoirs for water storage and repairs of watchtowers. The risks will be further managed through hiring specialized experts for building capacity of the community fire fighting teams. With regard to the workers safety, the management measures will be devised on case by case basis. The project will ensure that national working standards (Labor Code) are respected for all the project activities. The requirements of this Standard are to be applied in an appropriately-scaled manner based on the nature and scale of the project, its specific activities, the project's associated social and environmental risks and	UNDP, Project Team

				impacts, and the type of contractual relationships with project workers. The project will ensure implementation of risk management/safeguards measures related to Standard 7 (7.6) the Occupational safety and health (OSH) which include necessary processes and measures that address the safety and health of project workers that must be in place to support project implementation. These processes and measures may be encompassed and implemented through the applicable party's occupational safety and health management system17 or processes (please see ESMF Annex 23). For safeguards triggered by Standard 8 (8.3) the project team and project experts will make sure to avoid the use of hazardous materials for the fire fighting capacity building activities.The fire-fighting capacity-building supported by the project will be based on the existing experience and best practices available; the best practice does exist and it includes safety issues as a primary priority. Training programmes are standardized and include safety issues. These processes are strictly regulated in accordance with the existing law; there is long-term practice that's collected, analyzed, and used for trainings..	
16. (SESP Risk 11)	Project activities involving local/field interventions and close engagement with local communities may inadvertently contribute to the spread of COVID-19	SE	I = 3, L =3 Moderate	The risk will be mitigated through adequate safeguards that the project team and UNDP CO will put in place at the Project Inception such as: (i) clear procedures in place in case of COVID19 reinstatement of restrictions, approved during project inception (ii) use of protective equipment, maintaining social distancing and using remote methods of engagement whenever possible (iii) if adequate safeguards cannot be put in place, activities that entail	UNDP, Project Team

				close local communities engagement will be put on hold if necessary, and work programme/budget will be revised as needed. Wherever possible on-line meeting platforms will be used and travel decreased. All project meetings will be organized mindful of government regulations and healthy standards and other appropriate safeguards (including those of UNDSS).	

Annex 7: Monitoring Plan

This Monitoring Plan and the M&E Plan and Budget in Section VI of this project document will both guide monitoring and evaluation at the project level for the duration of project implementation.

Monitoring	Indicators	Targets	Comments on indicators and targets	Data source/Collection Methods[28]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
Project Objective: To achieve practical PA management improvement and better biodiversity status through strengthened resilience of key biodiversity values to climate change impact and increased revenues from sustainable recreation	**Mandatory** Indicator 1 (GEF Core Indicator 11): # direct project beneficiaries disaggregated by gender (individual people) (GEF Core Indicator 11)	*314,900 (incl. 157,260 women))*	A detailed methodology for assessment will be commissioned and verified at the project Inception stage	Annual project team analysis of number of people directly benefiting from project activities, according to the assessment methodology developed and verified at the project inception stage. Project internal sources such as lists of training participants and KM product distribution lists, will be analysed as data sources. Project beneficiary institutions will be approached to contribute to data collection	Annually Reported in DO tab of the GEF PIR	Project team	Number of the following key beneficiary groups analysed: pilot PA staff and associated management authorities Users of PA tourism offer and related services Ecosystem service users and community representatives involved in project activities in and around PAs PA managers, planners and practitioners Tourism sector businesses and individual partners Tourism and related service	- No large-scale staff turnover in participating enterprises, government institutions, and targeted PAs - Communities residing within and in the vicinity of PAs will benefit from project outcomes

[28] Data collection methods should outline specific tools used to collect data and additional information as necessary to support monitoring. The PIR cannot be used as a source of verification.

Monitoring	Indicators	Targets	Comments on indicators and targets	Data source/Collection Methods[28]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
							providers - private operators Tourism and related service providers (lodgings, traditional food, transportation etc.) - nearby commuinty reps PA visitors	
	Mandatory Indicator 2 (GEF Core Indicator 1.2): Terrestrial protected areas under improved management for conservation and sustainable use (Hectares) (GEF Core Indicator 1)	*113,451 ha*	Coverage of pilot PAs as detailed in the Core Indicator Worksheet	Project reporting on activities directly targeting the pilot PAs METT assessment Pilot PAs' annual reports	Annually Reported in DO tab of the GEF PIR	Project team	Project reports and documentation; Successful completion of project activities for relevant project components, as verified by the MTR and TE.	- Project risk management strategy is instrumental in management of moderate/high risks that derail implementation - Project cofinancing materialized
	Mandatory Indicator 3 (GEF Core Indicator 3.4): Area of land restored (GEF Core Indicator 3.4)	*120 ha*	Direct impact on the area under ecosystem restoration/rehabilitation within Tisina and Gromizelj pilots	Expert mapping reflecting the direct impact coverage for restoration pilots under Output 1.4	Annually Reported in DO tab of the GEF PIR	Project team; Terminal evaluation consultant.	Project reports and documentation; Mapping of direct impact areas for Output 1.4 Restoration success measured by	- Project risk management strategy is instrumental in management of moderate/high risks that derail implementation - Project restoration success indicators are

Monitoring	Indicators	Targets	Comments on indicators and targets	Data source/Collection Methods[28]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
							the established indicators and methodology, as verified by the MTR and TE.	verifiable within the project timeframe - The restoration methods make it possible to show results within the project timeframe - Restoration activities are supported with co-financing resources
Project Outcome 1: Managerial and technical capacities of targeted PAs in place helping ensure resilience of key biodiversity values to climate change	*Indicator 4:* At least 15% increase in METT score for the targeted national PAs	15% increase in METT score for the targeted national PAs	15% increase (on average) over the baseline METT score has been set as the end-of-project target	METT assessment	Before MTE and TR	Project team in cooperation with pilot PAs	METT scorecard	- Baseline finance and co-financing commitments for pilot PAs materialise
	Indicator 5: At least 5 PA management planning instruments with due account of climate threats developed and set under implementation	5 as mid-term target, 10 as end-or-project target	MPs for NPs Drina, Sutjeska, Una, Kozara, Prokosko Lake NM, Vjetrenica Protected Landscape, and Una Park of Nature Alpine newt (*Triturus alpestris*) MP for Prokosko Lake NM Adaptation plan for Serbian spruce (*Picea omorica*) for Drina NP Adaptation plan for Bosnian pine (*Pinus heldreichii*) for Blidinje Park of Nature	Project reporting on Outcomes 1.2 and 1.3 PA reporting	Annually Reported in DO tab of the GEF PIR	Project team	Project reports and documentation; Successful completion of project activities for relevant project components, as verified by the MTR and TE.	- Project risk management strategy is instrumental in management of moderate/high risks that derail implementation - PAs are willing and capacitated to ensure meaningful participation in the development of MP instruments and implement those once developed

Monitoring	Indicators	Targets	Comments on indicators and targets	Data source/Collection Methods[28]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
	Indicator 6a: Non deterioration of population of Serbian spruce (*Picea omorika*) population within Drina NP *Indicator 6b:* Non deterioration of Alpine newt (*Triturus alpestris*) population in Prokosko Lake NM *Indicator 6c:* Non deterioration of Bosnian pine population (*Pinus heldreichii*) within Blidinje PN	*2020 avaialble data on population distribution of the indicator species*		Project reporting on Outcomes 1.2 and 1.3 Indicator data from research and assessment carried out by pilot PAs	Before MTE and TR Reported in DO tab of the GEF PIR	Project team Pilot PAs	Project reports and documentation; PA data on agreed indicators for pilot species; Successful completion of project activities for relevant project components, as verified by the MTR and TE.	- Baseline data is available at pilot PAs - Species monitoring is carried out on regular basis
	Indicator 7a: % reduction in extent (ha/annum) of forests detrimentally impacted by fires: Orjen PN, Sutjeska NP, Kozara NP, Drina NP, Skakavac NM, Blidinje PN *Indicator 7b:* At least two functional community-based fire-fighting units established and functional	7a: baseline data and viable end-of-project target (%reduction) to be obtained in the Year 1; so far, the end-of-project target has been proposed as 15% reduction		Project reporting on Outcome 1.3 Indicator data from research and assessment carried out by pilot PAs	Before MTE and TR Reported in DO tab of the GEF PIR	Project team Pilot PAs	Project reports and documentation; PA data on agreed indicators for pilot species; Successful completion of project activities for relevant project components, as verified by the MTR and TE.	- Baseline data is available at pilot PAs - Tools and material capacities are in place to assess the indicator value - Institutional setting is favourable for testing inter-agency cooperation mechanisms
Project Outcome 2: Financial	*Indicator 8:* At least 20% reduction of the	*To be defined in the first year of*	The exact methodology for assessment to be developed in Year 1	Project reporting PA finance data interpreted as per	Annually	Project team	Project reports and documentation;	- Finance data for pilot PAs are in place

Monitoring	Indicators	Targets	Comments on indicators and targets	Data source/Collection Methods[28]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
sustainability of targeted PAs improves	funding gap for targeted PAs	*project implementation*		agreed assessment methodology	Reported in DO tab of the GEF PIR		Successful completion of project activities for relevant project components, as verified by the MTR and TE.	- Tourism development is on the green recovery track after COVID 19 recession as has been defined by the Government - COVID 19 effects on PA management are not critical
	Indicator 9: At least 1 mutually beneficial public-private agreement (including concessions, leases, rentals) formalised and operational	*1: Concession formalized and operational*	Status of tourism concession at Sutjeska NP	Project reporting Targeted PA reporting	Annually Reported in DO tab of the GEF PIR	Project team	Project reports and documentation; Successful completion of project activities for relevant project components, as verified by the MTR and TE.	- PA management and the competent ministry in RS confirm the initial commitments related to the concession pilot - There is a private sector partner, at least one, interested in the concession
	Indicator 10: At least 4 PAs participate in governmental tourism grant programmes			Project reports PA reports Reports from entity environmental funds	Annually Reported in DO tab of the GEF PIR	Project team	Project reports and documentation; Successful completion of project activities for relevant project components, as verified by the MTR and TE.	- Commitments from the entity Environmental Funds are confirmed - PAs enabled and capacitated to participate in governmental tourism grant programmes

Monitoring	Indicators	Targets	Comments on indicators and targets	Data source/Collection Methods[28]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
	Indicator 11: At least 20% increase in the annual number of visitors and service users in targeted PAs (data disaggregated by gender)	*20%*	Baseline data disaggregated by gender is not available. The project will cooperate with the pilot PAs to ensure that the gender-disaggregate data is in place for the Year 1 project reporting (will be used as baseline data)	Project reports based on data submitted by pilot PAs	Annually Reported in DO tab of the GEF PIR	Project team Pilot PAs	Project reports and documentation; Successful completion of project activities for relevant project components, as verified by the MTR and TE.	- COVID 19 effects on PA management are not critical - Negative effects of COVID 19 pandemic are managed throughout the project lifetime, the tourism development is on green recovery track with a focus on domestic tourism - The target is attainable even with the International travel restrictions related to COVID 19 stil in place - pilot PAs commit to change their annual reporting to accommodate gender-disaggregated data collection on annual number of visitors
Project Outcome 3: Knowledge management	*Indicator 12:* At least 3 knowledge products related to PA climate threats assessment and climate impact monitoring, PA	3		Project reports Project knowledge products publicly available	Annual	Project team	Project-related website, KM product distribution lists	-Demand for stand-alone specific knowledge products, printed or web-designed, confirmed by

Monitoring	Indicators	Targets	Comments on indicators and targets	Data source/Collection Methods[28]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
	integration into sustainable tourism, and tourism concessioning developed and disseminated							project stakeholders and beneficiaries
	Indicator 13: Number of women and men getting access to innovations, best available knowledge and practice, through project-supported capacity building, training, and knowledge building	tbd		Project reports Project knowledge products distribution lists Project-related web resources visitors List of participants of trainings and other KM events	Annual	Project team	Project-related website, KM product distribution lists	-Demand for stand-alone specific knowledge products, printed or web-designed, trainings and other KM events confirmed by project stakeholders and beneficiaries
	Indicator 14: Project M&E requirements and plans implemented in a timely and comprehensive manner	*Project M&E aspects receive positive assessment and satisfactory range rating by the FE*		Project MTR and FE reports	Mid-teren and end-of-project	Project team	Project MTR and FE reports and ratings	

Annex 8: GEF Core Indicators at Baseline

Core Indicator 1	**Terrestrial protected areas created or under improved management for conservation and sustainable use**						***(Hectares)***
				Hectares (1.1+1.2)			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
				54,941	*113,451*		
Indicator 1.2	Terrestrial protected areas under improved management effectiveness						
Name of Protected Area	WDPA ID	IUCN category	Hectares	METT Score			
				Baseline		Achieved	
					Endorsement	MTR	TE
Sutjeska National Park	555593970	II	16,052		*51*		
Kozara National Park	555593969	II	3,908		*63*		
Drina National Park	555698327	II	6,315		*58*		
Una National Park	555698328	II	19,800		*73*		
Skakavac Waterfall Nature Monument	179494	III	1,431		*69*		
Vrelo Bosne Nature Monument		III	603		*80*		
Bijambare Protected Landscape	179411	V	497		*80*		
Trebević Protected Landscape		V	402		*65*		
Bentbaša Protected Landscape		V	161		*51*		
Prokoško Lake Nature Monument	179488	III	2,225		*59*		
Blidinje Park of Nature	555698343	III	35,800		*45*		
Una Park of Nature	555698345	V	2,773		*29*		
Vjetrenica-Popovo Polje Protected Landscape	555698351	V	4,759		*59*		
Tišina Protected Landscape		IV	196		*29*		
Gromiželj Protected Landscape		IV	831		*35*		
Orjen Park of Nature	555692093	V	16,716		*22*		
Orlovača cave Nature Monument	555593980	III	27		*38*		

Ledana Jama Nature Monument	555593977	III	28		*22*		
Vaganska pećina (cave) Nature Monument	555593982	III	12		*25*		
Djatlo cave Nature Monument	555593979	III	43		*21*		
Pavlova cave Nature Monument	555593978	III	13		*23*		
Ledenjača cave Nature Monument	555593986	III	7		*24*		
Velika pećina (cave) Nature Monument		III	821		*19*		
Pod Lipom cave Nature Monument	555593985	III	6		*23*		
Girska cave Nature Monument	555593984	III	25		*23*		
		Sum	113,451				

Core Indicator 3	**Area of land restored**			***(Hectares)***
		Hectares (3.1+3.2+3.3+3.4)		
		Expected		Achieved
		PIF stage	Endorsement	MTR / TE
		500	120	

Indicator 3.1	Area of degraded agricultural land restored					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE

Indicator 3.2	Area of forest and forest land restored					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE

Indicator 3.3	Area of natural grass and shrublands restored					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE

Indicator 3.4	Area of wetlands (including estuaries, mangroves) restored					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
			500	120		

Core Indicator 11	**Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment**					***(Number)***
			Number Expected		Number Achieved	
			PIF stage	Endorsement	MTR	TE
		Female	157,260			

		Male	157,640			
		Total	314,900			

Annex 9: GEF PA Management Effectiveness Tracking Tool

Presented as a separate file.

Annex 10: GEF 7 Taxonomy

Level 1	Level 2	Level 3	Level 4
☒**Influencing models**			
	☐ **Transform policy and regulatory environments**		
	☐ **Strengthen institutional capacity and decision-making**		
	☐ **Convene multi-stakeholder alliances**		
	☐ **Demonstrate innovative approaches**		
	☒ **Deploy innovative financial instruments**		
☒**Stakeholders**			
	☐**Indigenous Peoples**		
	☒**Private Sector**		
		☐Capital providers	
		☐ Financial intermediaries and market facilitators	
		☐Large corporations	
		☒SMEs	
		☐Individuals/Entrepreneurs	
		☐Non-Grant Pilot	
		☐Project Reflow	
	☒**Beneficiaries**		
	☒**Local Communities**		
	☒**Civil Society**		
		☐Community Based Organization	
		☒Non-Governmental Organization	
		☐Academia	
		☐Trade Unions and Workers Unions	
	☒**Type of Engagement**		
		☒Information Dissemination	
		☒Partnership	
		☒Consultation	
		☒Participation	
	☒**Communications**		
		☒Awareness Raising	
		☐Education	
		☐Public Campaigns	
		☐Behavior Change	
☒ **Capacity, Knowledge and Research**			
	☐**Enabling Activities**		
	☒**Capacity Development**		
	☒ **Knowledge Generation and Exchange**		

	☐**Targeted Research**		
	☒**Learning**		
		☒Theory of Change	
		☒Adaptive Management	
		☒Indicators to Measure Change	
	☐**Innovation**		
	☒**Knowledge and Learning**		
		☒Knowledge Management	
		☐Innovation	
		☒Capacity Development	
		☐Learning	
	☒ **Stakeholder Engagement Plan**		
☒**Gender Equality**			
	☒**Gender Mainstreaming**		
		☐Beneficiaries	
		☐Women groups	
		☒Sex-disaggregated indicators	
		☐Gender-sensitive indicators	
	☐**Gender results areas**		
		☐ Access and control over natural resources	
		☐Participation and leadership	
		☐Access to benefits and services	
		☐Capacity development	
		☐Awareness raising	
		☐Knowledge generation	
☒**Focal Areas/Theme**			
	☐**Integrated Programs**		
		☐Commodity Supply Chains ([29]Good Growth Partnership)	
			☐ Sustainable Commodities Production
			☐Deforestation-free Sourcing
			☐Financial Screening Tools
			☐High Conservation Value Forests
			☐High Carbon Stocks Forests
			☐Soybean Supply Chain
			☐Oil Palm Supply Chain
			☐Beef Supply Chain
			☐Smallholder Farmers
			☐Adaptive Management
		☐ Food Security in Sub-Sahara Africa	
			☐Resilience (climate and shocks)
			☐Sustainable Production Systems
			☐Agroecosystems
			☐Land and Soil Health
			☐Diversified Farming

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			☐ Integrated Land and Water Management
			☐Smallholder Farming
			☐Small and Medium Enterprises
			☐Crop Genetic Diversity
			☐Food Value Chains
			☐Gender Dimensions
			☐Multi-stakeholder Platforms
		☐ Food Systems, Land Use and Restoration	
			☐Sustainable Food Systems
			☐Landscape Restoration
			☐ Sustainable Commodity Production
			☐Comprehensive Land Use Planning
			☐Integrated Landscapes
			☐Food Value Chains
			☐Deforestation-free Sourcing
			☐Smallholder Farmers
		☐Sustainable Cities	
			☐Integrated urban planning
			☐Urban sustainability framework
			☐Transport and Mobility
			☐Buildings
			☐Municipal waste management
			☐Green space
			☐Urban Biodiversity
			☐Urban Food Systems
			☐Energy efficiency
			☐Municipal Financing
			☐ Global Platform for Sustainable Cities
			☐Urban Resilience
	☒**Biodiversity**		
		☒Protected Areas and Landscapes	
			☒Terrestrial Protected Areas
			☐ Coastal and Marine Protected Areas
			☐Productive Landscapes
			☐Productive Seascapes
			☐ Community Based Natural Resource Management
		☐Mainstreaming	
			☐ Extractive Industries (oil, gas, mining)
			☐ Forestry (Including HCVF and REDD+)
			☐Tourism
			☐Agriculture & agrobiodiversity
			☐Fisheries
			☐Infrastructure
			☐Certification (National Standards)

			☐ Certification (International Standards)
		☐Species	
			☐Illegal Wildlife Trade
			☐Threatened Species
			☐ Wildlife for Sustainable Development
			☐Crop Wild Relatives
			☐Plant Genetic Resources
			☐Animal Genetic Resources
			☐Livestock Wild Relatives
			☐Invasive Alien Species (IAS)
		☐Biomes	
			☐Mangroves
			☐Coral Reefs
			☐Sea Grasses
			☐Wetlands
			☐Rivers
			☐Lakes
			☐Tropical Rain Forests
			☐Tropical Dry Forests
			☐Temperate Forests
			☐Grasslands
			☐Paramo
			☐Desert
		☐Financial and Accounting	
			☐Payment for Ecosystem Services
			☐ Natural Capital Assessment and Accounting
			☐Conservation Trust Funds
			☐Conservation Finance
		☐Supplementary Protocol to the CBD	
			☐Biosafety
			☐ Access to Genetic Resources Benefit Sharing
	☐**Forests**		
		☐Forest and Landscape Restoration	
			☐REDD/REDD+
		☐Forest	
			☐Amazon
			☐Congo
			☐Drylands
	☐**Land Degradation**		
		☐Sustainable Land Management	
			☐Restoration and Rehabilitation of Degraded Lands
			☐Ecosystem Approach
			☐ Integrated and Cross-sectoral approach
			☐Community-Based NRM
			☐Sustainable Livelihoods
			☐Income Generating Activities

			☐Sustainable Agriculture
			☐Sustainable Pasture Management
			☐ Sustainable Forest/Woodland Management
			☐ Improved Soil and Water Management Techniques
			☐Sustainable Fire Management
			☐ Drought Mitigation/Early Warning
		☐Land Degradation Neutrality	
			☐Land Productivity
			☐Land Cover and Land cover change
			☐ Carbon stocks above or below ground
		☐Food Security	
	☐**International Waters**		
		☐Ship	
		☐Coastal	
		☐Freshwater	
			☐Aquifer
			☐River Basin
			☐Lake Basin
		☐Learning	
		☐Fisheries	
		☐Persistent toxic substances	
		☐SIDS : Small Island Dev States	
		☐Targeted Research	
		☐Pollution	
			☐Persistent toxic substances
			☐Plastics
			☐Nutrient pollution from all sectors except wastewater
			☐ Nutrient pollution from Wastewater
		☐Transboundary Diagnostic Analysis and Strategic Action Plan preparation	
		☐ Strategic Action Plan Implementation	
		☐Areas Beyond National Jurisdiction	
		☐Large Marine Ecosystems	
		☐Private Sector	
		☐Aquaculture	
		☐Marine Protected Area	
		☐Biomes	
			☐Mangrove
			☐Coral Reefs
			☐Seagrasses
			☐Polar Ecosystems
			☐Constructed Wetlands
	☐**Chemicals and Waste**		
		☐Mercury	

		☐Artisanal and Scale Gold Mining	
		☐Coal Fired Power Plants	
		☐Coal Fired Industrial Boilers	
		☐Cement	
		☐Non-Ferrous Metals Production	
		☐Ozone	
		☐Persistent Organic Pollutants	
		☐ Unintentional Persistent Organic Pollutants	
		☐ Sound Management of chemicals and Waste	
		☐Waste Management	
			☐Hazardous Waste Management
			☐Industrial Waste
			☐e-Waste
		☐Emissions	
		☐Disposal	
		☐New Persistent Organic Pollutants	
		☐Polychlorinated Biphenyls	
		☐Plastics	
		☐Eco-Efficiency	
		☐Pesticides	
		☐DDT – Vector Management	
		☐DDT – Other	
		☐Industrial Emissions	
		☐Open Burning	
		☐ Best Available Technology / Best Environmental Practices	
		☐Green Chemistry	
	☒**Climate Change**		
		☐**Climate Change Adaptation**	
			☐Climate Finance
			☐Least Developed Countries
			☐Small Island Developing States
			☐Disaster Risk Management
			☐Sea-level rise
			☒Climate Resilience
			☐Climate information
			☐Ecosystem-based Adaptation
			☐Adaptation Tech Transfer
			☐ National Adaptation Programme of Action
			☐National Adaptation Plan
			☐Mainstreaming Adaptation
			☐Private Sector
			☐Innovation
			☐Complementarity
			☐Community-based Adaptation
			☐Livelihoods
		☐**Climate Change Mitigation**	

			☐ Agriculture, Forestry, and other Land Use
			☐Energy Efficiency
			☐ Sustainable Urban Systems and Transport
			☐Technology Transfer
			☐Renewable Energy
			☐Financing
			☐Enabling Activities
		☐**Technology Transfer**	
			☐ Poznan Strategic Programme on Technology Transfer
			☐ Climate Technology Centre & Network (CTCN)
			☐Endogenous technology
			☐Technology Needs Assessment
			☐Adaptation Tech Transfer
		☐ **United Nations Framework on Climate Change**	
RIO Marker **RIO Marker**	**Climate Change Adaptation: 1** **Climate Change Mitigation: 0**		☐ Nationally Determined Contribution

Annex 11: Overview and responsibilities of project staff and contractors

Staff/Consultant Time Input	Tasks, Inputs and Outputs
Local / National contracting	
Project Manager/ Principal Technical Coordinator	The Project Manager – Principal Technical Coordinator (PM) will be a locally recruited national selected based on an open competitive process. He/she will be providing technical input for the implementation of the project, and will ensure technical coordination and mobilization of all project inputs and synergy between the project components. The PM will be technically supervising project staff, consultants and sub-contractors. The PM's prime responsibility is to ensure that the project produces the planned outputs and achieves the planned indicators and indicator targets by undertaking necessary activities specified in the project document to the required standard of quality and within the specified constraints of time and cost. The PM will be tasked with the technical supervision over implementation of project technical Outcomes, KM and M&E, as well as with substantive, financial and administrative reporting. The PM is to ensure that the project impact contributes to the overall achievement of the main objective set for the project, and the project delivers the global environmental benefits as pledged in the project document. The PM prepares the yearly project workplan for the appraisal by the Project Steering Committee, develops TORs/SOWs for project activities and ensures the technical appraisal of project products and deliverables. The PM is responsible for coordination of project activities with the relevant parallel initiatives undertaken by the project stakeholders. The PM will report to Energy and Environment Sector Leader. <u>Duties and Responsibilities</u> • Plan the activities of the project under technical Components 1, 2 and 3 and, jointly with technical specialists, monitor progress against the initial quality criteria, i.e. vis-à-vis indicators in the logframe; • Ensure technical coordination and mobilization of all project inputs and synergy between the project components throughout the project implementation; • Streamline the integrated approach and cross-sectoral cooperation and coordination between project technical Components 1 and 2 in order to achieve the transformative changes towards better management and financial sustainability of PA estate; • Facilitate the engagement of the private sector, including tourism businesses;ensures deployment of differentiated approaches (as necessary) to engaging with certain groups and communities to ensure inclusion of marginalized and disadvantaged groups (including Roma); • Provide technical leadership and guidance to the project implementation team and development partners; • Make sure that the project planning is done on the basis of a thorough feasibility analysis and the best available knowledge and practices; • Ensure that the project planning is adaptive to the changing implementation environment and takes into account the existing practice and lessons that are being learned from the other projects and regions; • Prepare the annual workplan and quarterly operational workplans as required by the Steering Committee and the Implementing Partner; prepare the Annual Work Plan (AWP) and Annual Plan of Activities and Procurement Plan for the project years as requested by UNDP; • Ensure implementation of the project workplan as scheduled; • Prepare TORs and work specifications for key technical experts under Components 1, 2,and 3. Coach and train the technical experts under components until they are fully capable of implementing the tasks;

Staff/Consultant Time Input	Tasks, Inputs and Outputs
	• Review technical reports under Components 1, 2, and 3 and substantively contribute to development of technical knowledge products and other deliverables obtained from consultants and contractors, ensure technical assessment and control of quality; • Monitor the implementation of project components, analyse problems that hamper their implementation and takes appropriate measures to ensure timely delivery of required inputs and achievement of project-wide results; • Monitor and control the technical progress of the project at a strategic level and ensure adequate project performance in terms of delivery of progress indicator values in accordance with the Project Strategic Framework and agreed timeframes; • Provide technical supervision and ensure substantive input for project reporting; • Provide technical guidance for implementation of the project M&E plan; • Provide technical guidance for project risk management and response; • Act as a focal point for media interventions on technical aspects of the project. Monitor and facilitate advocacy and mass media outreach activities, write success stories, ensure newspapers coverage, participate in PR campaigns; • Ensure project coordination with the relevant regional and national initiatives; • Liaise with other UNDP and UNDP-GEF funded projects to implement possible synergies; • Undertake resource mobilization activities in areas of technical project scope to contribute to project scaling-up and replication; • Manage the overall conduct of the project. • Prepare the inception report no later than one month after the inception workshop. • Ensure that the indicators included in the project results framework are monitored annually in advance of the GEF PIR submission deadline so that progress can be reported in the GEF PIR. • Monitor implementation plans including the gender action plan, stakeholder engagement plan; • Monitors the implementation of UNDP SES requirements including the implementation of the ESMF and ensures the development and implementation of associated management plans; • Monitor and track progress against the GEF Core indicators. • Support the Mid-term review and Terminal Evaluation process. • <u>Qualifications required:</u> • A university degree (MSc or PhD) in a subject related to natural resource management or environmental sciences. • At least 5 years of demonstrable project/programme management experience. • At least 5 years of experience working with ministries, national or provincial institutions that are concerned with natural resource and/or environmental management. <u>Competencies</u> • Strong leadership, managerial and coordination skills, with a demonstrated ability to effectively coordinate the implementation of large multi-stakeholder projects, including financial and technical aspects. • Ability to effectively manage technical and administrative teams, work with a wide range of stakeholders across various sectors and at all levels, to develop durable partnerships with collaborating agencies. • Ability to administer budgets, train and work effectively with counterpart staff at all levels and with all groups involved in the project. • Ability to coordinate and supervise multiple Project Implementation Units in their implementation of technical activities in partnership with a variety of subnational stakeholder groups, including community and government.

Staff/Consultant Time Input	Tasks, Inputs and Outputs
	• Strong drafting, presentation and reporting skills. • Strong communication skills, especially in timely and accurate responses to emails. • Strong computer skills, in particular mastery of all applications of the MS Office package and internet search. • Strong knowledge about the political and socio-economic context related to the national protected area system, biodiversity conservation and law enforcement at national and subnational levels. • Excellent command of English and local languages.
Project Technical Officer	The Project Technical Officer (PO) will be a locally recruited national selected based on an open competitive process. He/she will be providing technical input for the implementation of the project, supporting the Project Manager / Principal Technical Coordinator in the technical supervision over implementation of project technical Outcomes, KM and M&E, implementation of the UNDP/SES requirements as well as with substantive reporting. The PO will provide an expert input to the yearly project workplans, will develop draft TORs/SOWs for project activities specifications for complex technical procurement, and provide technical expertise required for the technical appraisal of project products and deliverables. The PO will reports to the Project Manager / Principal Technical Coordinator. Duties and Responsibilities • Provide technical expertise to the project implementation team and development partners; • Participate in project planning and, jointly with the Project Mangaer, monitor progress against the initial quality criteria, i.e. vis-à-vis indicators in the logframe; • Draft TORs and work specifications for key technical experts under Components 1, 2,and 3. Coach and train the technical experts under components until they are fully capable of implementing the tasks; • Review technical reports under Components 1 and 2, substantively contribute to development of technical knowledge products and other deliverables obtained from consultants and contractors, ensure technical assessment and control of quality; • Monitor and report on the attainment of the progress indicator values in accordance with the Project Strategic Framework; • Provide technical input for project reporting; • Supports the Project Manager in the implementaiotn of UNDP SES requirements; provides technical inputs into different site specific procedures, and together with other specialised experts, supports the implementation of requirements listed in the ESMF. • Provide technical input for implementation of the project M&E plan; • Document lessons learned for the project; • Monitor field activities implementation; • Support the Mid-term review and Terminal Evaluation process. Qualifications required: • A university degree (MSc or PhD) in a subject related to natural resource management or environmental sciences. • At least 5 years of work experience in nature conservation, PA management and/or other project-related field in the country of residence. Competencies • Strong analytical and technical skills.

Staff/Consultant Time Input	Tasks, Inputs and Outputs
	• Strong drafting, presentation and reporting skills. • Strong communication skills, especially in timely and accurate responses to emails. • Strong computer skills, in particular mastery of all applications of the MS Office package and internet search. • Strong knowledge about the political and socio-economic context related to the national protected area system, biodiversity conservation and law enforcement at national and subnational levels. • A working command of English is an advantage.
Project Assistant Admin/Finance/M&E	Under direct supervision of the Project Manager, Administrative and Financial Assistant is fully responsible for operational and programmatic management of the project according to the project document, GEF corporate rules and NIM implementation agreed standards & procedures and for fulfilling but not limiting the following functions: <u>Duties and Responsibilities:</u> • Bear responsibilities for logistics, procurement, finance and recruitment for the project, in accordance with corporate UNDP rules and regulations; • Prepare all financial and administrative documents related to the project implementation; • Develop quarterly and annual budget plans for recruitment of personnel; maintain financial records and monitoring systems to record and reconcile expenditures, balances, payments and other data for day-to-day transaction and reports; • Advise and assist Project staff, experts and consultants on all respects of allowances, salary advances, travel claims and other financial and administrative matters, and calculate and authorize payments due for claims and services; • Prepare detailed cost estimates and participates in budget analysis and projections as required to handle all financial operations of the project office and reconcile all accounts in required time frame; • Maintain, update and transmit inventory records of non-expendable equipment in accordance with UNDP rules; • Perform cash custodian's duties being primarily responsible for project's cash disbursements and maintain project's petty cash book and payrolls; • Ensure leave monitoring of project staff, check the accuracy and proper completion of monthly leave reports; • Analyze the potential problems concerning administrative-financial issues and take respective measures to provide adequate project's resources in time for implementation of the project activities; • Define the cost-effective measures for optimal use of resources of the project; • Ensure full compliance of administrative and financial processes and financial records with UNDP and GEF related rules, regulations, policies and strategies; • Encourage awareness of and promotion of gender equality among project staff and partners; • Oversee and guide the design of surveys/ assessments commissioned for monitoring and evaluating project results; • Facilitate mid-term and terminal evaluations of the project; including management responses; • Facilitate annual reviews of the project and produce analytical reports from these annual reviews, including learning and other knowledge management products; • Support project site M&E and learning missions; • Visit project sites as and when required to appraise project progress on the ground and validate written progress reports.Support the Mid-term review and Terminal Evaluation process.

Staff/Consultant Time Input	Tasks, Inputs and Outputs
	Perform other duties related to personnel, administrative and financial issues of project as required <u>Qualifications required:</u> • Bachelor degree in any of the following areas: Finance, Economics, Management, Environmental sciences, International Relations, or any related field; • At least 2-3-years relevant experience. Working experience in international organizations is an advantage; • Strong financial and administrative skills, result and client-orientation, ability to work in a team; • Ability to work under pressure and with tight deadlines, ethics and honesty; • Ability to use information and communication technology as a tool and resource; • Experience in handling web-based management systems; • Ability to handle multiple tasks simultaneously and ability to prioritize • Good computer skills in common word processing (MS Word), spreadsheet (MS Excel), and accounting software; • Appropriate local language skills, both spoken and written.
Project Communication, KM and replication support consultant	Under the overall supervision and guidance of the Project Manager, the Knowledge Management and Communications Consultant will have the responsibility for leading knowledge management outputs and developing the project communications strategy at the project outset and coordinating its implementation across all project components. The consultant, under the PM guidance, will also support the implementation of the project Monitoring and Evaluation Plan. Specific responsibilities will include: • Develop a project communications strategy / plan, incorporate it with the annual work plans and update it annually in consultation with project stakeholders; • Lead and coordinate the implementation of the project communications strategy; • Coordinate and oversee the implementation of public awareness activities across all project components; • Lead and coordinate the development of knowledge management outputs of the project; • Facilitate the design and maintenance of the project website/webpages and ensure it is up-to-date and dynamic; • Contribute to lessons learned generation; • Facilitate scale-up and replication activities under the overall programmatic guidance of the PM; • Oversee/develop/coordinate the implementation of the stakeholder engagement plan; • Monitor progress in development/implementation of the project ESMP/ESMF ensuring that UNDPs SES policy is fully met and the reporting requirements are fulfilled; • Oversee/develop/coordinate implementation of all safeguard related plans; • Ensure social and environmental grievances are managed effectively and transparently; • Review the SESP annually, and update and revise corresponding risk log; mitigation/management plans as necessary; • Ensure full disclosure with concerned stakeholders; • Ensure environmental and social risks are identified, avoided, mitigated and managed throughout project implementation;

Staff/Consultant Time Input	Tasks, Inputs and Outputs
	Qualifications required: • University degree, preferably in the field of community development or natural resource / environmental management; • A communications qualification (diploma, Bachelor's degree) • At least three years of relevant work experience of communications for project or programme implementation, ideally involving international donors. Previous experience with UN projects will be a definite asset; • Previous experience in developing and implementing communications strategies for organizations or projects • Strong professional working capacity to use information and communications technology, specifically including website design and desk top publishing software • Understanding of illegal wildlife trade, biodiversity conservation, sustainable livelihoods and associated issues; • Very good inter-personal skills • Excellent language skills in English (writing, speaking and reading) and in local language

Annex 12: Comprehensive Stakeholder Engagement Plan

Presented as a separate file

Annex 13: Gender Analysis and Gender Action Plan

1. Introduction

While Bosnia and Herzegovina (further: BiH) constitution and legal system treat women and men equally, there are still issues such as a lack of harmonization of laws with the Gender Equality Law[30], inconsistent implementation of laws, and lack of effective monitoring and reporting. One of the main issues in BiH is lack of equal representation of men and women. According to the Gender Equality Law equal representation exists when one sex is represented by at least 40 percent of the population in public sector bodies at state, entity, cantonal, and municipal levels.

One of the most important steps forward in achievement of gender equality is that gender mainstreaming is being increasingly implemented as a strategy to achieve gender responsible outcomes of governmental regulations and practices. Apart from implementation of gender mainstreaming in government implemented programs, projects implemented in BiH by international partners also embraced this gender mainstreaming practice.

Related to that, the United Nations Development Programme in BiH is implementing the project: Improved Financial Sustainability and Strengthened Resilience of Protected Areas Through Development of Sustainable Recreation and Partnership With Private Sector, with the aim to achieve practical PA management improvement and better biodiversity status through strengthened resilience of key biodiversity values to climate change impact and increased revenues from sustainable recreation. In compliance with the Guide to Gender Mainstreaming in UNDP Supported GEF Financed Projects, the Project decided to develop and implement the gender action plan/gender mainstreaming strategy to assure implementation of the gender principles within the project tasks. Proposed gender action plan is based on the analysis of current situation, which enabled setting actions that need to be undertaken to achieve higher level of gender equality in this area. Projected actions and defined indicators should increase representation of women and men in the project implementation, both as stakeholders and beneficiaries.

Gender analysis is compliant with GEF policies and strategies, such as the Policy on Gender Mainstreaming (2012) and UNDP Guidance Note *How to Conduct Gender Analysis* (2016). Gender analysis is planned to: determine the baseline situation; integrate gender considerations into the project theory of change to understand how and why a given intervention will lead to a specific change and determine program/project activities required to respond to gender risks, differences, gaps, and opportunities, as well as to support the formulation of indicators relating to sex disaggregation and gender sensitivity, to be included in program/project results framework. In addition to sector analysis, gender impact analysis will be also conducted to assess, how the Project activities will impact the situation of men and women in the selected regions. The proposed gender action plan will be also in compliance with the Gender Equality Action Plan of BiH (2018-22).

2. Status of gender equality in Bosnia and Herzegovina

The BiH Gender Equality Law was adopted in 2003 and amended in 2009. The main objective of the Law is to regulate, promote and protect gender equality and to guarantee equal opportunities for all citizens, both in public and in private life. The purpose of the Law is to prohibit gender-based discrimination and establishes legal standards in the field of gender equality. The Law also defines the obligation of the State to establish gender institutional mechanisms. Today, the network of institutional mechanisms for gender equality in BiH encompasses all levels of legislative and executive power across state, entity, cantonal and municipal governments. According to the Law, the key institutional mechanisms for gender equality are:

Executive

- The Agency for Gender Equality of BiH
- RS and FBiH Gender Centers
- Mayors' Coordination Boards or Gender Focal Points

Legislature

- BiH Parliamentary Assembly Gender Equality (GE) Committees of the HoR and the HoP

[30] Official Gazette of BiH, No. 102/09

- FBiH Parliament GE Committees of the HoR and the HoP
- RS National Assembly Committee for Equal Opportunities
- Brčko Distrikt BiH Assembly Committee for GE
- Cantonal Assembly Committees for GE
- Municipal Council/Assembly Commissions for GE

Apart from defining above mentioned minimum threshold of 40% for equal participation, the Law further defines that gender discrimination is found in situations where women and men are represented with less than 40%. This approach shows that equal participation of women and men is seen as one of the goals of gender equality, which requires the adoption of temporary special measures when representation of one sex is below 40%.

Article 23 of the Law is related to the obligation to adopt a state level gender action plan. In line with this, the Gender Action Plan (2018-2022) puts a strong emphasis on building a system that will deliver sustainable impacts of all legal measures and policies to support gender equality. It covers all areas of social life and identifies priority and cross-cutting areas through three strategic goals concerning (1) Development, implementation and monitoring of the programme of measures for advancement of gender equality within governmental institutions, (2) Building and strengthening the systems, mechanisms and instruments for achieving gender equality, and (3) Establishment and strengthening of co-operation and partnerships, with reference to the Law on Gender Equality, national and entity development strategies, the EU Gender Equality Strategy and other relevant strategic documents of the Council of Europe, the European Union and the United Nations[31]. In addition to the basic legal and strategic framework on gender equality, other relevant strategies have been adopted[32].

Despite these achievements at legislative, structural and strategic levels, mechanisms in charge of sector coordination, planning and implementing these policies require strengthening. In general, monitoring and evaluation tools for strategies, including a relevant performance assessment framework with clear focus on results, need to be deployed evenly across the sector.

Women need to be equally and actively involved in processes to conserve and sustainably use biodiversity because they play critical roles as primary land managers and resource users, and they face disproportionate impacts both from biodiversity loss and gender-blind conservation measures. While women in many countries are increasingly taking on responsibility for managing small-scale agriculture, they do not have an equivalent voice in decision-making related to land use, nor equal access to needed resources. Beyond equity, enabling women's full engagement in biodiversity decisions is critical to ensure that biodiversity conservation and sustainable use efforts are successful in the long term. Without the contributions and buy-in of women and girls, these efforts risk overlooking the root causes of biodiversity loss, as well as potential solutions, and may continue to perpetuate gender inequalities. This is especially true for rural women, who are often more marginalized in decision-making processes.

Women's particular roles and responsibilities within the household, community, and society lead women to develop unique knowledge related to biodiversity and climate changes, shaped by their specific needs and priorities. They are thereby in a unique position to bring different perspectives and new solutions to addressing climate change concerns. Measures are necessary to increase the representation of women in decision-making roles related to biodiversity and environmental governance at all levels.

In addition to the above mentioned, tourism has an important role to play in achieving the objectives laid out in the 2030 Agenda for Sustainable Development. The SDGs related to tourism and relevant to the project are:

- Achieve gender equality and empower all women and girls;
- Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all;

[31] https://arsbih.gov.ba/wp-content/uploads/2019/02/GAP-BIH-2018-2022_ENG.pdf

[32] Framework Strategy for the Implementation of the Istanbul Convention of BiH 2015-2018, the Strategy for Combating Domestic Violence in the RS (2014-2019), the Action Plan for Implementation of the Istanbul Convention in the RS 2019-2020, the Strategy for Preventing and Combating Domestic Violence in the FBiH 2013-2019, the Action Plan for the Implementation of the Strategy for Preventing and Combating Domestic Violence in the FBiH 2018-2022 and the third Action Plan for Combating Trafficking in Human Beings in BiH 2016-2019.

- Take urgent action to combat climate change and its impacts;
- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss;

Tourism makes significant contribution towards UN Sustainable Development Goal 5, pinpointing challenges and identifying ways to mitigate inequality. As per World Bank Open Data from 2019: 54% of people employed in tourism are women; Women in tourism earn 14,7% less; 23% of tourism ministers are women. Women also hold less than 40% of managerial positions, less than 20% of general management roles and less than 8% of board positions. It is important to harness tourism's potential to advance gender equality and women's empowerment. Women continue to make up the majority of the tourism workforce worldwide but remain concentrated in low-level employment[33].

In BiH tourism plays an important role in economic development during the last decade. Gender-sensitive legal and macroeconomic policies at the national level could increase women's economic empowerment in the tourism sector when implemented effectively. In that regard it is important to invest in trainings in the tourism sector for women , including training on soft skills and management in tourism sector. Women have few opportunities for high-level tourism training that are critical for career progression. Women remain substantially underrepresented as leaders in tourism sector, with low influence in decision making spaces. Gender equality strategies for the tourism sector are vital for women's empowerment and must be backed by institutional and budgetary support. Women can be empowered politically and socially through tourism when links are made with the broader community and civil society organizations.

Gender Action Plan

Component/Activities	Indicators	Project component	Budget
Ensure equal access of men and women to resources and benefits associated with the PA estate	Number of direct project beneficiaries disaggregated by gender (SRF indicator 1) At least 20% increase in the annual number of visitors and service users in targeted PAs (data disaggregated by gender) (SRF indicator 10)	Component 1 Component 2 Component 2	USD 5,000
Ensure equal access of men and women to innovations, best available knowledge and practice, through project-supported capacity building, training, and knowledge building	Participants of project KM events and recipients of KM products disaggregated by gender *(Number of women and men getting access to innovations, best available knowledge and practice, through project-supported capacity building, training, and knowledge building – SRF indicator 12)*)	Component 1 Component 2 Component 3	USD 15,000
Provide mechanisms for enhanced participation of women in policy development and decision-making	Number of women professionals engaged by the project as experts for climate-smart PA management planning, business planning and innovative finance of PAs, nature-	Component 1 Component 2	USD 5,000

[33] https://www.e-unwto.org/doi/pdf/10.18111/9789284420384.

	based sustainable tourism development		
Ensure representation of women and men in project decision-making boards and working groups is in compliance with the BiH Gender Equality Law (40 % of representation of less represented sex)	Women in leadership roles (Steering Committees and other decision-making bodies supported by the project)	Component 1 Component 2	USD 5,000
Ensure participation of women' owned private enterprises in all specific project activities that envisage private sector participation	Women as private sector stakeholders for the project	Component 2	USD 2,000
Organise training for project management and project institutional partners on gender mainstreaming - with an emphasis on gender disaggregated data collection, inclusion of gender institutional mechanisms into project activities and implementation and specific gender and climate change impact issues and challenges	At least 20% of project management and institutional partners trained and implement gender into specific climate change issues	Component 3	USD 2,000
Develop cooperation with local women' NGOs in the municipalities where selected PAs are located and include Roma women and/or women with disabilities into project activities	Number of local women NGOs included into project activities (targeting 5) Number of Roma women and Roma man and /or women and man with disabilities included into project activities	Component 2 Component 4	USD 2,000
Develop requirements for data that needs to be gender-disaggregated, suggest the mechanisms for data collection and discuss with relevant stakeholders. Ensure that all collected data are used for further project planning and reporting	Gender-disaggregated data available for project reporting	Component 1 Component 2	USD 3,000

Establish cooperation channels between gender institutional mechanisms and responsible institutions included into project implementation and consult gender institutional mechanisms in implementation of gender related activities and reporting process	At least 2 meetings/information share initiatives implemented in cooperation with gender institutional mechanisms	Component 4	USD 3,000

Annex 14: Initial Project Procurement Plan

Presented as a separate file

Annex 15: Co-financing letters

Presented as a separate file

Annex 16: Bosnia and Herzegovina: country context

Socio-economic and administrative context

Bosnia and Herzegovina, situated in the Western Balkans, has a complex constitutional structure and political system. The country of 3.5 million inhabitants is divided into two entities, the Federation of Bosnia and Herzegovina and the Republika Srpska, in addition to the Brčko District, a separate administrative unit. The country's complex political system includes 13 constitutions, 10 cantons each with their own government, 14 legal systems and 141 ministries, making for complicated legislative processes. Bosnia and Herzegovina applied for European Union (EU) membership in February 2016.

For the past two decades, Bosnia and Herzegovina has experienced steady economic growth. Driven mostly by consumption and public investment, the country's annual GDP growth rate averaged 1.82 percent from 2004 until 2019 - too low to lead to a noticeable improvement in many citizens' living conditions. Unemployment remains high at 15.7 percent[34], albeit down considerably from previous years. The youth unemployment rate, at 47.3 percent (2019)[35], is considered one of the highest in the world[36]. Poverty is strongly associated with high unemployment, and over 17 percent of the population is estimated to live below the national poverty line[37].

The COVID-19[38] outbreak triggered an economic crisis in BIH, which was further amplified by the virus spread in the country and consequent government restrictions. The pandemic effects have affected almost every sector of the BIH' small and open economy. The GDP is expected to contract by 6.5% in 2020, which implies a GDP loss of more than 9% compared to previous growth trends[39].

According to the World Bank, BiH's key economic challenge is the imbalance of its economic model: public policies and incentives are skewed toward the public rather than the private sector, consumption rather than investment, and imports rather than exports. The country needs to shift to a business environment conducive to private investment that supports both vibrant small and medium-sized enterprises and the growth of larger companies, facilitates export performance and productivity improvements, and generates much-needed private sector employment. At the same time as addressing these imbalances in the economic model, the country must also ensure the sustainability and inclusiveness of future growth.[40]

Bosnia and Herzegovina has consistently run a budget deficit of around 2 percent of GDP in recent years, but its public foreign debt remains low at 24.5 percent of GDP in 2018[41]. According to the EIB, if the Government and state-owned enterprises were to reduce their extensive workforce gradually, some portion of those former employees would turn to entrepreneurship, boosting the small and medium enterprises (SME) sector. In order to support its high spending, the Government has set the tax rate on employee salaries at 37 percent, frequently cited by SMEs as one of the biggest constraints to their development[42].

The World Bank's Doing Business Report 2020[43] highlights some of the challenges the country faces in stimulating entrepreneurship. The country ranks 184th out of 190 countries in starting a business and 173rd in dealing with construction permits. On the positive side, it is 27th in trading across borders and 37th for resolving insolvency. The overall ranking was 79th in 2016, and 90 in 2019.

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[34]Agency for Statistics of Bosnia and Herzegovina, 2019.

[35]Ibid.

[36]http://www.bhas.ba/?option=com_publikacija&id=1&lang=en

[37]https://data.worldbank.org/country/bosnia-and-herzegovina

[38]Covid-19 is an infectious disease caused by the virus strain "severe acute respiratory syndrome coronavirus" (SARS-CoV-2). In March 2020, the World Health Organization (WHO) declared the coronavirus outbreak a pandemic and a public health emergency of international concern. Governments in BIH also declared a state of emergency in March 2020. Imposed restrictions slowed the economy down, forcing many small and mid-size businesses and much of the hospitality, retail, and in-person service sector to close their business operations.

[39] Source: https://www.imf.org/en/Countries/BIH

[40] The World Bank: Overview of BiH. Available at:
https://www.worldbank.org/en/country/bosniaandherzegovina/overview

[41]https://www.eib.org/attachments/efs/assessment_of_financing_needs_of_smes_bosnia_herzegovina_en.pdf

[42]Ibid

[43]World Bank, 2019. 'Doing Business 2020: Comparing Business Regulation in 190 Economies - Economy Profile of Bosnia Herzegovina', (English), World Bank Group, Washington, D.C. 2019: http://documents.worldbank.org/curated/en/657131574754234166/Doing-Business-2020-Comparing-Business-Regulation-in-190-Economies-Economy-Profile-of-Bosnia-Herzegovina.

Any consideration of socio-economic factors in Bosnia and Herzegovina must take notice of the country's population decline. At the time of the 1991 census, Bosnia and Herzegovina had a population of 4.37 million, which dropped to 3.9 million by 1996. The last census took place in 2013 and showed a population of 3,531,159[44], which is 839,000 fewer than in 1991.

BIH experiences negative migration trends, with 250,000 people having left the country since 2013[45]. Since the end of 2017, the country has been also struggling with increased numbers of migrants and asylum seekers. Much of the population loss can be attributed to persons departing for other parts of Europe to seek better economic conditions. As this migration skews towards youth, BiH has experienced rapid ageing of its remaining population (median age 41 years)[46].

Unemployment, already high, is expected to increase because of the COVID-19. The unemployment rate fell from 18.4% in 2018 to 15.7% in 2019, partly reflecting the country's aging and shrinking workforce. The labour market is also characterized by low employment rates and high inactivity, particularly among women[47].COVID-19 now threatens to cause the loss of a significant share of the existing jobs, especially in the service sector[48]. The country also has a relatively low level of wages as a reflection of its overall weak competitive position.

Regarding to the poverty dynamics, Household Budget Surveys (HBS) serve as the main reference point for poverty analysis in BiH. HBSs in BiH have been conducted only sporadically (2015, 2011, 2007 and 2004), which has prevented monitoring of poverty on a regular basis. The last HBS was conducted in 2015 and it shows that poverty rate has fallen from 17.9 % in 2011 to 16.9 % in 2015. One of the structural problems in BiH is certainly the difference between the rural and urban population. This is reflected in the huge difference in the poverty rate: 11.3 % for the urban population and 20.5 % for the rural population. Regarding the employment status of the head of the household, those households where the head of the household is incapacitated for work were at greatest risk of poverty (38.5%) and those households where the head of the household is employed were at the lowest risk of poverty (11.6%).[49] However, In-work poverty in BiH Report shows that, for many people in BiH, having employment does not guarantee a way out of poverty. Despite a very low at-risk-of-poverty threshold, their estimate for 2015 shows a very high IWP rate of 24.5%, which is staggering by European standards.[50] One in six households in BiH is poor. Almost all housing units in BiH are connected to electricity and water supply, and only 2.8 % of households in BiH live in rental homes. Based on the data provided by the Agency for Statistics of Bosnia and Herzegovina, the poverty rate for senior citizens (65+) and children (<15) exceeds the average poverty rate in the country.[51]

BiH is ranking 75th out of 188 countries according to the Human Development Index[52]. The Gini coefficient of Bosnia and Herzegovina stands at 32.7, indicating a moderate level of inequality. Certain communities in Bosnia and Herzegovina, such as the Roma, internally displaced persons and the long-term unemployed, experience significant difficulties in accessing education, housing, healthcare and employment. The challenges for the Roma population in these areas have received attention through a recent government strategy (2017-2020). There are legal provisions in place promoting equality between men and women in BiH. However, the implementation of these provisions is uneven. Legislation to prevent and protect victims of gender-based violence (GBV), particularly domestic violence, is not implemented effectively and women continue to be underrepresented in the political arena and public life[53].

Tourism development context

Tourism in BiH is a fast-growing sector making up an important part in the economy of the country. In 2013, the World Economic Forum reported in its Travel and Tourism Competitiveness Report that Bosnia and Herzegovina was the world's eighth friendliest nation towards tourists[54]. The National Geographic ranked Bosnia and Herzegovina among the 10 best adventure destinations for 2012. Among the destinations that offer excellent rafting, mountaineering, skiing and other

[44]https://www.popis.gov.ba/popis2013/doc/RezultatiPopisa_BS.pdf

[45] Migration and Brain Drain, the World Bank Group, 2019.

[46]World Bank, Net migration for Bosnia and Herzegovina: https://datacatalog.worldbank.org/dataset/world-development-indicators.

[47]http://bhas.gov.ba/data/Publikacije/Bilteni/2019/LAB_00_2019_TB_0_BS.pdf.

[48] The BIH Labour and Employment Agency recorded that the number of unemployed increased by 18,586 from March to June 2020.

[49]Voluntary Review - Implementation of Agenda 2030 and the Sustainable Development Goals in Bosnia and Herzegovina. The United Nations .April 2019

[50] In-work poverty in Bosnia and Herzegovina. European Commission - European Social Policy Network (ESPN). 2019

[51] Voluntary Review - Implementation of Agenda 2030 and the Sustainable Development Goals in Bosnia and Herzegovina. The United Nations .April 2019

[52] Measuring average levels of income, health and education, the Human Development Index of BIH was at 0.769 in 2019, ranking it among the countries with a high level of human development. Human Development Indices and Indicators, 2019 Statistical Update, UNDP.

[53]https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20180417-bosnia-and-herzegovina-report.pdf

[54] Blanke, Jennifer; Chiesa, Thea, eds. (2013). *"The Travel & Tourism Competitiveness Report 2013" (PDF)*. World Economic Forum. p. 455.

adrenaline sports, BiH was named as offering the best mountain biking trails. As of 2016, tourism accounted for 2-3% of the GDP and it provided ca 33,000 jobs. According to BiH Chamber of Commerce before the COVID-19 pandemic, the contribution of tourism to GDP was expected to grow by 5.6% to BAM 1,322.7 million (3.4% of GDP) by 2027. In 2018, Bosnia and Herzegovina surpassed 1 million arrivals and continued the growth until the sector was hit by 2020-2021 COVID-19 pandemic. In 2019, the country had the third-highest tourism growth rate in the world, and tourism contributed more than 409 million euros to the economy.

The accelerated tourism development in Bosnia and Herzegovina has offered development opportunities for rural areas, which often lag behind developed urbanized centres of the country. Tourism development enabled development of the periphery, offering economic opportunities, contributing to improved infrastructure, services and boosting the positive image of a region or the country as a whole. With wealth of natural, cultural and historical heritage, favourable geographic location, internationally known events, unique gastronomic offers, and its status as a still unknown tourism destination for major markets, Bosnia and Herzegovina has all pre-determinants to tourism development. A set of integrated short-term measures to further unlock sustainable tourism development in the country offered by an independent analysis financed by UNDP in 2018 included:

• develop the sector country-wide strategy to guide development and investments; ensure mine-free tourism destinations, boost tourism infrastructure and diversify tourism services which valorise the unique natural, historical and cultural assets of the country, set the ground for successful affirmation of the country as a world-class tourism destination;

• Ensure further, well-targeted promotion of the tourism brand both within the country and internationally, regional networking, as well as strengthened tourism governance that ensures quality public services and infrastructure will leverage increased tourist visits.

In 2020, however, the COVID-19 pandemic decreased tourism revenues by more than 85 percent and hampered the sector's development. Even before the COVID-19 pandemic, the tourism industry's performance was far below potential. This can be attributed to a variety of challenges such as underdevelopment and inadequate management of many tourism sites, insufficient tourism infrastructure and accommodation facilities, weak institutional and business connections within the sector and across sectors, and a still lacking global image of BiH that has not been addressed by an effective country branding and marketing campaign.

The country is now actively developing the paths towards the recovery of the tourism sector from the negative impacts of the pandemic. The sector's plans to emerge from the COVID-19 crisis by re-establishing the destination while setting new standards for sustainable tourism. There will be a time lag until the sector adjusts to the "new normality". So far, the focus in the recovery strategy is the development of domestic tourism - a complex process that requires a shift in the thinking and behavior of both providers and consumers of tourism services. The rewards of such a shift would be multiple: tourism in Bosnia and Herzegovina would develop in a more sustainable and non-intrusive direction by promoting slow tourism characterized by longer stays and shorter distances.

BD conservation context

BiH is primarily a mountainous country covered in forests. The average altitude is 500 m, with the highest peak being the Maglić Mountain (2,387 m). Out of its total land surface area, 42% consists of mountains, 24% of hills, 29% of karst areas and 5% of lowlands[55] . In the north, BiH has access to the Sava River and in the south, in Neum, to the Adriatic Sea. According to its geographical position, BiH belongs to the Adriatic and Black Sea Basin. BiH has a high value in water resources in the Balkan Peninsula, as there are many surface and groundwater watercourses in the country including seven river basins (Una, Vrbas, Bosna, Drina, Sava, Neretva with Trebišnjica and Cetina rivers), a large number of river lakes (on Pliva and Una rivers), mountain lakes (in the area of Dinarides) and thermal and geothermal groundwater resources.[56]

[55] 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

[56] Ibid.

As a result of unique orography, geological surface, hydrology and eco-climate, BiH has one of the greatest diversity of species of plants and animals 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.

As reported in the 2016 Biodiversity Analysis, systematic gathering and analysis of data on biodiversity in BiH and monitoring status of biological diversity are almost nonexistent. Inventory of flora and fauna has not been done. According to UNECE 2018 Environmental Performance Review, BiH hosts 252 ecosystems and unique biotopes that are important from both a European and global conservation perspective.[57] Unfortunately status of these ecosystems is not known, since no monitoring system is in place. There is generally neither detailed nor recent map of types and distribution of these ecosystems. Coastal and marine ecosystems are especially neglected and not well explored compared to terrestrial and aquatic ecosystems in BiH.

The official biodiversity data repositories are not established in BiH, therefore it is impossible to track the status of species diversity. In addition, there is no information that any endangered species is extinct or that any endangered species has improved its status since 2016[58].

While Red Lists have been developed and approved at the entity level (RS approved the Red List of Endangered Species of Flora and Fauna[59] in 2012 and the FBiH approved the Red List of Endangered Wild Species and Subspecies of Plants, Animals and Fungi[60] in 2014), there is no Red List at the state level which shows the status of threatened plant and animal species.

According to UNECE 2018 Environmental Performance Review, the ecosystems highly sensitive to climate change are high mountain landscapes, mountain landscapes and relict-refugial landscapes. The ecosystems situated in karst landscapes are also vulnerable to climate change and, at the same time, they are also strongly affected by other anthropogenic pressures (among these, the wetlands of karst fields are particularly sensitive)[61]. According to the Survey on stakeholders, ecosystems with best rated conditions are meadow ecosystems (with average rate of 3.38) continue by pasture ecosystems (3.28), forest ecosystems (3.12) and agro-ecosystems (3.00). The most degraded ecosystems are water ecosystems (with average rate of 2.61), followed by wetlands ecosystems (2.74) and urban ecosystems (2.80).

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[62]. According to Survey on stakeholders, 87.8% of them stated that biodiversity contributes to local rural development (from that 41.5% state that biodiversity absolutely contributes to local rural development). In their view, local/rural development mostly depend on these ecosystem services: tourism and recreation (73.1%), availability of drinking water (31.7%), pleasant climate, clean air and cultural heritage (29.3%) following with aesthetic values of area and existing of numerous different or specific species of flora and fauna (26.8%) and availability of wild medicinal herbs, forest fruits, ornamental plants (17%). It is interesting that they put more focus on cultural and regulating than provisioning group of ecosystem services (even that provisioning ecosystem services bring direct benefits for population).

Collection/natural habitat harvesting and cultivation of medicinal and aromatic plants, forest fruits and mushrooms has 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 Foreign Trade Chamber of BiH, the medicinal plants, forest fruits and honey export in 2018 was BAM 39 million (USD 22 million) and recorded an increase of 55% comparing to 2017[63].The numbers of families engaged in medicinal and aromatic plants collection in BiH is estimated at approximately 50,000 of

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[57] 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

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

[59] OG of RS, No. 124/12

[60] OG of FBiH, No. 7/14

[61] 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

[62] 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%A1njica-River-Basins.pdf.

[63] 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/

which almost 3,000 are organized in over 50 companies which repurchase medicinal herbs. Most of the collectors earn their incomes by collection of herbs, mushrooms and forest fruits[64]. 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 RS and FBiH, some natural habitats of medicinal herbs have become quite barren[65].

Environmental Governance system overview

At BiH level, environmental matters are the responsibility of the Sector on Natural Resources, Energy and Environment of the Ministry of Foreign Trade and Economic Relations (MOFTER). MOFTER is responsible for the implementation of environmental protection programs resulting from international treaties, as well as cross-sectoral coordination between other sectors of environment.

At the entity level, the ministries primarily in charge of biodiversity conservation are the Federal Ministry for Environment and Tourism and RS Ministry of Urban Planning, Civil Engineering and Ecology. According to the interview held with the representative of the Federal Ministry for Environment and Tourism, only 2 persons are employed in the field of biodiversity protection in this Ministry, even though the classification of workplaces foresees a total of 4 employees. In RS only one employee is employed in the field of biodiversity protection in RS Ministry of Urban Planning, Civil Engineering and Ecology, while classification of workplaces foresees a total of 2 employees. During the interview held with the RS Ministry of Urban Planning, Civil Engineering and Ecology representative, it was highlighted that this Ministry needs more than one employee in this field based on their current and future needs.

In 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. Within this Department 7 employees are foreseen according to classification of workplaces, while 6 of them are employed. According to the Law of Nature Protection of RS, this Institute is responsible for conducting nature monitoring, collecting and processing of information about nature condition, making reports and updates the Information Systems for Nature Conservation of RS. In FBiH, a similar Institute has not been established yet, even if its establishment is foreseen by the Law on Nature Protection of FBiH. For this reason the Information Systems for Nature Conservation of FBiH will be maintained and updated by the Fund for Environmental Protection of FBiH[66]. According to the interview held with the FMET capacity building for the said Fund is foreseen by establishing a professional department within the Fund which will work on the said Information System.

At the cantonal level in FBiH there is one ministry per canton (10 in total) responsible for environmental protection. The Cantonal ministries deal with environmental and nature protection issues, as well as the establishment and management of PAs of categories III, IV, V, VI[67].

PAs in BiH

There are four National Parks (IUCN category II): National Park “Kozara” and National Park “Sutjeska” and recently proclaimed National park “Drina” in Republika Srpska (RS), and National Park “Una” in Federation of Bosnia and Herzegovina (FBiH). Seventeen areas are designated as Nature Monuments (IUCN category III), five out of which are located in FbiH, and twelve in RS.

Table 1. Protected areas in Bosnia and Herzegovina

Name of the protected area	National Category	IUCN category	Area (ha)	Entity
Janj Primeval Forest	Strict Nature Reserve	Ia	295.0	RS
Lom Primeval Forest	Strict Nature Reserve	Ia	297.8	RS

[64] 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

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

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

[67] Law on Nature protection FBIH (OG of FBIH, No. 66/13), Article 134.

Sutjeska	National Park	II	16,052.0	RS
Kozara	National Park	II	3,908.0	RS
Drina	National Park	II	6,315.0	RS
Una	National Park	II	19,800.0	FBiH
Skakavac	Nature Monument	III	1,431.0	FBiH
Vrelo Bosne	Nature Monument-spring	III	603.0	FBiH
Prokosko lake	Nature Monument	III	2,225.0	FBiH
Orlovača cave	Nature Monument	III	27.0	RS
Ledana jama	Nature Monument	III	28.3	RS
Vaganska cave	Nature Monument	III	12.0	RS
Đatlo Cave	Nature Monument	III	43.4	RS
Pavlova Cave	Nature Monument	III	13.4	RS
Ledenjača cave	Nature Monument	III	7.4	RS
Velika pećina (cave)	Nature Monument	III	820.9	RS
Pod Lipom cave	Nature Monument	III	6.1	RS
Girska cave	Nature Monument	III	25.4	RS
Ljubačevo cave	Nature Monument	III	45.5	RS
Rastusa cave	Nature Monument	III	11.4	RS
Tajan Park	Nature Monument	III	3,510.0	FBiH
Žuta Bukva	Nature Monument	III	0.5	RS
Lijevčanski knez	Nature Monument	III	0.3	RS
Kuk cave	Nature Monument	III	0.0	RS
Tišina	Protected Habitat	IV	196.5	RS
Gromiželj	Protected habitat	IV	831.3	RS
Bijambare	Protected Landscape	V	497.0	FBiH
Trebević	Protected Landscape	V	400.2	FBiH
Bentbaša	Protected Landscape	V	160.9	FBIH
Blidinje	Park of Nature	V	35,800.0	FBiH
Una	Park of Nature	V	2,773.0	RS
Vjeternica-Popovo Polje	Protected Landscape	V	4,759.0	FBiH
Orjen	Park of Nature	v	16,716.0	RS
Konjuh	Protected landscape	V	8,016.6	FBiH
Cicelj	Park of Nature	V	330.8	RS
Hutovo Blato	Protected Landscape	V	7,411.0	FBiH
Area for resource management "University City"	Protected area with sustainable use of natural resources	VI	27.4	RS
Slatina	Protected area with sustainable use of natural resources	VI	35.7	RS
Forest Park "Jelića brdo"	Protected area with sustainable use of natural resources	VI	3.0	RS

The underdevelopment of PA system in BiH is in sharp contrast to the conservation needs. The biological, climatic and landscape diversity of the country are among top five on the continent and have been a source of sustenance for its people throughout its history. The country is home to a number of endemic species and habitats as well as a series of relict ecosystems. BiH belongs to the Mediterranean Basin Biodiversity Hotspot, which is well known for its globally important biodiversity and is home to several key biodiversity areas (KBAs), important bird areas (IBAs), Ramsar sites and primeval forests.

There are 3 Ramsar and 4 IBA sites in BiH, as shown in ***Error! Reference source not found.***. Question of management and financing of these areas is difficult since they are not recognized by entities laws on nature protection and integrated in 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 has a management plan and there is no national wetland inventory or inventories at the state or entities level. No planning and management is available for the IBA sites as well.

Table 2: Ramsar sites and IBAs in Bosnia and Herzegovina

No.	Name	Location	Area in hectares	Protection Status
Ramsar sites				
1	Hutovo Blato	FBiH	7,411.00	Nature Park (IUCN cat. V)
2	Livanjsko Polje	FBiH	45,800.00	-
3	Bardača	RS	3,500.00	-
KBAs				
1	Hutovo Blato	FBiH	7,411.00	Nature Park (IUCN cat. V)
2	Boračko Jezero	FBiH	26	-
3	Bardača	RS	3,500.00	-
4	Livanjsko Polje I Buško Jezero	FBiH	45,868.00	-

The current percentage of territory under protection in BiH is 2.28% (was 1.96% in 2016), with 3.24% in the FBiH and 1.30% in the RS respectively. Coast and sea areas in BiH have not been protected so far.

PA finance

Protected areas in BiH are managed by public entities and institutions, while financing of those institutions is provided via the governmental (FBiH/RS) and/or cantonal environmental funds, revenues and income from fees (entry fee, fee for recreational fishing and sports activities, souvenirs, parking fees, camping etc), as well as grants and subsidies. The overview of the government spending for the protected areas is provided in the table below. 2020 figures are somewhat impacted by budget rebalances caused by the COVID-19 pandemic.

Table 1: Overview of annual budgetary allocations for nature protection and tourism in FBiH and RS, in USD

Entity	Authority	Entity Budget Line	2017	2018	2019	2020
Federation of Bosnia and Herzegovina	Federal Ministry of Environment and Tourism	Annual Transfers for Implementation of the FBiH Environmental Strategy and Action Plan	880,281	733,568	909,624	302,000*
		Annual Transfers for Tourism Development in FBiH	1,584,507	1,819,249	1,375,000	0**
		Annual Transfers to "Una" national park	293,427	293,427	293,427	302,000
Rep pska	Ministry of Trade and Tourism	Annual Grants for Tourism Development	424,000	424,000	424,000	424,000

		Investment Grant for Tourism Development	586,854	586,854	586,854	363,000
	Ministry of Spatial Planning, Construction and Ecology	Annual Transfers to "Sutjeska" and "Kozara" national parks	1,115,023	1,115,023	1,115,023	1,150,000
		Annual Transfers for "Drina" national park	-	58,685	117,371	121,000

*the initial budget allocation for this purpose was the same as in 2019 (a little less than $1mil), but two thirds of the funds were transferred to the COVID-19 response related Federal Stablisation Fund. The remaining one third stated here was used for the procurement of two air quality monitoring stations.
**the planned budget for this activity was redirected to the COVID-19 response related Federal Stablisation Fund. However, some 18 million USD was made available in October for the tourism sector recovery by the Federal Ministry of Environment and Tourism, through the same Fund.

The four national parks' baseline financing comes from entity environmental ministries' budgets; the public financing of PAs of cat. III and below wildly differs. In RS, those PAs usually stay with little to no financing from municipal budgets, while in FBiH the majority of PAs of lower category have a dedicated management authority with at least some funding from the cantonal level.

Further on, nature conservation can and often is funded from the dedicated grant schemes of entity and cantonal environmental ministries and the entity environment funds. There is no secured financial support from the Environment Protection Funds (both of FBiH and RS), as the funds do not provide continuous financial support to PA management authorities (public enterprises/institutions) in their establishment and operation, nor do they fund activities for protecting and improving the state of biodiversity according to adopted management plans.

Despite a significant tourism development potential, all PAs in BiH have yet to become self-sustaining and are often closing financing gaps by unsustainable natural resource use (commercial logging, issuing hunting permits etc). For 2020, just two national parks, Una in FBiH and Sutjeska in RS, managed to make financial inputs and costs even. The majority of PAs including some nature parks and natural monuments still have not introduced visitor ticketing or other income generating practices and a significant number of PAs (particularly cat. III-VI in the entity of Republika Srpska) exist without any funding allocations.

Given the current number of visits, the baseline tourism offerings in the PAs, and the low growth trends for most of the PAs in BiH recently, a level of self-sustainability will be difficult to achieve in most PAs in the next few years without investing in content that will attract more visitors. Yet the PAs of BiH have a great potential to be the generators of local sustainable development, especially from the aspect of sustainable tourism offer. Some positive trends in this regard should be noted for the Una National Park and the Protected Landscape of Konjuh, both of which were able to generate a sustainable (although modest) profit from the tourism offering.

Only one protected area in BiH managed to have positive cash-flow for three consecutive years – NP Una. The current funding levels barely close the PA staff salary, and the majority of PAs is already understaffed. The conservation measures are often funded only through extra-budgetary allocations, third party-led projects or international assistance. Increasing the financial health of country's PAs and strengthening the own income generationthrough sustainable tourism development would have multiple positive effects on both conservation efforts in PAs and sustainable post-pandemic recovery of country's economy.

COVID impact on PAs

Despite their relatively small number and small coverage, protected areas in Bosnia and Herzegovina attract a large number of tourists. Two national parks (Una and Kozara) have almost 150,000 tourist visits annually, which is around 15% of the total annual tourist visits in Bosnia and Herzegovina[68]. Kozara National Park is primarily known for its cultural and historical heritage and ensures a stable boost to the local economies by attracting more than 80,000 visitors per year. In Una National Park the key attraction is nature itself: the river and waterfalls in the park are visited by more than 50,000 tourists annually. However, the lack of well-developed tourist infrastructure, including lodging, is evident, as most of the visits to the protected areas are one-day visits. A majority of the people living in the parks have emphasized the importance of tourism for local economies. Of the stakeholder groups targeted by the "Protected Areas Benefit Assessment in Bosnia and Herzegovina" in

[68] As above

2016, 68% have recognized tourism related activities as contributing at least minor levels of subsistence values. The major subsistence value of tourism and recreation was emphasized by stakeholder groups in Una National Park, Hutovo Blato Nature Park and Vrelo Bosne Nature Monument.

Only several protected areas in BiH offer consumer service to tourists and although the country is experiencing a visitation increase every year, there is very few tourism products that deal with natural values of PAs. The PA network of BiH can offer a year-round set of attractive activities, such as trekking, winter sports, bird watching, water safaris, rafting, camping or rock climbing. Having different types of climates, the country is a prime example of weather diversity and a range of different ecosystems in a relatively small territory and is thus exemplary for development of nature-based tourism products.

Numerous strategic approaches and practical tools for sustainable tourism have been developed in recent years. One of the useful mechanisms that have been proved in many PAs across Europe and the region is European charter for sustainable tourism developed by the Europarc Federation. Una National Park has been applying the Charter since 2014 and it is remarkable how this park has established itself as a leading tourism destination in just a few years. The number of visitors has increased by 16 times since 2011 when the PA was established.

The report on the impact of the COVID-19 pandemic on the work of protected areas in Bosnia and Herzegovina, produced by UNEP and WWF in June 2020 showed a significant effect of the public health crises on the overall management of PAs in the country, primarily related to a decrease in the number of visitors and budget cuts. Some of the managements that prior to the pandemic had significant visitation numbers reported a decrease of income as large as 80%. Most of the PAs have not received any recovery assistance from the governments apart from Sutjeska National Park. The implementation of conservation measures was hampered, and poaching rates increased in some protected areas due to insufficient control and monitoring.

Although a majority of PA managements (65% of those surveyed) did not plan for any alternative approaches to bridge the financing gaps, some saw the crisis as an opportunity and introduced new tourism packages focused on domestic tourists (e.g. Una National Park). Many PAs felt that more attention should be given to building stronger and more attractive local destinations out of protected areas and hope to receive support for these efforts in the future.Mangers also felt that they lacked in capacity to apply for economic recovery schemes available in the country and stressed the need for more collaboration with the civil society and the private sector to overcome the financing gaps and access recovery funds.

The structure of expenses of the protected area managements, which shows that promotion and information expenses range from 0% to 2% for many protected areas, indicates that in order to be self-sustainable and to increase their own income in their future business operations, the protected area managements will have to increase the investment in promotional activities, from the current percentage to 10-20%, in accordance with best practices in terms of promotion expenses.

Annex 17: Past and ongoing initiatives in the field of relevance

Key past interventions, their achievements and failures relevant to the proposed project.

No.	Organization	Project name	Project description	Donor	Period	Budget
1.	CENER 21 and Cantonal Public Institution for the Protected Natural Areas of Sarajevo (BiH) and 10 other partners from 8 countries in the Danube catchment area	ECO KARST	The ECO KARST project aimed to contribute to the protection and sustainable development of karst bio-regions in the Danube region based on their valued Ecosystem services. The project also aimed to increase pro-biodiversity business (PBB) opportunities.	ERDF and IPA through Interreg Danube Transnational Programme	2017-2019	2,263,661 EUR
2.	WWF Adria	Protected areas for Nature and People (PA4NP) - Field project UNA	Una National Park showed how parks can become a generator for the development of environmentally responsible practices, by providing support for green business ideas, opening of eco-market and marketing of local products.	International Development Cooperation Agency (SIDA)	2015-2019	322,530 EUR
3.	WWF Adria	Protected areas for Nature and People(PA4NP) - Field project Sutjeska	NP Sutjeska worked to promote tourism as an alternative to unsustainable patterns of development.	International Development Cooperation Agency (Sida)	2015-2019	204,663 EUR
4.	UNDP, Ministry of Spatial Planning, Civil Engineering and Ecology (MSPCEE) and the Ministry of Foreign Trade and Economic Relations (MoFTER)	Advance the National Adaptation Plan (NAP) process for medium-term investment planning in climate sensitive sectors in Bosnia-Herzegovina	The key outcomes of the project among others, are: Effective national adaptation coordination system established to drive the NAP process and Capacity for climate vulnerability assessments, development of socio-economic scenarios strengthened, and adaptation options prioritized for two key sectors	Green Climate Fund and UNDP	2018-2021	2,278,920 USD
5.	Una National Park and Development Agency of the	EcoSUSTAIN - Ecological sustainable Governance of	In order to maintain natural ecosystems and facilitate sustainable growth of the protected	ERDF and IPA trough	2016-2019	1,753,226.36 EUR

	Una-Sana Canton with 8 other partners from 5 countries	Mediterranean protected Areas via improved Scientific, Technical and Managerial Knowledge Base	areas of the Mediterranean basin EcoSUSTAIN overall objective was to increase management capacity of protected areas by developing integrated management and networking methodology, as well as innovative monitoring tools to support monitoring.	Interreg Mediterranean (MED) Programme		

The **ECOKARST** Project resulted in the ecosystem services mapping for the PL Bijambare, and preparation of an Action Plan for the Development of Small Enterprises in the Wider Area of Bijambare Protected Landscape. The Action Plan outlines the objectives and proposes the activities with the pro-biodiversity business and the local community as the main actors, and organizes the expected results, timelines and responsibilities around for main sectors - agriculture, tourism, wood products, and non-timber forest products – within the wider Bijambare Protected Landscape area. The Action Plan is accompanied by the Biodiversity Investment Opportunity (BIO) map provides information about the pro biodiversity businesses and business ideas and also features cycling and hiking trails perspective for the development of tourism and better sales of the products and services of the wider Bijambare Protected Landscape area. The ECOKARST project workshops and trainings with the local businesses and community resulted in a SWOT analysis of pro biodiversity business activities in the wider Bijambare Protected Landscape area. The activities within the Action Plan proposed for implementation within the Bijambare PL will be integrated into the Bijambare Protected Landscape Management Plan during the update process. The activities proposed for implementation in the wider scope of the Bijambare Protected Landscape were proposed to the Municipality of Ilijaš for integration into the Sustainable Development Strategy for the Municipality of Ilijaš.[69]

WWF Adria together with its partners implemented Field project UNA and Field project Sutjeska from 2015 to 2019 as part of the regional project “Protected areas for Nature and People”, funded by Swedish International Development Cooperation Agency (Sida). The project is a continuation of initiative of WWF "Dinaric Arc Parks", through which the network "Parks Dinarides" was established. The main purpose of the project is sustainable use of natural resources in the Dinaric Arc region as a foundation for the socio-economic development. In Bosnia and Herzegovina, two PAs – National Parks Drina and Una – were a subject of field projects. Field project Una was funded with 322,530 EUR and its main results were: a) establishment of the Tourism Cluster Una-Sana in 2017, in response to a need for a professional organization to implement the sustainable tourism development strategy for the area surrounding Una National Park. UNDP has a working relationship developed with the Cluster. b) Small grant support for improvement of tourist offer and services in the area of NP Una (up to EUR3,000); c) engagement of local communities in the tourism development of the area through a series of workshops, trainings and an Eco Market for SMEs. Field project Sutjeska was supported with 204,663 EUR with two main results: the biodiversity of the area was better researched and its values communicated to the local population, and a new sustainable tourism product “Canyoning on the Hrčavka river” was successfully developed within the Park’s borders. Lessons learned in this exercise will be applied to the design of sustainable tourism products under UNDP/GEF intervention proposed here.

Advance the National Adaptation Plan (NAP) process for medium-term investment planning in climate sensitive sectors in BiH Project supported the Government of BiH to advance the National Adaptation Plan (NAP) process and reach goals outlined in the Paris Agreement and 2030 Agenda for Sustainable Development. The Project was financed by the Green Climate Fund and UNDP and implemented in partnership with local ministries in charge of coordination of climate change adaptation activities. The project advanced adaptation planning in BiH and resulted in the compilation of a NAP and an

[69] As available at:

http://www.interreg-danube.eu/uploads/media/approved_project_output/0001/34/06b3ed1d4587d7bec2b366c09ade28bd11b0fb7e.pdf

implementation strategy focused on scaling-up adaptation in key sectors for the medium-term.[70] This process will inform the work proposed herewith on the CC impacts and adaptation of the PA network in the country and support the implementation of the climate threat assessment and the concrete adaptation measures in target PAs.

EcoSUSTAIN -Ecological sustainable Governance of Mediterranean protected Areas via improved Scientific, Technical and Managerial Knowledge Base is project implemented through Interreg Mediterranean (MED) Programme by Una National Park and Development Agency of the Una – Sana Canton with 8 other partners from 5 countries. Project was funded by ERDF and IPA through Interreg Mediterranean (MED) Programme. Project total budget was 1,753,226.36 EUR and activities were implemented from 2016 to 2019. In order to maintain natural ecosystems and facilitate sustainable growth of the protected areas of the Mediterranean basin, EcoSUSTAIN overall objective was to increase management capacity of protected areas. It was done by developing joint state-of-the-art water quality monitoring systems. Monitoring of protected areas has been improved through supporting scientific, technical and management knowledge base for the monitoring of impacts on ecosystems by means of two types of water quality monitoring systems, one being live, early warning system and the second is long term monitoring based on satellite imagery processing. [71]

Ongoing interventions in the field of relevance

No.	Organization	Project name	Project description	Donor	Period	Budget
1.	Public Institution National Park Sutjeska and City of Gradiška with 10 other partners from 6 countries	ADRILINK -Adriatic Landscape Interpretation Network	The project is aimed to provide new models of sustainable tourism management aimed at reducing tourism seasonality through the valorisation of natural and cultural landscapes as common assets that can be visited throughout the year. The project offers a system of new Adriatic itineraries and tourist roots based on landscape continuity, and connects them through a digital platform. The project supports the organization of "Landscape days" as a circuit event along the Adriatic region.	ERDF and IPA II through Interreg Adrion Programme	2020-2022	2,409,446.70 EUR
2.	CENER 21 - Center for Energy, Environment and Resources and Nongovernmental organisation Dinarica with 9 other partners from 6 countries	DINALPCONNECT - Transboundary ecological connectivity of Alps and Dinaric Mountains	The project intervention objective is to strengthen transnational and sectoral cooperation to improve EC (ecological connectivity), throughout Dinaric Mountains, connecting them with the Alps enabling long term	ERDF and IPA through Interreg Adrion Programme	2020-2022	1,620,972.00 EUR

[70]As available at: https://www.ba.undp.org/content/bosnia_and_herzegovina/en/home/climate-and-disaster-resilience/NAP.html
[71] As available at: https://ecosustain.interreg-med.eu/news-events/news/detail/actualites/ecosustain-project-created-water-quality-monitoring-software/

No.	Organization	Project name	Project description	Donor	Period	Budget
			protection of biodiversity in view of current and future climatic changes. Pilot Project area in BiH is NP Una.			
3.	Cantonal Public Institution for Protected Natural Areas of Sarajevo (BiH)	ADRIATICAVES - Sustainable management and tourist promotion of natural and archaeological heritage in the Adriatic Caves	The main project intervention objective of the Adriaticaves project is to establish and promote natural and archaeological heritage in caves as an alternative all year long tourism product. The project focuses on the sustainable development of accessible caves including ecotourism, establishment of a network of touristic caves and also conservation of karst areas threatened by climate change and illegal dumping. The focus area of the project in BiH is Protected Landscape "Bijambare" in the vicinity of Sarajevo.	EDRF and IPA II through Interreg Adrion Programme	2018-2020	1,325,236.10 EUR
4.	UNDP, UNICEF, UNESCO, UNFPA, FAO and local authorities	Disaster Risk Reduction for Sustainable Development in Bosnia and Herzegovina	The Programme will be expanding the previously developed Disaster Risk Analysis System (DRAS) software for local level risk assessments and development of risk mitigation measures, and specifically for climate risk management and climate resilience measure development. The joint UN Programme will also support disaster risk reduction (DRR) programmes to include fire and flood protection in protected areas.	Government of Switzerland	2018-2022	EUR 20 million
5.	UNDP,CzDa, local authorities	EU4AGRI – EU support for to Agriculture Competitiveness and Rural Development in BiH	Raising investment in the agri-food sector and increasing the knowledge and skills level of agricultural producers and other participants in the value chains through the	European Union under the Instrument for Pre-Accession Assistance	2020-2024	EUR 20 million

No.	Organization	Project name	Project description	Donor	Period	Budget
			expanded provision of advisory services, as well as by improving economic opportunities in rural areas			
6.	Ornithological Society "Nase Ptice" and Association for environmental protection and sustainable development „Nasa bastina" with 3 other organisation from Montenegro	BEAR in Mind: Bringing environmental actions for the biodiversity protection across the borders	Decreasing biodiversity threats within protected areas across borders of Bosnia and Herzegovina and Montenegro. The part of the project in BiH is implemented in PAs Sutjeska and Blidinje and includes strengthening the capacities of park managers to better manage bird and mammal species; development of species management plans and better communicating biodiversity values of the pilot areas.	European Union under the IPA Program cross-border cooperation Bosnia and Herzegovina – Montenegro 2014-2020	2019-2022 (30 months)	434,287.85 EUR
7.	Ornithological Society "Nase Ptice" and Society for research and protection of biodiversity from Banja Luka	Revitalization of wet meadows and pastures in wetland complex Tišina 1	Project for restoration of pastures and meadows around Tišina swamp aims at restoring wet meadows and pastures in the vicinity of wetland complex Tišina near Šamac, which were once widespread along the Sava River and its tributaries and maintained by cattle grazing.	EuroNatur	2018-2020	
8.	Ornithological Society "Nase Ptice" and Society for research and protection of biodiversity from Banja Luka	Revitalization of wet meadows and pastures in wetland complex Tišina 2	Continuation of Tišina swamp revitalization.	EuroNatur	2019-2021	
9.	Chemonics International Inc. with Subcontractors: Enova doo Sarajevo and SEGURA Consulting LLC	USAID's Developing sustainable Tourism in BiH-Turizam	The purpose of the project is to accelerate economic growth in the tourism sector, which will lead to more jobs, provide sustainable income for producer organizations and tourism-related companies, help to change	United States Agency for International Development (USA - HQ)	2020-2025	app. 20 million USD

No.	Organization	Project name	Project description	Donor	Period	Budget
			the "BiH brand", and have a positive spill over effect to other sectors; such as agriculture, transportation, and environmental protection. An entire component of the project will relate to the development of tourism in protected areas. Project Turizam will work with NP Una to develop their sustainable visitor management and community engagement plan, weaving in GSTC and Green Destinations criteria.			
10.	Agency for Economic Development of the City of Prijedor "PREDA PD"	"Feel Kozara" Project under EU4Business Project	The project will support the connection of functional tourist content and experiences in nature. The end users are micro, small and medium enterprises, including tour operators, tourist agencies, local restaurants, hotels, motels, sports clubs and associations. NP Kozara is pilot area of the Project.	EU	December 2020-October 2021	450,741 BAM

Adriatic Landscape Interpretation Network – ADRILINK is project funded by ERDF and IPA II through Interreg Adrion Programme, with total budget of 2,409,446.70 EUR for 2020-2022. Project partners in BiH are Public Institution National Park Sutjeska and City of Gradiška. ADRILINK general objective is to promote Landscape Tourism in Adriatic Region through the creation of a network of Landscape Interpretation Centres, conceived as nodal points of selected thematic paths and routes, digitally connected through an ICT platform, ensuring the integrated management of tourist services and fostering innovative solutions. The project provides new models of sustainable tourism management aimed at reducing tourism seasonality through the valorisation of natural and cultural landscapes as common assets that can be visited throughout the year.[72]Some of the planned activities in City of Gradiška and National Park Sutjeska are drafting guidelines for establishing Local Center for Landscape Interpretation, organizing local events such as seminars, concerts and exhibitions, mapping and defining local routes and equipping them with signalization and road signs and integrating collected data into common transnational network for landscape interpretation.[73] The concrete activity plans will need to be readjusted due to the project's late start and the effects of the pandemic on the project timeline and outcomes.

Transboundary ecological connectivity of Alps and Dinaric Mountains - DINALPCONNECT is another project funded by ERDF and IPA II through Interreg Adrion Programme, for 2020-2022. The project intervention objective is to strengthen

[72]As available at: https://adrilink.adrioninterreg.eu/
[73]As available at: http://www.gradgradiska.com/aktuelni-projekti-2/?script=lat

transnational and sectoral cooperation to improve EC (ecological connectivity) throughout Dinaric Mountains, connecting them with the Alps and enabling long term protection of biodiversity in view of current and future climatic changes. To improve EC, eleven DINALPCONNECT partners from seven countries will establish a network of Pilot regions to strengthen transboundary linkages between Natura2000 sites and protected areas where EC will be explored and consolidated.[74]Project pilot area in BiH is Una National Park for which is planned to establish link and ecological connectivity with Natura2000 site Lisac in Croatia. However, the actual implementation is still pending due to the late start of the project (in October rather than in January 2020) and the exact role of the Una NP will be reassessed in early 2021 after workshops held in pilot areas. All interventions after the desk research and worksops with stakeholders from the pilot area will be related to agricultural and forestry practices, in all pilot areas. It is planned to do promotion of pro-biodiversity activities (similar as in ECO KARST Project) and all activities that contribute to nature conservation and protection / strengthening of ecological corridors.

Sustainable management and tourist promotion of natural and archaeological heritage in the Adriatic Caves – ADRIATICAVES is Interreg Adrion project with total budget of 1,325,236.10 EUR contributed by ERDF and IPA II for 2018-2020. The main project intervention objective of the Adriaticaves project is to establish and promote natural and archaeological heritage in caves of the ADRION as an alternative all year long tourism product. The project focuses on the sustainable development of accessible caves, including ecotourism, establishment of a network of touristic caves in the ADRION and also conservation of karst areas and other caves not open to the public with habitat 8310 (92/43/EEC dir), threatened by climate change and illegal dumping. Key outputs of the project are: the new brand route of caves "Adriaticave"; the Charter of Caves, for the sustainable tourism; the international Action Plan for habitat 8310; the monitoring strategy.[75] In BiH, project activities will be implemented in Bijambare Protected Landscape where is planned to develop a new concept of tourist offer based on speleological biodiversity values present in this protected area.[76]

Disaster Risk Reduction for Sustainable Development in BiH is a joint program of the Government of Switzerland and the United Nations (UN). Programme received a total of 4,9 mln US $ funding from UNICEF, UNESCO, UNFPA, FAO and UNDP (2 mln) for 2018-2022. The Programme will be expanding the previously developed Disaster Risk Analysis System (DRAS) software for local level risk assessments and development of risk mitigation measures, and specifically for climate risk management and climate resilience measure development. The joint UN Programme will also support disaster risk reduction (DRR) programmes to include fire and flood protection in protected areas. The joint programme will serve as a key platform for the first component of the proposed UNDP/GEF project due to its focus on local coordination mechanisms for DRR and climate adaptation.[77]

EU4AGRI – EU support for to Agriculture Competitiveness and Rural Development in BiH is a EU-funded project aimed at modernizing agri-food sector, create new jobs, as well as retain existing ones, and support recovery from crisis caused by COVID-19 in Bosnia and Herzegovina.Worth EUR 20 million, the project is implemented and co-funded jointly by United Nations Development Programme (UNDP) and Czech Development Agency (CzDA). The project activities focused on strengthening the rural economy and its diversification are complimentary and will inform some of the proposed project's Outcome 2 interventions. Lessons learned and results achieved through the planned EU4AGRI investment of EUR 1.3 million in agri-tourism and EUR 1.1 million in rural socio-economic activities will be useful for the development of the proposed project's sustainable tourism development activities.

BEAR in Mind: Bringing environmental actions for the biodiversity protection across the borders is project funded by European Union under the IPA Program cross-border cooperation BiH – Montenegro 2014-2020, with 434,287.85 EUR budget for 2019-2022. In BiH project activities are implementing Ornithological Society "Nase Ptice" and Association for environmental protection and sustainable development „Nasa bastina". Locations of the action are: National Park Sutjeska and Nature Park Blidinje; municipalities: Posušje, Jablanica, Konjic, Kalinovik, Foča. Overall objective is decreasing biodiversity threats within protected areas across borders of BiH and Montenegro. The project in BiH will focus on the following activities: design and implementation of a training programme for PA managers for monitoring of threatened and endangered species (one programme for mammals and one for birds);procurement of biodiversity monitoring equipment;

[74] As available at: https://dinalpconnect.adrioninterreg.eu/
[75] As available at: https://adriaticaves.adrioninterreg.eu/
[76]As available at: https://www.zppks.ba/content/adriaticaves
[77]As available at:
https://www.ba.undp.org/content/bosnia_and_herzegovina/en/home/climate-and-disaster-resilience/SwissUN4DRR.html

development of at least 4 species action/management plans (two for mammals: bear and wolf, and two for birds: capercaillie and rock partridge); a joint communication plan development for charismatic species, including a memorandum of understanding signed with local hunter associations and loggers. The project also has a strong community component, focused on preventing and mitigating man-wildlife conflicts in pilot areas.

Project for restoration of pastures and meadows around Tišina swamp aims at restoring wet meadows and pastures in the vicinity of wetland complex Tišina near Šamac, which were once widespread along the Sava River and its tributaries and maintained by cattle grazing. The project is funded by EuroNatur and will be implemented until 2020. After the restoration of the meadows, the long-term maintenance by traditional livestock (cattle, sheep) grazing is planned. This which represents a semi-intensive form of livestock breeding which does not conflict with the objectives of nature, vegetation and wildlife protection of this area. Grazing will prevent succession in meadows, increase the attractiveness and value of the entire area and this project will be a pioneering project of returning traditional breeds and activities in Posavina. Through the project it is planned to work on the restoration and to donate native herd and fence for livestock to one household and organize educational workshops for other farmers who want to engage in traditional cattle breeding, but also workshops for children and students. The project envisages the development of the tourist offer of the area of Tišina. Revitalization of wet meadows and pastures in wetland complex Tišina-2 is continuation of the previously described project planned for 2019-2021 period. Both projects are part of the programme“Wet meadows and pastures 2”.

USAID’s Developing sustainable Tourism in BiH- Turizam is a 5- year project implemented by the Chemonics International Inc. with subcontractors: Enova doo Sarajevo and SEGURA Consulting LLC. An entire component of the project will relate to the development of tourism in protected areas. The purpose of the project is to accelerate economic growth in the tourism sector, which will lead to more jobs, provide sustainable income for producer organizations and tourism-related companies, help to change the “BiH brand”, and have a positive spill over effect to other sectors; such as agriculture, transportation, and environmental protection. Building on the conservation initiatives by BiH entity governments, UNEP, and GIZ, Project Turizam will support advocacy efforts of partners and through awareness workshops, policy papers and social media campaigns to support increase of land area classified as protected. Furthermore, Turizam will work with NP Una to develop their sustainable visitor management and community engagement plan, weaving in GSTC and Green Destinations criteria. NP Una is the only nominated pilot area for the first 2 years of the Project, the rest will be decided later.

The “Feel Kozara” project, which is being implemented within the EU4Business project, supports the development of domestic tourist potentials in the municipality of Prijedor and the introduction of new sports, tourist and gastronomic facilities on the mountain and in the Kozara National Park. The project holder is the Agency for Economic Development of the City of Prijedor “PREDA PD”, which together with local partners is implementing the project. The project will support the connection of functional tourist content and experiences in nature. The end users are micro, small and medium enterprises, including tour operators, tourist agencies, local restaurants, hotels, motels, sports clubs and associations.

Annex 18: PA finance baseline

PA finance overview

There are 39 protected areas in BiH at the end of 2020, 27 in Republika Srpska and 12 in FBiH as follows:

- two strict nature reserves in RS (Category Ia),
- four national parks (3 in RS and 1 in FBiH) (Category II),
- 14 natural monuments in RS (Category III),
- two nature parks in FBiH (Category IIIa),
- four monuments of nature and natural features in FBiH (Category IIIb),
- two protected habitats in RS (Category IV),
- three nature parks in RS (Category V)
- four protected landscapes in FBiH (Category Va) and
- three protected areas with sustainable use of natural resources - forest park in RS (Category VI).

PAs in BiH are managed by public entities and institutions (apart from a few community managed PAs in RS), while financing of those institutions is provided via the governmental (FBiH/RS) and/or cantonal environmental budgets, revenues and income from fees (entry fee, fee for recreational fishing and sports activities, souvenirs, parking fees, camping etc.), as well as grants and subsidies from different institutions including municipalities.

The governments of FBiH and RS finance the four national parks in BiH (Una in FBiH and Kozara, Sutjeska and Drina in RS). Una National Park also receives very small financing from both the cantonal and municipal governments.

There are examples such as Vjetrenica Protected Landscape that function with income from their own sources (tickets for the Cave entrance) but they also depend on municipal dotation for their staff costs (in 2020 they earned only 41.086Km from tickets and they received app. 100.000KM for staff salaries from Ravno Minicipality)[78].

There is no secured financial support from the Environment Protection Funds (both of FBiH and RS), as the funds do not provide continuous financial support to PA management authorities (public enterprises/institutions) in their establishment and operation, nor do they fund activities for protecting and improving the state of biodiversity according to adopted management plans.

The funds operate through open calls for requests for funding of specific focused environment projects that may or may not be linked to the PAs. In 2019, the only protected area that received funding was Una NP in FBiH. They also nominated a Project "Wildlife and life of beasts of Una National Park - phase 2: Wolf" and they have been awarded in December 2020 with the amount of 34,600.00 BAM (20,192.00 USD[79]). The overall capacity of PA managers to apply for competitive public funding remains low and public funds for nature protected are often underutilized by PAs. The same goes for tourism development grants – PA managers rarely apply for this funding and have been continuously expressing the need for project management cycle trainings and more human resources to support the public and ODA funds absorption capacity.

Despite a significant tourism development potential, all PAs in BiH have yet to become self-sustaining and are often closing financing gaps by unsustainable natural resource use (commercial logging, issuing hunting permits etc). For 2020, just two national parks, Una in FBiH and Sutjeska in RS, managed to make financial inputs and costs even (Una with a surplus of 129,000 BAM (77,902 USD) in 2018, surplus of 1mil. BAM (572,980 USD) in 2019 and surplus of app. 0.6Mil. BAM (350,099 USD) for 2020). Sutjeska National Park showed deficit of 265,000 BAM (160,009 USD) in 2018, 0.5mil BAM (286,489 USD) surplus in 2019 and 0.5 mil. BAM (291,749 USD) surplus in 2020. National Park Kozara had just slight surplus in 2019 (11,559BAM; 6,623 USD), but in 2020 they have again deficit in amount of 8,590 BAM (5,013 USD). Protected landscape Konjuh were positive in their cash-flows in 2019 (29,113 BAM) (16,681 USD), but they are negative in their cash-flow in 2020 in amount of 79,074BAM (90,164 USD).

[78] Information gathered via phone conversation with Director of the Company. After the re-classification of the PA, the financial flows and managment arrangements are likely to change.

[79]Calculated by the author according to the average annual exchange rate available at: https://www.exchangerates.org.uk/

The majority of PAs including some nature parks and natural monuments still have not introduced visitor ticketing or other income generating practices and a significant number of PAs (particularly cat. III-VI in the entity of Republika Srpska) exist without any funding allocations.

Given the current number of visits, the baseline tourism offerings in the protected areas, and the low growth trends for most of the PAs in BiH recently, a level of self-sustainability will be difficult to achieve in most protected areas in the next few years without investing in content that will attract more visitors.

Table 1 Number of visitors of protected areas in both entities in B&H[80]

Entity	2018.	2019.	2020.
Republika Srpska	**139.764**	**132.832**	**125.301**
Sutjeska National Park	8.760	9.779	5.000[81]
Kozara National Park	130.000	122.000	124.000
Orlovača cave	1.000	1.050	1.300
Natural monument "Tajan"	18.000	23.000	15.000
Strict nature reserve "Janj Rainforest"	200	150	50
FB&H	**185.000**	**204.500**	**175.075**
Una National Park FBiH	85.000	100.000	120.000
Vjetrenica Cave Nature Monument	13.000	15.000	5.500
Public Institution Protected Landscape "Konjuh" Banovići	69.000	66.500	34.575
Total B&H	**324.764**	**337.332**	**300.376**

Yet the protected areas of BiH have a great potential to be the generators of local sustainable development, especially from the aspect of sustainable tourism offer.

Some positive trends in this regard should be noted for the following protected areas:

Sutjeska National Park (RS) being able to generate a sustainable positive financial result in their cash-flows. Although surplus in 2019 their income from tourist offering amounted up to 38,6% of the total generated total cash-revenues in the respective year, and in 2020, their income from tourism offering obtained was 54,3% of total cash-revenues for 2020, they still are not able to cover even a half of their expenditures for the management of the protected area. Their surplus in cash-flows was supported by the other source of funding, meaning budgets of governments and budgets for specific projects. The same case is also with Una National Park (FBiH).

Vjetrenica Cave Nature Monument (FBiH) generated 69% of total income (cash-revenues) in 2019 for the area selling entrance tickets, although their finance were not enough for its sustainability. In 2020, the only income Vjetrenica had was from the entrance tickets sold; this is clearly insufficient for their sustainable functioning.

Good example is also CPI 'Protected Natural Areas in the Sarajevo Canton' which generated income in 2018 from tourist activities up to 43,3% of total income for the protected areas. But that is just half of the expenditures they have had for those areas in 2018.

The only protected area in BiH that managed to have positive cash-flow for three consecutive years is Una National Park, which, at least to outside appearance, should be largely attributed to the business attitude of its manager.

Almost all PA managers confirm that they do not have enough people employed, so there is no possibility to decrease their costs in that direction. The current funding levels barely close the PA staff salary, and the majority of PAs is already understaffed. The conservation measures are often funded only through extra-budgetary allocations, third party-led projects or international assistance. Increasing the financial health of country's PAs and strengthening the own income

[80] Protected areas that have provided data

[81] Dana obtained via phone

generation through sustainable tourism development would have multiple positive effects on both conservation efforts in PAs and sustainable post-pandemic recovery of country's economy.

Institutional and regulatory framework for PA finance

FBiH

Una National Park is the only PA in FBiH that has been established and regulated on Federal level (Federal Law on National Park Una), while all other protected areas are established and regulated within cantonal regulations.

The Federal Ministry of Environment and Tourism manages and finances the National Park Una, while the Cantons (cantonal ministry in charge of environmental affairs and the cantonal institute for nature protection) are in change for the establishment and finance of the cantonal-level PAs.

The Cantonal Public Institution for the Protected Areas in the Sarajevo Canton (SC) is the manager of 5 protected areas in the SC (NM Skakavac, NM Vrelo Bosne, PL Bijambare, PL Bentbaša and PL Trebević),.

Pursuant to the Law on Nature Protection of the FBiH, funds for the operation of the public companies and institutions which manage the protected areas are provided from:

- Initial budget of the founder of a protected area,
- Budgets of the FBiH Environmental Protection Fund (FEPF)and the environmental protection funds in the Cantons in which an environmental protection fund has been established,
- Income from the use of natural resources in the protected areas,
- Income from fees (souvenirs, parking and camping fees, etc.),
- Transfers from other level of government in accordance with approved projects
- Other sources laid down by the Law on Nature Protection of the FBiH (donations, subsidies, financial incentives, etc.).

Although not specifically defined by the Law on Nature Protection of the FBiH, protected areas may also be financed from the budgets of the levels of government that are lower than the ones that established/proclaimed them (municipality/city).

In accordance with the financial and management plans, as well as the annual work programmes, the generated surplus in cash is managed by the PA management authorities (public companies/institutions), which are to invest the it in the development of their own activity.

Although, in accordance with the legislation, the most important sources of finances for the protected areas are the budgets from the relevant level of government (founder) and from FEPF. Although FEPF is indicated as one of the principal sources of finance, along with the government/municipality, there is no regular basis and no guarantee for FEPF funding.

The funds collected by the FEPF from different fees and taxes for the protection of nature every year are distributed on the basis of the decision of the Management Committee on the announcement of an open call for the use of funds.

In accordance with Article 26 of the Law on the Fund, the Fund's resources are used to finance environmental protection, and in particular for:

- protection, preservation and improvement of air, soil, water and sea quality, and mitigation of climate change and protection of the ozone layer;
- remediation, encouraging the avoidance and reduction of waste generation;
- exploitation of valuable properties and waste treatment;
- protection and conservation of biological and landscape diversity;
- implementation of energy programs;
- implementation of demining programs;
- improvement and construction of infrastructure for environmental protection;
- improvement, monitoring and assessment of the state of the environment and introduction of an environmental management system;
- encouraging the sustainable use of natural resources;
- encouraging sustainable economic activities, ie sustainable economic development and
- encouraging research, development studies, programs, projects and other activities, including demonstration activities.

Projects, programs and other activities, in which the Fund's resources are invested, are determined in more detail by the work program for the current year and the work program for the four-year planning period. The Management Board of the Fund, within the defined areas for each financial year, determines the priorities for the allocation of funds in accordance with national strategies and other documents that define the priorities in the areas of environmental protection.

Based on the established priorities, the Fund announces a competition for the allocation of funds, in which it invites applicants to submit a proposal for a project, program or similar activity that meets the objectives and meets the necessary conditions prescribed by them. Legal and natural persons who have the right to realize the Fund's funds should:

- have its premises in the territory of the Federation of BiH;
- invest own funds in projects, programs and similar activities in the field of preservation, sustainable use, protection and improvement of the environment;
- have a well-prepared and designed project with clearly presented activities, goals, financial construction and implementation dynamics;
- submit a request for the use of the Fund's resources in accordance with the announced competition;
- provide an appropriate guarantee for the Fund's resources before concluding the contract;
- enter into an agreement with the Fund on joint investment in a project, program and similar activity for which the Fund's resources have been approved.

A large number of applications are rejected due to formal legal errors or omissions in completing the documentation prescribed by the provisions of the public invitation. Typical administrative errors consist of the following:

- the documentation was not submitted within the prescribed deadline;
- the documentation is incomplete, ie unsigned or uncertified;
- the documentation was not submitted in the prescribed format;
- the applicant's eligibility criteria are not met.

Based on the analysis of the decisions of the selection of beneficiaries, published on the FEPF website, the FEPF co-financed only projects which qualifies, and there have been only two projects directly related to the protected areas in the FBiH in 2016, and three projects in 2019, and just one in 2020.

Protected areas are able to apply for the above funds, but they do not have any advantage while applying.

Republika Srpska

The responsibility for the establishment, management and financing of the protected areas in the RS is regulated by laws and regulations at the Entity level.

Pursuant to the Law, at the Entity level, the RS National Assembly proclaims a national park by a separate law, while the RS Government proclaims strict nature reserves, special nature reserves, protected habitats and protected landscapes as protected areas by separate acts proclaiming a protected area (decision), on the proposal of the relevant ministry responsible for environmental protection (Ministry of Spatial Planning, Construction and Environment), and after obtaining the prior opinion of the other relevant ministries.

Upon the prior opinion of the RS Institute for Protection of Cultural, Historical and Natural Heritage and other relevant ministries, assemblies at the level of local self-government units proclaim protected areas which are entirely in the territory of the local self-government unit, on the basis of an act proclaiming a protected area (decision), after obtaining the consent of the Ministry of Spatial Planning, Construction and Environment and the.

The management of the protected area for which the proclamation act has been adopted by the RS Government may be entrusted to the one or more local self-government unit where the protected area is located, a public company, a public institution or another legal entity which meets the requirements to be the manager.

According to the RS Law on Nature Protection of the RS, the main sources of funds for protected areas are as follows:

- Budget of the RS,
- Budgets of local self-government units,
- Funds provided by the RS Environmental Protection and Energy Efficiency Fund,
- The managers' own income generated by services which the manager provides to visitors to the protected natural area (tourism, hospitality, trade, etc.)
- Funds provided for the implementation of programmes, plans and projects in the field of environmental protection, and

- Funds acquired in the form of donations, gifts and aid.

In accordance with the financial and management plans, as well as the annual work programmes, the generated profit is managed by the PA management authorities (public companies/institutions), which are to invest the generated profit in the development of their own activity.

Although, in accordance with the legislation, the most important sources of finance for the protected areas are the budgets from relevant level of government (founder) and from RS EPEEF. Although EPEEF is indicated as one of the principal sources of finance, along with the government/municipality, there is no regular basis and no guarantee for such funding.

In accordance with the answers from managers from PA from RS, there are only two PA which have received funds from the Fund for Protection of Environment: Sutjeska NP received 31.722KM in 207 and 10.000KM in 2018, and Trebinje received just 4.700KM in 2017.

There is normally a Public Call for the sources of the Fund for allocating funds for co-financing programs and projects in the field of environmental protection, energy efficiency and renewable energy.

Baseline finance data

The objective of this financial analysis is to identify the current situation from the aspect of financing of the protected areas in the FBiH and the RS as well as to identify new financing solutions for a successful and sustainable system of management and financing of those protected areas.

For this purpose, survey questions have been distributed to all managers of protected areas in FBiH and RS. The survey covered various groups of issues, such as: main sources of financing, range of financing, participation of different sources of financing in the generated income, expenditures types and its ranges, number of visitors, etc.

Republika Srpska

There have been 9 answers from managers of the following protected areas from RS:

1. Sutjeska National Park
2. Kozara National Park
3. Nature park „Una“, Novi Grad
4. Orlovača cave Nature Monument
5. Pavlova cave Nature Monument
6. Strict nature reserve Janj Primeval Forest
7. Protected habitat Gromiželj
8. Ledenjača cave Nature Monument
9. Pavlova cave Nature Monument

In the table bellow are presented summary results for all 9 protected areas.

Table 2 Source of funding for protected areas in RS

Financing		Income in BAM					
		2018	% for 2018	2019	% for 2019	2020	% for 2020
Funding by the government	Budget of Republika Srpska	2.000.895	27,4	1.900.000	27,4	1.705.592	46,4
	Budget of Municipality	0	0,0	0	0,0	5.000	0,1
Financing from commercial activities (tickets, parking, etc.)	Entry Fees	153.093	2,3	162.251	2,3	115.707	3,2
	Parking	0	0,0	0	0,0	0	0,0
	Tourist guide services	12.458	0,3	18.022	0,3	5.290	0,1
	Sale of products / souvenirs and other sales in catering facilities, etc.	1.492.841	22,8	1.584.269	22,8	1.146.645	31,2
	Rent	30.984	0,5	37.551	0,5	20.162	0,5
	Other: overnight stays, hunting permits, taxes, etc.	278.738	5,3	368.412	5,3	154.815	4,2

Financing by international institutions	World Bank, Global Environment Facility, etc.	0	0,0	0	0,0	0	0,0
	Projects of ministries clearing for landslide remediation near monuments	1.002.965	14,5	1.000.000	14,5	0	0,0
Funding by other institutions	Targeted finance – municipal level"	0	0,1	10.000	0,1		0,0
RS Environmental Protection and Energy Efficiency Fund		36.422	0,1	10.000	0,1	0	0,0
Donations, grants	Projects	98.264	0,6	42.523	0,6	0	0,0
	Grant from abroad EU	4.859	10,3	712.656	10,3	4.000	0,0
	Bilateral agreement	0	4,2	293.375	4,2	0	0,0
Other grants	Other(GIZ projects and UNESCO site priority area)	0	0	0	0	95.895	0,0
Other sources of funding	Own sources of funding	702.045	11,5	796.097	11,5	419.578	0,0
TOTAL		**5.813.564**	**100**	**6.935.156**	**100**	**3.672.684**	**100**

As can be drawn from the table above, the state budget of Republika Srpska contributes 27,4% (2019) of total funding for the PAs located in the RS, but it is only distributed to two national parks (Sutjeska and Kozara).

There is only 0,1% of total funding of protected areas for 2019 provided by the RS Environmental Protection and Energy Efficiency Fund to the Sutjeska national park.

Significant part of financing of protected areas in RS is formed from their own income (31,3%) (Entry Fees and Sale of products and souvenirs), but also from other sources such as international donor funding, donations, gifts and aid.

The structure of expenses of the protected areas in the RS in 2019 is showing that 54,1% of all expenditures for protected areas are related to the employees' expenses, 36,8% are related to other expenditures such as interest, expenses for the purchase value of realized stocks, depreciation etc., 8,7% related to material costs, and just 0,35% are related to projects directly related to BD conservation and improvement of sustainable tourism offering. The 2019 data shows no cost related to promotion and information services.

Table 3 Structure of expenditures for protected areas in RS

Expenditures	Amount of expenditures in BAM			% for 2019
	2018	2019	2020	
Employee costs	2.749.199	2.899.425	2.068.047	54,1
Material expenses of regular activities[82]	1.574.274	466.948	241.902	8,7
Activities envisaged by the Protected Area Management Plan (if adopted / adopted)	10.000	10.000	10.000	0,2
Promotion and information services	702	0	0	0,0

[82] Material costs include work materials, business trips, professional training of employees, utility costs, electricity costs, telephone services, intellectual services, etc.

Projects to improve the offer for tourists (info center, caravans, etc.)	0	0	0	0,0
Projects for the protection and conservation of biological diversity of species and valuable habitats	0	12.965	0	0,2
Other expenditures[83]	1.835.616	1.972.546	278.487	36,8
TOTAL	**6.169.791**	**5.361.884**	**2.598.436**	**100,0**

Federation of Bosnia and Herzegovina

The survey in FBIH was completed by 5 managers, as it follows:

1. Una National Park
2. Vjetrenica Cave Nature Monument
3. Nature Park Blidinje
4. PL Konjuh
5. NM Tajan

The table below presents summary results for all 5 protected areas.

Table 4 Source of funding for protected arease in FBiH

Financing		Income in KM					
		2018	% for 2018	2019	% for 2019	2020	% for 2020
Funding by one or more levels of government	Federation of BiH	548.913	29,7	603.156	18,8	500.000	22,82
	Canton	314.504	17,0	405.060	12,6	332.668	15,19
	Municipality	0	0,0	53.000	1,7	3.000	0,14
Financing from commercial activities (tickets, parking, etc.)	Tickets	537.285	29,1	645.052	20,1	768.574	35,08
	Parking	13.105	0,7	19.432	0,6	28.603	1,31
	Tourist guide services	0	0,0	0	0,0	0	0,00
	Sale of products / souvenirs and other sales in catering facilities, etc.	81	0,0	30	0,0	64	0,00
	Rent	36.060	2,0	22.814	0,7	20.927	0,96
	Other: overnight stays, income from wildlife, hunting taxes, etc.	94.562	5,1	130.329	4,1	323.855	14,78

[83] Other expenditures such as interest, expenses for the purchase value of realized stocks, depreciation etc.

Financing by international institutions	World Bank	0	0,0	0	0,0	0	0,00
	Global Environment Facility	9.583	0,5	3.799	0,1	0	0,00
	EU projects	109.893	5,9	204.177	6,4	166.470	7,60
Funding by other institutions	Projects of ministries	152.000	8,2	48.000	1,5	41.000	1,87
	Dedicated funds of the Government of FBiH through the Government of the USC and the City of Bihać	0	0,0	1.000.000	31,1	0	0,00
FBiH Environmental Protection Fund		27.800	0,0	75.469	2,3	4.042	0,00
Donations, grants	Projects	4.000	0,0	0	0,0	0	0,00
Other sources of funding	donations	0	1,5	1.462	0,05	1.411	0,18
TOTAL		**1.847.786**	**100**	**3.211.779**	**100**	**2.190.614**	**100**

For 2019, 33% of the total PA finance is attributed to the different levels of government in FBiH, namely 18,8% were provided by the budget of FBiH, 12,6% provided by cantonal budgets and just 1,7% of finances were provided by municipal level.

There is only 2,3% of total funding of protected areas for 2019 provided by the FBiH Environmental Protection Fund for two projects in Una National Park and one in Konjuh. There are no trends in providing funds form FEPF, as described above.

Significant part of financing of protected areas in FBiH is actually obtained from their own income mostly from entry fees (25,5%), but also from other sources such as funds provided for the implementation of programmes, plans and projects in the field of environmental protection, donations, gifts and aid.

There are some dedicated funds of the Government of FBiH through the Government of the USC and the City of Bihać amounting 1 mil. BAM, but it is only for 2019 and for specific project.

Cantonal Public Institution for PAs in the Sarajevo Canton provided the Project with their financial reports just for 2018.

Table 5 Source of funding for protected areas in the Sarajevo Canton

Financing		2018	% for 2018
Funding by one or more levels of government	Federation of BiH	107.000	8,2
	Canton	616.985	47,1
Financing from commercial activities (tickets, parking, etc.)	Tickets	562.503	42,9
	Rent	5.106	0,4
Donations, grants	Projects	19065	1,5
TOTAL		**1.310.659**	**100**

For the Cantonal Public Institution for the PAs in the Sarajevo Canton (responsible for the management of NMs Skakavac, Vrelo Bosne, PLs Bijambare, Bentvasa and Trebevic), the cantonal budget contributes 47,1% of all finances for these areas.

It is important that they have 42,9% of finances from their own services (mostly from selling entrance tickets).

The structure of expenses of the protected areas in the FBiH in 2019 is showing that 49,2% of all expenditures for protected areas are related to the employees' expenses, 17,9% related to material costs, almost 13% is dedicated to promotion and information services.

Table 6 Structure of expenditures for protected areas in FBiH

Expenditures	Amount of expenditures in BAM			% for 2019[84]
	2018	2019	2020	
Employee costs	853.911	960.312	874.564	49,2
Material expenses of regular activities	304.046	350.154	274.288	17,9
Activities envisaged by the Protected Area Management Plan (if adopted / adopted)	127.695	64.464	87.008	3,3
Promotion and information services	181.814	251.120	211.992	12,9
Projects to improve the offer for tourists (info center, caravans, etc.)	38.245	107.112	127.656	5,5
Projects for the protection and conservation of biological diversity of species and significant habitats	118.156	77.569	67.230	4,0
Other expenditures[85]	128.806	142.000	146.600	7,3
TOTAL	**1.752.673**	**1.952.730**	**1.789.338**	**100**

The analysis of the obtained data showed that the financing provided by the relevant level of government is applicable to all categories of protected areas. The financing provided by the sources of market activity, such as income from parking, tickets, rent and field trips is used by some natural monuments and protected landscapes / nature parks, as well as the Una National Park. The financing provided by international institutions or donations is only used by some natural monuments and protected landscapes / nature parks. The source of financing used by all categories of protected areas is the financing provided by other levels of government through projects, i.e. by those levels of government which are not obliged by the law to finance any protected area.

[84] 2019 is more relevant year since there have no pandemic conditions

[85] VAT, income tax, depreciation,remuneration to members of the Supervisory Board, Internal Affairs Committee, audit, the Assembly of the company and similar expenses

Annex 19: A Roadmap for the eco-tourism concession in Sutjeska National Park

1. Summary of PPG consultations

To explore the conditions for the implementation of the concession model in NP Sutjeska, and to confirm the feasibility of the proposed concession pilot, the consultations with the Ministry for Spatial Planning, Construction and Ecology of Republika Srpska (the competent ministry) and the management of NP Sutjeska were conducted through December 2020 - February 2021. In December 2020, the PPG expert on PA finance, Mr. Muris Mesetovic worked with Mr. Dejan Pavlovic, Director of NP Sutjeska, and Mr. Milos Jokic from the competent ministry in order to secure an informed opinion of the NP and the Ministry regarding the concession in NP Sutjeska. Both Mr. Jokic and Mr. Pavlovic were involved in the process of preparation of the feasibility study of options for long-term outsourcing of Sutjeska National Park Assets and Services[86] (the Study) in 2018. They stand informed of the proposed concession arrangements and benefits as stated in the Study and updated by the PPG expert assessment presented below.

The 2018 Study concluded that concession is the optimal way for outsourcing the NP Sutjeska assets to revitalize the tourist offer and ensure its financial sustainability. The financial, social, and other benefits of the concession pilot have been discussed during the PPG consultations in 2020-2021. The updates to the 2018 study are presented below in Section 2.

On behalf of the Sutjeska National Park, Mr. Pavlovic confirmed the validity of the concession pilots and declared to be interested in its implementation. In order to facilitate and formalise the process, an opinion of the competent ministry regarding the concession pilot was sought and received. The Ministry stated their non-objection with the implementation of concession as long as it is in accordance with procedures prescribed by the relevant regulations. Yet, no official commitment was communicated. The official letter from the Ministry for Spatial Planning, Construction and Ecology of Republika Srpska reads as follows:

"*Regarding the preparation of the Project Document for the project "GEF7 PPG BD - Strengthening the financial sustainability of protected areas through the promotion of tourism and strengthening partnerships with the private sector in BiH", we would like to share the following opinion:*

1. In Republika Srpska, the Law on Concessions ("Official Gazette of Republika Srpska", No. 59/13, 16/18 and 70/20) is in force, which regulates the subject matter and jurisdiction for the award of concessions, the policy of awarding concessions, and the manner and the procedure for granting concessions in Republika Srpska. The subject of the concession in terms of this law may be "performing activities in protected areas as protected natural assets, and the right to build and use facilities required to perform these activities in accordance with special regulations."

2. The manner and procedure of awarding concessions in the protected areas are defined by the Law on Concessions. So far, there have been no applications for concessions in protected areas.

3. The study for long-term outsourcing of assets and services of the Sutjeska National Park, conducted in 2018, presented the procedure for granting concessions in which private partners can use certain resources or perform activities of general interest, and pay a concession fee to the public sector. After the analysis in the mentioned study, there were no changes in the manner of granting concessions in protected areas.

For any additional questions regarding the development of a roadmap for the implementation of the concession, we are at your disposal. "

The extended PPG team performed an initial mapping of the potential private sector companies that might be interested in and eligible for partnering in the NP Sutjeska tourism concession model. A search for potential private sector partners for the pilot was limited by the factors associated with COVID 19 pandemic in 2020-2021, and, in particular, by uncertainty on the tourism market caused by COVID 19 travel and outdoor activity limitations. Through the initial screening, it became clear that the potential private sector investors are not likely to materialize before the competent ministry releases the information about the future concession pilot. On the other hand, the absence of potential partners on the ground is a primary reason why the competent ministry does not consider the concession pilot as an immediate priority for the moment and is reluctant to express any commitment in this regard. The GEF project can step in to moderate the process and stimulate

[86] Deloitte d.o.o. Belgrade, ENOVA Engineering and Consulting Company d.o.o. Sarajevo, AdvokatskakancelarijaStevanDimitrijevic (2018). Study of Options for Long-Term Outsourcing of Sutjeska National Park Assets and Services

all potential partners towards more active engagement. For this purpose, a comprehensive assessment of the concession benefits was prepared to inform further consultation process with the competent ministry and the national park, as presented below. This paper concludes with an operational road-map listing the activities to be implemented to operationalize the concession process.

2. Feasibility study update

A study of options for long-term outsourcing of Sutjeska National Park Assets and Services was prepared in early 2018 by a consortium of consulting and legal service companies and financed by UNDP[87]. The study confirmed the feasibility of concessions for assets and services for a model protected area located in Republika Srpska. The Republic's Concession Law provides straightforward regulations for the procedure for awarding the concession agreements. The Concession Law allows for up to 50-year concessions for the use of areas and buildings of natural, cultural and historical heritage, and hotel and restaurant services. Republika Srpska has accumulated a positive practice of concession agreements concluded mostly for energy facilities and mining; there are examples of concession agreements in tourist and hospitality activities.

All of the existing assets within the territory of the national park are owned by the Government of Republika Srpska (RS). The park management authority (a public institution) does not generate sufficient revenues to cover basic operational costs, nor does it have the financial capacity to invest in upgrading/modernization of tourism infrastructure and service improvement.

The study summarized the cost/benefit analysis for the National Park from the outsourcing of its infrastructure, as follows: while the park will no longer be getting revenues from the outsourced assets, the local benefits from the concession will be associated with reduced operational expenses (salaries, electricity, heating, maintenance costs). Key benefits for the Government of RS include the following:

- Modernisation of the assets owned by the Government of RS as it is expected that the private party would invest in the modernisation of assets;
- More efficient management of the assets by a private party;
- Generation of revenues as a result of a concession agreement; a one-time concession fee (4% to 6% of the total investment) and an annual concession fee (between 5% and 8% of the total annual revenues generated through the use of acquired assets); and,
- Decrease of the subsidy (up to 35%) to the national park as a result of a reduction in their operational expenses.

The economic viability analysis for the potential private sector partner (in the case of a 20-year concession of Sutjeska NP tourism infrastructure) shows that the only economically viable scenario would be with a 30% annual occupancy rate of beds in the facilities (versus the current average occupancy rate of 25%) and a 30% annual increase in prices for room rentals.

The feasibility study confirmed the viability of a concession mechanism for the Government and described the procedure starting from submission of an offer by a potential concessionaire, through to a concession award. It does not however present a roadmap for implementation of the concession in question. In particular, it does not touch upon the following key aspects:

- the concession management details;
- management capacities and skills required from the implementing agency;
- procedures and responsibilities for oversight and monitoring of concession activities; and,
- evaluation of concession outcomes.

One essential element that is currently missing in the legal and regulatory framework of BiH a the reinvestment of the financial return to the Government from the revenues generated through a specific concession, back to the protected area.

[87] Deloitte d.o.o. Belgrade, ENOVA Engineering and Consulting Company d.o.o. Sarajevo, Advokatska kancelarija Stevan Dimitrijevic (2018). Study of Options for Long-Term Outsourcing of Sutjeska National Park Assets and Services

Although these provisions may not be stipulated in the Concession Law and respective regulations, the proposed UNDP/GEF project will lobby for fair and transparent financial arrangements regarding the concession benefits.

The 2018 Study was updated as described in the subsections below, with the following main conclusions:

- ✓ A concession is a feasible option for long-term outsourcing.
- ✓ The concession pilot is not likely to qualify as PPP due to the following reasons: first, PA concessions are not specifically mentioned in the PPG regulations; second, the current practice of the RS Ministry of Finance regarding the approval of PPP projects is very restrictive.

While the overall viability of this pilot has been confirmed as a result of PPG studies and consultations, in the GEF 7 project main phase a qualified third party entity or consortium will be engaged to develop a business case for the concession at Sutjeska National Park. The contractor, in cooperation with relevant stakeholders, will be primarily responsible to get the market ready and attract high-quality concessionaires to take on the proposed business opportunity.

Legal status of NP Sutjeska

National Park Sutjeska ("NP Sutjeska" or "the Park") was founded in 1962. Currently, NP Sutjeska s a public institution, financed from the budget of Republika Srpska.

The Law on National park „Sutjeska" („Official Gazette of RS", No. 121/12) regulates the boundaries, protection regimes, management, protection and development issues of Sutjeska National Park.

NP Sutjeska extends to the municipalities of Foča, Gacko and Kalinovik in the total area of 16,052.34 hectares. It is managed by the Public Institution "Sutjeska" Tjentište („JUNP"). JUNP manages the natural and cultural-historical values, land, buildings and other immovable property of NP Sutjeska. JUNP share capital is BAM 29,729,796.00 (approx. EUR 15,000,000) and it is funded by Republika Srpska budget and by its own income.

Sutjeska NP is managed in accordance with the Management Plan adopted by the Government of the Republika Srpska, on the proposal of the JUNP. The land and buildings of NP Sutjeska are managed by JUNP. The ownership of the land and buildings (real estate, or immovable property) vests with Republika Srpska.Thus, JUNP Sutjeska is managing the property of Republika Srpska.

According to the statutory requirements, only those economic, tourist, catering and scientific research activities that are licensed in the process of obtaining licenses and that are determined not to endanger the authenticity and natural balance of the plant and animal world, natural habitats, and hydrographic, geomorphological, geological, cultural and landscape area values, can be performed within the NP Sutjeska.

Financial situation of NP Sutjeska

Total revenues for NP Sutjeska grew to the point of 5.2 mBAM in 2019; in 2020, du to the pandemic restrictions, it fell down to 2.5 mBAM.

Total expenditures for NP Sutjeska were 4.7 mBAM in 2019 and 1.9 mBAM in 2020.

Legal background for the concession

The outsourcing of the Sutjeska assets may become a subject of a Concession agreement with the Government of Republika Srpska as recent amendments to the Concession Law explicitly prescribe that a concession may be granted for business activities in protected areas.

In RS, environmental standards relevant for long-term outsourcing of assets and services in protected areas are defined by the legislation regulating protected areas and NPs. Below is an overview of existing standards as defined by the Law on Nature Protection of RS (O.G. of RS, No. 20/14), Law on National Parks (O.G. of RS, No. 75/10) and Law on National Park Sutjeska (O.G. of RS, No. 121/12).

Permitted Activities in NP

According to Article 10 of the Law on National Parks (O.G. of RS, No. 75/10), economic activity, tourism, catering, and scientific research activities are allowed, provided that they do not endanger the authenticity and natural balance of the plant and animal world, natural habitats, and hydrographic, geomorphological, geological, cultural and landscape area values. Construction of facilities and other works related to the aforementioned activities can be carried out only if they are in accordance with the spatial plan of the area and the management plan of the NP, and is implemented with a Construction Permit issued by the authorized administrative authority.

Prohibited Activities in NPs

- cutting or destroying of trees, shrubs and other vegetation, except for sanitary cutting,
- importing of allochthonous species of plants, animals and fungi that live in nature in the wild, as well as hunting of wild animals, except sanitary and breeding shoots in zones specified by special regulations,
- uncontrolled collection of medical and aromatic herbs, fungi, forest fruit,
- construction of facilities or performing other works that pollute land and air, deteriorate water quality or affect its quantity, spatial and temporal distribution, with the exception of water supply facilities in zones defined by the spatial plan of the NP,
- construction of energy facilities and performing other works, except for the needs of the NP. Exceptionally, the construction of energy facilities may be allowed, if they are of interest to RS, with the prior approval of RS Government,
- construction of nuclear facilities,
- waste disposal,
- exploitation of mineral resources,
- construction of main and regional roads, unless foreseen by the spatial plan of the NP,
- destroying border signs, warning signs and notifications, billboards, tourist signalling and messages that point to the importance and role of the park,
- other activities that destroy the nature or endanger the features of the NP.

Concession Benefits

The concession would bring many benefits to NP Sutjeska, RS Government and the local community, such as:

- A concession managed by a third party as a profitable business case will bring business attitude and enhanced promotion effort to the nature-based tourism development in the NP Sutjeska;
- A combination of business attitude and care for nature within the national park will present an excellent case for further replication in RS, FBiH and abroad;
- NP Sutjeska management will outsource the management and financial burden associated with the currently unprofitable assets and tourist infrastructure;
- Assets of RS, which are currently in half-ruined state and almost unusable, would be revitalized and reconstructed by a private partner, and after a concession period would be returned to RS in a completely functional state;
- The tourist flow and the duration of stay will increase as the tourist facilities are reconstructed;
- The staff costs of the NP can be reduced following a stable income generation by the improved tourist facilities once the concession is implemented;
- The NP staff will get hands-on experience in successful tourism business organisation;
- The RS Government would receive an annual concession fee and could reallocate this money to nature protection activities in the NP;
- There would be more employment and self-employment opportunities for the local population;
- There would be opportunities for the development of small businesses by the local population, which are complementary to tourism and nature protection.

Concession Process

a) Regulatory prerequisites

The relevant regulations in RS are as follows:

- Law on Public-Private Partnership ("Official Gazette of Republika Srpska", No. 59/09 and 63/11, "PPP Law")
- Decree on PPP Projects Realization ("Official Gazette of Republika Srpska", No. 104/09 and 62/12)
- Rulebook on Contents and Guidance of PPP Projects Register ("Official Gazette of Republika Srpska", No. 32/10)
- Concession Law ("Official Gazette of Republika Srpska", No. 59/13 and 16/18, "Concession Law")
- Concession Law of RS regulates the procedure of awarding the concession agreement.

The Concession Law does not give the state the possibility of outsourcing objects in order to perform, among others, hotel and tourist activities or hospitality activities, but in Article 7 of the Concession Law regulates the concessions on Build – Operate – Transfer model. This model implies the build or reconstruction of the facilities, financing the complete object, operating the object and then, after the concession period, transferring the object to the RS. Thus, the NP Sutjeska assets might be outsourced in this manner.

The property that is subject to the potential concession vests with the RS Government. The RS Government would need to withdraw these assess from NP Sutjeska books. Also, the asset management issues should be regulated through an agreement between the RS and JUNP before the concession is granted.

Some NP assets are located in Commemorative Complex Tjentiste, established by the decision of the RS National Assembly („Official Gazette of RS" No. 90/09). This decision prescribes a specific regime of protection in the complex:

(i) prohibiting further construction in the narrow zone of the complex (including construction on buildings located on the land parcels Nos. 129 and 133, Cadastral Municipality Tjentište, which includes Hotel Mladost) and

(ii) restricting construction activities in the wider zone only to ancillary facilities to constructed objects such as parking lots (including buildings located on the land parcel No. 140, Cadastral Municipality Tjentište).

Therefore, if the exploitation of outsourced assets would include work exceeding restrictions prescribed by the decision of the RS National Assembly, the decision should be amended in order to allow further works or these assets by excluding them from the area of Commemorative Complex Tjentiste or, alternatively, the asset in question should be excluded from the list of outsourced assets.

Finally, land parcels where the assets are located will also be subject to the concession. As the area of land parcels includes different types of land and the size of parcels may significantly exceed the needs of the potential concessionaire, it is advisable to divide some land parcels into smaller land lots prior to the outsourcing.

b) Assets for the future concession

An overview of the accounting value of NP Sutjeska assets recommended for long-term outsourcing is given in table below.

Accounting value of assets suggested for long-term outsourcing	**Value (BAM `000)**	**Share in total assets %**
Hotel "Mladost"	2,781.70	25.62
Hotel " Sutjeska"	1,850.31	17.04
Restaurant "Jezero"	220.83	2.03
Central House	578	5.33
Pavilion A	469.37	4.32
Pavilion B	225.42	2.08
Pavilion C	198.63	1.83
Pavilion D	141.96	1.31
Pavilion F	54.43	0.50
Pavilion G	54.43	0.50
Youth house	68.22	0.63
Bungalow	53.67	0.49
Sport courts	1,125.00	10.36
Recreational swimming lake	3,024.00	27.86
Camp	9.02	0.08
Total value of assets recommended for oursourcing	**10,855.00**	**100.00**

The income approach was used for the appraisal of the market value of NP Sutjeska's assets recommended for long-term outsourcing. An overview of the market value of NP Sutjeska assets recommended for long-term outsourcing is given in the table below.

Appraised market Value "as-if" of assets recommended for long-term outsourcing BAM '000	**Lower range**	**Base scenario**	**Upper range**
Discount rate	11.35%	8.35%	7.35%
Hotel Mladost	8,660	11,965	13,560
Hotel Sutjeska	3,159	5,459	6,691
Restaurant Jezero	812	1,197	1,395
Pavilion A	61	113	138
Pavilion B	664	958	1,101
Pavilion C	79	214	279
Pavilion D	-	-	-
Pavilion F	-	-	-
Pavilion G	155	238	279
Bungalow	62	97	114
Camp	539	718	804
Appraised Market Value	**14,191**	**20,959**	**24,361**

Appraised market values are based on the "as-if" assumption that the assets have been refurbished. Should there be no investment in refurbishment, the appraised values would not apply.

Certain interventions and investments into NP Sutjeska assets recommended for long-term outsourcing are required in order to bring them to operational level. After realization of necessary interventions and investments it is expected that these assets would generate revenues, such as room revenues, kitchen, bar, etc., as well as operational expenses such as expenses for employees salaries, food and beverage inventories, utilities, maintenance, etc.

c) Financial feasibility assessment

Total investment required is assessed at 6,616,230 BAM.

The economic feasibility of the investment for a possible private partner/third party was assessed through Internal Rate of Return (IRR) and Net Present Value (NPV).

As prescribed in Law on Concession in Republika Srpska, when acquiring assets through a concession agreement, a private investor is obliged to:

- pay one-time concession fee in the amount between 4% and 6% of the total investment, and
- annual concession fee in the amount between 5% and 8% of the total annual revenues generated through the use of acquired assets.

Average values of the aforementioned concession fees were taken into account within the financial analysis. Results of the chosen option (scenario) are given below:

IRR (%)	9.64%	11.82%	11.13%
NPV (BAM)	531,0	1.478	1.189
Annual Concessions Fee	6,50%	6.00%	7.00%
One-off Concession Fee	5,00%	4,50%	5,50%

Discount rate is 8,35%

As it can be seen from the table above, that the net cash flow is expected to be positive through the period of 20 years, ranging from 66kBAM in year 2 to 746 kBAM in year 20. On the other hand, cumulative cash flow is negative in year 1, amounting to 6.9mBAM. Due to the increase in annual net cash flows within the considered period, the cumulative cash flow will also increase and will turn positive in year 14, when it is expected to be56 kBAM. In this scenario, IRR is 9.64% and NPV is 531kBAM. Additionally, sensitivity analysis results show that IRR is 11.82% and NPV is 1.4 mBAM if both concession fees were reduced by 0.5%, while IRR and NPV amount to 11.13% and 1.1 mBAM respectively if both concession fees were increased by 0.5%.

Generally, a positive effect of long-term outsourcing would be cca 947 kBAM in the first year of operations and 680 kBAM in later years.

3. Operational "Road map" for the process of outsourcing NP Sutjeska's assets

	Step	Responsible party	Timelines	Comments
1	Preparatory work: - Defining the assets; - Exclusion of Hotel Mladost and other identified assets from the Commemorative Complex Tjentiste; - Division of the land parcels.	JUNP and the responsible authorities	N/A	
2	Screening of potential concessionaires Process framework Appropriately scoped ESIA	UNDP-GEF Project Team	N/A	
3	Holding consultations and acquiring opinions of the institutions, including the opinion from the RS Public Attorney`s Office	Responsible ministry	60 days	
4	Adopting decision on starting the concession awarding procedure	Responsible ministry	30 days	
5	The competent authority prepares the tender documents	Responsible ministry	N/A	
6	The competent authority shall submit a request for approval of tender documents to the Commission for Concessions	Responsible ministry	30 days	
7	The Commission for Concessions shall issue a decision on approval of tender documents	Commission for Concessions	30 days	
8	Competent authority publishes a call for bidders	Responsible ministry	N/A	
9	Bidding	Interested bidders	N/A	
10	Evaluation of bids based on the criteria set forth by the public invitation and tender documents,	Commission for Concessions	30 – 60 days	

11	Commission for Concessions submits to the concession grantor a report on the conducted procedure including ranking list of bidders	Commission for Concessions	30 days	
12	The concession grantor decides about the selection of the successful bidder and concession granting	Responsible ministry	30 days	
13	General Attorney issues an opinion regarding the draft Concession Agreement	General Attorney	15-30 days	
14	Signing of the concession agreement	RS Government / Interested bidder	N/A	The submitter of the initiative is awarded with up to 10% bonus points.
15	Original copies of the concession agreements to be submitted to the RS Public Attorney`s Office and registered with the RS Commission for Concessions	Responsible ministry	8 days	

Annex 20: Desk Climate Threat Assessment for Pilot Protected Areas

The flora, fauna and fungi of BiH are among the most diverse in Europe, and the high degree of endemicity and relicenses gives it importance at the level of global biodiversity. Climatic conditions have a significant impact on the natural systems development, with the living world evolving in changing conditions thanks to adaptations to such changes. Variability of climatic conditions has contributed to the development of biodiversity, but predictions are that climate changes will imply faster changes than changes in biodiversity thus reducing the possibility for adaptation.

From the aspect of climate change impacts on biodiversity, we can talk about dual effects, direct and indirect. Direct effects refer to changes in the occurrence of certain physiological phases for plants and animals, which consequently affect certain species. Indirect effects are reflected through changes in environmental parameters.

Climate change has been recognized as one of the key factors that affect biodiversity. According to the Fifth National Report of BiH to the Convention on Biodiversity, the Alpine-Nordic and Mediterranean areas are most affected, as well as rivers in karst areas and ecosystems that have developed in the valley of these rivers. It is also considered that climate changes have a significant impact on mountain zone ecosystems. The Strategy and Action Plan for the Protection of Biological Diversity - NBSAP BIH (2015-2020) states that the following are sensitive to climate change: high-mountain landscapes, mountain landscapes and relict-refugial landscapes. The ecosystems of karst areas and especially wetland areas of karst fields are stand out.

Climate changes in synergy with other factors also have consequences for forest ecosystems. This provides examples of drying trees spruce, fir, white and black pine and some deciduous species. A large number of individual trees of birch, black poplar, walnut, alder, willow, ash, hornbeam, black hornbeam, oak, beech and other woody species were observed in which the leaves were completely dried a month after leafing, or did not form at all (Strategy and Action Plan for the Protection of Biological and Landscape Diversity, 2014).

Just as the impact of these changes is manifested on flora and vegetation, it also has effects on animal species - fauna. The influence of climatic changes can also be observed through the prism of the spread of allochthonous and invasive species that can push autochthonous species from certain areas.

Climate changes are one of the factors disrupting biodiversity, and thus at the same time carry a significant risk for protected areas and their values. Temperature and the amount and distribution of precipitation can be emphasized as the basic parameters that stand out in the case of climate changes, and these parameters have an impact on the vegetation and migrations of the animal world. Also, a significant impact is manifested on habitats, primarily through fragmentation and changes in environmental conditions.

The sensitivity of ecosystems to the effects of climate change has increased due to their disturbed state, fragmentation and various anthropogenic influences. In combination with other factors, climate change significantly affects the time of occurrence and duration of seasons, which has a significant effect on the length of the vegetation period and the time of occurrence of certain phenophases. Climate change manifests its effect on plants and plant communities, which can first be noticed by changes in phenophases. They exert their effect on all aspects of biodiversity, through changes in the distribution of populations and species, as well as in the functioning of ecosystems.

Four national reports of BiH to the UN Framework Convention on Climate Change (2009, 2013, 2016, 2020) identify a significant impact of climate change on plants whose habitats are in the mountainous areas of BiH. In the long run, one can expect the migration of some woody plants in the direction of the Dinarides to the northwest and a decrease in the number of herbaceous plants of narrow ecological valence of the highest mountain areas. Possible causes are increases in average temperatures and stronger temperature extremes. In addition, the high sensitivity of fir forests was determined due to the narrow ecological valence in relation to temperature. Here it is necessary to emphasize the fact that for species such as spruce, fir and white pine (which are building numerous communities in mountain landscapes), BiH represents the southern limit of distribution. An increase in average temperatures could have a negative effect primarily on the quantitative aspects of the populations of these species, which in combination with other anthropogenic factors may lead to their endangerment and, finally, extinction from these areas.

Climate change models predict that, as a result of rising temperatures, significant changes in precipitation levels will occur. This will have a strong effect on the distribution of plant species. Climate change is expected to have a significant impact on the flora of mountainous areas, resulting in the migration of certain tree species

along the Dinarides, as well as a local reduction in the number of species. Grass species are likely to disappear in the high mountains. In addition, it is likely that wetlands, with their bird and turtle populations, and karst regions, will be particularly affected by the loss of flora and fauna. Some endemic species are also expected to disappear.

Climate change adaptation measures should focus on expanding the network of PAs in BiH, as well as improving the management system of existing PAs.

Mountain ecosystems are increasingly threatened by rising temperatures. Previous research has shown that the lakes in the area of high Herzegovina are already affected by the increase in temperature, which caused eutrophication and the accelerated disappearance of the lake. An increase in temperature was observed in all lakes of high Herzegovina (Orlovačko, Crno, Bare, Štirinsko, Kotlaničko).

Forest ecosystems: Negative effects of climate change on forest ecosystems have already been significant. The negative impact is manifested through increased droughts, forest fires, drying of certain species and declining groundwater levels. For example, drying of oaks has been recorded in the Sava river basin in the past two decades, mostly due to the reduction of groundwater.

The predicted increase of temperature, and more frequent and longer dry periods will contribute to faster spreading of forest areas affected by fires.

Research to date suggests that specific regions respond differently to climate change, and that impact analysis on species differs. Different reactions of forest ecosystems can be expected (some are located at higher altitudes and have a deeper pedological profile, while some are less sensitive, i.e. formed by more tolerant species). Species that are at the center of their natural distribution are more tolerant of climate change, while those near the ecosystem borders (marginal populations) are very vulnerable. In addition and the succession of species (their evolution) and changes in the structure of communities are related to the natural regeneration of forests and are determined by the age of the trees. In some species (such as oaks) it is more than 100 years, and in some it is unrealistic to expect changes in existing vegetation in a period shorter than one century (except in the case of natural disasters). Finally, all changes and movements of forest communities must take into account a number of other factors that affect changes in forest ecosystems (changes in soil structure, changes in genetic resources and diversity, adaptability of species, etc.).

In addition to the above, a significant threat to forest ecosystems is caused by an **increase in the number of forest fires**. In some parts of BiH, an increased risk of forest fires caused by rising temperatures and changes in precipitation is expected, which calls for an expansion of fire protection capacity. All these aspects (weather, pests, pathogens, fires) can, over a longer period of time, lead to reduced productivity and poorer forest health in BiH.

The upper temperature limits negatively affect productivity, because radical temperatures limit growth. In addition, there are certain complex stress agents in forests and forest systems: insects, diseases, droughts, floods, landslides, unplanned logging, fires, etc.

Afforestation efforts have been declining over the past two decades. The 6th National Report to the CBD outlines that the investments in the forest breeding have significantly fallen (over 50%) in 2015 as compared to 2008. In the period 2010-2012 forest companies (FC) invested inthe forest breeding measures around 30% less funds compared to annual plans.

Wildfires occur more intensively in the period before the vegetation in March-April, and in the period of drying of the vegetation, the end of summer, July-August and the first half of September. Open fires, and thus forest fires, endanger the population, property, infrastructure, and especially the environment. Areas under coniferous forests of pine, fir and spruce are especially endangered. Climate change leads to significantly longer and more intense drought periods with increase the fire risk index. In BiH, fire hazard indices are not calculated, nor are early warnings of dangerous occurrences issued, unlike in neighboring countries, Serbia and Croatia.

Prolonged droughts and stronger winds also contribute greatly to the fire risk. Available data and research indicate that climate change is a threat to all four macro-regions in BiH (ecological-vegetation areas). The area of the Dinarides will be highly threatened, as a very important and rich center of endemic species in the Balkans. The threats posed to such a rich flora and fauna by a wide range of different human activities are numerous. One of the significant consequences of climate change on ecosystems will certainly be the shift of water supplies and the distribution of pests and diseases. Invasion of non-native species can be expected, and more aggressive species can displace indigenous species from natural habitats. At present, it is not possible to accurately predict the success of adaptation to life in new habitats, caused by climate change.

Significant changes are expected in the genera inhabiting the mountainous areas of BiH, especially the **migration of some woody species in the direction of the Dinarides** to the northwest, with possible local depletion of flora. The most affected ecosystems will be the high mountain areas in BiH at altitudes of more than 1,500 m, which corresponds to the border of the subalpine zone.

In the canyon parts of relict-refugial landscapes, shallow soils are formed, which are subject to wind and water erosion. By drying trees in canyons, soils can be exposed to even greater erosion, which would lead to stronger temperature extremes of the substrate that threaten refugial forest communities.

Research has shown that the occurrence of drying trees (coniferous species) is most often associated with acid rain. In addition to this possibility, the causes of tree drying can be sought in frequent dry periods during the last few years, frost, parasites, soil pollution, soil erosion with overheating of the soil, or the action of multiple factors, aided by climate change.

Taking appropriate measures in forest management can to some extent reduce the environmental and socio-economic consequences of possible forest degradation under the influence of climate change. Approaches to climate change adaptation will require better information in the forest management process, with the aim of providing support in adapting to changes in already planted species, and management interventions aimed at preventing fire outbreaks and the spread of disease.

The impact of climate change on protected areas in BIH will be presented by area based on available data. It should be noted that existing documents in terms of assessment, valorisation, proclamation studies, management plans, etc. do not contain data about the climate changes impacts on certain ecosystems or species. Accordingly, to evaluate the climate changes impacts on certain ecosystems, communities or species in protected areas, other relevant sources will be used, i.e., scientific papers or analyzes that at least partially contain data of this kind.

National Park Drina

National Park (NP) Drina is the youngest national park in BIH, established in 2017. This NP is located in the territory of the municipality of Srebrenica (RS) and covers an area of 6,315.32 hectares, of mostly the river Drina canyon area. Protection of the area was carried out on the basis of the Law on NP Drina and the Study for the designation of protected area-NP Drina, which was adopted by the RS National Assembly.

The key biodiversity values of NP Drina are habitats of endemic and relict plant species, primarily the endemic Pančić's spruce whose localities are quite limited. The area of the ravine canyon valley of the Drina River constitutes a unique complex, which is part of the Dinaric Starovlaško-Raška highlands.

Detailed key features of this NP are as follows:

- The area of the Drina National Park is characterized by great richness and diversity of species, especially flora. According to the Study for the Proclamation of the National Park (2015)[88], 635 taxa (species and subspecies) of plants from 90 families and 351 genera were recorded in this area. A large number of species are indicators of primary and secondary ecosystems, while a significant number of representatives of tertiary ecosystems are present along the river banks.
- The presence of Pančić's spruce (*Piceaomorika*), which is an endemic and tertiary relict species, contributes to the exceptional value of the area. At one time this species was widespread in Europe, and today its area is limited to the area around the middle course of the Drina River. In BIH, it is widespread in the municipalities of Rogatica, Srebrenica, Foča, Čajniče and Višegrad.
- Besides Pančić's spruce, black pine (*Pinus nigra*) and bitter oak (*Quercus cerris*) stand out as special dendrological values of this area.
- The presence of 56 species and subspecies of plants that are protected by the Law on the Red List of Protected Species of Flora and Fauna of the RS equally argues the importance of this area. Species as Derventa centaury *Centaurea incompta*subsp.*derventana*, *Daphne malyana*, *Picea spruce*, are on the European Red List (1991) too. Species present in the area under the CITES Washington Convention are: snowdrop (*Galanthus nivalis*), *Cephalanthera longifolia*, *Cephalanthera rubra*, *Dactylorhiza maculate,* round orchis (*Traunsteineraglobosa*). Especially important from the aspect of biodiversity are relict genera and plants, such as: Anemone, Lilium, Ornithogalum, Iris, Crocus, Dianthus and Erythronium.
- Forest vegetation is well developed and extends in the range of 300 to 1100 m above sea level. There are forest communities of malt and bitter oak, then sessile and bitter oak, beech and beech and fir. Willow and poplar communities and black alder communities also appear. Forest vegetation belongs to the vegetation classes *Querco-Fagetea* (deciduous forests of the sub-Mediterranean, mountainous and subalpine zone), *Alnetea-glutinosae* (vegetation of hygrophilous alder forests), *Erico-Pinetea* (vegetation of pine forests) and *Vaccinio-Piceetea (*vegetation of dark coniferous forests). Thermophilic forests, shrubs and bushes of the oak (*Quercus pubescens*), white hornbeam (*Carpinus orientalis*) and black hornbeam (*Ostriacarpinifolia*) belong to the vegetation order *Quercetaliapubescentis*. Communities of this order are united by two bonds: *Ostryo-Carpinionorientalis* and *Orno-Ostryon*.
- Particular features of this area are rocks and steep cliffs of the Drina canyon, inhabited by relict phytocenoses of black pine, black hornbeam and thermophilic beech forests. There appear endemic communities of *Edraianthojugoslavici-Centauretumderventanae, Centaureoderventanae-Daphneetummalyanae* and *Centaureoderventanae-Seslerietumtenuifoliae*were recorded in the cracks in the limestone rocks. Screes are overgrow with Corydaleto-*Geranietummacrorrhizae* and *Achnatheretum calamagrostis*.

[88]Study for the designation of protected area – NP "Drina" (2015)

- The fauna of this area is also rich. Ichthyofauna was presented with 11 species of fish (chub, roach, bream, barbell etc.). Herpetofauna is presented with 13 species, including species important for preserving the biodiversity of this group such as fire salamander (*Salamandra salamandra*), *Triturus* spp*., Hyla arborea, Rana graeca, Testudo hermanii*, *Dolichophis caspius*, *Zamenis longissimus* and *Viperaammodytes*.A large number of bird species have been registered in the NP area, and all identified species are protected by the Convention on the Protection of European Wildlife and Natural Habitats. There are many other species that are characteristic representatives of the fauna of European forests: white-breasted hedgehog (*Erinaceus concolor*), Miller's water shrew (*Neomysanomalus*), European mole (*Talpa europaea*), rabbit (*Lepus europaeus*), bank vole (*Myodesglareolus*), European pine vole (*Microtus subterraneus*), yellow-throated mouse (*Apodemusflavicollis*), European polecat (*Mustela putorius*), European pine marten (*Martes martes*), wildcat (*Felis silvestris*) and chamois (*Rupicapra rupicapra*). There are also large mammals, brown bear (*Ursus arctos*),) lynx (*Lynx lynx*), wolf (*Canis lupus*), roe deer (*Capreolus capreolus*), wild boar (*Sus scrofa*) and European badger (*Melesmeles*). Brown bear, chamois and golden eagle (*Aquila chrysaetos*) stands out as particularly valuable species of fauna of this NP.

According to the Report Support to Water Resources Management in the Drina River Basin (World Bank, 2017) climate change in Drina River Basin (DRB) is considered with two IPCC scenarios: RCP 4.5, as a “middle line” and RCP 8.5 as a GHG intensive scenario. The key findings are:

- All models under both scenarios project a temperature increase over the entire DRB in all seasons during both considered future periods. The increase in the ensemble median mean annual temperature ranges from 1.1 °C to 1.4 °C under RCP 4.5 and 8.5 respectively in the near future (2011-2040) and from 2.0 °C to 2.7 °C in the distant future (2041-2070) with respect to the reference period 1961-1990. The largest heating is projected for summer season under both scenarios and in both future periods, and also for winter season in distant future under RCP 8.5.
- The changes in the hydrologic regimes of the Drina River, as well as its major tributaries Piva, Tara, Ćehotina, Lim and Uvac, are estimated on the basis of the following indicators: mean annual flow, mean seasonal flows, high annual flow having 10% exceedance probability and low annual flow having 90% exceedance probability. The results have shown that the change in mean annual flow ranging from-12% to +15% is expected in the near future (2011-2041) relative to the baseline period 1961-1990. The changes are more pronounced in individual seasons and especially in the winter season for which the changes range from +7% to +64%. In the spring season, which is characterized by the greatest flows in DRB, a reduction of up to 22% is expected. The summer flows are reduced according to all simulations, and the reduction is up to-35%. The changes in the autumn season in the near future range from-19% to +12% in accordance with changes in the climate drivers.
- Changes in the hydrological regimes can significantly hit sensitive members of living communities in the canyon

When it comes to climate change, Pančić’s Spruce stands out as one of the endangered species. Although it is a species that has a certain possibility of adaptation, it is endemic and tertiary relict species with limited range of appearance (it inhabits certain areas in BIH and Serbia in the area of the middle course of the river Drina). It is considered that this species is endangered (population trend decreasing)[89] in natural conditions due to its characteristics and specifics, which are primarily related to poor natural regeneration and low competitive abilities. Those characteristics are factored by the CC effects, where fires are considered the greatest threat. Climate change may accelerate the natural decline of populations of this species (main reasons for natural decline are competition, poor natural regeneration and fires[90]). The impact of climate change is reflected in the negative consequences of the drought during 2012, where physiological processes were disrupted, which led to greater

[89] https://www.iucnredlist.org/ja/species/30313/84039544

[90]Ivetić, V., Aleksić Jelena (2016): Response of rare and endangered species *Piceaomorica* to climate change - The need for speed. REFORESTA 2:81-99. https://www.researchgate.net/publication/311974227_Response_of_rare_and_endangered_species_Picea_omorika_to_climate_change_-_The_need_for_speed

exposure to pathogens. In this regard, according to the models, it is to be expected that drought periods will be longer and more intensive, while higher humidity and soil humidity correspond to this species. Also, the rise in temperature can adversely affect this species, because high temperatures do not suit it. In this regard, climate change poses a significant risk to Pančić's spruce because the population of this species is naturally endangered[91]. Other research also shows that climate change has an adverse effect on Pančić spruce and leads to changes in the environment of this species[92].

Protected Area	**Assessment of major threats from climate change**		**Major threats**	**Assessment of key climate impacts / pressures on biodiversity within the PA**	**Possible response scenarios to the threat (proposed interventions / adaptation measures)**
	Present	**Expected (according to climate scenario RCP 8.5)**			
Drina	-increase in average annual temperatures by about 1.2°C;-increase in temperatures by seasons up to 1.2°C; -reduction in the number of hated days (about 15); -increase in the number of summer and tropical days (over 10); -reduction in the number of days	-increase in average annual temperatures to 4.5°Cat the end of XXI;-reduced average daily precipitation at the annual level by-20% by the end of the XXI century; -reduction of days with the appearance of snow (over 15); -reduction of days with retention of snow cover over 30); -prolongation of the vegetation period; -increasing the number of summer	-Increased temperatures and changes in the precipitation distribution increase the risk of fire. At the same time, higher amounts of precipitation in certain periods increase the possibility of torrential currents, which can lead to erosion. -Due to the multiple stresses to which forest habitats and trees are exposed, climate change is likely to affect some more sensitive ecosystems, and stress includes droughts, pest and disease attacks, and	-*Picea omorica* is a key species exposed to the effects of climate change, including negative effects of droughts and rising temperatures. Small and fragmented populations of this species are naturally endangered and extremely vulnerable to CC. Reduction of the number of localities where this species occurs and the occurrence of drying, dying of trees in certain localities[94] -Due to the reduced physiological processes caused by dry periods, conditions for the development and influence of pathogens are created (it refers to the forest in general) [95]	Adaptation measures for Serbian spruce (*Piceaomorica*) should include adaptation plans with concrete activities aimed to improve the status of this species in natural populations. Improved regeneration is considered as a key measure for building species resilience. Natural regeneration is slow as the compositions are dense, while new plants do not develop from the seeds if there is not enough light. Therefore, the following measures in support to regeneration could be supported: • planting near natural habitats • collecting seeds from healthy trees and transferring them to suitable locations, with prior

[91] Ivetić, V., Aleksić Jelena (2016): Response of rare and endangered species *Piceaomorica* to climate change - The need for speed. REFORESTA 2:81-99. https://www.researchgate.net/publication/311974227_Response_of_rare_and_endangered_species_Picea_omorika_to_climate_change_-_The_need_for_speed

[92]Ballian, D., Longauer, R., Mikić, T., Paule, L., Kajba, D., Gömöry, D. (2006): Genetic structure of rare European conifer, Serbian Spruce (Piceaomorika (Panč.) Purkyne). Plant system and Evolution 260. 53-63. https://www.jstor.org/stable/23655538?seq=1

[94] Mataruga, M, Milanović, Đ. (2020): Natural populations of Pančić's spruce in the RS (BiH). Bulletin of the Faculty of Forestry, University of Banja Luka 30: 77–113. http://glasnik.sf.unibl.org/index.php/gsfbl/article/view/224

[95] Ivetić, V., Aleksić Jelena (2016): Response of rare and endangered species *Piceaomorica* to climate change - The need for speed. REFORESTA (2016) 2:81-

	with the appearance of snow; -reduction of the number of days with the retention of snow cover; -frequent occurrence of intense precipitation that causes torrential floods and landslides and erosion; -increase in precipitation episodes over 20mm; -intense and long-lasting heat waves with max daily temperatures over 30°C (at least 3 per year) -appearance of late spring frosts- -stormy winds over 100 km / h	days (up to 40) by the end of the XXI century; -increasing the number of tropical days (up to 30) by the end of the XXI century; -intensive and long-lasting heat waves with max daily temperatures over 30°C (at least 5 per year); -more frequent occurrence of late spring frosts.	increased risk of fire and soil changes[93]. -deforestation due to stormy winds -long-lasting droughts	-drying of coniferous trees;	analysis and the necessary permits • production of seedlings on plantations • monitoring of tree health • developing measures and actions with the aim of pests eradication In general, for the ecosystems within the PAs, the following measures could be developed for building ecosystem resilience: -rehabilitation of landslides caused by heavy rainfall; -development of a system of meteorological monitoring and early warning of climate risks and extremes; -intensification and strengthening of scientific research

National Park Sutjeska

99.https://www.researchgate.net/publication/311974227_Response_of_rare_and_endangered_species_Picea_omorika_to_climate_change_-_The_need_for_speed

[93]Climate Change Adaptation and Low Emission Development Strategy for Bosnia and Herzegovina, 2013.
https://www.ba.undp.org/content/bosnia_and_herzegovina/en/home/library/environment_energy/climate-change-adaptation-and-low-emission-development-strategy-.html

NP Sutjeska is the oldest NP in BiH, founded in 1962, which represents a mosaic of different landscapes and ecosystems in a unique area. The area includes parts of Maglić, Volujak and Zelengora, and is located in a forest-mountainous area in the southeast of Republika Srpska, on the border between BiH and Montenegro.

The area of the park is 16,052.34 ha, of which over 66% is covered by forests and the rest are meadows, pastures and barren lands above the upper forest boundaries. It includes a spacious mountainous area on the border of BiH and Montenegro, bordered by the rivers Piva, Drina, the source of the Neretva River, and the mountain massifs of Bioč, Vučevo, Maglić, Volujak, Lebršnik and Zelengora.

There are some special natural features of the NP Sutjeska that can be singled out:

- richness and variety of biodiversity in general
- strictly protected reserve Perućica-the biggest old: growth forest in Europe
- canyons of Sutjeska, Hrčavka and Jabučnica rivers
- glacial high mountain lakes („mountain eyes“)

A significant part of the NP Sutjeska is covered by forests and meadows, and mountain pastures and barren lands above the upper forest boundaries are also presented. Also, in the area of the park, there are various aquatic ecosystems, such as rivers, streams, and glacial lakes, so called-"mountain eyes", located in the area of Zelengora.

According to the available data, a large number of vascular plant species are present in the area of the park, many of which are endemic and medicinal, and a significant number of fungal species have also been recorded.

The area of the NP is mostly covered with climatogenic beech and fir forests with spruce (*Piceo-Abieti-Fagetum*), and to a lesser extent to beech and fir forests without spruce. Within these forests, secondary phytocenoses of fir and spruce (mostly *AbietiPiceetumillyricum*) are widespread, followed by beech forests (*Fagetummontanumillyricum*). The subalpine zone is characterized by the presence of beech forests (*Fagetumsubalpinum*) and juniper pine (*Pinetum mugi*). In addition to these, subalpine spruce forests (*Piceetumsubalpinum*) are present in colder habitats.

Relict forests of black pine (*Pinetum nigraecalcicolum*), forests of black hornbeam (*Orno-Ostryetum*), and forests of maple and linden (*Aceri-Tilitummixtum*) are widespread in the habitats in the canyon of watercourses. Oak phytocenoses, sessile and cera forests (*Quercetumpetraeae-cerric*), are mainly associated with lower regions. Small areas of recent fluvisols represent habitats of gray alder (*AlnetumIncanae*) and willow forest (*Salicetum*)[96]

Here it was necessary to point out that the Perućica old-growth forest[97][98] is located within the park. Within this part, forest communities of beech, fir and spruce are protected, followed by communities of subalpine beech, pure or with mountain maple, subalpine spruce, and curve pine vegetation and mountain grassland vegetation.

In the area of the park, 36 species of mammals from 18 families were recorded (chamois, roe deer, wild boar, brown bear, wolf, fox, European badger, European pine marten, Eurasian otter, red squirrel, rabbit (European hare), wildcat, lesser mole-rat).

Also, in this area, a number of species belonging to amphibians and reptiles have been recorded.

[96]Management Plan of NP Sutjeska (http://www.nasljedje.org/docs/publikacije/Plan_upravljanja_Sutjeska.pdf)

[97]Ratkinić, M., Braunović, S., Čančar, Z., Krsmanović, V. (2006): SPECIES DIVERSITY IN PERUĆICA. Scientifi c conference: “Management of forest ecosystems in national parks and other protected areas”. 589 - 597

[98] Management Plan of NP Sutjeska (http://www.nasljedje.org/docs/publikacije/Plan_upravljanja_Sutjeska.pdf)

The presence of 5 species of fish from the families Salmonidae and Cyprinidae was recorded in the park area, while 114 species of birds were also found. Recent research[99] found 78 bird species in this area, where the research sites were located around the rivers Sutjeska and Hrčavka and lakes on Zelengora. In comparison with previous research, it is concluded that a total of 118 species of birds are present in the area of the NP, of which 108 are possible, probable or confirmed nesting birds of the park.

When it comes to invertebrates, a smaller amount of data is available, but some research shows the presence of a larger number of species. Thus, Kulijer and Miljević (2017)[100] state that the presence of 35 species of dragonflies was recorded in the area of the NP, 30 of which are on the Red List of Republika Srpska.

According to the Management Plan of NP Sutjeska, climate change is listed as one of the important factors that manifest its action. Direct climate change-induced effects on species include changes in the life cycle of some taxa the individual, primarily related to the period of reproduction, growth, flowering, and some other physiological processes. At the same time, the effects of climate change can be observed through changes in environmental conditions and habitats, which change living conditions. Likewise, climate change is very often in synergy with other biodiversity loss factors, with the effects often intertwined and difficult to separate.

One particular example of climate change effect on biodiversity is the eutrophication of Zelengora lakes. This is primarily reflected in the increase in water temperature and disruption of precipitation regime. It should be noted that these are lakes at higher altitudes, where temperatures are extremely low during the winter months and where ice is formed of significant thickness. Some research[101], [102] of NP Sutjeska lakes (Crno, Donje Bare, Gornje Bare and Orlovačko lake) shows that certain changes are already present.

Overall, with the examined lakes, it can be stated that climate change has its impact on alpine lakes as specific ecosystems, where there are homogeneous ecological conditions. Namely, in some lakes, certain forms of eutrophication have been observed, which, in addition to the natural aging of the lake ecosystem, can also be associated with an increase in the water temperature of the lake. Although it is a water of good quality, where most of the parameters indicate the first quality class according to current regulations, it can be stated that some parameters have deviations and indicate the second quality class. This statement is indicated by the conducted analyzes of the monitored parameters.

According to the First National Report of BiH to the CBD (2008) and NBSAP (2014) different ecosystems are highly sensitive to climate change. Among others, these documents list the ecosystems of mixed deciduous-coniferous forests of beech and fir with spruce, ecosystems of spruce and fir forests and pine juniper ecosystems which are present within the NP Sutjeska.

Also, the Climate Change Adaptation Strategy (2013)[103] states that climate change can significantly affect forest ecosystems and over time can lead to transformation and changes in composition and distribution. Some of the forest species are listed as more resistant to the effects of climate change, although in such conditions they can be attacked by pests and diseases. Namely, according to the mentioned document, beech is mentioned as a resistant species that can be subjected to the action of pests, and conifers that are susceptible to pest attack are also emphasized. Also, the simulation of a 2-degree increase in temperature predicts significant negative consequences for the distribution of dark coniferous forests, where firs are exposed to the risk of rising temperatures, while other species will gradually spread to higher

[99] Sjeničić, J., Šćiban, M., Crnković, N.(2017): CONTRIBUTION TO THE STUDY OF THE BIRD FAUNA OF THE SUTJESKA NATIONAL PARK. Glasnik Šumarskog fakulteta Univerziteta u Banjoj Luci 226, 2017, 41–50.https://doisrpska.nub.rs/index.php/GSFUBL/article/view/4038

[100] Kulijer, D. and Miljević, I. (2017): DRAGONFLY (ODONATA) FAUNA OF THE ZELENGORA MOUNTAIN AND SUTJESKA NATIONAL PARK. Glasnik Šumarskog fakulteta Univerziteta u Banjoj Luci 26, 2017, 23–39, https://doisrpska.nub.rs/index.php/GSFUBL/article/view/4037

[101] https://www.gdrsbl.org/rajko-gnjato-radoslav-dekic-goran-trbic-svetlana-lolic-obren-gnjato-i-tatjana-popov-gornje-i-donje-bare-%E2%88%92neki-elementi-odrzivosti-i-kvaliteta-jezerske-vode/

[102] https://www.researchgate.net/profile/Svjetlana-Lolic/publication/321343804_BLACK_LAKE_OF_THE_ZELENGORA_MOUNTAIN_-_SUSTAINABILITY_PROBLEMS/links/5a1fd112a6fdccc6b7fb6fbd/BLACK-LAKE-OF-THE-ZELENGORA-MOUNTAIN-SUSTAINABILITY-PROBLEMS.pdf

[103] Strategija prilagođavanja na klimatske promjene i niskoemisionog razvoja za Bosnu i Hercegovinu, 2013, https://www.ba.undp.org/content/bosnia_and_herzegovina/bs/home/library/energija-i-okolis/climate-change-adaptation-and-low-emission-development-strategy-.html

altitudes. Also, an uneven distribution of precipitation could lead to drought in certain periods, which can have a negative effect on some species. It is to be expected that these effects of climate change will also affect the forest ecosystems of NP Sutjeska.

Climate changes lead to significantly longer and more intense drought periods with elevated and high fire hazard index.

In the NP Sutjeska, the outbreak of fires in open spaces and forest areas is a real and significant risk, and these fires can occur in several forms: low or ground fire (affects the combustible material on the ground and low vegetation) high fire (develops from low fire of stronger intensity, and it most often threatens coniferous forests), fire of individual trees (occurs by lightning) and underground fire (very rare and spreads very slowly). A special danger in this area is so-called "high fires", which affect trees from the roots to the top of the canopy, causing wind and water erosion and subsequently, degraded areas where less valuable tree species occur.

It should also be pointed out that landslides of various sizes also appear in NP Sutjeska as a consequence of heavy rainfall and melting snow[104].

Protected Area	**Assessment of major threats from climate change**		**Major threats**	**Assessment of key climate impacts / pressures on biodiversity within the PA**	**Possible response scenarios to the threat (proposed interventions / adaptation measures)**
	Present	**Expected (according to climate scenario RCP8.5)**			
Sutjeska	-increase in average annual temperatures by about 1.0ºC; -reduction in the number of frozen days; -increase in the number of summer and tropical days (over 10); -appearance of stormy winds; -frequent occurrence of intense precipitation that causes torrential floods	--increase in average annual temperatures around 5ºC by the end of XXI century; -reduction of average daily precipitation on an annual basis to 30%; -reduction of days with the appearance of snow; -reduction of the day with retention of snow cover; -extension of the vegetation period;	-increased risk of wildfire; -landslides; -increased risk of torrential floods; -drying of coniferous trees; -deforestation due to gusts of stormy winds -long-lasting droughts;	-beech, fir and spruce forests: -changes in distribution; forest -champs (fires); -mountain lakes on Zelengora (Crno and Bijelo lakes have been affected by the process of eutrophication due to the increase in air and water temperature); -several communities of beech-coniferous forests located in the area of Zelengora, Perućica and Sutjeska are also recognized as potentially endangered forest communities in BiH, without stating the cause of endangerment[105].	-inventory of species and ecosystems -recording species that are at a certain level of risk -recovery of mountain lakes affected by the eutrophication process; -recovery of landslides caused by heavy rainfall (example of landslides near the monument in Tjentište; -development of an early warning system against

[104]Božović, D. (2020): STUDIJA O RIZICIMA U PARKU PRIRODE "PIVA", KANJONU RIJEKE TARE I NACIONALNOM PARKU "SUTJESKA". Program prekogranične saradnje BiH-Crna Gora.

[105] Avdibegović, M., Brajić, A., Marić, B., Bećirović, Dž. (2017): Šume visoke zaštitne vrijednosti u Bosni i Hercegovini.Vodič za izdvajanje, gospodarenje i monitoring.WWF Adria, Zagreb,http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwfhcvf_vodic_bih_verzija_za_web_1.pdf

	and landslides and erosion; -increase in precipitation episodes 20 mm; -intense and long-lasting heat waves with max daily temperatures over 30ºC (at least 3 per year) -appearance of late spring frosts	-increasing the number of summer days (up to 40) by the end of the XXI century; -increasing the number of tropical days (up to 30) by the end of the XXI century; -intensive and long-lasting heat waves with max daily temperatures over 30ºC (at least 5 per year); -more frequent occurrence of late spring frosts.			climate risks and extremes; -intensification and strengthening of scientific research

National Park Una

NP Una is located in the western part of BiH, in the border area with the Republic of Croatia, and covers an area of 19,800.00 ha. The protected area includes the area of the canyon part of the upper course of the river Una (upstream from Lohovo), the area of the canyon part of the lower course of the river Unac (from its confluence with the Una upstream of Drvarsko polje), and the space between Una and Unac[106]. It belongs to the Una-Sana Canton, the territory of BiHać City.

As the main watercourse, the Una River is one of the most important and greatest natural values of the NP Una[107]. Geomorphological characteristics, mosaic habitats, geological past and biogeographical position give this area exceptional value in terms of richness and diversity of flora and fauna.

A significant part of the habitat in the area of the NP Una is forests, pastures and meadows. The vegetation belts from pastures, over transitional bushy vegetation, deciduous forests, mixed forests, coniferous forests and areas with deficient vegetation are clearly distinguished. Most of the area of the National Park is covered by different types of forests, depending on the altitude. High mountain forests have been developed in this area, building beech and fir communities with spruce and beech and fir forests. In temperate zones forests of pedunculate oak and Turkey oak are developed, and in the subalpine zone forests of commonbeech and mountain pine are present.

Forest communities of the *Querco-Fagetea class* are developed, with following *associations*: *Asparagotenuifolii-Quercetumpubescentis, Quercetum cerris s.l., Aceri-Carpinetumorientalis, Seserioautumnalis-Ostryetumcarpinifoliae, Ruscoaculeati-Ostryetumcarpinifoliae, Aceriobtusati-Fagetum, Aceri-Tilietummixtum, Salicetumalbo-fragilis and Alnetumglutinosae.*

[106]Hrelja Edin (2017): Models of sustainable management of protected natural areas of Bosnia and Herzegovina. Doctoral thesis. University of Zagreb, Faculty of Science.
[107]VildanaAlibabić (2008): Ocjenastanjaprostoranacionalni park Una kaopreduslovodrživograzvoja. Zbornikradova. Zaštićenapodručja u funkcijiodrživograzvoja.

A significant part of the area of the National Park is covered by beech and fir communities with spruce (*Piceo-Abieti-Fagetum*), and beech and fir forests (*Abieti-Fagetum-Illyricum*).[108]

Grasslands of the National Park are under anthropogenic influence represent and can only be maintained with constant direct or indirect human impact (mowing and cattle grazing). They are presented by the class *Bromo-Plantaginetea*, associations *Physospermo-Satureietummontanae, Artemisioalbae-Rutetum, Satureiosubspicatae-Festucetumdalmaticae*and *Achilleo nobilis-Dorycnietumherbacei*. At higher positions above the canyon itself, on flat terrain with deeper fine soil, grasslands of the order *Brometaliaerecti* are sporadically occurring[109].

The vegetation of rocks and rock creeps is represented by a class *Asplenietearupestris(associationsCentaureoglaberrimae-Onosmetumstellulati, Hyssopi-Crepidetumchondriloidis, Centaureodeustae-Campanuletum pyramidalis, Aspleniolepidi-Campanuletumunaensis, Euphorbiopancicii-Asperuletumscutellarisi*Dianthi-*Moehringietummalyi)* and class *Thlaspeetearotundifolii* (association *Micromeriothymifolii-Corydaletumleiospermae* and *Asplenio-Ceterachetum officinalis*)[110].

Weed and ruderal vegetation of the classes *Bidentetea, Artemisetea* and *Chenopodietea* is well developed.

There are many rare and endemic plant species in this area: gentiana (*Gentiana lutea*), spotted gentian (*Gentiana punctata*), eelgrass (*Leontopodium alpinum* Cass.) and mountain pine (*Pinus mugo*). Endemic is the Una's bellflower (*Campanillaunensis*) named after the river Una as well as the Bosnian iris (*Iris reichenbachii*Heuffel var. *Bosniaca*) which grows on dry meadows and pastures on carbonate and serpentine rocks with shallow soil. Bosnian iris is endemic to the central and southeastern Dinarides. Ecological conditions have enabled the development of a large number of diverse plant communities of exceptional value

When it comes to macroscopic invertebrates, according to available data, 68 species were registered, most of which (19) belong to the group Trichoptera, and 14 to the group Ephemeroptera. During the preparation of the Bases for fishery management for Una River area, 70 species of macroscopic invertebrates were found. According to the Feasibility Study of NP Una[111], i.e. in the upper course of the river, which is a part of national park, 15 species of fish from 4 orders and 6 families were found. This part of the stream is typical salmonid water. In this area, 10 species of amphibians and 12 species of reptiles were found. The presence of 120 bird species was also determined, of which 80 were nesting birds, while the mammal fauna was represented by 59 species.

The Feasibility Study of NP Una[112] also defined the ecosystems and habitats that are endangered. According to the study, endangered habitats include: wetland communities of reeds, tall sedges, tall greenery and grasslands, of which there are few in this area, with a trend of drying out, which can be connected with climate change. Rocky pastures, mesophilic pastures and rare meadows are also endangered. Beech and fir forests, mountain meadows and karst waters were found as the most endangered habitats. Climate change is listed as one of the factors endangering these habitats, as well as one of the factors affecting the vertebrate fauna, with populations that are susceptible to fluctuations due to low numbers, susceptibility to habitat changes or direct human impact. Endangered species include juvenile, wolf, lynx, bear. Also important are species such as olm, Horvath's rock lizard, viviparous lizard, long-legged and red bat, etc.

[108]Među-sektorskidijalogkaopodlogazaštitiprirode u BosniiHercegovini – pilot studijaNacionalni park Una. Sarajevo, 2011.

I. [109] ANDRIJA BOGNAR, ALEN LEPIRICA (2005): STUDIJA IZVODLJIVOSTI NACIONALNOG PARKA UNA, SEKTORSKASTUDIJAGEOGRAFIJAIGEOEKOLOGIJA, (ELABORAT), HTTPS://WWW.RESEARCHGATE.NET/PUBLICATION/331981457_STUDIJA_IZVODLJIVOSTI_NACIONALNOG_PARKA_UNA_SEKTORSKA_STUDIJA_GEOGRAFIJA_I_GEOEKOLOGIJA

[110] Plan upravljanja za Nacionalni park Una, Zagreb, 2011, http://nationalpark-una.ba/addDocuments/uploads/1468403097332966158.pdf

[111] Andrija Bognar, Alen Lepirica (2005): STUDIJA IZVODLJIVOSTI NACIONALNOG PARKA UNA, SektorskastudijaGeografijaigeoekologija, (elaborat), https://www.researchgate.net/publication/331981457_STUDIJA_IZVODLJIVOSTI_NACIONALNOG_PARKA_UNA_Sektorska_studija_Geografija_i_geoekologija

[112] Ibid.

According to the Management Plan for NP Una, climate change is listed as one of the segments that can lead to long-term degradation and fragmentation of certain habitats in hilly and mountainous areas. It is also stated that climate change in the karst area can affect biodiversity in terms of shifts and changes in the range of certain groups and species of animal's changes in the qualitative and quantitative structure of the biocenosis.

Feasibility study cites climate change as a reason for endangering habitats, and habitats that are listed as endangered are beech and fir forests, travertine barriers and underground habitats.

Protected Area	**Assessment of major threats from climate change**		**Major threats**	**Assessment of key climate impacts / pressures on biodiversity within the PA**	**Possible response scenarios to the threat (proposed interventions / adaptation measures)**
	Present	**Expected (according to climate scenario RCP8.5)**			
Una	-increase in average annual temperatures by about 1^0C; -reduction in the number of hated days; -increase in the number of summer and tropical days (over 10); -appearance of stormy winds; -frequent occurrence of intense precipitation that causes torrential floods and landslides and erosion; -increase in precipitation episodes 20 mm; -intense and long-lasting heat waves with max daily	-increase in average annual temperatures to 4.5 C by the end of XXI; -reduction of average daily precipitation on an annual basis to 20%; -reduction of days with the appearance of snow; -reduction of the day with retention of snow cover; -extension of the vegetation period; -increasing the number of summer days (up to 30) by the end of the XXI century; -increasing the number of tropical days (up to 20) by the	-changes in the annual rhythms of water levels as well as water quality. River water levels will fall, especially during summer and early autumn. Also, prolongation of dry, waterless periods is expected, as a result of reduced rainfall during the summer combined with increased evaporation rates -due to increased temperature and changes in precipitation increased risk of fire; -increased risk of torrential floods; -drying of coniferous trees; -deforestation due to gusts of stormy winds -long-lasting droughts; -drying of "beech-fir" forest communities	-pressure on salmonid fish species in relationship with changes of water quality (higher water temperature, lower concentration of oxygen. etc.) -drainage of wetland habitats (decreasing of water level) -ecosystems of travertine barriers sensitive to changes of hydrological regime and water pollution -beech forest ecosystems are also affected by climate change	-permanent monitoring of changes in abiotic (air, water, soil) and biotic ecological factors (referent communities living organism) -development of an early warning system against climate risks and extremes; -intensification and promotion of scientific research in NP Una; -monitoring of forest ecosystems

	temperatures over 30 C (at least 3 per year) -appearance of late spring frosts	end of the XXI century; -intensive and long-lasting heat waves with max daily temperatures over 30C (at least 3 per year); -more frequent occurrence of late spring frosts.			

National Park Kozara

NP Kozara is located in the central part of the mountain on the area of 3,907.54 ha. Kozara is a low, island mountain located between the Pannonian Plain in the north and the Dinarides in the south, and bordered by the rivers Sava, Una and Vrbas. The altitude does not exceed 1000 meters, and the central part of the NP Kozara is dominated by the plateau of Mrakovica (806 m above sea level), where several flat plateaus with a height of 700-800 m stand out.

It was declared national park in 1967 in order to preserve and protect cultural, historical and natural values, and the main reasons for declaring this area a national park were historical and significant natural values. The Kozara memorial complex on Mrakovica has been declared a cultural asset of exceptional importance.

When it comes to ecosystems in the area of the national park, the largest percentage (97%) belongs to forest ecosystems, while aquatic and urban are represented in a far smaller percentage. The following are the basic features of the biodiversity of the NP Kozara:

- the northern part of Kozara is occupied by high forests dominated by beech and fir, in the southern part the areas are overgrown with low oak forests and coniferous crops (black and white pine, spruce). A characteristic phenomenon is the appearance of fir at heights that are not common in Europe for the appearance of this species.
- significance of the number of species of medicinal plants: yarrow, thyme, valerian, etc.
- animal species from different groups

The area of NP Kozara is characterized by a great diversity of natural heritage, which includes forest complexes, mountain pastures, waterfalls, streams, caves etc.

On mild slopes, the forest of sessile and common hornbeam *Querco-Carpinetumcroaticum* is widespread, while in the higher zone the communities of beech and fir *Abieti-Fagetumpraepannonicum* dominate. On the exposed slopes and steep slopes of the southwestern part of the National Park, there is a sessile forest of ass.*Festucodrymeiae-Quercetumpetraeae*, and also part of the south side is overgrown with fir and sessile forest (*Quercum-Abietetum*) which is actually a vegetation

transition between *Abieti-Fagetum* communities and *Festucodrymeiae-Quercetumpetraeae*. Beech stands in the sessile and hornbeam forest belt belong to the Fagetumsubmontanum community. The largest areas are in the southwestern and southern part of the area. The *Querco-Carpinetum* sessile and hornbeam forest is present on the lower parts of the slopes, on slightly sloping positions and plateaus.

Higher and steeper parts of the limestone slopes, where the soil is shallow black, are occupied by fragments of black hornbeam and pubescent oak forests or black hornbeam and black ash forests, and in total the most common are beech (*Fagus silvatica*) and fir (*Abies alba*) forests. 117 fungi, 11 species of lichens, 80 mosses and 657 species of higher (vascular) plants have been registered in this area. Among the higher plants are 17 species of ferns, 114 species of dendroflora (77 indigenous and 37 allochthonous) and 526 herbaceous flowering plants[113]. The dendroflora of the National Park Kozara consists of: 33 species of deciduous trees, 2 species of coniferous trees, 30 deciduous shrubs, 1 coniferous shrub, 2 woody shrubs and 9 semi-shrubs.

A significant number of animal species from different groups are also present. According to the IBA Programme (Important Bird Areas) in BiH, Kozara area is listed as a potentially significant bird area[114]. Research conducted during 2013 shows that 102 species of birds were found in the area of the National Park, among which the most important are the long-tailed owl, black stork, click eagle. Other animal species found in NP Kozara are: wild boar, rabbit, wildcat, fox, European badger, European pine marten, etc. During various migrations, wolves and deer usually come from neighboring mountain areas. Reptiles in this area include grass snake, Aesculapian snake, common European viper and horned viper, as well as mountain lizards. Amphibians include various species of frogs and salamanders. Watercourses in the area of Kozara are inhabited by brown trout. The group of invertebrates is characterized by an extremely high degree of diversity.

According to the Management Plan of NP Kozara[115], climate change is mentioned as one of the factors leading to change in water balance and flora and fauna composition without specifying the specific consequences of the impact of climate change.

Also, according to the Spatial plan of the special purpose area for NP Kozara[116], it is stated that the consequences of climate change will be reflected in the change of extreme weather events, the slow change of flora and fauna and the water balance. At the same time, it is pointed out that there is no detailed information on changes in temperature and precipitation and the impact on rivers, flora and fauna in the National Park.

When it comes to NP Kozara, in terms of biodiversity sensitivity due to climate change are mentioned fir forests, and also Peripannonian forests and wetland habitats[117]

Climate change can significantly affect forests by transforming forest ecosystems over time and changing the composition and distribution of forests.[118] But, the anticipated climate changes will not have the same impact on all forest ecosystems in BiH. A special impact that can occur as a result of climate change is "multiple stresses", which at the same time causes changes in soil moisture, changes in average and extreme temperatures, as well as changes in the amount and distribution of precipitation (snow-rain, drought-flood), in connection with the number of pests and pathogens. All together it contributes to the high mortality rate of trees[119].

[113]Bucalo, V., Brujić, J., Travar, J., Milanović, Đ. (2007): Flora nacionalnog parka Kozara. Banja Luka

[114] Program IBA međunarodnoznačajnapodručja za ptice u BosniiHercegovini, 2012 (https://ptice.ba/wp-content/uploads/2018/04/Program-IBA-Medjunarodno-znacajna-podrucja-za-ptice-u-BiH.pdf)

[115] Plan upravljanja NP Kozara, 2014-2029. https://nasljedje.org/wp-content/uploads/2018/06/Plan_upravljanja_Kozara.pdf

[116]Prostorni plan područjaposebnenamjenenacionalni park Kozara 2011-2031, (2013), https://www.prijedorgrad.org/files/sadrzaj/S4507_PPPPN_KOZARA_20160425_054738_948.pdf

[117] Nacrtfinalnogizvještaja-Projekatzaštićenihšumskihiplaninskihpodručja Okolišnaprocjena/Okvirni plan upravljanjaokolišem, 2006, https://www.scribd.com/document/48826879/Okolisna-Procjena-Projekat-Zasticenih-Sumskih-i-Planinskih-Podrucja-UnEncrypted

[118]Strategijaprilagođavanjanaklimatskepromjeneiniskoemisionograzvoja za BosnuiHercegovinu, 2013, https://www.ba.undp.org/content/bosnia_and_herzegovina/bs/home/library/energija-i-okolis/climate-change-adaptation-and-low-emission-development-strategy-.htmlStrategija prilagođavanjanaklimatskepromjeneiniskoemisionograzvoja za BosnuiHercegovinu, 2013, https://www.ba.undp.org/content/bosnia_and_herzegovina/bs/home/library/energija-i-okolis/climate-change-adaptation-and-low-emission-development-strategy-.html

[119] NacrtStrategijeprilagođavanjanaklimatskepromjeneiniskoemisionograzvojaBosneiHercegovine za period 2020.-2030, 2020, http://ppipo.bdcentral.net/data/dokumenti/pdf/Strategija_prilagodjavanja_i_niskoemisionog_razvoja_BiH_2020-2030_Nacrt-april_2020.pdf

Literature data on the impact of climate change on the biodiversity of NP Kozara are scarce and incomplete. The documents mostly mentioned the listed fir forests as endangered ecosystems, but without any data on the consequences.

Protected Area	Assessment of major threats from climate change		Major threats	Assessment of key climate impacts / pressures on biodiversity within the PA	Possible response scenarios to the threat (proposed interventions / adaptation measures)
	Present	**Expected (according to climate scenario RCP8.5)**			
Kozara	-increase in average annual temperatures by about 1.0ºC; -increase in temperatures by seasons up to 1.2ºC; -reduction in the number of frosted days (over 10); -increase in the number of summer and tropical days (over 10); -reduction in the number of days with the appearance of snow; -reduction of the number of days with the retention of snow cover; -frequent occurrence of intense precipitation that causes torrential floods and landslides and erosion; -increase in precipitation episodes over 20 mm; -intense and long-lasting heat waves with max daily	-increase in average annual temperatures to 5ºC at the end of XXI; -reduced average daily precipitation at the annual level to-20% by the end of the XXI century; -reduction of days with the appearance of snow (over 15); -reduction of days with retention of snow cover over 30); -*lengthening* of the *growing season of plants* -increasing the number of summer days (up to 40) by the end of the XXI century; -increasing the number of tropical days (up to 30) by the end of the XXI century; -intensive and long-lasting heat waves with max daily	-increased risk of fire; -increased risk of landslides; -increased risk of torrential floods; -increased risk of erosion; -drying of coniferous trees; -deforestation due to gusts of stormy winds -long-lasting droughts;	-mountainous and Peripannonian ecosystems stand out as endangered ecosystems from climate change in the area of Kozara[120]. -negative impact on fir forests[121][122]	-analysis of the condition of fir forests in the area of the NP and elaboration of proposals for measures to improve the condition -rehabilitation of landslides caused by heavy rainfall; -development of a system of meteorological monitoring and early warning of climate risks and extremes; -intensification and strengthening of scientific research in NP Kozara;

[120]VojnikovicSead(2010): Bosnia and Herzegovina *in* Forests and Climate Change in Eastern Europe and Central Asia. Rome, 2010, http://www.fao.org/3/k9589e/k9589e.pdf

[121] NacrtStrategijeprilagođavanjanaklimatskepromjeneiniskoemisionograzvojaBosneiHercegovine za period 2020.-2030, 2020, http://ppipo.bdcentral.net/data/dokumenti/pdf/Strategija_prilagodjavanja_i_niskoemisionog_razvoja_BiH_2020-2030_Nacrt-april_2020.pdf

[122]Diverzitetšumskihekosistemaizaštićenapodručja. Cepos. 2010,https://fmpvs.gov.ba/wp-content/uploads/2017/Sumarstvo-lovstvo/Sumarski-program/17-Diverzitet-sumskih-ekosistema-i-zast-podr.pdf

	temperatures over 30ºC (at least 3 per year) -appearance of late spring frosts- -storms of stormy winds over 100 km/h	temperatures over 30ºC (at least 5 per year); -more frequent occurrence of late spring frosts.			

Natural Monument Skakavac

NM Skakavac is located 12 km northeast from Sarajevo. It was declared as NM in 2002. The total area of the protected area is 1,430.70 ha. There is a 98 m high waterfall located in an exceptionally beautiful landscape. This area features a high degree of biodiversity, with many endemic and relict plants, fungi and animal species. From the south, the Skakavac stream flows into the concave side, where there is a famous waterfall with a height of almost 100 m. The climate of this area is moderately continental with a strong influence of mountain, continental and sub-Mediterranean climate, especially on the southern slopes of this terrain. The key characteristics of this area are:

- Skakavac waterfall
- Plant species diversity
- Richness of fauna

The protected area is characterized by a high degree of biological diversity, where more than 1,500 species of higher plants have been found. When it comes to plant species, a high degree of endemism has been found, with 203 rare, 59 vulnerable and one endangered species. The medicinal flora includes up to 400 species of plants, such as raspberry *Rubus idaeus,* blackberry *Rubus* sp., wild rose *Rosa* sp., St John's-wort *Hypericum perforatum*, square stemmed St. John's wort*H. quadrangulum*, common centaury *Centaurium umbellatum*, valerian *Valeriana officinalis* etc.

The analysis of faunistic biodiversity also shows the richness of the species, although there are shortcomings in the research of certain faunal groups. Thus, in the ecosystems of dark coniferous forests those mammals can be found: *Sus scrofa, Vulpes vulpes, Canis lupus, Apodemusflavicola, A. silvaticus*, squirrels, down, roe deer etc. Recorded bird species in NM Skakavac are *Regulus regulus, Turdus viscivarus, Parus cristatus, P. ater, Fringilla fringilla* and many others. Reptiles and amphibians are relatively rare, but *Viperaursini, V. berus, Lacerta vivipara, Salamandra atra, Triturus vulgaris* and some others can be found. Characteristic fauna also occurs in ecosystems of mesophilic deciduous forests, shrubs and bush and ecosystems of hygrophilous forests in the area of Skakavac, where different species of invertebrates, amphibians, reptiles, birds and mammals are represented. Different meadow ecosystems of the lower vegetation belts are characterized by the presence of species of Orthoptera and Lepidoptera. Aquatic ecosystems, numerous in the study area, abound in both widespread and endemic species of Trichoptera, Plecoptera, Diptera and Ephemeroptera.In a part of the protected area, a significant number of bird species are present, while in aquatic ecosystems, diverse fish species are represented: brown

trout *Salmo trutta*, grayling *Thymallusthymallus* and juvenile huchen Huho*hucho*. Cyprinids include common nase *Chondrostoma nasus*, chub *Squaliuscephalus*, and Danube barbel *Barbusbalcanicus*, which inhabit the waters of the Vogošća River[123].

A significant number of fungal species have also been identified in the protected area. Recent research shows that 150 species of fungi have been found in the area of Skakavac[124].

When it comes to ecosystem diversity, 10 different forest ecosystem types have been identified. The *community* of spruce and fir (Abieti-Piceetum) is dominant and it covers 27% of the protected area. In addition, the communities Abieti-Fagetum, Fagetummontanum and the Ostryo-Fagenion also covers significant surface[125].

Meadow ecosystems are represented by three different types, among which the Festuco-Agrostion communities dominate. Observing the distribution of vegetation, from lower to higher altitudes, it was noticed that mountain forest change from deciduous forest, over deciduous and coniferous forests to dark coniferous forests.

The management plan of NM Skakavac states that anthropogenic impacts relate to the devastation and degradation of forest ecosystems, which have been exposed to climate change in recent years. For these reasons, it is necessary to monitor anthropogenic pressures, analyse their causes and consequences, and implement remediation and prevention measures[126].

Climate change is also recognized as one of the factors disrupting biodiversity, in a way that changes the microclimate, which leaves great consequences for local biodiversity, especially for primary producers of ecosystems, ie the plant community. The analysis of pilot monitoring activities showed that the ecosystems have been preserved and at a satisfactory level.

Project entitled “Monitoring of biodiversity of forest phytocenoses in the area of NM Skakavac and non-forest phytocenoses of Natural Monument VreloBosne” realized by the Center for Ecology and Natural Resources-Academician SujelmanRedžić included activities where experimental plots and forest condition indicators have been determined. Within the project, 11 permanent plots were used, distributed in three protection zones. Five plots are located in the nucleus zone, four in the buffer zone, and two in the transition zone. The plots include different types of ecosystems specific to the NM Skakavac, represented by vegetation of the type *Fagetummoesiacaemontanum*, *Ostryo-Carpinetaliaorientalis*, *Abieti-Picetalia*, *Abieti-Fagetummoesiacae*, *Fagetumsubalpinum*with *Seslerio-Ostler* alliance. Out of 11 selected plots, 7 of them found communities sensitive in terms of species endangerment. The project Inventory, population and health status of large carnivores and other species in the area of the NM Skakavac was carried out within which brown bear monitoring activities was also done.

	Assessment of major threats from climate change	**Major threats**		

[123]Omeragić, O., Kapo, N., Škapur, V., Čolaković, H., Klarić - Soldo, D., Fejzić, N. (2020): Inventarizacija, populacijskiizdravstveni status velikihzvijeriidrugihvrstanapodručjuSpomenikaprirode “Skakavac”. Veterinaria 69(2): 95-102.

[124]Jukić, N., Omerović, N., Tomić, S. (2020): Inventory of fungi on the territory of protected areas of Sarajevo Canton (SP VreloBosne, ZP Bijambare, SP Skakavac) Mycological Association MycoBH– Sarajevo. https://www.researchgate.net/publication/338659694_Inventarizacija_gljiva_na_teritoriji_zasticenih_podrucja_Kantona_Sarajevo_SP_Vrelo_Bosne_ZP_Bijambare_SP_Skakavac_Smjernice_i_preporuke_za_upravljanje_specificnim_tipovima_stanista_na_teritoriji_zasti

[125] Plan upravljanjaspomenikprirode „Skakavac“, 2011-2021.https://www.zppks.ba/sites/zppks.ba/files/PU%20Skakavac%20za%20kant.%20KONACNI.pdf

[126]REVIZIJA PLANA UPRAVLJANJA SPOMENIKOM PRIRODE “SKAKAVAC”, 2018. https://mpz.ks.gov.ba/sites/mpz.ks.gov.ba/files/nacrt_dokumenta_revizije_plana_upravljanja_sp_skakavac.pdf

Protected Area	Present	Expected (according to climate scenario RCP8.5)		Assessment of key climate impacts / pressures on biodiversity within the PA	Possible response scenarios to the threat (proposed interventions / adaptation measures)
Skakavac	-increase in average annual temperatures by about 1.2C; -reduction in the number of frozen days (about 15); -increase in the number of summer and tropical days (over 15); -appearance of stormy winds; -increase in precipitation episodes 20mm; -intense and long-lasting heat waves with max daily temperatures over 30C (at least 3 per year) -appearance of late spring frosts --storm winds over 100km / h	-increase in average annual temperatures to 4.5 C by the end of XXI -reduction of average daily precipitation on an annual basis to 20%; -reduction of days with the appearance of snow; -reduction of the day with retention of snow cover; -extension of the vegetation period; -increasing the number of summer days (up to 30) by the end of the XXI century; -increasing the number of tropical days (up to 20) by the end of the XXI century; -intensive and long-lasting heat waves with max daily temperatures over 30C (at least 3 per year); -more frequent occurrence of late spring frosts.	-deforestation due to gusts of stormy winds -long-lasting droughts; -increased heat stress;	-drought periods have contributed to the development of pest insects' harmful insects on the trees[127] -the results of research on the impact of climate changes on forest ecosystems in the Sarajevo Canton emphasize significant increase of pest insects in the forests[128]. - temperature increase and changes in the distribution of precipitation can have an effect on forest ecosystems. This area is dominated by spruce-fir forests and beech-fir forests with spruce, and according to available data for other similar areas, changes in forest ecosystems can be expected here as well	-monitoring anthropogenic pressures, analyzing their causes and consequences, and implementing remediation measures -monitoring and protection measures due to eradication of pest insects. -monitoring of forest ecosystems -monitoring of meadows ecosystems -monitoring of ichthyofauna -monitoring of trees health condition

[127] Dautbašić, M., Treštić, T.(2006): ZDRAVSTVENO STANJE ŠUMA PARKA PRIRODE «SKAKAVAC» SARAJEVO. Naučnakonferencija: "Gazdovanješumskimekosistemimanacionalnihparkovaidrugihzaštićenihpodručja". Zbornikradova, Jahorina - NP. Sutjeska, 05 -08. Jul 2006. p: 367 – 372, http://sf.unibl.org/index.php/cyr/publikacije/zbornici/zb-rni-h-rin-2006

[128]Vojniković, S., Višnjić, Ć., Balić, B., Selimović, E., Hodžić (2015): UTJECAJ KLIMATSKIH PROMJENA NA RECENTNO STANJE ŠUMSKE VEGETACIJE U KANTONU SARAJEVO. Našešume. Broj 40-41. https://usitfbih.ba/wp-content/uploads/2019/12/nase-sume40-41.pdf

Nature Monument Prokoško jezero

NM Prokoško Lake is located on the mountain Vranica, on the foothills of the highest peak and belongs to the group of the highest mountain lakes in BiH. It covers the area between the river Vrbas and the valley of the river Bosna and its tributaries Bistrica and Fojnička River[129]. It was declared a NM in 2005. The wider area of Prokoško Lake belongs to the Central Bosnian Canton. The area of the protected area covers 2225 ha.

The key characteristics of this area are:

- Lake and watercourses
- Presence of endemic taxa
- Different ecosystems

NM Prokoško Lake is characterized by a high degree of biodiversity in the wider area of Vranica Mountain. The reasons can be sought in geographic isolation (high altitude), which affects endemism, a large degree of diversity of the geological base and soil, succession, changes in physical factors and similar. Endemic species of flora and fauna stand out, and especially interesting are the habitats of vegetation around snowfields, mountain ores and heaths, different types of forests of the subalpine belt, and flora and fauna in and around watercourses, which this mountain is extremely rich in[130,131].

This area is very rich in surface waters made up of plant communities associated with streams and springs in the subalpine belt of the class *Montio-Cardaminetea* and low peat lands of the class *Scheuchzerio-Caricetea*. A specific phenomenon is the *Piceetum-Abietissubalpinum community*, which extends to the *Pinetum mugi* community. Mountain meadows on the silicates of the *Cariceteacurvulae* community are also characteristic. Around the snow patch there is vegetation of the class *Saliceteaherbaceae*, order *Salicetaliaherbaceae*, with a bunch of *Ranunculioncrenati*. Rocks cracks vegetation is represented with class *Asplenietearupestris*, and screes vegetation with class *Thlaspeetearotundifolii*. Green alder (*Alnus viridis*) communities also have special value. Plant communities of *Seslerioncomosae*ares developed on silicates in the alpine zone, while communities of *Jasionionorbiculatae* are developed in the subalpine zone. The subalpine belt, which covers a zone above 1,400 m above sea level, is characterized by the dominance of pine curve communities from the class *RosopendulinaePineteamugo*, and heaths from the class *Rhodoreto-Vaccinietea*. The presence of a large number of rare and endangered species was also stated in the bogs on Vranica[132]. The vegetation of low peat lands is presented with the class *Scheuchzerio-Cariceteafuscae*.

The subalpine and mountain belts at altitudes above 1,000 m are dominated by deciduous forests and subalpine spruce forests. Within the ecosystem of mixed coniferous-deciduous and deciduous forests of mesophilic character of the order *Fagetalia*, several vegetation zones are distinguished: subalpine beech forest belt with mountain maple, beech-fir forest belt, montage beech forest belt, mesophilic forest belt, hygrophilous forests of peat, alder and willow, which have a local or intrazonal

[129] Zakon o proglašenju spomenika prirode Prokoško jezero, https://www.cin.ba/wp-content/uploads/2020/09/ZAKON-O-PROGLA%C5%A0ENJU-SPOMENIKA-PRIRODE-PROKO%C5%A0KO-JEZERO.pdf

[130] Plan upravljanja spomenik prirode Prokoško jezero, 2006, http://e-prirodafbih.ba/media/protected_sites/pravni_dokumenti/planovi_upravljanja/SP_ProkoskoJezero_PlanUpravljanja.pdf

[131] LEAP Općine Fojnica – Prirodne vrijednosti i potencijali općine Fojica, Sarajevi/Fojnica, 2004. http://www.fojnica.ba/foto/albums/userpics/2005-04-06-00-00-68-pdf.pdf

[132]Mašić, E. (2020): Patterns of distribution of diatom assemblages in peat lands ecosystem on Vranica Mountain (Bosnia and Herzegovina). Works of the Faculty of Agriculture and Food Sciences, University of Sarajevo,Vol. LXV, No. 70, https://www.researchgate.net/publication/347688287_Patterns_of_distribution_of_diatom_assemblages_in_peatlands_ecosystem_on_Vranica_Mountain_Bosnia_and_Herzegovina

character. Meadow and tall greenery communities have also been developed, with *Pancicio-Lilietumbosniacae* and *Tanaceto-Telekietumspeciosae* being particularly significant.

When it comes to water ecosystem of Prokoško Lake, several plant species were found: *Carex rostrata, Equisetum fluviatilis, Potamogetonlucens* etc.

The phytoplankton of Lake Prokoško is presented with: *Ceratiumhirundinella*, species from genus *Mycrocystis, Pandorina morum, Staurastrum gracile*, species from genus *Spirogyra*, and so on. When it comes to zoobenthos, the most numerous representatives belong to Trichoptera group.

A special feature of this area is the presence of the alpine newt *Ichthyosaura alpestrisreiseri*(sin. *Triturus alpestris ssp. Reiseri*) which is rare and endemic. When it comes to ichthyofauna, brown and rainbow trout are represented. They are which introduced into Lake Prokoško, as well as brook trout. Different animal species are represented in different ecosystems in this area.

Protected Area	**Assessment of major threats from climate change**		**Major threats**	**Assessment of key climate impacts / pressures on biodiversity within the PA**	**Possible response scenarios to the threat (proposed interventions / adaptation measures)**
	Present	**Expected (according to climate scenario RCP8.5)**			
Prokosko jezero	The average amount of precipitation is about 1100 mm per year, -vegetation period about 120 days; -increase in average annual temperatures by about 1.0ºC; -reduction in the number of cold days (about 10); -increase in the number of summer and tropical days (over 10);	-increase in average annual temperatures to 4.0ºC by the end of XXI; -reduction of average daily precipitation on an annual basis to 20%; -reduction of days with the appearance of snow; -reduction of the day with retention of snow cover; -extension of the vegetation period;	-deforestation due to gusts of stormy winds -long-lasting droughts; -increased heat stress; -increased water inflow during heavy rainfall;	-increased lake eutrophication and water quality change[133,134] -negative impact on endemic species of the wider area of Prokoško Lake -negative impact on endemic species of the Prokoško Lake, e.g*Ichthyosauraalpestrisreiseri*(alpine newt)[135,136]	-strong control of fish restocking with obligatory expert analysis of influence on other members of water communities -monitoring of water quality from the point of physical, chemical and biological characteristics -regulation of anthropogenic influence at the area of PA

[133] Master plan razvojaturizma za zimsko-rekreativnicentar „Poljane“Fojnica, 2009. http://www.fojnica.ba/download/opcina-fojnica/projekti/Sportsko%20rekreacioni%20centar%20Poljana/Master%20plan%20razvoja%20turzima%20za%20SRC%20Poljana.pdf

[134] Spahić, M.,Temimović, E, Jahić, H. (2015): Spomenik prirode Prokoško jezero –stanje i perspektive. Acta geographica Bosniae et Herzegovinae 2015, 4, 27-41, https://www.geoubih.ba/Izdanja/Actavol2br4/Clanak-Spahi%C4%87%20i%20dr.%20Proko%C5%A1ko%20jezero.pdf

[135] Plan upravljanja spomenik prirode Prokoško jezero, 2006. http://e-prirodafbih.ba/media/protected_sites/pravni_dokumenti/planovi_upravljanja/SP_ProkoskoJezero_PlanUpravljanja.pdf

[136] Natura 2000-planina Vranica, https://pdfcoffee.com/vranica-natura-2014-final-pdf-free.html

	-appearance of stormy winds; -increase in precipitation episodes 20mm; -intense and long-lasting heat waves with a maximum daily temperature over 30ºC (at least 3 per year) -appearance of late spring frosts --storm winds over 100 km/h	-increasing the number of summer days (up to 30) by the end of the XXI century; -increasing the number of tropical days (up to 20) by the end of the XXI century; -intensive and long-lasting heat waves with max daily temperatures over 30ºC (at least 3 per year); -more frequent occurrence of late spring frosts.			

Protected Landscape Bijambare

The area of the PL Bijambare is located in the northern part of the Sarajevo Canton and the Municipality of Ilijaš and it covers an area of 497 ha. It was declared as PL in 2003. This is a mountainous area with an altitude range from 915 to 1044 m. It is under influence of the continental and mountain climate, and thanks to the average altitude of 950 meters it can be said that it is in the zone of temperate continental climate of the pre-mountain type[137].

The key characteristics of this area are:

- Rich geological diversity (caves, ravines, sinkholes and reefs),where the most famous is the Main Bijambara Cave (GlavnaBijambarskaPećina)
- Richness of watercourses
- Peat bogs ecosystems
- Forest ecosystems
- Flora and fauna diversity.

In the area of Bijambara, a number of ecosystems have been identified: ecosystems of rock crevices, dark coniferous forests, deciduous forests, shrubs, thorn bushes and spruce, hygrophilous forests and alder shrubs, osier, moderately humid high waters and greenery, ponds and swamps, high sedges, different types of meadows,

[137]Privremeneupravljačkesmjernice za zaštićenipejzažBijambare, 2019, https://www.zppks.ba/sites/zppks.ba/files/privremene_bijambare.pdf

springs and streams,rocky ground, peat bog and heaths. A significant part is occupied by forest vegetation ecosystems (fir-spruce forests, pine-fir forests) mountain spruce forests, mountain beech forests). Some of the most important forest communities are white pine and spruce forests on sour brown soil (*Piceo-Pinetum silicicolum*), spruce and fir forests on brown and sour brown soil (*Abieti-Picetum*), spruce forest on the podzol soil (*Lycopodio-Picetummontanum*), spruce forest and peat moss (*Sphagno-Picetummontanum*).

133 different living communities have been identified, and it is especially rich in species that belong to the group of medicinal flora, medicinal, edible, aromatic and vitamin plants[138]. 800 species of plants have been found in the area of Bijambare. Some of the representatives of this plant species are: *Rubus idaeus,Hypericum perforatuum, Valeriana officinalis, Mentha sp., Fragaria vesca* etc.

Recent research shows that 218 species of fungi have been found on Bijmbare area, and some of them are *Abortiporusbiennis, Adelphellababingtonii, Aleurodiscus amorphous* and *Amanita muscaria*[139].

In the area of the PL Bijambare there are peat bog ecosystems, in the form of high peat lands, and they appear as part of forest and non-forest vegetation. The most important species of peat ecosystems are: *Sphagnum recurvum, S. subsecundum, S. girgensohnii, S. robustum, Rhytidiadelphussquarrosus, Dicranumscoparium, Hylocomium splendens, Polytrichum commune, P. juniperum, Usnea barbata, Cladoniochrochlora* and others. Also, there are 45 species of diatoms algae recorded at peat bogs of PL Bijambare[140].

The PL Bijambare is rich in representatives of different groups of fauna. When it comes to mammals, the most common representatives are: *Sus scrofa*, *Vulpes vulpes*, *Canis lupus*, *Apodemusflavicola*, *Apodemussilvaticus* etc. It is important to emphasis that 21 species of bats were found in this area and some of them are: *Myotis myotis*, *M. oxygnathus*, *M. mystacinus*, *M. dasycneme*, *Pipistrellus pipistrellus*, *Nyctalusnoctula*, *Hypsugosavii* etc. According to the valorisation study[141], birds are represented by 16 species, but this number is probably higher. Some of them are: *Columba livia, Pizza pica, Coleum monedula*, *Picusviridis* etc.

Reptiles are presented with *Lacerta agilis, Viperaursini, Anguis fragilis* etc, while usual representatives of amphibians are *Hyila arborea, Rana agilis, Salamandra atra*etc.

When it comes to fish in this area, previous research has shown the presence of trout *Salmo trutta*, grayling *Thymallusthymallus*, juvenile *Huchohucho*, chub and brook trout. Different species of invertebrate has also been found, and in most cases, they belong to the Plecoptera, Trichoptera, Diptera, Ephemeroptera, Orthoptera and Lepidoptera.[142]

[138] Plan upravljanjazaštićenimpejzažom „Bijambare“, Sarajevo, 2008, https://mpz.ks.gov.ba/sites/mpz.ks.gov.ba/files/MPZ_Plan_upravljanja_bijambare_35-08_0_0.pdf

[139]Jukić, N., Omerović, N., Tomić, S. (2020): Inventory of fungi on the territory of protected areas of Sarajevo Canton (SP VreloBosne, ZP Bijambare, SP Skakavac) Mycological Association MycoBH– Sarajevo. https://www.researchgate.net/publication/338659694_Inventarizacija_gljiva_na_teritoriji_zasticenih_podrucja_Kantona_Sarajevo_SP_Vrelo_Bosne_ZP_Bijambare_SP_Skakavac_Smjernice_i_preporuke_za_upravljanje_specificnim_tipovima_stanista_na_teritoriji_zasti

[140] Kapetanović, T., R. Jahn, S. Redžić& M. Carić (2011): Diatoms in a poor fen of Bijambare protected landscape, Bosnia &Herzegovina.NovaHedwigia 93:125–151. https://www.researchgate.net/publication/233717746_Diatoms_in_a_poor_fen_of_Bijambare_protected_landscape_Bosnia_Herzegovina

[141]ValorizacijaprirodnihvrijednostipodručjaBijambara, 2001.

[142]ValorizacijaprirodnihvrijednostipodručjaBijambara, 2001.

The following factors have been identified as factors that negatively affect the preservation of specific values of the area: tourism spread of pests, climate changes, and occurrence of invasive species[143].

Climate changes are emphasized as one of the pressures on the forest and non-forest ecosystems of the PL Bijambare, without specifying the specific impacts. It should be noted here that climate change is also mentioned in other documents as a factor disrupting biodiversity. Data on endangered ecosystems or species from the point of view of climate change are limited and poor.

According to the assessment of endangered forest communities[144], the endangered forests of high protection value in BIH, more precisely in Bijambare area, are *Lycopodio-Piceetummontanum* and *Sphagno-Piceetummontanum*, ie spruce forests on podzol soil. This publication does not emphasis which threatening factors are in question. Climate changes, drainage, peat exploitation, deforestation and agricultural activities are the main pressures on peat bogs ecosystems, and the reduction or disappearance of these ecosystems leads to accelerated climate change and the loss of ecosystem services[145].

Protected area	**Assessment of major threats from climate change**		**Major threats**	**Assessment of key climate impacts / pressures on biodiversity within the PA**	**Possible response scenarios to the threat (proposed interventions / adaptation measures)**
	Present	**Expected (according to climate scenario RCP8.5)**			
Bijambare	-increase in average annual temperatures by about 1.2ºC; -increase in temperatures by seasons up to 1.2ºC; -reduction in the number of hated days (about 15);	-increase in average annual temperatures to 4.5ºC at the end of XXI; -reduced average daily precipitation at the annual level by-20% by the end of the XXI century; -reduction of days with snow (over 15);	-deforestation due to gusts of stormy winds -long-lasting droughts; -increased heat stress; -increased water inflow during heavy rainfall;	-endangered communities in the Bijambara area are Lycopodio-*Piceetummontanum*and *Sphagno-Piceetummontanum*, ie spruce forests on podzol soil and spruce forests and peat bogs mosses[146] -*Piceaexcelsa* and *Sphagnum* sp. are listed as species endangered by climate change in this area[147] -spruce trees drying	-monitoring of the biodiversity trends and risk assessment -monitoring the health of trees -monitoring the health of mosses[148] -control of peat bogs overgrowth

[143] Akcioni plan razvojamalogpoduzetništva u širempodručjuZaštićenogpejzaža "Bijambare", Bosna i Hercegovina, 2019. https://cener21.ba/wp-content/uploads/2019/11/ebfdd9fc00e1ce1130a1878c83d71c50d049c329.pdf

[144] Avdibegović, M., Brajić, A., Marić, B., Bećirović, Dž. (2017): Šumevisokezaštitnevrijednosti u BoasniiHercegovini.Vodič za izdvajanje, gospodarenjeimonitoring.WWF Adria, Zagreb. http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwfhcvf_vodic_bih_verzija_za_web_1.pdf

[145]Barudanović, S., Mašić, E., Macanović, E. (2017): TresetištanaBosanskimplaninama. Sarajevo.

[146] Avdibegović, M., Brajić, A., Marić, B., Bećirović, Dž. (2017): Šumevisokezaštitnevrijednosti u BoasniiHercegovini.Vodič za izdvajanje, gospodarenjeimonitoring.WWF Adria, Zagreb. http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwfhcvf_vodic_bih_verzija_za_web_1.pdf

[147] Adaptacija na klimatske promjene u sektoru poljoprivrede. Urednici: Hamid Čustović, Melisa Ljuša, Bishal K. Sitaula, Sarajevo, 2015. https://www.researchgate.net/publication/324124187_Adaptacija_na_klimatske_promjene_u_sektoru_poljoprivrede_Vrijeme_je_da_djelujemo_odmah

[148] Privremene upravljačke smjernice za zaštićeni pejzaž „Bijambare", Srajevo, 2019. https://www.zppks.ba/sites/zppks.ba/files/privremene_bijambare.pdf

	-increase in the number of summer and tropical days (over 10); -reduction in the number of days with the appearance of snow; -reduction of the number of days with the retention of snow cover; -frequent occurrence of intense precipitation that causes torrential floods and landslides and erosion; -increase in precipitation episodes over 20 mm; -intense and long-lasting heat waves with max daily temperatures over 30ºC (at least 3 per year) -appearance of late spring frosts- -storms of stormy winds over 100km /h	-reduction of days with retention of snow cover over 30); -elongation of the vegetation period; -increasing the number of summer days (up to 40) by the end of the XXI century; -increasing the number of tropical days (up to 30) by the end of the XXI century; -intensive and long-lasting heat waves with max daily temperatures over 30ºC (at least 5 per year); -more frequent occurrence of late spring frosts.		-intensive pests spread on peat mosses -the condition of peat bogs depends on the surrounding ecosystems, taking into account the interactive relationship of climate change, the spread of pests, the appearance of invasive species and pollution, can result in the loss of these sensitive ecosystems -drainage of water or lack of water leads to changes in peat bogs and losses of these ecosystems	-reforestation of surrounding forest ecosystems -water retention in peat bogs -pest control on surrounding forest ecosystems -analysis of the health condition of trees -analysis of the presence of pests

Protected Landscape Vjetrenica-Popovo polje

The PL Vjetrenica-Popovo polje is located in the southeastern part of BiH, and administratively belongs to the Herzegovina-Neretva Canton and the municipality of Ravno. It covers an area of 47.6 km^2. The municipality of Ravno borders on the west and southeast with the Dubrovnik-Neretva County (Croatia), on the northeast with the Municipality of Trebinje (Republika Srpska), and on the north with the Municipality of Neum (Federation of BiH). The area is located in Popovo polje. In the wider area of Vjetrenica there is a mediterranean climate with hot summers and one rainy period, while areas above 500 m of elevation have a humid boreal climate with warm summers and humid periods.

The key characteristics of this area are:

- Vjetrenica cave, with specific climate conditions
- Flora diversity
- Richness of over ground and underground fauna[149].

For the area of Vjetrenica-Popovo polje, a high degree of diversity of flora, fauna and habitats of the considered area stands out, as well as the presence of a large number of endangered and protected species. The species from the Habitats Directive and the European Union Birds Directive has also been recorded. Natural habitats and ecosystems are well preserved although degradation of primary ecosystems has been recorded. According to the Study for designation of protected area, some ecosystems and species that are under a certain degree of pressure or species that are considered endangered were key factors to declaring this protected area.

When it comes to the identification of rare/endangered habitat types, several habitats have been identified: Mediterranean occasional ponds, Maquis with *Juniperus oxycedrus* and *Juniperus phoenice*, Pseudostepes with grasses and annual plants (*Thero-Brachypodietea*), East-sub-Mediterranean dry-grassland (Scorzoneretaliavillosae) Sub-mediterranean grasslands Molinio-Hoerdeionsecalini, Eastern Mediterranean Drypidetaliaspinosae, Limestone rocks with hazmophytic vegetation, Eastern forests etc.

The main vegetation types are: vegetation of forests and bush (*Ostryo-Carpinionorientali)*, vegetation of dry grasslands (*Chrysopogoni-Koelerionsplendentis*, *Satureionsubspicatae*, *Peucedanionneumayerii*, *Scorzonerionvillosae)*, vegetation of sparsely overgrown terrestrial areas (*Peltarionalliaceae)*, vegetation of part of Popovo polje with reference to the area around Vjetrenica cave, vegetation of Vjetrenica entrance area and ruderal vegetation[150].

Thus, when it comes to plant species, a total of 448 species of flora have been recorded, of which 21 species are endemic to the Balkan Peninsula. while According to the Federation of BiH Red List of Flora[151], 38 species have some vulnerability status (10 sensitive, 12 endangered, 5 critically endangered, 7 almost endangered and 4 with data deficient status). The Study for designation of protected area also lists the species listed in Annexes II and IV of the Habitats Directive. *Scilla litardierei* was found, while only *Ruscus aculeatus* and *Galanthus nivalis* were confirmed from Annex V.

The area of Vjetrenica is considered to be one of the richest caves with endemic fauna, with 232 species in total, with 103 members belongs to specific underground fauna: 56 stigobionts and 47 troglobionts; 14 is a stenoendemic of Vjetrenica, and for 38 obligatory cavern species Vjetrenica is a typical locality. Most species show a high degree of adaptation to groundwater conditions and represent cavernicol, ie troglobiont and troglophilic species, while a smaller number represent trogloxen species. These species are endemic to the Dinarides and mostly endemic to BiH. It can be pointed out that Vjetrenica is a locality with the following monotypic genera: *Spelaeoconchapaganettii* (Gastropoda), *Marifugiacavatica* (Polychaeta), *Velkovrhiaenigmatica* (Hydrozoa), *Stalitellanoseki* (Araneae), *Dinariavjetrenicae* (Opiliones), *Typhlogammarusmrazeki*, *Troglomysisvjetrenicensis* (Crustacea) and *Proteus anguinus* (Vertebrata, Amphibia). With a total of 10 species from the genus Niphargus

[149]Stručno obrazloženje za proglašenje zaštićenog područja v kategorije - zaštićeni pejzaž Vjetrenica - Popovo polje. Sarajevo 2020. Cener.
[150] Plan upravljanja za zaštićeno područje Vjetrenice. https://www.cin.ba/wp-content/uploads/2020/09/PLAN-UPRAVLJANJA-ZA-ZP-VJETRENICA.pdf
[151]CrvenalistafloreFederacijeBosnei Hercegovine,2013, https://www.fmoit.gov.ba/upload/file/okolis/Crvena%20lista%20Flore%20FBiH.pdf

(Amphipoda), Vjetrenica holds the world record; of which Vjetrenica is a typical locality for seven species of the genus Niphargus. By destroying and disturbing the habitats of these species, the uninterrupted life cycle necessary for the survival of the species is disturbed.

When it comes to the over ground part of the fauna, this area is inhabited by 88 species of daily butterflies, 24 species of dragonflies, 32 species of ants, 9 (11 in the wider area of Popovo polje) species of amphibians and 14 (15 in the wider area of Popovo polje) species of reptiles[152]. 7 species of invertebrates and 4 species of amphibians and reptiles are in endangered categories on the Red List of Fauna of the Federation of BiH. Also, 3 species of invertebrates and 17 species of vertebrates are included in Annexes II and / or IV of the EU Habitats Directive *Congeriakusceri*, *Myotis emarginatus*, *Proteus anguinus*, *Rhinolophus hipposideros*. 78 species of birds can be found in this protected area; one species is classified as critically endangered, while six are classified as vulnerable, and eleven species are listed in Annex I of the EU Wildlife Conservation Directive.

Protected Area	**Assessment of major threats from climate change**		**Major Threats (Popovo polje)**	**Assessment of key climate impacts / pressures on biodiversity within the PA**	**Possible response scenarios to the threat (proposed interventions / adaptation measures)**
	Present (Popovo polje)	**Expected (according to climate scenario RCP8.5) (Popovo polje)**			
Vjetrenica	-average air temperature in the cave around 11ºC, humidity up to 100%, wind speed at the entrance to the cave (gorge) reaches up to 15m /s) -the average annual temperature in the vicinity of the cave (Popovo polje) is about 15 ºC; The average amount of precipitation is about 1800 mm per year,	-increase in average annual temperatures to 4.5 ºC by the end of XXI; -reduction of average daily precipitation on an annual basis to 20%; -reduction of days with the appearance of snow; -reduction of the day with retention of snow cover;	-deforestation due to gusts of stormy winds -long-lasting droughts; -increased heat stress; -increased water inflow during heavy rainfall; and by releasing water from the Grančarevo dam and Goričko lakes. -landslide -flooding	-rare/endangered habitat types (karst caves, basins and abyss ecosystems[153]) and species that are considered endangered[154] are also sensitive to some aspects of climate changes (reducing water level, changes in water temperature, changes in water regime etc.)	-frequent monitoring of flora and fauna -protection and conservation of species and habitats -planning the protection and sustainable use of biodiversity

[152]Stručno obrazloženje za proglašenje zaštićenog područja V kategorije - zaštićeni pejzaž Vjetrenica - Popovo polje. Sarajevo 2020. Cener.

[153]VojnikovicSead (2010): Bosnia and Herzegovina u Forests and Climate Change in Eastern Europe and Central Asia. Rome, 2010. http://www.fao.org/3/k9589e/k9589e.pdf
[154]CrvenalistafloreFederacijeBosne i Hercegovine,2013, https://www.fmoit.gov.ba/upload/file/okolis/Crvena%20lista%20Flore%20FBiH.pdf

	-increase in average annual temperatures by about 1.3 ºC; -reduction in the number of hated days (about 15); -increase in the number of summer and tropical days (over 15); -appearance of stormy winds; -increase in precipitation episodes 20 mm; -intense and long-lasting heat waves with max daily temperatures over 30ºC (at least 3 per year) -appearance of late spring frosts --storm winds over 100km/h	-extension of the vegetation period; -increasing the number of summer days (up to 30) by the end of the XXI century; -increasing the number of tropical days (up to 20) by the end of the XXI century; -intensive and long-lasting heat waves with max daily temperatures over 30ºC (at least 3 per year); -more frequent occurrence of late spring frosts.			

Nature Park Blidinje

Nature Park Blidinje is located in the central part of BiH, in the region of Herzegovina, in the northern zone of the Dinarides. It is located in the central part of the high mountain zone of BiH and covers the area of the Vrana, Čvrsnica and Čabulja mountain massifs connected by the Dugo polje valley, in the southern part of which is Lake Blidinje. It is bordered on the east side by the Neretva canyon, on the north by the canyon of the river Doljanka, and on the south by the canyon of the river Drežanka. The park covers an area of 358 km^2.

In terms of geomorphology in the area of the Nature Park Blidinje, three dominant regions can be distinguished:

- Čvrsnica mountain massifs (2228 m)
- Vran mountain (2074 m)
- Dugo polje valley[155].

[155] Slišković Mara (2017): Hidrogeološkeznačajke Parka prirodeBlidinje.Diplomski rad. Sveučilište u Zagrebu, Rudarsko-geološko-naftnifakultet. https://repozitorij.rgn.unizg.hr/islandora/object/rgn%3A669/datastream/PDF/view

Since it covers different areas with different altitudes, the park area is characterized by certain microclimatic specificities. The area is located on the border of the influence of Mediterranean and continental climate, where hot and cold air masses often meet, which causes frequent and sudden changes in weather with strong rains in autumn and snow in winter. The lower and southern parts of the mountains Čvsrnica, Čabulje and Vrana have a Mediterranean climate. The northern slopes of the mountains and the higher parts of the sea are influenced by the continental climate.

Ecological heterogeneity of space (i.e. geomorphological, hydrological and climatic characteristics), provide the conditions for development of different ecosystems in this area. In total, different habitats and ecosystems can be distinguished: forest ecosystems,scrubsts, grasslands, aquatic habitats and rocky areas, karst fields and underground habitats. The largest part of the park (67.6%) is covered with forest, while the rest consists of meadows and pastures, ie mountain ores (bare lands) in the peak zone of elevation. In addition to Lake Blidinje, as the most significant hydrographic phenomenon, there are other lakes in the park: Čvrsničko, Ledeno, Jezerine and Crepulja[156].

The main specificities of the Nature Park Blidinje are:

- It is one of the largest mountain lake in BiH
- In the area of the Nature Park Blidinje there is about 1500 species of plants, of which more than 200 are endemic, subendemic and relict species. Numerous Illyrians, Dinaric, Balkan and Balkan-Apennine endemics are represented.
- Pine and fir forests stand out in particular. They are best preserved in a special forest reserve Masna Luka, on the northwestern slope of Čvrsnica, which includes a large complex of endemic Balkan pine (Pinus leucodermis Ant.), which is the largest forest complex of its kind in Europe.

In the area of the Park, a large number of forest and non-forest vegetation units have been recorded. Studies of the vegetation of these areas results with about 50 associations, subassociations and facies have been recorded. At the foot of the mountains (altitude of about 500 m) there are karst forests of Oriental hornbeam (*Carpinus orientalis*), forests of pubescent oak (*Quercus pubescens*), European hop-hornbeam (*Ostrya carpinifolia*), montage beech (*Fagetum montane*), beech-fir forest (*Abieti-Fagetum*), subalpine beech forest (*Fagetumsubalpinum*), black pine (*Pinus nigra*) and Bosnian pine (*Pinus heldreichii*) forests, then spruce forests and finally, mountain pine (*Pinetum mughi*) developed on the slopes and peaks of these mountains[3].

Endemic species are also found in other ecosystems. Thus, as part of the vegetation of wet grasslands of lowland areas and karst fields, endemic species *Chouardialitardierei* and *Edraianthusdalmaticus* grow. On the other hand, on dry meadows and rocky areas, the endemic species *Sternbergiacolchiciflora* var. *dalmatica*can be found. So far, two stenoendemic species have been recorded in the slopes of the Park-*Oxytropisprenja* and *Minuartiahandelii*, which are building the endemic micro-association *Minuartiohandelii-Caricetum*. Also, a large number of Dinaric endemics such as *Gentiana dinarica*, *Oxytropisdinarica* and *Euphrasia dinarica* can also be found on those slopes.Along the peak ridge of Čvrsnica (above 2100 m above sea level) abundantly grow arctonival lichens and several representatives of high mountain plant species such as *Androsacelactea*, *Carexrupestris*, *Papaver kerneri* and the glacial relict *Kobresiamyosuroides*[157].

The area of the nature park is also rich in fauna diversity. When it comes to invertebrate fauna, representatives of Lepidoptera (Rhopalocera) are the best studied, where recent research shows that 109 species of butterflies have been found in this area. The richness of invertebrates in the underground fauna, ie in caves, is also significant. Characteristic species of ichthyofauna are chub (*Squaliuscephalus*), as well as introduced rainbow trout (*Oncorhynchus mykiss*). In the lake live some endemic fish species

[156] Jelić Anja (2018): Politika promocije parka prirode Blidinje. Završni rad. University of Split, Faculty of economics Split / Sveučilište u Splitu, Ekonomskifakultet.https://core.ac.uk/display/199770612

[157] Plan upravljanja za park prirodeBlidinje (2020-2030) nacrt, http://bih.rec.org/documents/news/PLAN_UPRAVLJANJA_BLIDINJE_-_NOVI_-_FINALNI_DOKUMENT.pdf

like Dalmatianbarbel gudgeon **(***Aulopygehügeli)* andsunbleak (*Leucaspiusdelineatus)* as highly endangered species, which are also on the IUCN red list of endangered species.A total of 11 species of amphibians have been registered in the area of the Nature Park Blidinje. Alpine salamander (*Salamandra atra*) has been recorded on Čvrsnica, and the endemic subspecies, Prenj alpine salamender (*Salamandra atraprenjensis)* on Prenj.

The fauna of reptiles in this area is poorly researched, and some of the species and subspecies that have been found are: *Viperaursinii*-Ursini's viper, Bosnian viper (*Viperaberusbosniensis*) and horned viper (*Viperaammodytes*), Aesculapian snake (*Zamenis longissimus*), smooth snake (*Coronellaaustiaca*), leopard snake (*Zamenis situla*) and Dahl's whip snake (*Platycepsnajadum*).. Species of the genus *Natrix* (garss snake and dice snake) can be expected in wet habitats such as Lake Blidinje and the Brčanj watercourse. Also, mountain grasslands are a favorable habitat for viviparous lizard (*Zootoca vivipara*) and sand lizards (*Lacerta agilis*).Ornithofauna in the Nature Park Blidinje counts 127 species of birds. The mammal fauna is represented by a number of species, and some of them ar the lesser mole-rat (*Spalax leucodon*), the brown bear (*Ursus arctos*) and the chamois (*Rupicapra rupicapra*).

Climate changes as one of the factors disrupting biodiversity has not been recognized within the management plan for the Nature Park Blidinje, but the impact of climate change has been stated in other publications. The influence of climate change, especially change in temperature and precipitation distribution, was registered on Bosnian pine growth. There is positive influence of precipitation in the early spring and summer period of the year because the radial growth of Bosnian pine trees on Čvrsnica is enhanced. On the other hand, the negative impact of high air temperatures during the summer (June-July) is the main limiting factor for the growth of Bosnian pine trees on Čvrsnica. These results indicate that the limiting factor for the growth of Bosnian pine is the dry and hot periods in the summer months, which is a consequence of higher summer temperatures and lower precipitation in winter. In this context, the Bosnian pine in the area of Čvrsnica is significantly endangered by climate change, which predicts a significant increase in air temperature and reduced precipitation[158].

Protected Area	**Assessment of major threats from climate change**		**Major threats**	**Assessment of key climate impacts / pressures on biodiversity within the PA**	**Possible response scenarios to the threat (proposed interventions / adaptation measures)**
	Present	**Expected (according to climate scenario RCP8.5)**			
Blidinje	-Average amount of precipitation around 1000 mm per year, -vegetation period about 130 days; -increase in average annual temperatures by about 1.^{0}C; -reduction in the number of frosty days (about 15);	-increase in average annual temperatures to 4.5C by the end of XXI; -reduction of average daily precipitation on an annual basis to 20%; -reduction of days with the appearance of snow; -reduction of the day with retention of snow cover;	-long-lasting droughts; -increased heat stress; -increase in water temperature; -eutrophication;	-the impact of climate change on the growth of Bosnian pine (*Pinus heldreichii*), where there is a decrease in growth associated with high temperatures -expected impact of climate change on the growth of other tree species -eutrophication and change of lake water characteristics	-research of the impact of climate factors on the growth of Bosnian pine, which is long-living and as such a good model for monitoring the impact of climate change -monitoring the effects of climate change on other species -Monitoring the state of the lake ecosystem

[158]PejićŽarko (2018): Dendroekološkaanalizastabalamunike (Pinus heldreichii H. Christ) u parkuprirodeBlidinje. Master's thesis / Diplomski rad. University of Zagreb, Faculty of Forestry / Sveučilište u Zagrebu, Šumarskifakultet.

	-increase in the number of summer and tropical days (over 15); -appearance of stormy winds; -increase in precipitation episodes 20mm; -intense and long-lasting heat waves with max daily temperatures over 30C (at least 3 per year) -appearance of late spring frosts -storms of stormy winds over 100km/h	-extension of the vegetation period; -increasing the number of summer days (up to 35) by the end of the XXI century; -increasing the number of tropical days (up to 25) by the end of the XXI century; -intensive and long-lasting heat waves with max daily temperatures over 30C (at least 3 per year); -more frequent occurrence of late spring frosts.			

Nature Park Orjen

Nature Park Orjen is located on the territory of Trebinje City, in the southeastern part of Republika Srpska and BiH. By the decision of the Government of Republika Srpska ("Official Gazette of the RS" No. 93/20), it was declared as a protected area in category V-Protected Landscapes-Nature Park. The area of the Park is 16,715.83 ha and is the largest protected area in Republika Srpska. The basic value of the Nature Park Orjen is represented by geological, geomorphological, biological and landscape diversity and preserved, natural ecosystems.

The basic geological and geomorphological value of the Nature Park Orjen is the karst relief. Due to the great influence during the last ice age (Pleistocene), Orjen is is also characterized by glacial rocks. The most significant structure in the Orjen PA created by the glaciers is the glacial wave in Dobri do, located between two ridges-Velika Jastrebica and Buganjegrede. An underground karst relief has been developed in the entire Orjen massif, which is mostly represented by cave and abyss-type of objects. In the Nature Park Orjen, 47 speleological objects have been identified and described, 13 of which have the characteristics of caves whose canal length generally does not exceed 50 meters.

The highest peak of Orjen in Republika Srpska is Velika Jastrebica (1865 m above sea level) and it is the highest coastal mountain of the Dinaric massif in Republika Srpska and BiH. On the territory of Montenegro, a protected area of he same name (Orjen) and category (Nature Park) covers an area of 8,897 ha.

The area of Orjen belongs to the Mediterranean climate zone. Orjen has a mountain climate but with a strong influence of the Mediterranean climate. Since it is located on the edge of the Adriatic Sea, Orjen represents the border of warm and humid air masses from the sea, which results with large amounts of annual precipitation, on the highest peaks mainly in the form of snowfall. Specific microclimatic conditions depend on altitude, exposure, distance from the sea, terrain disunity and vegetation

characteristics. Those climatic conditions are prerequisite for great biodiversity richness as well as numerous taxa of endemic flora and fauna of the area. The surface river network was developed only in the north of the Nature Park Orjen (Sušica river basin). River Trebišnjica, ie Trebinje Lake forms the northern border of the protected area.

Different types of ecosystems have been recorded in the area of the Nature Park. Forests and forest lands occupy 76.89% of the area, but there are also: ravines, rock crevices, caves and pits, rocky deserts, screes, grasslands, meadows, pastures, rocky areas, ruderal habitats, aquatic ecosystems etc.

When it comes to forest ecosystems, the types are present: different deciduous forests Illyrian beech forests, forests with aspen, willow, Bosnian pine, black pine, thermophilic deciduous forests, shrubs, sub-Mediterranean forests of pubescent oak and white-hornbeam, sub-Mediterranean shrub and thickets of black hornbeam and pubescent oak, forests and underbrush of black hornbeam and sedges etc.

Special features of the Nature Park Orjen are:

- Endemic-relict forests of Bosnian pine (*Pinus heldreichii* ssp. *leucodermis*) represent one of the most famous attributes of the mountain (symbol of the entire nature park). They are endemic and relict forest stands that is a subendemic of the southern Apennines and southeastern Dinarides
- Illyrian beech forests which include mesothermal beech forests (*Seslerioautumnalis-Fagetum*), mesophilic beech forests (*Fagetummontanums.lato*), beech-fir forests (*Abieti-Fagetum*), and subalpine beech forests (*Fagetumsubalpinum s.to*.)
- Forests of noble deciduous trees include stages with linden and maple on the steep slopes of the canyon
- Black pine forests, located in the northern and central part of the Park
- Significant presence of fungi, of which 25 species have been proposed for protection
- Faunistic values -ascertained species that are on the Red List, as well as endemic representatives of certain groups
- Geological values (ravines and rocky deserts, pits and caves)

There are 42 different habitat types recorded in Orjen protected area, where 21 of them have significant importance for the European Union.

The diversity of the plants is presented with 1088 taxa (species and subcspecies). Out of the total number, 156 taxa are endemic (113) and subendemic (43) for the Balkan Peninsula. Numerous plant species, new to science, have been described from Orjen and some of them are: *Aquilegia grata, Cytisustommasinii, Vincetoxicumhuteri, Salvia brachyodon, Melampyrum fimbriatum, Saturejahorvatii, Iris orjeni, Euphorbia orjeni, Lonicera glutinosa, Achillea abrotanoides, Amphoricarposneumayeri, Crepispantoscekia*nd others[159].

A total of 262 species of fungi have been registered in the Nature Park Orjen, where 25 species have been proposed for protection due to their importance, rarity and endangerment.

In the northern part of the Nature Park "Orjen", in the basin of the rivers Trebišnjica, Sušica and Trebinje Lake, 17 species ichthyofauna have been recorded, of which 11 species have been singled out as important for the area. Also, in the area of Orjen and Bijelagora, 7 species of amphibians and 10 species of reptiles were found. Recent research has confirmed the presence of 87 bird and 14 mammal species. It is necessary to point out the presence of significant species of large carnivores, brown bear

[159] Studija zaštite Park prirode „Orjen“

(*Ursus arctos*) and wolf (*Canis lupus*) who's monitoring has been carried out for many years, as well as the potential presence of lynx (*Lynx lynx*) whose monitoring should be established.

Overall, the existing ecosystems in the area of the Nature Park Orjen mostly preserved, although there are certain pressures. Fires cause great damage to forest ecosystems, especially for Bosnian pine forests and Illyrian beech forests. Climate changes are also recognized as threat factor[160].

Protetcted Area	**Assessment of major threats from climate change**		**Major threats**	**Assessment of key climate impacts / pressures on biodiversity within the PA**	**Possible response scenarios to the threat (proposed interventions / adaptation measures)**
	Present	**Expected (according to climate scenario RCP8.5)**			
Nature Park Orjen	-increase in average annual temperatures by about 1.2ºC; -reduction in the number of frozen days; -increase in the number of summer and tropical days (over 10); -appearance of stormy wind gusts; -more frequent occurrence of intense precipitation; -increase in precipitation episodes 20 and 60 mm; -intense and long-lasting heat waves with max daily temperatures over 30ºC (at least 3 per year)	-increase in average annual temperatures around 4.5C by the end of XXI century; -reduction of average daily precipitation on an annual basis to 20%; -reduction of days with the appearance of snow; -reduction of the day with retention of snow cover; -extension of the vegetation period; -increasing the number of summer days (up to 40) by the end of the XXI century; -increasing the number of tropical days (up to 30) by the end of the XXI century; -intensive and long-lasting heat waves with max daily temperatures over 30ºC (at least 5 per year);	-increased risk of fire; -landslides; -drying of coniferous forests; -long-lasting droughts; -drying of forest communities - Illyrian beech forests	-community of Illyrian beech forests -Bosnian pine forests -Monutain beech stands (fagetummontanum) are threatened by climate change, fires, extreme temperatures and droughts.	-implementation of fire prevention measures -development of an early warning system against climate risks and extremes; -intensification and strengthening of scientific research; -monitoring of the growth of selected speceis in the context of climate change -establishing monitoring and selection of biodiversity state indicator

Annex 21: Pre-feasibility analysis for Ecosystem Restoration Pilots

The Output 1.4 was planned as one or several practical restoration pilots to be implemented in the GEF project's main phase. Each pilot is called to demonstrate an ecosystem restoration solution that is innovative, manageable, and replicable. Restoration success should be confirmed by verifiable indicators, ideally with some monitoring data available within the project timeframe.

The table below presents a feasibility analysis of two possible restoration pilots according to the following criteria:

- Ecosystem types/threat imminence/current damage to ecosystem/its representativity and value;
- Experience in the region with regards to ecosystem restoration, including past and ongoing projects for the areas;
- Restoration method;
- Target indicators for restoration success.

	Pilot PA 1	**Pilot PA 2**	**Comments**
Location	Wetland habitats of **Gromiželj** PH	Wetland habitats of **Tišina** PL	
Area	Approx. 50 ha for restoration out of 831.3 ha	70-80 ha for restoration out of 196.49 ha	The coverage is less than commited in the project concept (500 ha)
Ecosystem type(s)	Majority forest ecosystems, especially important because of the aspect of ecosystem services related to the regulation of the water regime, wetland ecosystem, ponds and arable land.	Alluvial-hygrophilous forests, sagnant water ecosystems, flowing water ecosystems.	For Tishina, Wetland restoration project has already been funded by EuroNatur (meadows and pastures) – with a focus on sustinable grazing and community benefits. Need to ensure synergy
Restoration method(s)	Management plan for protected habitat Gromiželj defines that for the needs of revitalization and remediation, it is necessary to develop the Revitalization and Rehabilitation Project. Some of the activities that the Project should contain are: - Removal of invasive species - Removal of biomass excess - Removal of accumulated sludge and humus (siltation) which are consequence of overgrown habitat and increase in biomass	Protection study for Tišina contains guidelines for improving ecosystems state of this area, i.e. guidelines for revitalization. It is considered that a revitalization project should be developed first, which should include these aspects: - Providing sufficient water by cleaning the supply and drainage channels and regulating the water level - Cleaning and sludge removal from natural springs, supply and drainage channels of sediments and organic matter	There is no more specific information for restoration method available, as well as knowledge nor expertise in the country. Will rely on methods and examples of good practice from Serbia, WWF work under the „Living Danube“, wetland restoration projects in Belarus and Russia. The method will be innovative for the country but can rely on the existing experience of it

	- Removal of all types of waste and defining measures for adequate waste disposal - Rehabilitation of the area in order to provide self-sustainable habitats for indigenous species.	- Improvement of hydrotechnical structure as a whole - Disposal of solid municipal and construction waste as well as regulation of adequate waste disposal - Revitalization of meadow habitats through mowing and grazing - Elimination of invasive species - Favoring organic agriculture to reduce pesticide pollution - Afforestation of degraded forest areas - Stocking with indigenous fish species in accordance with the opinion of the reference institution - Application of mechanical and biological methods in regulating the number of macrophytic vegetation - Construction and installation of artificial islands for birds (nesting and resting)....	neighbours; a significant replication potential is expected.
Biological indicator(s) - indicators of change, i.e. restoration results	Depending on the realization of the mentioned activities, as biological indicators of restoration may serve: - Condition of alluvial forests of black alder and field ash (narrow-leafed ash) - Condition of pedunculate oak forests - Communities of floating, emergent and submergent plants - Biological indicators of water quality - Condition of populations of selected species of flora, especially relict and endangered plant species (etc. *Urtica kiovensis, Hottonia palustris, Thelypteris polustris*...) - Condition of populations of selected fauna species with an emphasis on endemic and relict representatives	Depending on the realization of the mentioned activities, as biological indicators of restoration may serve: - Condition of lowland floodplain meadows - Condition of forest communities - (floodplain, oaks and other forests) - Communities of floating, emergent and submergent plants - Biological indicators of water quality - Number of bird species registered in the area of the wetland complex Tišina - Monitoring the condition of selected nesting species, especially in the case of sensitive species - Monitoring the state of populations of aquatic plant species	The results of the restoration must be visible by the end of the project (at least in the 5th year of the project) and there must be biological indicators - an indicator of change, ie. restoration results in place, as part of the restoration pilot design in the project implementation year 1.

	(etc. *Umbra krameri*), and endangered and sensitive taxons (etc. *Emys orbicularis, Ciconia nigra, Circus aeruginosus, Ardea purpurea, Egretta garzetta...)*	- Monitoring the population of selected representatives of the fauna (fish, amphibians, reptiles, mammals, selected groups of invertebrates)	
Co-financing	Co-financing of competent institutions can be achieved through their engagement and participation in the implementation of activities. The manager does not have his own funds. Potential funds for co-financing can be requested from the City of Bijeljina, Waters of Srpska(„*Vode Srpske*“), but also from certain international funds.	The competent municipal department expressed its readiness to co-finance the restoration process through various activities. Also, it is possible to demand funds from various sources: EU projects for the prevention of climate change, rural development, ecotourism development, smaller grants from biological-conservation foundations, etc.	No cash co-financing foreseen.
Management plans	The management plan includes activities for the development of the rehabilitation and revitalization project and the implementation of rehabilitation and revitalization activities in the total amount of 72,000 BAM.	A management plan is under development, it will be completed probably during May. Revitalization or restoration activities will also be envisaged. The protection study itself provides guidelines for individual segments related to revitalization.	
Will/attitude of the manager	The manager of the protected habitat "Gromiželj" is the Association for the Protection of Flora and Fauna "Gromiželj" Bijeljina. The manager is of the opinion that the restoration process should be done.	The manager of the protected habitat "Tišina" is the Municipality of Šamac, and the competent department has the will/attitude for the restoration process. In the previous period, according to the possibilities, certain restroration measures were implemented.	
Previous plans/works/projects	Restoration plans are planned in the coming period, and accordingly, the Institute for the Protection of Cultural and Historical Monuments and Natural Heritage of Republika Srpska has commmissioned: -Report on the condition of the protected habitat "Gromiželj" -Report on the current situation in the Protected Habitat "Gromiželj" with a proposal for revitalization measures, **-**The Institute also addressed the Institute for Nature Conservation of Voivodina Province (Serbia) with the aim of considering the	In the previous period, a revitalization project was implemented, and its second part is currently being implemented. The project entitled "Revitalization of meadows and pastures in the complex Tišina i Odmut" was completed in 2020, and implemented by NGO "Naše Ptice", Sarajevo and "Society for Research and Protection of Biodiversity" Banja Luka, with the aim of restoring endangered wet grassland habitats and long-term maintenance by grazing cattle. The realization of the second part of the project is in progress ("Revitalization of meadows and pastures in the complex Tišina	

	possibility of better management of the protected area and the implementation of specific revitalization activities**.**	i Odmut"2). The realization of the project began in early 2020 and ends in 2022. Main results are that on 6.5 and 10 ha will be maintained wet grasslands by ecological breeding of old Posavina cattle breeds, by the system of free grazing.	
Land ownership (in the area of restoration)	The protected habitat Gromiželj occupies an area of 831.3 ha. Of that area, 768.8 ha (92.47%) are privately owned, and 62.6 ha (7.53%) are state-owned. The area that would be covered by the restoration is mostly owned by the City of Bijeljina, Republika Srpska and the Water Agency.	The protected habitat "Tišina" is located on the territory of the Municipality of Šamac. Republika Srpska owns 64.56 ha or 32.86% of the area. The rest of the area is privately owned.	This is an important issue because private owners can make interventions difficult or impossible. The restoration is less risky for the stately owned area, hence the target indicator was set as is (120 ha for both sites).
Key permits and approvals for the restoration project	Conditions and opinion for restoration/revitalization are given by the Institute for the Protection of Cultural and Historical Monuments and Natural Heritage of Republika Srpska, the City of Bijeljina, depending on the type of activity, and the Ministry of Spatial Planning, Construction and Ecology of Republika Srpska.	Conditions and opinion for revitalization are given by the Institute for the Protection of Cultural and Historical Monuments and Natural Heritage of Republika Srpska, Municipality of Šamac as the manager of the protected area, which is responsible for the necessary permits, in some cases depending on the type of activity the Ministry of Spatial Planning, Construction and Ecology of Republika Srpska is competent too.	The permits and approvals will be discussed in detailed during the restpration pilot design phase in the project implementation year 1

Annex 22: Baseline data for pilot PAs

Name of the protected area	National Category	IUCN category	Area (ha)	Entity	Management Authority/PA manager	Baseline METT	Number of staff	Number of female staff	Number of visitors (2019)
Sutjeska NP	National Park	II	16,052	RS	RS Ministry of Spatial Planning, Civil Engineering and Ecology /Public enterprise "NP Sutjeska"	51	73		14130
Kozara NP	National Park	II	3,908	RS	RS Ministry of Spatial Planning, Civil Engineering and Ecology / Public enterprise "NP Kozara"	63	58		122000
Drina NP	National Park	II	6,315	RS	RS Ministry of Spatial Planning, Civil Engineering and Ecology / Public enterprise "NP Drina"	58	22		
Una NP	National Park	II	19,800	FBiH	FBiH Ministry of Environment and Tourism / Public enterprise "NP Una"	73	30		
Skakavac waterfall NM	Nature Monument	III	1,431	FBiH	Canton Sarajevo Public enterprise for protected areas	69	2		30000
Vrelo Bosne NM	Nature Monument	III	603	FBiH	Canton Sarajevo Public enterprise for protected areas		0		259000
Bijambare PL	Protected landscape	V	497	FBiH	Canton Sarajevo Public enterprise for protected areas	80	35		68300

Trebević PL	Protected landscape	V	402	FBiH	Canton Sarajevo Public enterprise for protected areas				50000
Bentbaša PL	Protected landscape	V	161	FBIH	Canton Sarajevo Public enterprise for protected areas				30000
Prokosko lake NM	Nature Monument	III	2,225	FBiH	Municipality of Fojnica	59	4		10000
Blidinje PN	Park of Nature	V	35,800	FBiH	Public enterprise "Nature Park Blidinje"	45	2		
Una PN	Park of Nature	V	2,773	RS	Municpality of Novi Grad	29	2		
Vjeternica-Popovo Polje PL	Protected landscape	V	4,759	FBiH	Public Enterprise "Vjetrenica"	59	6		15000
Tišina PL	Protected habitat	IV	196	RS	Municipality of Šamac	29			290
Gromiželj PH	Protected habitat	IV	831	RS	NVO "Gromiželj"				
Orjen PN	Park of Nature	V	16,716	RS		22	30		
Orlovača cave NM	Nature Monument	III	27	RS	Cultural centre Pale	38			1000
Ledana jama NM	Nature Monument	III	28	RS	Municipaliy of Ribnik	22			
Vaganska cave NM	Nature Monument	III	12	RS	Municipality of Šipovo	25			
Đatlo Cave NM	Nature Monument	III	43	RS	Municipality of Gacko, Municipality of Bileca	21			
Pavlova Cave NM	Nature Monument	III	13	RS	Municipality of Trebinje	23			
Ledenjača cave NM	Nature Monument	III	7	RS	Municipaliy of Foča	24			
Velika pećina (cave) NM	Nature Monument	III	821	RS	Municipaliy of Bileća	19			
Pod Lipom cave NM	Nature Monument	III	6	RS	Municipaliy of Sokolac	23			

Girska cave NM	Nature Monument	III	25	RS	Municipaliy of Sokolac	23			

Annex 23: Project co-finaincing

Sources of Co-financing/Co-financing line	**Type of Co-financing**	**Co-financing amount for FSP, USD**	**Planned Co-financing Activities/Outputs**	**Risks**	**Risk Mitigation Measures**
FBiH Ministry of Environment and Tourism					
Budgetary allocations covering the costs associated with the improved management capacities of the existing PAs (Una National Park) and implementation of parallel projects of the Ministry	Grant	5,946,600	Output 1.1: Climate threat assesment Output 1.2: New Management Plan for Una NP Output 1.3. Adaptation and resilience solutions for targeted PAs Output 1.5 Replication of ecosystem restoration demos Output 2.1: Development of detailed Regulatory (urban) plans for visitor zones in the area of "Una" National Park (Martin Brod, Kulen Vakuf and visitor zone Štrbački buk-Lohovo); support to sustainable tourism development for other PAs; Output 2.2: replication of a PA tourism concession model; Output 2.4: a sustainable model for PA participation in the Env Fund grant scheme; Output 2.5 Branding and marketing of PA products and services	PA funding limitations associated with the change in govt priorities caused by the economic recession. PA budget for future years might be affected by the negative economic trends caused by COVID 19 pandemic and other recession factors	The project team will be in regular contact with the Ministry in order to monitor the status of planned expenditures and committed co-financing within the PA finance lines
In kind contribution	In-kind	232,000	Work for the Project Steering Committee, coordination of project activities, cross-sectoral communication, technical expertise through the ministerial staff and networks		
Subtotal for the FBiH Ministry of Environment and Tourism		**6,178,600**			
Ministry of Spatial Planning, Civil Engineering and Ecology of Republika Srpska					

Budgetary allocations covering the costs associated with the improved management capacities of the existing PAs (Kozara, Sutjeska and Drina National Parks)	Grant	6,408,000	Output 1.1: Climate threat assesment Output 1.2: New Management Plan for three national parks Output 1.3. Adaptation and resilience solutions for targeted PAs Output 1.5 Replication of ecosystem restoration demos Output 2.1 Output 2.2 a PA tourism concession model piloted at Sutjeska NP; Output 2.4: a sustainable model for PA participation in the Env Fund grant scheme; Output 2.5 Branding and marketing of PA products and services	PA funding limitations associated with the change in govt priorities caused by the economic recession. PA budget for future years might be affected by the negative economic trends caused by COVID 19 pandemic and other recession factors	The project team will be in regular contact with the Ministry in order to monitor the status of planned expenditures and committed co-financing within the PA finance lines
In kind contribution	In-kind	152,500	Work for the Project Steering Committee, coordination of project activities, cross-sectoral communication, technical expertise through the ministerial staff and networks		
Subtotal for the Ministry of Spatial Planning, Civil Engineering and Ecology of Republika Srpska		**6,560,500**			
Ministry of Trade and Tourism of Republika Srpska					
Annual grants in support of local tourism development, including infrastructure and tourism products and services	Grant	93,750	Output 2.1.	Funding limitations associated with the change in govt priorities caused by the economic recession and COVID-19 impacts on the tourism sector.	The project team will be in regular contact with the Ministry in order to monitor the status of planned expenditures and committed co-financing within the annual grants scheme and other support lines for the sustainable tourism devt in RS
In kind contribution	In-kind	75,000	Work for the Project Steering Committee, coordination of project activities, cross-sectoral communication, technical expertise through the ministerial staff and networks		
Subtotal for the Ministry of Trade and Tourism of Republika Srpska		**168,750**			
Environmental Protection Fund FBiH					

Incremental funding directly to PA management, in support to implementation of management plans and sustinable tourism development projects	Grant	2,500,000	Output 2.4	Funding limitations associated with the change in govt priorities caused by the economic recession and COVID-19 impacts on the tourism sector.	The project team will be in regular contact with the Fund Management in order to monitor the status of planned expenditures and committed co-financing in support to sustainable tourism devt for PAs in FBiH
Subtotal for the Environmental Protection Fund FBiH		**2,500,000**			
Ministry of Foreign Trade and Economic Relations (MoFTER) of Bosnia and Herzegovina					
In kind contribution	In-kind	116,600	Work for the Project Steering Committee, coordination of project activities, cross-sectoral communication, technical expertise through the ministerial staff and networks	n/a	n/a
Subtotal for MOFTER		**116,600**			
Municipality of Šamac	In-kind	**24,375**	Output 1.3	The environmental rehabilitation at Tisina may go down in the priority management actions list following the negative economic factors	The project will deliver a thorough feasibility assessment (inluding that of long-term environmental and economic benefits) of the proposed restoration scenario

Municipality of Ramo (for Vjetrenica-Popovo Polje)	In-kind	**200,000**	Output 1.1. Output 1.2. Output 2.1 Output 2.2 Output 2.5	The list of project activities involving Vjetrenica PA, although agreed in detail with the Municipality at the PPG stage, can be assigned a lower priority by the Managing Authority following the negative economic factors	The Municipality will be closely involved in project planning and adaptive management for Vjetrenica PA
Sarajevo Canton PE for PAs	In-kind	**150,000**	Output 1.1: PA network climate threat assessment conducted (for Nature monument Skakavac and Protected Landscape Bijambare) Output 1.2: PA Management plans developed/updated and under implementation (Protected landscape Bijambare) Output 1.3: A portfolio of adaptation and resilience solutions for targeted species and ecosystems developed and set under implementation (Nature monument Skakavac) Output 1.5 Output 2.1 Output 2.4 Output 2.5	The list of project activities involving Sarajevo Canton PA, although agreed in detail with the PE at the PPG stage, can be assigned a lower priority by the PE following the negative economic factors	The PE will be closely involved in project planning and adaptive management for Sarajevo Canton PAs
CISP	Grant	**1,365,000**	Project activities covering National Park Sutjeska and Blidinje Park of Nature	The international funding may be affected by the COVID 19 recession	Project activities will be planned in order to secure maximum possible synergy even if the parallel funding is delayed/cut
UNDP					
UNDP core resources as PMC costs	Cash	150,000	UNDP core funds including PMC costs	n/a	n/a

UNDP via Joint UN Programme for Disaster Risk Reduction for Sustainable Development in Bosnia and Herzegovina	Grant	400,000	Outcome 1 where it concerns climate risk assessment and climate resilience in local governance	The international funding may be affected by the COVID 19 recession	Project activities will be planned in order to secure maximum possible synergy even if the parallel funding is delayed/cut
UNDP via Fire Tisk Management project finance by the Government of the Czech Republic	Grant	100,000	Outcome 1 when It concerns forest fire management capacity building	The international funding may be affected by the COVID 19 recession	Project activities will be planned in order to secure maximum possible synergy even if the parallel funding is delayed/cut
UNDP via EU4Agri financed by EU IPA (Instrument for Pre-Accession Assistance II)	Grant	500,000	Outcome 2 Output 2.1 where it concerns improving business environment for develop,emt of sustainable tourism products and promoting sustainable enterpreneurship in tourism	The international funding may be affected by the COVID 19 recession	Project activities will be planned in order to secure maximum possible synergy even if the parallel funding is delayed/cut
UNDP via Via Dinarica project financed by the Government of Italy	Grant	100,000	Outcome 2 Output 2.1 and Output 2.6	The international funding may be affected by the COVID 19 recession	Project activities will be planned in order to secure maximum possible synergy even if the parallel funding is delayed/cut
Subtotal for UNDP		**1,250,000**			
TOTAL		**18,513,825**			

Annex 24: ESMF (attached separately)