



NBSAP

Biodiversity Strategy and Action Plan
of Bosnia and Herzegovina

Sixth National Report of Bosnia and Herzegovina to the Convention on Biological Diversity



Convention on
Biological Diversity



SIXTH NATIONAL REPORT OF BOSNIA AND HERZEGOVINA
to the Convention on Biological Diversity

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ABBREVIATIONS

ABT	Aichi Biodiversity Target
BD	Brčko District
BiH	Bosnia and Herzegovina
BIP	Biodiversity Indicators Partnership
CBD	Convention on Biological Diversity
CEPA	Communication, Education and Public Awareness
CEPAP	Cantonal Environmental Protection Action Plan
CHM	Clearing House Mechanism
CLC	Corine Land Cover
COP	Conference of Parties
EEA	European Environment Agency
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EIONET	European Environment Information and Observation Network
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FBiH	Federation of Bosnia and Herzegovina
FMAWMF	Federal Ministry of Agriculture, Water Management and Forestry
FMET	Federal Ministry of Environment and Tourism
GBO	Global Biodiversity Outlook
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIS	Geographic Information System
GSPC	Global Strategy for Plant Conservation
IBAs	Important Bird and Biodiversity Areas
IBRD	International Bank for Reconstruction and Development

IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
MAFWM RS	Ministry of Agriculture, Forestry and Water Management of Republika Srpska
MoFTER BiH	Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina
MSPCE RS	Ministry of Spatial Planning, Construction and Ecology of Republika Srpska
NBSAP	National Biodiversity Strategy and Action Plan
NFP	National Focal Point
NGO	Non-Governmental Organization
NP	National Park
NtP	Nature Park
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
POPs	Persistent Organic Pollutants
PU	Public Utility
RS	Republika Srpska
SIDA	Swedish International Development Cooperation Agency
TEEB	The Economics of Ecosystems and Biodiversity
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development

KEY DEFINITIONS

Aichi Biodiversity Targets- ABT, a set of 20 targets under the Strategic Plan for Biodiversity 2011-2020 meant to motivate all parties/countries and stakeholders to work towards conserving biodiversity and advancing benefits of biodiversity for all people.

Sustainable Development Goals form a part of the 2030 Agenda for Sustainable Development adopted by the UN member states at the Sustainable Development Summit on 25 September 2015. The 17 Sustainable Development Goals of the 2030 Agenda for Sustainable Development are meant to mobilize efforts to end poverty, fight inequalities and injustice and tackle climate change.

Global Strategy for Plant Conservation is a ten-year strategic framework with defined strategic objectives. The Global Strategy for Plant Conservation 2011-2020 was adopted at the tenth meeting of the Conference of the Parties (COP 10). There are five objectives: (i) Plant biodiversity is well understood, documented and recognized; (ii) Plant diversity is urgently and effectively conserved; (iii) Plant diversity is used in a sustainable manner; (iv) Education and awareness about plant diversity and its role; (v) The capacities and public engagement necessary to implement the Strategy have been developed. There are total of 16 targets defined under the five strategic objectives meant to motivate the parties and stakeholders to work towards conservation of plants and plant biodiversity.

Convention on Biological Diversity – CBD is the first international agreement that aims to resolve in an integrated manner the issues related to the protection and sustainable utilisation of biological diversity on global, regional, national and local level. Conservation of biological diversity, as the basic international principle of natural conservation, is the most important strategic task related to the protection and sustainable utilisation of natural resources. It is both a shared and individual responsibility of all countries. Bosnia and Herzegovina is a party to the CBD since 2002 and accordingly follows the global trends in conservation and sustainable use of biodiversity.

National targets for the protection of biological diversity of Bosnia and Herzegovina are based on the country's priorities and specificities, and have been identified through a participatory planning process that included a series of consultation meetings with stakeholders, a multidisciplinary approach and efficient inter-sectoral coordination under the Strategy and Action Plan for Protection of Biological Diversity of BiH (NBSAP). The set targets are ambitious, but also realistic and feasible if all relevant institutions at all levels remain fully committed to the process.

National Biodiversity Strategy and Action Plan - NBSAP is a key tool for the implementation of the Convention on Biological Diversity in general terms, and for the implementation of the Strategic Plan for Biodiversity 2011-2020 in specific terms. There are 21 national targets defined under the NBSAP BiH which to a greater or lesser degree correspond to the targets of the Strategic Plan for Biodiversity 2011-2020 /Aichi Biodiversity Targets.

Strategic Plan for Biodiversity 2011-2020, a ten-year strategic framework developed around a common vision, mission, strategic goals and ambitious, yet feasible targets- Aichi targets. The Strategic Plan 2011-2020 was adopted at the Conference of the Parties (COP10) to the Convention on Biological Diversity in Nagoya in 2010. Strategic plan is meant to serve as a flexible framework for adoption of national and regional targets and promotion of coherent and efficient implementation of the three objectives defined under the Convention on Biological Diversity: (i) conservation of biological and landscape diversity; (ii) sustainable utilisation of biodiversity components; (iii) fair and equitable sharing of the benefits arising out of the utilisation of genetic resources. The Strategic Plan foresees five global strategic goals (A, B, C, D and E) with each goal covering a specific number of Aichi targets, which the parties to the Convention should strive to achieve by 2020.





1.

NATIONAL BIODIVERSITY TARGETS OF BIH

All national targets defined and/or adopted by Bosnia and Herzegovina (BiH) under the Strategic Plan for Biodiversity 2011-2020 are listed in this chapter and linked to Chapter 3, which summarizes the progress that BiH made towards achieving the targets. Bosnia and Herzegovina adopted the Strategy and Action Plan for Protection of Biological Diversity 2015-2020, which is an equivalent of NBSAP. In this part of the report a detailed overview of all national targets is provided, focusing on the following:

- rationale for the adoption of each target and how achieving individual targets will benefit biological diversity of the country,
- the Aichi Biodiversity Targets (ABT) partly or fully related to the national targets and ABTs indirectly related to the national targets,
- the relevant information pertaining to planning and adopting of the national targets and the stakeholders involved in the process,
- review of the relevant documents and links to websites where information and data supporting the claims can be found.

Overview of the national targets is presented in tables applying the methodology prescribed under the Guidelines for the Sixth National Reports, which is an Annex to the Decision XIII/27 of 15 December 2016 adopted by the Conference of the Parties to the Convention on Biological Diversity.¹ The methodology applied in preparation of tables with an overview of national targets for BiH is summarised below. It is compatible with the online tool which will be used for the submission of the Sixth National Report to the Secretariat of the Convention on Biological Diversity.

Table 1: Methodology applied in the preparation of tables with an overview of the national targets for Bosnia and Herzegovina

National target	Target as defined in the Strategy and Action Plan for Protection of Biological Diversity of BiH 2015-2020 (NBSAP)
Rationale for the National Target	Rationale for the national target
Level of application	Please indicate the level to which your country's target applies (may refer to the level of government or area) – possible answers: <ul style="list-style-type: none"> ▪ Regional / multilateral – please indicate area concerned (text entry) ▪ National/federal ▪ Subnational – please indicate area concerned (text entry)
Relevance to the Aichi Biodiversity Targets- ABT	<p>Main related: Please select one or more ABT (1-20) to which the national target is wholly or partially related.</p> <p>Other related: Please select one or more ABT (1-20) to which your country's national target is indirectly related- as needed.</p> <p>Not corresponding: If the national target is not related to any ABT, directly or indirectly, please use this field to provide an explanation for adopting this target.</p>
Other relevant information	Please use this field to provide any other relevant information, such as the process of developing and adopting the national target, the stakeholders involved or the strategies and plans in which this national target has been included.
Relevant websites, web links and files	Please use this field to indicate any relevant websites, web links or documents where additional information related to this national target can be found.

¹ <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-27-en.pdf>

Table 2: National targets and related information

National Target		1. By 2020, increase the public awareness level in the field of biological diversity protection
Rationale for the national target		<p>In BiH, the values of biological diversity are under-represented in the government and in society. Public awareness of environmental protection, including biological diversity, is at a very low level, which was recognized in several strategic documents dealing with environmental protection. As noted in the NBSAP BiH, low public awareness of the importance of biological diversity and conservation of the basic environmental values represents one of the issues faced by developing countries and countries with economy in transition, including BiH. It is important to note that the NGO sector plays a major role when it comes to communication, raising public awareness and education on environmental protection, including biological diversity in BiH. There is no accurate data on the state of public awareness of biodiversity.</p> <p>The reasons for the lack of a clear picture of the level of public awareness in BiH are insufficiently reliable and available data and under-representation of environmental protection issues, as well as the values of biological diversity, in the media and education. Even though there are numerous NGOs working to resolve these issue and helping raise public awareness through various projects in BiH, measures to raise public awareness should be delivered systematically and include different approaches in educating the public.</p>
Level of application		Subnational – entity and cantonal level
Relevance of the national targets to ABT	Main related ABT	1
	Other related	/
	Not corresponding	Not applicable
Other relevant information		<p>This target has been defined in cooperation with the representatives of the ministries, relevant agencies, institutes, funds, educational and scientific institutions and professional bodies in BiH upon the preparation of NBSAP BiH, which was adopted in May 2017. This target is related on Aichi Target 1 which foresees implementation of activities to raise awareness about the importance and the values of biodiversity and its sustainability through different approaches to public interpretation. In other words, the target foresees access to information on the state of environment. The main focus of Aichi Target 1 is public awareness about the value of biological diversity and this is what the Program for Communication, Education and Public Awareness – CEPA (hereinafter: CEPA Program) has been based on. The Program represents a tool for achieving this target, as well as for providing support in the development and implementation of the CEPA Strategy and Communication Plan (Communication Plan for the needs of the NBSAP BiH 2015-2020 is presented in Chapter 5 of NBSAP BiH).</p> <p>It should be noted that BiH is a signatory to the Aarhus Convention which foresees public participation in environmental decision-making, and that entails conservation of biodiversity and learning about biodiversity. The laws in the field of environmental protection prescribe that the authorities responsible for environmental protection have a duty to render assistance, raise public awareness, encourage participation in the decision-making and enable access to information to general public. All this adds to the importance of achievement of this national target. In addition, in accordance with Article 15 of the Law on Nature Protection (Official Gazette of Republika Srpska, No. 20/14), public participation is ensured through public disclosure during the drafting of acts on the protection of natural values, management plan and other acts related for nature protection.</p>
Relevant websites, web links, and files		<p>NBSAP BiH</p> <p>https://biodiversity.europa.eu/data</p> <p>https://aarhus.osce.org/sr/node/12</p> <p>Federal Ministry of Environment and Tourism, Ministry of Spatial Planning, Civil Engineering and Ecology of RS, Fund for Environmental Protection of FBiH, Fund for Environmental Protection and Energy Efficiency of RS</p>

National target		2. By 2020, integrate biological diversity values into development strategies and strategic plans, with an emphasis on rural development
Rationale for the national target		In BiH there are various sectoral strategies that integrate the values of biological diversity, but due to the fact that entity laws on environmental protection prescribe strategic environment assessment during the creation of plans and other relevant documents, it is necessary to also integrate biological diversity into strategies of the sectors such as energy, mining, industry, and forestry. At the BiH level, as well as at the entity level, the adoption of this type of strategies is slow, which additionally slows down their implementation. It is necessary to accelerate the process of adoption of the strategies and to include all relevant stakeholders in these strategies and plans, which would provide a more efficient implementation of national targets. The need for development strategies that integrate the values of biological diversity was recognized in the course of preparation of NBSAP, especially because these strategies are adopted in BiH mainly at the level of local communities, without placing sufficient emphasis on biological diversity which is affected by the development of local communities. The need to integrate the value of biodiversity conservation is recognized when rural development strategies are concerned, since agricultural communities have even a greater impact on the conservation of native varieties and sustainable agricultural production.
Level of application		Subnational – entity and cantonal level
Relevance of the national targets to ABT	Main related ABT	2
	Other related	7
	Not corresponding	Not applicable
Other relevant information		National target 2 directly corresponds to Aichi Target 2. This target foresees integration of the biological diversity values in national and local development strategies, strategies for elimination of poverty and planning processes, and as appropriate in the national financial and reporting systems by 2020. According to Article 6 of the Convention, the Parties to the Convention are required to integrate measures of conservation and sustainable use of biological diversity in the relevant sectoral and cross-sectoral plans, programs and policies, and to strengthen coordination between all levels of the government. Accordingly, biological diversity values such as ecosystem services, protected areas, ecosystems, plant species, animal species, etc., should be included in the spatial planning processes for specific areas, which is done in BiH as part of the process of preparation and adoption of spatial plans. However, these measures are considered to be insufficient and thus require preparation and implementation of sustainable production and consumption plans at all levels in other sectors as well (forestry, water management, agriculture, energy and industry) with an ultimate goal of conserving the natural resources within safe ecological limits.
Relevant websites, web links, and files		NBSAP BiH https://www.cbd.int/convention/text/default.shtml Federal Ministry of Agriculture, Water Management and Forestry Ministry of Agriculture, Forestry and Water Management of RS

National target		3. By 2020, reduce negative and increase positive incentives and subsidies in order to conserve biological diversity
Rationale for the national target		In BiH incentives and subsidies are awarded in the sectors of industry, transport, energy, agriculture and environmental protection to foster economic and sustainable development and improve the state of economy. Incentives and subsidies in the mentioned sectors may both harm and benefit biological diversity. Analysis has never been carried out to determine the amounts of incentives and how harmful or beneficial certain incentives are for biological diversity. Experience has shown that some incentives in the energy sector, such as feed-in tariffs for hydropower plants, have a negative impact on biodiversity, considering that construction of

		<p>hydropower plants changes the ecosystems of rivers and some species of plants and animals may become endangered. Examples of positive incentives are usually found in the agricultural sector where subsidies are given for the breeding of native endangered species of animals and agricultural plants.</p> <p>This problem was identified during the preparation of NBSAP BiH and this target was proposed by participants from different institutions, who agreed in a participatory process that this issue needs to be resolved and that concrete steps should be proposed to identify, quantify and reform negative incentives while increasing the amounts for the positive incentives. In order to achieve this target, all institutions awarding incentives and subsidies should first determine which measures benefit and which harm biological diversity in BiH and quantify them. Thereafter, the negative incentives should be reformed and more funds should be allocated for the incentives that benefit biological diversity. Increasing the amounts for positive incentives can contribute to a more sustainable development, particularly if funds are allocated for the breeding of native species. The last step in this process is introduction of a system to monitor incentives, which at this moment does not exist in BiH.</p>
Level of application		Subnational- entity and cantonal level
Relevance of the national targets to ABT	Main related ABT	3
	Other related	/
	Not corresponding	Not applicable
Other relevant information		<p>This target relies on Aichi Target 3 which foresees elimination of incentives that are harmful to biological diversity. The current state of industrial and economic development in BiH is such that majority of funds cannot be allocated only to conservation of biological diversity and elimination of harmful incentives. Accordingly, the representatives of institutions have agreed that the amounts for the incentives with harmful impact on biological diversity should be reduced, but not entirely eliminated. This approach will contribute to the economic development in BiH without eliminating incentives that are crucial for kick-starting the economy.</p> <p>Since there is no official definition of what constitutes harmful or negative subsidies in the context of biological diversity, during the preparation of NBSAP BiH a proposal was given to use the definition adopted by the Organisation for Economic Cooperation and Development (OECD) in 2005. According to this definition, a subsidy harmful to biological diversity is a result of the government's action that favours consumers and producers so they can supplement their revenues or reduce their costs, while at the same time discriminating the environmental protection policy. Harmful (negative) subsidies increase the amount of waste, pollution and exploitation of natural resources.</p>
Relevant websites, web links, and files		<p>NBSAP BiH</p> <p>Federal Ministry of Agriculture, Water Management and Forestry</p> <p>Ministry of Agriculture, Forestry and Water Management of RS</p>

National target	4. By 2019, prepare and adopt plans for sustainable production and consumption of natural resources
Rationale for the national target	<p>This target is meant to identify actions to ensure conservation and sustainable utilization of biological diversity. Sustainable production and consumption as well as conservation of resource within the ecologically safe limits is discussed in many legal documents, strategies and plans in BiH. Overexploitation of resources threatens biological diversity. In order to improve the process of conservation and achieve concrete progress, all relevant sectors dealing with production and consumption need to adopt plans foreseeing sustainable production. For this target to be achieved, governments at all levels need to develop and implement sustainable production and consumption plans in sectors such as forestry, water management, agriculture, energy and industry, with an ultimate goal of keeping the effects of the use of natural resources within ecologically safe limits.</p>

Level of application		Subnational- entity and cantonal level
Relevance of the national targets to ABT	Main related ABT	4
	Other related	/
	Not corresponding	Not applicable
Other relevant information		The national target 4 in NBSAP BiH is directly related to Aichi Target 4. According to Aichi Target 4, governments at all levels in the Parties to the CBD should undertake steps to adopt or implement sustainable production and consumption plans, keeping the effects of the use of natural resources within ecologically safe limits. These activities should be implemented by business entities and stakeholders at all levels in the Parties. Aichi Target 4 is particularly important because many Parties to the CBD in their Fourth National Reports referred to unsustainable utilization and overexploitation of resources as a threat to biological diversity. In their Fifth National Reports the Parties reported that there has been no major progress in preventing negative impacts of utilization of natural resources, especially water.
Relevant websites, web links, and files		NBSAP BiH http://www.fzofbih.org.ba/userfiles/file/Strategija%20zastite%20okolisa%20FBiH.pdf http://www.nasljedje.org/prirodno-nasljedje/108-strategija-zastite-prirode-republike-srpske Federal Ministry of Agriculture, Water Management and Forestry Ministry of Agriculture, Forestry and Water Management of RS

National target		5. By 2020, prepare and implement sustainable management programs for all fishing waters (fisheries basis)
Rationale for the target		<p>Fisheries basis entails professional studies on the management of a specific fishing area. This target was defined because of the need for collection of diverse and extensive data on fishing waters to enable adequate assessment of the state of environment and to propose measures accordingly. Fisheries basis include hydrological, biological, physical, chemical and other characteristics of fishing waters, the composition of fishing stock disaggregated by species, the manner and possibility of natural and artificial breeding of fish species, measures for breeding and protection of fish and fishing and catching animals fish eat, measures to protect hatcheries, fish and fish roe in alluvial regions, measures to detect and prevent pollutants of fishing waters, restocking program, fish-guardian service and other data. Fisheries basis also provides for measures for the protection and sustainable management of fish stocks, including measures for breeding, protection and fishing of fish and animals fish eat, measures for the protection of hatcheries and measures to determine and prevent pollutants of fishing areas.</p> <p>Fisheries basis prescribes conditions for sport fishing and fishing tourism in fishing areas and the economic basis for implementation of fisheries basis.</p> <p>The state of water ecosystems is determined using the data from the fisheries basis on the physical, chemical and biological quality of water, the composition and number of species, prevalence and number of endemic and native species and prevalence of invasive species in water ecosystems. The presence or absence of certain species of fish and derogations from the characteristic structure of biocenosis of the water environment may be a good indicator of the extent of pollution.</p>
Level of application		Subnational- entity and local level
Relevance of the national targets to ABT	Main related ABT	6
	Other related	4, 7
	Not corresponding	Not applicable

<p>Other relevant information</p>	<p>This target, defined by the team of experts and other participants in the preparation of NBSAP BiH, is also provided for in the relevant laws in BiH, which increases the chances of achieving this target. Preparation of fisheries basis in BiH is regulated by the Law on Freshwater Fishing in the FBiH, the Law on Fishing of the RS and the Law on Freshwater Fishing of the Brčko District. These laws define the catchment area and the procedure for the preparation of the fisheries basis. In line with the laws applicable in the FBiH and the BD, the fisheries basis is permanently valid and must be revised every five years in the FBiH and every six years in the BD as of the confirmation of the fisheries basis. In RS, the fisheries bases are adopted for the period of 20 years. In addition to the mentioned laws in the FBiH, the laws on freshwater fishing were adopted in two cantons as well, in Herzegovina-Neretva Canton and Canton 10. Herzegovina-Neretva Canton has also adopted the Law on Marine Fishing in the Herzegovina-Neretva Canton. BiH, or more precisely Federation of BiH, has coastline and marine ichthyofauna.</p> <p>Besides the fisheries basis, other relevant documents in the context of planning and management of certain water ecosystems include monitoring studies detailing physical, chemical and biological quality of water. Monitoring of the quality of water courses during certain periods also include ichthyoidal studies, in addition to water quality monitoring.</p>
<p>Relevant websites, web links, and files</p>	<p>NBSAP BiH Law on Fishing (Official Gazette of Republika Srpska, No. 72/12) Law on Freshwater Fishing in the FBiH (Official Gazette of the Federation of BiH, No. 64/04) Law on Freshwater Fishing (Official Gazette of Brčko District BiH, No. 35/05) Law on Amendments of the Law on Freshwater Fishing (Official Gazette of Brčko District BiH, No. 19/07) Law on Freshwater Fishing of Herzegovina-Neretva Canton (Official Gazette of Herzegovina-Neretva Canton, No. 2/06) Annual Report in Field of Agriculture, Nutrition and Rural Development BiH for 2017 Dekić R., Friščić J., Manojlović M., Lolić S., Golub D. (2017): Ichthyofaunal diversity of the Drinjača catchment area. The Proceedings of 7th International Symposium of Ecologists. Sutomore 77-81. Federal Ministry of Agriculture, Water Management and Forestry Ministry of Agriculture, Forestry and Water Management of RS</p>
<p>National target</p>	<p>6. By 2019, prepare and implement strategies for development of aquaculture and ranching of commercially significant fish species (for water ecosystems that are not habitats for rare and endemic species)</p>
<p>Rationale for the target</p>	<p>Aquaculture is a food production activity currently on the rise. Strategies for development of aquaculture and ranching of commercially significant fish species contribute to the enhancement of production of fish and ranching of commercially significant fish. In BiH there are many water resources (water courses, natural lakes and artificial accumulations) with a significant hydropotential. There are also many hatcheries and nurseries in different areas of BiH with different capacities and annual production. In the context of development of fisheries and in light of the tradition of fish breeding and fish farm management, these strategies are meant to improve the results and increased production of fish.</p> <p>Fish farms may be salmonid, cyprinid and marine, depending on their location and the species of fish.</p> <p>Pursuant to the Law on Fishing of the RS, the water user is obliged not later than six months from the date of signing the contract on the use of the fishing zone to adopt a fishing zone management program for the period of use of the fishing zone granted to him. This management program, among other things, must contain a restocking plan. Management programs are adopted for each year. The Law on Freshwater Fishing in the FBiH prescribes that the water user is obliged every year to restock the fishing area in line with the annual program.</p> <p>As already mentioned, ranching of commercially significant fish is foreseen primarily in the management plans of fishing societies for specific waters. These plans, among other things, provide for a ranching plan.</p>

Level of application		Subnational – entity and local level
Relevance of the national targets to ABT	Main related ABT	5, 6
	Other related	7
	Not corresponding	Not applicable
Other relevant information		This target is linked to the previous target considering that the preparation of strategy for the development of aquaculture and ranching of commercially significant fish requires data from the fisheries basis as the main document. The laws foresee that ranching may be done with healthy fish, fertilised fish eggs and juvenile fish. Certain sportfishing societies manage special hatcheries and produce juvenile fish. Power utilities may take part in the fish hatchery together with sport fishing societies, depending on who is the water user.
Relevant websites, web links, and files		NBSAP BiH Fishery and Aquaculture in BiH Annual Report on Aquaculture, 2017. Agency for Statistics BiH Fishery and Aquaculture Sector in BiH Pavličević, J., Savić, N., Glamuzina, B. (2014): Aquaculture and Fishery – situation and perspectives in BiH Draft Plan of Ranching of River Una, Fishery Area ibolovno 4 Fishery Zone 4.2 for 2016 Federal Ministry of Agriculture, Water Management and Forestry Ministry of Agriculture, Forestry and Water Management of RS

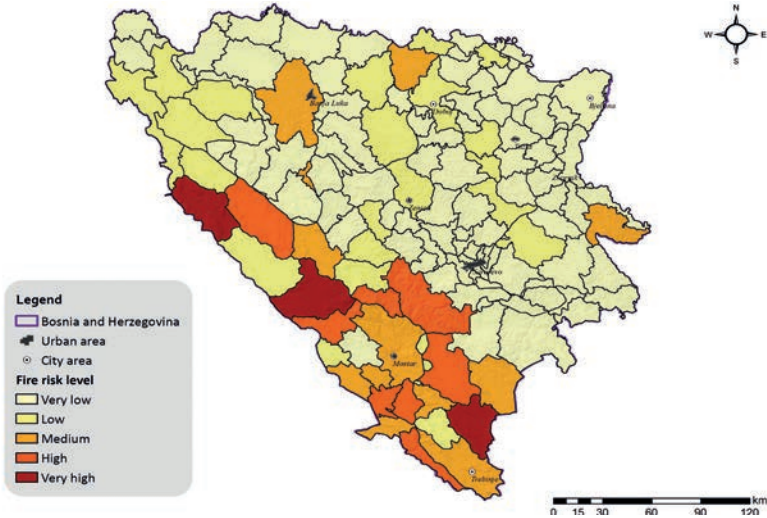
National target	7. By 2020, certify all state-owned forests in BiH
Rationale for the target	<p>BiH is deemed to be one of the European countries that are extremely rich in forest resources in terms of their distribution and biological diversity. Around 53% of the total land area in BiH is covered by forests which provide multiple benefits for the community. There has been increased degradation of forest resources in terms of uncontrolled logging, pest calamities and forest fires, all of which affects the reduction potential of forest components in terms of providing long-term benefits for the society, especially for biological diversity conservation. Five types of forest damage have been identified in BiH: the human factor, damage from insects, damage from natural disasters, damage by plant diseases and fire damage. In addition, the significant problem in FBiH forestry is the mine contamination of forests and forest land. A significant proportion of the economically highly valuable forests is among these forests, and they are for longer periods subject to non-management. The figure below shows a map with levels of fire risk.</p>  <p>Legend</p> <ul style="list-style-type: none"> Bosnia and Herzegovina Urban area City area Fire risk level <ul style="list-style-type: none"> Very low Low Medium High Very high <p>Scale: 0 15 30 60 90 120 km</p>

Figure 1: Levels of fire risk in BiH

		Forests, therefore, need to be managed sustainably, which implies necessary steps to prevent damage and its negative impact. One of the ways to ensure sustainable forest management is through FSC certification. Certification of forests in the FBiH and the RS is carried out in accordance with the FSC certification scheme. The objectives of forest certification are: (i) prevention of potentially harmful impact that may cause reduction of forested areas; (ii) improved forest management; (iii) unimpeded and efficient access to global market; (iv) improved state of natural environment; (v) enhanced economic and social development. Certificates are valid for 5 years. Recertification or certification renewal is carried out upon the expiry of the five-year period. Certification ensures promotion of ecologically acceptable, socially useful and economically sound forest management, which is the rationale for this target.
Level of application		Subnational- entity and local level
Relevance of the national targets to ABT	Main related ABT	7
	Other related	2, 10, 11
	Not corresponding	Not applicable
Other relevant information		<p>This national target arises from Aichi Target 7, according to which forests should be managed sustainably by 2020, ensuring conservation of biodiversity. One of the ways to achieve this national target is through FSC certification, which is already implemented in the forest management areas in BiH. However, not all forests are covered with the FSC certificate or managed sustainably. These forests need to be certified, including all forested areas that have not been certified before.</p> <p>Forest Stewardship Council (FSC) is an independent, non-governmental and non-profit organization established with an aim of promoting responsible management of forests in the world. One of the responsibilities of the FSC is adoption of standards to ensure promotion of ecologically responsible, socially useful and economically sustainable management of forest resources.</p>
Relevant websites, web links, and files		<p>NBSAP BiH</p> <p>https://ic.fsc.org/en</p> <p>Federal Ministry of Agriculture, Water Management and Forestry</p> <p>Ministry of Agriculture, Forestry and Water Management of RS</p>

National target	8. By 2020, establish and develop a system for sustainable agricultural production, especially organic and integral production, and conservation and breeding of indigenous species
Rationale for the target	<p>BiH is rich with natural resources, but the demand for food may still cause a negative impact on biodiversity and ecosystem services. According to the Annual Report on Agriculture, Food and Rural Development of BiH for 2017, which quotes the data from the register of farms and the register of clients maintained by the entity ministries and the Department for Agriculture, Forestry and Water Management of the BD BiH, the total number of farms entered in the register in 2017 was 114,576. The number of registered farms has increased in 2017 by 11,883 farms or 12% in comparison to the previous year, and by 21% in comparison to the number of registered farms in 2015. The size of agricultural land registered as farms in 2017 was 327,507 hectares.</p> <p>Agricultural production is a major sector in BiH that may cause negative impacts on biodiversity and is one of the key pressures on biodiversity components. Organic production could facilitate a greater presence of autochthonous species, and consequently their sustainable use. Also, a more efficient solution is the introduction of ecosystem measures, such as agroecology, or agriculture on small farms in a wider area based on agroecological approach. In BiH, organic</p>

			<p>production is mostly present in the plant sector, production of honey, gathering of medicinal plants, forest fruits and mushrooms and distillation of essential oils. Organic producers must adhere to strict regulations regulating organic production and their final product must receive a certificate proving that it was produced in compliance with those regulations. Even though BiH is rich with natural resources suitable for expansion of organic production and other forms of sustainable production, there are not many organic producers and quantities of produced organic food are small. It can be concluded that the system of sustainable agriculture in BiH is still underdeveloped, which is the rationale for this target.</p> <p>As regards the conservation of indigenous species it is important to emphasize that the Institute for Genetic Resources, of the University of Banja Luka, with its two Centers - Center for Biodiversity and the Center for Sustainable Use of Genetic Resources, is active in the activities of conservation of autochthonous species.</p>
Level of application			National/federal
Relevance of the national targets to ABT	Main related ABT	8	
	Other related	2, 3, 13, 18, 12, 19	
	Not corresponding	Not applicable	
Other relevant information			<p>In the course of preparation of NBSAP BiH, the stakeholders have identified the need for specific mechanisms that will contribute to the promotion and introduction of the system of sustainable agricultural production to match those in the developed countries. This national target is related to Aichi Target 7, according to which agricultural areas should be managed sustainably by 2020, ensuring conservation of biodiversity. In BiH, agriculture is the main activity in rural areas, creating pressure on biodiversity. The analyses carried out for the purpose of NBSAP BiH revealed a number of problems that BiH is facing in the agricultural sector, primarily related to the use of old equipment, inadequate practices of sustainable development in agriculture, lack of agro-environmental data (for example, use and composition of fertilisers, pesticides, nitrogen ratio, ecological efficiency, energy consumption, etc.) which is why the actual impact of agriculture on environment, including biodiversity, is hard to estimate. Sustainable agricultural production can help minimize the negative impact and resolve problems identified in NBSAP BiH.</p>
Relevant websites, web links, and files			<p>NBSAP BiH</p> <p>Institute for Genetic Resources of RS</p> <p>Annual Report on Agriculture, Food and Rural Development of Bosnia and Herzegovina for 2017</p> <p>Strategic Plan of Rural Development of BiH 2018 -2021, Framework Document</p> <p>Federal Ministry of Agriculture, Water Management and Forestry</p> <p>Ministry of Agriculture, Forestry and Water Management of RS</p>

National Target	9. By 2020, establish a system for treatment of industrial and utility wastewaters and monitoring of pesticide and fertilizer consumption
Rationale for the national target	<p>The setting of this target and the timeframe for its implementation through the set of defined measures is a strong incentive for protection of important components of biodiversity. Developing urbanisation, industry and intensive agriculture, as well as the rise in the standard of living has led to environmental pollution, with water pollution as one of its most serious forms. Water consumption for various purposes has been increasing continuously, which results in greater amounts of wastewater. In terms of water organic pollution, the most important polluters are household sewage waste water and waste water from various sectors, such as agriculture,</p>

			industry, etc. In BiH, the amounts of non-treated waste water are higher than the amounts of treated wastewater, because many towns and settlements do not have waste water treatment facilities, which would achieve permissible parameters for discharge of treated water into watercourses. The second section of this target pertains to excessive presence of nutrients in soil, which most often results from the use of mineral fertilizers. In BiH there are no data available on the gross nutrient balance and the nitrogen balance in the soil (e.g. kg of N per ha land). Data on the use of pesticides and fertilizers are also not available. For these reasons, the NBSAP BiH defined this target, in order to reduce negative impact on water and soil, which would in turn reduce the pressure on biodiversity and ecosystems in these segments of the environment.
Level of application			Subnational – entity/local
Relevance of the national targets to ABT	Main related ABT	8	
	Other related	7	
	No corresponding	Not applicable	
Other relevant information			This national target was set, in order to facilitate BiH's achievement of the Aichi target 8 to reduce pollution and excessive presence of nutrients harmful to biological diversity by 2020. It is important to note that within their Fourth National Reports, almost all CBD Parties reported that pollution of media (water, soil and air) represents a threat to biological diversity. In their Fifth National Reports, the Parties reported deviation from the target set. Excessive quantities of nutrients (substances that appear in the environment as a result of the use of mineral fertilizers, detergents, etc.), primarily nitrogen (N) and phosphorus (P), is a primary and increasing cause of biological diversity loss and ecosystem dysfunction. Aichi Target 8 specifically points out that an excess of nutrients can lead to eutrophication, which is particularly harmful to aquatic ecosystems. Eutrophication may occur naturally (a slow process) or through human activities (an intensive and very fast process) due to improper discharge of nutrients in waste waters, straining of agricultural areas with massive use of fertilizers, deforestation of river basins and others. All of these can disrupt the ecological balance with very adverse consequences for biological diversity and the functioning of the ecosystem. Since the Aichi Target 8 does not require the elimination of all contaminants, but it does require that they be reduced to a level that does not exert a negative effect on biological diversity and ecosystems, the national target 9 foresees increased numbers of waste water treatment facilities and the monitoring of the use of fertilizers and pesticides.
Relevant websites, web links, and files			NBSAP BiH Federal Ministry of Agriculture, Water Management and Forestry Ministry of Agriculture, Forestry and Water Management of RS

National Target	10. By 2018, prepare strategies for invasive species
Rationale for the national target	This target was set primarily due to potential negative effects of invasive species, both on native species and on human health. Invasive species are plant, animal and fungi species introduced to an area from other phyto and zoogeographical area. Characterized by fast spreading and reproduction, they suppress native species and take over available ecological niches. The process of spreading of invasive species is most commonly associated with the various human activities and is one of the major factors threatening biological diversity, immediately after habitat destruction. In addition to the negative impact on biological diversity, these types of negative effects can manifest itself even towards human life and health. Assessment of invasive potential of a particular taxon is a very complex endeavour, requiring knowledge of the ecosystem where the species has been introduced and the biological characteristics of the introduced taxon. Invasive species usually have a great

		reproductive potential, strong competitive ability and adaptability, which allows them to make more progress in the new environment as compared to the native taxa. Therefore, the preparation and development of the strategy and identification of the invasive species is a highly important aspect of control over the spread of these species. The lists of invasive species are contained in various documents dealing with this issue, such as preliminary reports and strategies. No strategies for invasive species have been adopted. Some published scientific papers contain parts pertaining to specific categories of invasive species.
Level of application		Subnational – Entity
Relevance of the national targets to ABT	Main related ABT	9
	Other related	1, 5
	No corresponding	Not applicable
Other relevant information		<p>This national target relies on the Aichi target 9 to identify and prioritize invasive alien species and pathways, control or eradicate priority species, and introduce measures to manage pathways to prevent their introduction and establishment by 2020.</p> <p>In coordination with other stakeholders involved in the drafting of the NBSAP BiH, the expert team considered the achievement of this target realistic, since the list of invasive species present, and the segmenting of the data on distribution and size of these populations are presented as results of various research. Invasive species can be encountered in almost all biological categories. The majority of data covers invasive plant and animal species. Invasive species are one of the factors undermining biodiversity, and the development of strategies informed by the current data and new research are extremely important for the preservation of biodiversity.</p>
Relevant websites, web links, and files		<p>NBSAP BiH</p> <p>Inventory and Geographical Interpretation of Invasive Species in FBiH</p> <p>Decision on Measures to Suppress and Destroy Weed Plant Ambrosia (Official Gazette of Republika Srpska, No. 81/07)</p> <p>Semir Maslo (2016): Preliminary List of Invasive Alien Plant Species (IAS) in Bosnia and Herzegovina. <i>Herbologia</i>, Vol. 16, No. 1, 2016.</p> <p>Sjeničić J., Gašić B., Pašić J., Đurić G. 2015. Fauna of the Protected Area “University City” in Banja Luka and Opportunities for Biocontrol of Pest Species, <i>AGRO-ZNANJE</i>, Vol. 16, No. 1, pp. 89-106.</p> <p>Babić Gordana, Trkulja, V. (2017): Distribution mapping of selected invasive weed species in north western area of Republika Srpska (Bosnia and Herzegovina). VIII International Scientific Agriculture Symposium “Agrosym 2017”, Book of Proceedings: 1524–1530.</p> <p>Babić, G., Trkulja, V. (2015): Occurrence and distribution mapping of invasive weed species <i>Helianthus tuberosus</i> L. in north western area of Republika Srpska. Book of Proceedings of the VI International Scientific Agriculture Symposium “Agrosym 2015”; 15-18 October, 2015; Jahorina, Bosnia and Herzegovina, pp. 1248–1255.</p> <p>Trkulja, V., Babić Gordana (2012): The spread of the invasive weed species <i>Amorpha fruticosa</i> L. in the Republika Srpska. IX Symposium on Plant Protection in Bosnia and Herzegovina, Teslić. Book of summaries: 80-81.</p> <p>Spreading of invasive species to higher altitudes</p> <p>Law on Nature Protection of FBiH (Official Gazette of the Federation of BiH, No. 66/13)</p> <p>Law on Nature Protection of RS (Official Gazette of Republika Srpska, No. 20/14)</p> <p>Federal Ministry of Agriculture, Water Management and Forestry</p> <p>Ministry of Agriculture, Forestry and Water Management of RS</p>

National Target		11. By 2020, map and urgently protect the specific biological diversity of BiH (canyon, mountain, alpine and wetland ecosystems, karst fields and alluvial plains) in compliance with the applicable spatial planning documents
Rationale for the national target		<p>Geographic location and climate have created diverse landscape and natural sights, changing harmoniously from the vast lowlands and hills, over the mountain peaks and Dinaric mountain range all the way to the Adriatic Sea. All of this implies enormous diversity, specific biodiversities, and the diversity of natural sights and natural phenomena. The share of protected areas in BiH changed over time. The protection procedures commenced in 1954. At the time, the plan was to protect 15.03% of BiH territory. However, by 1990, only 0.55% of the territory was protected (253 areas, or 28,127 ha) (NEAP, 2003). Since the competence in the field of nature protection in BiH is regulated at the entity level (RS, FBiH and BD), the main legislation regulating nature protection, including the categories of protected areas and the procedure of protection, is the Law on Nature Protection of the FBiH (Official Gazette of the Federation of BiH, No. 66/13), the Law on Nature Protection of the RS (Official Gazette of Republika Srpska, No. 20/14) and the Law on Nature Protection of the BD (Official Gazette of Brčko District of BiH, No. 24/04, 1/05, 19/07, and 9/09). The existing protected areas do not fully implement the system of protection, monitoring and sustainable use. The reason for this is the lack of the budgetary allocations, insufficient capacities (in terms of organizational and human capacities), the lack of management plans, failure to establish the institution responsible for the management of the protected areas, and the like. The area of protected areas for the whole country is 2.28%, 3.24% for FBiH and 1.30% for RS. However, this is still scarce compared to the 17% foreseen in the Strategic Plan for Biodiversity 2011-2020. Accordingly, the NBSAP BiH defined this target to protect specific biodiversity of BiH in the percentage set forth in the Strategic Plan.</p> <p>Based on the Spatial Plan of Republika Srpska by 2025, the basic concept of protection of natural resources and biodiversity is based on increasing the total area under protection, their consideration within the ecological network of Republika Srpska, identifying the area for European ecological networks NATURA 2000 and EMERALD, and building an efficient system for the management of areas covered by these networks.</p>
Level of application		Subnational - Entity
Relevance of the national targets to ABT	Main related ABT	11
	Other related	12
	No corresponding	Not applicable
Other relevant information		<p>The implementation of this target or the establishment of additional protected areas is carried out in line with the aforementioned legal framework, which provides that together with the establishment of the protected area a public company/institution should be formed to manage the newly established protected area. Areas are managed in line with the provisions of the aforementioned laws, which provide for a number of measures that should be implemented and monitored. During the implementation of the national target 11, efforts should be made to manage the protected areas adequately and legally. In addition, this national target relies on the Aichi target 11 which foresees that by 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effective and equitable management. Since only 1.96% of BiH area was protected at the time of the development of the BiH NBSAP, the target has not included the percentage of area to be protected by 2020.</p>
Relevant websites, web links, and files		<p>RS Institute for the Protection of Cultural, Historical and Natural Heritage Federal Ministry of Environment and Tourism NBSAP BiH</p>

National Target		12. By 2020, complete the inventory of: (i) flora, fauna and fungi in BiH; (ii) ecosystems and types of habitats in BiH
Rationale for the national target		<p>BiH is characteristic for its significant wealth and diversity of species. The flora, fauna and fungi in BiH are among the most diverse groups all over Europe, and a high level of endemic and relic qualities gives it significance of the global biological diversity level. Similarly, in this area there are various types of habitats, from marine to high mountainous, as well as various types of ecosystems. In order to form a complete picture of types of habitats, ecosystems and the prevalence of flora, fauna and fungi, a complete inventory is required.</p> <p>Progress in achieving this goal can be considered activities on the establishment of the information system of nature protection in FBiH and RS. The web application of the information system and the basic database - endemic species - have been established. The aforementioned web application is in function in the RS, while in FBiH it is not yet operational. Another significant contribution in inventorying is the research conducted for the purpose of protection of a certain area, since the procedure of protection is preceded by flora, fauna, fungi and ecosystem analyses, and other research in a given area. Inventories of certain groups of organisms can be found in the publications of scientists researching this field. These include, for example, fresh water fish in BiH, mammal biodiversity in BiH, etc., or references to research conducted in a specific area. It should be noted that the degree to which biodiversity is explored varies between different groups of organisms, so that there are more data for certain groups of organisms.</p>
Level of application		Subnational - entity
Relevance of the national targets to ABT	Main related ABT	12
	Other related	5, 8, 13
	No corresponding	Not applicable
Other relevant information		<p>This target is directly related to the Aichi target 12 according to which the extinction of known threatened species has to be prevented and their conservation status has to be improved. In order to achieve this Aichi target, an inventory of all species and ecosystems in BiH should be made. Current data on flora, fauna, fungi, ecosystems and habitat inventories are incomplete, and the data varies significantly depending on the categories of organisms at issue. There is more data on vertebrates and vascular plants, than for invertebrates. In case of invertebrates, there is more data about some of the groups. Activities on the establishment of nature protection information system, researches at local level and cantonal action plans constitute progress towards this target.</p>
Relevant websites, web links, and files		<p>NBSAP BiH</p> <p>Institute for Genetic Resources of RS</p> <p>Inventory and evaluation of plant, animal, forest and aquatic genetic resources in the area of Banja Luka - the first phase between the City of Banja Luka and the University of Banja Luka (2018, study)</p> <p>Petković, M. (2015). Identification and valorization of existing autochthonous animal genetic resources in Bosnia and Herzegovina. Master work. Banja Luka: Faculty of Natural Sciences and Mathematics, University of Banja Luka</p> <p>Maletić Zoran, Stojanović Mladen, Ćirković Nevena, Antić Marina, Kajkut Zeljko, Mirela. (2018). Analysis of the state of Bosnian Mountain Horse in stud farm Borike. <i>Agroknowledge</i> 19 (1): 1-7</p> <p>Sjeničić J., Gašić B., Pašić J., Đurić G. 2015. Fauna of the Protected Area "University City" in Banja Luka and Opportunities for Biocontrol of Pest Species, <i>Agroznanje</i>, Vol. 16, No. 1, pp. 89-106.</p> <p>Todorović V., Vasić M., Vasić J., Zarić D., Gvozdanović-Varga J., Tepić A. (2012): Results of inventorying and collecting of high and low brown beans and string beans in Republika Srpska. <i>Proceedings of the XVII Biotechnology Biotechnology Consultation with International Participation, Čačak</i>, Vol. 17 (19), 62-66.</p>

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Law on National Park "Drina" (Official Gazette of Republika Srpska, No. 63/17)
Expert explanation for designation of Protected Landscape "Bentbaša" /Study
RS Institute for the Protection of Cultural, Historical and Natural Heritage
Federal Ministry of Environment and Tourism

National target		13. By 2020, develop the red books of plants, animals and fungi, and adopt action plans for protection of the most endangered taxa
Rationale for the national target		This target is defined as the need to protect endangered taxa and adopt plans proposing measures for their protection. During the development of the BiH NBSAP, the issue of endangered taxa was identified, and a separate target was defined in that respect. Changing environmental factors, disturbance and degradation of habitats, climate change, etc. are some of the causes of decreasing numbers and endangerment of certain taxa. Field research and defining criteria for appropriate categorization is the starting framework for the development of red books and adoption of action plans. In that regard, species under certain level of threat should have priority for research and proposal for protection. Official documents in the field include the Red List of Protected Species of Flora and Fauna of the RS and the Red List of Endangered Plants, Animals and Fungi in the Federation of BiH. Some related activities are ongoing as part of certain projects. The development of red lists and red books, and identification of categories of endangerment for specific species requires extensive field and desk research, as well as the setting of criteria for endangerment categorization of a particular specie.
Level of application		Subnational - entity
Relevance of the national targets to ABT	Main related ABT	12
	Other related	8, 9, 13
	No corresponding	Not applicable
Other relevant information		Development of red books is one of the prerequisites for the categorization of taxa into certain categories and the implementation of adequate protection measures. Documents contributing to the implementation of this target are the Red List of Protected Species of Flora and Fauna in Republika Srpska and the Red List of Endangered Plants, Animals and Fungi in the Federation of BiH. In addition, researches publishing their papers proposing inclusion of certain species in the red list, make a significant contribution. This target is related to the Aichi target 12 dealing with endangered species.

	Under the impact of various factors (e.g. conversion of habitats, climate change, invasive species, pollution, excessive exploitation, eutrophication), the survival of many plant and animal species is endangered today, many are threatened by extinction, and a large number have disappeared for good. A very important step in the protection of endangered species is the formation and development of red lists and red books.
Relevant websites, web links, and files	<p>Law on Nature Protection of RS (Official Gazette of Republika Srpska, No. 20/14)</p> <p>Law on Nature Protection of BD BiH (Official Gazette of Brčko District BiH, No. 24/04, 01/05 and 19/07)</p> <p>Decree on Red List of Protected Species of Flora and Fauna of the RS (Official Gazette of Republika Srpska, No. 142/12)</p> <p>Red list of wild species and subspecies of animals, plants and fungi (Official Gazette of the Federation of BiH, No. 7/14)</p> <p>Lelo, S., Zimić, A., & Šunje, E. (2016). Red list of reptiles (Chordata, Vertebrata, Reptilia) of the Federation of Bosnia and Herzegovina. Annexes to Fauna of BiH, 12, 31-42.</p> <p>Lelo, S. (2015). Red list of dung beetles (Coleoptera: Scarabaeoidea) of the Federation of Bosnia and Herzegovina. Annexes to Fauna of BiH, 11, 13-28.</p> <p>Gajić, A., Kahrić, A., & Lelo, S. (2017). Preliminary proposal of the Red list of the elasmobranchs, Classis Elasmobranchii Bonaparte, 1838, in Bosnia and Herzegovina. Annexes to Fauna of BiH, 13, 21-34.</p>

National target	14. By 2020, prepare and implement <i>in situ</i> and <i>ex situ</i> programs for protection of domestic varieties, breeds and their wild relatives, including their inventory and establishment of indigenoussness parameters	
Rationale for the national target	<p>Agrobiodiversity (agricultural biodiversity) is a component of total biodiversity and as such an important and cultural heritage of BiH. In that regard, agrobiodiversity is reflected in indigenous plant varieties and animal breeds, as well as characteristic natural and cultivated landscapes (e.g. meadows and mountain pastures). Given the modernization of agricultural production, the rural to urban migration trend, and other reasons, some indigenous genetic resources have been completely lost, while others are under threat of extinction. Due to the above, the BiH NBSAP defined this target to try and stop or mitigate such negative trends through well designed <i>in situ</i> and <i>ex situ</i> programs for protection of plant and animal indigenous genetic resources.</p> <p>Gene banks were established at the level of the entities in BiH, at the relevant institutions dealing with genetic resources. In RS, the plant gene bank is with the Genetic Resources Institute of the University of Banja Luka. In FBiH, the plant gene bank is with the Faculty of Agriculture and Food Sciences of the University of Sarajevo. Additionally, RS deposited reserve copies of their seeds at the Svalbard Global Seed Vault (Norway).</p>	
Level of application	Subnational – entity/Brčko District BiH	
Relevance of the national targets to ABT	Main related ABT	13, 16, 18
	Other related	1, 2, 3, 7, 14, 20
	No corresponding	Not applicable
Other relevant information	This target directly relies on the Aichi target 13 pertaining to genetic diversity, as well as the Aichi target 16 dealing with the Nagoya Protocol, or access to genetic resources and fair and equitable sharing of benefits arising from their utilization, which implies the use of genetic resources only under jointly agreed conditions between two countries, based on previously established information and	

	<p>agreements. This target is also directly related to the Aichi target 18, dealing with the issue of traditional knowledge, innovation and practices, which in BiH largely pertain to the production of food originating from the autochthonous plant varieties and animal breeds. Such knowledge is primarily related to rural population where depopulation threatens the preservation of indigenous genetic resources and traditional knowledge and practices regarding the utilization of those resources.</p> <p>There is also an obvious connection with other Aichi targets through the raising of public awareness (Aichi 1), mainstreaming of preservation of indigenous genetic resources in sectoral and intersectoral development strategies (Aichi 2), favouring sustainable agriculture, aquaculture and forestry (Aichi 7) and the importance of preserving ecosystems providing essential services (Aichi 14). The implementation of the Aichi target 20 (pertaining to finances) will have clear and direct implications on the achievability of all 19 remaining Aichi targets, including this national target.</p>
Relevant websites, web links, and files	<p>NBSAP BiH Institute for Genetic Resources of RS Faculty of Agriculture and Food Sciences Agrobiodiversity in Southeast Europe -Assessment and Policy Recommendations, 2018 Agrobiodiversity in Southeast Europe -Assessment and Policy Recommendations, Report – Republika Srpska, 2018 Agrobiodiversity in Southeast Europe -Assessment and Policy Recommendations, Report - entity FBiH, 2018 Antić, M., Đurić, G., Kajkut Zeljković, M., Bosančić, B. (2016): Genetic Diversity of Wild Apples and Pears in the Forest Park of Starčevica, Banja Luka, Bosnia and Herzegovina. <i>Agriculturae Conspectus Scientificus</i>, 81 (4), 205-211. Bosančić, B. (2009). Domestication and morphological variation in wild and cultivated populations of Cornelian cherry (<i>Cornus mas</i> L.) in the area of Drvar Valley, Bosnia and Herzegovina. Master work. Uppsala: SLU, Uppsala University Đurić, G., Tomić, L., Radun, M., Pećanac, D. (2009). Conservation and sustainable utilization of plant genetic resources in Republika Srpska. Book of papers "Safety and health at work and environmental protection". Scientific - professional conference with international participation, 24 - 26 Jun 2009, Banja Luka. Institute of Protection, Ecology and Informatics, Banja Luka, 81 - 93. Maletić Zoran, Stojanović Mladen, Ćirković Nevena, Antić Marina, Kajkut Zeljković Mirela. (2018). Analysis of the state of Bosnian Mountain Horse in stud farm Borike. <i>Agroknowledge</i> 19 (1): 1-7. Todorović, V., Vasić, M., Zarić, D., Čičić, D., Davidović, M. (2011). Possibility of using the genetic resources of eastern Herzegovina in organic farming. <i>Proceedings 22nd International Symposium "Food safety production"</i>, Trebinje, BiH, University of Novi Sad, Faculty of Agriculture, 281-283. Federal Ministry of Agriculture, Water Management and Forestry Ministry of Agriculture, Forestry and Water Management of RS</p>
National Target	<p>15. By 2020, map and evaluate the benefits from forest, agricultural and water ecosystems, and strengthen the environmental permit mechanism and supervisory inspection within protected area spaces, areas of special interest and areas from the Natura 2000 ecological network plan</p>
Rationale for the national target	<p>Although the nature of BiH consists of different types of ecosystems in spatial and syngenetic continuity, three groups of ecosystems with essential services have been singled out:</p> <ul style="list-style-type: none"> ▪ <i>Forest ecosystems</i> taking up the area of around 27,000 km² or around 53% of the territory of BiH. From the aspect of production of timber, as one of the first essential services to the population of BiH, forest ecosystems can be roughly differentiated into highly productive forests and low productive forests. From the aspect of protective functions of forests as special ecosystem services, the following

		<p>have an essential role: alpine forests and riparian forests. The latter are under severe pressure due to urbanization and road construction along rivers. Other, and no less important, benefits of forests are reduced flooding risks, the absorption of CO₂, climate regulation, air purification, regulation of soil erosion.</p> <ul style="list-style-type: none"> ▪ <i>Freshwater ecosystems</i> or ecosystems of rivers, mountain streams, glaciers, lake ecosystems and wetland habitats, where moorland ecosystems are particularly valuable, as well as marine ecosystems. Some of these ecosystems are threatened by negative effects of hydropower plants, which is the cause of one of the leading conflicts in sustainable water management. ▪ <i>Agricultural ecosystems</i> in BiH are very important for food production and ecosystem services derived from agri-biological diversity. Food production in agri-biological systems is an ecosystem service whose potential is underused, which indicates the need for serious and organized restoration of neglected agri-ecosystems. Of the total area of BiH, around 2,572 million ha or 50.3% is suitable for agriculture. Arable land takes up 1,009,000 ha or 20.0% of total land, of which 478,000 ha or 47% is currently uncultivated. <p>A large portion of forest and water ecosystems in BiH has still maintained primary, natural structure. Many of them are in the area included in the Natura 2000 plan, or in the areas of importance for the preservation of biodiversity. Ecosystem services in these areas have not been evaluated or mapped. Therefore, these areas should be managed more carefully. On the other hand, ecosystem services of agricultural ecosystems are not sufficiently used to support the development of sustainable agriculture. For these reasons, it was decided to include this national target in the NBSAP BiH.</p>
Level of application		National/federal
Relevance of the national targets to ABT	Main related ABT	14
	Other related	5, 11
	No corresponding	Not applicable
Other relevant information		The defining of this national target was in focus of the 4 consultative meetings with stakeholders during the development of the NBSAP BiH. This target reflects the degree of intersectoral coordination in managing biodiversity, which is a highly complex and demanding process, given the complex administration structure in BiH. Statistical indicators show the importance and condition of ecosystem services of forest, freshwater and agricultural ecosystems.
Relevant websites, web links, and files		<p>Biodiversity and ecosystem services of Bosnia and Herzegovina (2015)</p> <p>Planted areas and crops at the end of spring sowing (2018)</p> <p>Annual report in the field of agriculture, food and rural development for Bosnia and Herzegovina (2016)</p> <p>Water use by households and the manufacturing industry, from public water supply and self and other supply (2015)</p> <p>Water use by economic sector — public water supply (2015)</p> <p>Use of water by the domestic sector (households and services) — all sources (2005–15)</p> <p>Bosnia and Herzegovina, FAO sign new cooperation agreement (2018)</p> <p>Tree Cover Loss in Bosnia and Herzegovina</p> <p>Women - leaders of new practices in agriculture (2018)</p> <p>Fostering agricultural market activity, FARMA (2015)</p> <p>Federal Ministry of Agriculture, Water Management and Forestry</p> <p>Ministry of Agriculture, Forestry and Water Management of RS</p>

National target		16. By 2020, restore 30 strip-mine lakes into wetland habitats, increase the productivity of all categories of forests, preserve the existing area of flood alder and willow forests, and increase the regulated urban green areas by 20%
Rationale for the national target		<p>The degraded ecosystems in BiH are for the most part located in industrial and urban areas. The high degree of degradation occurs in the mining zones in BiH, through coal strip-mining and pit mining. In the deep craters, formed by settling down of pits or strip mines, today there is a large number of standing lakes, some of them being over 50 years old. In the majority of them the natural progradation process is taking place and wetland ecosystems are established. However, the natural process is very slow. Through restoration activities, it would be possible to achieve different types of benefits for both people and biological diversity. Restoration activities could also bring social benefits, such as jobs, development of eco-tourism, development of aquaculture, etc.</p> <p>Forest ecosystems and forest lands are under constant pressure of climate and other anthropogenic factors, and their restoration is needed.</p> <p>Certain types of forest communities are very hard to restore, including riparian willow and poplar forests. They are under great pressure due to urbanization and building of roads along rivers. Due to the lack of opportunities for their reforestation, these forests should be preserved in their current size. In urban areas, green parks are very important to better quality of living, which also suffered considerable damage during the war and post-war time, due to increasing development in urban areas. These were the reasons for adoption of this national target, the implementation of which will additionally contribute and increase the carbon capture capacities.</p>
Level of application		National/federal
Relevance of the national targets to ABT	Main related ABT	15
	Other related	/
	No corresponding	Not applicable
Other relevant information		Ecosystem restoration (which is differently called in national practices) is a part of statutory obligations in forestry, mining industry, various infrastructure developments and utilities. Due to the lack of financial and technical capacities in the country, these activities are not regularly conducted. With the impending climate change, the awareness is rising of the need for healthy ecosystems, which aligns with the need to reach Aichi target 15. Ecosystems selected in the identification of the national target were those where restoration is feasible and conducive to social and economic benefits.
Relevant websites, web links, and files		<p>Diversity of Diatoms on Mine Pit Lake Vrtlište (Kakanj, Bosnia and Herzegovina) (2015)</p> <p>Marshland vegetation of the order Phragmitetalia on shores of mine pit lakes in north-eastern Bosnia and Herzegovina (2014)</p> <p>Tuzla Valley Coal Mines, Bosnia and Herzegovina (2003)</p> <p>Notice on the situation of public green areas in the city of Sarajevo, plan and program of maintenance of public green areas (2016)</p>

National Target		17. By 2018, prepare the legislation and establish the conditions for ratification and implementation of the Nagoya Protocol
Rationale for the national target		The modern age is characterized by new forms of exploitation of genetic resources, primarily for the pharmaceutical and food industries, and also through a variety of biotechnological and scientific developments as the basis of progress for any society.

		<p>The Nagoya Protocol assumes the use of genetic resources only on mutually agreed terms between the two countries, on the basis of pre-determined information and arrangements.</p> <p>In BiH, there is insufficient control of the use and export of various products arising from the use of local genetic resources. Also, there is no sufficient control of the use and export of medicinal, vitaminized and aromatic species, as well as other ecosystem goods onto which BiH claims its sovereign rights. Over the recent years, a large number of pharmaceutical companies tried to contact the relevant institutions in our country for information on the licensing procedure for exploitation of certain plant resources.</p> <p>A rather large number of scientists from the region and other parts of the world come to our country to gather plant and animal materials for scientific research. National experts have been invited very often to assist in identification of habitats, but without any opportunity to take part in the research. Therefore, BiH has the need to regulate the issues of benefits from the utilization of local biodiversity, which could be achieved by the adoption and application of the Nagoya Protocol. The purpose of this target is to develop activities for the ratification of the Nagoya Protocol in BiH and develop supporting mechanisms for national implementation of the Protocol.</p>
Level of application		National/federal
Relevance of the national targets to ABT	Main related ABT	16
	Other related	/
	No corresponding	Not applicable
Other relevant information		<p>The importance of regulating the use of genetic resources of BiH is demonstrated by a growing number of inquiries on the applicable national procedures coming to the focal point for the Nagoya Protocol in BiH, especially from international pharmaceutical companies. One of the biggest issues is the widespread ignorance of the Protocol. Many stakeholders in the ratification process of the Nagoya Protocol in BiH have understood genetic resources to cover only agricultural cultures and breeds and condition the ratification of this Protocol with accession to other international treaties (International Treaty on Plant Genetic Resources for Food and Agriculture, for example), of which BiH is still not a member. Thus all other genetic resources and related research remain unprotected from free foreign use. This interpretation of the Protocol also transfers competence over the matter (which is an issue of high relevance in BiH) from the environment sector exclusively to the agriculture sector. Many relevant sources refer to the diversity of genetic resources of BiH, which are currently widely exploited and exported.</p>
Relevant websites, web links, and files		<p>Operational programme for plant genetic resources of FBiH (2014) https://www.agroklub.ba/hortikultura/izvoz-etericnih-ulja-u-proteklj-pet-godina-porastao-za-320-posto/40666/ Immortelle (2018) Rulebook on Growing, Exploiting, Harvesting and Selling Non-timber Forest Products (Official Gazette of the Federation of BiH, No. 66/05) Rulebook on Growing, Exploiting, Harvesting and Selling Non-timber Forest Products (Official Gazette of the Herzegovina-Neretva Canton, No. 15/14) Law on Nature Protection of FBiH (Official Gazette of the Federation of BiH, No. 66/13) Program for Conservation of Forest Genetic Resources of Republika Srpska 2013-2025 Program for Conservation of Plant Genetic Resources of Republika Srpska (Official Gazette of Republika Srpska, No. 59/08) Nikitović, J., Sjeničić, J., Đurić, G. 2015. Analyses of legislation in the field of conservation of animal genetic resources in the Republika Srpska. Agroznanje 16 (5): 645-653.</p>

	<p>Report on the Implementation of the Program for conservation of plant genetic resources in the Republika Srpska from 2009 to 2012 (Official Gazette of Republika Srpska, No., br. 102/12)</p> <p>Report on the Implementation of the Program for Conservation of Plant Genetic Resources of Republika Srpska from 2012 to 2014 (Official Gazette of Republika Srpska, No., br. 17/16)</p> <p>Đurić, G., Radun, M., Todorović, V., Kondić, D., Pećanac, D., Jovanović Cvetković, T., Mandić, D., Pašalić, N., Radić, V. (2012). Implementation of the Program for conservation of plant genetic resources in the Republika Srpska from 2009 to 2012. Agro-knowledge Journal, 13(4), 563-571.</p> <p>Federal Ministry of Environment and Tourism</p> <p>Ministry of Spatial Planning, Civil Engineering and Ecology of RS</p>
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National Target		18. By 2017, establish centres for preservation and implementation of traditional knowledge and practices, particularly in rural areas of interest
Rationale for the national target		In BiH, the long process of ethnogenesis with strong diversity of cultures have given enough time and space to develop practices that have characterized the diversity of use of natural resources on the one hand, and moderation in their consumption on the other. Traditional knowledge on the use of biological diversity is largely related to the production of food, which has proceeded in the abundant and climatically favourable conditions in BiH with the constant development of new land farming practices. These production methods have ensured enough food for the population of the BiH territory. In addition, knowledge and practices related to the use of medicinal herbs have been extremely well developed. However, due to intensive urbanisation caused by massive migration of the population of Bosnia and Herzegovina, in the modern Bosnian-Herzegovinian society, easy and fast ways to meet the needs of life are sought on a constant basis, while the traditional approach is no longer attractive. With the older generations of citizens, the old knowledge and practices disappear for good, which is a loss that the BiH society today is not aware of. Therefore, the NBSAP BiH defined this national target pertaining to the establishment of centres for preservation and implementation of traditional knowledge and practices, in order to document and preserve traditional knowledge. All of this directly reflects on the preservation of biodiversity through traditional practices.
Level of application		Subnational - Local
Relevance of the national targets to ABT	Main related ABT	18
	Other related	19
	No corresponding	not applicable
Other relevant information		This national target was set to preserve traditional knowledge and practices that have direct impact on the use of natural resources and preservation of biodiversity in BiH. Traditional knowledge and practices in BiH have been generationally transferred in BiH, and own recipes and practices were developed and preserved. Unfortunately, during the war and in post-war period a great portion of this knowledge disappeared. A big part of the rural population was displaced, and many rural areas in BiH today have only elderly population. Similar issues regarding traditional knowledge can be identified in other countries members of the Convention. That is the reason why the Aichi target 18 was introduced. It provides that the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, are respected, subject to national legislation, and fully integrated and reflected in the implementation of the Convention. National target 18 was set within the NBSAP BiH, in order to integrate the values of traditional knowledge and practices into the implementation of the Convention in BiH.

Relevant websites, web links, and files		NBSAP BiH Strategic Plan for Rural Development of BiH 2018-2021 - Framework Document http://kudmodrackimornari.com/ http://ruralnamreza.ba/?start=24 http://www.bacar-project.org/en/home-eng/ http://hdr.undp.org/sites/default/files/nhdr_bih_web.pdf
National Target		19. By 2020, strengthen the role of the scientific research and professional institutions, NGO sector and media including improvement of scientific technologies
Rationale for the national target		National target 19 was set to strengthen the institutions dealing with scientific research and the scientific technologies used by those institutions. The target was set based on the sector review provided in the NBSAP, pertaining to science and technology, taking into account in particular their application in preserving biodiversity. Based on the above, it was concluded that The position of science and scientific research organizations in BiH is best described by the fact that so far no inventory has been made of the available capacities, their legal status, staffing, financing methods or technical equipment. In the absence of such an inventory, there is no information available for scientific research activity for CBD issues in BiH. In BiH there is a number of faculties with curricula on ecology and environmental protection, or similar departments, which allows significant learning and application of knowledge on biodiversity and the environment. Some of these faculties also offer graduate programs in these fields. In addition to faculties, there are also research institutions and laboratories relevant to biodiversity issues in BiH. Even though projects are financed and implemented with these institutions, it is important to note that funds granted for such projects are not large, and that scientific technology used could be improved through cooperation with other institutions in other countries. Therefore, it is necessary to work on the strengthening of the role of scientific and research institutions in preserving biodiversity and raise public awareness.
Level of application		Subnational - entity
Relevance of the national targets to ABT	Main related ABT	19
	Other related	1
	No corresponding	Not applicable
Other relevant information		This national target relies on the Aichi target 19 according to which by 2020, knowledge, the science base and technologies relating to biodiversity, are improved, widely shared and transferred, and applied. In order to monitor the situation of biodiversity, monitoring and research is required. However, the lack of relevant information or impeded access to relevant information poses great obstacles to the implementation of the CBD targets. Actions towards the Aichi and national target 19 include encouraging new research, developing new technologies and improved monitoring of biodiversity. All of the above also includes considerable investment in technologies used to monitor the situation of the environment (and biodiversity), as well as investment in many research programs.
Relevant websites, web links, and files		Federal Ministry of Education and Science Database of researchers and research organizations in BiH Ministry of Science and Technology, Higher Education and Information Society of RS NBSAP BiH

National Target		20. By 2017, prepare and adopt the strategy for mobilization of financial resources for conservation of biological diversity
Rationale for the national target		The rationale for this target is the need to provide funds for the implementation of measures under the NBSAP. Mobilization of funds is one of the generators of application of necessary measures. It must be planned in the budgets of the entities, cantons and local communities. Within budget planning of institutions dealing with these issues, certain funds are allocated for the preservation of biodiversity. In addition, a significant portion of funds for the financing of protection and sustainable use of biodiversity in BiH can be obtained from international development organizations, funds and financial institutions. These funds are not always allocated in a coordinated manner, and the amount of funds does not always cover full implementation of the biodiversity targets. By developing strategies for mobilization of financial resources for conservation of biological diversity, the allocation of funds for this purpose could be coordinated, with prioritization of activities and allocation of funds in line with the priorities.
Level of application		Subnational – entity/local
Relevance of the national targets to ABT	Main related ABT	20
	Other related	1,2, 3, 4, 5, 6, 7, 8, 9,10, 11, 12, 13,14, 15, 16, 17, 18,19
	No corresponding	Not applicable
Other relevant information		The adoption of this strategy requires the coordination of several institutions, so that appropriate activities are proposed in line with the competencies. This target directly relies on the Aichi target 20 pertaining to the mobilization of funds for effective implementation of the Strategic Plan (2011-2020) from all sources. The aforementioned mobilization of funding needs to be in compliance with the consolidated and adopted procedure described in the Strategy for Mobilization of Financial Resources adopted at COP 10. The Strategy contains the process of target financing, indicators, specific activities and initiatives, as well as the method of implementation and supervision of the use of financial funds. The CBD Parties are also required to develop the Resource Mobilization Plan. In BiH, this plan has been developed as the implementation plan within the NBSAP BiH, adopted by the Council of Ministers of BiH in May 2017.
Relevant websites, web links, and files		NBSAP BiH Costs for Protection of the Environment, 2016. Agency for Statistics of Bosnia and Herzegovina Costs for Protection of the Environment, 2017. Agency for Statistics of Bosnia and Herzegovina

National Target		21. By 2020, establish and strengthen cooperation for improved protection and sustainable use of biological diversity in the countries of the Western Balkans
Rationale for the national target		<p>In terms of the condition and value of biological diversity, the Balkan Peninsula is one of the most valuable in Europe. However, SEE countries do not have satisfactory capacities for preservation and sustainable use of biodiversity, or capacities for fair distribution of benefits of use of generic resources. BiH has particular lack of capacities, due to vast damage and delay caused by the war and post-war recovery. The development of institutional capacities for the implementation of the Convention on Biological Diversity has been slow due to the complex administrative structure of the country.</p> <p>In that regard, the development of regional cooperation may contribute to easier and more efficient organizing of the process of efficient management of biodiversity. Joint and compatible mechanisms can be established through regional cooperation, which would benefit all countries of the region.</p>

		Regional cooperation should be developed in various aspects of development related to sustainable use and preservation of biodiversity. Focus should be on (a) exchange of data on biodiversity in the region, (b) cross-border projects, such as establishment of transboundary protected areas and natural areas requiring protection and (c) promotion of regional natural treasures for the purpose of their protection and development of regional eco-tourism, etc.
Level of application		Regional / multilateral – Western Balkans
Relevance of the national targets to ABT	Main related ABT	19
	Other related	1
	No corresponding	Not applicable
Other relevant information		<p>During the drafting of the NBSAP BiH, experts who worked on the document and the representatives of stakeholders have recognized the need to define a target that would cover international cooperation. Even though this type of cooperation is not referred to in the Aichi targets, it was concluded that cooperation among the countries of the Western Balkans could contribute to sustainable use of biodiversity, and achievement of the Convention targets.</p> <p>As further elaborated in the subsequent chapters of this Report, various activities involving the countries of the region have been instigated with support of international institutions. One of the positive examples is the Open Regional Fund for South-East Europe – Biodiversity (ORF BD), initiated and supported by GIZ. This activity includes projects related to conservation and sustainable use of biodiversity in South East Europe. In the period between 2015 and 2018, ORF BD combined the efforts of six Balkan countries implementing the following projects:</p> <ol style="list-style-type: none"> 1. Biodiversity Information Management and Reporting (BIMR), 2. Ecosystem Services Assessment and Valuation (ESAV), 3. Regional Network of Biodiversity CSOs (BioNET), 4. Transboundary Management of Ecosystems (BiH was not involved in this project)
Relevant websites, web links, and files		https://www.giz.de/en/worldwide/40686.html





2.

IMPLEMENTATION MEASURES TAKEN, ASSESSMENT OF THEIR EFFECTIVENESS AND ASSOCIATED NEEDS TO ACHIEVE NATIONAL TARGETS

This section of the Report describes all the measures that have been proposed by the NBSAP BiH as a support to achieving national targets that had been previously described in Chapter 1 of this Report. In cases when the said measures were implemented or partially implemented, the section also provides description of activities that have been taken for implementing the measures. Along with description of each measure, the assessment shows their effectiveness and related needs for their realization/implementation. Assessment of effectiveness of each measure is shown in the table following the methodology provided in the Guidelines for the Sixth National Report, which is an Annex to the Decision XIII/27 of 15 December 2016 adopted by the Conference of the Parties to the Convention on Biological Diversity². A tabular overview of methodology that was used to complete the table, with assessment of the contribution to implementation of different measures is shown below. The aforementioned table corresponds to the entries into the online tool that will be used for submitting the Sixth National Report to the Secretariat of the Convention on Biological Diversity.

Table 3: Overview of methodology used to complete the table with assessment of effectiveness of the measures implemented in BiH

Measure	This section should explain all measures taken to implement the BiH action plan (within NBSAP)
Measure description	Please describe the measure taken to contribute to the implementation of NBSAP
Nature of measure	For each measure, please indicate its nature (legal, regulatory, financial, policy/strategic.). a. Legal b. Regulatory c. Financial d. Policy/strategic.
Corresponding target	Please indicate the numbers of corresponding national and Aichi targets i.e. identify to which national/Aichi targets the respective measure contributes most.
Measure effectiveness	<p>Assessment of the effectiveness of the measure: measure effectiveness should be assessed using a predefined scheme:</p> <ul style="list-style-type: none"> a. measure taken has been effective, b. measure taken has been ineffective, c. measure taken has been partially effective, d. unknown. <p>Please explain the selection (explanation of the assessment of effectiveness). Additionally, where a measure taken cannot be assessed, please indicate why or explain this argument and support it with documents.</p> <p>Tools and methodology used for the assessment: for the selection made above, please indicate tools and methods used for the assessment for the selection - no offered answers, please provide narrative description.</p> <p>References: Please use this field to indicate any relevant websites, web links and documents where provided information can be confirmed and additional information related to this assessment can be found.</p>
Other relevant information	It is preferable to include other relevant information or case studies to illustrate how the measure taken has resulted in outcomes that contribute to the implementation of NBSAP.
Obstacles/deficiencies and needs for measure implementation	Please describe any obstacles to the implementation of this measure, identify any scientific and technical needs for addressing these issues, including technical and scientific cooperation, capacity development activities or need for development of various materials (e.g. guidance materials).
References	Please use this field to indicate any relevant websites, web links and documents where provided information can be confirmed and additional information related to this assessment can be found.

² <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-27-en.pdf>

Table 4: Nature and level of implementation of measures taken to contribute to the implementation of NBSAP BiH, their effectiveness and related obstacles and needs for their implementation

MEASURES TO ACHIEVE NATIONAL TARGET 1		
Measure		Public surveys and media monitoring
Measure description		This measure entails two activities: a) surveying the public and b) media monitoring. Public surveys should be carried out by research institutions/agencies, in cooperation with the NGO sector through, online surveys, by telephone, or by direct contact, and the sample should be less than 400. The survey should be carried out at least two times during the period of 2015-2020, specifically: a) in 2015 and b) in 2020. The aim of the surveys is to identify the current level of public awareness, do a comparative analysis and see the trend of public awareness change. This can also serve as a fundamental basis for the development of the CEPA Strategy of BiH. Media monitoring pertains to the representation of concepts and information related to biological diversity in the media (print and electronic ones) in BiH at all administrative levels. Media monitoring requires for research institutions/agencies to conduct monitoring of at least 5 print and 5 electronic media at the same time every year over the period of 2015-2020. The described activities foreseen under this measure have not been implemented.
Nature of measure		Regulatory
Corresponding target	National	1
	Aichi	1
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	No research has been conducted to date on impact to people's awareness, or media monitoring in the area of protection of biological diversity.
	Tools and methodology used for effectiveness assessment	Overview of existing web pages of institutions, media and NGO sector.
	References	NBSAP BiH
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		The main obstacle to implementation of this measure stems from the fact that the NBSAP BiH was adopted in May 2017, while the beginning of implementation of this measure had been planned for 2015. Additional obstacle is insufficient communication among institutions and media, and low level of interest on the part of the media for these issues.
References		/
Measure		Enable securing of financial resources for biological diversity protection projects
Measure description		During the development process of the Fifth National Report of BiH to the CBD (2014), a significant lack of financial resources and institutional capacity was observed in the progress of implementation of NBSAP BiH (2008-2015). However, this document showed that the NGO sector and scientific research and professional institutions played a key role in the implementation of projects (over 50), and indirectly even in the implementation of the NBSAP BiH (2008-2015). Therefore, the NGO sector, media, scientific research and professional institutions can and must play an increased role in the implementation of projects related to the protection of biological diversity, which also requires allocations of funds on

		an annual basis. Financial allocations should be increased from year to year, for projects at all levels (entity, district, cantonal and municipal levels). In this regard, in order to facilitate the implementation of this measure, it is essential that professional institutions/agencies or NGO sector organize seminars (at least 2) and round tables (at least 2) for the government representatives at all levels, with a view to inform them about the importance of allocation of funds for biological diversity protection, standardization of project documentation and reports for beneficiaries of the funds, and to provide assistance in completing applications for financing from international funds. All of the above mentioned meetings are aimed at raising awareness among decision-makers in the government, as well as in decision making to allocate funding that would be directed into priority areas in biological diversity protection. Activities foreseen under this measure have not been implemented.
Nature of measure		Financial
Corresponding target	National	1
	Aichi	1
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Activities foreseen under this measure have not been implemented. However, it is important to note that the institutions responsible for issues of protection of environment are familiar with the necessity of financing and supporting activities aimed at preserving biological diversity, and they allocate funds for projects implemented by NGOs in accordance with their abilities.
	Tools and methodology used for effectiveness assessment	Overview of existing web pages of institutions and provided data on projects financed and implemented by the ministries competent for environment, and by the funds for environment protection.
	References	Federal Ministry of Environment and Tourism, Ministry of Spatial Planning, Civil Engineering and Ecology of RS, Fund for Environmental Protection of FBiH, Fund for Environmental Protection and Energy Efficiency of RS
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Obstacles in implementation of this measure are due to the fact that the NBSAP BiH was adopted in May 2017, while the beginning of implementation of this measure had been planned for 2015. In addition, in order for this measure to be implemented, representatives of the NGO sector need to get more involved in its implementation by organizing workshops and roundtables as planned under this measure. In order to organize such events, it will be necessary to find and allocate financing, which is in itself an additional obstacle.
References		/
Measure		Formation of a database with implemented projects
Measure description		During the preparation of NBSAP BiH (2015-2020) and the Fifth National Report of BiH to the CBD (2014), a problem was recognized with respect to identification and tracking of funds for projects aimed at conserving biological diversity, due to the different forms of reports and project documents or inability to access them. Therefore, the aim of this measure is to establish a database of implemented projects related to the protection of biological diversity. The activities that this measure involves are: a) establish communication between FMET, as the NFP of BiH for the CBD, and relevant institutions at all levels which finance projects through informative and educational meetings (at least 2), and b) development of a database by the FMET. The database should be publicly available online on the CHM website, by the designated CHM NFP. This measure has not yet been implemented.

Nature of measure		Policy/strategic
Corresponding target	National	1
	Aichi	1
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Activities foreseen under this measure have not been implemented. However, it is important to underline that NFP BiH for CBD has established good cooperation with the institutions that finance activities related to biological diversity. Additionally, the said institutions that provide funds for implementation of projects aimed at protection of environment maintain databases on projects they had financed or co-financed.
	Tools and methodology used for effectiveness assessment	Overview of existing web pages of institutions, and provided data on projects financed and implemented by ministries responsible for protection of environment, and by funds for environment protection. View of CHM web page.
	References	Federal Ministry of Environment and Tourism, Ministry of Spatial Planning, Civil Engineering and Ecology of RS, Fund for Environmental Protection of FBiH, Fund for Environmental Protection and Energy Efficiency of RS, http://www.bih-chm-cbd.ba
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Implementation of this measure had been planned for 2016; however, the NBSAP was adopted in May 2017, causing delays in implementation of many measures. In addition, it is necessary to secure financing for establishing software (data base) to keep track of implemented projects and for its maintenance.
References		/
Measure		Prepare and adopt the CEPA Strategy for BiH
Measure description		At COP-6, the CEPA program was adopted, recognized as a key factor in the implementation of the CBD. The CEPA program is a global initiative that provides support in the development of the CEPA Strategy. The aim of this measure is to prepare and adopt the CEPA Strategy in BiH. The CEPA Strategy in BiH is prepared by relevant ministries for protection of environment, education, science and culture at the entity level and district level and it is adopted by the Council of Ministers of BiH. It is also essential that the above said ministries, in cooperation with the NGO sector, develop the promotional materials in terms of raising of public awareness on the importance and future implementation of the CEPA Strategy among the BiH authorities, which needs to be published on the CHM website by the designated CHM NFP.
Nature of measure		Policy/strategic
Corresponding target	National	1
	Aichi	1
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Activities foreseen under this measure have not been implemented.

	Tools and methodology used for effectiveness assessment	Analysis of reports on activities implemented by institutions and consultations with institutions.
	References	Federal Ministry of Education and Science Ministry of Science and Technology, Higher Education and Information Society of RS Federal Ministry of Environment and Tourism, Ministry of Spatial Planning, Civil Engineering and Ecology of RS
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		This measure has not yet been implemented. NBSAP BiH foresees that the CEPA Strategy were adopted in 2017. Delays in adoption of the NBSAP BiH have resulted with this measure not yet being implemented. Implementation of this measure requires funding.
References		/

MEASURES TO ACHIEVE NATIONAL TARGET 2

Measure		Prepare the Study on Economics of Ecosystems and Biodiversity (TEEB)
Measure description		TEEB is a global initiative concerning the economic benefits of biological diversity, including the growing costs of biological diversity loss and ecosystem degradation. The aim of TEEB is for decision-makers to recognize the value of ecosystem services and biological diversity. In BiH, certain information is either or missing or not publicly available, and only some general assessment can be provided on the use of ecosystem services and biological diversity. It is therefore necessary that the ministries responsible for protection of environment in cooperation with the ministries of agriculture, water management and forestry develop the TEEB. The competent ministries are responsible to hold 3 consultative meetings with relevant stakeholders from the governmental and non-governmental sectors and determine a plan of work prior to the development of the TEEB. To date, the TEEB has not been developed or adopted.
Nature of measure		Policy/strategic
Corresponding target	National	2
	Aichi	2
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Not possible to assess effectiveness of this measure as it has not been implemented.
	Tools and methodology used for effectiveness assessment	Methodology used: consultations with stakeholders; expert opinions and analysis of data obtained through web search.
	References	Federal Ministry of Environment and Tourism, Ministry of Spatial Planning, Civil Engineering and Ecology of RS, Federal Ministry of Agriculture, Water Management and Forestry, Ministry of Agriculture, Forestry and Water Management of RS

Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		This measure has not been implemented for a number of reasons, main among them being the fact that no funding has been planned for its implementation. Economic valuation of the ecosystem requires thorough analyses and assessments, and involvement of a number of experts. So far, the responsible ministries have not initiated this Study, so there is a need to include the activities related to development of the TEEB in the work programs of the competent ministries in the coming period.
References		NBSAP BiH
Measure		Harmonize the existing and new development strategies, including poverty reduction, with national biological diversity targets
Measure description		Prior to the implementation of this measure, it is necessary to first establish working group for coordination of all sectors (e.g. environment protection, water management, agriculture, forestry, spatial planning, mining and industry) at the level of Council of Ministers of BiH. In order to implement this measure, the said working groups should do the GAP analysis and determine the extent to which values, i.e. the national targets on biological diversity, are integrated into each of the existing and new strategies. After the adoption of these strategies, it is also necessary to monitor their implementation through the annual reports prepared by the working groups by sectors. The reports are to be sent to FMET, which should summarize all of the received reports and provide the conclusions as to the extent to which each of the strategies has contributed to the implementation of national targets on biological diversity.
Nature of measure		Policy/strategic
Corresponding target	National	2
	Aichi	2
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Not possible to assess effectiveness of this measure as it has not been implemented.
	Tools and methodology used for effectiveness assessment	Methodology used: consultations with stakeholders; expert opinions and analysis of data obtained through web search.
	References	Ministry of Foreign Trade and Economic Relations of BiH, Federal Ministry of Environment and Tourism, Ministry of Spatial Planning, Civil Engineering and Ecology of RS, Fund for Environmental Protection of FBiH, Fund for Environmental Protection and Energy Efficiency of RS, Federal Ministry of Agriculture, Water Management and Forestry, Ministry of Agriculture, Forestry and Water Management of RS, Federal Ministry of Energy, Mining and Industry, Ministry of Industry, Energy and Mining of RS, Federal Ministry of Transport and Communications, Ministry of Transport and Communications of RS
Other relevant information		/
References		/

Obstacles/deficiencies and needs for measure implementation		Working groups for implementation of this measure have not been established. Reviews of the strategy, in terms of identifying shortcomings that are related to the issues of biological diversity, had not been done in the way foreseen under this measure. This measure should be implemented continuously; however, none of the above mentioned activities has been implemented. The development strategies are mostly adopted at the level of local administration, so in the coming period, it would be necessary to plan and allocate funding for reviewing the strategy with the view of identifying shortcomings that are related to biological diversity within each strategy in order to be able to develop proposal of appropriate measures that would include biological diversity.
References		NBSAP BiH
Measure		Integrate national biological diversity targets into existing and new spatial plans
Measure description		<p>When it comes to integration of national biological diversity targets adopted through NBSAP BiH into existing and new spatial plans, it can be said that this activity has been partially implemented. National targets established in NBSAP BiH include Target 11 according to which, by 2020, the specific biological diversity of BiH (canyon, mountain, alpine and wetland ecosystems, karst fields and alluvial plains) should be mapped and urgently protected in compliance with the applicable spatial planning documents. Therefore, to achieve this target, spatial plans should identify the sites to be protected in order to enable their subsequent protection.</p> <p>Review of the existing spatial plans indicates that these plans do contain identified sites of natural importance to be protected.</p> <p>Spatial Plan of the FBiH (2008-2028), which has still not been adopted in FBiH since the House of Peoples of the FBiH Parliament has still not considered it (although it has been adopted by the House of Representatives of the FBiH Parliament), represents an overarching strategic document on the basis of which the use of space will be defined and development plans will be made to define objects and areas of natural heritage, and objectives of spatial development, protection, use and purpose of land. Within the Spatial Plan, it was inevitable to specify proposals for protection and improvement of the state of the environment in FBiH, therefore a strategic environmental assessment has been conducted in the course of the preparation of this document. The Spatial Plan of the FBiH (2008-2028) envisaged establishment of 14 new protected areas with total area size of approximately 4,488 km², which makes 18.5% of FBiH area.</p> <p>Spatial Plan of the RS by 2025 dedicates one sub-section to biological diversity, where spatial planning is guided by the values of biological diversity protection, as well as environmental protection. According to the Spatial Plan, between 15 and 20% of the territory should be protected in RS by 2025.</p> <p>Spatial Plan of BD BiH 2007-2017 emphasizes that parks and nature reserves are sites of special importance in Brčko District for their natural beauty and environment, where strict protection of surface and deep soil layers, water, flora and fauna is combined with scientific promotion and excursion tourism activities that need to be carefully regulated.</p> <p>Plans adopted at municipal and cantonal levels or special purpose plans (protected area) define areas to be protected. It should be also mentioned that laws prescribe strategic environment impact assessment in the process of the adoption of spatial plans, therefore directly integrating values of biological diversity into the spatial plans.</p>
Nature of measure		Regulatory
Corresponding target	National	2
	Aichi	2

Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
	Effectiveness assessment explanation	The measure has been assessed as partially effective due to the fact that the Spatial Plan of FBiH (2008-2028), which should serve as basis for preparation and adoption of municipal and cantonal spatial plans, has still not been adopted. Also, this effectiveness assessment is based on the fact that BD BiH implements a spatial plan which has expired.
	Tools and methodology used for effectiveness assessment	The assessment has been done based on the review of existing applicable spatial plans and the draft spatial plan of FBiH.
	References	http://www.vladatk.kim.ba/vlada-tk/dokumenti-tk/prostorni-plan-fbih http://nasprostor.org/dokumenti-2/prostorni-plan-republike-srpske/ http://ppipo.bdcentral.net/Content/Read/Prostorni_plan NBSAP BiH
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Failure to adopt new spatial plan in FBiH and BD BiH.
References		NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 3

Measure		Define and calculate positive and negative incentives and subsidies
Measure description		In BiH, the incentives or subsidies that have negative or positive impact have not been precisely defined or quantified. Therefore, working groups need to be established by key sectors that offer incentives (i.e. sectors of industry, transport, energy, environment, agriculture, forestry, water management). The working groups tasks would be to do the following: a) analyze the existing incentives and subsidies, and b) determine which of these incentives and subsidies pose a threat and cause damage to biological diversity, and which have a positive impact in terms of protection. Once it has been determined which the negative and positive incentives and subsidies are, in consultation with relevant ministries for protection of environment and the Ministry of Foreign Trade and Economic Relations of BiH, the working groups by sectors should calculate their values and develop a plan to increase the positive and reductions or elimination of the negative incentives and subsidies by 2020.
Nature of the measure		Regulatory Financial
Corresponding target	National	3
	Aichi	3
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Effectiveness of this measure is not known because the research conducted had not provided data on implementation of this measure

	Tools and methodology used for effectiveness assessment	Methodology used for assessing effectiveness involved searching web pages of the Ministry and other relevant institutions, and analysis of data found by the expert.
	References	Ministry of Foreign Trade and Economic Relations of BiH, Federal Ministry of Environment and Tourism, Ministry of Spatial Planning, Civil Engineering and Ecology of RS, Fund for Environmental Protection of FBiH, Fund for Environmental Protection and Energy Efficiency of RS, Federal Ministry of Agriculture, Water Management and Forestry, Ministry of Agriculture, Forestry and Water Management of RS, Federal Ministry of Energy, Mining and Industry, Ministry of Industry, Energy and Mining of RS, Federal Ministry of Transport and Communications, Ministry of Transport and Communications of RS
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Among main obstacles to implementation of this measure is the fact that NBSAP BiH was adopted as late as in May 2017, and the measures it foresaw should have been already implemented by then. For example, implementation of this measure had been planned for 2015. Additional obstacle is lack of cooperation among institutions on the issue of negative impact of incentives. Generally, the institutions recognized through the NBSAP the need to reduce the said incentives; however, there is no evidence to date that any work on coordination and analysis of such incentives has started that would lead to agreement as to what incentives to reduce. Therefore, it will be necessary, as proposed in the measure itself, for one institution to take the coordinating role and start implementation of this measure, i.e. organize initial meetings with institutions that should subsequently conduct analysis of their respective incentives as foreseen in the measure.
References		/
Measure		Enable securing of financial resources for positive incentives and subsidies
Measure description		This measure is closely related to the previous measure. The measure is included in the NBSAP BiH and it provides that, once the positive incentives and subsidies have been determined, the ministries responsible for protection of environment should organize at least 4 consultative meetings with stakeholders from various sectors, at which they would agree on the following: a) prioritization of existing and new possible initiatives and subsidies, b) securing of funding at the state level, c) drafting of guidelines for applications for international funding, and d) equitably distribute the resulting funding by sectors.
Nature of the measure		Policy/strategic
Corresponding target	National	3
	Aichi	3
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Effectiveness of this measure is not known because the research conducted had not provided data on implementation of this measure.
	Tools and methodology used for effectiveness assessment	Methodology used for assessing effectiveness of this measure was research of web pages of Ministries and other relevant institutions, and analysis of data found by the expert.

	References	Ministry of Foreign Trade and Economic Relations of BiH , Federal Ministry of Environment and Tourism, Ministry of Spatial Planning, Civil Engineering and Ecology of RS, Fund for Environmental Protection of FBiH, Fund for Environmental Protection and Energy Efficiency of RS, Federal Ministry of Agriculture, Water Management and Forestry, Ministry of Agriculture, Forestry and Water Management of RS, Federal Ministry of Energy, Mining and Industry, Ministry of Industry, Energy and Mining of RS, Federal Ministry of Transport and Communications, Ministry of Transport and Communications of RS
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Obstacles to implementation of this measure are caused by delays in adoption of the NBSAP BiH and its implementation. This measure should be implemented after the incentives and subsidies that have positive impact on biological diversity have been identified and quantified by relevant institutions. Therefore, in order for this measure to be implemented, it is necessary to implement another measure that is titled: <i>Define and calculate positive and negative incentives and subsidies.</i>
References		NBSAP BiH
Measure		Introduce the monitoring system for positive and negative incentives and subsidies, and prepare annual reports
Measure description		In BiH there is no system of monitoring incentives and subsidies that have negative and positive effects on biological diversity. It is necessary to establish such a system in order to establish and in future maintain continuity of monitoring incentives and subsidies. This measure means that each sector (through working groups) should prepare an annual report on the values of positive and negative incentives and subsidies and send it to FMET. This monitoring system would provide regular and transparent reporting on the progress in reducing negative incentives and subsidies and in increasing the positive ones. Based on the annual reports for various sectors, FMET should make a joint progress report on achieving the national targets on reducing negative and increasing positive incentives for biological diversity.
Nature of the measure		Policy/strategic
Corresponding target	National	3
	Aichi	3
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Effectiveness of this measure is not known because the research conducted had not provided data on implementation of this measure.
	Tools and methodology used for effectiveness assessment	Methodology used for assessing effectiveness was the searching of web pages of Ministries and other relevant institutions, and analysis of data found by the experts.
	References	Ministry of Foreign Trade and Economic Relations of BiH , Federal Ministry of Environment and Tourism, Ministry of Spatial Planning, Civil Engineering and Ecology of RS, Fund for Environmental Protection of FBiH, Fund for Environmental Protection and Energy Efficiency of RS, Federal Ministry of Agriculture, Water Management and Forestry, Ministry of Agriculture, Forestry and Water Management of RS, Federal Ministry of Energy, Mining and Industry, Ministry of Industry, Energy and Mining of RS, Federal Ministry of Transport and Communications, Ministry of Transport and Communications of RS

Other relevant information	/
References	/
Obstacles/deficiencies and needs for measure implementation	Obstacles to implementation of this measure are caused by delays in adoption of the NBSAP BiH and its implementation. This measure should be implemented after the relevant institutions have completed identification and quantification of all incentives and subsidies that have negative or positive impact on biological diversity. Only after the implementation of this measure, it would be possible to establish a system of monitoring subsidies that would follow the progress in achieving national target that is related to reduction of incentives that have negative impact on biological diversity and increasing incentives that have positive impact on biological diversity. Therefore, in order for this measure to be implemented, first the measure that is called: <i>Define and calculate positive and negative impacts of incentives and subsidies</i> needs to be implemented.
References	NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 4

Measure		Establish a functioning institutional and legal framework for sustainable production and consumption of natural resources
Measure description		In order to implement this measure, the relevant ministries of agriculture, water management and forestry should analyze the existing institutional and legal frameworks in order to identify which institutions should be strengthened, in which areas and in what way, which laws, rulebooks or regulations need to be passed at the state or entity levels, etc. After the analysis, it is essential that the relevant ministries for agriculture, water management and forestry hold at least 4 consultative meetings with stakeholders where it is necessary to determine the needs and shortcomings in the field of sustainable production and consumption of natural resources, as well as organize at least 3 training sessions for the employees of relevant institutions. Establishment of functional institutional and legal frameworks for sustainable production and consumption of natural resources should be in line with the objectives of the Capacity Development Plan - Implementation Plan (Chapter 5 of the NBSAP BiH). Once these steps are implemented, this will strengthen the vertical and horizontal cooperation among the existing institutions in the field of sustainable production and consumption of natural resources. Activities proposed under this measure have not yet been implemented.
Nature of the measure		Regulatory
Corresponding target	National	4
	Aichi	4
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Not possible to assess effectiveness of this measure as this measure has not been implemented.
	Tools and methodology used for effectiveness assessment	Methodology used for assessing effectiveness of this measure was collection and studying data from various web pages of competent ministries.
	References	Federal Ministry of Agriculture, Water Management and Forestry, Ministry of Agriculture, Forestry and Water Management of RS

Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		According to the NBSAP BiH, implementation of this measure was planned for 2017; however, delays in adoption of the NBSAP BiH have lead to delays in adoption of this measure. In addition, it is necessary to secure the planned financing for implementation of all activities under this measure so that the relevant ministries could start activities related to its implementation.
References		NBSAP BiH
Measure		Draft and adopt action plans for sustainable production and consumption of natural resources
Measure description		<p>Based on Measure 4.1., i.e. the analysis of the institutional and legal frameworks, as well as consultative meetings with stakeholders, the ministries responsible for agriculture, water management and forestry should determine the current status, i.e. collect data on production and current consumption of natural resources in order to determine the objectives to be achieved and the measures to be taken to ensure that production and consumption of natural resources is sustainable. It is important during the status analysis to do an environmental and social assessment of impacts of some economic sectors, such as energy, water, transport, agriculture, etc. Once the status has been established, the relevant ministries for agriculture, water management and forestry should propose an action plan and present it at the meetings (at least 2) with stakeholders and send them to the entity governments for adoption.</p> <p>The activities described under this measure have not been implemented, and the action plans that are related only to sustainable production and consumption of natural resources have not been drafted and passed. However, sustainable production and consumption of natural resources has been integrated in numerous sectoral strategies and plans.</p> <p>For example, the issue of sustainable production and consumption of natural resources is to be found in the documents Strategic Plan of Rural Development of BiH for the period 2018-2021; in protected areas management plans for a large number of protected areas in BiH; in spatial plans in BiH; in Forestry Development Strategy of Republika Srpska 2011-2021; in the Program of Achieving Neutrality in Soil Degradation of RS; in the Water Management Plan for the Sava River Basin in FBiH; in the Water Management Plan for the Adriatic River Basin; in the Sava Water Management Plan (RS); in the Trebišnjica Water Management Plan; in Energy Efficiency Action Plans adopted at the levels of BiH, FBiH and RS; as well as through strategies of energy development, and others that directly or indirectly touch upon natural resources.</p>
Nature of the measure		Strategic/ policy
Corresponding target	National	4
	Aichi	4
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Not possible to assess effectiveness of this measure as it has not been implemented.
	Tools and methodology used for effectiveness assessment	Methodology used for this measure was research of web portal of the competent institutions.

	References	http://www.vladars.net/sr-sp-cyrl/Pages/default.aspx http://www.fbihvlada.gov.ba/ http://www.vlada.bdcentral.net/
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		This measure is linked to the previous measure, meaning that it would be necessary to first implement the measure that concerns establishment of functional institutional and legislative framework for sustainable production and consumption of natural resources. Following the completed implementation of the said measure, required financing will need to be secured and action plans developed for sustainable production and consumption of natural resources.
References		/

MEASURES TO ACHIEVE NATIONAL TARGET 5

Measure		Draft programs for sustainable management of all fishing waters
Measure description		<p>The fisheries bases are expert studies on how to manage certain fishing areas and as such they are the basis for the sustainable management of fishing waters, or fish stock, fish habitats, etc. The funding for the implementation of this measure should be provided through the budgets of line ministries, users of fishing waters and from international sources/funds. In parallel with the implementation of the financial structure, it is essential that the relevant ministries for agriculture, water management and forestry announce a competition for service providers for development of these programs so that in those cases where there are no fisheries bases at all, or where they are outdated, the work should start as soon as possible. Drafting of a program for the sustainable management of fishing waters should include catching fish on the ground (trawls and standing networks, generator sets for catching fish, etc.), an assessment of the species and quantities of fish, the water quality (field and laboratory testing of water), fish diseases (field and laboratory tests), etc.</p> <p>Partial implementation of this measure is reflected in the drafting of fisheries bases for specific fishing areas. The following can serve as examples of the implementation of this measure: The Sarajevo Canton Fisheries Basis for the Fishing Area VI, Jablanica Revised Fisheries Basis, Sanski Most Fisheries Basis, Revised Fisheries Basis for the Central Bosnia Canton, Decision approving the revised economic basis for the Brčko District BiH fishing area etc.</p>
Nature of measure		Legal Financial
Corresponding target	National	5
	Aichi	6
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
Measure effectiveness	Effectiveness assessment explanation	Partial effectiveness of this measure is explained by the fact that fisheries bases or revisions thereof have been or are being prepared for some areas and regions (Fishing areas in Sanski Most, Mostar, Jablanica, Bihać, Ključ, Central Bosnia Canton, Brčko District, Sarajevo etc.)
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included search of websites of ministries and other relevant institutions in the water management sector, fishing associations, media, analysis of data obtained by experts.

	References	<p>Fisheries basis for Sarajevo Canton_Area 6</p> <p>Revision of fisheries basis for the area of Central Bosnia Canton</p> <p>Law on Fishing (Official Gazette of Republika Srpska, No. 72/12)</p> <p>Law on Freshwater Fishing in the FBiH (Official Gazette of the Federation of BiH, No. 64/04)</p> <p>Law on Freshwater Fishing (Official Gazette of Brčko District BiH, No. 35/05)</p> <p>Law on Amendments of the Law on Freshwater Fishing (Official Gazette of Brčko District BiH, No. 19/07)</p>
Other relevant information		The measure has been partially implemented.
	References	<p>Revision of fisheries basis for the area of Central Bosnia Canton</p> <p>Fisheries basis for Sarajevo Canton_Area 4</p> <p>http://usr-unabihac.com/</p> <p>Approval on the revision of the fisheries basis for the fishery area of Central Bosnia Canton for a period of 5 years</p> <p>Decision on approval of the revision of economic basis for fishery area of Brčko District BiH</p> <p>Regulation on Fishing Regions and Fishing Water Borders in the Area of Central Bosnia Canton</p>
	Obstacles/deficiencies and needs for measure implementation	<p>One of the key obstacles for the implementation of this measure is the fact that NBSAP BiH was adopted as late as May 2017, while measures envisaged in NBSAP should have already been implemented by that time. Drafting of fisheries bases and sustainable management programs is regulated by law and deadlines within which they are adopted. Their implementation also requires certain funds. Since this measure is regulated by law and is being implemented, it can be expected that it will be completed in due time.</p>
	References	NBSAP BiH
	Measure	Implementation of programs for sustainable management of all fishing waters
	Measure description	<p>The implementation of the program for the sustainable management of fishing waters of BiH includes improving the Fish Guard Service (more employed guards, additional training and development of employed guards), restricting fishing of endangered and endemic species, especially during spawning, ranching with indigenous commercially significant fish species in terms of preserving genetic diversity (in conjunction with Aichi Target 13 - aquatic genetic resources), continuous monitoring of water quality and the health state of fish, etc., on the basis of which to strengthen the implementation mechanisms not only for the fisheries bases but also the Law on Fisheries, i.e. freshwater fishing on the territory of both entities and the BD.</p>
	Nature of measure	<p>Legal</p> <p>Regulatory</p>
Corresponding target	National	5
	Aichi	6
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective

	Effectiveness assessment explanation	Organization of the Fish Guard Service is regulated by the laws on freshwater fishing and is implemented independently from NBSAP. Interviews with the representatives of fishing associations indicate that the fish guard service is organized in accordance with the capacities of associations. Measures banning fishing at certain times of the year related to spawning are also being implemented. It should be mentioned that management plans are adopted by fishing associations and then submitted to line ministries for approval. Fishing waters management plans include various data relevant for fishing waters management. These documents include, among other things, information related to measures for protection and sustainable exploitation of fish stocks and opportunities and modes of its annual increase, ranching in terms of species and quantity of fish, time and place of ranching, measures for protection of specific habitats, organization of fish guard service and so on. It should be mentioned that adoption of management plans is prescribed by applicable laws regulating this field, specifically the Law on Fishing (Official Gazette of Republika Srpska, No. 72/12), Law on Freshwater Fishing (Official Gazette of the Federation of BiH, No. 64/04) and the Law on Freshwater Fishing (Official Gazette of Brčko District of BiH, No. 35/05).
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included search of websites of ministries and other relevant institutions in the water management sector and analysis of data obtained by experts, cooperation with fishing associations and participation of institutions in the implementation of some activities related to this measure
	References	Ministry of Foreign Trade and Economic Relations of BiH, Federal Ministry of Agriculture, Water Management and Forestry, Ministry of Agriculture, Forestry and Water Management of RS, Federal Ministry of Energy, Mining and Industry, Ministry of Industry, Energy and Mining of RS, SRD Banja Luka, SRSRS, USR UNA Bihać, Government of Brčko District BiH, SRSFBiH
Other relevant information		The measure has been partially implemented.
References		Mid-Term Strategy for the Development of the Agricultural Sector in the FBiH for the period 2015 - 2019 Integrated Water Management Strategy of Republika Srpska 2015-2024 Rulebook on the program and method of taking the fishery exam, the form and the manner of issuing the certificate of the passed fishing exam and the register of issued certificates for the passed fishing exam http://usr-unabihac.com/
Obstacles/deficiencies and needs for measure implementation		Some of the obstacles to the implementation of the measure include lack of sufficient number of fish guards compared to the needs bearing in mind the number of water bodies, extended components of water monitoring, introduction ichthyofauna and fish health status monitoring. Areas covered by monitoring, both water bodies and the number of monitored parameters, should be extended.
References		NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 6

Measure	Map areas and determine commercially significant species for ranching and breeding
Measure description	The implementation of these measures requires from the competent ministries for agriculture, forestry and water management to appoint the members of the expert team from the government sector, scientific research and professional institutions/agencies and the NGO sector, who will professionally perform the mapping of areas in order to attain prosperity (sustainable development) of all sectoral policies. According to scientific bases, established expert team should determine areas for ranching, breeding with certain species and quantities. According to the RS, FBiH and BD laws on fishing, water users are responsible to

			determine areas for ranching, breeding with certain species and quantities. According to the RS, FBiH and BD laws on fishing, water users are responsible to adopt management plans for fishing waters. These plans contain a number of components and one of them is related to ranching of specific waters. Although the mapping of all areas has not been completed yet, which represents the first stage of this measure, it should be noted that sport fishing associations are the ones who define waters and areas for ranching, as well as species of fish for ranching. Some fishing associations have their own spawning grounds facilitating production of young fish for ranching. Species and areas for ranching are selected based on the characteristics of waters and areas, while ranching itself is done in specific periods depending on weather conditions. In the process of ranching it should be ensured that young fish is indigenous. Commercially significant fish species for breeding are determined depending on the characteristics of the area and other important parameters.
Nature of measure			Regulatory Financial
Corresponding target	National		6
	Aichi		6
Measure effectiveness	Measure effectiveness assessment		Measure taken has been partially effective
	Effectiveness assessment explanation		Partial effectiveness of the measure is explained by the fact that sport fishing associations carry out the process of ranching in certain areas as part of their plans and programs of activities. Namely, fishing associations as water users have the obligation to adopt management plans, which include ranching programs among other things. Species for ranching are selected based on characteristics of fishing waters and some fishing associations also have capacities for production of young fish. Management plans for fishing areas are adopted at the end of each calendar year for the next year and they include fishing waters ranching programs. Ranching is carried out in accordance with the applicable Fisheries Bases and annual ranching programs and the ranching programs are approved by line ministries. Different species are used for ranching depending on the ranching sites, e.g. protection and conservation of the Neretvan salmo dentex, trout and marble trout in controlled conditions until their release into the Neretva River and its tributaries. It should be mentioned that ranching is also done in fishing waters where hydropower plants HPP Mostar, HPP Peć Mlini, HPP Mostarsko blato, HPP Čapljina are constructed.
	Tools and methodology used for effectiveness assessment		Methodology used for the effectiveness assessment included contacts with sport fishing associations, participation in the preparation of expert studies on specific sites, research of websites of ministries and other relevant institutions. Ranching process has most frequently been also monitored through the media.
	References		Sarajevo Canton Fisheries Basis for the Fishing Area 6, 2016 SRD Banjaluka, SRSRS, http://www.banjaluka-tourism.com/index.php/sr/smjestaj/hosteli/item/2339-poribljavanje-vrbasa-mladicom Public Enterprise Elektroprivreda Bosne i Hercegovine d.d. – Sarajevo. Annual Report on Environmental Protection for 2017 Protection and preservation of Neretva Salmo dentex, trout and huchen under controlled conditions to restocking in the Neretva River and tributaries Decision on the selection of the most favorable bidder Ranching of fishing waters on which the following hydropower plants are built HPP Mostar, HPP Peć Mlini, HPP Mostarsko blato, HPP Čapljina
Other relevant information			The measure has been partially implemented.

References		/
Obstacles/deficiencies and needs for measure implementation		Preparation of management plans and exploitation programs for fishing areas is regulated by the law, as well as deadlines for their adoption. Ranching is conducted through activities of sport fishing associations and some deficiencies are primarily reflected in the fact that ranching is not carried out systematically with professional supervision of competent institutions. Also, ranching is not equally distributed, but it rather depends on financial capacities of fishing associations which are in charge of the management of specific water areas. It should be noted that young fish used for ranching should be indigenous.
References		NBSAP BiH
Measure		Prepare and implement strategies for development of aquaculture and ranching of commercially significant fish species
Measure description		<p>Development of strategies at the entity level for the implementation of this measure is a basic requirement for any activities related to the development of aquaculture and ranching of important species. Strategies are also the basis for the implementation of projects and provision of funds by domestic and international institutions. BiH has great potential for development of aquaculture, both from the point of view of hydro potentials, and from the point of view of fisheries, where the salmonide and cyprinids capacities may be significantly increased. In addition to the classic trout and carp farms, there is also farming in cages, the capacities of which may also be expanded. Farming sea fish species is also possible in the region of Neum. In addition, fish farms have good opportunities for producing the juvenile fish to be used for ranching. Certainly, the ranching needs to be accompanied with appropriate programs. It may be said that the water capacities offer the opportunity for development of aquaculture and more significant increase in production of fish.</p> <p>In addition to drafting and implementing strategies for development of aquaculture and ranching of commercially important species, the measure also foresees implementation of inter-sectoral workshops and roundtables for the purpose of preparing strategies. Institutions responsible for implementation of the strategies are the ministries for agriculture, water management and forestry. Strategies of development of aquaculture in RS and FBiH have not been passed, so it can be said that this measure has not been implemented. However, the ranching programs have been adopted as an integral part of fishing plans that are adopted by associations of sports fishermen (anglers) as water users.</p>
Nature of the measure		Policy/strategic
Corresponding target	National	6
	Aichi	6
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Effectiveness of this measure is not known as the measure has not been implemented.
	Tools and methodology used for effectiveness assessment	Assessment of effectiveness of the measure was done on the basis of available data of this kind. The data were found on web pages of the Ministries and other relevant institutions and organizations.
	References	Federal Ministry of Agriculture, Water Management and Forestry, Ministry of Agriculture, Forestry and Water Management of RS Sarajevo Canton Fisheries Basis for the Fishing Area 6, 2016 SRD Banjaluka, SRSRS,

	<p>http://www.banjaluka-tourism.com/index.php/sr/smjestaj/hosteli/item/2339-poribljavanje-vrbasa-mladicom</p> <p>Public Enterprise Elektroprivreda Bosne i Hercegovine d.d. – Sarajevo. Annual Report on Environmental Protection for 2017</p> <p>Protection and preservation of Neretva <i>Salmo dentex</i>, trout and huchen under controlled conditions to restocking in the Neretva River and tributaries</p> <p>Decision on the selection of the most favorable bidder</p> <p>Ranching of fishing waters on which the following hydropower plants are built HPP Mostar, HPP Peć Mlini, HPP Mostarsko blato, HPP Čapljina</p>
Other relevant information	/
References	/
Obstacles/deficiencies and needs for measure implementation	Among the deficiencies in implementation of this measure are the delay in the adoption of NBSAP BiH and lack of legal grounds for adoption of the said strategies for development of aquaculture, which exists for development of fishing management plans.
References	NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 7

Measure		Passage/adoption of the Law on Forests of FBiH
Measure description		<p>Forests and forest lands are of special interest for BiH. Given that forests are an asset that benefit of the society, as well as an important ecosystem and an ideal habitat for numerous wildlife, it is necessary to pass/adopt the Law on Forestry in the FBiH, because this will enable the same conditions for the preservation and protection of forests, enhance their ecological functions, ensure planning in forestry and forest management, strengthen the commercial functions, and allow for financing of recovery and improvement of the state of forests in the FBiH.</p> <p>The Federal Ministry of Agriculture, Water Management and Forestry (FMAWMF) has developed the Preliminary Draft of the Law on Forests and submitted it for consideration to the Government of FBiH in November 2011. After submission of the Preliminary Draft, between 2012 and 2015 the FMAWMF has requested in several occasion for the Government of FBiH to take it into consideration. In September 2015, the Government of BiH passed a conclusion based on which a working group was established to provide technical assistance to the FMAWMF in producing Draft Law on Forests. After the new preliminary draft has been completed, and public discussion held, the FMAWMF submitted the new Preliminary Draft of the Law on Forest to the Government of FBiH, and the Government adopted it on 27th of May 2016, and submitted it in the form of Draft to the parliamentary procedure. The Draft Law is still in the parliamentary procedure.</p> <p>In the meantime, nine cantons have adopted their own legislation on forestry. Adoption of the cantonal regulations deprives FBiH of the competences prescribed by Constitution of FBiH. Forest management and stewardship has been organized in different ways, issue of ownership as well as allocation of funds for use, protection and improvement of forests, and this is contrary to provisions of the constitution.</p>
Nature of the measure		Legislative
Corresponding target	National	7
	Aichi	7
Measure effectiveness	Measure effectiveness assessment	The undertaken measure proved to be ineffective.

	Effectiveness assessment explanation	The measure is considered ineffective because the Law on Forests of BiH has not yet been adopted, after having been in parliamentary procedure for 3 years.
	Tools and methodology used for effectiveness assessment	Methodology used for assessing effectiveness of this measure was gathering and researching data from various web pages of competent specialized institutions.
	References	Federal Ministry of Agriculture, Water Management and Forestry
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		In this specific case, the obstacles to implementation of this measure are mostly political in nature.
References		/
Measure		Secure financial resources and involve companies accredited for certification
Measure description		<p>During the development of the NBASP BiH, sources funding so far have mostly been only forest management companies, competent cantonal ministries, and other international organizations (e.g. World Bank, IKEA). During the certification procedure, the forest management companies hire firms accredited for certification through selecting the most favourable bids through international competition. Besides the 60,000-70,000 KM for certification, about 20,000 KM should also be allocated for a workshop on the certification process and methodology, and a workshop on the identification and mapping of high conservation value forests (HCVF) for company employees. During the certification process, it is also necessary to have 10,000 KM for a HCVF workshop for other participants who need to express their opinions and interests on the subsequent management of high conservation value forests (HCVF).</p> <p>So far, the forest management companies have managed to secure funding to go through the certification procedure. In addition to their own funds, the forest management companies also used funds provided to them through implementation of projects that have as objective to certify forests in BiH. For example, the IKEA (manufacturer of modern Scandinavian furniture and home supplies) and WWF Adria started in 2012 the project to certify forests in Tuzla Canton that are managed by the Šume Tuzlanskog Kantona Kladanj d.o.o. (forest management company of Tuzla Canton). The said certification project is in fact one of component of the project "Promote sustainable forest management to support sustainable development BiH" implemented by the WWF Adria. Also, a GEF project "Sustainable Forest and Landscape Management", which is implemented by the International Bank for Reconstruction and Development (IBRD), supported certification or recertification of forest management in four cantons (BPK, USK, TK and K10).</p> <p>To date, around 75% of forests in BiH have been certified.</p>
Nature of the measure		Financial
Corresponding target	National	7
	Aichi	7
Measure effectiveness	Measure effectiveness assessment	The undertaken measure proved to be partially effective.
	Effectiveness assessment explanation	The measure is considered partially effective as only around 75% of forests in BiH have been certified.

	Tools and methodology used for effectiveness assessment	Methodology used for this measure was research of web portal of the competent institutions.
	References	http://sumerepublikesrpske.org/index.php/fsc-c-r-ifi https://fmpvs.gov.ba/odrzivo-upravljanje-sumama-i-krajolikom/ http://www.wwfadmira.org/projekti/sume/promoviranje_odrivog_gospodarenja_umama_kao_podrka_odrivom_razvoju_u_bosni_i_hercegovini/ https://www.sarajevo-sume.ba/index.php/en/fsc-certificiranje
	Other relevant information	/
	References	/
	Obstacles/deficiencies and needs for measure implementation	Difficulties in full implementation of this measure stem from the lack of funding for implementation of forest certification procedures and insufficiently trained and certified individuals and institutions that are competent for certification. In addition, the significant problem in FBiH forestry is the mine contamination of forests and forest land. A significant proportion of the economically highly valuable forests is among these forests, and they are for longer periods subject to non-management.
	References	/
	Measure	Ensure controls during the certification implementation process itself
	Measure description	An accredited certification firm shall conduct the certification process in three steps: 1) pre-audit, 2) main audit, and 3) certificate awarding. The pre-audit includes the field visits of appraisers, who assess every segment of the company and list everything that needs to be fixed by the time of the main audit. The main audit includes the appraiser checking whether what they have described in the pre-audit has been accomplished, and they cite what has not been accomplished under corrective measures that need to be completed until the next control within one year. The last step is the certification award, i.e. the administrative procedure without field visits. In addition, during the period pending the main audit the company itself may organize internal meetings or meetings with advisors experienced in Forest Stewardship Council (FSC) certification in order to meet the requirements from the pre-audit in the best manner as soon as possible.
	Nature of the measure	Regulatory
Corresponding target	National	7
	Aichi	7
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	The research being conducted does not tell whether the companies that had done certification of BiH forests followed the procedure described in the measure.
	Tools and methodology used for effectiveness assessment	Methodology used for assessing effectiveness was the search of web pages of institutions and forest management companies.
	References	http://sumerepublikesrpske.org/index.php/fsc-c-r-ifi https://fmpvs.gov.ba/odrzivo-upravljanje-sumama-i-krajolikom/ http://www.wwfadmira.org/projekti/sume/promoviranje_odrivog_gospodarenja_umama_kao_podrka_odrivom_razvoju_u_bosni_i_hercegovini/ https://www.sarajevo-sume.ba/index.php/en/fsc-certificiranje
	Other relevant information	/
	References	/

Obstacles/deficiencies and needs for measure implementation		In this case, there are no significant obstacles to implementation of the measure. It is necessary to engage in the procedure of certification also the evaluators who would evaluate the whole procedure of certification and propose corrective measures. Only the securing of financing could become a barrier in implementation of this measure within each forest management company.
References		/
Measure		Develop forest certification schedule plans
Measure description		The forest management company will move forward with certification once it has secured the funding defined in Measure 7.2 (Secure financial resources and involve companies accredited for certification). The certification schedule depends on the capacity of employees to verify each of the nine FSC certificate principles and to make them in compliance with the FSC criteria. The more incompliance there are, the more time is needed for harmonization. The process mainly takes from one to two years. According to the certification action plan drafted in the very beginning and supplemented after the pre-audit, it can be concluded how much time it will take to obtain the certification.
Nature of the measure		Regulatory
Corresponding target	National	7
	Aichi	7
Measure effectiveness	Measure effectiveness assessment	The undertaken measure proved to be partially effective.
	Effectiveness assessment explanation	The measure is considered partially effective because only around 75% of forests in BiH have been certified. The forest management companies included in their annual plans and work programs also the dynamics of forest certification.
	Tools and methodology used for effectiveness assessment	Methodology used for assessing effectiveness of this measure involved searching of web pages of institutions and forest management companies.
	References	http://sumerepublikesrpske.org/index.php/fsc-c-r-ifi https://finpvs.gov.ba/odrzivo-upravljanje-sumama-i-krajolikom/ http://www.wwfadria.org/projekti/sume/promoviranje_odrivog_gospodarenja_umama_kao_podrka_odrivom_razvoju_u_bosni_i_hercegovini/ https://www.sarajevo-sume.ba/index.php/en/fsc-certificiranje
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Difficulties for full implementation of this measure are to be found in the lack of financing for implementation of forest certification procedure and insufficiently trained and certified individuals and institutions that are competent for certification.
References		/

MEASURES TO ACHIEVE NATIONAL TARGET 8

Measure	Adopt the Law on Organic Food Production of Food in FBiH
Measure description	At the time of the drafting of NBSAP BiH, the Law on Agricultural Organic Production had not been adopted. Therefore, based on an analysis of this sector, it was assessed that it was necessary to regulate methods falling within the category of agricultural organic production in FBiH. In September 2016, the Law on Agricultural Organic Production (Official Gazette of the Federation of BiH, No. 72/16) was adopted and it has been in effect since 30 th September 2017.

Provisions of Article 54 of the Law define a transitional period of one year from the date of entry into force of the Law which was deemed necessary for the drafting and adoption of by-laws, establishment of institutional and administrative capacities required for the implementation of the Law.

The Law regulates objectives and principles of organic production, production rules for organic agricultural production, labelling of organic products, control system in organic production, register of entities in organic production, administrative and inspection supervision, import, export and marketing of organic products, infringements and other issues of relevance for organic production.

Based on the review of the report of the Federal Ministry of Agriculture, Water Management and Forestry, in 2017, the Ministry prepared a draft Rulebook on Organic Plant and Livestock Production which was adopted in 2018 and published in the Official Gazette of the Federation of BiH, No. 14/18.

This Rulebook defines minimum requirements for organic plant production including procedures and certain standards for plant cultivation, transitional period, parallel production, maintaining soil fertility, crop rotation, list of approved fertilizers, lists of plant protection products and soil conditioning preparation; minimum requirements for organic livestock production for animal breeding, transitional period, conditions for keeping animals, feeding, care and treatment of animals; and conditions for adjustment of production rules for plant and livestock production in exceptional cases. The purpose of this Rulebook is to facilitate the implementation of the Law on Agricultural Organic Production in relation to organic plant and livestock production and further alignment of the legislation regulating agricultural organic production in FBiH with the EU legislation through transposition of provisions regulating the field of organic plant and livestock production defined in the Commission Regulation (EC) No. 889/2008 laying down detailed rules for the implementation of Council Regulation (EC) No. 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control (OJ L 250, 18.9.2008.) as last amended by the Commission Implementing Regulation (EU) 2017/838.

As regards other by-laws, the Ministry's work plan for 2019 envisages activities on their drafting and adoption.

Nature of measure		Legal
Corresponding target	National	8
	Aichi	7
Measure effectiveness	Measure effectiveness assessment	Measure taken has been effective.
	Effectiveness assessment explanation	The adopted Law on Agricultural Organic Production (Official Gazette of the Federation of BiH, No. 72/16) facilitates the application of organic production methods, implementation of incentives through budget policies of relevant institutions in FBiH, labelling of organic products.
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included analysis of the legal framework for agricultural organic production in FBiH, as well as annual reports and plans of the Federal Ministry of Agriculture, Water Management and Forestry.
	References	https://fmpvs.gov.ba/wp-content/uploads/2017/Poljoprivreda%20legislative/Poljoprivreda-zakoni/Zakon-polj7216.pdf https://fmpvs.gov.ba/wp-content/uploads/2017/Poljoprivreda%20legislative/Poljoprivreda-pravilnici/prav-org-14-18.pdf https://fmpvs.gov.ba/wp-content/uploads/2017/Planovi-izvjestaji/plan-rada-2019-2.pdf https://fmpvs.gov.ba/wp-content/uploads/2017/Planovi-izvjestaji/godisnji-izv-2018.pdf

Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Since the measure has been implemented, no obstacles have been identified. Deficiencies include failure to adopt all by-laws as defined under the Law on Agricultural Organic Production in FBiH (Official Gazette of the Federation of BiH, No. 72/16).
References		/
Measure		Analyze the current status and market in the area of organic and integral production
Measure description		As organic farming is gaining in importance, a series of activities are planned under this measure. First of all, through relevant state institutions (e.g. statistics) it is necessary to obtain the indicators on the quantities and types of manufactured goods and the number of certified farms engaged in organic production. These activities will be carried out in the framework of the Study Analysis of the Current State of Organic and Integral Production in BiH, which should be created by a team of experts nominated by the relevant ministries of agriculture, water management and forestry at the entity level and BD levels. Questionnaires, phone calls and e-mails are to be used to carry out the process of surveying individuals, institutions, legal entities and others, with pre-defined questions. After completion of the survey, the team of experts will statistically process the whole sample and pass the conclusions based on the results. These activities require a period of about one year. This measure has not been implemented yet.
Nature of the measure		Policy/strategic
Corresponding target	National	8
	Aichi	7
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Effectiveness of this measure is not known because activities foreseen under it have not been implemented.
	Tools and methodology used for effectiveness assessment	Methodology used for assessing the effectiveness involved searching web pages of Ministry and other relevant institutions, and analysis of data found by the expert.
	References	Federal Ministry of Agriculture, Water Management and Forestry, Ministry of Agriculture, Forestry and Water Management of RS
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		According to the NBSAP BiH, implementation of this measure was planned for 2016; however, the NBSAP BiH was adopted in May 2017, what has caused delays in implementation of all measures, including this one. In order to implement these measures, it will be necessary to secure financing and establish a team to do analysis and activities foreseen under this measure.
References		/
Measure		Select potential agencies for certification of organic and integral production

Measure description		<p>Accreditation of control i.e. certification bodies is the responsibility of the Institute for Accreditation of Bosnia and Herzegovina (BATA) as an independent administrative and non-profit institution responsible for accreditation of conformity assessment bodies in BiH. BATA has been established based on the Law Establishing the Institute for Accreditation of BiH (Official Gazette of BiH, No. 10/02) pursuant to the Law on Accreditation (Official Gazette of BiH, No. 19/01).</p> <p>There are several certification bodies in the territory of BiH which perform control and certification of organic production. Bodies that have their principal office in BiH and perform certification of organic production are:</p> <ul style="list-style-type: none"> ▪ Organska Kontrola, with the principal office in Sarajevo, has been accredited by the European Commission for the certification of organic products in third countries intended for marketing in EU. This is the only certification body approved by the Ministry of Agriculture, Forestry and Water Management of Republika Srpska, ▪ BeHaBIOCert, with the principle office in Sarajevo, performs surveillance and certificates are issued through AgriBIO Cert from Croatia, ▪ DQS BIH, with the principle office in Sarajevo, performs surveillance and certificates are issued through DQS Frankfurt Company. <p>In addition to these certification bodies, a number of international bodies, which are not registered in BiH and do not have their principal offices in BiH, have been active in the certification of organic products in BiH for many years, specifically:</p> <ul style="list-style-type: none"> ▪ Agreco R.F. Göderz GmbH, from Germany, ▪ Bio.inspecta AG, from Switzerland, ▪ Ecocert SA, from France, ▪ IMOSwiss AG, from Switzerland, ▪ LACON GmbH, from Germany, ▪ ORSER, from Turkey, ▪ Organic Control System, from Serbia. <p>This is also one of the reasons for the lack of complete overview of the organic production sector in BiH. After the drafting and adoption of the full set of laws regulating this sector, a system will be established that will regulate the organic production sector, i.e. operation of only such certification bodies as approved by the entity ministries. Therefore, it is important to establish, in accordance with the future laws, clear schemes for the control of organic production by the relevant authorities to ensure efficient control of producers, certification bodies and marketing of local and imported organic products.</p>
Nature of measure		Regulatory
Corresponding target	National	8
	Aichi	7
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective.
	Effectiveness assessment explanation	The measure taken has been partially effective due to a small number of approved certification bodies certifying organic products in BiH.
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included research of websites of ministries and other relevant institutions and analysis of data obtained by experts.
	References	Ministry of Foreign Trade and Economic Relations of BiH Federal Ministry of Agriculture, Water Management and Forestry Ministry of Agriculture, Forestry and Water Management of RS

	<p>Department of BD Government for Agriculture, Forestry and Water Management</p> <p>http://www.dei.gov.ba/dei/direkcija/sektor_strategija/Upitnik/odgovoriupitnik/Archive.aspx?pageIndex=1&langTag=bs-BA</p> <p>http://www.mvteo.gov.ba/attachments/bs_Home/Ostale_stranice/POLJOPRIVREDA,_PREHRANA,_ŠUMARSTVO_I_RURALNI_RA-ZVOJ/Podzakonski_akti_poljoprivrede/Odluku_o_harmoniziranim_registri-ma__poljoprivrednih_gazdinstava_BiH_B_S_H_ENG.pdf</p>												
Other relevant information	/												
References	/												
Obstacles/deficiencies and needs for measure implementation	Budgets do not allocate sufficient funds for organic production certification, while there are no available data for integral production. It is also necessary to establish additional certification bodies which will be approved by the entity ministries.												
References	/												
Measure	Continually increase incentives and subsidies for organic and integral production, and for <i>in situ</i> on farm breeding of indigenous species												
Measure description	<p>In the context of incentives policy in BiH, as well as other support measures, support of entities, cantons and the Brčko District BiH is critical. Measures funded from the budgets of entities, cantons and the Brčko District BiH, which are aimed at supporting organic production, are mainly focused on supporting organic production certification.</p> <p>As shown in the table below, total expenditure for the support of organic production in BiH between 2011 and 2015 was approximately BAM 700,000 and was continuously decreasing. Thus, in 2015, the amount was BAM 59,272. Also, the trend of decrease in budget incentives continued in 2016 and 2017 when the amount was BAM 70,000, but these payments are mainly related to general organic production certificate and certification of honey in the Una-Sana Canton.</p> <p><i>Table 5: Details organic production support provided in BiH, period 2011-2015 in BAM</i></p> <table><tr><th>Organic production support</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th></tr><tr><td></td><td>BAM 371,456.90</td><td>BAM 143,136.08</td><td>BAM 55,046.92</td><td>BAM 69,137.66</td><td>BAM 59,272.00</td></tr></table> <p>Source: Office for Harmonization and Coordination of the Payment System in Agriculture, Food and Rural Development BiH, based on information provided by entity/cantonal ministries of agriculture and BD Department of Agriculture</p> <p>In FBiH, Incentives for product certification are granted by the Federal Ministry of Agriculture, Water-Management and Forestry. Rulebook on Conditions and Modalities for Obtaining Financial Support under Rural Development Model regulates criteria for supporting organic production. Compliance with the criteria for subsidies is verified by inspectors in the field of agriculture who prepare records on organic production control which serve as basis for the payment of subsidies. The amount of the support is 75% of total documented costs of certification. Funds intended for this purpose are paid once a year to applicants who meet the set criteria. The amount of these funds is also constantly decreasing.</p> <p>In RS, the Ministry of Agriculture, Forestry and Water Management of RS issues the Rulebook on the Conditions and Modalities of for Obtaining Financial Incentives for the Development of Agriculture and Rural Areas every year defining support measures for agricultural producers. Organic plant production and plant production in conversion periods is the first measure for which incentives are granted. Certification of organic agricultural production is the second measure for which incentives are granted. Since 2016, this Rulebook also includes incentives for organic livestock production and conversion period. The amounts paid are constantly decreasing in RS as well.</p>	Organic production support	2011	2012	2013	2014	2015		BAM 371,456.90	BAM 143,136.08	BAM 55,046.92	BAM 69,137.66	BAM 59,272.00
Organic production support	2011	2012	2013	2014	2015								
	BAM 371,456.90	BAM 143,136.08	BAM 55,046.92	BAM 69,137.66	BAM 59,272.00								

<p>In BD BiH, incentives for organic production certification are granted from the budget of the Department of Agriculture, Forestry and Water Management. Farmers can obtain support for organic plant production, organic livestock production. Organic plant production incentives include the following categories: arable crops, planting material (except soft fruit), planting material for soft fruit and perennial crops. Organic livestock production includes the following categories: milk (from cows), calves for fattening, steer fattening, pig fattening, lamb fattening, chicken fattening, dairy cows, cows in cow-calf operations, sheep, rams, goats and billy goats, breeding female rabbits, turkey poultts fattening, pigs and bee broods. Funds intended for these purposes are paid once a year to applicants who meet the set criteria.</p>		
Nature of measure		Financial
Corresponding target	National	8
	Aichi	7
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
	Effectiveness assessment explanation	Since the measure defined in NBSAP covers the period 2016-2020, there has been some progress, but insufficient. Also, continuous decrease of funds allocated from the budgets has been recorded.
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included research of websites of ministries and other relevant institutions and analysis of data obtained by experts.
	References	Annual reports on the situation in agriculture Federal Ministry of Agriculture, Water Management and Forestry Ministry of Agriculture, Forestry and Water Management of RS Department of BD Government for Agriculture, Forestry and Water Management
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		The most serious obstacle is the fact that the amount of funds allocated for organic agricultural production is decreasing year by year.
References		Annual reports on the situation in agriculture
Measure		Draft the action plan for development of organic and integral agricultural production in BiH
Measure description		<p>Although it has not yet been adopted, the Action Plan for Developing Organic Production in BiH has been prepared for the period 2017-2021 (working draft) by the Association for Rural Development – ARD. The Action Plan for Developing Organic Production contains 3 goals, 16 objectives and 50 activities, identified in consultations with key stakeholders in organic production using the bottom-up approach. With the proposed objectives and activities that reflect actual needs of the existing and potential organic producers and processors, also identified were the stakeholders who should be responsible for implementation of the identified objectives and activities, all for the purpose of modernizing and intensifying organic production in BiH, what would make it competitive both in national and international markets.</p> <p>The process of developing Action Plan was initiated by civil society organizations in cooperation with agricultural producers, and they were joined in the process of development of the Plan by representatives of commercial companies and</p>

		<p>public institutions from local, entity and BiH levels. When developing this Action Plan, strengths, weaknesses, opportunities and obstacles that exist in the sector of organic production in BiH were taken into consideration in order to obtain relevant information.</p> <p>As a part of the campaign “Developing Organic Production in BiH”, on 27th November 2017, the Association for Rural Development, in cooperation with the Centres of Civil Initiatives (CCI) sent to the Ministry of Foreign Trade and Economic Relations and to the Council of Ministers of BiH the “Initiative to include the Action Plan for Developing Organic Production in BiH for the period 2017-2021 in the Program of Work of Council of Ministers of BiH for 2018”. However, this Action Plan has not been adopted yet.</p>
Nature of the measure		Policy/strategic
Corresponding target	National	8
	Aichi	7
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
	Effectiveness assessment explanation	The measure can be considered partially effective because the action plan has been developed; however, it has not been adopted yet. Adoption of the plan and its implementation would enable this measure to be considered fully effective.
	Tools and methodology used for effectiveness assessment	Methodology used for assessing effectiveness involved searching web pages of the Association for Rural Development and the competent ministries.
	References	http://ardbih.org/aktivnosti/javne-kampanje/unapredenje-organske-proizvodnje-u-bih/ Ministry of Foreign Trade and Economic Relations of BiH Federal Ministry of Agriculture, Water Management and Forestry Ministry of Agriculture, Forestry and Water Management of RS
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Among greatest obstacles to implementation of this measure is the non-adoption of the action plan by the Council of Ministers of BiH.
References		NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 9

Measure	Establish the system for prioritization in construction of the largest and most significant treatment facilities
Measure description	<p>The prioritization of construction of systems for the largest and most significant pollutants, the ones that directly affect the precious and sensitive ecosystems, contributes to protection of human health and environment in general. This measure foresees that the competent ministries of agriculture, water management and forestry, jointly with agencies/public institution for water basins, need to nominate an expert team of 10 members. In addition, it was foreseen that the said expert team should organize 3 meetings in order to define criteria for prioritization, establish the work plan and the responsibilities for implementation of this measure. To date, this measure has not been implemented. Prioritization of the wastewater treatment facilities is based on financing available from the budgets of local administration units and the capacity to borrow from international financial institutions.</p>

Nature of the measure		Regulatory
Corresponding target	National	9
	Aichi	8
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Not possible to assess effectiveness of this measure as it has not been implemented.
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included research of websites of institutions responsible for water monitoring and other relevant institutions
	References	Adriatic Sea Watershed Agency Sava River Watershed Agency Public Institution "Vode Srpske"
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Significant delays in implementation of this measure are results of two factors. The first is about delays in adoption of the NBSAP BiH. Implementation of this measure was planned for 2016, but the NBSAP was adopted only in 2017. The second factor is the lack of coordination among the institutions, and the institutions competent for implementation of this measure have failed to start activities to establish an expert team that would work on prioritization of construction of waste water treatment plants.
References		/
Measure		Establish wastewater quality monitoring and form databases
Measure description		<p>Continuous monitoring of watercourses that are recipients of wastewater from industrial and municipal wastewaters is a legal obligation in order to prevent and protect human health, including overall biological diversity. Monitoring of water quality, ecological state of surface waters and ground waters is currently implemented by agencies in charge of water basins and public health departments. Agencies for river basins in FBiH and the Public Institution <i>Vode Srpske</i> in RS have automatic stations which measure certain water quality parameters. Therefore, they have some databases with data being stored in the water information system.</p> <p>Also, when it comes to industrial activities that have or might have negative environmental effects (including discharge in water), they must have environmental permits. Environmental permit is based on the concept of prevention of environmental pollution and use of BATs. Environmental permits regulate activities in industrial processes and emission of pollutants into environment, emission limit values and monitoring and reporting annual production. It should be mentioned that environmental permit also includes a program for monitoring/reporting by the plant operator.</p> <p>Plant operators (holders of environmental permits) submit annual reports on emissions and release into environment, including emissions into waters through pollutant release and transfer registers (PRTR) at the level of FBiH, RS and BD. PRTR is based on information obtained by authorized institutions or plant operators. PRTR contains databases on release of pollution, environmental permits, environmental inspection activities and harmful substances to human health. Therefore, information on industrial pollution can also be found in PRTRs.</p>

Nature of measure		Regulatory
Corresponding target	National	9
	Aichi	8
Measure effectiveness	Measure effectiveness assessment	Measure taken has been effective
	Effectiveness assessment explanation	The measure taken has been effective since relevant water agencies have their scopes of work (divided per basins), established networks of automatic measuring station, sufficient human resources. In addition, public health institutes, with their equipment and human resources, are able to respond to questions related to water safety for human use.
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included research of websites of institutions responsible for water monitoring and other relevant institutions.
	References	Adriatic Sea Watershed Agency Sava River Watershed Agency Public Institution "Vode Srpske" Public Health Institute of Federation of BiH Public Health Institute of Republika Srpska
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		One of the deficiencies in terms of establishment of the monitoring system and submission of data to PRTR system is related to operators who have the responsibility to submit information on discharges into water and pollutants. These operators do not always submit this data, which then requires increased inspection activities and stricter penalties for those operators who fail to submit data on pollutants they discharge into water.
References		NBSAP BiH
Measure		Analyze the types and quantities of pesticides and fertilizers used
Measure description		<p>It is not known today what amounts and types of pesticides and fertilizers are used for agricultural production in BiH, and under this measure a series of activities are planned. First of all, through relevant state institutions (e.g. statistics, institutes for agriculture, customs services), it is necessary to obtain the indicators on the quantities and types of imported products, as well as the data on domestic production. This measure also envisaged a preparation of a study which would be based on the obtained information and would include a detailed analysis of quantities of pesticides and fertilizers used in BiH. However, this study has still not been prepared. Therefore, a brief analysis based on available data has been prepared for the purposes of this Report.</p> <p>Wide range of pesticides and fertilizers are used, especially in agriculture. Data on BiH trade (import) indicate the quantities of nitrate, phosphate mineral or chemical fertilizers and mineral or chemical fertilizers with two or three elements (N, P and K). However, there is no available data on quantities used.</p> <p>In terms of import, the analysis covered the period between 2014 and 2018. Generally, it can be concluded that in the period between 2014 and 2016 there was a significant increase of import of all types of fertilizers, which was then followed by a decrease in quantities of imported fertilizers. Imported quantities expressed in kg for 2018 are as follows:</p> <ul style="list-style-type: none"> ▪ nitrate fertilizers – 53,582,297.78 kg, ▪ phosphate – 5,000 kg and ▪ mineral or chemical fertilizers with three elements 49,968,347.43 kg.

<p>According to statistical indicators of imported and exported quantities of pesticides in BiH for 2017 and 2018, the situation is as follows:</p> <ul style="list-style-type: none"> in 2018, import of insecticides was 566,060.52 kg and export 28,016.28 kg; in 2017, import of fungicides was 549,824.96 kg and export 26,535.45 kg; in 2018, import of herbicides etc. was 11,352,139.59 kg and export 18,670.18 kg; in 2018, import of disinfectants was 740,248.10kg and export 1,114.00 kg; in 2018, import of DDT was 483.00 kg; in 2017, import of rodenticides was 152,464.15 kg and export 2,661.69 kg; in 2018, import of other pesticides was 294,127.29 kg and export 5,477.71 kg. <p>The presented data indicate that, in case of some pesticides, import is several times higher than the export. There is a decrease of rodenticide import in 2018 compared to 2017. As for DDT and other, only import is recorded, with no export.</p> <p>In accordance with regulations, the Food Safety Agency conducts checks of maximum levels of pesticide residues in food and feed of plant and animal origin.</p>		
Nature of measure		Regulatory
Corresponding target	National	9
	Aichi	8
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	The time period for the implementation of this measure had expired even before the NBSAP BiH was adopted by the BiH Council of Ministers, therefore the measure has not been implemented within the set deadline. For that reason, it is not possible to assess the effectiveness of the measure, since some minor steps towards its implementation have been made so far.
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included research of websites of the BiH Statistics Agency and other relevant institutions and analysis of data obtained by experts.
	References	Agency for Statistics of BiH http://www.fsa.gov.ba/fsa/images/pravni-propisi/bs-Pravilnik_o_maksimalnim_nivoima_ostataka_pesticida_u_i_na_hrani_i_hrani_za_%C5%BEivotije_biljnog_i_%C5%BEivotinjskog_porijekla_89-12.pdf
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		One of the most serious obstacles to the implementation of this measure is the lack of a single database on used fertilizers and pesticides, as well as lack of obligation on the part of the users of fertilizers and pesticides to submit to the relevant institutions information about used fertilizers and pesticides during one year. It is necessary to require by law the obligation of users of fertilizers and pesticides to submit annual data on used quantities and establish a database where this information will be stored. This database could then be used for analyses of quantities of used pesticides and fertilizers.
References		Agency for Statistics of BiH Ministry of Foreign Trade and Economic Relations of BiH
Measure		Establishment of the system for monitoring of pesticides, fertilizers and soil fertility

Measure description		Successful implementation of this measure requires the expert team be established as referred to in Measure 16.1. (Establish cooperation and synergy among the relevant institutions) to hold 3 meetings in order to establish which parameters are monitored and which locations are monitored, and to pass an activity plan to define the regional (sensitive locations) coverage of the state with a soil monitoring network. In addition to the aforementioned activities, the expert team shall establish databases that will be available on the websites of the entity ministries of agriculture, water management and forestry. Activities foreseen for implementation of this measure have not been implemented.
Nature of the measure		Regulatory
Corresponding target	National	9
	Aichi	8
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	It was not possible to assess effectiveness of this measure as the measure has not been implemented.
	Tools and methodology used for effectiveness assessment	Methodology used for assessing effectiveness of this measure involved searching web pages of relevant institutions and consultations with representatives of institutions.
	References	Institute of Agriculture of RS Federal Agropedology Institute
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Implementation of this measure had been scheduled for 2018; however, due to certain delays, the NBSAP BiH was adopted as late as in May 2017, causing delays in implementation of all measures. An additional problem for establishment of monitoring that is foreseen under this measure is the financing that is needed in order to establish the system of monitoring. In addition, the expert team that should start activities on implementation of this measure in the Council of Ministers has not been established.
References		Ministry of Foreign Trade and Economic Relations of BiH NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 10

Measure	Identification of species and populations of invasive animals, plants and fungi, and formation of databases
Measure description	The successful achievement of the defined national target 10 and implementation of this measure requires that the expert team appointed by relevant ministries for protection of environment identify the species and populations of invasive species of animals, plants and fungi in BiH and the intensity and pathways for the spread of these species. Based on the results, the expert team should establish databases on invasive species that would be available on the websites of the entity ministries for environmental protection. Successful implementation of this measure involves literary and field research with the aim of identifying and determination of invasive species of plants and fungi and adequate analytical and statistical processing of data on invasive species, the state of their populations, numbers, areal, etc., with appropriate statistical and software programs for database development. Activities

for the implementation of these measures are reflected in the application of standard research methods in order to obtain adequate data, which in addition to identifying the presence of invasive species also include the assessment of the population status, its areal, etc. This measure involves the use of appropriate computer programs, databases, mapping, etc.

It is important to mention that this measure has been partially implemented. Activities proposed within the measure have so far not been implemented. In particular, databases of populations of invasive animals, plants and fungi, envisaged by the measure, have not been established. Partial implementation of the measure can be viewed through the fact that certain regulations have been adopted at entity and at levels of local self-government units which prescribe measures to prevent spreading of some invasive species. Also, Cantonal Environmental Protection Plan of the Sarajevo Canton (SC) indicates that a digital cadastre of habitats has been established for ragweed and according to the cadastre data, a total of 105 ragweed sites have been identified in SC. Invasive species are also addressed within activities of some currently implemented projects. Also, information about invasive species and their areal can be found in research papers.

Activities of the project “Inventory and Geographic Interpretation of Invasive Species in FBiH”, implemented by the Federal Ministry of Environmental Protection and the Faculty of Natural Sciences and Mathematics of the Sarajevo University, are of particular importance. The aim of this project is to prepare a list of invasive species and establish a relevant database, which will be achieved through a comprehensive analysis of the existing literature, field research and geographic interpretation of spatial distribution of invasive species. This database containing a list of invasive species will serve to inform the preparation of by-laws for the protection from alien invasive species in order to preserve native biodiversity of species and habitats and protect habitats and species in FBiH.

Another important project for the identification of invasive species is the project “Preserving Sava River Basin Habitats through Transnational Management of Invasive Alien Species (Sava TIES)” implemented between June 2018 and May 2021 as part of the Danube Transnational Program. The goal of this project is to reduce habitat fragmentation and improve the connectivity of the transnational ecological corridor within the Sava River Basin through cross-sectoral measures to monitor the situation, control and remove invasive species in the network of protected areas in the Sava River basin. Over the next three years, the project will be implemented in the territory of four countries of the Sava River basin – Slovenia, Croatia, BiH and Serbia. During its implementation, the project will seek to find effective solutions for permanent removal and eradication of invasive alien plants that are spreading uncontrolled in the Sava River basin, having a negative effect or even pushing out other native species, reducing soil fertility and cultivable agricultural surfaces, causing major problems in flood control and much more. The project will focus on species which are already causing serious damage in the Sava River basin. Activities will be implemented in 7 pilot areas in 4 countries to remove: Japanese knotweed (*Fallopia japonica*), false indigo bush (*Amorpha fruticosa*) and tree of heaven (*Ailanthus altissima*). The project will also include researches to learn more about other invasive alien species posing a threat to biodiversity.

Nature of measure		Regulatory Financial
Corresponding target	National	10
	Aichi	9
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
	Effectiveness assessment explanation	Partial effectiveness of the measure can be explained by the fact that there are individual activities and projects aimed at identification of invasive species, as well as action plans at cantonal levels and levels of local self-government units focusing on the prevention of spreading of certain invasive species. Also, environmental protection plans contain certain data on invasive species.

	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included research of websites of ministries and other relevant institutions and research of scientific papers found in some bases.
	References	<p>Semir Maslo (2016): Preliminary List of Invasive Alien Plant Species (IAS) in Bosnia and Herzegovina. <i>Herbologia</i>, Vol. 16, No. 1, 2016.</p> <p>Law on Nature Protection of RS (Official Gazette of Republika Srpska, No. 20/14) http://www.fmoit.gov.ba/ba/clanak/1755/dobar-primjer-uspjescaronne-suradnje-akademske-zajednice-i-federalnog-ministarstva-okoliscarona-i-turizma</p> <p>Law on Nature Protection of FBiH (Official Gazette of the Federation of BiH, No. 66/13)</p> <p>Dautbašić M., Mujezinović, O. (2017): Alien and invasive species of harmful insects in Bosnia and Herzegovina.</p> <p>Action Plan for Environmental Protection of Tuzla Canton 2015-2020</p> <p>Action Plan for Environmental Protection of Sarajevo Canton</p> <p>National Park Una</p> <p>Action Plan for Environmental Protection of Una-Sana Canton 2014-2019</p> <p>http://czzs.org/ocuvanje-stanista-sliva-rijeke-save-kroz-medunarodno-upravljanje-invazivnim-vrstama-sava-ties/</p>
Other relevant information		The measure has been partially implemented.
References		https://www.energetskiportal.rs/inventarizacija-i-geografska-interpretacija-invazivnih-vrsta-u-federaciji-bih/
Obstacles/deficiencies and needs for measure implementation		Based on various project activities focusing on identification of invasive species, lists with information about distribution and mode of spread et cetera should be made.
References		<p>NBSAP BiH</p> <p>Vojniković Sead (2015): Tall Cone Flower (<i>Rudbeckia laciniata</i> L.) – Ew Invasive Species in the Flora Of Bosnia and Herzegovina. <i>Herbologia</i>, Vol. 15, No. 1, 2015</p>
Measure		Preparation of strategy for invasive species
Measure description		Identification of the existing invasive species and determining the condition of their populations are the basis for the preparation of strategies and for the establishment of a system for monitoring and determination of methods and paths for spreading of invasive species. The measure foresees that an expert team should propose a framework for coordination and comprehensive approach to control of invasive species and define methods to prevent the spread of some invasive species. Methods and ways of preventing the spread should be tailored to the very biology and ecology of the species, and will vary depending on the type and the possibility of using certain methods. Accordingly, the expert team needs to organize consultative meetings with stakeholders and, if necessary, make appropriate action plans for specific invasive species. Monitoring and control of spreading is reduced to some invasive species, prevailingly those that affect human health. The basic plans implemented in local communities involve mowing and preventing spreading of ambrosia. This measure has not yet been implemented.
Nature of the measure		Policy/strategic
Corresponding target	National	10
	Aichi	9
Measure effectiveness	Measure effectiveness assessment	Unknown

	Effectiveness assessment explanation	Measure effectiveness is unknown because the measure has not yet been implemented. However, there have been some individual activities and action plans implemented with the objective of stopping negative impact of certain invasive species and stop their spreading.
	Tools and methodology used for effectiveness assessment	Methodology used for assessing effectiveness involved searching web pages of ministries and other relevant institutions, scientific paper data bases, and relevant research on this topic.
	References	<p>http://www.fmoit.gov.ba/ba/clanak/1755/dobar-primjer-uspjescaronne-suradnje-akademske-zajednice-i-federalnog-ministarstva-okoliscarona-i-turizma</p> <p>Decision on Measures to Suppress and Destroy Weed Plant Ambrosia (Official Gazette of Republika Srpska, No. 81/07)</p> <p>NBSAP BiH</p> <p>Law on Nature Protection of RS (Official Gazette of Republika Srpska, No. 20/14)</p> <p>Law on Nature Protection of FBiH (Official Gazette of the Federation of BiH, No. 66/13)</p> <p>Semir Maslo (2016): Preliminary List of Invasive Alien Plant Species (IAS) in Bosnia and Herzegovina. Herbologia, Vol. 16, No. 1, 2016.</p>
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Among the obstacles/deficiencies, it can be mentioned the facts that the data have not been aggregated and systematized, and that so far no funding has been allocated to implementation of this measure. In addition, this measure had been planned for implementation by 2017, however, as the NBSAP BiH was adopted as late as in May 2017, implementation of this measure has also been delayed.
References		NBSAP BiH
Measure		Formation of the system for monitoring and definition of methods for control of spread of invasive species
Measure description		<p>Identification of the existing invasive species and determining the condition of their populations are the basis for the preparation of strategies and for the establishment of a system for monitoring and determination of methods and paths for spreading of invasive species. The measure envisages that an expert team should propose a framework for coordination and comprehensive approach to control of invasive species and define methods to prevent the spread of some invasive species. Methods and ways of preventing the spread should be tailored to the very biology and ecology of the species, and will vary depending on the type and the possibility of using certain methods. Accordingly, it was envisaged that the expert team should organize consultative meetings with stakeholders and, if necessary, make appropriate action plans for specific invasive species.</p> <p>Until now, all mentioned activities envisaged by this measure have not been implemented. Monitoring and control of the spread has been reduced to only a few invasive intensive species, primarily those affecting human health. Basic plans implemented at the level of local self-government units focus primarily to cutting and prevention of spread of ragweed. As it has already been mentioned under the assessment of the previous measure, Sarajevo Canton has established a cadastre of ragweed which represents partial implementation of that measure. Some individual projects could also be mentioned which focus on monitoring of some invasive species. One of such projects is "Monitoring of concentrations of allergenic plants pollen in the territory of Herzegovina" which was co-funded in 2012 by the FBiH Environmental Protection Fund and implemented by the Faculty of Agronomy and Food Technology of the Mostar University.</p>
Nature of measure		Regulatory Financial

Corresponding target	National	10
	Aichi	9
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
	Effectiveness assessment explanation	Partial effectiveness of this measure is primarily related to prevention of the spread of ragweed, where majority of local self-government units have action plans and implement planned cutting to avoid negative effects to the health of the population.
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included research of websites of ministries and other relevant institutions and analysis of data obtained by experts.
	References	Kovačević, Z., Šumatić, N., Janjić, V., Mitrić, S., Kelečević B. (2015) Ambrosia (<i>Ambrosia artemisiifolia</i> L.) in the weeds of the Republika Srpska. Acta herbológica, Vol. 24, No. 2, 2015
Other relevant information		The measure has been partially implemented.
References		http://skupstina.ks.gov.ba/intenziviranje-kontrole-subjekata-zaduzenih-za-unistavanje-ambrozije Report on Ambrosia Suppression Ambrosia Mowing in RS
Obstacles/deficiencies and needs for measure implementation		Deficiencies in the implementation of the measure are reflected in the fact that there is a large number of invasive species, while spread control is done only for some species.
References		NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 11

Measure	Prepare the analysis (including mapping) of planned protected areas and start procedures for establishment of protected areas planned in spatial plans
Measure description	<p>Mapping of the specific biological diversity of BiH, as well as mapping of the whole territory, will give provide a complete database on the numbers and types of coded habitats, and their area size. This measure requires coordinated action in order to protect nature and expand the size of protected areas.</p> <p>Areas to be protected in the future period are identified in spatial plans. Spatial Plan of FBiH (2008-2028) envisages the establishment of 14 new protected area with a total spatial coverage of about 4,488 4.488 km², which is 18.5% of the territory of FBiH. Spatial Plan of RS until 2025 targeted at placing under protection 15 to 20% of the total territory of RS. Some of the identified areas in RS include:</p> <ul style="list-style-type: none"> ▪ 6 special nature reserves, ▪ 8 national parks, ▪ 187 natural monuments, ▪ 41 habitat management areas, ▪ 18 protected landscapes, ▪ 42 parks of nature, ▪ 18 forest parks, and ▪ 1 area with transformed nature.

In BiH, activities aimed at mapping, biological research and initial procedures to establish additional protected areas have been launched in the frame of the project "Achieving Biodiversity Conservation through Creation and Effective Management of Protected Areas and Capacity Building for Protection of Nature in BiH" funded by the Global Environment Fund (GEF) and implemented by the United Nations Environment Program. This Program includes activities to prepare valorisation studies for selected areas nominated for protection. Namely, these analyses will help identify the diversity of flora and fauna, as well as specific features of specific areas; also, documentation will be prepared for procedures to proclaim new protected areas. The project envisages protection of the following areas:

1. Livanjsko Field,
2. Orjen-Bijela Gora,
3. Bjelašnica– Visočica– Treskavica–Rakitnica River Canyon,
4. Mt. Zvijezda,
5. Cave at the spring of Mokranjska Miljacka,
6. Tišina,
7. Botanical and floral reserve Mediteranetum,
8. Cave system Vjetrenica,
9. Cave system Govještica.

Implementation of the activities in this project includes preparation of detailed feasibility studies for each area to be protected including identification of all natural values in the area, establishment of formal protection and establishment of efficient management in accordance with the requirements of national legislation and best international practice.

As regards identified areas in FBiH, activities are ongoing to prepare documents for Expert Opinions for proclamation of protected areas based on which line ministries for environmental protection will prepare proposals of drafts of proclamation of planned protected areas. Preparation of expert opinions for Mount Zvijezda and the Vjetrenica-Popovo Field is at its final stage. In late March 2019, opinions for Botanical and Floral Reserve Mediteranetum in Neum will be ready and in mid 2019, opinions for Livanjsko Field and Bjelašnica– Visočica– Treskavica–Rakitnica River Canyon should also be completed. A Feasibility Study for the protection of Mt. Zvijezda area was prepared in 2014 and currently, based on the Feasibility Study, an Expert Opinion for the proclamation of the "Mt. Zvijezda Protected Area with Sustainable Exploitation of Natural Resource" is being prepared.

As regards the areas located in the territory of RS, research is currently being conducted for the purpose of the preparation of protection studies for Natural Park Orjen and Natural Park Prača Canyon, while the Feasibility Study for the proclamation of the protected habitat Tišina was completed in late 2018.

Nature of measure		Regulatory Legal
Corresponding target	National	11
	Aichi	11
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
	Effectiveness assessment explanation	When it comes to the implementation of this measure, it can be concluded that the measure has been partially effective, since currently work is being done to identify all natural values in the territory of areas nominated in the mentioned project, while activities to establish their protection will be taken in the coming period.
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included collection and research of data from websites of various competent and specialized institutions.

	References	Federal Ministry of Environment and Tourism RS Institute for the Protection of the Cultural, Historical and Natural Heritage http://www.vladatk.kim.ba/vlada-tk/dokumenti-tk/prostorni-plan-fbih http://nasprostor.org/dokumenti-2/prostorni-plan-republike-srpske/ NBSAP BiH
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Some of the obstacles to the implementation of this measure include delay in adoption of NBSAP BiH, failure to plan sufficient funds in the budgets of municipalities, cantons and entities for nomination, valorisation and establishment of new protected areas.
References		NBSAP BiH
Measure		Establishment or appointment of existing institutions to manage the protected area
Measure description		<p>Establishment of Public Enterprises / institutions, which will run and sustainably manage the protected areas, represents a kind of security in protection of natural and cultural values, as well as economic starting up of local communities. According to the existing Laws on Nature Protection, a protected area is managed by a legal entity that fulfills professional, personnel and organizational conditions for carrying out activities of preservation, improvement, and promotion of natural and other values and sustainable use of the protected area. The managers are determined by the protection act. The authority competent to pass the act on the designation of a protected area may, for the purposes of managing one or more protected areas, establish a public enterprise or public institution.</p> <p>In RS, the management of a protected area, for which the act on the designation of a protected area is passed by the Government of RS, may be entrusted to a unit of local self-government in whose territory the protected area is located, a public enterprise, a public institution or other legal entity that fulfills the above conditions. The management of the protected area, for which the act on the designation is passed by the assembly of the local self-government unit, may be entrusted to one or more units of local self-government in whose territory the protected area is located which may entrust these tasks to another legal entity that fulfills the above conditions.</p> <p>In FBiH, public companies for the management of protected natural values from categories I and II are established by the Government of FBiH, while public institutions for management of other protected areas and other protected natural values are established by cantonal governments.</p> <p>There are 7 managers of protected areas in the Federation of BiH. By the Decision on the Establishment of a Cantonal Public Institution for Protected Natural Areas (Official Gazette of Sarajevo Canton, No. 31/17) it is defined that the Cantonal Public Institution manages 5 protected areas. In the Republika Srpska, there are 21 managers. Progress in implementation of this measure is seen in establishing new protected areas and their new managers.</p>
Nature of the measure		Legislative
Corresponding target	National	11
	Aichi	11
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
	Effectiveness assessment explanation	Partial effectiveness of this measure stems from the fact that after the period when the NBSAP BiH had been made, new protected areas were established, as well as new managers, while for the areas that are currently in the procedure of establishment, the managers have not yet been established.

Tools and methodology used for effectiveness assessment	Methodology used for this measure was research of web portal of the competent institutions, and searching various databases the experts got access to in various ways.
References	Federal Ministry of Environment and Tourism Public Institution "Protected Natural Areas of Sarajevo Canton" RS Institute for the Protection of the Cultural, Historical and Natural Heritage RS Government
Other relevant information	/
References	/
Obstacles/deficiencies and needs for measure implementation	An obstacle to implementation of this measure is insufficient financing on annual level that is allocated by competent institutions until such time when the protected area can become self-sustainable.
References	/

MEASURES TO ACHIEVE NATIONAL TARGET 12

Measure	Conduct the inventory of ecosystems and types of habitats in BiH
Measure description	<p>Inventory of ecosystems and habitat types in BiH is necessary because the available data significantly differ and are not complete. Implementation of this measure is necessary because the conversion of habitats is one of the manners in which biological diversity is disrupted. As a first step, the measure envisages that the competent ministries for environmental protection appoint an expert team that will implement these measures. It is necessary that the expert team systematizes the existing data and integrates them in a single document, and implements appropriate field research that would identify habitats and ecosystems and perform their mapping. The inventory methodology involves mapping and marking of certain types of ecosystems and habitats and the corresponding processing in GIS in order to create the database.</p> <p>Inventory of ecosystems and habitat types in BiH in the form of a separate list has not been done. However, various other activities have been taken to make inventories of ecosystems in different parts of BiH. Activities on the establishment and development of the information system of nature protection, that is, the formation of databases represents progress towards inventory, as one of the following modules will be protected areas. In addition, research for the proclamation of protected areas also includes identification of ecosystems and habitat types. Therefore, these data can be viewed as a small progress in the implementation of this measure. Also, types of ecosystems can be found in cantonal environmental protection action plans, as well as in scientific publications.</p> <p>BiH is characterized by rich species and ecological diversity. Some papers discussing this topic (Redžić, 2012) mention 252 ecosystems distributed in 11 biomes in the territory of BiH. According to those publications, the most diverse ecosystems can be found in river canyons and gorges which serve as centers of endemic flora, fungi and fauna development.</p> <p>As regards the habitats, there is a publication "Guide to Types of Habitats in BiH in accordance with the EU Habitats Directive". This publication was produced by the project "Support to Implementation to Birds and Habitats Directives in Bosnia and Herzegovina" implemented in the period 2012-2015. In addition to project objectives and methodology, the project also gives a detailed description of the preliminary proposal of the network of potential Natura 2000 areas in BiH, including areas sizes and existing habitat types and species of relevance to European Union for each individual area.</p>

Nature of measure		Regulatory Financial
Corresponding target	National	12
	Aichi	12
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
	Effectiveness assessment explanation	The inventorying of ecosystems and habitat types has been partially effective, since the ecosystems and habitat types have been identified in the course of research for the purpose of proclamation of certain protected areas. There several different classifications of habitat types primarily related to the purpose of habitats. A significant contribution to habitat types has been made in the "Guide to Habitat Types in BiH in line with the EU Habitat Directive" which was prepared in the frame of the project "Support to Implementation to Birds and Habitats Directives in Bosnia and Herzegovina" (2012-2015).
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included research of websites of ministries and other relevant institutions and analysis of data obtained by experts.
	References	Guide to Habitat Types in BiH in line with the EU Habitat Directive Action Plan for Environmental Protection of Bosnian-Podrinje Canton
Other relevant information		Certain types of ecosystems and habitats can also be found in cantonal environmental protection plans. Inventorying of ecosystems and habitat types as a measure from NBSAP has not been implemented. Publications related to certain types of ecosystems and habitats can be seen as a contribution to this part.
References		Action Plan for Environmental Protection of Sarajevo Canton 2016-2021
Obstacles/deficiencies and needs for measure implementation		Data is fragmented and is not contained in a single database. It is necessary to work on the implementation of this measure in order to establish databases containing inventories of ecosystems.
References		NBSAP BiH
Measure		Conduct the inventory for flora, fauna and fungi in BiH
Measure description		<p>Inventory of flora, fauna and fung in BiH is necessary because the data of this type available are incomplete, segmented, and very often there is disagreement in the reference materials about the numbers of specific taxa in BiH. Completion of this list is of great importance not only for achieving of the established goal, but also in terms of biological diversity in general. In order to implement this measure, the expert team needs to systematize the existing data and integrate them into a single document, and to perform appropriate field research in order to identify the species that are assumed to be located on the territory of BiH, which are not mentioned in the existing documents. The inventory methodology involves standard methods of literature review, field research and the application of specific methods, depending on the species researched, GPS devices and other accessories adapted to the type of research.</p> <p>Progress in the implementation of this measure can be seen in the establishment of the nature protection information system in RS with modules, where some of the modules are active and contain part of data on endemic species and the register of plant species in RS. It should be mentioned that the information system has been launched only recently and that this database will contain more information in future. RS flora is a register containing data on the spread and taxonomy of the higher plants in RS with almost 70,000 collected spatial data related to 2,638 taxa on species and subspecies level. This is an open-type database, which includes continuous work on collecting and compiling existing and new information about the flora in RS. Also, the Fund for Environmental Protection of FBiH is implementing activities to establish an information system in FBiH.</p>

		<p>Activities implemented in the frame of the project “Achieving Biodiversity Conservation through Creation and Effective Management of Protected Areas and Capacity Building for Protection of Nature in BiH” funded by the Global Environment Fund (GEF) and implemented by the United Nations Environment Program can also be seen as progress in the implementation of the measure. This Program includes activities to prepare valorisation studies for selected areas nominated for protection. Namely, these analyses will help identify the diversity of flora and fauna, as well as specific features of specific areas, which represents certain progress in terms of the implementation of this measure.</p> <p>Some projects implemented at local level also represent contribution to the implementation of this measure. Currently, activities aimed at inventorying and evaluation of plant, animal, forest and water genetic resources of the City of Banja Luka are ongoing.</p> <p>Publications addressing this issue can be mentioned as the last aspect of the progress.</p>
Nature of measure		Regulatory
Corresponding target	National	12
	Aichi	12
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
	Effectiveness assessment explanation	The implementation of the activities on the establishment of the information system of nature protection, that is, the formation of databases is the major contribution to the implementation of this measure.
	Tools and methodology used for effectiveness assessment	Methodology used for the effectiveness assessment included research of websites of ministries and other relevant institutions and analysis of data obtained by experts, participation of institutions in the implementation of some activities related to this measure.
	References	http://e-priroda.rs.ba/ https://www.giz.de/en/worldwide/40686.html
Other relevant information		The measure has been partially implemented through the activities on the establishment of the information system of nature protection, that is, the formation of databases, proclamation of protected areas, implementation of certain protection measures and project activities at local level.
References		http://e-priroda.rs.ba/ https://www.giz.de/en/worldwide/40686.html Law on National Park “Drina” (Official Gazette of Republika Srpska, No. 63/17)
Obstacles/deficiencies and needs for measure implementation		Deficiencies are primarily found in the fact that data is not complete.
References		NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 13

Measure	Identify the endangered species and their localities
Measure description	<p>Identification of endangered species and their habitats is necessary because according to adopted red lists and according to international organizations, a number of species are classified into different categories of threat. In this regard, identification of endangered species that have a narrow areal of presence is one of the basic preconditions for adequate protection and preservation. When this measure was formulated in NBSAP-a BiH an expert team was planned to be appointed by the ministries competent for environmental protection to be responsible for</p>

		<p>the identification of endangered species, and for appropriate field research that, in addition to identification, also involve determining the state of the population, number trends and direct and indirect pressures to which the population is subjected in a given habitat. The methodology for research and determination of endangered species should depend on the type and locality of research.</p> <p>Although all endangered species and their localities have not been identified, noteworthy is that BiH is working on these activities. Red Lists of protected flora and fauna are regulated by environmental laws on the Entity and BD BiH level. Of the official documents, the Decree on the Red List of Protected Species of Flora and Fauna of RS (Official Gazette of Republika Srpska, No. 124/12) has been issued and the Red List of Endangered Plants, Animals and Fungi in FBiH (Official Gazette of the Federation of BiH, No. 7/14) has been adopted. The Lists include the inventory of flora, fauna and fungi, their area distribution and level of threat. In RS, the procedure for drafting the Decree on protected and strictly protected species, which should be adopted in accordance with the provisions of the Law on Nature Protection (Official Gazette of Republika Srpska, No. 20/14), is in process.</p> <p>Activities for the establishment of environmental information systems on the level of FBiH and RS is also considered to have contributed to implementation of the measure, which have been developed within the project of establishment of the regional network for biodiversity information management and reporting (BIMR) implemented by the Open Regional Fund for the South-eastern Europe – Biodiversity (ORF BD), established and supported by GIZ. The database within the information system has been developed according to the Darwin Core standard and supports elements for further development of the modules such as flora, fauna, protected areas, Natura 2000, GIS platforms, red lists, etc. For example, one of the modules in the RS information system is the Red List, i.e. the List of Species distributed in RS, which fall in the category of the endangered species according to the IUCN criteria.</p>
Nature of measure		Regulatory
Corresponding target	National	13
	Aichi	12
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
	Effectiveness assessment explanation	The measure effectiveness assessment is based on activities implemented to identify endangered species. One of the activities is also the process of establishment of the nature protection information system of Republika Srpska and Federation of BiH. One of the modules of the RS information system is the Red List, i.e. the list of species distributed in RS falling in the category of endangered species according to the IUCN criteria. Endangered species are primarily related to the Red Lists, and are categorized according to established vulnerability criteria. In addition one of the modules will also be the protected species, wild species which are endangered or may become endangered, which are particularly significant from the genetic, ecological, ecosystemic, scientific, economic and other aspects.
	Tools and methodologies used for effectiveness assessment	The methodology used for effectiveness assessment is a search of the web pages of ministries and other relevant institutions, as well as the analysis of data found by an expert.
	References	<p>NBSAP BiH</p> <p>Decree on the Red List of Protected Species of Flora and Fauna of RS (Official Gazette of Republika Srpska, No. 124/12)</p> <p>Red List of Endangered Plants, Animals and Fungi in FBiH (Official Gazette of the Federation of BiH, No. 7/14)</p> <p>http://e-priroda.rs.ba/</p> <p>https://www.giz.de/en/worldwide/40686.html</p>

Other relevant information		Activities in implementation of the Project <i>Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building in BiH</i> implemented by the UN Environment Program in BiH and funded by the Global Environment Facility also contributed to implementation of the measure. The Project objective was to expand the network of protected areas in BiH, to improve efficiency of protected area management and to build the capacity as a tool for conservation of biodiversity and protection of endangered species and habitats. One of the activities in the Project was training of researchers for assessment of vulnerability of specific taxa.
References		NBSAP BiH, RS Institute for the Protection of the Cultural, Historical and Natural Heritage
Obstacles/deficiencies and needs for measure implementation		Creation of red lists, identification of vulnerable taxa and proposed measures for improvement would be the required steps. Also the increase of the number of areas under protection is a step forward as these areas keep both the species and habitats protected. Deficiencies lie in the fact that respective decrees and decisions have not been made for protection of endangered species and habitats.
References		NBSAP BiH Decree on the Red List of Protected Species of Flora and Fauna of RS (Official Gazette of Republika Srpska, No. 124/12) Red List of Endangered Plants, Animals and Fungi in FBiH (Official Gazette of the Federation of BiH, No. 7/14)
Measure		Form the <i>in situ</i> and <i>ex situ</i> protection of endangered species
Measure description		This measure requires that after the identification of endangered species and their populations, the expert team adopts appropriate recommendations for the protection of endangered species in order to preserve them. Activities include protection of species in their natural habitats in application of appropriate measures, which would reduce direct and indirect pressures that threaten the species, as well as creation of conditions for the protection of species even outside of its natural environment (through various forms of <i>ex situ</i> protection) in order to preserve them, and if necessary, so that they could be reintroduced into their natural habitats. Thus, this measure also involves the procedures for formal legal protection and adoption of appropriate legal solutions by the relevant ministries for protection of environment that will enable the formation of <i>ex situ</i> and <i>in situ</i> forms of protection. The methodology used for <i>in situ</i> and <i>ex situ</i> depends on the types of conservation, species and localities. This measure has been implemented through the activities on establishment of gene banks. Gene banks were established at the level of the entities in BiH, at the relevant institutions dealing with genetic resources. In RS, the plant gene bank is with the Genetic Resources Institute of the University of Banja Luka. In FBiH, the plant gene bank is with the Faculty of Agriculture and Food Sciences of the University of Sarajevo. Additionally, RS deposited reserve copies of their seeds at the Svalbard Global Seed Vault (Norway).
Nature of the measure		Regulatory
Corresponding target	National	13
	Aichi	12
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective
	Effectiveness assessment explanation	The assessment of the effectiveness of the measure is based on the activities carried out with the aim of <i>in situ</i> and <i>ex situ</i> protection of endangered species. As positive can be seen the activities of certain researchers and institutions aimed to preserve certain species in natural conditions, or in some form of protection outside of natural habitat. This part of activities may include the increase of area under protection, because that provides protection to species in their natural habitats.

	Tools and methodologies used for effectiveness assessment	Methodology used for assessing effectiveness involved searching web pages of the Ministry and other relevant institutions, and analysis of data found by the expert.
	References	Institute for Genetic Resources of RS Faculty of Agriculture and Food Sciences http://e-priroda.rs.ba/ https://www.giz.de/en/worldwide/40686.html
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		The deficiencies in implementation measure may include lack of systemically organized protection of certain species, and that the implementation of this measure requires significant funds that need to be secured.
References		NBSAP BiH
Measure		Completion, adoption and implementation of action plans and red books
Measure description		Red books are the basis for undertaking adequate measures and creation of action plans and programs to protect the endangered species. The drafting of red books and action plans for protection is of great importance, because they include the lists of endangered species in particular areas, the analysis of the vulnerability degrees and the causes that have led to this, and the recommendations for monitoring of the population status. The expert team should undertake the following activities: updating of the existing red lists, conducting research according to the parameters for assessment of vulnerability, and eventually providing the measures for the conservation of endangered species. Based on the results of identification of endangered species and their localities and the measures to protect these species, the expert team should prescribe the action plans for protection and develop the red books. Activities related to implementation of this measure have not yet been implemented, and according to the NBSAP BiH its implementation was planned in 2020.
Nature of the measure		Regulatory
Corresponding target	National	13
	Aichi	12
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Effectiveness of this measure is not yet known because activities foreseen under this measure have not yet been implemented. However, it should be noted that certain activities related to updating the existing Red Lists are being implemented.
	Tools and methodologies used for effectiveness assessment	Methodology used for assessing effectiveness involved searching web pages of the Ministry and other relevant institutions, and analyses of data found by the expert.
	References	Decree on the Red List of Protected Species of Flora and Fauna of RS (Official Gazette of Republika Srpska, No. 124/12) Red List of Endangered Plants, Animals and Fungi in FBiH (Official Gazette of the Federation of BiH, No. 7/14)
Other relevant information		/

References	/
Obstacles/deficiencies and needs for measure implementation	Delays in adoption of the NBSAP BiH and lack of financing needed for the required research and analyses that precede development of the red books are the main obstacles to implementation of this measure.
References	NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 14

Measure		Identification and evaluation of the state of existing indigenous genetic resources in BiH
Measure description		<p>The measure related to identification and evaluation of the state of existing indigenous genetic resources in BiH was set by NBSAP BiH due to missing, outdated and incomplete data on the state and vulnerability of some sorts and breeds of indigenous genetic resources in BiH. Taking into account the aforementioned, it has been established that it is necessary to make an inventory (identification and evaluation) of the existing state which would result in a valid and relevant database of indigenous genetic resources. This database should include lists of species or varieties and breeds of domestic plants and animals, as well as and their wild relatives. Evaluation of the state of their populations should be shown through data on the size of populations, spatial distribution with the accompanying maps of their distribution, methods of cultivation and conservation, and the like. The Institute of Genetic Resources of the University of Banja Luka has the database of only plant genetic resource, whose activities have been funded by the Ministry of Science and Technology of Republika Srpska since 2012. The Institute serves also as the plant gene bank of RS. Also, a similar database exists at the Faculty of Agriculture and Food Science of the University of Sarajevo, functioning also as the gene bank, but in this case, funding mechanisms have not been resolved yet.</p> <p>Although the measure has not been fully implemented, noteworthy is that activities on identification of indigenous genetic resources were initiated through projects implemented by international institutions. Specifically, some activities have been implemented, resulting in an overview of state of plant and animal genetic resources in BiH, as well as the current activities on their conservation, done within the Project „Rural development through Integrated Forest and Water Resources Management in Southeast Europe (LEIWW)” implemented by GIZ from 2015 to 2018. In this case it should be underlined that this measure has not been initiated by the State or Entity authorities, or by the line ministries, although their representatives (Ministry of Agriculture, Forestry and Water Management of RS, Federal Ministry of Agriculture, Water Management and Forestry, Ministry of Foreign Trade and Economic Relations of BiH) took part in workshops which were integral parts of the Project.</p>
Nature of measure		Regulatory
Corresponding target	National	14
	Aichi	13
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Effectiveness of the measure is not known because, based on the searches performed there was no additional data on the implementation of the measure except for those resulting from the GIZ Project, therefore its effectiveness cannot be assessed. The existing or ongoing activities aimed at implementing this measure do not result from implementation of NBSAP BiH as they had commenced before the NBSAP BiH adoption.

	Tools and methodologies used for effectiveness assessment	The methodology used for effectiveness assessment is a search on the web pages of ministries and other relevant institutions, as well as the analysis of data found by an expert.
	References	<p>Institute of Genetic Resources of the University of Banja Luka</p> <p>Report on Financial Audit of the Ministry of Science and Technology of Republika Srpska for the Period from 1st January to 31st December 2017, 2018</p> <p>Federal Ministry of Agriculture, Water Management and Forestry – regulations in the field of agriculture</p> <p>Ministry of Agriculture, Forestry and Water Management of Republika Srpska – regulations in the field of agriculture</p> <p>Regulations in the field of agriculture on the level of BiH</p> <p>https://www.giz.de/en/worldwide/35208.html</p> <p>Reports of the Project Agrobiodiversity in Southeast Europe - Assessment and Policy Recommendations</p>
	Other relevant information	Apart from the aforementioned, no additional information is available about implementation of the measure.
	References	/
	Obstacles/deficiencies and needs for measure implementation	One of the main obstacles in implementation of the measure is that NBSAP BiH (developed in 2014) was adopted only in May 2017, and the measure was planned to be implemented by 2018. The second obstacle is an evident lack of interest of the relevant government levels (line ministries) in issues related to genetic resources, as well as keeping the records thereof. On the other hand, legal regulations related to these issues clearly refer to the line ministries in terms of their obligation to maintain the database. Article 49 of the Law on Livestock Breeding of RS ("Official Gazette of Republika Srpska", No. 44/15) defines the responsibility of the Ministry of Agriculture, Forestry and Water Management of RS for keeping records on the number of domestic and endangered breeds of domestic animals, whereas Article 13 of the Law on Livestock Breeding of FBiH ("Official Gazette of the Federation of BiH", No. 66/13) stipulates that indigenous breeds shall be entered into the register of indigenous breeds kept by the breeding and selection department, and the list of indigenous and protected breeds and varieties of domestic animals and a number of heads upon the proposal of the authorized scientific and professional institutes in the field of domestic animal breeding is approved by the Federal Minister. In that regard, the line ministries are required to put also this activity into their activity plans or to assign implementation of this measure to another institution (e.g. the Institute of Genetic Resources in RS, Faculty of Agriculture and Food Science in Sarajevo in FBiH).
	References	<p>NBSAP BiH</p> <p>Federal Ministry of Agriculture, Water Management and Forestry – regulations in the field of agriculture</p> <p>Ministry of Agriculture, Forestry and Water Management of Republika Srpska – regulations in the field of agriculture</p> <p>Regulations in the field of agriculture on the level of BiH</p>
	Measure	Improvement of existing and drafting of new laws and bylaws dealing with genetic resources issues
	Measure description	During development of NBSAP BiH and analysis of the legal framework related to the genetic resources issues it has been found that the legal framework should be improved, therefore the measure is set stipulating improvement of existing and drafting of new laws and bylaws dealing with genetic resources issues. In other words, based on the measure the line ministries on the level of FBiH and RS including the line department on the level of BD BiH should form teams for this activity in cooperation with other stakeholders, particularly having in mind

<p>the need for harmonization of national acts with the EU <i>acquis communautaire</i> in the given field. At the time of drafting of NBSAP, the Law on Genetic Resources of RS was under preparation, and it was planned to take the similar measure also on the level of FBiH and BD BiH. It is also necessary to draft a number of by-laws, such as the rulebook on incentives for conservation of plant and animal genetic resources, which would directly contribute to the implementation of other measures set by NBSAP BiH aimed at achieving national and Aichi targets and the Convention on Biological Diversity.</p> <p>As for adoption of new legislation it is important to underline that in 2015 a new Law on Livestock Breeding was adopted in RS which recognized several indigenous species, breeds and varieties of bred animals (itemized), emphasizing their importance and their protection. In the same year the Strategic Plan for Development of Agriculture and Rural Areas of RS for the period 2016-2020 was adopted. The Law on Genetic Resources of RS in the adoption procedure since 2014 has not been adopted yet.</p> <p>In the FBiH legislation related to the genetic resources issues one can single out the 2018 Rulebook for Organic Plant and Livestock Production and the Rulebook on Beekeeping from the same year. The Strategic Plan for Rural Development of BiH (2018-2021) should also be mentioned which focuses on plant and animal genetic resources in a separate chapter (Agro ecological conditions).</p>		
Nature of measure		Legal Regulatory
Corresponding target	National	14
	Aichi	13
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective.
	Effectiveness assessment explanation	Although the laws which regulate in detail genetic resources have not been adopted yet on the level of FBiH, RS and BD BiH, legal acts have been adopted in RS and FBiH regulating by their provisions some aspects of genetic resources and indigenous species. Most of the laws and by-laws as well as strategic documents were adopted prior to adoption of NBSAP BiH thus it may be concluded that partial implementation of the measure is not a result of the NBSAP BiH implementation but other activities of the Ministries responsible for genetic resources.
	Tools and methodologies used for effectiveness assessment	The methodology used for effectiveness assessment is a search on the web pages of ministries and other relevant institutions, as well as the analysis of data found by an expert.
	Reference	Regulations in the field of agriculture on the level of BiH Federal Ministry of Agriculture, Water Management and Forestry – regulations in the field of agriculture Ministry of Agriculture, Forestry and Water Management of Republika Srpska – regulations in the field of agriculture Mid-term Agricultural Sector Development Strategy in the Federation of Bosnia and Herzegovina for the period 2015-2019 Strategic Plan for Development of Agriculture and Rural Areas of Republika Srpska 2016-2020 Strategic Plan of Rural Development of BiH (2018-2021)
Other relevant information		/
Reference		/

Obstacles/deficiencies and needs for measure implementation		One of the obstacles in implementation of the measure is that adoption of NBSAP BiH and its implementation was delayed (the measure was planned to be implemented from 2015 to 2017). On the other hand the procedures for passage and adoption of laws and regulations are long (e.g. the Law on Genetic Resources of RS has been in the adoption procedure since 2014) which directly suggests the lack of interest in dealing with issues of genetic resources preservation or the lack of specific capacity.
References		NBSAP BiH
Measure		Development and implementation of the Program for Sustainable Use of Genetic Resources
Measure description		<p>The planned approach to resolution of the problem involving protection and sustainable use of genetic resources in BiH requires development of the program for sustainable management of genetic resources. Programs projected by this measure should include data on capacity and the past levels of genetic resources research in BiH, legal and institutional frameworks, causes of threat and trends for changes in their status, methodology of conservation (<i>in situ</i> and <i>ex situ</i> protection), the benefits from their use and conservation for the population and environment, and the like.</p> <p>The Program for Conservation of Plant Genetic Resources in RS exists since 2008, whereas the Program for Conservation of Forest Genetic Resources of RS 2013-2025 was adopted in 2013. In FBiH there is the 2014 Operational Program for Plant Genetic Resources in Agriculture of FBiH, providing specific objectives, activities, planned results and monitoring mechanisms toward conservation of plant genetic resources.</p> <p>Although the programs for conservation of animal genetic resources (specific breeds and varieties) have not been adopted yet in either entity, noteworthy is that in RS the Program for Cattle Breeding in Republika Srpska 2016-2022 (in 2016), Program for Goat Breeding and the Program for Sheep Breeding in Republika Srpska for the period 2018–2022 (2018) have been adopted. All programs indicate existence and importance of indigenous breeds as animal genetic resources as well as importance of their conservation.</p>
Nature of measure		Regulatory Policy/Strategic
Corresponding target	National	14
	Aichi	13
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective.
	Effectiveness assessment explanation	It has been assessed that the measure has been partially effective because the programs related to plant genetic resources have been adopted in both entities so far, whereas the planned programs for conservation of animal genetic resources (specific breeds and varieties) have not been adopted yet. However, some programs exist in RS related to breeding of some domestic breeds which underline the importance of indigenous breeds as animal genetic resources and importance of their conservation.
	Tools and methodologies used for effectiveness assessment	The methodology used for effectiveness assessment is a search on the web pages of ministries and other relevant institutions, as well as the analysis of data found by an expert.
	References	NBSAP BiH Federal Ministry of Agriculture, Water Management and Forestry – regulations in the field of agriculture

	<p>Ministry of Agriculture, Forestry and Water Management of Republika Srpska – regulations in the field of agriculture</p> <p>Program for Conservation of Forest Genetic Resources of Republika Srpska 2013-2025</p> <p>Program for Conservation of Plant Genetic Resources of Republika Srpska, 2008</p> <p>Operational Program for Plant Genetic Resources in Agriculture of FBiH from 2014</p>
Other relevant information	Apart from the foregoing, no additional information is available about implementation of the measure.
Reference	/
Obstacles/deficiencies and needs for measure implementation	As in case of previous measures, one of the observed obstacles in implementation of the measure is related to delay of adoption of NBSAP BiH and its implementation (implementation of the measure was planned by 2017). The lack of operational programs for conservation of animal genetic resources is evident which is related to the lack of specific capacity and interested parties.
References	NBSAP BiH
Measure	Favouring of agricultural practice based on breeding of indigenous domesticated plant varieties and breeds of domestic animals
Measure description	<p>One of the most efficient methods for conservation of plant and animal genetic resources is the <i>in situ</i> protection, or their cultivation exactly in such areas in which they had been generated, or those that they have been best adapted to. Intensification of agricultural production, including the development of rural areas based on favouring the cultivation of indigenous species of plants and animal breeds, needs to be ensured through use of incentive measures, integration of the mentioned cultures and their products into rural tourism supply (related to traditional knowledge and practices), production with geographic origin, etc.</p> <p>Analyzing the rulebooks on incentives in RS and FBiH from 2018, it was concluded that when it comes to autochthonous animal genetic resources, in RS horse breeders who breed Bosnian Mountain Horses and Lipizzaner breeds, among others, are entitled to incentives. In addition, the beekeeping is also subsidized (the Rulebook does not indicate the breed, but the Law on Beekeeping in RS indicates that only domestic grey, <i>Apis mellifera carnica</i>, bee may be bred). Through systemic and other support measures, incentives are provided to support livestock breeding organizations for the protection of cultural heritage and genetic resources (incentives for this purpose may reach the amount of maximum BAM 50 000 per beneficiary).</p> <p>In FBiH, the Program of Agriculture Incentives (abbreviated) from 2018 envisages incentives for breeding of protected breeds in the amount from BAM 200 to 250 per head (Bosnian Mountain Horse, Buša cow and domestic donkey) and from BAM 35 to 40 per head (dog tornjak - Bosnian and Herzegovinian Shepherd Dog), depending whether legal person or physical person is concerned. Incentives exist also for beekeeping in the amount of BAM 11 to 14 per beehive, i.e. bee colony. In that regard, the Rulebook on beekeeping in FBiH regulates that, in order to improve the beekeeping through conservation of biodiversity, allows breeding and purchasing of queen bees of exclusively indigenous breed of bees, i.e. a grey bee, <i>Apis mellifera carnica</i>).</p> <p>Similar mechanisms for plant genetic resources have not been recorded.</p> <p>As for FBiH, the available 2017 data suggests that the funds for encouraging breeding of indigenous genetic resources have been allocated through the categories: beehives, breeding of bee colonies (most of the funds, data available in the list of beneficiaries), tornjak dog breeding (total BAM 920) and breeding of Bosnian Mountain Horse, domestic Buša cow and domestic donkey (total BAM 42.550).</p> <p>As for RS and data on allocated incentives for 2018, it has been established that the incentives have been paid out to the following categories: support to bee production (most of the funds), support to horse breeding development, including breeding of both the indigenous and induced breeds, but the data on individual breeds are not available (total BAM 39 840), while no funds have been allocated to support livestock breeding organizations for protection of cultural heritage and genetic resources, which mainly relate to indigenous animal breeds. Similar data for BD BiH were not available.</p>

Nature of measure		Legal Regulatory Financial
Corresponding target	National	14
	Aichi	13
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective.
	Effectiveness assessment explanation	Through the analysis of implementation of the measure it has been assessed that the measure has been partially effective because funding mechanisms have been established in both entities so far for conservation of indigenous animal breeds while similar mechanisms for plant genetic resources have not been recorded. Furthermore, no available data exist on the funding mechanisms in BD BiH.
	Tools and methodologies used for effectiveness assessment	The methodology used for effectiveness assessment is a search on the web pages of ministries of agriculture and other relevant institutions, as well as the analysis of data found by an expert.
	References	<p>Rulebook on Terms and Modalities for Obtaining Financial Incentives for Development of Agriculture and Rural Areas, 2018; Ministry of Agriculture, Forestry and Water Management of RS</p> <p>Rulebook on Terms and Modalities for Obtaining Financial Support Based on the Model of Rural Development, Rulebook on Amendments to the Rulebook on Modality and Terms for Obtaining Financial Support Based on the Model of Production Incentives, Rulebook on Financial Support Based on the Model of Other Types of Support, Rulebook on Amendments to the Rulebook on Terms and Modalities for Obtaining Financial Support Based on the Model of Other Types of Support, Rulebook on Modality and Terms for Obtaining Financial Support Based on the Model of Production Incentives - Rulebooks for 2017 and 2018, Federal Ministry of Agriculture, Water Management and Forestry</p> <p>Decision on Adoption of the Program of Financial Support in Agriculture and Rural development for 2018 "Subsidies to Private Companies and Entrepreneurs – Incentive for Agriculture", 2018, Federal Ministry of Agriculture, Water Management and Forestry</p>
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		The obstacle to more complete implementation of the measure is the delayed adoption of NBSAP BiH and its implementation, although the period planned for implementation of the measure is from 2016 to 2020. There is also a constant problem with insufficient funds planned for incentives.
References		NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 15

Measure	Secure human and technical capacities for assessment of ecosystem services in BiH
Measure description	Ecosystem services have so far not been mapped or evaluated in BiH, nor are human or technical capacities for mapping and evaluation of ecosystem services sufficient at relevant institutions. The projects have been implemented in BiH which did not result from stipulated measures and activities for implementation of the national target 15, but they contribute to achieve it. Strengthening of human

		and technical capacities is achieved, inter alia, by appropriate education and information. For example, education about ecosystem services is regularly conducted at the Biology Department of the Ecology Program at the Faculty of Science in Sarajevo. The total of 40 students per annum, on average, complete graduate and postgraduate education at this program, which is a good professional basis for strengthening human capacities in the management sector. The latest textbooks are adapted to the need of development of technical and scientific knowledge of ecosystem services. Apart from education, for the purpose of better information and promotion of ecosystem services in general public, the Federal Ministry of Environment and Tourism supported the implementation of the Project "Mobilization of Scientific Biodiversity Knowledge in FBiH in Raising Public Awareness of Environment". The Project resulted in the publication "Biodiversity and Ecosystem Services of BiH", presented and distributed at public gatherings and available on the Internet.
Nature of measure		Regulatory
Corresponding target	National	15
	Aichi	14
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Available methodology does not provide reliable assessment of the measure effectiveness.
	Tools and methodologies used for effectiveness assessment	Methodology used: consultations with interested parties, expert opinions and analysis of data obtained by web searches.
	Reference	Barudanović, S., Macanović, E., Topalić-Trivunović, Lj., Cero M. (2015): Ecosystems of Bosnia and Herzegovina for the purpose of sustainable development, PMF, UNSA; Fojnica d.d. Fojnica Biodiversity and ecosystem services of Bosnia and Herzegovina (2015)
Other relevant information		/
Reference		/
Obstacles/deficiencies and needs for measure implementation		Due to delay of donor funds for which BiH was a qualified country the entire process of NBSAP BiH revision was delayed for three years. NBSAP BiH was adopted in May 2017, when many of stipulated measures should have been already implemented. However, according to the existing legal solutions implementation of state environmental strategies is possible only through the entity level. Time wise, the entity level does not follow the strategy development. It is necessary to revise the entity strategies in order to incorporate national strategy targets in them. Only then the measure implementation may commence. According to this model of action, it is clear that the implementation of the Strategic Plan for Biological Diversity in BiH requires far more time than the existing time frame. The main barriers in implementation of the measure are: (a) delayed international funds, (b) lack of human and technical capacities, (c) absence of a responsible professional institution/agency, (d) complexity of institutional framework, (e) short deadline for implementation of the target.
References		NBSAP BiH
Measure		Complete the analysis of the state of ecosystem services in BiH

Measure description		Four groups of ecosystem services have not been evaluated or analyzed in BiH: supply, regulatory, cultural and support services. This measure involves that the expert team: a) conducts field visits and social research, b) singles out a group of ecosystems that provide essential services for the life of the citizens of BiH, and c) makes an assessment of the state of such ecosystems. This measure has not been implemented to this date.
Nature of the measure		Regulatory
Corresponding target	National	15
	Aichi	14
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Not possible to assess effectiveness of this measure as it had not been implemented.
	Tools and methodologies used for effectiveness assessment	Methodology used: consultations with stakeholders, expert opinions and analysis of data obtained through web search
	Reference	The Fisheries and Aquaculture sector in Bosnia-Herzegovina, FAO, 2015 The Forest Sector in Bosnia and Herzegovina, FAO, 2015 Annual report in the area of agriculture, food and rural development for Bosnia and Herzegovina (2016)
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		<p>Due to the donor funds, for which BiH is an eligible country, being late, the whole process of reviewing the NBSAP was delayed by three years. The NBSAP document was adopted in May 2017, when many of the prescribed measures should have already been completed. However, implementation of the national environment-related strategies, in line with the current legal solutions, is only possible at the entity level. Entity level is not keeping up with the time schedule for preparation strategy. Entity strategies need to be revised to incorporate the NBSAP BiH targets. Only then the implementation of measures should start. According to this operational model, it is clear that implementation of the Strategic Plan for biodiversity in BiH requires far more time than the current framework provides. The two main barriers are therefore: the international funds being late, and complexity of national legislative framework.</p> <p>In addition to the above, it needs to be said that certain sector analyses have been conducted in BiH that could have contributed to better implementation of this measure. Thus, for example, over the previous years, analyses of the sectors of forestry (2015), fishing and aquaculture (2015) were done, while analyses in the area of agriculture and rural development are being done on annual basis. However, due to the lack of integrated and coordinated approach to management, mismatch in terms of timing of the assessment process, and finally, poor promotion of Strategy for Protection of Biodiversity (NSAP BiH) and identified national targets, this opportunity for evaluation of relevant eco-system services was missed.</p> <p>In addition, it should be said that various sectors in BiH use different terminology for eco-system services. Although they have been recognized long ago, in forestry for example, the term used to describe the eco-system services is <i>forest functions of general benefit</i>.</p>
References		/

Measure		Strengthen the environmental permit mechanism and supervisory inspection
Measure description		In order for the ecosystem services to be maintained and preserved, it is necessary as follows: (i) to strengthen the environmental permit mechanism and supervisory inspection in terms of the relevant laws integrating and implementing the punitive provisions for those who disrupt the services (the competent ministries for environmental protection in cooperation with the relevant inspections), (ii) to increase human capacities at supervisory inspections (the competent ministries for environmental protection), and (iii) to organize training sessions for professional improvement and strengthening of the inspectorate (the competent ministries for environmental protection). The relevant activities for implementation of this measure include the following activities that need to be conducted by the ministries in charge of environmental protection: a) analysis of all laws pertaining to the use of nature in the segment of “supervision”; b) as needed, prepare amendments to the Law on Nature Protection, and c) strengthen inspection services. Activities foreseen under this measure have not been implemented.
Nature of the measure		Financial Policy/strategy
Corresponding target	National	15
	Aichi	14
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Available methodology does not provide reliable assessment of effectiveness of the measure because the measure has not been implemented.
	Tools and methodologies used for effectiveness assessment	Methodology used: consultations with stakeholders, expert opinions and analysis of data obtained through web search
	Reference	https://www.fmoit.gov.ba/bs/okolisne-dozvole/statistika-o-od http://www.vladars.net/sr-SP-Cyrl/Vlada/Ministarstva/mgr/Servisi/Poslovanje/Pages/Ekoloske_dozvole.aspx http://www.vladars.net/sr-SP-Cyrl/Vlada/Ministarstva/mgr/Servisi/Pages/Arhiva_-_ekoloske_dozvole.aspx
Other relevant information		<p>Although they are not result of implementation of the prescribed measure, activities that contribute to achieving this national target are being implemented in BiH.</p> <p>With support of the USAID Project for “Strengthening Government Institutions and Processes in BiH” (USAID/SGIP), a very useful “Comparative Analysis of Procedures and Practices in the Area of Environmental Permits in FBiH, cantons in FBiH, in RS and in Republic of Croatia” was done. Process of issuing environmental permit at all administrative levels and units has been considered; using this analytical approach, shortcomings of this process were identified and recommendations were offered. To this analysis should be added the necessity to establish a technical institution/agency to ensure standardization of procedure for issuing environmental permit.</p> <p>Furthermore, the environmental permit has become a recognized mechanism of implementation of the Law on Environmental Protection. Through the work of non-governmental organizations and media, the general public is now better informed of the term itself and of the procedure. The main obstacle to development of better capacities for strengthening processes of acquiring and maintaining environmental permit is the inexistence of technical institution/ agency. Technical work involved in issuing and maintaining environmental permit is done by hiring</p>

	licensed consulting companies and experts in technical commissions. In absence of a standard procedure that establishment of an agency would provide, the process of issuing environmental permit needs to be further perfected by developing analytical and critical approach to the work of consultants and experts.
References	http://lawinstitute.ba/wp-content/uploads/2016/12/Finalna_analiza_web.pdf http://www.fmoit.gov.ba/userfiles/file/Lista%20nositelja%20-%202017%20po%20abecedi.pdf http://www.fmoit.gov.ba/userfiles/file/FETAH/Certificirani%20stru%C4%8Dnjaci%2011-2017.pdf
Obstacles/deficiencies and needs for measure implementation	<p>As already stated with respect to the previous measure, the whole process of NBSAP revision was delayed for three years due to donor funds being late. The NBSAP was adopted in May 2017, when many of the prescribed measures should have already been implemented. Constitution of BiH allow for implementation of state level environment related strategies exclusively through the entity levels, i.e. entity strategies, the preparation of which is not synchronized with the NBSAP. At present, the entity strategies are yet to be revised to incorporate the NBSAP targets in order to be implemented. According to this model of operation, it is clear that implementation of strategic plan for biodiversity in BiH requires much longer time than offered in the existing framework. Therefore, two main barriers are – the international funds being late, and complexity of the national legislative framework.</p> <p>In addition, the following fact should be taken note of: although the content of the study of environmental impact is prescribed by the Law on Environmental Protection, quality of the part of the study that concerns description and status of biodiversity at the site of intervention in nature is far from being satisfactory. Description of biodiversity is usually taken from unverified written sources, or remains very general. Field research of biodiversity is typically not done when making the studies, or is done superficially and in a way that is not sound. Impacts of the interventions on nature are typically inexpertly assessed in the studies. The studies often repeat the claim that the intervention has no impact on biodiversity, so no appropriate measures are prescribed for its protection. Considering that the commissions for evaluating studies in most cases do not include experts in the area of biodiversity, environmental impact studies prepared as described here typically receive positive evaluation and get accepted, and are followed by issuance of environmental permit. Considering that the measure of strengthening environmental permit is related to the areas of high natural value (protected areas, areas of special interest and area of the Plan for Natura 2000 in BiH), a certain transitional policy instrument needs to be adopted (for example, provision of the Law on Environment Protection) that will specify the method of acquiring environmental permit in the said areas until such time that the management plan or the Natura areas enter force.</p>
References	http://www.nap.ba/new/vijest.php?id=50026 http://www.jpautoceste.ba/wp-content/uploads/2018/10/Prostorni-plan-podru%C4%8Dja-posebnih-obilje%C5%BEja-od-zna%C4%8Dja-za-Federaciju-BiH-Autocesta-na-Koridoru-Vc-za-2008-%E2%80%93-2028-.pdf http://www.regodobrenja.net/index.php?akc=po_detaljno&id=231&jezik=1

MEASURES TO ACHIEVE NATIONAL TARGET 16

Measure	Establish cooperation and synergy among the relevant institutions
Measure description	Cross-sector approach in nature management is not developed and it is necessary to integrate biological diversity into other sectors. The relevant activities for implementation of this measure include: a) formation of a working group for coordination of all sectors (e.g. environmental protection, water management, agriculture, forestry, spatial planning, energy, mining and industry) at the level of

<p>the Council of Ministers of BiH, and b) preparation of instructions (publication) for integration of biological diversity values into other sectors, i.e. strategies and plans, as well as instructions for monitoring of their implementation, including organization of regular meetings.</p> <p>Therefore, the proposed and adopted method of implementing measures is establishment of a working group at the level of Council of Ministers of BiH, composed of representatives of relevant sectors for achieving national target 16. The working group would be tasked with development of harmonized activities to renew the status of nature after the implementation of resource exploitation activities. During the period following the adoption of the NBSAP, revised in line with the Strategic Plan 2011-2020, at the level of Council of Ministers of BiH numerous working groups were established as needed (Working Group for developing amendments to the National Strategy for War Crimes Processing, 2016; Working Group for analysis of implementation of the Law on Public Broadcasting System of BiH, 2017; Working Group for making Draft Law on Protection of Personal Data, 2017; Working Group for Developing Draft Law on Amendments to the Law on Public Procurement, 2017; Working Group for developing Strategy of BiH for preventing Proliferation of Weapons of Mass Destruction, 2017; Working Group for developing Framework Strategy for Cooperation with Diaspora for the period 2019-2023, etc.). However, according to the available information, the working group for support and coordination of NBSAP has not been established. Also, no instructions have been prepared to integrate biological diversity values in other sectors, their strategies and plans. It is necessary to establish Working Group for support and coordination of NBSAP at the level of Council of Ministers of BiH.</p>		
Nature of the measure		Policy/strategic
Corresponding target	National	16
	Aichi	15
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Available methodology does not provide reliable assessment of effectiveness of the measure (the measure has not been implemented).
	Tools and methodologies used for effectiveness assessment	Methodology used: consultations with stakeholders; expert opinions and analysis of data obtained through web search.
	References	http://vijeceministara.gov.ba/saopstenja/sjednice/zakljucci_sa_sjednica/default.aspx?langTag=en-US
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Main barriers to implementation of this measure include lack of coordinated action; inexistence of competent technical institution/agency; complexity of institutional framework; short time for implementation of the measure.
References		/
Measure		Secure funding and other capacities for restoration of lakes and existing flood forests, and implement the restoration measures
Measure description		Due to surface and groundwater courses, after long-term exploitation of ore resources in BiH, new water bodies have been created on the sites of strip-mines. There are more than 100 of them today in BiH, large or small ones. The lakes convert into wetlands gradually but very slowly. If this natural succession is supported and accelerated, these areas will have the role of actual wetlands with

		<p>developed ecosystem services for preservation of wetland biological diversity, migratory birds, carbon absorption, and significant economic benefit. Flood forests have been degraded by construction of roads and other infrastructure, which compromises river banks, increasing the possibility of floods. The implementation of this measure requires the implementation of the following activities: a) establish an expert team and develop the work plan (MoFTER in cooperation with the competent ministries for environmental protection, spatial planning, agriculture, water management and forestry, energy, industry and mining), and b) prepare the application and secure funding for projects involving restoration of lakes and forests (the expert team). As far as it can be determined, on the level of BiH the potential of new 100 water bodies has not been recognized to date, and an expert team has not been formed, however, it is important to point out that other activities falling under the implementation of the measure have been implemented and that this measure is stipulated as a priority in recovery of ecosystems in applications for IPA funds.</p> <p>Activities exist in the country which lead toward development of human capacities for revitalization processes. One of the examples is a detailed research of biodiversity of pit lakes in the territory of Tuzla and Zenica-Doboj Cantons, to identify an efficient revitalization model. Development of ecosystem functions through revitalization of lakes would be a significant contribution to adaptation measures to climate change effects, primarily from the perspective of increased possibility of absorption of carbon dioxide from the atmosphere. The total of 30 pit lakes were explored, with special focus on possibility of economic gain increase, i.e. reduction of poverty in the sensitive population group particularly through the so-called development of “small business”. The research results are a good step forward in creation of professional capacity for revitalization of degraded ecosystems in BiH.</p>
Nature of measure		Financial Policy/strategic
Corresponding target	National	16
	Aichi	15
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Available methodology does not provide reliable assessment of measure effectiveness.
	Tools and methodologies used for effectiveness assessment	Methodology used: consultations with stakeholders: expert opinions and data analysis obtained through web searches.
	References	http://www.mvteo.gov.ba/Content/Read/sumarstvo http://www.mvteo.gov.ba/Content/Read/vodni-resursi-turizam-zastita-potrosaca
Other relevant information		<p>When it comes to other water ecosystems and flood forests, it should be pointed out that at present they are under great anthropogenic pressure. According to the Assessment Report on Biodiversity and Ecosystem Services for Europe and Central Asia (2018), 2700 mini hydropower plants are planned to be built in the Balkan Peninsula, mainly on the rivers in BiH. The strategic assessment of impact of building of hydroelectric plants and conversion of water ecosystems in BiH to generate electric power has not been done. Nevertheless, most of environmental permits and submitted studies on environmental impact relate to the so-called “mini hydroelectric plants” in the territory of BiH.</p>

References	<p>https://www.ipbes.net/assessment-reports/eca</p> <p>Mašić, E. (2018): Restoration Models of Pit Lakes in the Federation of Bosnia and Herzegovina, a doctoral dissertation, Faculty of Science, Sarajevo</p> <p>Kamberović, J., Kralj Borojević, K., Razić, A. & Barudanović, S.: Epipellic diatom communities in the Šerička Bara marsh (northeast Bosnia and Herzegovina). Nat. Croat., Vol. 26, No. 1., 17–32, Zagreb, 2017</p> <p>Barudanović, S., Mašić, E. (2015): Diversity of diatoms on mine pit lake Vrtlište (Kakanj, Bosnia and Herzegovina), 6th Balkan Botanical Congress; Croatia</p> <p>Marshland vegetation of the order Phragmitetalia on shores of mine pit lakes in north-eastern Bosnia and Herzegovina, Biologica Nyssana, 5 (1), September 2014: 1-10.</p>
Obstacles/deficiencies and needs for measure implementation	An expert team for implementation of the measure has not been established. The main barriers to implementation of the measures are (a) delayed international funds, (b) lack of human and technical capacities (c) lack of a competent professional institution/agency, (d) complexity of the institutional framework, (e) short deadline to achieve the target.
References	NBSAP BiH
Measure	Conduct forestation of degraded forest ecosystems with indigenous species
Measure description	<p>Strengthening of forest ecosystem functions is of essential importance to the BiH society and to adaptation to climate changes. In the post-war period, forestation drives have not been conducted to the necessary extent. The lack of funding is frequently related to purchase of seedlings, some of which are imported. Although some local capacities are in place, it is needed to intensify the cultivation and planning of indigenous species of trees. The implementation of this measure requires preparation of the application, securing of funding for forestation projects and stimulation of public for forestation of degraded forest ecosystems through promotional materials.</p> <p>Although the forestation, i.e. restoration of forest ecosystems has always been a part of the forest programming and planning documents, this measure has been set in the light of state of forests in the period of the Strategic Plan 2011-2020 and the need for better response to climate change challenges. Based on the 2014 Report of the Audit Office for Institutions of FBiH, the investing in the forest breeding measures was reduced in the observed years and in 2012 it decreased by 50% compared to 2008. In the period 2010-2012 forest companies (FC) invested in the forest breeding measures around 30% less funds compared to annual plans.</p> <p>Assessment was done in RS based on the Report of the Public Forestry Company Šume Republike Srpske a.d. Sokolac (Report on Implementation of the Production and Financial Plan for the period from 1st January to 31st December 2015) stating that “works and investments in high degraded forests, young forests and bare areas suitable for forestation were not satisfactory. Only 53% of the planned investments had been used. The reason for failing to do the works was the lack of required funds collected on the basis of contributions to forest improvement.”</p> <p>The need to fund this activity was recognized on the level of the Environmental Protection and Energy Efficiency Fund which is evident from allocation of funds for implementation of “Project for Funding of Simple Forest Reproduction for 2018 – Dying of Sessile Oak” implemented by the Public Forestry Company Šume Republike Srpske a.d. Sokolac – Forest Management Company Dobo, was approved BAM 50.000 (EUR 26.000).</p> <p>All the aforementioned leads to conclusion that no satisfactory financial capacity exists in BiH to satisfy the needs for forest restoration. Exactly for that reason it is necessary to urgently find ways to implement this stipulated and adopted measure.</p>
Nature of measure	Financial Policy/strategic

Corresponding target	National	16
	Aichi	15
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective.
	Effectiveness assessment explanation	Available methodology does not provide reliable assessment of measure effectiveness, but activities on its implementation have been recorded.
	Tools and methodologies used for effectiveness assessment	Methodology used: consultations with stakeholders: expert opinions and data analysis obtained through web searches.
	Reference	http://www.mvteo.gov.ba/Content/Read/poljoprivreda-prehrana-sumarstvo-ruralni-razvoj https://fmpvs.gov.ba/wp-content/uploads/2017/Sumarstvo-lovstvo/gospodarenje-sumama/Gospodarenje-sumama-2016-planovi-2017-FBiH.pdf https://www.sumesbk.ba/uzgajanje-suma/ https://fmpvs.gov.ba/federalna-uprava-za-sumarstvo/ The Forest Sector in Bosnia and Herzegovina, FAO, 2015 http://www.vrifbih.ba/javni-izvj/Report.aspx?id=6969&langTag=bs-BA
Other relevant information		<p>To maintain the forest management continuity the FBiH Government has rendered a decision on establishment, management, maintenance and use of Forestry Information System in the Federation of BiH (Official Gazette of the Federation of BiH, No. 69/18) and the Decision on amendments to the Decision on Development, Contents and Application of Forestry Framework (Official Gazette of the Federation of BiH, No. 45/18).</p> <p>The document "Information about Forest Management in FBiH in 2016 and Plans for Forest Management for 2017 (Federal Ministry of Agriculture, Water Management and Forestry, FMAWMF) identify the issue of collection funds required for forest restoration. One of the significant sources of funds for forest restoration had been the fund collected in the FBiH Budget and cantonal budgets by application of the Law on Forests which was put out of force. Although a significant amount of funds had been collected in the FBiH Budget, since 2009 the funds have not been planned in the Budget for investment in the forestry. When this forestry legislation was rendered ineffective on the level of FBiH, the collection of the funds ceased. The funds collected on this basis in the FBiH Budget were used for other purposes.</p>
References		Information about Forest Management in FBiH in 2016 and Plans for Forest Management for 2017 Report on execution of the production and financial plan for the period 1 January - 31 December 2015 - Forest Management Company of RS The Forest Sector in Bosnia and Herzegovina, FAO, 2015
Obstacles/deficiencies and needs for measure implementation		Noting that the 2018 data are still not officially available, the following should be pointed out: (a) in spite of lawfully unregulated relations in the field of forestry in FBiH, forest breeding works are performed, (b) the implementation rate of works is significantly lower than planned (i.e. needs), (c) efforts do exist toward passage of the new Law on Forests (after 2009 on several occasions preliminary drafts and drafts of the Law were prepared, which were submitted to the FBiH Government, where they were not adopted or not discussed at all).
References		/
Measure		Secure funding for increase of urban green areas

Measure description

The quality of life in urban environment is today linked to activity involving greening of cities. On the other hand, the pressure from construction and urbanization on the existing green areas is very strong, and there is the need for a planned approach to this issue. The need for larger green areas has been identified in all big and small towns in BiH. In the past two decades, intensive building in the towns has been evident as well as the increased traffic frequency. For these reasons in many cases green areas have been reduced. However, in the past several years a shift has been evident in the need for better development of towns, maintenance and even expansion of park areas, as well as development of all other green areas. Examples of this can be seen in all our cities (Sarajevo, Zenica, Banja Luka, references attached). It should be emphasized that the change has happened also due to expressed efforts of the public who recognize the connection between the quality of living and green areas in the cities. As an example of recognized need for conservation and increase of green areas in cities we here mention two projects funded by the Fund for Environmental Protection of FBiH.

The Institute for Protection of Cultural, Historical and Natural Heritage Sarajevo implemented the Project "Revitalization of Existing Green Areas of the City Proper Including a Proposal for Establishment of New Ones in accordance with the Implementation Plan Documents". The basis for the project mission is the existing plan and implementation plan documents related to the given scope, as well as the field research based on which the state of green areas is established and measures proposed for their protection and revitalization. They also define new possible sites for urban green areas. The Project is implemented in two phases:

- a. The existing state-recording and evaluation of existing green areas in the present boundaries including protection and revitalization measures and the proposal of new green areas - planning of new green areas in the areas which have insufficient number of them, with a proposed general solution and design of green areas;
- b. Development of guidelines and project requirements for individual preliminary designs for restoration, revitalization and horticultural development of urban green areas.

The second Project is "Production of Autochthonous Propagating Material and Its Distribution to the Areas Affected by Natural Disasters to Restore Green Areas, Landslides and Development of Water Courses by Planting Autochthonous (Domestic) Propagation Material Creating Preconditions also for Protection of Biological and Landscape Diversity", which was implemented by the Production and Transport Company Prunus d.o.o. Having in mind formation of landslides due to floods and other problems, activities were implemented through this Project which contributed to restoration of green areas and landslides as well as development of water courses.

However, in spite of positive steps forward in this field, it should be stated that much space for better coordinated activities exists and needs for far stronger financial support than the existing ones. Noteworthy is that no database on existing green areas and their state exists on the level of cantons, entities or the state.

Nature of measure		Financial
Corresponding target	National	16
	Aichi	15
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective.
	Effectiveness assessment explanation	Available methodology does not provide reliable assessment of measure effectiveness.
	Tools and methodologies used for effectiveness assessment	Methodology used: consultations with stakeholders, expert opinions and analysis of data obtained through web searches, data from public utility companies.

	References	http://www.fzofbih.org.ba/userfiles/file/ODLUKA%20UO%20dodjela%20sredstava%202016.pdf http://www.fzofbih.org.ba/userfiles/file/ODLUKA%20UO_2015.pdf https://gradskovijece.sarajevo.ba/wp-content/uploads/2016/08/13.-Informacija-o-stanju-javnih-zelenih-povr%C5%A1ina-na-podru%C4%8Dju-grad-a-Sarajeva-plan-i-program-za-odr%C5%BEavanje-i-ure%C4%91enje-istih.pdf http://www.spomenici-sa.ba/2017/07/18/projekat-revitalizacija-postojecih-zelenih-povrsina-centralnog-gradskog-jezgra-sa-prijedlogom-uspostave-novih-uskladivanje-sa-aktuelnom-provedbenom-planskom-dokumentacijom/
Other relevant information	/	
References	/	
Obstacles/deficiencies and needs for measure implementation	The main barriers to the measure implementation are (a) lack of funding, (b) lack of human and technical capacities at public utility companies, (c) short deadline for the target implementation.	
References	/	

MEASURES TO ACHIEVE NATIONAL TARGET 17

Measure		Ratify the Nagoya Protocol
Measure description		<p>Given the importance of cross-border movement and use of genetic resources of BiH, and the commercial and/or any other type of profit arising from this, the signing and ratification of the Nagoya Protocol need to be one of the priority targets of BiH. The significance of the Protocol is that it imposes obligation of the user to use the genetic resources in BiH under informed consent and under mutually agreed conditions. In order for the conditions to be created for further development of the local legislation in terms of this Protocol, it is first necessary that BiH officially accede the Protocol. In those terms, as the relevant state-level ministry, and in line with the Law on the Procedure for Execution and Enforcement of International Agreements (Official Gazette of BiH, No. 29/00), the Ministry of Foreign Trade and Economic Relations of BiH needs to start the initiative for the ratification process at the level of the Council of Ministers of BiH, and to lead the ratification process until its finalization.</p> <p>In April 2018, the Ministry of Foreign Trade and Economic Relations of BiH sent an initiative to the entity ministries of environment regarding the accession of BiH to the Nagoya Protocol. Ratification can only be initiated once positive opinions are received from both entities of BiH, what has not happened in this case. In June 2018, positive opinion was received from the Federal Ministry of Environment and Tourism, which was issued after consents had been obtained from cantons, so the Protocol has not been ratified to this date.</p>
Nature of the measure		Legislative Policy/strategic
Corresponding target	National	17
	Aichi	16
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Effectiveness of this measure is not known because the activities foreseen under this measure have not been implemented.

	Tools and methodology used for effectiveness assessment	Methodology used: consultations with stakeholders, expert opinions and analysis of data obtained through web search and data provided by institutions.
	References	Data / information obtained from the Federal Ministry of Environment and Tourism for the purpose of developing project "Delivery of Technical Support for Coordination and Development of the Sixth National Report of Bosnia and Herzegovina to the Convention on Biological Diversity", by means of letter number 04-23-934/18 of 7 th January 2019.
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Implementation of this measure requires positive opinion and consent of RS for the initiative for ratification of Nagoya Protocol.
References		/
Measure		Harmonize domestic legislation with the Nagoya Protocol requirements
Measure description		<p>The ratification process also entails the process of implementation of the Protocol. In order to facilitate its implementation, it is necessary to prepare, propose and conduct the process of adopting the law on the conditions for the use of genetic resources of BiH. The law that regulates this matter for the time being does not exist in the local legislation. It is therefore necessary for MoFTER, in cooperation with the ministries of environmental protection, agriculture, water management and forestry: a) to establish a working group for the preparation of the law; b) to provide funding for the work of the working group; and c) to identify the institutions that will be responsible for implementation of the law and of the Protocol. At the same time, it is also necessary to develop the activities aimed at spreading awareness of the genetic resources of BiH (scientific research and professional institutions/agencies). It is necessary to conduct this activity primarily in the sectors which are based on the use of these resources, such as the pharmaceutical industry, forestry, agriculture, trade, etc., through workshops and promotional materials.</p> <p>Until present day, this measure has not been implemented. It is important to note that the entity laws on livestock breeding include provisions regarding genetic resources, but not to the extent as foreseen in the Nagoya Protocol. There are indications and information that plant material in particular is being exported at grand scale, because BiH has not ratified this Protocol and thus provided conditions for regulating exports and profiting from use of natural genetic resources.</p>
Nature of the measure		Legislative
Corresponding target	National	17
	Aichi	16
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Effectiveness of this measure is not known because activities foreseen under it have not been implemented.
	Tools and methodology used for effectiveness assessment	Methodology used: consultations with stakeholders, expert opinions and analysis of data obtained through web search.

	<p>Operational programme for plant genetic resources in agriculture in FBiH</p> <p>Proposal of the programme of conservation of plant genetic resources in RS</p> <p>https://www.agroklub.ba/hortikultura/izvoz-etericnih-ulja-u-protekljih-pet-godina-porastao-za-320-posto/40666/</p> <p>https://www.agroklub.ba/sortna-lista/ljekovito-bilje/smilje-370/</p> <p>http://www.vladahbz.com/sadrzaj/dokumenti/ministarstvo-poljoprivrede-vodoprivrede-i-sumarstva/Sektor%20sumarstva/Sumarstvo/PRAVILNIK%20o%20uzgoju%20iskoristavanju%20sakupljanju%20i%20prometu%20nedrvinih%20sumskih%20proizvoda.pdf</p> <p>http://extwprlegs1.fao.org/docs/pdf/bih143206.pdf</p>
Other relevant information	/
References	/
Obstacles/deficiencies and needs for measure implementation	<p>Among obstacles to implementation of this measure is the fact that the NBSAP BiH was adopted in 2017, while according to the action plan, this measure should have been implemented that same year. In addition, it is necessary for the relevant ministry at the level of BiH to initiate the activities and establish the working group in accordance with the prescribed measure to work on drafting the proposal of the law.</p>
References	/

MEASURES TO ACHIEVE NATIONAL TARGET 18

Measure	Document traditional knowledge and practices for sustainable use of biological diversity and establish monitoring of traditional knowledge and practices
Measure description	<p>In the post-war period, the territory of BiH is characterized by migration of people from rural to urban areas. The consequence of this process is a huge loss of traditional knowledge and practices related to sustainable use of biological diversity. It is rightfully considered that this knowledge and practices are related mainly to rural areas, and smaller population of older age groups inhabit them today. It is necessary to document, as soon as possible, the still existing knowledge and practices today.</p> <p>This part includes two measures that have been proposed in the NBSAP, which are closely linked. The first measure is about documenting traditional knowledge and practices for sustainable use of biological diversity. In order to achieve this, it is first necessary to form a team of experts from the relevant ministries for protection of environment, agriculture, water management and forestry, in cooperation with the Food Safety Agency of BiH. The expert team should: a) carry out strategic research of traditional knowledge and practices in rural areas, b) prepare the corresponding database of this knowledge, c) prepare a database of resources used in the traditional manner, d) prepare publications to spread awareness about the value of traditional knowledge and practices, and e) identify centres for the implementation of traditional knowledge and practices in BiH. Activities foreseen for implementation of this measure have not yet been undertaken.</p> <p>The second measure is about establishing monitoring of traditional knowledge and practices. Following the researching, documenting and preparing the database on traditional knowledge and practices for sustainable use of biological diversity in BiH, the expert team should identify appropriate methods for monitoring the state of traditional knowledge and practices; and establish monitoring mechanisms for traditional knowledge and practices. Since the activities on implementation of the first measure have not been undertaken, it was not possible to implement this second measure either, because for its implementation it is necessary to first have the data base of knowledge and resources used in traditional way.</p>

Nature of the measure		Strategic/ policy
Corresponding target	National	18
	Aichi	18
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	It is not possible to assess effectiveness of this measure because they have not been implemented.
	Tools and methodology used for effectiveness assessment	Methodology used for assessing effectiveness included searching web pages of the ministries and other relevant institutions, and analysis of data found by experts.
	References	Federal Ministry of Environment and Tourism, Ministry of Spatial Planning, Civil Engineering and Ecology of RS, Federal Ministry of Agriculture, Water Management and Forestry, Ministry of Agriculture, Forestry and Water Management of RS
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Implementation of these measures was planned in the NBSAP BiH for the period 2015-2016; however, the NBSAP BiH was adopted in May 2017, resulting with delays in implementation of all measures, including this one. In order to implement these measures, it is necessary to secure financing from international institutions, because implementation of the above described activities involves large costs. In addition, ministries in charge of implementation of these measures need to be actively involved and to coordinate implementation of these activities, and work to provide the required financing.
References		NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 19

Measure	Ensure maintenance of the CHM BiH website
Measure description	<p>The mechanism for exchange of biological diversity information (<i>Clearing House Mechanism-CHM, hereinafter: the CHM</i>) is a requirement of the CBD which encompasses effective information services and other appropriate measures to promote and facilitate scientific and technical cooperation, knowledge sharing, information exchange, as well as establishing and operating networks for customers and partners. This measure includes: (i) the promotion of the CHM website in BiH, (ii) development of a database of all NGOs and research institutions in the domain of biological diversity, (iii) development of a database of experts, (iv) establishment of a forum for data exchange, (v) development of a manual for the use of CHM website, and (vi) organization of seminars on the functioning and use of the CHM website for all stakeholders.</p> <p>The mentioned measure has been partially implemented. The BiH portal with mechanism for sharing of the biological diversity information, i.e. CHM BiH, was established in 2013. The aim of CHM is to provide comprehensive information about biological diversity through efficient information services not only to the general public but also to interested parties, and facilitate technical and scientific cooperation, knowledge sharing and information flow to help decision makers and all interested parties to fulfil obligations defined by CBD. CHM BiH currently has the information about values and state of biological diversity in BiH, and</p>

about events (e.g. workshops, conferences, meetings, and the like). CHM BiH contains general information about CHM, CBD, including the Strategic Plan for the period 2011-2020, about biological diversity in BiH (the latest information about diversity on the level of genes, taxons and landscapes), relevant documents for the field of biological diversity, cooperation in terms of cross-border projects, institutional and legal framework of nature protection, calendar with important dates for the nature protection, frequently asked questions, useful links, gallery, contact and the like. In the following years the page was kept updated and relevant documents uploaded.



Figure 2: CHM³ BiH website

Nature of measure		Policy/Strategic
Corresponding target	National	19
	Aichi	19
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective.
	Effectiveness assessment explanation	The measure is partially effective because it has not been fully implemented yet. CHM BiH has been established but other activities have not been implemented so far related to creation of database of all NGOs and scientific institutions in the field of biological diversity and database of experts.
	Tools and methodologies used for effectiveness assessment	Methodology used for assessment of effectiveness is the search and monitoring of activities on the web page of CHM in BiH.
	References	http://www.bih-chm-cbd.ba/
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		The biggest obstacles are those financial ones because maintenance of CHM BiH and implementation of further activities planned by this measure require adequate funding.
Reference		/
Measure		Organization of symposia/conferences in the domain of conservation of biological diversity
Measure description		In addition to the CHM, this measure contributes significantly to the sharing of knowledge and experiences among all parties and partners in the field of nature protection, especially scientific research and professional institutions. During

3 Link: www.bih-chm-cbd.ba (accessed on 11th February 2019)

			<p>the preparation of NBSAP BiH (2015-2020), it was observed that there are many new research studies and data in the field of biological and landscape diversity that are hardly available or not available at all. The objective of this measure is, through the exchange of knowledge and experiences of domestic and international parties and partners, to apply good practices and strengthen cooperation, especially the cross-border one, as well as to promote scientific research institutions and motivate individuals to publish their scientific achievements and research results. This measure involves the organization of symposia/conferences in the domain of nature protection each year by the MoFTER, in cooperation with the relevant ministries in charge of environmental protection. The symposia/conferences should be held for several days and be divided thematically according to the global strategic goals of the CBD.</p> <p>Several conferences on biological diversity have been implemented in BiH: "Public Forum on Invasive Species" in Tuzla, "Symposium on Plant Protection in BiH" which takes place every year in different town in BiH, the 1st and the 2nd "Blidinje International Symposium" in 2005 and 2015, the 3rd Conference "Future of Forestry and Wood Processing in BiH" in Kupres 2018, the Conference "Issues related to Control and Management of Agricultural Land in the Herzegovina-Neretva Canton with Special Focus on the Private Agricultural Land" Ravno, 2018, 3rd International Day of Enchantment by Plants and 1st Scientific Symposium "Preservation of Genetic Resources" held on 18 May 2015 in Banja Luka.</p> <p>Apart from that, when it comes to the cooperation with the countries in the region it is important to underline that traditional exchange of scientific results exists in the field of biodiversity in the territory of West Balkans, specifically through organization of conferences and scientific symposia. The few of the latest gatherings on biodiversity in the region are: the Fifth Botanical Symposium (Primosten, Croatia, 2016), the Fifth Conference of Ecologists of the Republic of Macedonia with international participation (Ohrid, Macedonia, 2016), the Seventh Balkans Botanical Conference (Novi Sad, Serbia, 2018), Nature of the South and East Europe – State, Diversity and Management (Sarajevo, BiH, 2018).</p>
Nature of measure			Policy/Strategic
Corresponding target	National		19
	Aichi		19
Measure effectiveness	Measure effectiveness assessment		Measure taken has been effective.
	Effectiveness assessment explanation		Public events are regularly held in Bosnia and Herzegovina for raising the level and transfer of knowledge through symposia and conferences. In addition BiH cooperates also with the regional countries in organization of conferences and symposia, taking active part in them which shows that BiH experts have sufficient knowledge for data sharing on the international level, thereby broadening and raising the awareness of the academia and scientific community of the biological diversity in BiH.
	Tools and methodologies used for effectiveness assessment		The methodology used for assessment of effectiveness is searches of web pages of organizations which organize conferences and other relevant institutions and analysis of data found by the expert.
	References		https://www.besnet.world/newsletter-detail?name=BES-Net%20Newsletter%20-%20No.8.%20November%202017&pdf=BES-Net%20Newsletter%20-%20No.%208.%20November%202017.pdf http://www.dzbbih.org/ http://uzzb.gov.ba/
Other relevant information			/
References			/

Obstacles/deficiencies and needs for measure implementation		Major obstacles are financial ones for the organization of symposia, conferences and scientific and research gatherings usually require large funds which are mainly allocated by international institutions.
References		/
Measure		Enhancement of scientific technologies
Measure description		This measure implies that the ministries responsible for environmental protection, agriculture, water management and forestry should form a group of experts/technicians who will: a) analyze the current situation and identify deficiencies/needs in the domain of scientific technology laboratories and institutes; b) develop the prioritization list for scientific technologies; and c) develop a plan of activities for the provision of funding, i.e. for investment into scientific technology, including consultative meetings. This measure should be in accordance with the Scientific Technology Development Plan (one of implementation plans developed under the NBSAP BiH). Activities foreseen by this measure have not been implemented yet.
Nature of the measure		Regulatory
Corresponding target	National	19
	Aichi	19
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Effectiveness of this measure is not known because the measure has not been implemented.
	Tools and methodology used for effectiveness assessment	Methodology used: consultations with stakeholders; expert opinions and analysis of data obtained through web search.
	References	Federal Ministry of Education and Science Database of researchers and research organizations in BiH Ministry of Science and Technology, Higher Education and Information Society of RS Ministry of Education and Science of Sarajevo Canton
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Implementation of this measure requires better cooperation among institutions that should form a group of expert to take charge of drafting activity plan for securing funding for financing scientific technologies. In addition, financing will have to be secured for funding implementation of this measure.
References		NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 20

Measure	Prepare and adopt the strategy for mobilization of financial resources
Measure description	The more effective implementation of the NBSAP BiH (2015-2020) and the Strategic Plan 2011-2020 requires as a first step to prepare the strategy for mobilization of financial resources. The strategy needs to analyze the current situation (estimated funding allocations from local and international sources for the domain of biological diversity over the past 5 years, identification of donors and

sponsors), to make the assessment of the resources available for the implementation of the national targets/measures for biological diversity by 2020, to identify indicators, create an action plan, and to state the method for implementation and supervision of the use of the funding. This measure has not been implemented. However, it should be noted that the budgets of entities, cantons and local communities plan for certain allocations to be used for research of biodiversity. Scientific and research institutions apply with various projects and receive certain funds that are used for studying different segments of biodiversity.		
Nature of the measure		Policy/strategic Financial
Corresponding target	National	20
	Aichi	20
Measure effectiveness	Measure effectiveness assessment	Unknown
	Effectiveness assessment explanation	Strategy for mobilization of financial resources has not been prepared nor adopted, so the effectiveness of this measure is impossible to assess.
	Tools and methodology used for effectiveness assessment	Methodology used to assess effectiveness of the measure involved searching web pages of the ministries and other relevant institutions, and analysis of data found by the expert.
	References	Costs for Protection of the Environment, 2016. Agency for Statistics of Bosnia and Herzegovina
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		The NBSAP BiH foresaw this measure be implemented in 2017 in order to develop a plan of financing needed for implementation of different measures and activities provided in the NBSAP. Due to delays in adoption of the NBSAP BiH, this measure has not been implemented yet. Implementation of this measure requires involvement of various institutions at national and international levels, which should cooperate and jointly come up with plans for using the funds for financing projects and measures in the area of biological diversity, particularly those provided in the NBSAP BiH. Currently, use of the financial resources is neither systematic nor unified, and is typically done independently from measures proposed in the NBSAP BiH.
References		NBSAP BiH

MEASURES TO ACHIEVE NATIONAL TARGET 21

Measure	Holding of annual meetings between NFPs and scientific community representatives on potential cross-border projects
Measure description	During the parallel process of drafting the NBSAP BiH, in the West Balkans countries a total of two meetings were held with the NFP's, coordinators and representatives of implementation agencies. The goal of the meeting was based on exchange of activities, knowledge and good practices in the process of drafting the NBSAP document. In order to continue this process, it is necessary to hold regional meetings 3 times per year with the NFPs and representatives of the scientific community. Each meeting would be held at another place, i.e. in a different West Balkans country, and would be organized by the NFPs. The purpose of the meetings is to strengthen regional cooperation, establish the work plan, discuss potential cross-border projects and apply for funding that aim at protection and sustainable use of biological diversity.

		<p>The Open Regional Fund for Southeast Europe – Biodiversity (ORF BD) is a part of the current program financed by the German Federal Ministry of Economic Cooperation and Development (BMZ), and implemented by GIZ since 2007. The goal of the ORF BD is to strengthen regional cooperation for implementation of EU Biodiversity Strategy. ORF BD implements the program in cooperation with the IUCN ECARO.</p> <p>ORF BD encourages regional cooperation among organizations that are relevant for biological diversity – particularly the ministries and agencies for environment, but also the ministries working with natural resources, including forestry and agriculture, municipal administrations, academic institutions and research institutes, as well as non-governmental organizations for environment protection. This was done through implementation of regional subprojects that include at least three countries. While doing so, the ORF BD works closely with the existing regional initiatives and networks, and supports establishing partnerships for the purpose of achieving impact and sustainability.</p> <p>Implementation of the said project produced various results. In connection with this measure, it is necessary to emphasize that the Regional Network of Biodiversity Civil Society Organizations was established (BioNET), and that intensive work was done to achieve networking of biodiversity experts in the region, including support to the network for protection of nature that is being developed (BalkaNatureNet).</p> <p>Also established was the Regional Biodiversity Working Group for biodiversity within the Regional Environmental Working Group (REWG) under leadership of the Regional Council for Cooperation (RCC). Meetings of these bodies, which are organized in the framework of implementation of different projects, are attended by a representative of NFP.</p>
Nature of the measure		Policy/strategic
Corresponding target	National	21
	Aichi	19
Measure effectiveness	Measure effectiveness assessment	Measure taken has been partially effective.
	Effectiveness assessment explanation	Results of joint regional projects are already visible, showing the effectiveness of the measure. The measure has not been implemented fully, i.e. the NFPs in the region do not meet three times a year as provided in the measure, and for that reason, it was not possible to assess this measure as fully effective.
	Tools and methodologies used for effectiveness assessment	Information provided by the GIZ office in Sarajevo.
	References	https://www.giz.de/en/worldwide/66446.html
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		Full implementation of this measure would be achieved through the planned meetings of NFPs at regional level. For that purpose, the possibility of organizing the said meetings should be explored and the funding for holding such meetings needs to be secured.
References		NBSAP BiH
Measure		Exchange of information, data and good practices in the domain of biological diversity management

Measure description

It is very important to establish, maintain and exchange new information and data related to biological diversity among the representatives of scientific community in the West Balkans countries, aimed at protection and sustainable use of biological diversity.

Traditional exchange of new scientific biodiversity results exists in the Western Balkans through organization of conferences and scientific symposia. Scientific releases are printed and published in the Collections of Papers. The latest scientific gatherings on biodiversity in the region are: the Fifth Croatian Botanical Symposium (Primošten, Croatia, 2016), the Fifth Conference of Ecologists of the Republic of Macedonia with international participation (Ohrid, Macedonia, 2016), the Seventh Balkans Botanical Conference (Novi Sad, Serbia, 2018), Nature of the South and East Europe – State, Diversity and Management (Sarajevo, Bosnia and Herzegovina, 2018).

In addition, the Project of establishment of the regional network for biodiversity information management and reporting (BIMR) has been successfully implemented in the Western Balkans. The Project was implemented by GIZ Open Regional Fund for the Southeast Europe-Biodiversity (ORF BD) in close cooperation with relevant actors and partners.

In terms of biodiversity, the Southeast Europe is one of the richest parts of the Europe. Conservation and use of biodiversity and valuable natural resources in a sustainable manner within the regionally harmonized approach required establishment of a mechanism for biodiversity information management and reporting (), in accordance with principles of the Convention on Biological Diversity and the EU requirements. The mechanism should facilitate regional exchange of data and information toward collaborative monitoring, reporting and management of (joint) resources in the domain of biodiversity. Given the intentions of all countries of the Western Balkans in relation to EU, BIMR is a key component for all countries in the region.

The adequate assessment of biodiversity status in the region requires digitalized, structured and verified biodiversity data, so this Project was implemented toward introduction of uniform technical standards for exchange of data, lists of species and habitats as well as a continuous dialogues, coordination and communication among all relevant actors in the region.

The first phase of this Project included regional assessment of the initial state to establish non-conformities, deficiencies and challenges countries in the region faced in their efforts toward successful management of the biodiversity data, as well as their readiness for adequate reporting on diversity of species and ecosystems. Results and observations were used in the second phase of the BIMR Project when the most practical regional guidelines were prepared for the biodiversity information management and reporting.

Furthermore, noteworthy is that the first BES-Net Trialogue on Pollinators, Food Security and Rural Development was held in the region (Sarajevo, Bosnia and Herzegovina). As a result of cooperation between UNDP-a, Ministry for Environment, Nature Protection, Construction and Nuclear Security of Germany, GIZ, Agency for Environment Protection of Norway and SwedBio Centre for Resilience of Sweden and the Federal Ministry of Environment and Tourism, the BES-Net Trialogue took place from 18 to 20 October 2017 in Sarajevo. The Trialogue gathered around 50 participants from Albania, Bosnia and Herzegovina, Montenegro, Georgia and Moldova, representatives of governmental institutions, academia, farmers and beekeepers who had an opportunity to learn about results of IPBES global assessment of the state of pollinators, pollination and in that regard the food production, exchange of information about the current status of pollination and pollinator protection, trends and major threats to pollinators, services the pollinators provide to agriculture and advantages of the sustainable management of pollinators and their habitats.

During the Trialogue the first joint regional document on pollinators was initiated. The strategic national and regional activities were identified. Organization of the Trialogue in BiH initiated an access of our country to a global Coalition of the Willing on Pollinators, as well as the interest of young researches in implementation of new projects in the field of insect pollinators.

Nature of measure		Policy/strategic
Corres-ponding target	National	21
	Aichi	19
Measure effectiveness	Measure effectiveness assessment	Measure taken has been effective.
	Effectiveness assessment explanation	Public events are regularly held in Bosnia and Herzegovina for raising the level and transfer of knowledge through symposia and conferences. In addition, BiH cooperates also with the regional countries in organization of conferences and symposia, taking active part in them which shows that BiH experts have sufficient knowledge for data sharing on the international level, thereby broadening and raising the awareness of the academia and scientific community of the biological diversity in BiH.
	Tools and methodologies used for effectiveness assessment	The methodology used for assessment of effectiveness is searches of web pages of organizations which organize conferences and other relevant institutions and analysis of data found by the expert.
	References	http://e-priroda.rs.ba/ https://www.giz.de/en/worldwide/40686.html https://www.besnet.world/newsletter-detail?name=BES-Net%20Newsletter%20-%20No.8.%20November%202017&pdf=BES-Net%20Newsletter%20-%20No.%208.%20November%202017.pdf http://e-priroda.rs.ba/en/endemics/ http://e-priroda.rs.ba/static/bis/pdf/Regional_Assessment_BHS.pdf https://balkangreenenergynews.com/rs/publikacije-bd/ https://www.besnet.world/sites/default/files/event-document/BGdoc%20EN-online.pdf https://promotepollinators.org/2018/03/22/five-new-members-promote-pollinators-ipbes6/ http://hbs.biol.pmf.hr/ http://mes.org.mk/nov-sajt/wp-content/uploads/2016/06/Second-announcement-for-the-5th-Congress-of-Ecologists-of-Macedonia.pdf http://www.7bbc2018.com/ https://www.nisee.org/
Other relevant information		/
References		/
Obstacles/deficiencies and needs for measure implementation		<p>The stipulated measure would have been far more effective had there been funds and modalities for better exchange of biodiversity data.</p> <p>The following barriers have been identified for the measure implementation:</p> <ol style="list-style-type: none"> The scientific community has not been familiarized with advantages of the CHM use. Data on scientific gatherings and symposia are not presented on the national CHM pages in the region. It suggests that the scientific community is not sufficiently involved in the CBD implementation on the national level. Better financial support for organization of scientific gatherings would contribute to better exchange of biodiversity information. Financial support for scientific data publishing would contribute to better exchange of biodiversity information.
References		/





3.

ASSESSMENT OF PROGRESS TOWARDS EACH NATIONAL TARGET FOR BIOLOGICAL DIVERSITY

This section of the Report provides an assessment of the progress towards each national target previously described in Chapter 1 of this document/report. The assessment of the progress towards each target is presented in the table following the methodology set out in the Guidelines for the preparation of the Sixth National Report, which are contained in the Annex to Decision no. XIII/27 adopted on the 15th December 2016 by the Conference of the Parties to the Convention on Biological Diversity⁴. Below is a tabular overview of the methodology used in filling out the table with the assessment of progress towards each set national target in the Strategy and Action Plan for Protection of Biological Diversity in BiH (2015-2020). This table corresponds to the entry into the online tool that will be used for submitting the Sixth National Report to the Secretariat of the Convention on Biological Diversity.

Table 6: An overview of the methodology used in filling out the table with the assessment of progress and the system for monitoring of each national target for biological diversity in BiH

National Target	The target as set out in the Strategy and Action Plan for Protection of Biological Diversity in BiH (2015-2020)
Category of progress towards the implementation of the selected target:	According to the already defined scheme it is necessary to assess the category of progress towards achieving the target-offered answers: a. On track to exceed target b. On track to achieve target c. Progress towards target but at insufficient rate d. No significant change e. Moving away from target f. Unknown.
Date the assessment was done	Specify the date when the assessment was done.
Additional information	Please provide information on the evidence used in the assessment of this target drawing upon relevant information provided in section II, including obstacles in undertaking the assessment.
Indicators used in this assessment	Please provide a list of indicators used for the assessment of this target
Tools/means used for the assessment of progress	Please describe any other tools or means used for assessing progress
Relevant websites, weblinks and files	Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found.
Level of confidence of the assessment	Level of confidence of the above assessment: a. Based on comprehensive evidence b. Based on partial evidence c. Based on limited evidence Text: <u>Please provide an explanation for the level of confidence indicated above.</u>
Adequacy of monitoring information to support assessment	Adequacy of monitoring should also be chosen on the basis of the given scheme, with a subsequent explanation in writing, by enclosing the adequate and relevant documentation: a. Monitoring related to this target is adequate b. Monitoring related to this target is partial (e.g. only covering part of the area or issue) c. No monitoring system in place, d. Monitoring is not needed.
Target monitoring	Please describe how the target is monitored and indicate whether there is a monitoring system in place.
Relevant websites, weblinks and files	Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found.

4 <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-27-en.pdf>

Table 7: Assessment of progress and monitoring system for each national target for biological diversity

National target		1. By 2020, increase the public awareness level in the field of biological diversity protection
Assessment of progress	Category of progress towards the implementation of the selected target	On track to achieve target
	Date the assessment was done	16/02/2019
	Additional information	<p>Public awareness of environmental protection, and thereby of the value of biological diversity in BiH, is still in development. This has been recognized through a society that has not been sufficiently affirmed in terms of environmental protection and biological diversity and it has been defined in various documents. Although based on laws and strategies environmental issues are included in teaching curricula and harmonized between the entities of the FBiH and the RS, the BD, cantons and municipalities, low public awareness of the importance of biodiversity for preserving the core values of the environment is one of the problems facing developing countries and countries with a transition economy, including BiH. One of the problems in the process of raising public awareness is that the general public is insufficiently informed about the importance of protecting biodiversity. As a consequence, anti-campaigns emerge for the protection of certain areas as a result of the misunderstanding of the process and the purpose of protection.</p> <p>The curricula and activities related to environmental protection, including biological diversity, are harmonized between the entities of the FBiH and the RS, the BD, and the cantons and municipalities. Based on primary schools' curricula, the initial environmental protection topics, including the biodiversity values, are dealt within the school subject: My Environment, Nature and Society, Nature Studies, Biology, Geography, Chemistry. In this way, young people become acquainted with the concepts of ecosystems, genetic resources, protected areas, endangered species, aquaculture, forestry, invasive species, etc. Also, elective subjects and extracurricular activities related to the above subjects (ecological actions, etc.) are of great importance. In secondary schools, biological diversity is partially involved in education, as it depends on the area of activities of the secondary schools and whether there are subjects that deal with these issues (Biology, Geography and Chemistry).</p> <p>The activities focused on raising public awareness have also been implemented by the Public Institution National Park "Sutjeska" and Public Institution National Park "Kozara". These activities regard the promotion of protected areas and nature protection.</p> <p>The media play a key role in raising public awareness. In BiH there are no studies or monitoring of media in terms of coverage and ways of interpreting the values of biological diversity. According to available and research-based data, there are more than 14 print media that directly or partially address information on biological diversity. Also, through electronic media (radio, TV stations and the Internet) about 15 documentary broadcasts from different levels (state, entity, cantonal and local radio and TV stations) are actively addressing issues of biodiversity directly or indirectly. However, there is no data on how often radio and TV stations broadcast this content.</p> <p>Important channels for promoting and publishing environmental protection and biological diversity data are social media and websites that deal solely with the theme of promoting these topics: (Turizam plus, Zeleni – Neretva, Ekotim, Eko akcija, Bistro BiH, etc.). For example, the Association for Biological Research and Nature Protection BIO.LOG is an organization founded with the aim of working in the field of biological sciences through scientific and professional work, of informing and educating the general population about various aspects of ecology and nature protection, which they do through their portal.</p>

The activities focused on raising public awareness have also been implemented by the environmental association “Lijepa naša” from Čapljina through implementation of projects and publication of various magazines, including *Eko Hercegovina* (engl. *Eco Herzegovina*) and *Priroda i okoliš* (engl. *Nature and Environment*). Implementation of the project “Branding and promoting protected areas in Neretva-Herzegovina Canton as the Driver of Sustainable Development” included 3 educational lectures on branding, presentation of models of sustainable use of natural resources, and production of materials (brochures, videos) on protected areas.

WWF Adria, together with the partners from five countries, started in 2016 the project called “Civil society acts for environmentally sound socio-economic development” (CO – SEED) in the following countries: Albania, Bosnia and Herzegovina, Montenegro, Serbia and Turkey. The CO-SEED Project aims to contribute to sustainable management of natural resources by improving regulatory framework, ensuring more participatory and transparent decision making processes that include active group of civil society organizations and more media focus on this topic, which should ultimately contribute to the whole society. Implementation of this project also contributes to raising public awareness through direct media involvement.

The content directly or indirectly related to biological diversity is occasionally published on the websites of relevant ministries and other institutions. For example, establishing an information system for the protection of nature in RS, as well as the one being established in the FBiH under a project implemented by the Open Regional Fund for South East Europe - Biodiversity (GIZ/ORF-BD) within the sub- project *Biodiversity Information Management and Reporting* (BIMR), will be crucial for raising public awareness in the coming period.

Likewise, in 2018 the Forestry Information System (FIS) of the Federation of BiH was established managed by the Federal Ministry of Agriculture, Water Management and Forestry. It is a system that provides the necessary information about the status and changes in the forest resources for planning, monitoring, controlling and reporting, as well as accuracy, quality, data protection and their availability to authorized users under the same conditions, the application of uniform standards and the exchange of data and documents.

The BiH internet portal with the mechanism for exchange of information on biological diversity Clearing House Mechanism – CHM (further in text: CHM BiH) was established in 2013.

Every year, events are organised to increase the level of public awareness in the field of biodiversity protection on the occasions of celebrating the Earth Day, World Water Day, World Environmental Day, etc.

In the previous years, ELAN network projects have been launched aimed at strengthening the capacity of CSOs to raise public awareness in local communities about environmental issues and biodiversity, the Fund for Environmental Protection of FBiH programme incentives have been implemented to inform the public on environmental protection and biodiversity, as well as educational projects in local communities that encourage media promotion of sustainable development of natural resources and biodiversity, while the Federal Ministry of Environment and Tourism and the Ministry of Physical Planning, Construction and Ecology of the Republika Srpska have implemented projects for raising public awareness in protected areas.

Indicators used in this assessment

- Number of educational institutions
- Number of print media
- Number of web portals
- Number of implemented projects

Other tools or means used for assessing progress

Research and analysis of data obtained from documents and strategies from relevant ministries. Review of study programs in higher- education institutions. Review of media promotion via the Internet.

	Relevant websites, web links and files	<p>Federal Ministry of Environment and Tourism, Ministry of Spatial Planning, Civil Engineering and Ecology of RS, Fund for Environmental Protection of FBiH, Fund for Environmental Protection and Energy Efficiency of RS</p> <p>Institute for Genetic Resources of RS</p> <p>http://e-priroda.rs.ba/</p> <p>www.pmf.unsa.ba</p> <p>https://pmf.unibl.org/</p> <p>https://fpmoz.sum.ba</p> <p>https://unze.ba</p> <p>http://biolog.ba/</p> <p>http://www.fbihvlada.gov.ba</p> <p>http://bih.rec.org/news-item.php?id=64</p> <p>https://www.eulijepanasa.ba/</p> <p>www.co-seed.eu/bs</p> <p>Public Institution National Park "Sutjeska"</p> <p>Public Institution National Park "Kozara"</p>
Level of confidence of the above assessment	Level of confidence	Based on comprehensive evidence
	Explanation for the level of confidence	There is a variety of information that reveals that there are activities undertaken in the field of raising public awareness of biodiversity, however the public attitude towards environment shows that the undertaken activities are not sufficient and that additional activities on raising public awareness are required.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Monitoring of the target	The monitoring system of this target has not been established and therefore it is difficult to monitor progress towards this target.
	Relevant websites, web links and files	NBSAP BiH

National Target		2. By 2020, integrate biological diversity values into development strategies and strategic plans, with an emphasis on rural development
Progress assessment	Category of progress towards the implementation of the selected target	On track to achieve target
	Date the assessment was done	25/01/2019
	Additional information	<p>When it comes to strategies that contain biodiversity values, it is important to emphasize that BiH has adopted a National Strategy and Action Plan for the Protection of Biodiversity (NBSAP BiH), which include a set of established national targets that relate to the Aichi targets. NBSAP BiH contains integrated biodiversity values in each of the set targets.</p> <p>Furthermore, in February 2018 the Strategic Plan for Rural Development of BiH 2018 - 2021 - Framework Document was adopted. This document integrated</p>

		<p>the biodiversity values that were analysed in the chapter <i>Biodiversity and Animal and Plant Genetic Resources</i>. According to the Strategy it is necessary to integrate the issues of agro-environment into the process of rural development planning. They should prevent the destruction of landscapes and biodiversity, the disappearance of animal and plant genetic resources. The Action Plan, which is an integral part of this Strategic Plan, contains a measure for supporting organic production, environmental protection and reducing the impact of climate change. It contains a number of sub-targets aimed at, <i>inter alia</i>, the application of good agricultural and environmental practices; protection and sustainable use of agricultural land; and the wider protection of biodiversity and rural landscapes.</p> <p>The Strategic Plan for the Development of Agriculture and Rural Areas of the Republika Srpska 2016-2020 and the Medium-Term Strategy for the Development of the Agricultural Sector in the FBiH 2015-2019, in many parts and objectives, are based on the conservation of biodiversity, in particular through sustainable agricultural production and conservation of genetic resources.</p> <p>With regards to development strategies, it is important to mention that at local level, they include to a certain, limited measure the biological diversity values. At the level of BiH, FBiH and RS, the said strategies have not been adopted. However, it is important to note that the RS has adopted the Industry Development Strategy and Policy of RS for the period 2016-2020, which is a new strategic document that identifies priorities and strategic objectives of industrial development and ways of achieving them over the period 2016-2020. This strategy recognizes the need for implementation of environmental standards in industry, and more efficient use of resources and preservation of biodiversity in forests when using biomass as a resource.</p> <p>At the level of the Entities and the BD BiH, and the cantons other strategic documents that to a certain extent include the protection of biodiversity have also been adopted.</p>
	Indicators used in this assessment	Number of adopted strategies
	Tools/means used for the assessment of progress	Research on the Ministries' websites and in the available strategic documents relating mainly to rural development.
	Relevant websites, weblinks and files	<p>NBSAP BiH</p> <p>Strategic Rural Development Plan for BiH 2018 -2021, Framework Document</p> <p>Strategic Plan for Development of Agriculture and Rural Areas of the Republika Srpska 2016-2020</p> <p>Medium-Term Strategy for the Development of the Agricultural Sector in the Federation of Bosnia and Herzegovina for 2015 – 2019</p>
Level of confidence of the assessment	Level of confidence of the assessment	Based on limited evidence
	Explanation for the level of confidence	Information and data on the integration of biodiversity are found in rural development strategies, while they are less represented in other strategies that have been adopted for the purpose of sustainable development and development of individual sectors.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place

	Target monitoring	The monitoring system for this target has not been established so that progress towards achieving this target is difficult to follow. In order to monitor the progress towards the target, it is necessary to analyse all adopted development strategies and strategic plans, focusing on rural development and determine based on the aforementioned analysis the level of progress towards achieving the target.
	Relevant websites, weblinks and files	NBSAP BiH

National Target		3. By 2020, reduce negative and increase positive incentives and subsidies in order to conserve biological diversity
Progress assessment	Category of progress towards the implementation of the selected target	Unknown
	Date the assessment was done	14/11/2018
	Additional information	<p>In BiH, activities related to determining incentives and subsidies that have a positive or negative impact on biological diversity have not yet been launched. The aforementioned incentives and subsidies have not been calculated and monitored over the years to enable one assessment of progress towards the implementation of this target.</p> <p>Based on the search of websites of the institutions responsible for incentives and subsidies in the forestry, energy, agriculture and environmental sectors, it was found that the data on incentives awarded upon drafting and adoption of NBSAP BiH were not publicly available.</p> <p>Through an analysis of the incentives approved in 2017 by the Federal Ministry of Agriculture, Water Management and Forestry, (based on the previously adopted annual grant fund programs with allocation criteria <i>Subsidies to Private Enterprises and Entrepreneurs - Incentive for Agriculture</i> determined in the Budget of the Federation of Bosnia and Herzegovina for 2017), the amount of BAM 43.200,00 was approved for the purpose of breeding the Bosnian Mountain Horse (bosanski brdski konj), Buša cow and domestic donkey. According to the annual grant fund programs with allocation criteria, these breeds belong under the indigenous protected breeds of animals, which means that the above incentive can be considered as the incentive with positive impact on conservation of biodiversity in BiH. By analysing the adopted annual grant fund programs with allocation criteria <i>Subsidies to private enterprises and entrepreneurs - Incentive for agriculture</i> established under the Budget of the Federation of Bosnia and Herzegovina in 2018, it was established that the funds for the breeding of the domesticated animals such as Bosnian Mountain Horse (bosanski brdski konj), Buša cow and domestic donkey are allocated for 2018 as well, however, the document provided a sum of funds for multiple purposes making it impossible to estimate the exact amount foreseen only for the breeding of the protected breeds. When it comes to the allocation of incentives for previous years, it is not possible to identify whether the funds were allocated for breeding indigenous endangered breeds.</p> <p>In the RS, horse breeders who, among others, breed Bosnian Mountain Horses and Lipizzaner breeds the (2018 Rulebook on Incentives) are entitled to incentives. Also, bee breeding is subsidized (the Law on Beekeeping stipulates that only indigenous grey bees/<i>Apis Mellifera Carnica</i>/ can be bred). The systematic and other support measures include support to organizations in cattle breeding for</p>

		<p>the protection of cultural heritage and genetic resources (incentives for this purpose can be up to 50,000 KM per user and for the first time appear in the 2018 incentives).</p> <p>In the course of drafting of NBSAP, experts have come up with limited data regarding the amounts of incentives that are the subject of National Target 3. According to the FMAWMF data, support measures for conservation of biological diversity were implemented in the FBiH in the period 2010-2012. This involved support for the preservation of the genome of indigenous plants and animals and the certification of organic production. For the first support measure, 250,000 KM was allocated for 107 projects in 2010. The support was provided for the production of indigenous seeds, seedlings, and young trees, construction or adaptation of existing facilities, purchase of necessary mechanization for the growth and maintenance under natural conditions, as well as for affirmation of threatened and declining species of agricultural plants and animal breeds, co-funding of programs for the preservation of health and genomes of indigenous plants and animals. Furthermore, as part of the certification of organic production in FBiH, the Federal Ministry for Agriculture, Water Management and Forestry allocated 185,000 KM in 2010, 258,000 KM in 2011, and 86,254 in 2012 to boost organic production. This support was provided for co-financing the costs of certification of organic products, as well as certain products made of raw materials produced in the organic production process.</p>
	Indicators used in this assessment	The number and types of positive and negative incentives and subsidies for biological diversity
	Tools/means used for the assessment of progress	Research on the websites of the Ministries and other relevant institutions, and analysis of data found by experts.
	Relevant websites, weblinks and files	<p>Decision incentive for agriculture FBiH 2017</p> <p>Approved incentives agriculture FBiH 2017</p> <p>Decision incentives for agriculture FBiH 2018</p> <p>Bylaws of the Ministry of Agriculture, Forestry and Water Management in RS</p> <p>NBSAP BiH</p>
Level of confidence of the assessment	Level of confidence of the assessment	Based on limited evidence
	Explanation for the level of confidence	Information and data on positive and negative incentives are limited and not available on the websites of the institutions responsible for awarding incentive measures and subsidies.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	The monitoring system for this target has not been established so that progress towards achieving this target cannot be followed. One of the measures envisaged in the NBSAP of BiH and related to the implementation of this target is the introduction of a monitoring system for positive and negative incentives and subsidies and preparation of annual reports in order to assess the effect of the implementation of the target.
	Relevant websites, weblinks and files	NBSAP BiH

National Target		4. By 2019, prepare and adopt plans for sustainable production and consumption of natural resources
Progress assessment	Category of progress towards the implementation of the selected target:	Progress towards target but at insufficient rate
	Date the assessment was done	11/01/2019
	Additional information	<p>In Bosnia and Herzegovina, activities on the adoption of strategic documents or plans that relate only to sustainable production and consumption of natural resources have not yet started, which would prevent excessive exploitation of natural resources. However, sustainable production and consumption of natural resources is integrated into many sectoral strategies and plans.</p> <p>For example, the issues of sustainable production and consumption of natural resources are contained in the documents in the Strategic Plan for Rural Development of BiH for 2018-2021, in management plans for protected areas for a large number of protected areas in BiH, in spatial plans in BiH, in the Strategy for Forestry Development of Republika Srpska 2011-2021, in the Program for Achieving the Neutrality Land Degradation of RS, in the Water Management Plan for the Sava River Basin District in FBiH, in the Water Management Plan for the Adriatic Sea Basin, in the Sava Water Management Plan (RS), in the Trebišnjica Water Management Plan, in the Action Plans for Energy Efficiency that were adopted at the level of BiH, FBiH and RS, and in energy development strategies, and others that are directly or indirectly related to natural resources.</p> <p>It is important to note that due to certain data deficiencies, the use of natural resources may not be best defined in strategic plans. For example, in some areas there is no defined boundary between forest and agricultural land, or the conversion of agricultural land to forest due to abandonment of rural areas has not been constantly monitored, which may lead to a wrong assessment of the availability of certain natural resources and to the problems of monitoring the area with these resources.</p> <p>Sustainable use of natural resources is predominantly found in legal acts in the field of nature protection adopted at Entity and BD BiH levels (Law on Nature Protection of FBiH (Official Gazette of the Federation of BiH, No. 66/13), Law on Nature Protection of RS (Official Gazette of Republika Srpska, No. 20/14) Law on Nature Protection of BD BIH (Official Gazette of Brčko District of BiH, No. 24/04, 1/05, 19/07 and 9/09)). These are the basic legal acts governing nature protection, as well as the sustainable management of protected areas and the procedure for their protection.</p> <p>Furthermore, all relevant institutions in accordance with their work plan, their vision and mission, by defining and implementing strategies, policies, laws and other regulations within their competence, make their work plans to ensure sustainable development, which are related to sustainable production and consumption of natural resources to prevent excessive exploitation of natural resources. For example, the Three-Year Plan of the Federal Ministry of Agriculture, Water Management and Forestry defines strategic goals, programs and activities arising from the competence of the Ministry and relevant strategic documents. The objectives and activities envisaged in the three-year work plan are defined in a way to ensure sustainable development of agriculture, food industry, veterinary, water, forestry and hunting through rational use and protection of natural resources, support to producers and development of rural areas in FBiH.</p>
	Indicators used in this assessment	<p>The number of adopted sectoral plans for sustainable use of natural resources</p> <p>The number of enacted laws and bylaws in the field of biological diversity or other closely related fields</p>

	Tools/means used for the assessment of progress	Research on the websites of Ministries and other relevant institutions, as well as analysis of data contained in sectoral strategies and plans as well as legal acts.
	Relevant websites, weblinks and files	http://www.vladars.net/sr-sp-cyrl/Pages/default.aspx http://www.fbihvlada.gov.ba/ http://www.vlada.bdcentral.net/ Law on Nature Protection of the RS (Official Gazette of Republika Srpska, No. 20/14) Law on Nature Protection (Official Gazette of the Federation of BiH, No. 66/13) NBSAP BiH
Level of confidence of the assessment	Level of confidence of the assessment	Based on comprehensive evidence
	Explanation for the level of confidence	Sustainable production and consumption of natural resources is integrated in many sectoral strategies and plans and legal acts related to nature protection. The data from the above documents are reliable and can be found on the websites of ministries and other relevant institutions.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	The monitoring system for this target has not been established so that progress towards achieving this target cannot be followed without prior analysis, which includes an overview of the above-mentioned strategic documents and plans, and legal acts.
	Relevant websites, weblinks and files	NBSAP BiH

National Target		5. By 2020, prepare and implement sustainable management programs for all fishing waters (fisheries basis)
Progress assessment	Category of progress towards the implementation of the selected target:	On track to achieve target
	Date the assessment was done	14/11/2018
	Additional information	With respect to achieving this target it can be concluded that there is some progress reflected in the fact that fisheries basis was made for a significant number of fishing areas in the previous period, that the basis and revision of some fishing areas are under development, while development of these documents is planned for a certain number of areas. Development of fisheries basis is regulated under laws and constitutes a professional study that is made and adopted for a certain time period. As such, it is the underlying document that provides a long-term fishery management policy. These activities on the development of fisheries basis are carried out periodically in certain time intervals, while it is necessary to

		<p>emphasize that the fisheries basis in the FBiH is made at the level of the fishing associations, or a certain area, while the development of this basis in the RS is regulated for the whole territory of the RS.</p> <p>In the FBiH and BD BiH, a number of fisheries bases or revisions of fisheries bases have been carried out, including the Revised Fisheries Basis for the Fishing Area of the Central Bosnia Canton, the Fishery Basis of the Sarajevo Canton for Fishing Area VI, Fisheries Basis for Sarajevo Canton for Fishing Area IV, Fisheries Basis - Sanski Most, Revised Economic Basis for the Fishing Area of BD BiH, Bihać, Bosanska Krupa, Mostar, etc.</p> <p>In addition to the development of fisheries basis, there are certain ichthyological researches that include certain segments, i.e. they are carried out on the local level.</p>
	Indicators used in this assessment	Number of implemented fisheries bases and revisions, also taking into account those whose implementation is ongoing.
	Tools/means used for the assessment of progress	Research on the websites Ministries and other relevant institutions, and analysis of data found by experts.
	Relevant websites, weblinks and files	<p>Fisheries basis for Sarajevo Canton_Area 6 NBSAP BiH https://www.biscani.net/usr-una-bihac-izrada-ribarske-osnove/ Revision of fisheries basis for the area of Central Bosnia Canton Information on the situation in hunting and fishing in the Municipality of Prozor-Rama for 2016. Year Law on Fisheries (Official Gazette of Republika Srpska, No. 72/12) Law on Freshwater Fishing (Official Gazette of the Federation of BiH, No. 64/04) Law on Freshwater Fishing (Official Gazette of Brčko District of BiH, No. 35/05) Law on Amendments to the Law on Freshwater Fishing (Official Gazette of Brčko District of BiH, No. 19/07)</p>
Level of confidence of the assessment	Level of confidence of the assessment	Based on limited evidence
	Explanation for the level of confidence	Information and data on fisheries basis are collected from the website of the relevant institutions and organizations. Furthermore, the data published by sports fishing associations have been used to obtain a clear picture of the fisheries bases.
Monitoring	Adequacy of monitoring information to support assessment	Monitoring related to this target is partial (e.g. only covering part of the area or issue)
	Target monitoring	<p>The laws regulated the developing of fisheries basis as well as the period for which they are adopted. This is also similar for the revision of the fisheries basis where this type of research is carried out. According to the RS Law on Fisheries, the enactment of the Fisheries Basis for the territory of the Republika Srpska for a period of 20 years is foreseen, taking into account the specificities of ecosystems, fishing areas and fishing zones. Under the Law on Freshwater Fisheries of FBiH, the fisheries basis is adopted for a specific area managed by water users (sports fishing associations). The fisheries basis has a permanent application provided that it is monitored, and a revision of the fisheries basis must be carried out not later than five years from the date of confirmation of the fisheries basis. According to the Law on Freshwater Fisheries of the BD BiH, the economic basis is developed for the fishing area or fishing zone and is the basic document for managing the fishing area or fishing zone. The economic basis has a permanent application provided that it is monitored, and revision of the fisheries basis must be carried out not later than six years from the date of confirmation of the fisheries basis.</p> <p>When it comes to this target, revisions that are made in accordance with laws after a certain period could serve as the monitoring system for fisheries basis.</p>

	Relevant websites, weblinks and files	NBSAP BiH Law on Fisheries (Official Gazette of Republika Srpska, No. 72/12) Law on Freshwater Fishing (Official Gazette of the Federation of BiH, No. 64/04) Law on Freshwater Fishing (Official Gazette of Brčko District of BiH, No. 35/05)
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National Target		6. By 2019, prepare and implement strategies for development of aquaculture and ranching of commercially significant fish species (for water ecosystems that are not habitats for rare and endemic species)
Progress assessment	Category of progress towards the implementation of the selected target:	Progress towards target but at insufficient rate
	Date the assessment was done	14/11/2018
	Additional information	<p>Strategies for the development of aquaculture in the RS and FBiH have not been adopted, and consequently their implementation is not possible. However, ranching programs are an integral part of the fisheries plans adopted by sports fishing associations as water users. Aquaculture statistics show that production dropped in 2017. The analysis of the fisheries and aquaculture sector in BiH was done in 2015 and it was funded by the European Commission, and implemented by the Food and Agriculture Organization of the UN – FAO. According to the available data, the major part of trout farming takes place in the FBiH, while the major part of carp production takes place in the RS. At the same time, the breeding of marine organisms is present in the Neum area.</p> <p>Strategic documents also cover aquaculture section. The Medium-Term Development Strategy of Agricultural Sector Development in FBiH for the period 2015-2019 noted that the funds invested in the establishment and equipping of new fish farms have increased over the last five years. The focus of the Strategy is to create the conditions for expanding the supply through the strengthening of the production of specific BH species such as zlatovčica (<i>Salvelinus fontinalis</i>), graylings, as well as creating the conditions to substitute fish food import. The Strategy states that aquaculture has achieved excellent results in the production of consumer fish and juvenile fish for open water ranching. At the same time, the RS Integrated Water Management Strategy 2015-2024 also states that the development of aquaculture should focus on expansion of existing and development of new capacities of cyprinid and salmonid ponds, as well as expansion and development of new caged ponds in existing and planned reservoirs, where appropriate ichthyological and ecological studies show that requirements for upgrading and development have been met. It is also noted that a planned ranching of rivers and reservoirs is required in order to exploit great potential for the development of fishing and fishing tourism. Regardless of the aquaculture being covered under these strategies, the annual report on aquaculture in BiH for 2017 shows a decrease in production.</p> <p>According to the aquaculture report, it is noted that the total production of consumer fish in 2017 is lower by 17.6% compared to 2016. Production of carp is lower by 41%, and trout production is 11% lower than in 2016. Of the total quantity of produced consumer fish, 80.8% relates to trout, 12.4% relates to carp and 6.8% relates to other fish species. The total production of freshwater fish in 2017 in FBiH was 1,833 tons, which is by 8.9% more than in the previous year. The production of trout is 1.803 tons and in comparison, to the previous year it increased by 8.8%, while production of other fish is 30 tons and it is by 18.7% higher than in the previous year. The total production of sea fish is 177 tons and it is by 1.9% higher compared to 2016. In RS, the production of fish in fish farms</p>

		<p>in 2017 decreased by 35.3%. The production of fish in carp fish farms in 2017 decreased by 46.7%, while in trout farms it decreased by 29%. The production of carp accounts for 25.5% of the total production of fish, the production of trout accounts for 70.5%, while the production of other fish makes up 4% of the total production of fish compared to 2016.</p> <p>According to a rough estimate, 65% of trout production in BiH is located in FBiH and 35% in RS. Almost the entire production of carp takes place in the RS (four fairly large fish farms). The production of sea species is based in Neum, with two cage farms covering a total area of 0.36 ha. The total useful area of installed capacity of aquaculture in BiH is about 3.113 ha.</p> <p>It is necessary to point out the other segment of this national target that relates to the ranching of economically important species. Fishing associations as water users, based on the established fishing basis, improvement programs or other similar documents, make appropriate annual plans of work and activities, and one of the segments addressed therein is ranching. The ranching is carried out with different types of fish, depending on the area. The ranching of the fishing area and the ranching of fish ponds is done with healthy fish, fingerlings and fertilized fish eggs, upon health control and quality assurance of fish, fingerlings, fish eggs and fishing waters. Data on the quantity of ranching of fish are maintained by sports fishing associations. In the last three years, SRD Banja Luka has performed ranching of 450,000 brook trouts.</p>
	Indicators used in this assessment	<p>The aquaculture development strategy adopted and implemented</p> <p>Ranching performed by certain sports fishing associations</p> <p>Production of consumer fish</p>
	Tools/means used for the assessment of progress	<p>Research on the websites of Ministries and other relevant institutions, and analysis of data found by experts</p>
	Relevant websites, weblinks and files	<p>Medium-Term Strategy of Development of Agricultural Sector in FBiH For 2015-2019</p> <p>Integrated Water Management Strategy of the RS 2015-2024</p> <p>NBSAP BiH</p> <p>Annual Report on Aquaculture, 2017. Agency for Statistics of BiH</p>
Level of confidence of the assessment	Level of confidence of the assessment	<p>Based on partial evidence</p>
	Explanation for the level of confidence	<p>The estimate was based on the available data. The data are taken from the relevant documents and strategies, and the reports on aquaculture.</p>
Monitoring	Adequacy of monitoring information to support assessment	<p>No monitoring system in place</p>
	Target monitoring	<p>The target is regulated by the adoption of appropriate strategies and their implementation. Strategies on the development of aquaculture and ranching of economically important fish species (for aquatic systems that are not habitats for rare and endemic fish species) have not been adopted, while the program for ranching has been implemented by sports fishing associations. In this regard, the monitoring of the implementation of target is possible through the development of aquaculture strategies, the value of production, and through the performed ranching.</p>
	Relevant websites, weblinks and files	<p>NBSAP BiH</p>

National Target		7. By 2020, certify all state-owned forests in BiH
Progress assessment	Category of progress towards the implementation of the selected target	Progress towards target but at insufficient rate
	Date the assessment was done	05/12/2018.
	Additional information	<p>More than 52% of state-owned forests are certified in FBiH. However, it should be emphasized that not all forest management units have been certified in the same year, and that the certification, or possibly recertification process, has mostly been carried out through the implementation of international projects.</p> <p>For example, IKEA (a Scandinavian factory of modern furniture and furnishings) and WWF Adria started the project of forest certification in the Tuzla Canton managed by the Public Enterprise for the Management of State-owned Forests in Tuzla Canton (<i>Šume Tuzlanskog kantona Kladanj d.o.o.</i>). This certification project is in fact one of the components of the project <i>Promote responsible forest management to support sustainable development BiH</i> which is currently implemented by the WWF Adria. The aim of the project is to expand the area of responsible forest management by identifying high-conservation value forests (HCVF) and their inclusion in forest management plans. The second objective of the project was to increase the capacity of public forest enterprises and public forest management from other cantons in FBiH for responsible forest management. The extension of the curriculum of the Faculty of Forestry in Sarajevo has been included with the aim of including the experience in the modernization of the forest policy of the Tuzla Canton in the curriculum.</p> <p>Furthermore, with the support of the GEF project <i>Sustainable Forest Management and Landscape Management (SFLMP)</i>, implemented by the International Bank for Reconstruction and Development (IBRD), the process of certification or issuance of new forest management certificates was performed in four cantons (Bosnian-Podrinje Canton Goražde, Una-Sana Canton, Tuzla Canton and Canton 10). The aim of this project is to build the capacities of the entities in the forestry sector and to demonstrate the sustainable management of forests and land through integrated management of forest and landscapes of endangered forests and pastures. One of the Project components relates to support for certification of forests.</p> <p>In 2017 th Cantonal Public Enterprise for the Management of State-owned Forests <i>Sarajevo šume d.o.o Sarajevo</i>, decided to harmonize all activities on managing forest resources with FSC principles. In the period from 5 to 7 September 2017, the main assessment of the quality of management of this company was carried out by the authorized institution <i>SGS Slovakia spol.s r.o Slovakia</i>, with the aim of issuing FSC certificates. The FSC certificate was issued in 2018 and it covers all state-owned forests in the Sarajevo Canton.</p> <p>In RS, the certification was carried out in 2008 at the Public Enterprise for the Management of State-owned Forests <i>Šume Republike Srpske</i>, thus issuing a joint certificate for the Public Enterprise relating to 23 forest farms. The unique certificate number is SGS-FM / COC-004338. The certificate is valid for all forest farms in RS in the period from 10 March 2018 until 9 March 2023. With its internal procedures the Public Enterprise ensures that all members comply with the FSC standards. The accredited body that issued the certificate by the sampling method conducts the annual monitoring of the Public Enterprise. Certification in state-owned forests has been done 100%.</p> <p>Taking into account the foregoing, about 75% of the forests are certified in BiH.</p> <p>A significant problem in FBiH forestry is the mine contamination of forests and forest land. A significant proportion of the economically highly valuable forests is among these forests, and they are for longer periods subject to non-management.</p>

	Indicators used in this assessment	Percentage of certified forest areas
	Tools/ means used for the assessment of progress	Research on the websites of ministries and other relevant institutions, and analysis of data found in web pages of forest management units.
	Relevant websites, weblinks and files	http://sumerepublikesrpske.org/index.php/fsc-c-r-ifi https://fmpvs.gov.ba/odrzivo-upravljanje-sumama-i-krajolikom/ http://www.wwfadmira.org/projekti/sume/promoviranje_odrivog_gospodarenja_umama_kao_podrka_odrivom_razvoju_u_bosni_i_hercegovini/ https://www.sarajevo-sume.ba/index.php/en/fsc-certificiranje
Level of confidence of the assessment	Level of confidence of the assessment	Based on limited evidence
	Explanation for the level of confidence	There are information and data in the institutions' websites.
Monitoring	Adequacy of monitoring information to support assessment	Monitoring related to this target is partial (e.g. only covering part of the area or issue)
	Target monitoring	Monitoring of this target can be established by monitoring the issued FSC certificates and their re-issuing to all forestry management units.
	Relevant websites, weblinks and files	NBSAP BiH

National Target		8. By 2020, establish and develop a system for sustainable agricultural production, especially organic and integral production, and conservation and breeding of indigenous species
Progress assessment	Category of progress towards the implementation of the selected target	Progress towards target but at insufficient rate
	Date the assessment was done	05/12/2018
	Additional information	In the past years the system of organic production has slowly developed. Based on the data presented in the 2017 Annual Report on the State in the Sector of Agriculture, Food and Rural Development in BiH there are around 70 organic producers in the FBiH. It was highlighted that there was no single certified livestock organic farm and that there are two in the process of conversion. Since 2009 there is the Federation of Associations of Organic Producers of the FBiH - ORGANSKO FBiH, with 17 members (seven cantonal organic producer associations and 10 associations dealing with organic production development). There are 26 producers dealing with organic agricultural production identified in the RS, and most of them are in the sector of medicinal plants and berries. In the RS the RS Association of Organic Producers and Processors was established in 2015.

According to the report of the FIBL Institute (Research Institute of Organic Agriculture), organic production in BiH in 2016 occupied 659 ha which covers a little more than 0.03% of the total arable land, while the collection of wild grown plants took place in the area of 50,250 ha. Based on the data shown in the table below it is evident that between 2013 and 2016 organic crops farming areas significantly increased, specifically from 292 to 659 hectares or by 126%.

Table 8: Areas under organic production in BiH (ha)

Year	2011.	2012.	2013.	2014.	2015.	2016.
Area under organic production (ha)	343	343	292	353	576	659

Both entities make constant efforts to set the organic production legal framework. The Law on Organic Production of the Republika Srpska (Official Gazette of the Republika Srpska, No. 12/13) is in force in the RS together with the following bylaws:

- Rulebook on Issuing of Organic Product Certificates;
- Rulebook on Working Conditions of Control Bodies and Controlling Procedure in the Organic Production Process;
- Rulebook on the Processing Technological Methods in Organic Production;
- Rulebook on the Methods of Organic, Plant and Livestock Production and the Conversion Period;
- Rulebook on the Contents, Form and Method of Organic Production Documentary Recording.

The Law on Agricultural Organic Production is in force in the FBiH (Official Gazette of the Federation of BiH, No. 72/16), and the Rulebook on Organic Plant and Livestock Production was adopted, while other bylaws are being drafted.

With regard to the provision of subsidies for organic production, it is noteworthy that the FBiH, RS and BD BiH developed mechanisms for the placement of resources for organic production, however, it should be highlighted that the paid resources have been increasingly lower each year. In the FBiH, the Federal Ministry of Agriculture, Water Management and Forestry awards incentives for product certification. The Rulebook on Conditions and Method of Achieving Incentives under the Rural Development Model further regulates requirements for support to the development of organic production. The funds dedicated for this purpose are paid annually to those applicants who fulfil the requirements. In the RS, the Ministry of Agriculture, Forestry and Water Management each year adopts the Decree on Conditions and Method of Achieving Incentives for Agricultural and Rural Development defining the support measures for farmers. The first measure the incentives are allocated for is organic plant production and plant production in the conversion period, while the second measure covers the certification of organic production. In the BD BiH, the Department of Agriculture, Forestry and Water Management allocates funds as incentives for the certification of organic production from its own budget. Farmers can obtain support for organic plant production and organic livestock production. The funds dedicated for this purpose are paid annually to the applicants who fulfil the requirements.

On the territory of BiH there are several international certification bodies that perform activities of control and certification of organic production.

The Strategic Plan of Rural Development of BiH (2018-2021) recognizes the importance of organic production and also defines a special measure related to the support for organic production, environmental protection, reducing the impact of climate change. Within this measure there is the individual sub-measure of support to the production, certification and control of organic production according to the best practices and the EU market requirements. This means that activities on development of the system of organic production will also be continued the coming period.

In addition to organic agriculture, integral agricultural production is also environmentally acceptable implying integrated plant protection principles, balanced application of agro-technical measures and reasonable use of agrochemicals and fertilizers in the production process. A (voluntary) certification scheme for integral production has not been developed in BiH yet.

	Indicators used in this assessment	Areas under organic and integral production
	Tools/means used for the assessment of progress	Research of the web sites of the Ministries and other relevant institutions, and analysis of the data found by experts.
	References	BiH Strategic Rural Development Plan for the period 2018-2021 - Framework Document Annual report in the field of agriculture, food and rural development of BiH for 2017
Level of confidence of the assessment	Level of confidence of the assessment	Based on limited evidence
	Explanation for the level of confidence	Evidence is limited because there is no the exact number of organic producers, which suggests the fact that the areas under organic production are not accurate either, though they are growing. Additionally, there is no evidence about implementation of the system of integral agricultural production.
Monitoring	Adequacy of monitoring information to support assessment	Monitoring related to this target is partial (e.g. covering only a part of the area or issue)
	Target monitoring	Monitoring of this target can be done by the monitoring of data about the areas under organic production, number of laws and bylaws adopted for the purpose of establishing the system of organic production, and the amount of funds placed as incentives for the local agricultural organic production.
	References	/

National Target		9. By 2020, establish a system for treatment of industrial and utility wastewaters and monitoring of pesticide and fertilizer consumption
Progress assessment	Category of progress towards the implementation of the selected target:	Progress towards target but at insufficient rate
	Date the assessment was done	23/01/2019
	Additional information	<p>When it comes to achievement towards this target, it needs to be noted that the target consists of two sub-targets, one related to the establishing of a system for treatment of industrial and utility wastewaters, while the other pertains to the monitoring of pesticide and fertilizer consumption. Thirteen of these facilities are in the FBiH, and three are located in the RS, specifically:</p> <ul style="list-style-type: none"> ▪ River Sava (FBiH) – covers 8 inhabited places with water treatment facilities currently operational, out of which 6 do the secondary treatment and 2 do the tertiary treatment. Plants in additional 9 inhabited places have different status of implementation, and in the coming future they are expected to become operational.

- Adriatic Sea (FBiH) – covers 7 inhabited places, water treatment facilities are currently operational, out of which 3 do the tertiary treatment and 1 does the higher level of treatment. In additional 10 inhabited places there are plans to make operational additional wastewater systems which are currently at different stages of implementation.
- River Sava (RS) – There is a treatment facility operational for 1 inhabited place with tertiary treatment. It is expected that in the coming period additional plants in 3 inhabited places currently at different stages of implementation, will become operational.
- River Trebišnjica (RS) – There are treatment facilities operational for 2 inhabited places with tertiary treatment.

Additionally, with regard to treatment of industry wastewaters, environmental permit prescribes water sanitation through the wastewaters treatment system. When it comes to industrial waters neither the progress in this case is sufficient to achieve the target.

These findings are supported by the data from the Agency for Statistics of BiH. Based on these data, as it could be seen in the tables below, the wastewaters ending in the Public Discharge System predominantly come from households, through industry also releases small quantities of wastewaters into this discharge system. Between 2014 and 2016 quantities of wastewaters released into the Public Discharge System significantly increased, while in 2017 the total quantities of wastewaters were by 5.7% smaller compared to the previous year.

Table 9: The origin of wastewaters in the Public Discharge System

Wastewaters ('000 m ³)	Year			
	2014	2015	2016	2017
Total wastewaters	91,962	92,894	124,002	116,916
Households	68,845	70,260	90,709	90,143
Business activities (total):	23,117	22,634	33,293	26,773
Agriculture, Forestry, Fishing	263	230	215	217
Industrial and construction business	8,693	8,629	9,900	10,750
Other business activities	14,161	13,775	23,178	15,806

As the table below shows, quantities of treated wastewater abruptly rose from 2015 to 2016, when the wastewater treatment facility in Butile (Sarajevo) became functional. Due to a mild fall in numbers of total quantities of wastewaters in 2017, the total quantities of treated wastewaters decreased by 13.1% compared to the previous year.

Table 10: Wastewaters released into the Public Discharge System

Released wastewaters ('000 m ³)	Year			
	2014	2015	2016	2017
Total	91,962	92,894	124,002	116,916
Non-treated wastewater	87,475	87,754	68,121	68,383
Treated wastewater	4,487	5,140	55,881	48,533

With regard to the construction of treatment plants for utility wastewaters it can be concluded that progress has been made compared to the previous years. In BiH there are 16 utility wastewater treatment facilities currently operational, which suggests the conclusion that major progress has been made towards the achievement of this target. With regard to the released industrial wastewaters, it is the Agency for Statistics of BiH that collects data in this case as well. The chart below shows how the quantities of water released from industrial plants were reduced between 2011 and 2016. In 2017 quantities of the released used water

were by 4.9% bigger than in the previous year. Between 2015 and 2017 quantities of the treated wastewaters gradually decreased. In 2017, in the total amount of released wastewaters the share of treated water was 63.1%, share of polluted water was 16.6%, and the share of non-polluted wastewater was 20.3%. There is also the reduction of the polluted water disposed into to the environment by 17.7% compared to 2016.

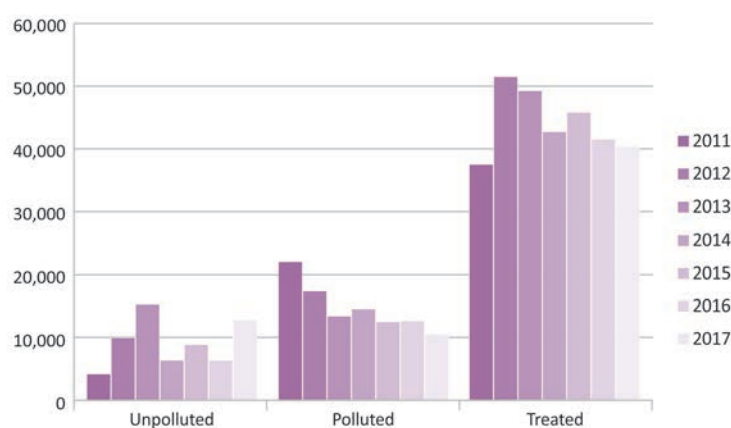


Figure 3: Industrial waters discharge per type of water treatment (expressed in '000 m³)

With regard to the second part of the target related to consumption of pesticides and fertilizers, it is important to note that data on the consumption itself are not available, thus the exact consumption of fertilizers and pesticides is not known. In BiH the import of pesticides and fertilizers can be monitored, as well as their production via statistical indicators. However, there is no exact information about their use.

	Indicators used in this assessment	<ul style="list-style-type: none"> ▪ The number of wastewater treatment systems installed ▪ Quantities of wastewater treated in the wastewater treatment system ▪ The quantities and types of pesticides and fertilizers used
	Tools/means used for the assessment of progress	Research of the web sites of institutions relevant for the collection of wastewater data and those relevant for plant health protection.
	References	http://www.voda.ba/nacrt-plana-upravljanja-vodama-za-vodno-podrucje-sa-ve-i-prateci-dokumenti http://www.jadran.ba/index.php?mode=content&content=12 http://www.voders.org/upravljanje-vodama/planski-dokumenti/?lang=lat http://bhas.gov.ba/data/Publikacije/Saopstenja/2018/ENV_03_2017_Y1_0_BS.pdf http://bhas.gov.ba/data/Publikacije/Saopstenja/2018/ENV_02_2017_Y1_0_BS.pdf http://uzzb.gov.ba/
	Level of confidence of the assessment	Based on partial evidence
Level of confidence of the assessment	Explanation for the level of confidence	The assessment was made based on data available on the web sites of some institutions. These data relate to the wastewater treatment systems and quantities of the treated wastewaters (from the Public Discharge Systems and from industry). When it comes to pesticides and fertilizers, there is no evidence related to their consumption.

Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	In order to have a monitoring system of progress towards this target in place, a system of monitoring of quantities of pesticides and fertilizers used in BiH needs to be put in place. Agencies for water basins in the FBiH and the Public Institution "Vode Srpske" in the RS have data on the number of systems for treatment of wastewaters from industry and from the public discharge systems, while the Agency for Statistics of BiH has additional information on the quantities of treated water.
	References	NBSAP BiH

National Target		10. By 2018, prepare strategies for invasive species
Progress assessment	Category of progress towards the implementation of the selected target	Progress towards target but at insufficient rate
	Date the assessment was done	14/11/2018
	Additional information	<p>Introduction of allochthonous species is defined by certain laws regulating this field (Laws on Nature Protection of the RS, FBiH, and BD BiH) and the corresponding bylaws. Strategies for invasive species have not been adopted. Implementation of the project <i>Inventory and Geographical Interpretation of Invasive Species in the FBiH</i> funded by the Federal Ministry of Environment and Tourism and implemented by the Faculty of Sciences of the Sarajevo University, can be considered as progress in this field. Based on these data, bylaws addressing the protection from invasive species will be prepared with the aim of conservation of biological diversity. In the FBiH there is also the Action Plan for Public Awareness, Elimination and Suppression of Ragweed in the FBiH, while the Decision on Measures to Suppress and Eradicate the Weed Ambrosia is effective in the RS. It needs to be added that introduction of allochthonous species is also regulated by the legislation. Based on Article 37 of the Law on Nature Protection (Official Gazette of Republika Srpska, No. 20/14) it is not allowed to introduce allochthonous wild species and their hybrids into free nature in the RS. Exceptionally, introduction can be allowed with presentation of scientific and technical evidence for the purpose of protection of nature and sustainable management or if the introduction does not endanger natural habitat of the indigenous wild species. The Law on Nature Protection of the FBiH regulates this issue in the same way, where one of the articles reads that it is prohibited to introduce alien species/subspecies in nature in the FBiH. Introduction of allochthonous fish species into natural and semi-natural waters or transferring of such species from fish farms into other wetlands is forbidden. Exceptionally, introduction is allowed if it is scientifically and technically corroborated and acceptable from the viewpoint of protection of nature, technical opinion of a scientific body and sustainable management.</p> <p>In addition to the legal norms and applicable rulebooks and the decisions addressing introduced and invasive species, some publications also refer to some invasive species.</p>
	Indicators used in this assessment	Number of strategies implemented for invasive species

	Tools/means used for the assessment of progress	Research of the web sites of the Ministries and other relevant institutions, and analysis of the data found by experts
	References	http://www.fmoit.gov.ba/ba/clanak/1755/dobar-primjer-uspjescaronne-suradnje-akademske-zajednice-i-federalnog-ministarstva-okoliscarona-i-turizma Decision on Measures to Suppress and Destroy Weed Plant Ambrosia (Official Gazette of Republika Srpska, No. 81/07) NBSAP BiH Law on Nature Protection of RS (Official Gazette of Republika Srpska, No. 20/14) Law on Nature Protection of FBiH (Official Gazette of the Federation of BiH, No. 66/13) Semir Maslo (2016): Preliminary List of Invasive Alien Plant Species (IAS) in Bosnia and Herzegovina. Herbologia, Vol. 16, No. 1, 2016.
Level of confidence of the assessment	Level of confidence of the assessment	Based on partial evidence
	Explanation for the level of confidence	The assessment was made based on data available on the web sites of some institutions.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	A monitoring system of this target is not in place and progress towards the achievement of this target cannot be measured. Strategies planned by this target were not prepared and there is no monitoring of implementation of activities that would be defined by the strategies. Currently, there is only monitoring of controls of ragweed and its mowing.
	References	NBSAP BiH

National Target		11. By 2020, map and urgently protect the specific biological diversity of BiH (canyon, mountain, alpine and wetland ecosystems, karst fields and alluvial plains) in compliance with the applicable spatial planning documents
Progress assessment	Category of progress towards the implementation of the selected target	Progress towards target but at insufficient rate
	Date the assessment was done	01/12/2018
	Additional information	The percentage of protected areas in BiH changed through the history. Since 1954, when the protection processes started, it was planned to protect 15.03% of the territory in BiH. However, by 1990, only 0.55 % of the territory of BiH was protected (253 areas, i.e. 28,127 ha) (NEAP, 2003). The size of the protected areas increased from 0.55% in 2003 to 1.96% in 2014, the data included in the NBSAP BiH. Since the NBSAP and the Fifth National Report under CBD had been Livanjsko Field, developed, new protected areas were established, namely

Protected Landscape „Bentbaša“ (2017) in the FBiH, and in the RS National Park Drina (2017), Natural Monument „Cave Kuk“ (2018), Protected Nature Reserve „Gromiželj“ (2018), Nature Park „Una“ (2018), Nature Park „Cicelj“ (2018), Monument of Park Architecture „Univerzitetski grad“ (2016), Forest Park „Slatina“ (2016), Forest Park „Jelića brdo“ (2018).

The current territory of protected areas for BiH is 2.28%, with 3.24% in the FBiH and 1.30% in the RS respectively. However, this area is still a small area compared to the percentage of 17% defined under Aichi Target 11 set in the Strategic Plan for Biological Diversity 2011-2020. The figure below shows the current protected areas in BiH.

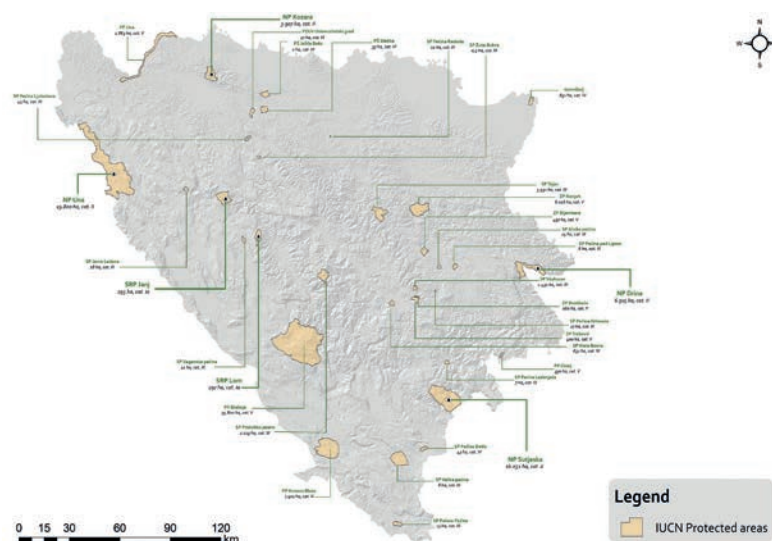


Figure 4: Current protected areas in BiH according to IUCN categories

Activities have started in BiH which lead to achievement towards this target within the set deadline. These activities require a longer timeline and allocation of resources from budgets of the relevant institutions and therefore a slower progress could be expected.

Based on data available on the web sites of the Federal Ministry of Environment and Tourism and the RS Institute for Protection of Cultural, Historical and Natural Heritage, funds for mapping of the specific biological diversities were allocated in the process of declaration of the protected areas and current implementation of the studies to declare the new ones. Funds are provided by foreign and local donors. The entity governments allocate funds from their budgets for a continuous funding of the first two categories pursuant to IUCN.

It is noteworthy that implementation of the project *Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building* funded by the GEF and implemented by the UNEP is on-going. Within this project valorisation studies for the selected areas proposed for protection will be prepared. These studies will define diversity of flora and fauna and specificities of some areas, and documentation will be prepared for the procedure to declare new protected areas. The project plans to establish protection of the following areas:

- Orjen-Bijela Gora,
- Bjelašnica– Visočica– Treskavica–Rakitnica River Canyon,
- Zvijezda Mountain,
- Cave Spring of Mokranjska Miljacka River,
- Tišina,
- Botanical and Flower Reserve Mediteranetum,
- Cave System Vjetrenica,
- Cave System Govještica.

Additionally, an analysis of the spatial plans determined that the Spatial Plan of the FBiH (2008-2028) envisages the establishment of 14 new protected areas with a total spatial coverage of about 4,488 km², which is 18.5 % of the territory of the FBiH, while the Spatial Plan of the Republika Srpska by 2025 plans to put 15 to 20% of the territory under protection. The figure below shows the planned protected areas.

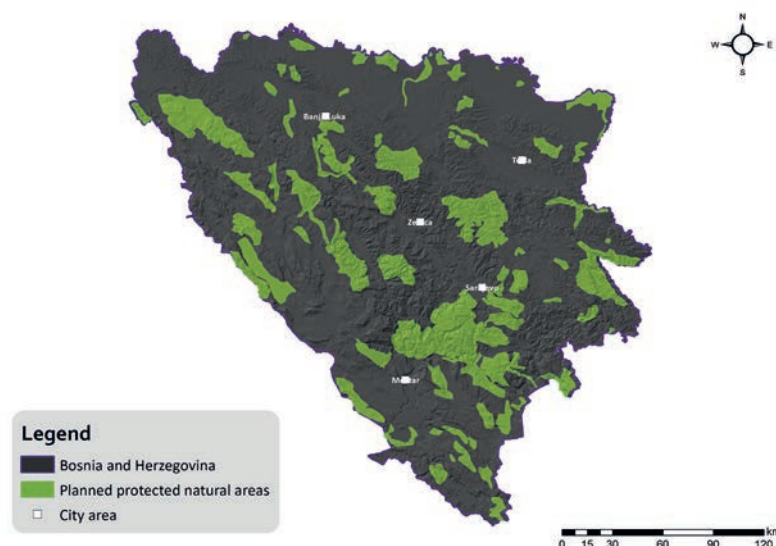


Figure 5: Planned protected areas in BiH

When it comes to mapping biological diversity in BiH, this is mostly done by mostly NGOs through implementation of various projects. For example, under the project “*Protected areas for nature and people*”, the Centre for Environment from Banja Luka carried out scientific research of NP Sutjeska lakes in order to explore present species and ensure their long term protection through creating guidelines for management of these water bodies. The scientific investigations were conducted in 2016, and included five lakes in NP Sutjeska (Gornje Bare, Donje Bare, Bijelo jezero, Crno jezero and Orlovačko jezero). In 2018, the same association implemented projects: “*Preliminary research of the distribution of threatened saproxylic beetle species in National park Kozara*” and “*Study of Bat Fauna within Protected Area of National Park Kozara*”.

As a part of implementation of project: “*Karst polje (Karst field) 2 - Revision of potential karst field IBAs and establishment of sustainable Development in Duvanjsko and Livanjsko polje*”, activities have been implemented by the Ornithological Society “*Naše ptice*” for the purpose of identifying areas of importance for protection, control of bird population and illegal bird killing, support to development of tourism, cattle raising and organic production. The Livanjsko polje management plan has also been developed.

With regards to protection of marine ecosystems, note should be taken of activities that are being implemented with the aim of protecting them. The SharkLab is working on implementation of project “*Establishing the first MPAs in Bosnia: Protecting the highly endangered habitats and spawning sites of skates and rays in the Neum bay*”. Activities implemented under this project concern the research of skates and rays in BiH in order to identify their spawning sites through conservation biology and ecology, and achieve conservation results and protect their habitats. Four species of rays and skates have been observed, and two potential spawning sites were identified in the Neum bay. Results of this project will serve as a basis for establishing the first marine protected area.

In addition, it is important to stress that some of the protected areas in BiH are among the eleven properties from BiH inscribed on the UNESCO Tentative list of the properties which will be considered for nomination on UNESCO World Heritage List during the following years. Tentative or provisional list (a list of potential properties) is an inventory of properties on the territory of the country which are considered suitable for inscription on the UNESCO World Heritage List.

		Member States in their Tentative lists include properties that are considered as cultural and/or natural heritage of outstanding universal value and which they intend to nominate during the following years. Nominations for the World Heritage List are not considered unless the property is not already on the Tentative list of the country. On the BiH Tentative list three protected areas of BiH are inscribed. These areas are: a) the Strict Nature Reserve - Primeval forest "Perućica" which is located within the National Park "Sutjeska", b) the Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe - extension (Bosnia and Herzegovina) which include the Strict Nature Reserve - Primeval forest "Janj", and c) Complex of travertine waterfalls in Martin Brod - Una National Park.
	Indicators used in this assessment	Percentage of each habitat within the protection status
	Tools/means used for the assessment of progress	The methodology used for this measure includes research of web sites of the relevant institutions and analysis of the existing documents containing information about the existing protected areas, on-going projects implemented with the view of future protection and an analysis of the spatial plans of the FBiH and the RS.
	References	Federal Ministry of Environment and Tourism RS Institute for the Protection of Cultural, Historical and Natural Heritage http://www.vladatk.kim.ba/vlada-tk/dokumenti-tk/prostorni-plan-fbih http://nasprostor.org/dokumenti-2/prostorni-plan-republike-srpske/NBSAP-BiH https://drive.google.com/file/d/1brAlnqUSO0rrH51dQ3Z6ifIkjNRS5bZM/view https://ptice.ba/bs/ http://sharklab-adria.org/eng/ https://whc.unesco.org/en/statesparties/ba
Level of confidence of the assessment	Level of confidence of the assessment	Based on comprehensive evidence
	Explanation for the level of confidence	Evidence related to the activities of mapping and future protection of additional areas is publicly available. The evidence of activities and resources allocated by the relevant institutions for a better management of the existing protected areas is also available.
Monitoring	Adequacy of monitoring information to support assessment	Monitoring related to this target is partial (e.g. only partly covering areas or issues)
	Target monitoring	A better monitoring of this target should be in place, especially regarding the FBiH an expert institution should be established that will be responsible for collecting and aggregating all technical data related to the protected areas.
	References	NBSAP BiH Federal Ministry of Environment and Tourism RS Institute for the Protection of Cultural, Historical and Natural Heritage

National Target		12 By 2020, complete the inventory of: (i) flora, fauna and fungi in BiH; (ii) ecosystems and types of habitats in BiH
Progress assessment	Category of progress towards the implementation of the selected target	Progress towards target but at insufficient rate
	Date the assessment was done	14/11/2018

Additional information

Inventory of flora, fauna and fungi in BiH is necessary because the available data of this type are incomplete, segmented, and very often there is a disagreement in the reference materials about the numbers of specific taxa in BiH. The complete inventorying of flora, fauna and fungi in BiH; (ii) ecosystems and habitat types in BiH has never been done in the way to produce lists of flora or fauna, or databases. Setting of the Nature Protection Information System in the RS with modules, where some of the modules are active and include data on endemic species and a register of plant species in the RS, can be considered as progress towards achievement of this target. It should be pointed out that the information system has been used for a relatively short time and that in the coming period there will be more information in this database. RS Flora is a register of data on distribution and taxonomy of cormophyta in the RS with almost 70,000 of collected spatial data related to 2,638 taxa at the level of species and subspecies. The database is „open“ which implies a continuous work on the collection and aggregating of the existing and new information about the RS flora. Likewise, the Fund for Environmental Protection of FBiH is implementing activities to establish an information system in FBiH.

The activities undertaken as a part of the project *Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building* funded by the GEF and implemented by the UNEP can be considered as progress towards the target. Within this project the valorisation studies for the selected areas recommended for protection should be prepared. These studies identify flora and fauna diversity and specificities of some areas, which is some progress in view of implementation of this measure.

Inventory of plant and animal species is being made also through appropriate project activities at local level, and some cantonal action plans also include certain data on ecosystems and types of habitats. For example, Centre for Environment from Banja Luka is currently working on implementation of the project: *„Brown Bear Protection in the Dinarides“*. During the implementation of this project, the first objective is to assess status of the brown bear population in BiH and Montenegro and establish a monitoring system by mid-2019. Following the establishment of the monitoring, the work on developing the brown bear management plan will begin.

The Ornithological Society „Naše Ptice“ worked on implementation of projects aimed at mapping and developing an inventory of specific bird species. The project: *„Monitoring of birds and bird crime in Nature Park Hutovo Blato and Neretva Delta“* was implemented in the period 2015-2016. During the project implementation, the work was done on monitoring population of marsh birds and bird crime in Hutovo Blato, and on control and monitoring bird crime twice a month. Similar activities were implemented under a project that was related to establishment of a system of stop-over and wintering along the Adriatic migration path, which was implemented in 2015-2018, and under the project: *„Nature Park Hutovo Blato and Mostarsko Blato as safe Breeding, Stop-Over and Wintering Sites for Birds“*, which was implemented in 2016-2017. Under the project *„Mapping the nesting birds of Bosnia and Herzegovina / Federation of Bosnia and Herzegovina“* the work was done to map the nesting bird population in BiH using maps 50x50 and 10x10. The project was done over two years (2017-2018) and was funded by the Fund for Environment Protection of FBiH. Similar activities were taken under the project *„EBBA2“* over the period 2015-2017, which was supported by the BirdLife International.

It is also noteworthy that appropriate publications include data on some systematic categories and as such they are the basis for a comprehensive inventory. In this aspect scientific and professional publications on some groups or taxa are a segment that can be considered as a kind of progress. Thus the lists or databases of some systematic groups can be found through publications, e.g. „Freshwater Fish in BiH“, „Biodiversity of Amphibians in BiH“, „Balkans Endemic Plants in BiH Flora“, etc. Partially observed different surveys list corresponding biodiversity of a category. BiH is characterised by a high species diversity and rich ecological diversity. Some works addressing this issue (Redžić, 2012) provide the information of 252 ecosystems distributed into 11 biomes on the territory of BiH. Based on these publications the most diverse are ecosystems in river canyons and gorges where certain centres of development of endemic flora, fungi and fauna can be found. With regard to habitats there is the publication *„Guide through habitat types in BiH based on the EU Habitats Directive“*.

	Indicators used in this assessment	Number of species in the Nature Protection Information System Reports on inventorying of certain localities Publications with lists of species of some systematic categories
	Tools/means used for the assessment of progress	Research on the web sites of the Ministries and other relevant institutions, and analysis of the data found by experts
	References	<p>NBSAP BiH</p> <p>Law on National Park "Drina" (Official Gazette of Republika Srpska, No. 63/17)</p> <p>Expert explanation for designation of Protected Landscape "Bentbaša" /Study Suvađ Lelo, Adnan Zimić, Mirza Čengić and Dušan Jelić (2015): Biodiversity of Amphibians (Chordata: Vertebrata: Amphibia) of Bosnia and Herzegovina.</p> <p>Guide to Habitat Types in BiH in line with the EU Habitat Directive</p> <p>Biodiversity of Amphibians (Chordata: Vertebrata: Amphibia) of Bosnia and Herzegovina: Biosystematic overview of data with preliminary maps of distribution</p> <p>Inventory, population and health status of big beasts and other species in the area of nature monument "Skakavac"</p> <p>Inventory and mapping of distribution of species covered by the EU Habitat Directive in the PA Trebević area</p> <p>Inventory and evaluation of plant, animal, forest and aquatic genetic resources in the area of Banja Luka - the first phase between the City of Banja Luka and the University of Banja Luka (2018, study)</p> <p>Research and inventory of the fauna of saproxyl hardwoods of Bosnia and Herzegovina</p> <p>The Society for Biological Research and Nature Protection - BIO.LOG in the catchment area of the Neretva River implements the project "Karst Freshwater Habitats: Identification and Participatory Planning for the Conservation of Endangered Species of Invertebrates and Fish"</p> <p>Redžić, S. (2012): Biodiversity of Bosnia and Herzegovina - State, Possibilities of Use and Needs of Sustainable Management. Biodiversity - Theory and Practical Aspects ". Proceedings 22, 47-70.</p> <p>Dubravka Šoljan, Edina Muratović, Sabaheta Abadžić Biljke planina Bosne i Hercegovine = Plants of the mountains of Bosnia and Herzegovina</p> <p>http://czzs.org/?lang=en/</p> <p>https://www.ebba2.info/</p> <p>https://www.cepf.net/grants/grantee-projects/hutovo-blato-nature-park-and-mostarsko-blato-safe-breeding-stop-over-and</p>
Level of confidence of the assessment	Level of confidence of the assessment	Based on partial evidence
	Explanation for the level of confidence	The assessment was made based on available evidence, Information System database, individual projects, cantonal action plans, studies to declare protected areas and publications addressing these issues.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	The target has been addressed by inventorying. Partial inventorying has been conducted through the Nature Protection Information System databases and research done through project activities.
	References	NBSAP BiH, RS Institute for the Protection of Cultural, Historical and Natural Heritage, City of Banjaluka

National Target		13 By 2020, develop the red books of plants, animals and fungi, and adopt action plans for protection of the most endangered taxa
Progress assessment	Category of progress towards the implementation of the selected target	Progress towards target but at insufficient rate
	Date the assessment was done	14/11/2018
	Additional information	<p>The red books referred to under National Target 13 have not been developed yet. With regard to the issue of the red lists and the red books, it should be noted that there are the Red List of Protected Species of Flora and Fauna of the RS and the Red List of Endangered Plants, Animals and Fungi in the FBiH. In RS, the procedure for drafting the Decree on protected and strictly protected species, which should be adopted in accordance with the provisions of the Law on Nature Protection (Official Gazette of Republika Srpska, No. 20/14), is in process.</p> <p>At the same time there are some steps forward mirrored in the implementation of the project <i>Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building</i> funded by the GEF and implemented by the UNEP. The goals of this project are expanding of the network of protected areas in BiH, enhancing of efficiency of the protected area management, and capacity building as tools for the conservation of biological diversity and protection of endangered species and habitats.</p> <p>It should also be noted that progress in this field can also be considered the activities for the establishment of Information Systems for Nature Protection at the level of entities in BiH, which is developed within the project of the <i>Regional Network for Biodiversity Information Management and Reporting</i> (BIMR) implemented by the Open Regional Fund for South-East Europe – Biodiversity (ORF-BD) established and supported by the GIZ. The database within the Information System was developed according to the Darwin Core standard and it supports elements for further development of the modules such as flora, fauna, and protected areas, Natura 2000, GIS platform, red lists, etc. Nature Protection Information System of the RS consists of different modules, and its integral part is also the Endemic List of SE Europe and the Red List or the List of species represented in the RS which are categorised as endangered pursuant to the IUCN criteria. A module containing the protected species which includes wild species that are endangered or might become endangered and which have special importance from genetic, environmental, eco-systemic, scientific, economic and other aspects, is also being prepared. The Fund for Environmental Protection of FBiH is implementing activities to establish an information system in FBiH, while in the RS it is established within the RS Institute for Protection of Cultural, Historical and Natural Heritage.</p> <p>In addition to the above, significant contributions are made by the researchers engaged in the studying of individual groups who publish their works of this type, e.g. The Red List of Reptiles of BiH or preliminary proposal of the Red List of Elasmobranchii. In addition, it could be observed that there are different types of studies dealing with the issues of endangered species, endemic species or researches monitoring some pressures the organisms are exposed to.</p>
	Indicators used in this assessment	<p>Red books and action plans developed</p> <p>Red lists compiled</p> <p>Nature Protection Information System set-up</p>
	Tools/means used for the assessment of progress	Research of the web sites of the Ministries and other relevant institutions, and analysis of the data found by experts

	References	<p>Decree on Red List of Protected Species of Flora and Fauna of the RS (Official Gazette of Republika Srpska, No. 142/12)</p> <p>Red list of wild species and subspecies of animals, plants and fungi (Official Gazette of the Federation of BiH, No. 7/14)</p> <p>http://www.hbsume.ba/public/files/crvena_lista_bih.pdf</p> <p>NBSAP BiH</p> <p>Lelo, S., Zimić, A., & Šunje, E. (2016). Red list of reptiles (Chordata, Vertebrata, Reptilia) of the Federation of Bosnia and Herzegovina. Annexes to Fauna of BiH, 12, 31-42.</p> <p>Lelo, S. (2015). Red list of dung beetles (Coleoptera: Scarabaeoidea) of the Federation of Bosnia and Herzegovina. Annexes to Fauna of BiH, 11, 13-28.</p> <p>Gajić, A., Kahrić, A., & Lelo, S. (2017). Preliminary proposal of the Red list of the elasmobranchs, Classis Elasmobranchii Bonaparte, 1838, in Bosnia and Herzegovina. Annexes to Fauna of BiH, 13, 21-34.</p> <p>The Society for Biological Research and Nature Protection - BIO.LOG in the catchment area of the Neretva River implements the project "Karst Freshwater Habitats: Identification and Participatory Planning for the Conservation of Endangered Species of Invertebrates and Fish"</p>
Level of confidence of the assessment	Level of confidence of the assessment	Based on partial evidence
	Explanation for the level of confidence	The assessment was made based on the available evidence and positive examples of progress in the achievement towards this target. The evidence on indicators, such as the number of implemented measures for protection of endangered taxa and the number of protected species as planned by the NBSAP BiH, can be expected with the adoption of documents on protected and strictly protected species.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	Target monitoring is not in place, and the progress towards the target will be presented by innovated Red Lists, development of the red books and with adoption of the action plans for protection of the most endangered taxa.
	References	NBSAP BiH

National Target		14. By 2020, prepare and implement <i>in situ</i> and <i>ex situ</i> programs for protection of domestic varieties, breeds and their animal relatives, including their inventory and establishment of indigenusness parameters
Progress assessment	Category of progress towards the implementation of the selected target	Progress towards target but at insufficient rate
	Date the assessment was done	05/12/2018
	Additional information	A review of the web sites of the institutions responsible for adoption and implementation of the programs of conservation of indigenous plant varieties and breeds of animals, both domesticated and their wild relatives, established that progress towards achievement of this target is at insufficient rate, especially with

regard to the fact that it will not be achieved within the target deadline. The official databases related to the compiling of inventories of indigenous genetic resources have not been set in either entity, or for any group of organisms.

In RS, the Program for the Conservation of Plant Genetic Resources was adopted in 2008, while in 2013 the Program for the Conservation of Forest Genetic Resources was adopted in 2013, which provided a legal framework for the realization of activities for the protection and sustainable use of plant and forest genetic resources. These programs also define priority species, as well as established frameworks for *in situ* and *ex situ* protection of domestic varieties and their wild relatives, including their inventory.

In the RS the 2016-2021 Cattle Breeding Program in the Republika Srpska was adopted in 2016, while the 2018-2022 Goat Breeding Program was adopted in 2018. These two Programs refer to indigenous species, but do not assign particular importance to them. In 2018 the 2018-2022 Sheep Breeding Program in the RS was adopted which clearly recognises and highlights the importance of the breeding and conservation of indigenous breeds and strains of sheep.

In the FBiH the Operational Program for Plant Genetic Resources in Agriculture in the Federation of BiH from 2014 stands out by providing of specific goals, activities, planned outcomes and mechanisms targeted towards the conservation of plant genetic resources. A Program for Conservation of Animal Genetic Resources (individual breeds and strains) has not been adopted in either entity. The Rulebook on Bee Farming adopted in 2018 in the FBiH underlines that exclusively indigenous species/breeds of bees should be grown on the territory of the FBiH. In the same year the Rulebook on Organic Plant and Livestock Production was adopted in the FBiH which gives preference to the indigenous plant varieties and animal breeds in this system of breeding.

All remaining programs were adopted with a view of conservation of plant and animal resources which existed before.

There are incentives for breeding of indigenous animal breeds both in the RS and the FBiH, while the similar measures to encourage cultivation of indigenous plant species and varieties are not in place. In the RS, horse breeders who *inter alia* breed varieties of Bosnian Mountain Horses and Lipizzaner (Rulebook on Incentives from 2018) are entitled to incentives. The bee breeding is also subsidized (The Law on Bee Farming reads that only domestic grey bee can be bred). Among systemic and other support measures, the incentives for support of livestock organisations for protection of cultural heritage and genetic resources are mentioned (incentives for this purpose cannot exceed 50,000 KM per beneficiary and they are mentioned for the first time in the 2018 incentives). In the FBiH, the Rulebook on Incentives from 2018 earmarks funds amounting to 43,200 KM for the breeding of protected breeds (Bosnian Mountain Horse (*bosanski brdski konj*), Buša cow, domestic donkey and *tornjak* dog), and there are also incentives for bee breeding based on the Rulebook on Bee Farming which allows breeding and procurement of queen bees exclusively of indigenous bee breed.

Indicators used in this assessment

Number of varieties under *ex situ* and *in situ* protection
Relevant programs of breeding of indigenous species in some areas

Tools/means used for the assessment of progress

Research of the web sites of the Ministries and analysis of the data found by experts

References

NBSAP BiH
Laws and bylaws of the Ministry of Agriculture, Forestry and Water Management of the RS
Laws and bylaws of the Federal Ministry of Agriculture, Water Management and Forestry
Institute for Genetic Resources of RS
Program for Conservation of Forest Genetic Resources of Republika Srpska 2013-2025

Level of confidence of the assessment	Level of confidence of the assessment	Based on comprehensive evidence
	Explanation for the level of confidence	Based on the adopted and published laws and bylaws, and other strategic and planning document in this field, the assessment of achievement of this national target was made.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	This target monitoring system is not in place, thus the progress towards this target cannot be systemically monitored. Since the issue of genetic resources is in the competence of several institutions (Ministries responsible for agriculture, Ministries responsible for science and technology, etc.) the monitoring and reporting system requires their coordinated action and establishing of a dedicated body to address this issue.
	References	NBSAP BiH

National Target		15. By 2020, map and evaluate the benefits from forest, agricultural and water ecosystems, and strengthen the environmental permit mechanism and supervisory inspection within protected areas, areas of special interest and areas from the Natura 2000 ecological network plan
Progress assessment	Category of progress towards the implementation of the selected target:	Progress towards target but at insufficient rate
	Date the assessment was done	03/12/2018
	Additional information	<p>Progress towards this target was achieved through strengthening of human capacities for knowledge and evaluation of ecosystem services, and of human capacities for better quality preparation of environmental impact studies. On the other hand, there were no significant institutional advances in the evaluation of ecosystem services and strengthening of the environmental permit mechanism.</p> <p>No systemic activities have been taken in BiH on the evaluation of different groups of ecosystem services. There are some activities, mostly educational, focused on strengthening of human capacities for evaluation of ecosystem services. However, technical and financial capacities for these activities are still undeveloped. The concept of ecosystem services is not integrated in sector policies, and it is very difficult to assess to what extent they are devoted to preservation of ecosystem functions and services. This is why stronger implementation of existing regulatory instruments for preservation and sustainable use of biodiversity is necessary in this transitional period. Such instruments include the environmental permit and supervisory inspection. The identified target tries to strengthen the role of these instruments in forest, water and agricultural ecosystems that provide essential ecosystem services to the population of BiH. Due to existing barriers in taking of measures, no significant progress has been achieved on this target.</p> <p>When it comes to environmental permits and supervisory inspection, it is important to note that, although data on issued environmental permits are publicly available, as is the number of conducted inspections based on them, there are no data about number of permits in protected areas, areas of special interest, and</p>

areas of the Natura 2000 ecological network plan. A number of issued environmental permits for small hydro power plants are related to areas of the Natura 2000 ecological network plan in BiH, which by its nature includes riparian forest habitats as a priority, but the exact number of these permits is unknown.

With regard to the work of supervisory inspections, it has been found that the Federal Administration for Inspection Affairs and RS Administration for Inspection Affairs prepare annual work reports, but it was impossible to identify through analysis of available reports if supervisory inspections were carried out within the protected areas, areas of special interest, and areas of the Natura 2000 ecological network plan.

Figure below shows the potential Natura 2000 areas.

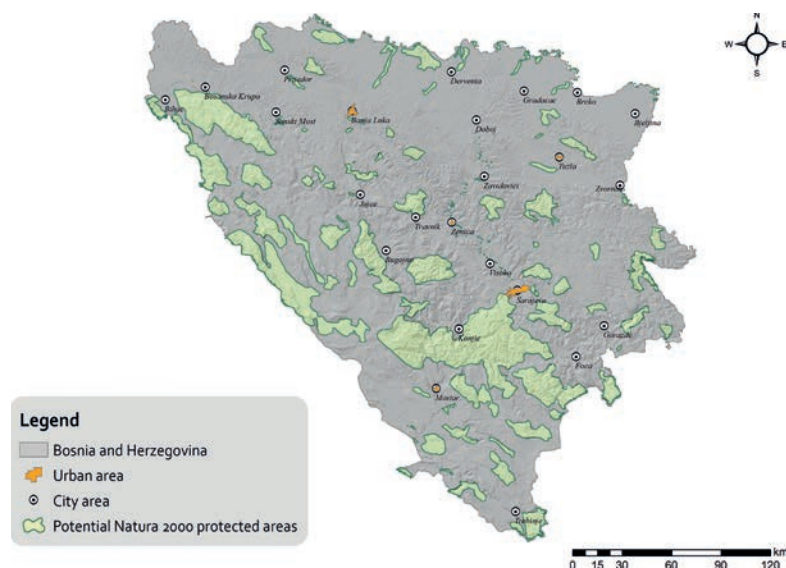


Figure 6: Potential Natura 2000 areas

	Indicators used in this assessment	Number of environmental permits and supervisory inspections within protected areas, areas of special interest and areas from the Natura 2000 ecological network plan
	Tools/means used for the assessment of progress	Search of websites of ministries in charge of issuance of environmental/ecological permits and websites of inspectorates and inspection administrations in BiH.
	References	http://www.fmoit.gov.ba/ba/page/84/statistika-o-od http://www.fuzip.gov.ba/bundles/websitenews/gallery/files/37/1520494342Godi%C5%A1nji_izvje%C5%Altaj_FUZIP-a_za_2017.pdf http://www.vladars.net/sr-SP-Cyrl/Vlada/Ministarstva/mgr/Servisi/Pages/Arhiva_-_ekoloske_dozvole.aspx http://www.inspektorat.vladars.net/stranica/105/pregled
Level of confidence of the assessment	Level of confidence of the assessment	Based on limited evidence
	Explanation of confidence level	Data are not standardized on the whole territory of BiH, or differentiated for special areas
Monitoring	Adequacy of monitoring information to support assessment	Monitoring related to this target is partial (e.g. only covering part of the area or issue)

	Target monitoring	Adequate monitoring of this target has not been established. Partially available data were used for preparation of incomplete indicators. Data on ecosystem services in forests and other forest areas are not available.
	References	http://www.bhas.ba/?option=com_content&view=article&id=226 http://www.fmoit.gov.ba/ba/page/84/statistika-o-od http://www.fuzip.gov.ba/stranica/37/pregled http://www.inspektorat.vladars.net/stranica/105/pregled http://www.vladars.net/sr-SP-Cyrl/Vlada/Ministarstva/mgr/Servisi/Pages/Arhiva_-_ekoloske_dozvole.aspx

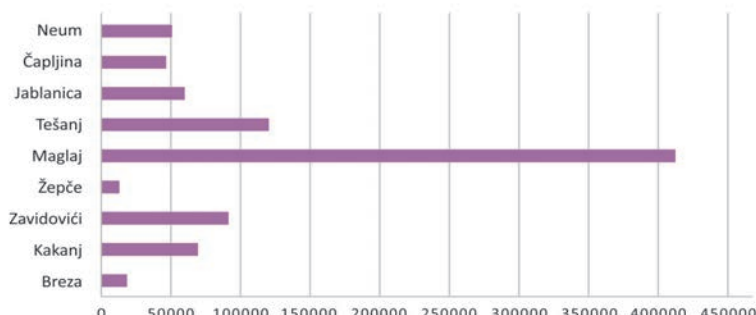
National Target		16. By 2020, restore 30 strip-mine lakes into wetland habitats, increase the productivity of all categories of forests, preserve the existing area of flood alder and willow forests, and increase the regulated urban green areas by 20%																			
Progress assessment	Category of progress towards the implementation of the selected target:	Progress towards target but at insufficient rate																			
	Date the assessment was done	03/12/2018																			
	Additional information	<p>BiH is an area where intense exploitation of mineral, energy and forest resources has been developed for a long time. Degradation of the environment in some parts of BiH is the consequence of such development. Recovery of degraded ecosystems is possible and feasible. Lakes were formed on strip coal and ore mines in BiH, where the succession process is underway today. Through facilitated process of building of functional wetlands, intense forestation and maintenance of forests, and planned development of quality green areas, the possibility for carbon intake can be increased, thus contributing to the mitigation of climate change effects.</p> <p>With regard to strip-mine lakes, this target proposed restoring of 30 such lakes by 2020; however, although scientific literature defines the restauration models, there have been no changes in this regard since the development of NBSAP BiH.</p> <p>Based on data received from 9 municipalities in BiH, it was not possible to establish if urban green areas increased by the percentage proposed in this national target. There are no data about area change trends. In some cities (Sarajevo, Zenica, Banja Luka), there are decisions on the increase of urban green areas, and decisions on financial resources for these activities. Based on received data, a graph of green areas in 9 municipalities in BiH (Neum, Čapljina, Jablanica, Tešanj, Maglaj, Žepče, Zavidovići, Kakanj and Breza) was made. The graph clearly shows that green areas in the Municipality of Maglaj are much larger than in other analysed municipalities.</p>  <table><thead><tr><th>Municipality</th><th>Green Area (approx. m²)</th></tr></thead><tbody><tr><td>Neum</td><td>50,000</td></tr><tr><td>Čapljina</td><td>45,000</td></tr><tr><td>Jablanica</td><td>55,000</td></tr><tr><td>Tešanj</td><td>120,000</td></tr><tr><td>Maglaj</td><td>410,000</td></tr><tr><td>Žepče</td><td>10,000</td></tr><tr><td>Zavidovići</td><td>90,000</td></tr><tr><td>Kakanj</td><td>70,000</td></tr><tr><td>Breza</td><td>20,000</td></tr></tbody></table>	Municipality	Green Area (approx. m²)	Neum	50,000	Čapljina	45,000	Jablanica	55,000	Tešanj	120,000	Maglaj	410,000	Žepče	10,000	Zavidovići	90,000	Kakanj	70,000	Breza
Municipality	Green Area (approx. m²)																				
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Maglaj	410,000																				
Žepče	10,000																				
Zavidovići	90,000																				
Kakanj	70,000																				
Breza	20,000																				

Figure 7: Green areas in nine municipalities in BiH

Figure 7: Green areas in nine municipalities in BiH

With regard to the part of the objective relating to the increase of productivity of all categories of forests, based on data in forest cadasters in the RS and FBiH, and on websites of the Public Forestry Company “Šume Republike Srpske” and Federal Ministry of Agriculture, Water-Management and Forestry, one can conclude that progress is being made towards attainment of this target. From 2011 to 2017, volume of forests in FBiH increased from year to year, and a positive trend is evident, except for 2015, which recorded a gradual decrease of the volume of forests.

Also, the volume of forests has been constantly on the rise in the RS from 2011 to 2016, without any negative trends.

Table 11: Volume of forests in FBiH, 2011-2017

Vegetation form	2011	2012	2013	2014	2015	2016	2017
All high forests (m ³)	142,488,233	143,178,047	147,418,786	146,944,673	139,376,146	151,716,100	154,932,770
Young forests (m ³)	19,354,355	18,819,135	19,342,297	20,112,907	21,918,206	22,138,724	19,463,179
Total (m ³)	161,842,558	161,997,182	166,761,083	167,057,580	161,294,352	173,854,824	174,395,949

Table 12: Volume of forests in RS, 2011-2016

Vegetation form	2011	2012	2013	2014	2015	2016
High forests with natural renewal (m ³)	151.596.839	151.798.243	152.781.985	154.065.370	156.585.970	157.061.802
Degraded high forests (m ³)	4.111.472	4.018.056	3.993.504	3.800.838	3.767.393	3.822.418
Young forests (m ³)	19.596.579	21.011.377	20.952.312	22.258.782	22.736.226	24.985.206
Forest cultures (m ³)	7.709.320	8.134.079	8.264.524	8.430.469	8.650.729	8.732.184
Total (m ³)	183.014.210	184.961.755	185.992.325	188.555.459	191.740.318	194.601.610

Although the volume of forests in forest management units has increased, it is important to emphasize that there were also losses of forests due to land use changes of forest lands. This loss is shown in the figure below.

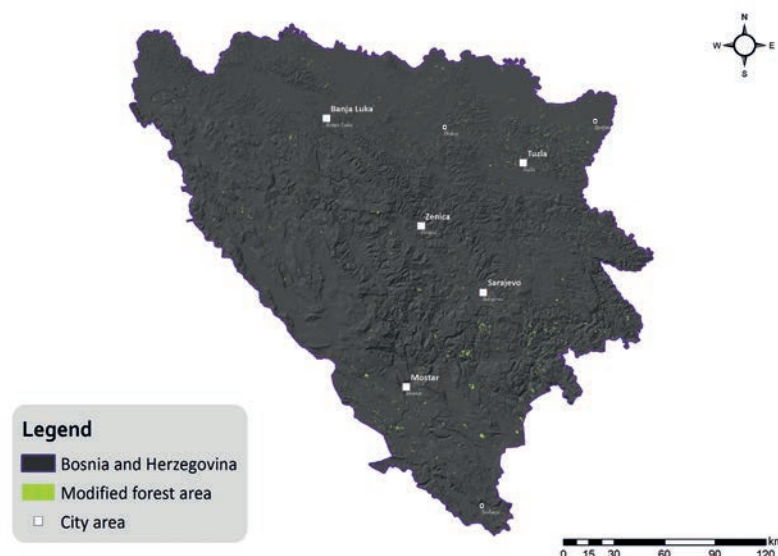


Figure 8: Areas with a conversion of forest area

	Indicators used in this assessment	<ul style="list-style-type: none"> ▪ Number of restored lakes ▪ Size of urban green areas ▪ Volume of forests by categories
	Tools/means used for the assessment of progress	For progress assessment purposes, forestry and agriculture data were used, as well as data of public companies/institutions that work on maintenance and planning of urban green areas.
	References	<p>Information obtained from public utility companies: Čapljina, Neum, Jablanica, Breza, Kakanj, Zavidovići, Žepče, Maglaj, Tešanj (pdf files)</p> <p>Information on forest management in the Federation of BiH in 2016 and the forest management plans for 2017</p> <p>Cadastral of forests and forest lands in RS</p> <p>Forest management information in FBiH https://www.sumesbk.ba/uzgajanje-suma/ https://gradskovijec.sarajevo.ba/wp-content/uploads/2016/08/13.-Informacija-o-stanju-javnih-zelenih-povr%C5%A1ina-na-podru%C4%8Dju-grada-Sarajeva-plan-i-program-za-odr%C5%BEavanje-i-ure%C4%91enje-istih.pdf</p>
Level of confidence of the assessment	Level of confidence of the assessment	Based on limited evidence
	Explanation of confidence level	The data on forests are not standardized i.e. divided to the same forest categories in both entities. Moreover, data about green areas and related trends are not available.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	Target monitoring could be established by monitoring the data available in the aforementioned reports.
	References	/

National Target		17. By 2018, prepare the legislation and establish the conditions for ratification and implementation of the Nagoya Protocol
Progress assessment	Category of progress towards the implementation of the selected target:	No significant change
	Date the assessment was done	03/12/2018
	Additional information	The initiative for ratification of the Nagoya Protocol on access to genetic resources and fair distribution of profits generated by their use has been launched several times so far in BiH. In April 2018, the Ministry of Foreign Trade and Economic Relations of BiH submitted an initiative to entity-level ministries of environment for BiH's accession to the Nagoya Protocol. The ratification can be initiated after obtaining of positive opinions from both entities in BiH, which did not happen in this case. In June 2018, the Federal Ministry of Environment and Tourism issued a positive opinion, after it had obtained approvals from cantons, and the Protocol has not been ratified to date.

		It is important to note that the UNEP office in Bosnia and Herzegovina implemented the project entitled "Global support for the ratification and entry into force of the Nagoya Protocol on access and benefit-sharing in BiH" as early as in 2014. The project prepared a detailed Analysis of the state of affairs for the purposes of accession and implementation of the Nagoya Protocol in BiH. The accession procedure and relevant policies were identified, as well as the obligations in case of accession, and benefits from ratification of this Protocol. This analysis demonstrates possible solutions and a broad spectrum of benefits arising from the implementation, and shows that by establishing the mechanism of access to genetic resources and benefit-sharing in accordance with the Nagoya Protocol requirements, BiH can eliminate the identified problems, and protect, preserve, and even improve its genetic resources. The final result and conclusion of this analysis shows that the ratio of estimated benefits and costs of implementation of the Nagoya Protocol in BiH is 1.7, which means that total costs will generate almost twice as more total benefits with the Protocol implementation.
	Indicators used in this assessment	Number of legal acts that have been aligned with the Nagoya Protocol requirements
	Tools/means used for the assessment of progress	Assessment based on available data relating to the activities taken for the ratification of the Nagoya Protocol
	References	Data / information received from the Federal Ministry of Environment and Tourism for the purpose of developing the project "Technical support for the coordination and drafting of the Sixth National Report of Bosnia and Herzegovina under the Convention on Biological Diversity", by official letter no. 04-23-934/18 of 7 January 2019.
Level of confidence of the assessment	Level of confidence of the assessment	Based on limited evidence
	Explanation of confidence level	Complete data were not received from relevant ministries
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	The target is monitored based on available information submitted by relevant ministries
	References	/

National Target		18. By 2017, establish centers for preservation and implementation of traditional knowledge and practices, particularly in rural areas of interest
Progress assessment	Category of progress towards the implementation of the selected target:	Progress towards target but at insufficient rate
	Date the assessment was done	16/2/2019

	Additional information	<p>In BiH, activities on establishment of centers for preservation and implementation of traditional knowledge and practices have not been launched yet, but search of available web portals and websites of all relevant institutions, and surveys among population in rural and sub-rural areas of BiH provided findings that a large number of data on traditional knowledge and practices were transferred from one generation to another, along with the development and keeping of own recipes, which contributes to the preservation of cultural and natural values of BiH. Unfortunately, a large share of this knowledge disappeared during migrations due to the war, and rural population in many parts of BiH mostly comprises elderly people nowadays.</p> <p>Search of websites of the institutions competent for incentives with the aim of preservation of traditional knowledge and practices has revealed that a small number of institutions awarded resources for financing of a small craft in the domain of traditional knowledge. Every year, ministries of agriculture allocate resources for incentives for cultivation of indigenous species, which indirectly stimulates preservation of traditional knowledge.</p> <p>In today's economic situation, traditional knowledge about the use and preservation of indigenous gene pool and good production and natural potentials constitute the basis for intense production of healthy food. One of the good old practices in BiH is growing fruit trees and methods of processing and canning fruit. For example, trees of apples, plums, pears, cherries, sour cherries, quinces and other fruit trees are part of almost every yard in rural and suburban areas in BiH. In addition, a large part of fragmented agricultural farms that are outside villages are under fruit plantations. Traditional knowledge and experience are used in the process of conservation and drying of these fruits. It is important to note that drying of fruits has been developed as an indigenous technology at the time when other ways of conserving fruits were not known or available.</p> <p>Traditional knowledge, innovations and practices also particularly reflect themselves on the extraordinary abundance of indigenous cheeses. So far, several dozen cheeses have been identified that have indigenous characteristics. There is also a tradition for the production of sour milk cream and preparation of buttermilk, milk spread, cow butter and other dairy products. Very recognizable autochthonous dairy products are the Travnik cheese, Livno cheese, dry smoked cheese and cheese from the bellows (NERDA, 2009).</p> <p>Preservation of traditional knowledge may contribute to local community development. By implementing the project "<i>Protected areas for nature and people</i>", the WWF Adria has been implementing activities in the National Park Una, which were aimed at creating a model where the parks would become generators of environmentally responsible business, by providing support for green business ideas, opening an eco-market, selling local products in the market, and their branding. The said activities also established the Tourist Cluster Una, which is made of a variety of members (27) from the Una-Sana Canton.</p>
	Indicators used in this assessment	Number of established associations dealing with traditional knowledge
	Tools/means used for the assessment of progress	Search of websites of ministries and other relevant institutions and analysis of data found by the expert.
	References	<p>Register of Associations at BiH level</p> <p>Action Plan of the project "Development of Small and Medium Enterprises in the Federation of Bosnia and Herzegovina" for the period 2016-2018. years (https://www.fmrpo.gov.ba/wp-content/uploads/.../AKCIJ-SKI-PLAN-2016-2018.docx)</p> <p>Decision incentive for agriculture FBiH 2017</p> <p>Approved incentives agriculture FBiH 2017</p> <p>Decision incentives for agriculture FBiH 2018</p> <p>NBSAP BiH</p> <p>http://www.unasana.ba/</p> <p>http://www.wwf.adria.org/projekti/zasticena_podrucja/zatiena_podruja_zaprirodu_i_ljude/</p>

Level of confidence of the assessment	Level of confidence of the assessment	Based on limited evidence
	Explanation of confidence level	The assessment was made based on available data on organized processes of traditional knowledge and practices used in practice.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	Progress in the target implementation is monitored based on available data, considering that the monitoring system has not been established.
	References	NBSAP BiH

National Target		19. By 2020, strengthen the role of the scientific research and professional institutions, NGO sector and media including improvement of scientific technologies
Progress assessment	Category of progress towards the implementation of the selected target:	Progress towards target but at insufficient rate
	Date the assessment was done	16/2/2019
	Additional information	<p>The Framework Law on Basics of Scientific Research Activities and the Coordination of Internal and International Scientific Research Cooperation of BiH (Official Gazette of Bosnia and Herzegovina, No. 43/09) defines that for the purpose of planning and implementation of strategic objectives, directions and priorities of scientific and technological development, BiH should adopt and implement the strategy for science development in BiH. The 2010 - 2015 Strategy for Science Development in BiH was adopted by the Council of Ministers of BiH in December 2009. A revised framework Strategy paper was developed for 2017 - 2022, and adopted in 2016. The Revised Strategy provides strategic guidelines and an action plan for the development of scientific research and research and development activities and innovations in BiH for 2017-2022, aiming at prosperous development of science and research, economy, education and culture in Bosnia and Herzegovina, in accordance with science development recommendations in Europe and worldwide.</p> <p>According to this Strategy, the scientific research activity in BiH nowadays is characterized by:</p> <ul style="list-style-type: none"> ▪ lack of qualified and accredited institutions for scientific research work and a small number of researchers, ▪ low level of science financing, ▪ low mobility of researchers and their large concentration in the entity centers, ▪ low competitiveness of scientific papers by number and quality, ▪ low level of transformation of scientific research into innovation and products of high added value, ▪ very scarce statistical data on scientific research results based on relevant international standards, ▪ continuous brain drain i.e. insufficient capacity of BiH to retain existing talents and attract new ones from abroad.

Similar situation in scientific research activity in BiH was identified during the development of the first Strategy from 2009, and described in NBSAP BiH.

With regard to financing of the scientific research activity, it is important to note that scientific research institutions and NGO sector have been strengthened continuously in compliance with the legislation of BiH, FBiH, RS and BD BiH through various forms of financing and co-financing. Financing is provided through public calls for use of grants for the development of individual themes (research, educational or promotional). Every year, the competent entity ministries for education and science provide financing of different projects for scientific research and educational institutions and individuals, as well as NGOs, for the purpose of improving new research achievements. Entity ministries competent for the environment sector, the Fund for Environmental Protection of FBiH and the Fund for Environmental Protection and Energy Efficiency of RS also provide financial support for research in protected areas, as well as research for development purposes. Cantonal ministries also play an important role in financing of scientific research projects.

Budget allocations for financing of research activities have not changed significantly in recent years. According to data of the Agency for Statistics in BiH, total budget allocations of the institutions financing the research and development activities amounted to BAM 13,814,538 in 2014. By sector, budget resources of the institutions are mostly allocated for the higher education sector (83.1%), followed by the public sector with 14.3% of allocated budget resources. Other budget resources are allocated for the non-profit sector (1.8%) and business sector (0.8%). By social-economic goals, the largest amount of budget resources of the institutions was spent for General Knowledge Improvement (56.5%). Projected budget resources for research and development in 2015 amounted to BAM 13,617,235.

Total budget allocations of the institutions financing the research and development activities amounted to BAM 13,952,461 in 2017. By sector, budget resources of the institutions are mostly allocated for the higher education sector (77.8%), followed by the public sector with 19.1% of allocated budget resources. Other budget resources are allocated for the business sector (1.7%) and non-profit sector (1.3%). By social-economic goals, the largest amount of budget resources of the institutions was spent for Education (63.2%). Projected budget resources for research and development in 2018 amounted to BAM 15,642,795, which is by almost BAM 2,000,000 more than in previous years.

The presented analyses show that the NGO sector is one of the sectors that received the smallest funding amounts in previous years.

With regard to the cooperation with the EU institutions, it is important to note that in early 2016, the Ministry of Civil Affairs of BiH initiated activities on the development of strategic documents for membership with the European Strategy Forum on Research Infrastructures (ESFRI) and mapping of research and innovation infrastructures in BiH. The largest part of the existing I&R infrastructure is located at the universities, and this is where the majority of scientific research work takes place in BiH.

Scientific technologies in the area of biodiversity are also implemented through the projects of NGO sector. For example, the Centre for Environment from Banja Luka implemented the project "*Scientific research of rivers of National park Sutjeska*". During the implementation of this project, scientific research of flora and fauna of the NP Sutjeska (Sutjeska and Hrvacka) was conducted for the purpose of strengthening arguments against construction of small hydro power plants. Scientific research of 11 groups of organisms was conducted at the site by over 20 experts. The project was implemented in 2015.

Additionally, by implementing the project: "*Basic biology of cartilaginous fish: the First Bosnian-Maltese School of Pathology and Molecular Genetics – PATHOGEN 2017*" SharkLab worked on informal education of the youth (students of Natural Science and Mathematics Faculty, Veterinary Medicine, etc.) for the purpose of improving their knowledge and practice in marine science in the area of pathology, histopathology and genetics. This project was implemented in 2017, and supported by the Federal Ministry of Education and Science.

	Indicators used in this assessment	Budget allocations of institutions financing the research and development activities Adoption of the new Science Development Strategy in BiH
	Tools/means used for the assessment of progress	For progress assessment purposes, data posted on websites of relevant institutions about allocation of funds for scientific research and expert institutions were used, as well as data on the situation in the scientific research activity in BiH which were provided in the revised Strategy for Science Development in BiH, in order to compare them to the data described during the development of NBSAP BiH.
	References	Fund for Environmental Protection of FBiH Fund for Environmental Protection and Energy Efficiency of RS Federal Ministry of Education and Science Database of researchers and research organizations in BiH Ministry of Science and Technology, Higher Education and Information Society of RS http://sllist.ba/glasnik/2018/broj22/broj022.pdf http://www.bhas.ba/saopstenja/2015/NTI_BI-IR_2015_001_01_BA.pdf http://bhas.gov.ba/data/Publikacije/Saopstenja/2018/RDE_03_2017_Y2_0_BS.pdf Ministry of Education and Science of Sarajevo Canton http://czzs.org/?lang=en/ http://www.sharklab-adria.org/pathogen/ NBSAP BiH
Level of confidence of the assessment	Level of confidence of the assessment	Based on comprehensive evidence
	Explanation of confidence level	The assessment is based on official data of the institutions, which is why it is deemed reliable.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	This target can be monitored through the amount of allocated incentives from the budget, and through the analysis of the state affairs in the scientific research sector as described in existing strategic documents
	References	http://sllist.ba/glasnik/2018/broj22/broj022.pdf http://www.bhas.ba/saopstenja/2015/NTI_BI-IR_2015_001_01_BA.pdf http://bhas.gov.ba/data/Publikacije/Saopstenja/2018/RDE_03_2017_Y2_0_BS.pdf Ministry of Education and Science of Sarajevo Canton NBSAP BiH

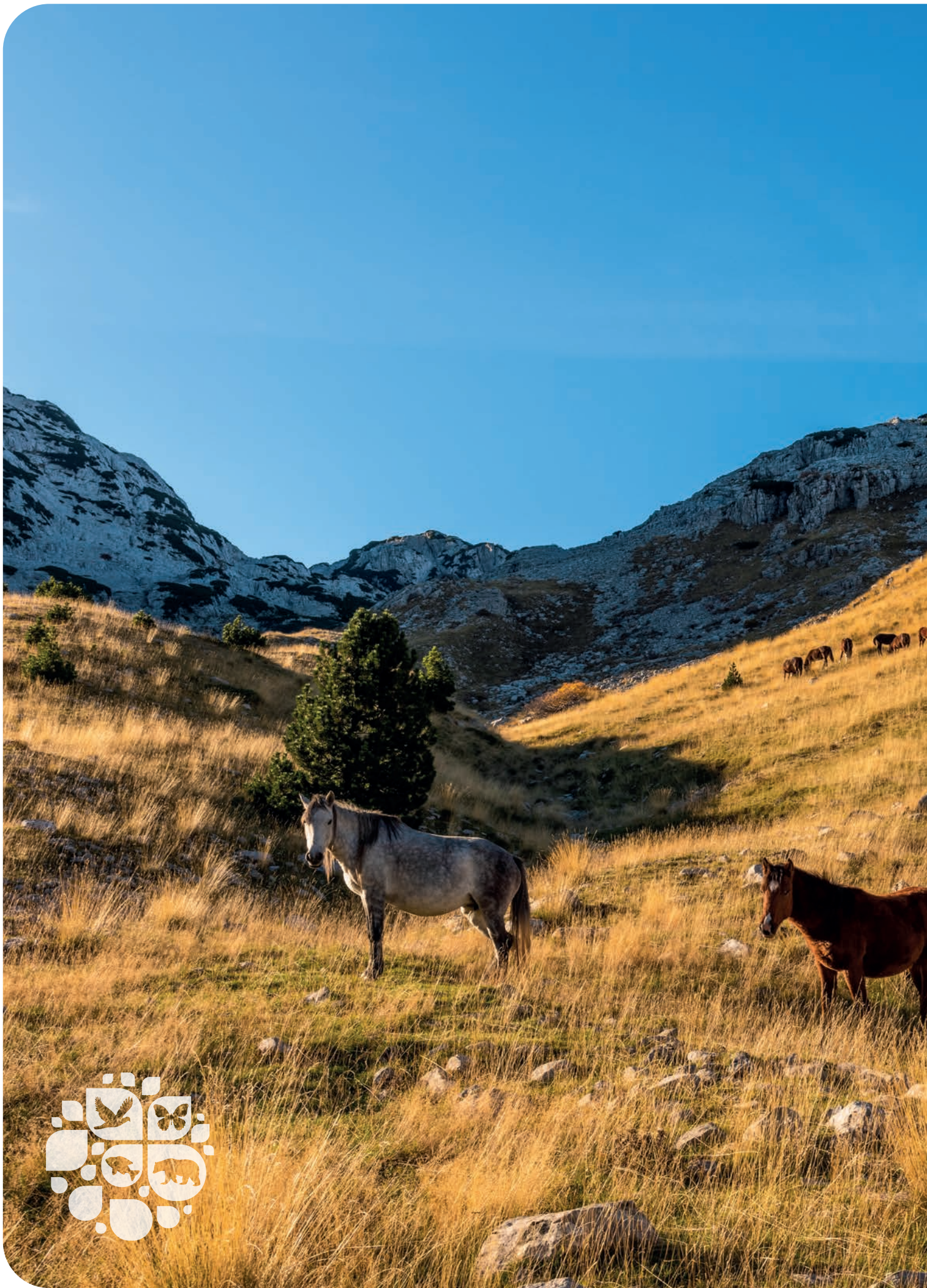
National Target		20. By 2017, prepare and adopt the strategy for mobilization of financial resources for conservation of biological diversity
Progress assessment	Category of progress towards the implementation of the selected target:	Progress towards target but at insufficient rate
	Date the assessment was done	14/11/2018

	Additional information	<p>The implementation of the Strategy for Mobilization of Financial Resources should include the establishment and expansion of financial flows to support the conservation of biological diversity in BiH. A strategy for mobilization of financial resources has been neither prepared, nor adopted. Although a strategy for mobilization of financial resources for conservation of biological diversity has not been adopted, it is important to note that some institutions such as ministries competent for environmental protection allocate funds from their budgets for implementation of projects relating to conservation of biological diversity.</p> <p>According to environmental economic calculations published by the Agency for Statistics of BiH, total environmental protection costs in 2016 amounted to BAM 81,342,158. Total investments in environmental protection in 2016 amounted to BAM 27,960,506. Investments at the end of the production process accounted for 93.8%, and investments in the prevention of environmental pollution for 6.2% of the structure of environmental protection investments. Of the total investments in environmental protection, a small percentage accounts for the protection of biological diversity. According to the structure, investments in air protection amounted to 82%, in waste water management to 8.2 %, in waste management to 6.7%, in protection and rehabilitation of soil and of underground and surface waters to 2.7%, in noise and vibration reduction to 0.2%, and investments in the protection of biological diversity amounted to 0.2%. Total running costs of environmental protection in 2016 amounted to BAM 53,381,652. Of the total running costs of environmental protection, internal running costs amounted to 76.4%, and external running costs to 23.6 %.</p> <p>Data for 2017 illustrate somewhat different values. Total costs of environmental protection in 2017 amounted to BAM 95,402,323, while total environmental protection investments in 2017 amounted to BAM 43,543,315. These amounts are higher compared to those in 2016. However, the structure of investments and costs should be analyzed, too. Investments at the end of the production process accounted for 93.6%, and investments in the prevention of environmental pollution for 6.4% of the structure of environmental protection investments. Of the total environmental protection investments, the investments in air protection amounted to 91%, in waste water management to 2 %, in waste management to 5.2%, in protection and rehabilitation of soil and of underground and surface waters to 1.5%, in noise and vibration reduction to 0.2%, and investments in the protection of biological diversity amounted to 0.1%.</p> <p>Although the 2017 data indicate an evident increase of allocations for environmental protection compared to 2016, it should be emphasized that 0.1% of total investments accounted for biological diversity, while 1.4 % of funds were used for biological diversity from a portion of running costs.</p> <p>Apart from these funds, it is important to note that significant amounts for the protection of biological diversity are also allocated by entity environmental protection funds that are regulated by the Law on Environmental Protection Fund of the FBiH (Official Gazette of the Federation of BiH, No. 33/03) and the Law on the Fund and Financing of Environmental Protection of the RS (Official Gazette of Republika Srpska, No. 117/11 and 63/14), and by other regulations.</p> <p>Existing mechanisms for financing of biological diversity are not sufficient for financing of the implementation of NBSAP BiH and of the measures contained in it.</p>
	Indicators used in this assessment	Budget allocations for biological diversity on different administration levels
	Tools/means used for the assessment of progress	Search of websites of ministries and other relevant institutions and analysis of data found by the expert
	References	<p>NBSAP BiH</p> <p>Costs for Protection of the Environment, 2016. Agency for Statistics of Bosnia and Herzegovina</p> <p>Costs for Protection of the Environment, 2017. Agency for Statistics of Bosnia and Herzegovina</p>

Level of confidence of the assessment	Level of confidence of the assessment	Based on partial evidence
	Explanation of confidence level	The assessment was made based on available data.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	No adequate target implementation monitoring system has been established
	References	NBSAP BiH Costs for Protection of the Environment, 2016. Agency for Statistics of Bosnia and Herzegovina Costs for Protection of the Environment, 2017. Agency for Statistics of Bosnia and Herzegovina

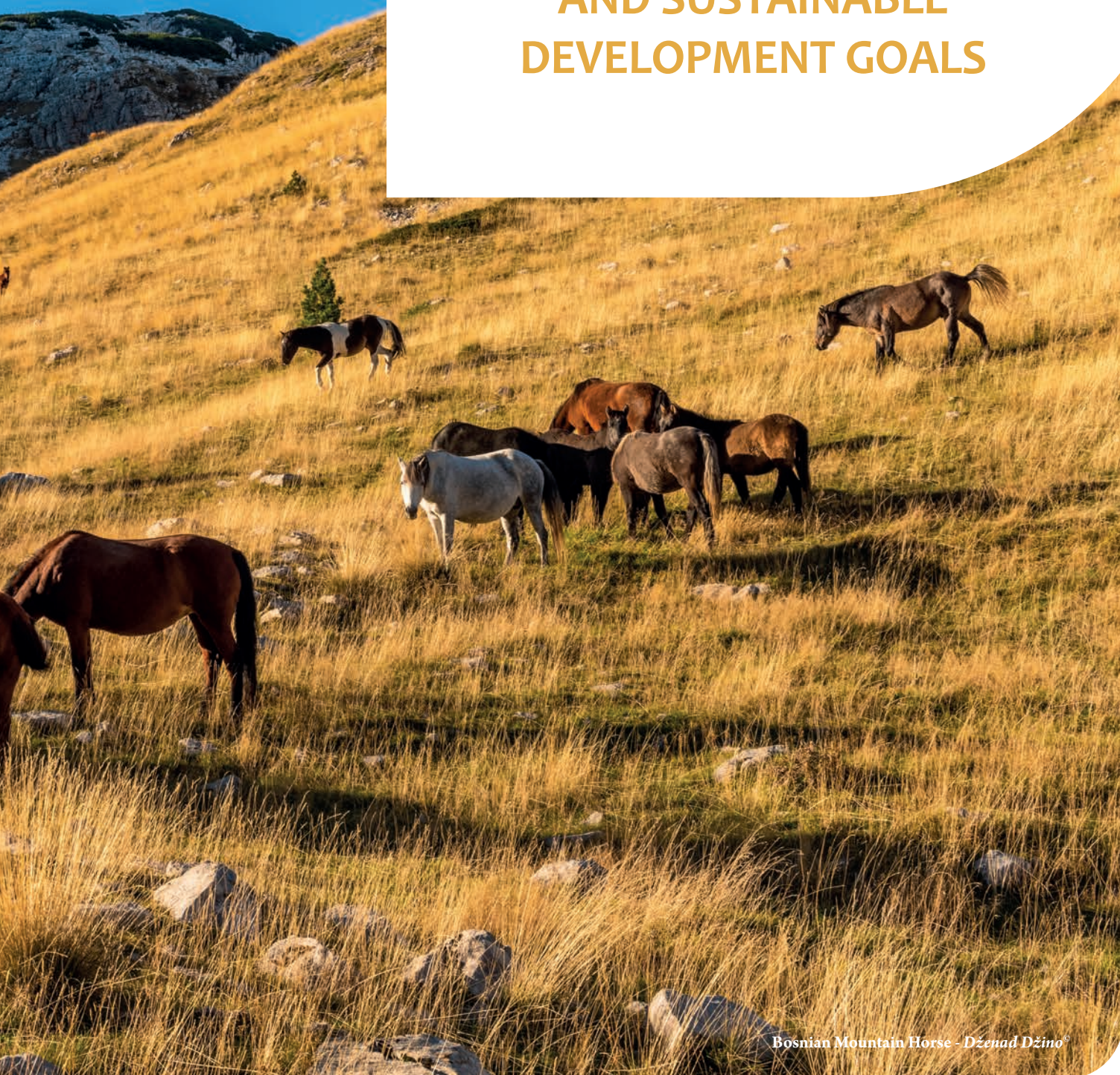
National Target		21. By 2020, establish and strengthen cooperation for improved protection and sustainable use of biological diversity in the countries of the Western Balkans
Progress assessment	Category of progress towards the implementation of the selected target:	On track to achieve target
	Date the assessment was done	3/12/2018
	Additional information	<p>Regional cooperation has been launched to a significant extent with the support of international organizations and initiatives. These include ORF BD, IUCN, UNEP, UNDP, RCC etc.</p> <p>There is a traditional exchange of new scientific results on biodiversity in the territory of the Western Balkans, through organization of congresses and scientific symposia. Some of the region's most recent scientific events on biodiversity include: The Fifth Croatian Botanical Symposium (Primošten, Croatia, 2016), Fifth Congress of Ecologists of the Republic of Macedonia, with international participation (Ohrid, Makedonija, 2016), Seventh Balkan Botanical Congress (Novi Sad, Serbia, 2018), The Nature of South and East Europe - Diversity, Condition and Management (Sarajevo, Bosnia and Herzegovina, 2018).</p> <p>Additionally, the Open Regional Fund for Southeast Europe – Biodiversity (ORF BD), which was established and supported by GIZ, implements projects relating to conservation and sustainable use of biodiversity on the Southeast Europe region. In that respect, in 2015-2018, the ORF BD united the efforts of six Balkan countries, and the following projects were carried out:</p> <ul style="list-style-type: none"> ▪ Biodiversity Information Management and Reporting (BIMR) ▪ Ecosystem Services Assessment and Valuation (ESAV), ▪ Regional Network of Biodiversity CSOs (BioNET), ▪ Transboundary Management of Ecosystems (BiH is not included in this project) <p>The Project for establishment of the Regional Network for Biodiversity Information Management and Reporting (BIMR) is particularly important, as it should enable regional exchange of data and information for the purpose of collaborative monitoring, reporting and management of (joint) resources in the biodiversity domain. The project followed the direction of the introduction of unified technical standards for data exchange purposes, lists of species and habitats, and of</p>

		<p>a continuous dialogue, coordination and communication among all relevant stakeholders in the region. Through the implementation of this project, activities were carried out on the establishment of information systems for nature protection. Two mutually compatible entity-level information systems are in the process of being established in BiH, which are also compatible and regionally unified with Montenegro and Macedonia. The database within the information system was developed in accordance with the Darwin Core standard, and it supports elements for further development of modules such as flora, fauna, protected areas, Natura 2000, GIS platform, the red list etc.</p> <p>In addition to the aforementioned projects, it is important to emphasize that the first BES-Net dialogue on pollinators, food safety and rural development was held in the region (Sarajevo, Bosnia and Herzegovina). In cooperation with the UNDP, German Ministry of Environment, Nature Protection, Construction and Nuclear Safety, GIZ, the Norwegian Environmental Protection Agency and SwedBio Resilience Center from Sweden, and the Federal Ministry of Environment and Tourism, the BES-Net dialogue was held from 18 to 20 October 2017 in Sarajevo. The dialogue gathered around 50 participants from Albania, BiH, Montenegro, Georgia and Moldova, representatives of governmental institutions, the academic community, farmers and beekeepers who have had the chance to exchange information about the current situation regarding pollination and pollinator protection.</p>
	Indicators used in this assessment	Number of cross-border cooperation projects aiming at protection and sustainable use of biological diversity
	Tools/means used for the assessment of progress	The assessment was made based on search of available websites of projects that were implemented by BiH in cooperation with countries from the region.
	References	http://e-priroda.rs.ba/ https://www.giz.de/en/worldwide/40686.html https://www.besnet.world/newsletter-detail?name=BES-Net%20Newsletter%20-%20No.8.%20November%202017&pdf=BES-Net%20Newsletter%20-%20No.%208.%20November%202017.pdf
Level of confidence of the assessment	Level of confidence of the assessment	Based on comprehensive evidence
	Explanation of confidence level	Results of the regional cooperation are available in online reports and on websites of the institutions implementing the projects.
Monitoring	Adequacy of monitoring information to support assessment	No monitoring system in place
	Target monitoring	The target progress is monitored based on available information about regional activities and through project implementation reports
	References	http://e-priroda.rs.ba/ http://e-priroda.rs.ba/static/bis/pdf/Regional_Assessment_BHS.pdf https://balkangreenenergynews.com/rs/publikacije-bd/ https://www.besnet.world/newsletter-detail?name=BES-Net%20Newsletter%20-%20No.8.%20November%202017&pdf=BES-Net%20Newsletter%20-%20No.%208.%20November%202017.pdf https://www.besnet.world/sites/default/files/event-document/BGdoc%20EN-online.pdf https://promotepollinators.org/2018/03/22/five-new-members-promote-pollinators-ipbes6/



4.

BiH's CONTRIBUTION TO THE ACHIEVEMENT OF GLOBAL AICHI TARGETS AND SUSTAINABLE DEVELOPMENT GOALS



This part of the Report describes how and to what extent BiH contributed to the achievement of each Aichi target and how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals. This Section is divided into two parts: one part is related to the contribution to Aichi targets and the other one to the contribution to Sustainable Development Goals (SDG). Each part contains the description of methodology used, based on the methodology referred to in the Guidelines for the Sixth National Report, provided in the Annex to Decision no. XIII/27 adopted on 15 December 2016 by the Conference of the Parties to the Convention on Biological Diversity⁵.

4.1 BiH's contribution to the achievement of global Aichi biodiversity targets

This part of the Report contains description of BiH's contribution to the achievement of global Aichi targets. Below is the tabular overview of methodology used in completing the table with the assessment of contribution to each global Aichi target. The table corresponds to the entry in online tool which will be used for the submission of the Sixth National Report to the Secretariat of the Convention on Biological Diversity.

Table 13: Overview of methodology used in completing the table with assessment of BiH's contribution to the achievement of global Aichi biodiversity targets

Aichi target	Target as set in the Strategic Plan for Biodiversity 2011-2020
Contribution to the achievement of Aichi targets	Contribution of measures undertaken in BiH to achieve global Aichi biodiversity targets: a. Very significant b. Significant c. Moderate d. Somewhat significant e. Insignificant.
Measures undertaken to implement Aichi target in BiH	This part of described measures is produced using answers to questions from the methodology for drafting Sixth National Report relating to the contribution to the achievement of each Aichi target.
Reference	List all relevant websites, web links and documents where indicated information can be corroborated and additional related information found.

⁵ <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-27-en.pdf>

Table 14: BiH's contribution to the achievement of global Aichi biodiversity targets

Aichi target	ABT 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably
Contribution to the achievement of Aichi target	Significant
Measures undertaken to implement Aichi target in BiH	<p>Activities carried out with the aim of raising public awareness of biodiversity include public debates, round tables, lectures, conferences and seminars. Also, public awareness campaigns are carried out through media channels (programmes broadcast on TV and radio), internet portal, newspapers, various printed promotional materials included in projects on this topic. Active shows are videos "Nije teško biti EKO" (<i>It's not hard to be ECO</i>), TV show "Budi EKO friend" (<i>Be ECO friendly</i>), TV show "EKO sat" (<i>ECO clock</i>), videos "Ekologija i mi" (<i>Ecology and us</i>), info portal "Eko kult" (<i>Eco cult</i>), etc. Non-governmental organisations registered for environmental protection, higher education institutions, institutes registered for environmental protection and natural resources, international organisations implementing environmental and natural resources projects (UNEP, UNDP, UNCCD, REC, WWF) have implemented activities that encourage raising of public awareness.</p> <p>Raising of public awareness is targeted if carried out within the framework of the project and focused on the subject area, such as the implementation of projects in protected areas (Nature Park Hutovo Blato, Nature Park Blidinje, Protected Landscape of Bijambare, etc.). For example, campaigns in the Hutovo blato Nature Park were targeting a group of children in elementary schools as the first contact with the problem of conserving biodiversity and raising awareness at that age as a prerequisite for responsible behaviour. Workshops were conducted exclusively by teachers of natural sciences. Such field workshops are effective because they draw attention to the problem and mitigate them in the area where users are active. There are also targeted workshops entitled "How to Improve Cooperation to Reduce Illegal Activities related to Vertebrates Biodiversity in Hutovo Blato?", where target groups are mainly users of the area and wider areas that have an impact on this area. If general awareness raising is carried out, as in educational institutions or for the general public (citizens), the topics are then focused on general problems, finding solutions and ways to prevent biodiversity loss as a whole.</p> <p>Performance evaluation of the measures taken is carried out by means of an evaluation at the end of the project or awareness-raising activities and the measurement of the undertaken activities in the following time period by the target groups. Performance evaluation activities were divided according to the geographical region, or locations where activities were carried out, according to the age (workshops for children, primary school pupils, youth, etc.), target thematic units, interest of individual groups. Although not all monitoring activity data are always available, taking into account the available results, it has been noted that children and young people have the greatest influence on developed awareness of biodiversity conservation.</p>
Reference	<p>https://centrazakulturutuzla.ba/2018/12/10/javna-tribina-o-invazivnim-biljkama-grada-tuzle-u-domu-mladih-tuzla/</p> <p>http://www.dzbbih.org/</p> <p>https://rtvbk.ba/rtv-tk-eko-sat/</p> <p>https://tv1.ba/category/produkcija/ekologija-i-mi/</p> <p>http://hutovo-blato.ba/smanjenja-nelegalnog-djelovanja-na-biodiverzitet-kicmenjaka-u-hutovom-blatu/</p> <p>https://www.hercegovina.info/vijesti/hercegovina/mostar-hercegovina/udruga-moj-grad-organizira-posumljavanje-huma-71474/print:true</p> <p>www.faktor.ba/vijest/nastavlja-se-uspjesan-projekt-posumljavanja-zajedno-za-nase-zelene-sume-foto-167323</p>
Aichi target	ABT 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems
Contribution to the achievement of Aichi target	Moderate

Measures undertaken to implement Aichi target in BiH	<p>In BiH, the greatest opportunities where better biodiversity management could contribute to poverty reduction are in organic production in agriculture, by cultivating indigenous species, through adequate incentive policies by the competent institutions, tourism development, development of rural economies, etc.</p> <p>When it comes to development strategies, it is worth mentioning that at local levels they have incorporated, to a lesser extent, the values of biodiversity. At the level of BiH, the FBiH and RS, these strategies have not been adopted. However, it is important to emphasise that the RS Industry Development Strategy and Policy for the period 2016-2020 was adopted in the RS, recognising the need to apply environmental standards in industry and more efficient use of resources, and the conservation of biodiversity in forests when it comes to using biomass as a resource.</p> <p>Strategic documents and plans relating to agricultural development are those that recognise the importance of biodiversity to the greatest extent possible. The 2018 - 2021 BiH Strategic Rural Development Plan - Framework Document has integrated the values of biodiversity that are analysed in the chapter <i>Biodiversity and Animal and Plant Genetic Resources</i>. According to the Strategy, it is necessary to integrate the issues of agro-environment into the process of rural development planning. They should prevent the destruction of landscapes and biodiversity, the disappearance of animal and plant genetic resources. Similarly, many areas and goals of the 2016-2020 Strategic Plan for the Development of Agriculture and Rural Areas of the Republika Srpska and the 2015-2019 Mid-term Strategy for the Development of the Agricultural Sector in the FBiH are based on the conservation of biodiversity, in particular through sustainable agricultural production and preservation of genetic resources.</p> <p>When it comes to other strategic documents, such as transport strategies, they do not recognise the values of biodiversity and these values are not integrated into the action plans of these strategic documents.</p> <p>It is important to emphasise that BiH adopted the National Strategy and Action Plan for the Protection of Biodiversity (NBSAP BiH), which contains a set of national targets that were developed and related to Aichi targets. NBSAP BiH contains integrated biodiversity values through each of the set targets. The NBSAP BiH has defined a timetable for the implementation of individual measures from national targets and Aichi targets aimed at development, conservation and well-being at the national and local levels. The implementation of these measures would have indirect impact on the development of the country, agriculture, forestry and sustainable development.</p> <p>Programs and projects in the economy that integrate biodiversity as an integral part of development are funded from different levels of government. The incentive policy in the agricultural sector (organic production, incentives for breeding indigenous breeds and varieties), tourism activities, the production of indigenous products, especially in rural areas, contributes to the reduction of poverty.</p> <p>The biodiversity values are insufficiently presented in national financial reports, or at a very low level.</p>
Reference	<p>BiH Strategic Rural Development Plan for the period 2018-2021 - Framework Document</p> <p>Strategic Plan for the Development of Agriculture and Rural Areas of the Republika Srpska for the period 2016-2020</p> <p>Mid-term Strategy for the Development of the Agricultural Sector in the FBiH for the period 2015-2019</p> <p>Industrial Development Strategy and Policy for the period 2016-2020</p>
Aichi target	<p>ABT 3: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions</p>
Contribution to the achievement of Aichi target	<p>Somewhat significant</p>

Measures undertaken to implement Aichi target in BiH

BiH authorities have recognized the need to eliminate subsidies and incentives that are harmful to biodiversity. This need has already resulted in the development of NBSAP BiH, which was prepared through the participatory process of institutions at various levels and from various sectors in BiH. Representatives of institutions directly participated in proposing National targets for NBSAP BiH, and the third national target proposed is: *By 2020, reduce negative and increase positive incentives and subsidies in order to conserve biodiversity*. Furthermore, through the adoption of the NBSAP BiH by the Council of Ministers of BiH in May 2017, this document became a strategic and planning document for BiH, recognising its targets as crucial for the conservation of biodiversity and CBD implementation in BiH. However, based on the research of the expert team working on this Report, there is no knowledge of whether some subsidies have been rejected and reformed for the purpose of protecting biodiversity, nor has there been information on how to eliminate or reform incentives or subsidies in order to reduce pressure on biodiversity.

In BiH, activities related to determining incentives and subsidies, as to which have a positive effect and which have a negative impact on biodiversity, have not yet been initiated. Similar incentives and subsidies have not been calculated and monitored over the years so that an assessment can be made on this issue. Only when it comes to the agriculture sector positive incentives were identified for cultivating indigenous species and breeding indigenous breeds.

In order to prepare this Report, the expert team has done research on data available on the websites of institutions that are in charge of incentives and subsidies in the sectors of forestry, energy, agriculture, environmental protection. Data on the incentives granted after the drafting and adoption of NBSAP BiH were not publicly available. For FBiH, based on the data on the website of the Federal Ministry of Agriculture, Water Management and Forestry and having analysed the incentives approved in 2017 (based on the previously adopted *Program of expenditures of funds with allocation criteria "Subsidies to private companies and sole traders - Incentive for agriculture"* determined by the Budget of the Federation of Bosnia and Herzegovina for 2017), the amount of BAM 43,200.00 was determined, which was approved for the purpose of breeding Bosnian Mountain Horse (bosanski brdski konj), Buša cow and domestic donkey. According to the *Program of expenditures of funds with allocation criteria*, the mentioned breeds fall under the original protected breeds of animals, which means that the mentioned incentive can be considered as an incentive that has positive effects on the conservation of biodiversity in BiH. By analysing the adopted *Program of expenditures of funds with allocation criteria "Subsidies to private companies and sole traders - Incentive for agriculture"*, established by the Budget of the Federation of Bosnia and Herzegovina for 2018, it has been established that the funds for the cultivation of the (bosanski brdski konj), Buša cow and domestic donkey are foreseen for 2018. However, the said document provides a sum of funds for multiple purposes, so that it was not possible to estimate the amount exclusively provided for the breeding of those protected breeds.

In the RS, horse breeders who, *inter alia*, raise horses from the Bosnian Mountain Horses and Lipizzaner breeds (2018 Rulebook on incentives) are entitled to incentives. Also, the beekeeping is subsidised (Law on Beekeeping states that only domestic grey bees can be kept). Through systemic and other support measures, incentives are provided to support cattle-breeding organizations for the protection of cultural heritage and genetic resources (incentive funds for this purpose can be up to BAM 50,000 per user and it is for the first time that they occur in the above-mentioned about incentives from 2018).

As previously stated, mechanisms in BiH for monitoring positive and negative subsidies has not been established, nor are data available on their contribution to the conservation of biodiversity. This means that there is no adequate system for determining either the effect of incentive measures or their positive or negative impacts on biodiversity, and from that aspect it is difficult to address or express BiH's progress towards this goal.

Through research conducted to analyse the achievement of Aichi target 3 in BiH, it is not known whether BiH has, and to what extent, helped to achieve this goal at a global level. As previously explained, there are no mechanisms for analysing the effects of the incentives on the conservation of biodiversity, while reports on these activities are not available.

Reference

Decision incentive for agriculture FBiH 2017
Approved incentives agriculture FBiH 2017
Decision incentives for agriculture FBiH 2018
Bylaws of the Ministry of Agriculture, Forestry and Water Management in RS
NBSAP BiH

Aichi target	ABT 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits
Contribution to the achievement of Aichi target	Somewhat significant
Measures undertaken to implement Aichi target in BiH	<p>Consumption and the need to use natural resources in BiH are not at the margin of sustainability. Excessive resource utilisation is one of the threats to biodiversity. The need to use natural resources in BiH has been enhanced by increasing pressure from the construction of small hydropower plants, cutting forests, urban expansion and degradation of the area.</p> <p>The data on anthropogenic pressures on natural resources refer to the following activities:</p> <ul style="list-style-type: none"> ▪ construction of a complete infrastructure (construction of a transport network, construction of electric power plants / hydro accumulations, electric power stations, power transmission plants, pipelines, gas lines, construction of water supply / catchment areas, ditches, artificial lakes with dams, water gates, dams) ▪ agricultural activities (reclamation, exhaustion of habitats by monoculture, use of pesticides and mineral fertilisers), ▪ uncontrolled urbanisation and ruralisation, ▪ mismatch between strategic development goals by sector. <p>In recent years, BiH has mapped certain areas where endangered European habitats are located. The Natura 2000 Ecological Network Plan covers most of BiH with endangered European habitats, and habitats with high values of specific BiH's biodiversity. The mapped area data are still used according to the 2006 CORINE database system. It is important to emphasise that protected areas are sensitive to nitrates and are subject to eutrophication, and therefore they require application of the protection and conservation plan. Areas susceptible to soil degradation and erosion (forest and non-vegetation areas) also require the application of the protection and conservation plan.</p> <p>Sustainable production and consumption of natural resources is integrated in many sectoral strategies and plans. For example, the issues of sustainable production and consumption of natural resources are found in the documents in the Strategic Rural Development Plan for BiH for the period 2018-2021, in the management plans for protected areas for a large number of protected areas in BiH, in spatial plans in BiH, in the Strategy for the Development of Forestry of the Republika Srpska 2011-2021, in the RS Program for Achieving the Land Degradation Neutrality, in the Water Management Plan for the Sava River Area in FBiH, in the Water Management Plan for the Adriatic Sea Water Area, in the Sava Water Management Plan (RS), in the Trebišnjica Water Management Plan, in the Energy Efficiency Action Plans adopted at the level of BiH, FBiH and RS, and through the energy development strategies, and other strategies that directly or indirectly touch on natural resources.</p> <p>In BiH, companies, especially those involved in the manufacture and using several types of natural resources, are not sufficiently aware and do not make plans to use the resources they use in a sustainable way.</p>
Reference	http://www.vladars.net/sr-sp-cyrl/Pages/default.aspx http://www.fbihvlada.gov.ba/ http://www.vlada.bdcentral.net/ NBSAP BiH

Aichi target	ABT 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced
Contribution to the achievement of Aichi target	Insufficiently significant

Measures undertaken to implement Aichi target in BiH

When it comes to reducing the rate of loss of natural habitats in BiH, it is those from the field of forestry that are monitored. Analysing the data from the newsletters found at the Entities' Statistics Institutes, it was noted that the forest damage in 2017 in FBiH and in the RS increased rapidly compared to the previous years. Due to forest damage in 2017, 28,300 ha of forests were destroyed in the FBiH, and 26,791 ha in the RS, which makes the total of 55,091 ha of state forests in BiH. For comparison, in 2016, total damage amounted to 20,607 ha, which is more than half than in 2017. According to the data, fires are the main cause of degradation and loss of forests, while other causes are natural disasters, cattle, insects and plant diseases, and illegal use and land acquisition. Various measures are being taken to prevent these damages. In order to reduce illegal logging, and thus the loss of natural habitats, legal measures are applied, namely submission of criminal and misdemeanour reports. Organisation of fire protection is realised through the forestry administrations, forestry companies and civil protection directorates. Fire protection is carried out through annual fire protection plans. Also, mined areas are nominated for demining priorities, which depends on the available funds.

Below is a map showing the loss and gain of forests in BiH.

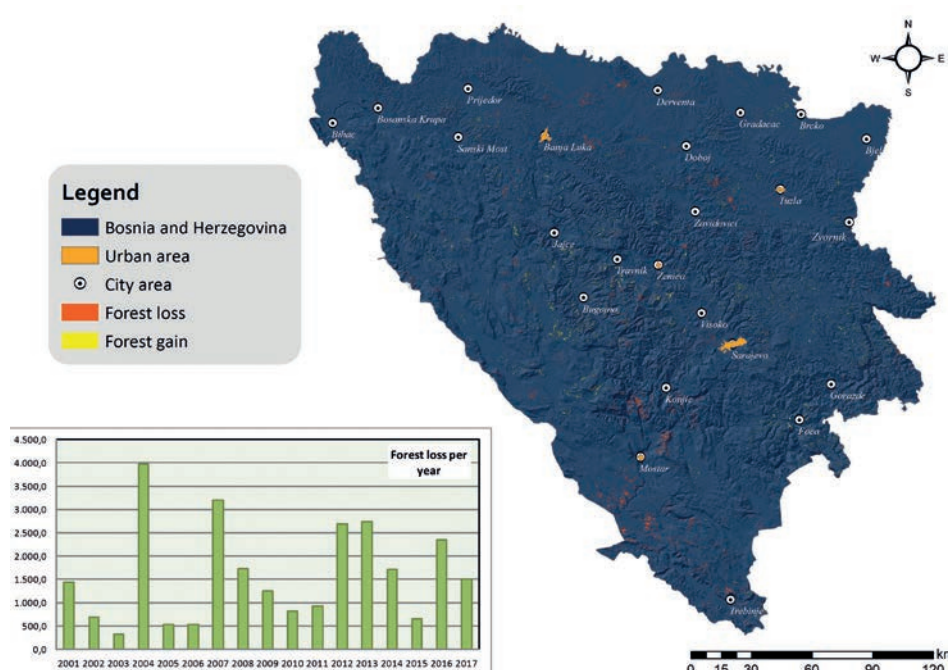


Figure 9: Loss and gain of forests in BiH

When it comes to degradation and fragmentation of land, they happen as a consequence of urbanisation, construction of infrastructure facilities, fire, erosion, discharge of pollutants into the ground, and illegal construction of facilities. In order to reduce these negative impacts on ecosystems during the construction of infrastructure facilities, the measures envisaged in the obtained permits as well as the best practices and technologies used in the EU Member States are implemented. For example, when building a motorway in BiH, a structure that largely affects the fragmentation of habitats and isolation of species, account was taken of measures such as the construction of green bridges for migratory species and subways for the same purpose. This measure was implemented on the basis of analyses, habitat research and tracking of migratory species. With the above mentioned parameters, among the pressures that lead to the change of habitat, the most distinctive are those of demographic nature which entail economic and social pressures. Migration of the population from higher altitudes-rural areas was especially pronounced during the war events in BiH. As a result, large areas remained uninhabited and at the same time great pressure was created in urban areas, which resulted in further urbanisation. Uninhabited areas that, in addition to nature, have been shaped for centuries by human activities, domestic animals, etc. have descended, so some very sensitive habitats have decreased with a further tendency to decrease (as in the case of subalpine pastures).

Reference

Statistical Bulletin_Forestry 2018_Republika Srpska
Statistical Bulletin_Forestry 2018_Federation of BiH

Aichi target	ABT 6: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits
Contribution to the achievement of Aichi target	Moderate
Measures undertaken to implement Aichi target in BiH	<p>The management of fisheries and open water fisheries is carried out through fishing master plans prescribing the quality of water, the composition of species and their abundance, measures for improvement, the prescribed fish guard service. These documents are adopted at certain time intervals and apply to specific areas, and they are the basis for adoption of plans and programs of management and restocking. Restocking plans are made within the fishermen's associations. The fishing master plans provide analysis and proposal for restocking, as well as definition of the bio-potential of fish population. Special plans for the recovery of harvested species are not drafted, as the master plan specifies the allowed catch. In addition, according to the plan, fishing is prohibited in a certain period of the year, while applying the rules on allowed measures. When it comes to the impact of fisheries on vulnerable ecosystems and endangered species, it is necessary to emphasise that it is primarily necessary to define endangered species, with no negative effects of fishing.</p> <p>Generally, on the basis of available data on fishing master plans and other aquatic ecosystem research, the status of fish, aquatic plants and invertebrates is satisfactory because the data of most watercourses point to good quality water in accordance with the applicable legislation. The status change is linked to the deterioration of the environment.</p> <p>There are several laws on fishery in the territory of BiH and the Entities. In the RS, the Law on Fisheries (Official Gazette of Republika Srpska, No. 72/12) is in force, while the Law on Freshwater Fisheries (Official Gazette of the Federation of BiH, No. 64/04) is applied in the territory of FBiH. Fishery in the BD BiH is governed by the Law on Freshwater Fisheries (Official Gazette of the Brčko District of BiH, No. 35/05, 19/07). In addition to the aforementioned laws, cantonal laws on freshwater fishing have been adopted in two cantons of FBiH, and the law on marine fishing in the Herzegovina-Neretva Canton (Official Gazette of the Herzegovina-Neretva Canton, No. 7/14). In addition to the legal acts, a whole set of various regulations govern this field: the Rulebook on fishing areas, the Rulebook on fishermen's service, the Rulebook on equipment and baits for fishing, the minimum catch allowed, minimum measures and closures, Rulebook on forms, method of issue and the use of the license for commercial and sport fishing, Rulebook on the form, content and manner of keeping the register of issued commercial fishing licenses, the Rulebook on the form, content and method of keeping a fishing cadastre, the Rulebook on the manner, tools and equipment used for fishing, and other rulebooks. Each of these rulebooks regulates this area in its domain and regulates catch, minimum lengths, habitat protection, etc.</p> <p>Critical locations of fisheries in BiH are not yet mapped and highlighted. From the point of view of pollution of water as a fish habitat, one can speak of occasional incidents. If considered that critical locations are pollutants, by monitoring the quality of surface waters it is possible to establish such conditions and locations, and give recommendations for improvement. Laws on fisheries allow certain watercourses to be placed under different protection regimes or proclaimed to be fishing areas. At the moment of placing watercourses under a certain protection regime it is necessary to implement special measures and activities in order to protect watercourses.</p>
Reference	<p>Law on Fisheries (Official Gazette of Republika Srpska, No. 72/12)</p> <p>Law on Freshwater Fishing (Official Gazette of the Federation of BiH, No. 64/04)</p> <p>Law on Freshwater Fishing (Official Gazette of Brčko District of BiH, No. 35/05)</p> <p>Law on Amendments to the Law on Freshwater Fishing (Official Gazette of Brčko District of BiH, No. 19/07)</p>

Aichi target	ABT 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity
Contribution to the achievement of Aichi target	Somewhat significant

Measures undertaken to implement Aichi target in BiH

Management of agricultural, forest and areas important for aquaculture in accordance with the rules of sustainable development, while ensuring the conservation of biodiversity, is done in accordance with development and planning documents, adopted by different levels of government within its competence. When it comes to protected areas, they are managed in accordance with protected area management plans. Management of areas important for aquaculture is done in accordance with the fisheries master plans made for a significant number of fishing areas in the previous period, and in accordance with the fishing plans adopted by associations of sports fishermen as water users. Measures for sustainable agricultural management are provided in strategic documents and plans related to agricultural development, including the Strategic Plan for Rural Development of BiH 2018-2021 - Framework Document, Strategic Plan for the Development of Agriculture and Rural Areas of Republika Srpska 2016-2020 and the 2015-2019 Mid-term Agricultural Sector Development Strategy in FBiH for the period. When it comes to sustainable forest management, it is important to emphasise that around 75% of forests in BiH have a FSC certificate, which is the basis for the implementation of measures of sustainable forest management.

When it comes to measures contributing to the protection of aquaculture, on the basis of annual work plans and activities carried out by fishing associations, restocking is carried out using different types of fish, depending on the area. Restocking of fishing areas and stocking of fishponds is done by healthy fish, juvenile fish and fertile fish eggs, after the health check and establishing of fish quality, juvenile fish, fertile fish eggs and fishing waters.

In agriculture, development of organic production is among the most important measures. According to the report of the Research Institute of Organic Agriculture, organic production in BiH in 2016 was done on 659 ha, which makes a bit more than 0.03% of the total arable land, while the collection of wild plant species was done on the surface of 50,250 ha. In the period from 2013 to 2016, areas for growing organic crops have increased considerably, from 292 to 659 hectares or by 126%. In addition, the contribution to the conservation of biodiversity is also made through incentives in agriculture relating to the cultivation of indigenous species.

In BiH, the most important opportunities for the promotion of sustainable management of aquaculture, forestry and agriculture are through the promotion of BiH tourism potentials (fairs of autochthonous products, handicrafts, etc.) as well as through the promotion of protected areas, by organising various competitions in sport fishing and promoting the country through this type of tourism and service activities.

The loss of habitat is reflected primarily through construction and urbanisation in the vicinity of big cities and other centres, through the construction of transport infrastructure as well as the construction of certain economic facilities. The adoption of spatial plans would greatly contribute to reducing this type of degradation of habitats. Some aquatic ecosystems, and thus biodiversity, are significantly affected by pouring out of contaminated industrial waters. The absence of the Law on Forestry in the FBiH makes the situation in the forestry sector complicated, and thus vertical passage of adopted cantonal laws, and it complicates taking measures to reduce illegal logging, fire protection, etc. Below is a map showing the land use in BiH.

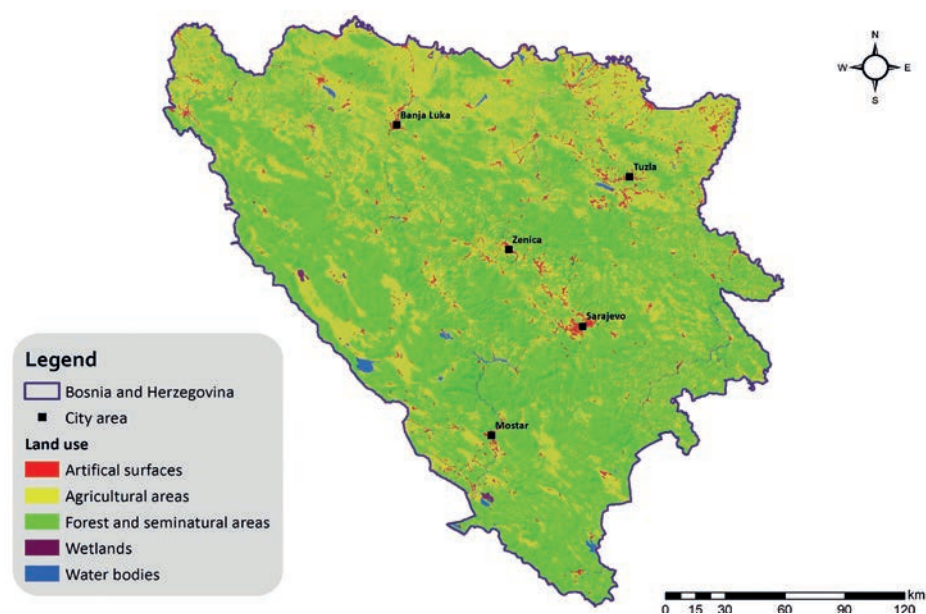


Figure 10: Land use in BiH

Reference	<p>Federal Ministry for Spatial Planning</p> <p>RS Institute for the Protection of Cultural, Historical and Natural Heritage</p> <p>BiH Strategic Rural Development Plan for the period 2018-2021 - Framework Document</p> <p>Annual report in the field of agriculture, food and rural development of BiH for 2017</p>
Aichi target	ABT 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity
Contribution to the achievement of Aichi target	Insufficiently significant
Measures undertaken to implement Aichi target in BiH	<p>In BiH, the largest sources of pollution have a direct impact on air, water, and soil. Air pollution in BiH mostly comes from industrial activities and traffic. Constant increase in traffic also increases the emissions of exhaust gases, which is most evident in big urban centres in BiH. Due to the specific climatic conditions and temperature inversions, air pollution is significantly higher in winter months, in particular in many big urban centres in BiH, especially in cities located in the valleys where pollution is “captured” for a longer period of time. In addition, in individual heating systems, coal is mostly used as the cheapest heating medium for heating, which has a major impact on air pollution. When it comes to water in BiH, there is a clear problem of inadequate waste water discharge. In BiH, 16 wastewater treatment plants are currently in use. Soil degradation is on the rise. Changes in the use of land and the loss of agricultural land were caused by sudden urbanisation, industrialisation and changes in commercial development. Waste is disposed of in a large number of areas, where agricultural land is also used for these purposes, which temporarily leads to land in these areas being occasionally, and sometimes permanently, excluded from agricultural production. The FBiH, RS and BD legislation governing the management of agricultural land are in force, on the basis of which a system for monitoring the quality of agricultural land has been established. Other types of land are not covered by the monitoring system.</p> <p>The possibilities of reducing negative impacts are primarily through the issuance of certain permits (including environmental permit), and through the application of measures contained in the permits by the operator. Implementation of the measures prescribed in the permit reduces the pressure on all environmental components. In addition, observing the limit values of pollutants that can be released into the environment, which are harmonised with the EU acquis, also contributes to reducing negative impacts on all environmental components and on biodiversity.</p> <p>In BiH, sulphur dioxide SO₂, PM₁₀, nitrogen dioxide NO₂, are mainly emitted into the air, then N, P, K into the soil through fertilisers, while largest amount of pollution in the waters comes from wastewater. For facilities and plants for which environmental permits are issued by law, the measures are defined that operators have to respect by adopting the best available technologies in order to reduce or completely eliminate the sources of pollutants. Industrial pollution is characteristic of industrial pools such as Tuzla, Zenica, Kakanj, Banja Luka, Sarajevo.</p> <p>In BiH, in recent years, there have been major problems with air emissions, and some of the BH cities are among the most polluted cities in the whole of Europe. Based on the review of the number of daily exceedances of limit values of SO₂, NO₂ and PM₁₀ pollutants in the air available on the websites of the Entities’ hydro-meteorological institutes, the largest number of exceedances in BiH was recorded for PM₁₀ pollutant. The main sources of PM₁₀ emissions are the housing sector (domestic firewood) and the industrial sector (combustion of fossil fuels). However, taking into account large combustion plants and industry as main sources and emissions of SO₂, it is evident that the SO₂ limit and tolerance value is exceeded particularly in cities with developed industrial production (Tuzla, Zenica, Ugljevik, Brod). Some cities have developed their intervention plans in cases of excessive air pollution containing a series of measures that must be applied in situations of excessive air pollution.</p>
Reference	<p>http://www.voda.ba/nacrt-plana-upravljanja-vodama-za-vodno-podrucje-save-i-prateci-dokumenti</p> <p>http://www.jadran.ba/index.php?mode=content&content=12</p> <p>http://www.voders.org/upravljanje-vodama/planski-dokumenti/?lang=lat</p> <p>Federal Hydrometeorology Institute</p> <p>RS Hydrometeorology Institute</p>

Aichi target	ABT 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment
Contribution to the achievement of Aichi target	Somewhat significant
Measures undertaken to implement Aichi target in BiH	<p>In BiH, not all invasive species have been identified and registered in special lists, nor have strategies for invasive species been adopted. On the other hand, many invasive species have been identified through different types of research. Publication of works on invasive species of certain categories contributes to the achievement of Aichi target. Progress is also reflected through various project activities carried out to obtain data on invasive species and their distribution.</p> <p>For some priority invasive species there are action plans for their removal and prevention of spread, as well as control of invasive species. On the territory of the RS, the decision on measures to control and destroy the ragweed (<i>Ambrosia artemisiifolia</i>) is in force, while the Decision on the Measures for the Prevention of the Spread and Destruction of Ragweed - <i>Ambrosia artemisiifolia</i> is in effect in the territory of FBiH. Additional issues of invasive species are regulated by various laws and regulations. The laws on nature protection in the RS and the FBiH prescribe a ban on the introduction of invasive species into natural habitats. However, it is not known to what extent methods for preventing the introduction and spreading of invasive species have been developed because there are no lists of present invasive species, while data on distribution and population size of these species are segmented and given as results of various studies. In addition, since the number of invasive species has not been identified for all categories, it is difficult to estimate the change in the number of invasive species.</p> <p>Measures of border control are regulated by appropriate laws and regulations, which govern the transport of plant and animal organisms. There is also a whole set of rules and decisions governing this area.</p> <p>When it comes to plants, the implementation of the border inspection procedure is carried out with the aim of health protection of domestic production, markets and consumers, applying the process of health control of plants, plant products, regulated facilities and other objects that can transmit quarantine and economically harmful organisms in international traffic, as well as by applying quality control, monitoring and recording of cross-border traffic of plant protection products, fertilisers and soil improvement agents, and by ensuring the international trade in healthy plants and plant products when exported. Phytosanitary control of BiH in cross-border trade in goods of plant origin and control inland are under the responsibility of the RS Administration for Inspection Affairs - RS Inspectorate in the Agricultural Inspection Sector, Federal Inspection Administration - Border Inspectorate Sector and the Mayor's Office - BD BiH Government Inspectorate. They are responsible for the management and operation of the phytosanitary inspection, both at the border and supervision inland.</p> <p>Animal controls are also carried out to determine whether they meet the conditions laid down in the BiH legislation and EU legislation and correspond to the purpose for which they are intended and listed in the veterinary certificate. Clinical examination of the animal consists of observing the general health condition and behaviour of the entire group or a representative sample. If an irregularity is detected during the inspection, a detailed examination is carried out, including sampling if necessary. In addition, the free movement ability, the state of skin and visible mucous membranes and the presence of non-physiological excretions are checked and other procedures are carried out. The Border Veterinary Inspection Department carries out veterinary health checks for import / export / transit of consignments of animals, products and by-products of animal origin, animal feed of animal and non-animal origin, articles and goods that can transmit infectious and parasitic diseases and thus endanger the lives and health of people and animals.</p> <p>As already mentioned, according to the applicable laws, the introduction of allochthonous species is prohibited. The Rulebook on Measures for Preventing the Introduction and Spread and Control of Harmful Organisms on Plants, Plant Products and Regulated Facilities (Official Gazette of Bosnia and Herzegovina, No. 59/11) is worth mentioning may be mentioned here as well as Rulebook on the Method of Conducting Risk Assessment and Drafting Risk Assessment Study Related to introduction, Re-Introduction and Growing of Alien Varieties and Procedure of Granting Permit to Introduce Alien Varieties in FBiH (Official Gazette of the Federation of BiH, No. 102/15). The latter governs the method of introducing alien species in the FBiH area, including the need to draft a study and carry out risk assessment.</p>

	<p>It is important to emphasise that the impact of invasive species on the ecosystem is primarily seen through the taking of places of indigenous species and their suppression, which affects the change in the structure of the community. By releasing different substances, they can affect other members of the community, the use of available resources, and the transmission or causing of various types of illness. It is also possible to cross with the indigenous species.</p> <p>The economic consequences are also reflected in different ways. It can include economic consequences from the viewpoint of financial resources necessary for control, prevention of spreading, mowing, etc. It can be considered from the viewpoint that some of the invasive plant species are very important allergens affecting the health of people. Reducing yields in agriculture can also be caused by invasive species, which has also direct economic consequences. The economic consequences can also be caused by some invasive fish species in aquatic ecosystems, using foods of other species or as a competitor of cultivated species in aquaculture, and in addition, they may affect otherwise.</p>
Reference	<p>Rulebook on Measures for Preventing the Introduction and Spread and Control of Harmful Organisms on Plants, Plant Products and Regulated Facilities (Official Gazette of Bosnia and Herzegovina, No. 59/11)</p> <p>Rulebook on the Method of Conducting Risk Assessment and Drafting Risk Assessment Study Related to introduction, Re-Introduction and Growing of Alien Varieties and Procedure of Granting Permit to Introduce Alien Varieties in FBiH (Official Gazette of the Federation of BiH, No. 102/15)</p> <p>Law on Nature Protection of FBiH (Official Gazette of the Federation of BiH, No. 66/13)</p> <p>Law on Nature Protection of RS (Official Gazette of Republika Srpska, No. 20/14)</p> <p>Manual for Work at Border Crossings in Bosnia and Herzegovina (pdf)</p> <p>Manual for Border Veterinary Inspection - Inspection of products of animal origin</p> <p>Ordinance on phytosanitary register and plant passports</p>

Aichi target	ABT 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning
Contribution to the achievement of Aichi target	Somewhat significant
Measures undertaken to implement Aichi target in BiH	<p>In BiH there are ecosystems that are sensitive to climate change. Particularly sensitive ecosystems in BiH include:</p> <ol style="list-style-type: none"> 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); 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.); 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 hygrophilic polidominant forest communities, beech forests in canyons and cliffs, alder forests, thermal springs around habitats in semi-shadows, etc.), and karst fields with associated wetlands. <p>Since it is difficult to reduce the anthropogenic pressures on sensitive ecosystems, it is suggested that new protected areas be established as a basic measure of improving the state of the ecosystems, which is a combined response from BiH to Aichi 10 and 11. Many areas of BiH, where the mentioned ecosystem types are dynamically and mosaically distributed, still have a well-preserved structure. Because of that, they were marked for protection in planning documents long time ago. In the post-war period, new spatial plans were developed, in which these areas were again proposed for protection. The establishment of protected areas runs very slowly, due to conflicts with other interests.</p>

Sensitive ecosystems are mosaically arranged in BiH, which is a reflection of complex geomorphology and ecological conditions. These are areas of high mountains, wide mountain belt under forest ecosystems, canyons and gorges of Una, Vrbas, Bosna, Drina and Neretva rivers, karstic fields of eastern and western Herzegovina. The need to protect individual parts of these areas is big and real. However, there are multiple interests for the same areas. For example, high-mountain areas of BiH are under great pressure today from the construction of tourist resorts. Some of these settlements are the real cities on the tops of the mountains. Unlike other countries, decision-making in BiH about the purpose of using space is almost entirely in the hands of the local community, which often does not recognise long-term national goals.

Figure below shows the areas in BiH with the highest degree of anthropogenic impacts.

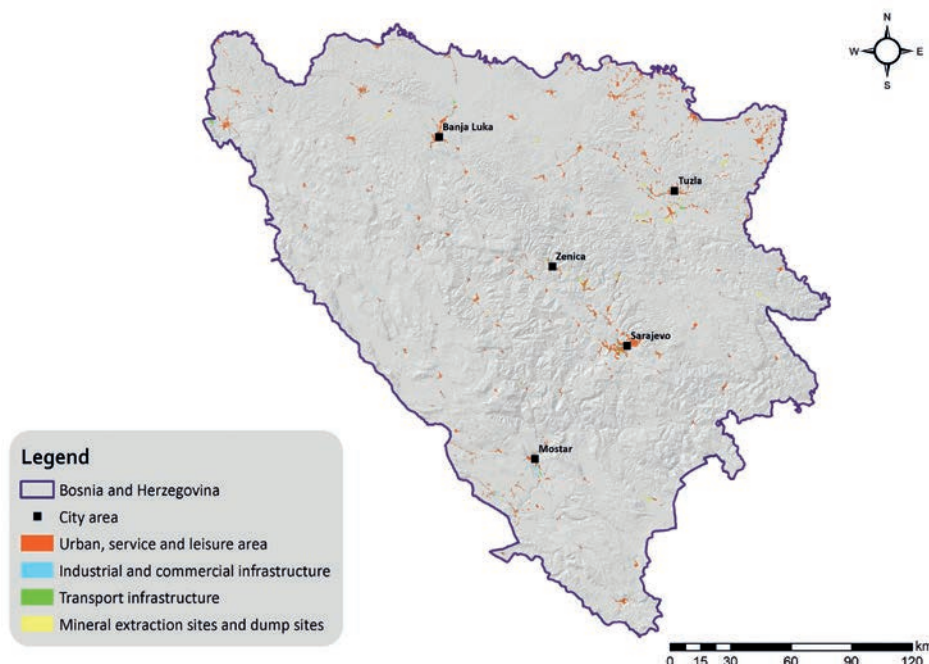


Figure 11: Areas in BiH with the highest degree of anthropogenic impacts

Reference 5 National Report of BiH to the Convention on Biological Diversity

Aichi target	ABT 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes
Contribution to the achievement of Aichi target	Moderate
Measures undertaken to implement Aichi target in BiH	The surface of protected areas in BiH amounts to 2.28%, in FBiH 3.24%, and in RS 1.30%. The largest percentage is protected land and mountain areas, while water-wetland habitats are a very small percentage and they represent IBA areas, or areas of international importance (Hutovo blato, Bardača, Livanjsko polje). In the NBSAP BiH, the goal is to map and protect BiH's specific biodiversity by 2020, in accordance with current spatial documents, however the goal does not mention the percentage of areas to be protected until that year. However, through the analysis of spatial plans it can be concluded that it is planned to achieve 17% of protected areas in BiH in the future. The Spatial Plan of the FBiH (2008-2028), which is still in the process of adoption, envisages the establishment of 14 new protected areas with a total spatial coverage of about 4,488 km ² , which is 18.5% of the area of the FBiH. The RS Spatial Plan by 2025 has set the goal to place 15 to 20% of the territory of the entire RS territory under protection.

	<p>In BiH, currently there are no protected coastal and marine habitats, however, it is planned to protect the Botanical and floristic reserve Mediteranetum in Neum of 1,256 ha of surface.</p> <p>When it comes to mapping habitats, it is important to point out that they are mapped for the areas proclaimed as protected areas, while activities on habitat mapping are ongoing for some of the areas for which conservation is planned. For all protected areas, the spatial plans of the area of special characteristics determined by spatial plans are adopted. Also, the method of governance is defined by legal regulations at different levels of executive and legislative power. As a rule, the local community represents the backbone of conservation and improvement of the protected area. If local communities have resistance to the protected area, it will be difficult to implement all the activities successfully and achieve the intended purpose of the protected area. Certainly, the local community should be involved through management, employment, implementation of projects, tourist activities, sale of local products, etc.</p> <p>In BiH, mapping activities, biological research and initial procedures for the establishment of additional protected areas have been initiated through the project "Achieving Biodiversity Conservation through Creation and Effective Management of Protected Areas and Capacity Building for Nature Protection in BiH" funded by the Global Environment Facility (GEF), and implemented by the United Nations Environment Program. As part of this project, activities are carried out on the development of valorisation studies for selected areas proposed for conservation. The project envisages establishment of protection for Livanjsko polje, Orjen-Bijela Gora, Bjelašnica–Visočica–Treskavica–Rakitnica River Canyon, Zvijezda mountain, cave of Mokranjska Miljacka source, Tišina, Botanical and floristic reserve Mediteranetum, Vjetrenica cave system and Govještica cave system.</p>
Reference	<p>Federal Ministry of Environment and Tourism</p> <p>RS Institute for the Protection of Cultural, Historical and Natural Heritage</p>

Aichi target	ABT 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained
Contribution to the achievement of Aichi target	Somewhat significant
Measures undertaken to implement Aichi target in BiH	<p>The issue of endangered species is regulated by the relevant laws on nature protection at the level of Entities and BD BiH, while out of the official documents dealing with this issue there have been published the Red list of protected species of flora and fauna of the RS (Official Gazette of the Republika Srpska, No. 124/12) and Red list of endangered plants, animals and mushrooms in FBiH (Official Gazette of the Federation of BiH, No. 7/14). The Red list of protected species of flora and fauna of the RS contains a list of vascular flora, birds, fish, mammals, amphibians, reptiles and subkingdom Metazoa, without categories of vulnerability. The Red list of the FBiH includes plant species, mammals, birds, reptiles, amphibians, fish and cyclostomata with an overview of belonging to the appropriate category of vulnerability. The list includes endangered mushroom species in FBiH, as well as an overview of the species of the order of <i>Ephemeroptera</i> (mayflies), <i>Odonata</i> (dragonflies), <i>Plecoptera</i> (stoneflies) and <i>Trichoptera</i> (caddisflies), an overview of the butterflies, <i>Carabus coriaceus</i> and <i>Scarabaeidae</i> of FBiH, as well as species from the <i>Amphipoda</i> (Crustacea), <i>Decapoda</i> (decapods), <i>Opiliones</i> (daddy longlegs) and <i>Pseudoscorpionida</i> (pseudoscorpions). In addition to the red list in RS, the procedure for drafting the Decree on protected and strictly protected species, which should be adopted in accordance with the provisions of the Law on Nature Protection (Official Gazette of Republika Srpska, No. 20/14), is in process.</p> <p>To change the conservation status of a species, it is necessary to have knowledge of the distribution and degree of vulnerability, as well as the number of a particular species. Data on abundances of certain endangered species in BiH are not yet known. Defining the criteria on the basis of which species are classified into the appropriate categories of vulnerability and the training of experts for carrying out such research is the first necessary step. In that regard, having defined the criteria, extensive field research should be carried out to determine the abundance of certain species, to determine the endangered species, the percentage of endemic from the total vulnerable species, the pressures to which they are exposed. Taking into account the foregoing, it can be concluded that it is not known whether and in what way the main threats to species have changed since the adoption of 2011-2020 Strategic Plan for Biodiversity. In addition, there is no information that any endangered species is extinct or that an endangered species has improved its status in the specified period.</p>

	<p>Generally, and without detailed research, it can be noted that among the main pressures one can distinguish habitat conversion, pollution, invasive species, climate change, and the like. Measures that are applied to eliminate threats relate to the control and measures of prevention of the spread of some invasive species. Reducing pollution of environmental components also represents a measure of reducing threats.</p> <p>In order to reduce the pressure and protect ecosystems, it is best to act in terms of increasing the territory of protected areas, reintroduction of species to their earlier habitats, control of invasive species, adoption of a regulation on protected and strictly protected species and the adoption of plans for the protection of endangered species. An example of the reintroduction can be the activities carried out by the RS Institute for the Protection of Cultural, Historical and Natural Heritage in cooperation with the organisation “Južnjačko plavo nebo” (<i>Southern Blue Sky</i>) from Trebinje and the competent institutions from Serbia related to the reintroduction of the griffon vulture in Popovo polje, in the territory of the city of Trebinje.</p> <p>The extinction of known endangered species is largely prevented by the protection of areas in which those endangered species are found. In this way, various threats are eliminated to a significant extent, as both species and habitat are protected at the same time. In that regard, the designation of new protected areas represents positive examples (NP Drina, Cicelj Nature Park, Protected Landscape of Bentbaša and others). A positive example can be the project “Karst Freshwater Habitats: Identification and Participatory Planning for the Conservation of Endangered Species of Invertebrates and Fish”, implemented by the Association BIO.LOG in cooperation with the Odontology Association of Slovenia in the Neretva River basin, and funded by the Critical Ecosystem Partnership Fund (CEPF). One of the main objectives of the project is the research and conservation of rare and endangered freshwater habitats for the conservation of endangered species of dragonflies, molluscs and fish in the wider area of the Neretva River basin. The project is primarily focused on the research of habitats and populations of species: <i>Coenagrion ornatum</i>, <i>Caliaeschna microstigma</i>, <i>Lindenia tetraphylla</i> and <i>Cordulegaster heros</i>.</p>
Reference	<p>Decision on Proclamation of the Nature Park Cicelj</p> <p>Decree on Red List of Protected Species of Flora and Fauna of the RS (Official Gazette of Republika Srpska, No. 142/12)</p> <p>Red list of wild species and subspecies of animals, plants and fungi (Official Gazette of the Federation of BiH, No. 7/14)</p> <p>Law on the Proclamation of the Protected Landscape of “Bentbaša” (Official Gazette of Canton Sarajevo, No. 31/17)</p> <p>http://www.karsthabitats.ba/images/publikacije/Zatita_ugroenih_vrsta_vilinih_konjica-Studija.pdf</p> <p>http://www.nasljedje.org/sr_RS/prirodno-nasljedje/306</p>
Aichi target	ABT 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity
Contribution to the achievement of Aichi target	Moderate
Measures undertaken to implement Aichi target in BiH	<p>The diversity of cultivated species and plant varieties is maintained in plant gene banks located in the RS (Institute for Genetic Resources of University of Banja Luka) and in FBiH (Faculty of Agriculture and Food Sciences of University of Sarajevo) but also in field collections (Agricultural Institute of RS, Institute for Genetic Resources of University of Banja Luka, Faculty of Agriculture and Food Sciences of University of Sarajevo). Exact data on which species and varieties are in question are not publicly available and are stored in the databases of these institutions.</p> <p>The diversity of domestic and domesticated species was held at a relatively satisfactory level when it comes to races that are more intense, including, for example, gatačko cattle and curly sheep. In other words, given the absence of the gene bank, as well as poorly developed other methods of ex situ protection, in situ conservation is the most effective way of maintaining genetic diversity. Other races, which are often replaced by alien and more productive races or hybrids, are in a much more disadvantaged position and are endangered.</p>

	<p>The diversity of socioeconomic and culturally valuable species is reflected in the existence of various plant species (e.g. wild medicinal and edible plants, ornamental plants, and wild relatives of cultivated plants) and animal species (different breeds of dogs, pigeons, hunting game, and wild relatives of raised animals). The genetic diversity of these species is mainly based on the engagement and activities of individual breeders or associations of breeders (ornamental plants, dogs and pigeons), activities of hunting associations (hunting game and wild relatives of raised animals), while for other representatives no specific form of preserving genetic diversity was noted.</p> <p>In order to minimize genetic erosion and preserve genetic diversity in indigenous plant species, the following strategies have been adopted:</p> <ul style="list-style-type: none"> ▪ Strategic Plan for Rural Development for BiH (2018-2021), ▪ 2016-2020 Strategic Plan for the Development of Agriculture and Rural Areas of the Republika Srpska, ▪ 2015-2019 Mid-term Strategy for the Development of the Agricultural Sector in the FBiH. <p>Conservation strategies and plans have not yet been developed, but there are Programs for the conservation of plant genetic resources in RS and FBiH. Ex situ <i>on farm</i> conservation of animal genetic resources is carried out at the Centre of Buhovo (Široki Brijeg, FBiH) and Manjača (Centre for rural affairs; RS) where the buša cows are primarily held. In situ conservation is carried out in cases where certain species are still being cultivated (e.g. gatačko cattle and curly sheep, when it comes to animal genetic resources). Plant genetic resources are stored ex situ (gene banks) and in field collections.</p> <p>The main activities undertaken in order to conserve genetic diversity in BiH are as follows:</p> <ul style="list-style-type: none"> ▪ Deposit of a safe collection of plant seeds from the RS to a vault in Svalbard (Norway), ▪ Inclusion of incentive measures for the cultivation of indigenous animal genetic resources in the RS and FBiH.
Reference	Operational Program for Plant Genetic Resources in Agriculture of FBiH

Aichi target	ABT 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable
Contribution to the achievement of Aichi target	Somewhat significant
Measures undertaken to implement Aichi target in BiH	<p>BiH ecosystems may be grouped in different ways. One of the simplest classifications distinguishes 19 large groups of ecosystems within which there is a great diversity. These are: ecosystems of firm snow, ecosystems of alpine and subalpine meadows, ecosystems of heathlands, mountain pine forest ecosystems, spruce forest ecosystems, beech forest ecosystems, tall-herb ecosystems, oak forest ecosystems, European hop-hornbeam and Oriental hornbeam thickets ecosystems, pine forest ecosystems, rock joints ecosystems, rock creep ecosystems, ecosystems of thermophilic meadows, ecosystems of mesophilic meadows, ecosystems of hygro-mesophilic and flood-meadows, ecosystems of forests of alder and willow, ecosystems of wetlands, ecosystems of freshwater and saltwater, ecosystems of ruderal vegetation and row crops.</p> <p>The most important ecosystem services are provided by forest ecosystems, aquatic ecosystems and agricultural ecosystems. The high diversity of ecosystems is connected to the diversity of services they provide, such as: food, raw materials, drinking water, medicinal and vitamin resources, regulation of local, regional and global climate, the adoption and storage of carbon, prevention and mitigation of natural disasters, wastewater treatment, control of soil erosion, regulation and control of diseases, production of organic matter, pollinations, circulation of matter, recreation, mental and physical health, tourism, aesthetic, cultural and artistic inspiration, spiritual experience and learning, and numerous other services.</p> <p>So far, ecosystem services in BiH have not been spatially mapped, while written information about them is very rare. They mostly refer to scientific literature and technical reports on the commonly used functions of forests in BiH.</p>

Most of the ecosystems that provide essential ecosystem services to the population of BiH are not protected. They are subject to a number of pressures, which come from:

- energy sector (hydro-storage reservoirs, power plants, power lines, pipelines, etc.),
- forestry sector (logging, forest roads),
- water management sector (water catchment areas, channels, reservoirs, embankments, etc.),
- transport and communication sector (corridors, trunk roads, highways, airports, pollution by products of fossil fuel combustion),
- agricultural sector (reclamation, exhaustion of habitats by monoculture, poorly controlled use of pesticides and fertilisers),
- spatial planning sector (poorly controlled urbanisation, ruralisation and use of space in accordance with ecosystem capacities).

In BiH, women are traditionally engaged in agricultural production and sales, and they represent the pillar of local communities. Therefore, the status of agricultural ecosystems, but also of all others that generally support the quality of agricultural production, is especially important to them.

All natural and agricultural ecosystems are considered important in our country. The population of BiH has an “innate” awareness of the values of nature and importance of, for example, high-mountain ecosystems as habitats of a number of endemic species. On the other hand, the value of the forest has always been recognised by people from these areas, as has been the value of aquatic ecosystems. Meadow ecosystems are important for livestock grazing, and their condition and conservation have always been looked after.

There is no established monitoring system in BiH that could provide information on which ecosystems have the highest degradation rate. However, based on expert opinion, it can be concluded that degradation of high-mountain, mountain and aquatic ecosystems is evident.

There is a change in the status of ecosystems that provide important ecosystem services. Changes in high-mountain, mountain and aquatic ecosystems have been noted. Original scientific research on the status of individual groups in these ecosystems is carried out. The results of these surveys are not always available to the public for further reporting. There is no established monitoring system of the state of ecosystems that provide important ecosystem services.

BiH National target 15 (By 2020, map and evaluate the benefits from forest, agricultural and water ecosystems, and strengthen the environmental permit mechanism and supervisory inspection within protected area spaces, areas of special interest and areas from the Natura 2000 ecological network plan) has actually been established because ecosystems at risk of degradation are not mapped and evaluated. The target also contains mechanisms for their conservation and sustainable use. The ecosystem restoration measures in BiH are generally not implemented, with the exception of afforestation actions, involving young people of both sexes.

Different financial mechanisms are used in BiH to serve ecosystem services. Inspections and other institutions in both Entities collect fees for damages and improvements in forest and water and for air pollution. Some of these funds are directed to the operation of public enterprises. Also, part of the funds is directed to the work of environmental funds in the Entities. They further fund the implementation of various projects that partially ensure the maintenance of primary ecosystem services.

Reference

5 National Report of BiH to the Convention on Biological Diversity

Aichi target

ABT 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification

Contribution to the achievement of Aichi target

Moderate

Measures undertaken to implement Aichi target in BiH	<p>In BiH, monitoring has not been established to give precise data on increasing ecosystem resistance and enhanced contribution to carbon stocks through restoration and conservation of ecosystems. However, it is important to emphasise that in BiH there are continuous afforestation activities and the volume of forests in recent years is on the increase. From 2011 to 2017 forests in the FBiH grew year by year and a positive trend can be noticed, except in 2015 when the volume of forests decreased slightly. Similarly, in the RS, the volume of forests was constantly increasing from 2011 to 2016, with no negative trends.</p> <p>Due to the barriers to the implementation of the NBSAP measures, which are mentioned in the previous chapters, no measures have been taken to restore degraded ecosystems. The exception is organised volunteer afforestation campaigns, silviculture activities in the forests (there are no data showing the efficacy of these works) and plans for extending and renewing green areas of the city.</p> <p>BiH has so far failed to implement habitat inventory and mapping projects. Habitats were partially entered in inventories during the preparation of the Natura 2000 Plan in BiH. However, in this case, data have not yet been checked in the field, but they rely on previous knowledge. It should be noted that the results of the 20-year project of the Vegetation Map of BiH were destroyed and disappeared during the war destruction.</p> <p>As already mentioned, a Plan for the Natura 2000 ecological network has been prepared for BiH. This plan covers most of BiH in which there are endangered European habitats and habitats with high values of specific Bosnian-Herzegovinian biodiversity. In addition to this Plan, certain activities have been undertaken in BiH to increase the territory of protected areas, as well as activities that arise from the management plans of existing protected areas. This primarily refers to the project "Achieving Biodiversity Conservation through Creation and Effective Management of Protected Areas and Capacity Building for Nature Protection in BiH" funded by the Global Environment Facility (GEF) and implemented by the United Nations Environment Program. The implementation of this project started in 2016 and the end of the project is expected in late 2019. Within this project, valorisation studies for selected areas proposed for protection will be developed. Namely, during this research, the diversity of flora and fauna, as well as the specificities of certain areas will be determined, and documentation for the procedures for the designation of new protected areas will be prepared. The results of the project show that there is a great interest in and need for conservation of nature in BiH, but also that protection is not easy to establish.</p>
Reference	<p>FIRMA 2012. Transition from JUS to BAS EN standards of forest wood assortments of Bosnia and Herzegovina, Final report, Sarajevo</p> <p>Cadastrre of forests and forest lands in RS</p> <p>Forest management information in FBiH https://www.sumesbk.ba/uzgajanje-suma/</p>

Aichi target	ABT 16: By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation
Contribution to the achievement of Aichi target	Somewhat significant
Measures undertaken to implement Aichi target in BiH	<p>BiH has not yet ratified the Nagoya Protocol, which is an obstacle to the development of domestic procedures in regulating the use of genetic resources.</p> <p>In 2014, the UNEP Office in Bosnia and Herzegovina implemented the "Global Support for the Ratification and Entry into Force of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in BiH". The project has prepared a detailed situation analysis for the needs of the accession and implementation of the Nagoya Protocol in BiH. The procedure of accession, relevant policies, obligations in the event of accession have been identified, but also benefits from the ratification of this Protocol. The above analysis provides possible solutions and a wide range of benefits arising from the implementation, and that by establishing a mechanism to access genetic resources and sharing of benefits according to the Nagoya Protocol, BiH can eliminate identified problems, protect and conserve and improve its genetic resources. The final result and conclusion of this analysis suggests that the ratio of estimated benefits and costs of implementing the Nagoya Protocol in BiH is 1.7, which means that total costs will bring almost twice as many total benefits to the implementation of the Protocol.</p>

	<p>In 2014, the Federal Ministry of Agriculture, Water Management and Forestry adopted the Operational Program for Plant Genetic Resources in the Federation of BiH, stating that the prerequisites for accession to this international agreement are primarily the developed mechanisms for free access to plant genetic resources. Unlike this opinion, NBSAP gave priority to the ratification of the Protocol.</p> <p>Initiative for the ratification of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization has been initiated in BiH several times to date. In April 2018, the Ministry of Foreign Trade and Economic Relations of BiH sent an initiative to the Entities' ministries of environment for BiH's accession to the Nagoya Protocol. Ratification can be initiated after receiving positive opinions from both Entities in BiH, which in this case did not happen. In June 2018, a positive opinion was received by the Federal Ministry of Environment and Tourism after previously obtained cantonal approval, so that the Protocol has not been ratified to date.</p>
Reference	Data / information received from the Federal Ministry of Environment and Tourism for the purpose of developing the project "Technical support for the coordination and drafting of the Sixth National Report of Bosnia and Herzegovina under the Convention on Biological Diversity", by official letter no. 04-23-934/18 of 7 January 2019.

Aichi target	ABT 17: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan
Contribution to the achievement of Aichi target	Significant
Measures undertaken to implement Aichi target in BiH	<p>NBSAP BiH was developed as part of the project "Support to Bosnia and Herzegovina (BiH) for revision of the Strategy and Action Plan for the Protection of Biodiversity and the preparation of the Fifth National Report under the Convention on Biological Diversity", which was funded by the Global Environment Facility (GEF), and implemented by the United Nations Environment Programme (UNEP). The aim of the mentioned Project is to develop the Strategy and Action Plan for the Protection of Biodiversity of BiH (NBSAP BiH 2015-2020) and the Fifth National Report on CBD, and the adoption and submission of the NBSAP BiH (2015-2020) to the CBD Secretariat. Having been drafted, the NBSAP BiH was sent to the Secretariat of the Convention.</p> <p>For the purposes of developing the NBSAP, the CBD Secretariat has developed a methodology⁶ through a package of modules containing guidelines and instructions for coordinators, experts, decision makers and other relevant stakeholders in the planning and implementation of NBSAP. This methodology has been used for the development of NBSAP BiH. Based on the applied methodology, the main participants in the development of NBSAP in BiH were:</p> <ol style="list-style-type: none"> 1. The Steering Committee, consisting of several members: UNEP in BiH, the Ministry of Foreign Trade and Economic Relations of BiH, the Federal Ministry of Environment and Tourism and the Ministry of Physical Planning, Construction and Ecology of RS. The responsibilities of the Steering Committee were the planning and supervision of the implementation of project activities, the approval of the Fifth National Report on the CBD and NBSAP BiH (2015-2020), and the participation and provision of consultations at stakeholder meetings; 2. Expert team, comprised of experts in the field of biodiversity, nominated by the Ministry of Physical Planning, Construction and Ecology of RS and the Federal Ministry of Environment and Tourism. The expert team had a professional and advisory role in the process of developing NBSAP BiH (2015-2020) in cooperation with stakeholders from different sectors, and was responsible for delivering parts of the document to CENER 21 and participating in stakeholder meetings; 3. CENER 21, a local coordination body that was responsible for coordinating project activities on a daily basis (preparing and submitting a questionnaire for searching for data on biodiversity, organising and facilitating meetings of the Steering Committee, Expert team and stakeholders, reviewing parts of documents submitted from the Expert team and preparation of the Project Progress Reports to UNEP) and the final drafting of the NBSAP BiH Document (2015-2020).

⁶ A set of capacity building modules for NBSAP development is available on the official CBD website (<http://www.cbd.int/nbsap/training/default.shtml>)

The process of drafting NBSAP in BiH took place through a series of working and consultative meetings, with the preparation of appropriate materials. During the development of the document, there were:

- seven meetings of the Expert team, which were held every two to three months, with regular e-mail communication;
- five stakeholder meetings (competent ministries and sectors/departments for environmental protection, agriculture, water management, forestry, finance, mining, industry, energy, spatial planning, statistics, education, culture, scientific and research institutions/agencies, non-governmental sector and wider public at the state, entity, cantonal and municipal levels) held in Sarajevo, Vlačić, Tešanj, Konjic and Neum;
- two inter-sectoral meetings (sectors/departments for environmental protection, agriculture, water management, forestry, finance, mining, industry, energy, spatial planning, statistics, education and culture at the state, entity, cantonal and municipal levels) held in Sarajevo;
- two regional meetings of countries in the region - the Republic of Macedonia (2 October 2013, Skopje) and the Republic of Serbia (15 May 2014, Belgrade);
- seven Steering Committee meetings, six in Sarajevo and one in Banja Luka;
- two trainings on the development of indicators for biodiversity held in the period from 19 to 22 March 2013 in Konjic, BiH, and from 10 to 12 September 2013, in Kolašin, Montenegro. The training was funded by the European Commission and implemented by the Biodiversity Indicators Partnership (BIP) in cooperation with UNEP Regional Office for Europe (ROE) and UNEP World Conservation Monitoring Centre (WCMC).

During the drafting of the NBSAP BiH and processing of some issues related to the analysis of the implementation of the Aichi targets in BiH and the setting of national targets, conventions that are strictly related to the conservation of biodiversity were taken into consideration, such as the Convention on the Conservation of Migratory Species of Wild Animals (CMS), the Convention on Wetlands of International Importance (Ramsar), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the Convention on Protection of the World Cultural and Natural Heritage. In addition, the remaining two Rio Conventions were taken into consideration for some issues: the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention to Combat Desertification (UNCCD).

During the development of NBSAP BiH, and its targets and indicators, SMART methodology was fully used. NBSAP BiH (2015-2020) contains a total of 21 national targets for biodiversity, which are deployed within 5 global strategic directions (A, B, C, D and E) identified in the Strategic Plan 2011-2020. As stated above, in order to determine adequate national targets, in accordance with the Strategic Plan 2011-2020, SMART methodology has been applied to ensure that all defined targets are specific, measurable, achievable, realistic/relevant and time-bound.

NBSAP BiH was designed to be fully applicable and efficient in achieving Aichi targets, taking into account the state of biodiversity and its management in BiH. Since the NBSAP BiH was adopted by the Council of Ministers of BiH in May 2017, it is not possible to determine the effectiveness of this document at this point. It can be emphasised that the achievement of the national targets of NBSAP contributes largely to achieving Aichi targets because Aichi targets were used as the basis for the development of national targets.

After its creation, NBSAP was approved by the Entities in BiH, and in May 2017, together with the Action Plan for its implementation, it was adopted by the Council of Ministers of BiH on the proposal of the Ministry of Foreign Trade and Economic Relations of BiH. In this way, NBSAP BiH has become a strategic document (strategy) at the level of BiH, and the Council of Ministers of BiH has demonstrated commitment to meeting its obligations on the international level and in the process of European integration in order to preserve nature and rational management of natural resources. By adopting NBSAP at the BiH level, the institutions have undertaken to implement the measures it contains to achieve national targets from the NBSAP, and implement the provisions of the Convention on Biological Diversity in BiH.

NBSAP will also contribute to the incorporation of biodiversity issues into sectoral and cross-sectoral plans and policies that affect biodiversity in BiH. One of the national targets developed within the NBSAP development is National target 2 which reads: *By 2020, integrate biological diversity values into development strategies and strategic plans, with an emphasis on rural development.*

	<p>It has been suggested that the stated target is achieved through the implementation of the following measures:</p> <ol style="list-style-type: none"> 1. Prepare a Study on Economic Valorisation of Ecosystems and Biodiversity (TEEB), 2. Align current and new development strategies, including poverty reduction, with national biodiversity targets, 3. Integrate national biodiversity targets into existing and new spatial plans. <p>Achieving national target 2 and implementation of these measures would contribute to the integration of biodiversity issues in sectoral and cross-sectoral plans and policies that affect biodiversity in BiH, and especially those related to economic/social development and spatial planning.</p> <p>NBSAP BiH is only partially implemented. A number of targets contained therein are only partially implemented, while many of the measures envisaged therein have not been implemented at all. It is important to emphasise that the main prerequisites for its implementation are in place, and that funds from the budget are allocated for the implementation of measures that contribute to biodiversity, although these funds cannot be considered significant. Laws related to nature protection have been adopted and are the bases for the designation of protected areas and their sustainable management as well as the preservation of ecosystems within the said areas. In the upcoming period, it is necessary to work on increasing the funds and activities that are in line with the targets of NBSAP BiH. Regarding the implementation of NBSAP in BiH, it implies the active participation of a large number of institutions involved in the development of this document as they are the ones responsible for the activities of measures for achieving the national targets.</p> <p>The achievement of National NBSAP targets is monitored through indicators proposed in the NBSAP itself. As part of reporting to the CBD Secretariat, National Reports on the Implementation of CBD, Aichi targets and national targets are produced using these indicators. Monitoring the implementation of NBSAP BiH is done through reports regularly sent to the CBD Secretariat.</p>
Reference	NBSAP BiH

Aichi target	ABT 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels
Contribution to the achievement of Aichi target	Insignificant
Measures undertaken to implement Aichi target in BiH	<p>Indigenous communities in rural areas still live in traditional ways and practices, and thus substantially support the objectives of the Convention. The traditional way of life of the local population depends on biological resources, although it is possible to notice the connection of traditional knowledge, innovations and procedures important for the conservation of biodiversity and the sustainable use of its components.</p> <p>The indigenous population of rural areas uses traditional knowledge in everyday practice and thus contribute to the preservation of biodiversity in the areas in which they live. Indigenous people have the opportunity to participate in decisions that are made directly for their area. The mode of cooperation with decision-makers is usually through dialogue at public debates. Some municipalities on their own initiative include centres of civic initiatives and in this way encourage the participation of indigenous population in community development and providing proposals for decisions regarding certain sectors, among others, in the use of natural resources, because they are all mostly semi-rural areas. During the preparation of this Report, research was conducted and direct contact was established with some of the municipalities in BiH to find out details about the involvement of indigenous population in decision making at the local level as details of cooperation with administrative bodies within the municipalities. In the Municipality of Bosansko Grahovo there is an example of good practice that manifests itself through the self-initiative of the Citizens Association "Grahovo". The Association was the first to initiate some changes in the local community. The municipality of Donji Vakuf is an example of how different departments within the same institution have different perceptions of cooperation with the civil sector. The Department for Physical Planning, Cadastre and Property Affairs considers that there are not many examples</p>

	<p>of good practice and that the civil sector is passive at the level of the local community. On the other hand, the Agriculture Service emphasises good partnership cooperation and assistance to vulnerable categories of population through various agricultural projects. As a very good example of quality networking in different sectors, the Municipality of Goražde considers the signing of the Agreement between the head of the Municipal Council and the NGO sector, which regulates cooperation and partnership of local self-government with citizens' associations as a transparent procedure for allocating funds. The municipality of Zvornik emphasises the importance of the civil sector in resolving problems at the local level and the importance of cross-sectoral cooperation in order to improve the socio-economic status of all citizens. Also, different decisions and agreements are mentioned as those that strengthen the involvement of the civil sector in the development and implementation of strategic documents (Decision on the criteria, method and procedure for the allocation of funds to citizen associations, Agreement between NGOs and the municipality on joint co-operation and the establishment of the Citizens' Advisory Body - umbrella organizations of all NGOs whose representatives attend the sessions of the executive body).</p> <p>Since the adoption of the Strategic Plan for Biodiversity, there have not been a lot of activities aimed at involving the population in the issue of biodiversity other than those that promote the production of agricultural products using traditional knowledge and practices. Traditional knowledge in using the necessary and accessible natural resources in rural areas is inseparable. It includes the sustainable use of resources by recycling used natural products and their cyclical use from household use to application in cattle breeding or cultivation of agricultural land. Local communities, or farmers, can apply for incentives for the cultivation of native autochthonous varieties and breeds using traditional knowledge, which directly contributes positively to the sustainable use of natural resources and the conservation of biodiversity in BiH.</p> <p>One of the projects, which is in the implementation phase and contributes to this target, is the project "Protected Areas for Nature and People". It is a regional project involving Serbia, Slovenia, Macedonia, Croatia, Montenegro, Bosnia and Herzegovina, Albania and Kosovo, financed by the Swedish International Development Agency SIDA. The project is implemented by WWF Adria, together with its partners, the "Dinarica" association in Bosnia and Herzegovina, the "World Nature Organization" in Serbia, "Ecopana" in Kosovo and the "Dinaric Parks" in Montenegro. The project aims to increase the cooperation of protected areas and local communities, promote protected areas as drivers of socio-economic development, present good examples of cooperation between protected areas and local population, conduct field projects in the protected areas of the Dinaric Arc and contribute to the implementation of the objectives of the Convention on Biological Diversity. The project will be implemented from 2016 to 2019.</p>
Reference	<p>Register of Associations at BiH level</p> <p>Action Plan of the project "Development of Small and Medium Enterprises in the Federation of Bosnia and Herzegovina" for the period 2016-2018. years (https://www.fmrpo.gov.ba/wp-content/uploads/.../AKCIJSKI-PLAN-2016-2018.docx)</p> <p>Decision incentive for agriculture FBiH 2017</p> <p>Approved incentives agriculture FBiH 2017</p> <p>Decision incentives for agriculture FBiH 2018</p> <p>NBSAP BiH</p>
Aichi target	ABT 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied
Contribution to the achievement of Aichi target	Insignificant
Measures undertaken to implement Aichi target in BiH	<p>Exchange and transfer of scientific knowledge related to biodiversity is done through education, through lectures at higher education institutions where specialised staff for environmental protection and biodiversity is educated, through global and regional networks (THEMIS network), through the media and social networks spreading professional articles and news and through the communication of institutions at informative meetings (horizontally and vertically). The exchange of technology and technological achievements is done through professional projects, education, innovative presentations and vocational education.</p>

	<p>The access to information has been improved since the adoption of the Strategic Plan for Biodiversity 2011-2020 in a way that the information network has expanded, which is important for access and the relation to biodiversity. ELAN network projects that strengthen the capacities of CSOs have been launched to strengthen public awareness of local communities regarding environmental issues and biodiversity. Incentive programmes of the Fund for Environmental Protection of FBiH and the Fund for Environmental Protection and Energy Efficiency of RS are implemented to inform the public on environmental protection and biodiversity. Educational projects are implemented in local communities that encourage media promotion of sustainable development of natural resources and biodiversity. The Federal Ministry of Environment and Tourism and the Ministry of Physical Planning, Construction and Ecology of RS implement projects for strengthening public awareness in protected areas.</p> <p>Exchange of knowledge is possible through professional training, presentation, at expert meetings, professional lectures, education and similar projects aimed at improving biodiversity. Better awareness makes it possible to make quality decisions and legal provisions. This is evident in the example of the conservation of endemic species where the public is informed about the condition of the individuals on the ground, thus raising public awareness of the need to conserve biodiversity, making it easier to make decisions and plans for their conservation.</p>
Reference	<p>Fund for Environmental Protection of FBiH</p> <p>Fund for Environmental Protection and Energy Efficiency of RS</p> <p>Federal Ministry of Education and Science</p> <p>Database of researchers and research organizations in BiH</p> <p>Ministry of Science and Technology, Higher Education and Information Society of RS</p> <p>NBSAP BiH</p>

Aichi target	<p>ABT 20: By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties</p>
Contribution to the achievement of Aichi target	<p>Somewhat significant</p>
Measures undertaken to implement Aichi target in BiH	<p>In order to achieve Aichi target 20, it is necessary to implement activities and establish a system of monitoring of financial flows aimed at conserving biodiversity in BiH and invested by state institutions, private entrepreneurship, foreign investments and foreign donors, as well as financial resources from various funds at global level pursuing this topic.</p> <p>Financing of activities in the field of biodiversity is carried out at Entity, BD BiH, cantonal and local levels, but there is no common database with the funds allocated for this purpose. In this regard, it is difficult to determine whether and to what extent the mobilisation of financial resources has been accelerated or is in a significant increase in the implementation of the Strategic Plan.</p> <p>On the other hand, statistical agencies indicate that, in previous years, certain funds were directed to biodiversity issues. Data on environmental costs indicate that total funds invested in 2017 were higher than those invested in 2016. Total costs for environmental protection in 2016 amounted to BAM 81,342,158, while in 2017 they amounted to BAM 95,402,323. During 2016, out of the total investments in environmental protection, the part related to biodiversity was 0.2%, while the share in total current costs was 1.1%. During 2017, out of the total investments in environmental protection, biodiversity accounted for 0.1%, and the share in the current costs was 1.4%.</p> <p>In addition to this, part of the funds is also provided through various grants and European funds financing certain project activities that have a direct or indirect link with the conservation of biodiversity. When applying for international funds, it should be noted that, besides institutions, individuals apply for these projects. Cross-border cooperation projects can also be included in this section.</p>
Reference	<p>NBSAP BiH</p> <p>Costs for Protection of the Environment, 2016. Agency for Statistics of Bosnia and Herzegovina</p> <p>Costs for Protection of the Environment, 2017. Agency for Statistics of Bosnia and Herzegovina</p>

4.2 BiH's contribution to the achievement of Sustainable Development Goals

This part of the Report describes the extent to which BiH's contribution to achieving global Aichi targets supports the implementation of the Sustainable Development Plan and Sustainable Development Goals 2030 (SDG). Below is a tabular overview of the methodology used to fill in the contribution assessment table for each identified SDG sub-goal that corresponds to each individual Aichi target. The correspondence between the SDG sub-goals and the Aichi target is given in the document "Links between the Aichi Biodiversity Targets and the 2030 Agenda for Sustainable Development" issued by the Secretariat of the Convention⁷.

Table 15: An overview of the methodology used in completing the table with an assessment of BiH's contribution to achieving the Sustainable Development Goals

Aichi target	As set out in the Strategic Plan for Biodiversity 2011-2020
Sustainable Development Goals	Corresponding sub-goals as indicated in "Links between the Aichi Biodiversity Targets and the 2030 Agenda for Sustainable Development"
Degree of relation	According to best practice examples, degree of relation between global Aichi Targets and Sustainable Development Goals: <ul style="list-style-type: none"> ▪ weak ▪ moderate ▪ strong.
Contribution to the achievement of Sustainable Development Goals	Contribution of measures undertaken in BiH to achieve sustainable development sub-goals: <ol style="list-style-type: none"> a. Very significant b. Significant c. Moderate d. Somewhat significant e. Insignificant.
Explanation	Narratively explain how it contributed to a specific sub-goal if the contribution was recognised (all categories except insignificant).

⁷ Links Between The Aichi Biodiversity Targets And The 2030 Agenda For Sustainable Development (<https://www.cbd.int/doc/meetings/sbstta/sbstta-19/information/sbstta-19-inf-09-en.pdf>)

Table 16: BiH's contribution to the achievement of Sustainable Development Goals

ABT 1: D By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably	
SDG	4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development
Degree of relation	Moderate
Contribution to the achievement of SDGs	Significant
Explanation	Sustainable development has not yet been represented as a special subject in primary school education. Through the subjects of geography and biology, the processes of sustainable development of natural resources are partly processed. In secondary education, sustainable development is also included in certain subjects (geography, biology, sociology). Only at faculties of natural and biotechnical sciences one can acquire complete knowledge about the sustainable development of natural resources. Laws on environmental protection stipulate that the competent ministry of education and culture, in cooperation with the competent ministry of environment, is obliged to develop annual educational programs on environmental protection with the aim of educating and raising public awareness in the field of environment. Education programs on environmental protection, and thus on the importance and value of biodiversity as well as the ways of protecting and sustaining biodiversity, are included in curricula and extracurricular programs. Therefore, although the principles of sustainable development are partially represented in the curriculum of educational institutions, it can be concluded that the National target 1 contributes to the SDG sub-goal..
SDG	12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development lifestyles in harmony with nature
Degree of relation	Moderate
Contribution to the achievement of SDGs	Moderate
Explanation	Strengthening public awareness of sustainable development in BiH is implemented in two ways. One is through the educational process in schools and faculties following the schedule in which sustainable development is represented at the faculty and in science. The second is to increase public awareness of the population through activities that are conducted by associations through sustainable development projects and in the process of raising public awareness of the population regarding the sustainable development. Although there is no adequate database for all sustainable development projects implemented by non-governmental organisations and other institutions, it can yet be concluded that the concept of sustainability has been passed on to the population through these activities. Therefore, the contribution to the implementation of this goal of sustainable development in BiH is moderate. It is assessed that National target 1 supports the SDG sub-goal.

ABT 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems	
SDG	15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts
Degree of relation	Strong

Contribution to the achievement of SDGs	Moderate
Explanation	Adoption of NBSAP and National targets, including the target to integrate the issue of biodiversity into domestic poverty reduction strategies and spatial plans, has a significant impact on the implementation of this SDG sub-goal in BiH, especially at the moment when the National target is to be implemented. Biodiversity is included in spatial planning documents and predominantly in strategic documents relating to sustainable development. Although biodiversity is not included in other strategic documents, it is important to note that, based on laws regulating environmental protection and spatial planning, the authorities responsible for the development of physical planning documents and the Entity and cantonal authorities responsible for the development of plans, programs and strategies in the fields of agriculture, fisheries, forestry, energy, mining and industry, transport, waste management, water management and whose contents may have a negative impact on the environment, are obliged to develop a strategic environmental impact assessment. By developing the document, the SDG sub-goal 15.9 is achieved, in other words the values of ecosystems and biodiversity are integrated into higher-order plans and strategies that form the basis for the development of local plans and strategies.

ABT 3: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions

SDG	14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation
Degree of relation	Moderate
Contribution to the achievement of SDGs	Moderate
Explanation	Although the amount of incentives in fisheries is not known on the basis of the survey, the incentives are there and are assigned either by the Entities or cantons. However, an adequate assessment has not been made to assess the extent to which the incentives are harmful to fisheries and whether there are those contributing to illegal fishing. Taking into account that National target 3 does not foresee the elimination of incentives that have a negative impact on biodiversity, but rather their reduction in order not to challenge economic development, it is estimated that National target 3 moderately contributes to achieving this SDG sub-goal.

ABT 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits

SDG	8.4. Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead
Degree of relation	Moderate
Contribution to the achievement of SDGs	Moderate

Explanation	Various strategic documents have been adopted in BiH, which, among other things, address the issues of sustainable production and consumption. BiH is a signatory to the Convention on Environmental Impact Assessment in a Transboundary Context that tracks the relationship between economic growth and its impact and environmental consequences in order to ensure environmentally sound and sustainable development. Based on laws regulating environmental protection and spatial planning, the authorities responsible for the preparation of spatial planning documents and the Entity and cantonal authorities responsible for the development of plans, programs and strategies in the fields of agriculture, fisheries, forestry, energy, mining and industry, transport, waste management, water management, whose contents may have a negative impact on the environment, are obliged to develop a strategic environmental impact assessment. Implementation of these provisions will contribute to the achievement of this SDG sub-goal.
SDG	9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
Degree of relation	Moderate
Contribution to the achievement of SDGs	Moderate
Explanation	Efficiency in the use of resources is not yet sufficiently represented in industrial processes in BiH. Through the application of measures referred to in environmental permits, the best available technologies are applied. Some activities have been initiated through certain projects in order to use cleaner and environmentally sound technologies in BiH industry. From 2015 to 2018, the project "National Cleaner Production Programme in BiH" was implemented in BiH. This project was implemented by the United Nations Industrial Development Agency (UNIDO) and funded by the Republic of Slovenia. The main objective of this project was to improve the resource efficiency and environmental performance of business and other organisations in BiH in order to contribute to sustainable industrial development, employment and income generation. The project contributed to improving the performance of environmental resources in the industry. These activities have contributed to the achievement of this SDG sub-goal.
SDG	12.2 By 2030, achieve the sustainable management and efficient use of natural resources
Degree of relation	Strong
Contribution to the achievement of SDGs	Significant
Explanation	The problems of sustainable production and consumption of natural resources are identified in the Strategic Plan for Rural Development of BiH for the period 2018-2021, in the management plans for protected areas for a large number of protected areas in BiH, in spatial plans in BiH, in the Strategy for the Development of Forestry of the Republika Srpska 2011-2021, in the RS Programme for Achieving the Land Degradation Neutrality, in the FBiH Water Management Plan for the Sava River Basin, in the Water Management Plan for the Adriatic Sea area, the Sava Water Management Plan (RS), the Trebišnjica Water Management Plan, the Energy Efficiency Action Plans adopted at the level of BiH, FBiH and RS, and through the energy development strategies, and others that directly or indirectly touch on natural resources. An additional sustainable use of natural resources is predominantly found in legal acts in the field of nature protection adopted at Entity and BD BiH level. These are the basic legal acts for nature protection, the sustainable management of protected areas and the procedure for their protection. Implementation of the measures envisaged in the aforementioned strategic and planning documents and the above mentioned laws of BiH contribute to the implementation of this SDG sub-goal.

ABT 6: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits	
SDG	14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
Degree of relation	Strong
Contribution to the achievement of SDGs	Moderate
Explanation	Observed from the point of view of the measures implemented for national goals, it can be concluded that the contribution of the measures taken is moderate, since a number of fishing master plans have been prepared, giving the basic guidelines for water management, restocking, protection measures, spawn, etc. All these measures should contribute to the fish fund. There are several laws on fisheries in the territory of BiH, and Entities, which regulate this area. In the RS, the Law on Fisheries (Official Gazette of Republika Srpska, No. 72/12) is in force, while the Law on Freshwater Fisheries (Official Gazette of the Federation of BiH, No. 64/04) is applicable in the territory of FBiH. Fisheries in the BD BiH area are regulated by the Law on Freshwater Fisheries (Official Gazette of the Brčko District of BiH, No. 35/05 and 19/07). In addition to the aforementioned laws, cantonal laws on freshwater fishing have also been adopted in two cantons of the Federation of BiH, as well as the law on marine fishing in the Herzegovina-Neretva Canton (Official Gazette of the Herzegovina-Neretva Canton, No. 7/14).
SDG	14.7 By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
Degree of relation	Weak
Contribution to the achievement of SDGs	Moderate
Explanation	The possibilities of marine resources have less potential than the freshwater ones because a small part of the sea coast belongs to the territory of BiH. Management of fishing, aquaculture, and sport fishing has a significantly higher share when it comes to freshwater ecosystems, and from this aspect, a moderate contribution can be made. Fisheries master plans and fisheries programs allow for more efficient management of resources.

ABT 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity	
SDG	2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
Degree of relation	Moderate
Contribution to the achievement of SDGs	Moderate

Explanation	Implementation of the National target 8 related to the establishment and development of a system of sustainable agricultural production, in particular organic and integral production, and the conservation and cultivation of indigenous species contributes to the implementation of this SDG sub-goal. In BiH, the system of organic agricultural production slowly develops, while there are no activities on the establishment and development of integral agricultural production, which includes the principles of integrated plant protection, balanced application of agro-technical measures and the rational use of agro-chemical agents and fertilisers in the production process.
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ABT 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity	
SDG	14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
Degree of relation	Strong
Contribution to the achievement of SDGs	Moderate
Explanation	BiH has about 21 km of coastal area and the City of Neum on the very coast. The issue of urban wastewater is addressed by a system of collection and drainage outside the bay of Neum. In this case, the threat to pollution must be the waste left on the beaches or dropped directly into the sea, although there is a waste collection system in Neum. Activities implemented at a certain level contribute to the achievement of this SDG sub-goal. More efforts are needed to reduce sea pollution in BiH. In order to prove negative impacts on ecosystems, the SharkLab has been implementing projects like the “ <i>Shark tales: the effects of habitat loss and pollution on elasmobranch health and specific disease development</i> ” and the “ <i>Quantification of the microplastic debris in the by-catch samples from marine and freshwater small-scale fisheries in Bosnia and Herzegovina</i> ”. By implementing these projects, the diseases and negative impact on fish of the marine pollution by various pollutants (heavy metals, plastics, etc.) have been analysed and proven.

ABT 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment	
SDG	15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species
Degree of relation	Strong
Contribution to the achievement of SDGs	Moderate
Explanation	<p>Contribution can be considered moderate because the introduction of alien species is primarily regulated through the relevant legal norms. This area is regulated by the Law on Nature Protection of the Federation of BiH (“Official Gazette of the Federation of BiH, No. 66/13”) and the Law on Nature Protection (Official Gazette of Republika Srpska, No. 20/14). Also, this issue is addressed by strategic documents from the field of nature and environment that were adopted at the Entity and BD BiH level. There are action plans and decisions at the local and cantonal levels that regulate the control and prevention of the spread of certain invasive species that are prioritised. Invasive species are also the subject of research in scientific publications</p> <p>It is also necessary to mention the decisions that regulate the control of certain invasive species. On the territory of the RS, the Decision on measures for control and destruction of ragweed (<i>Ambrosia Artemisiifolia</i>) is in force, while in FBiH the Decision on measures for preventing the spread and destruction of ragweed <i>Ambrosia Artemisiifolia</i> is in force.</p>

	Activities on projects "Inventory and geographical interpretation of invasive species in the FBiH" and "Conservation of the Sava River Basin habitat through international management of invasive species" give a special contribution to the measures for preventing the spread of the invasive species.
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10. By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning	
SDG	<p>14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans</p> <p>14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information</p>
Degree of relation	Moderate
Contribution to the achievement of SDGs	Somewhat significant
Explanation	<p>National target 11 includes ecosystems of canyons, mountains, high-mountains, karst fields, alluvial plains and wetlands, which, as defined in Ramsar Convention includes also the BiH's marine and coastal areas. Given that it is very difficult to carry out the activities of reducing multiple anthropogenic pressures on these areas (construction i.e. habitat conversion, marine pollution, invasive species, climate change), the target has been established so to call for urgent action to establish a protected area. It should be emphasised that the area of Klek peninsula on BiH seashore has been protected for a long time as a Mediterranean arboretum. It should also be noted that this legal act (Decision) has never been repealed but it has been neglected in the post-war period, while numerous activities are carried out in the Klek area which are not in accordance with conservation goals. Somewhat significant contribution to the SDG has been achieved through the Plan for Natura 2000 sites in BiH, which proposed the listed vulnerable ecosystems as part of the Natura 2000 network, and through the implementation of the UNEP / GEF project "Achieving Biodiversity Conservation through Creation and Effective Management of Protected Areas and Capacity Building for Nature Protection in BiH". In the case of Mediteranetum, the mentioned project proposed a roadmap for its reclassification in accordance with the applicable Law on Nature Protection of FBiH.</p>
SDG	15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species
Degree of relation	Moderate
Contribution to the achievement of SDGs	Somewhat significant
Explanation	<p>When it comes to degradation and fragmentation of land, it happens as a consequence of urbanisation, construction of infrastructure facilities, fire, erosion, discharge of pollutants into the ground, and illegal construction of facilities. In order to reduce these negative impacts on ecosystems during the construction of infrastructure facilities, the measures envisaged in the permits as well as the best practices and technologies used in the EU Member States are implemented. Various measures are being taken to prevent these damages. In order to reduce illegal logging, and thus the loss of natural habitats, action is taken through legal measures, submission of criminal and misdemeanour reports. Organisation of fire protection is done through the forest administrations, forest management companies and civil protection administrations. Fire protection is carried out through annual fire protection plans. Also, mined areas are nominated for demining priorities, which depends on the available funds. These activities contribute to achieving this SDG sub-goal.</p>

ABT 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes	
SDG	11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage
Degree of relation	Strong
Contribution to the achievement of SDGs	Moderate
Explanation	This issue poses a particular challenge for BiH institutions, because BiH is a central part of the Dinarides and migratory roads that are integral to this region, high mammals (bear, lynx, wolf), as well as migratory avifauna routes through specific IBA areas. By implementing National target 11 and achieving Aichi target 11, BiH will contribute to achieving this SDG sub-goal at a global level. The current surface of protected areas in entire BiH amounts to 2.28%, in FBiH 3.24%, and in RS 1.30%. In addition, through the analysis of spatial plans, it can be concluded that the Spatial Plan of the FBiH (2008-2028), which has not been adopted in FBiH yet, foresees the establishment of 14 new protected areas, which is 18.5% of the area of the FBiH, while in the RS according to the RS Spatial Plan by 2025 it is planned to protect between 15-20% of the entire RS territory.

ABT 12. By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained	
SDG	15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species
Degree of relation	Strong
Contribution to the achievement of SDGs	Somewhat significant
Explanation	Contribution can be viewed through activities for creating Red Books and innovating the existing Red Lists. The FBiH Red List contains the categories of vulnerability, while in the RS Red List these categories are not represented. Also, areas under a certain degree of protection are increasing, which affects the protection of natural habitats. Increasing the protected areas is implemented through activities at entity and cantonal levels with domestic resources, as well as through implementation of projects financed by international financial institutions and funds. Among the above projects, the UNEP / GEF project "Achieving Biodiversity Conservation through Creation and Effective Management of Protected Areas and Capacity Building for Nature Protection in BiH" is ongoing, whose implementation will increase the number of protected areas and sustainably manage natural habitats in these areas.
SDG	15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products
Degree of relation	Moderate
Contribution to the achievement of SDGs	Moderate

Explanation	<p>Trade in protected species is regulated by the Laws on Nature Protection in FBiH, RS and BD BiH, respectively. Also, the part referring to poaching is addressed by the Laws on Hunting and Laws on Fisheries in FBiH, RS and BD BiH, respectively. The above mentioned legal acts regulate fishing by illegal means, as well as the placing on the market of the catch. There are regulations that determine the time of closure, prohibition of hunting or fishing for a certain period of time.</p> <p>BiH has signed and ratified international conventions addressing the issues of protection, management and promotion of flora and fauna, including the Berne Convention, the CITES Convention and the Convention on Biological Diversity. CITES is a Convention on International Trade in Endangered Species of Wild Fauna and Flora. Taking into account the aforementioned regulations and ratified conventions and the implementation of the provisions contained therein, it can be concluded that the contribution of BiH to achieving this sub-goal is moderate.</p>
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ABT 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity

SDG	2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed
Degree of relation	Strong
Contribution to the achievement of SDGs	Moderate
Explanation	<p>In BiH, the conservation of plant genetic resources is carried out both in RS and FBiH. In the RS, the plant gene bank is located within the Institute for Genetic Resources of the University of Banja Luka, while in the FBiH, the plant gene bank is located at the Faculty of Agriculture and Food Sciences of the University of Sarajevo. Duplicates of the collection of plant seeds from the RS have been deposited and stored in the Global Seed Vault in Svalbard (Norway). The gene bank for animal genetic resources does not exist in either entity of BiH. As for activities related to access to, and fair and equitable sharing of the benefits arising from the utilisation of genetic resources and associated traditional knowledge, no contribution was made in this respect since BiH has not yet signed the Nagoya Protocol.</p>

ABT 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable

SDG	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes 15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development
Degree of relation	Strong
Contribution to the achievement of SDGs	Somewhat significant

Explanation	The achievement of these sub-goals of Agenda 2030 is dedicated to two national targets (11 and 15). The first target (11) requires mapping and urgent protection of high-mountain ecosystems in accordance with existing planning documents. In these documents, a large part of BiH high-mountain areas is planned to protect biodiversity. However, the establishment of these protected areas has been blocked due to the interests of other sectors (as stated in the previous chapters of this Report). The second national target (15) aims to develop sustainable management of forest, freshwater and wetland ecosystems through mechanisms of issuing environmental permits and establishing protected areas. In addition to the preparation of Plan for Natura 2000 areas in BiH, there has been insufficient progress in reaching this goal.
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ABT 15. By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification	
SDG	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
Degree of relation	Strong
Contribution to the achievement of SDGs	Somewhat significant
Explanation	BiH National target 11 is directly dedicated to the achievement of this sub-goal of Agenda 2013, which is formulated so to support Aichi targets 10 and 15. Taking into consideration that BiH is at the bottom of the European scale regarding the size of protected areas, where the forest is the most important biological resource, it is necessary to take urgent action of their protection in order to conserve and restore the carbon sequestration function.
SDG	15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world
Degree of relation	Strong
Contribution to the achievement of SDGs	Somewhat significant
Explanation	In order to conserve and restore the carbon sequestration function, the following actions are planned: reconstruction of mine pit lakes in the direction of assisted development of functional wetland ecosystems, restoration and afforestation of degraded forest ecosystems, and expansion of green city areas. Apart from voluntary afforestation actions, plans for the expansion and reconstruction of city parks and the development of scientific and professional capacities for restoration activities, no significant success has been made in achieving this goal. For the barriers to implementing the measures, see the previous chapters.

ABT 16: By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation	
SDG	15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed
Degree of relation	Strong

Contribution to the achievement of SDGs	Somewhat significant
Explanation	BiH has not yet ratified the Nagoya Protocol, which is an obstacle to the development of domestic procedures in regulating the utilisation of genetic resources. The actions taken to reach Aichi target 16 have not yet resulted in the ratification of the Nagoya Protocol. According to the targets of NBSAP BiH 2015-2020, BiH gives priority to the ratification of the Protocol, to be followed by the development of other activities of the SDG sub-goal 15.6.

ABT 17: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan	
SDG	15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts
Degree of relation	Strong
Contribution to the achievement of SDGs	Significant
Explanation	Adoption of NBSAP and National targets, including the target to integrate the issue of biodiversity into domestic poverty reduction strategies and spatial plans, has a significant impact on the implementation of this SDG sub-goal in BiH, especially at the moment when the National target is to be implemented. Biodiversity is included in spatial planning documents and predominantly in strategic documents relating to sustainable development. Although biodiversity is not included in other strategic documents, it is important to note that, based on laws regulating environmental protection and spatial planning, the authorities responsible for the development of physical planning documents and the Entity and cantonal authorities responsible for the development of plans, programs and strategies in the fields of agriculture, fisheries, forestry, energy, mining and industry, transport, waste management, water management and whose contents may have a negative impact on the environment, are obliged to develop a strategic environmental impact assessment. By developing the aforementioned document, the SDG sub-goal 15.9 is achieved, in other words the values of ecosystems and biodiversity are integrated into higher-order plans and strategies that form the basis for the development of local plans and strategies.

ABT 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels	
SDG	1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance
Degree of relation	Weak
Contribution to the achievement of SDGs	Significant
Explanation	The social component of development is contained and implemented through the development strategies of the cantons, units of local self-governments and the BD BiH. The action plans of the above documents contain the proposal of measures to improve the living standards of the population and the use of economic and natural resources in acceptable proportions. When it comes to funding, it is important to emphasise that at the Entity and BD BiH level, incentive funds for agricultural activities are allocated every year, especially those intended for the cultivation of indigenous species and breeds, which has an impact on the sustainable management of domestic natural resources. In addition, at the BiH level, there are microcredit organisations that place their products, or provide microfinance, for the purpose of business development, which includes agriculture. Through these activities, BiH contributes to the achievement of this SDG sub-goal.

ABT 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied	
SDG	17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism
Degree of relation	Moderate
Contribution to the achievement of SDGs	Significant
Explanation	One of the ways activities are carried out to achieve this SDG sub-goal is the implementation of a number of projects in BiH. The SEEDLING Project “Regional Programme on Education for Sustainable Development - Meeting the New Millennium: Presenting the UN Sustainable Development Goals in Schools in South Eastern Europe”, which lasted from November 2015 to October 2018, aimed to support educational reforms, build capacities and raise awareness on the sustainable development goals of the UN in SEE countries (including BiH) by integrating sustainable development goals into national school curricula, promoting regional co-operation and networking among decision-makers, educators and teachers. The project additionally influenced the capacity building of relevant institutions, teachers and students in understanding the sustainable development goals and their implementation, and improved cross-border co-operation between institutions in the field of education for sustainable development in South Eastern Europe.

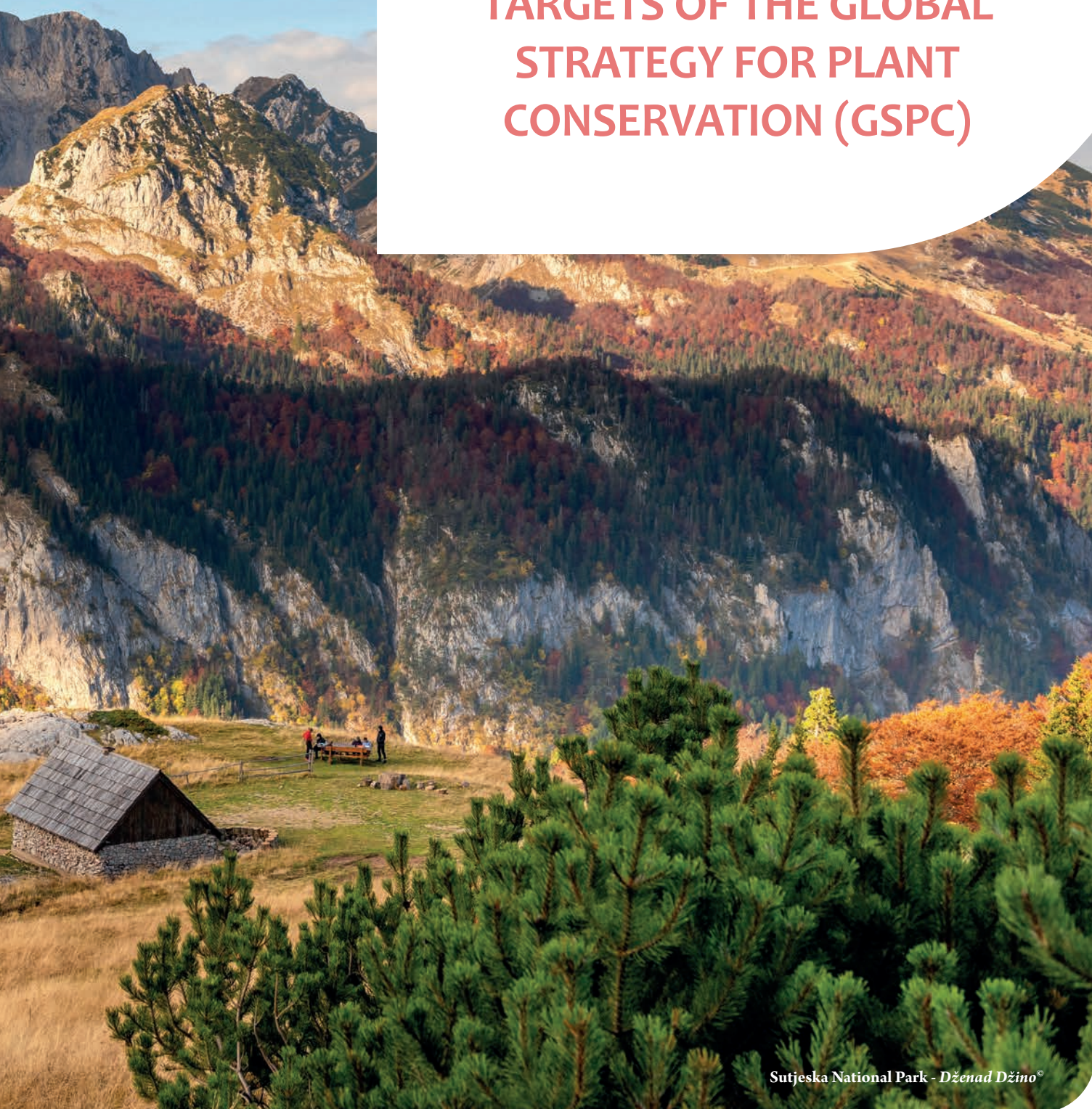
20. By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties	
SDG	1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions
Degree of relation	Moderate
Contribution to the achievement of SDGs	Somewhat significant
Explanation	<p>Competence for environmental protection is at the level of Entities and BD BiH. The competent ministries are the Federal Ministry of Environment and Tourism, the Ministry of Spatial Planning, Construction and Ecology of RS and the Department for Spatial Planning and Property and Legal Affairs of the BD BiH. At the Entity level in BiH, there is also the Fund for Environmental Protection and Energy Efficiency of RS and the Fund for Environmental Protection of FBiH. Mobilisation of funds is carried out in accordance with budget planning for a specific year, at the level of Entities, cantons and local communities.</p> <p>Data on environmental protection costs show that more funds were invested in 2017 than in 2016. Total costs for environmental protection in 2016 amounted to BAM 81,342,158, while in 2017 they amounted to BAM 95,402,323. During 2016, out of the total investments in environmental protection, the part related to biodiversity was 0.2%, while the share in total current costs was 1.1%. During 2017, out of the total investments in environmental protection, biodiversity accounted for 0.1%, and the share in the current costs was 1.4%.</p>

	In addition to this, part of the funds is also provided through various grants and European funds financing certain project activities that have a direct or indirect link with the conservation of biodiversity. When applying for international funds, it should be noted that, besides institutions, individuals apply for these projects. Cross-border cooperation projects can also be included in this section.
SDG	17.3 Mobilize additional financial resources for developing countries from multiple sources
Degree of relation	Moderate
Contribution to the achievement of SDGs	Somewhat significant
Explanation	<p>It can be concluded that the contribution to achieving this SDG is somewhat significant because in Bosnia and Herzegovina mobilization of additional financial resources is made from various available sources: budgets of Entities, cantons and local communities. In addition, it is worth mentioning that funds are utilised from international funds, cross-border cooperation, and also from applications that individuals submit to organisations addressing biodiversity.</p> <p>An additional contribution to the achievement of this SDG sub-goal is also the implementation of the project "Support to the Preparation for the Implementation of the Sustainable Development Goals and Private Sector Engagement", which aims to enable and prepare private and public sector partners in BiH to implement the Sustainable Development Goals (SDGs), thus directly supporting the efforts of BiH to contribute to the implementation of the largest global agenda of today - Agenda 2030. The project implementation envisages the development of the SDG Roadmap for BiH and starting its implementation, as well as the engagement of private sector actors in SDG prioritisation, planning and implementation.</p>



5.

BIH CONTRIBUTION TO THE ACHIEVEMENT OF THE TARGETS OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION (GSPC)



This section of the Report describes the contribution of BiH in achieving the targets of the Global Strategy for Plant Conservation (GSPC)⁸. The contribution is described in four parts, in line with the methodology set forth in the Guidelines for the drafting of the Sixth National Report, attached to the Decision No. XIII/27 adopted on 15 December 2016 by the Conference of the Parties to the Convention on Biological Diversity⁹. Part one pertains to the overview of national targets related to the GSPC targets; part two provides information on all active plant conservation networks in BiH; part three describes the major measures undertaken by BiH for the implementation of the GSPC; and part four contains the category of progress towards the GSPC targets with explanations.

5.1 Overview of national targets related to the GSPC targets

In BiH, national targets related to the GSPC targets have been adopted. Below is the list of GSPC targets and related national targets:

- GSPC target 2. An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action: there is only one BiH national target directly related to this GSPC target, namely the national target 13 - By 2020, develop the red books of plants, animals and fungi, and adopt action plans for protection of the most endangered taxa
- GSPC target 9. 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge: there is only one BiH national target directly related to this GSPC target, namely the national target 14 - By 2020, prepare and implement in situ and ex situ programs for protection of domestic varieties, breeds and their animal relatives, including their inventory and establishment of indigenousness parameters
- GSPC target 14. The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes: BiH adopted two national targets directly related to this GSPC target, namely national target 19 (By 2020, strengthen the role of the scientific research and professional institutions, NGO sector and media including improvement of scientific technologies), and national target 1 (By 2020, increase the public awareness level in the field of biological diversity protection).

The following table contains an overview of all GSPC targets. The targets with corresponding national targets are highlighted.

Table 17: Overview of GSPC targets

GSPC targets
1. An online flora of all known plants
2. An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action
3. Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared
4. At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration
5. At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity
6. At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity
7. At least 75 per cent of known threatened plant species conserved in situ

⁸ <https://www.cbd.int/gspc/targets.shtml>

⁹ <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-27-en.pdf>

8. At least 75 per cent of threatened plant species in ex situ collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programmes

9. 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge

10. Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded

11. No species of wild flora endangered by international trade

12. All wild harvested plant-based products sourced sustainably

13. Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care

14. The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes

15. The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy

16. Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy

5.2 Information on active plant conservation networks in BiH

In BiH there are various centres, institutions and nongovernmental organizations dealing with plant conservation. These institutions are very important for the conservation of the plant genetic fund of indigenous species.

Under the auspices of the Swedish Biodiversity Centre – CBM and with the financial support of the Swedish International Development Cooperation Agency – SIDA, the *South East European Development Network on Plant Genetic Resources* (SEEDNet) was established in 2004. In the same year, Faculty of Agriculture and Food Sciences of the University of Sarajevo was appointed the implementer of the Project at the level of FBiH, by the Ministry of Foreign Trade and Economic Relations of BiH. This appointment was also endorsed by the Federal Ministry of Agriculture, Water Management and Forestry. In the course of two phases of the work of the network, the most of FBiH was inventoried in terms of plant genetic resources of agricultural crops and plant materials were gathered and compiled in collections. The importance of preservation of plant genetic resources of agricultural crops was recognized by IFAD (International Fund for Agricultural Development) and OdRaz (*Foundation for Sustainable Development of FBiH*). In 2007, these two organizations allocated funds for the reconstruction of the facility at the Faculty owned land in Butmir, for the purpose of establishment of the gene bank of FBiH. The reconstruction of the facility was completed in 2008, and in 2009, the equipment and collections of materials (seeds) were stored in the facility.¹⁰ As a result of these activities, plant gene bank of FBiH was established with the Faculty of Agriculture and Food Sciences of the University of Sarajevo (<https://www.ppf.unsa.ba/>).

The Government of the RS has allocated the budget for the maintenance of the plant genetic resources for food and agriculture (PGRFA), as the support to the SeedNet Project and the establishment of the *Plant genetic resource conservation program of RS* since 2005. In January 2009, the Genetic Resources Institute of the University of Banja Luka was established. This Institute was appointed the coordinating institution for the implementation of the Program adopted in June 2008, and also designated as the plant gene bank of the RS. The Institute also manages the protected area “University Town”. The Institute has two organizational subunits – the Centre for Biodiversity and the Centre for Sustainable Use of Genetic Resources. The Genetic Resources Institute of the University of Banja Luka is the only institution in the region that deposited its reserve seed collection at the Svalbard Global Seed Vault in Norway. The Global Seed Vault was founded by the Norwegian

¹⁰ Operational programme for plant genetic resources in agriculture in FBiH

Government on 26 February 2008, with the aim of conserving plant genetic resources. The Vault is located in permafrost in the Svalbard archipelago (www.igr.unibl.org). The Institute of Genetic Resources of the University of Banja Luka is registered for the production of reproductive material of apple, bony, coriander and berry fruit, vines and perennial ornamental plants (Decision of the Ministry of Agriculture, Forestry and Water Management No. 12.03.3-2535/13), as well as production of forest reproductive material (Decision of the Ministry of Agriculture, Forestry and Water Management No. 12.06-18/12). The nursery produces planting material for the expansion of existing ex situ collections as well as for the sale and return of autochthonous material in the on-farm conservation system (<https://igr.unibl.org/?idsek=186&griunibl=Proizvodnja/reproduktivnog/materijala/jabucastog,/kosticavog,/jezgrastog/i/jagodastog/voca,/vinove/loze/i/visegodisnjih/ukrasnih/biljaka>).

A European Genebank Integrated System- AEGIS through the European Cooperative Programme for Plant Genetic Resources – ECPGR seeks to provide long-term conservation and use of plant genetic resources in Europe. The Program is financed by member countries and coordinated by FAO, or the International Plant Genetic Resources Institute (IPGRI) seated in Rome. The Program functions through ten defined networks dealing with groups of crops and general genetic resources related topics. Through the Ministry of Foreign Trade and Economic Relations of BiH, the country became a member of the ECPGR in 2008. The Centre for Sustainable Use of Genetic Resources within the Genetic Resources Institute of the University of Banja Luka was appointed a coordinating institution (<http://www.ecpgr.cgiar.org/aegis/>) ([http://www.ecpgr.cgiar.org/aegis/aegis-membership/associate members/Bosnia%20and%20Herzegovina/](http://www.ecpgr.cgiar.org/aegis/aegis-membership/associate%20members/Bosnia%20and%20Herzegovina/)).

Since 2009, BiH has been a part of the European Search Catalogue for Plant Genetic Resources – EURISCO (<http://eurisco.ecpgr.org>). In 2010, the National Inventory with information on around 500 species of seed was posted on the EURISCO page <https://www.genesys-pgr.org/org/EURISCO#nav-BIH>.

Botanical Garden of the National Museum (Zemaljski muzej) in Sarajevo bears mentioning. The Botanic Garden was started in 1912–13 under the supervision of the famous botanist Karl Malý (1874–1951). Today, several thousand specimens of around 1,700 species are cultivated in the Botanic Garden. There are around 750 specimens of trees and bushes, and the rest are annuals and perennials. The garden comprises the following plots: (i) Shale Flora, (ii) Serpentine Soil Flora, (iii) Magnesian (Dolomitic) Limestone Flora, (iv) the Flora of the Limestone Mountains of Bosnia and Herzegovina (Mt Trebević Flora, Cave Flora); (v) the Flora of the Miljacka River Valley; Succulents; (vi) Mountain Swallow Hole Flora; (vii) Aquatic and Wetland Plants; (viii) the Fernery; (ix) Flora of Xerothermic Habitats; (x) the Rockery; and (xi) the Arboretum (www.zemaljskimuzej.ba).

One should also mention the Plant Protection Society of BiH, the main interests of which are to promote scientific research in the field of plant protection, studying and preserving scientific, natural and cultural heritage in the field of plant protection and active participation in the development of the legislation in the field of plant protection. (<http://www.dzbbih.org/>).

Nurseries at forest management companies should also be mentioned in the context of conservation of plant genetic resources. Forest Growing and Protection Service, a part of the Technical Department of the Public Company “ŠPD ZDK” d.o.o. Zavidovići, bears mentioning. The activities of the Service include: forest growing, forest protection, seed production and nurseries, secondary timber products and ecology. JP “ŠPD ZDK” d.o.o. is one of three registered producers, or collectors of forest and horticultural seeds in the area of FBiH. Seeds include normal forest seeds: common fir, spruce, *Picea omorika*, Douglas fir, white pine, black pine, larch, beech, white ash, sycamore maple, Norway maple, wych elm, small leaved lime, Cornish oak and checker tree. The seeds are collected on recognized seed plots, of which currently there are 40. The production of seedling material of forest and horticultural species of trees and bushes in the JP “ŠPD ZDK” d.o.o. Zavidovići is carried out in four registered nurseries – Olovo nursery, Žepče nursery, Zavidovići nursery and Tešanj nursery. All these nurseries were entered into the Phytoregister in 2014. In order to resolve the issue of activating a non-production area, in coordination with the Forestry Faculty in Sarajevo, three plots for genetics and breeding of forest trees were installed in the recent period in the Žepče Nursery, namely: (i) black poplar clonal archive, (ii) generative orchard of common oak, (iii) international provenance trial of wild cherry and (iv) tests of euro-american poplar hybrids. (<http://spdzdk.ba/ba/djelatnost.php>).

Cantonal public company for management of public forests, KJP “Sarajevo-šume”, also deals with the production of seedling material. The company has two nurseries (Sedrenik and Tarčin), on the total area of 28,538 m². The main purpose of these nurseries is to produce seedling material of forest trees, and ornamental trees, shrubs and flowers. In order to protect the genetic fund of the most important autochthonous tree species and the economically justified growing of allochthonous tree species, the existing or newly selected seed plots should be separated, nominated and registered. The plots were selected, and the Forestry Faculty will assist in their development and separation as seed plots. Thereupon they will be registered with the Federal Ministry of Agriculture, Water Management and Forestry. Eight seed plots were planned, requiring separation and protection of groups of trees with particularly valuable phenotypic traits that will be used as seed trees. (<https://www.sarajevo-sume.ba/index.php/en/djelatnosti/rasadnicka-proizvodnja>).

“Voćni rasadnik” d.o.o. Srebrenik deals with production and sale of seedlings of fruit, flowers and decorative plants. The nursery has around 45 ha of land and the production capacity of around 450,000 seedlings of fruit trees per year. To date, the nursery has produced around 10.5 million fruit seedlings of different species and varieties. The nursery mostly produces seedlings of apple, pear, plum, cherry, sour cherry, peach, quins, medlar, walnut, hazelnut, mulberry and seedlings of soft fruit and berries. The nursery also produces flowers, ornamental plants and trees. Federation Institute for Agriculture Sarajevo carries out production controls in the Srebrenik nursery. (<http://vocnirasadnik.ba/en/home-2/>).

Nurseries IRIS, POPOVIĆ and SLAVNIĆ are the most diverse nurseries of fruit and forest varieties, as well as varieties of ornamental plants and medicinal herbs in the area of Banja Luka. The quality of seedlings and seeds is controlled by the Faculty of Agriculture in Banja Luka (<http://www.sadnice.com/>) (<http://www.irisasadnik.com/index.html>) (<https://www.indeks-firmi.ba/listing/sadnice-cempresa-rasadnik-popovic/>).

In the forthcoming period, an arboretum should be established in Banja Luka in the park forest Trapisti. The feasibility study of the making of the arboretum was carried out by the Faculty of Architecture, Civil Engineering and Geodesy of the University of Banja Luka.

5.3 Measures undertaken by BiH for the implementation of the GSPC

During the latest period, BiH undertook various measures which directly or indirectly contribute to the implementation of GSPC. The measures that influenced the implementation of GSPC in BiH the most, are as follows:

- Red lists of flora were adopted at the level of the Entities (Decree on the Red List of protected species of flora and fauna of the RS (Official Gazette of Republika Srpska, No. 124/12) and the Red List of Endangered Plants, Animals and Fungi in the Federation of BiH (Official Gazette of the Federation of BiH, No. 7/14)). These lists contain valuable information on the locations of the species with a conservation status.
- Gene banks were established at the level of the entities in BiH, at the relevant institutions dealing with genetic resources. In RS, the plant gene bank is with the Genetic Resources Institute of the University of Banja Luka. In FBiH, the plant gene bank is with the Faculty of Agriculture and Food Sciences of the University of Sarajevo. Additionally, RS deposited reserve copies of their seeds at the Svalbard Global Seed Vault (Norway).
- Educational activities on the importance of plant diversity are regularly conducted as part of the curricula in higher education in BiH – faculties of science and mathematics (departments of biology), bio engineering, forestry, agriculture and pharmacy.
- Activities are conducted to raise public awareness on plant diversity. A large number of nongovernmental organizations work to raise public awareness on the preservation of biodiversity and thus promote the values of plant diversity among BiH citizens. In addition, public awareness is raised through the media. For example, some TV stations in BiH produce and broadcast new shows, or rerun shows on certain types of biodiversity in BiH.

These measures are explained in greater detail in the following section pertaining to the contribution of BiH to the achievement of the GSPC targets.

5.4 Contribution of BiH to the achievement of the GSPC targets

This section of the Report describes to what degree BiH contributes to the achievement of the GSPC targets. The table below shows the methodology used and the contribution to the achievement of each GSPC target for which there is a related national target. In other words, the table gives the overview of contribution to the achievement of GSPC targets 2, 9 and 14.

Table 18: Methodology applied in the preparation of tables with an assessment of BiH progress towards GSPC targets

GSPC target	Target from the Global Strategy for Plant Conservation which has a corresponding national target
Corresponding national target	List the national target related to the targets in the Global Strategy for Plant conservation
Level of correspondence	Indicate the level of correspondence using the following predetermined scheme: <ul style="list-style-type: none"> ▪ Low correspondence ▪ Medium correspondence ▪ High correspondence.
Plant protection actions/measures	List and explain here all actions/activities/measures undertaken to achieve the listed/identified national targets (contributing to the GSPC targets).
Documents issued for the purpose of plant conservation	List all documents issued for the purpose of plant conservation and what they relate to specifically.
Assessment of progress towards the national target related to the GSPC target	Asses the progress towards national targets related to the GSPC targets, using the following predetermined scheme: <ul style="list-style-type: none"> ▪ On track to achieve target at national level, ▪ Progress towards target at national level but at an insufficient rate, ▪ No significant change at national level.
Explanation	Short explanation of the assessment.
Reference	List all relevant web sites, web links and documents substantiating the information provided and offering additional information relative to the information included here.

Table 19: Contribution of Bosnia and Herzegovina to achievement of GSPC targets

National targets corresponding to the GSPC targets	GSPC target	2. Assessment of conservation status of all known plant species carried out to guide further conservation action.
	Corresponding national target	13. By 2020, develop the red books of plants, animals and fungi, and adopt action plans for protection of the most endangered taxa.
	Level of correspondence	Medium correspondence
Measures for plant protection	Actions/measures for plant protection	Red lists of plants have been adopted at the entity level in Bosnia and Herzegovina, in line with the statutory competence. The lists contain valuable data on the location of species awarded conservation status. Review of these lists will be initiated in the upcoming period, in line with the statutory requirements. Integral red list of plants is not foreseen under the BiH legislation. Due to the lack of financial, human and technical resources, no protection measures have been put in place for the specific plant species thus far. Instead, protection is awarded to specific areas that are home to one or several plant species from the red list of plants.
	Documents issued for the purpose of plants protection	Red list of plants of the Federation of BiH (Official Gazette of the Federation of BiH, No. 7/14) Red list of protected species of flora and fauna of the Republika Srpska (Official Gazette of Republika Srpska, No. 124/12)

Category of progress towards the national target corresponding to the GSPC target	Category of progress	Progress towards target at national level but at an insufficient rate
	Explanation for the category of progress	Assessment of the conservation status of plants has been carried out for the Federation of BiH and the Republika Srpska separately. In Bosnia and Herzegovina there is no integral red list of plants. Preparation of red lists was finalized in 2013. Bosnia and Herzegovina did not achieve any significant progress as regards the preparation of red lists since then.
	Relevant websites, web links and files	Red list of protected species of flora and fauna of RS Red list of flora in FBiH

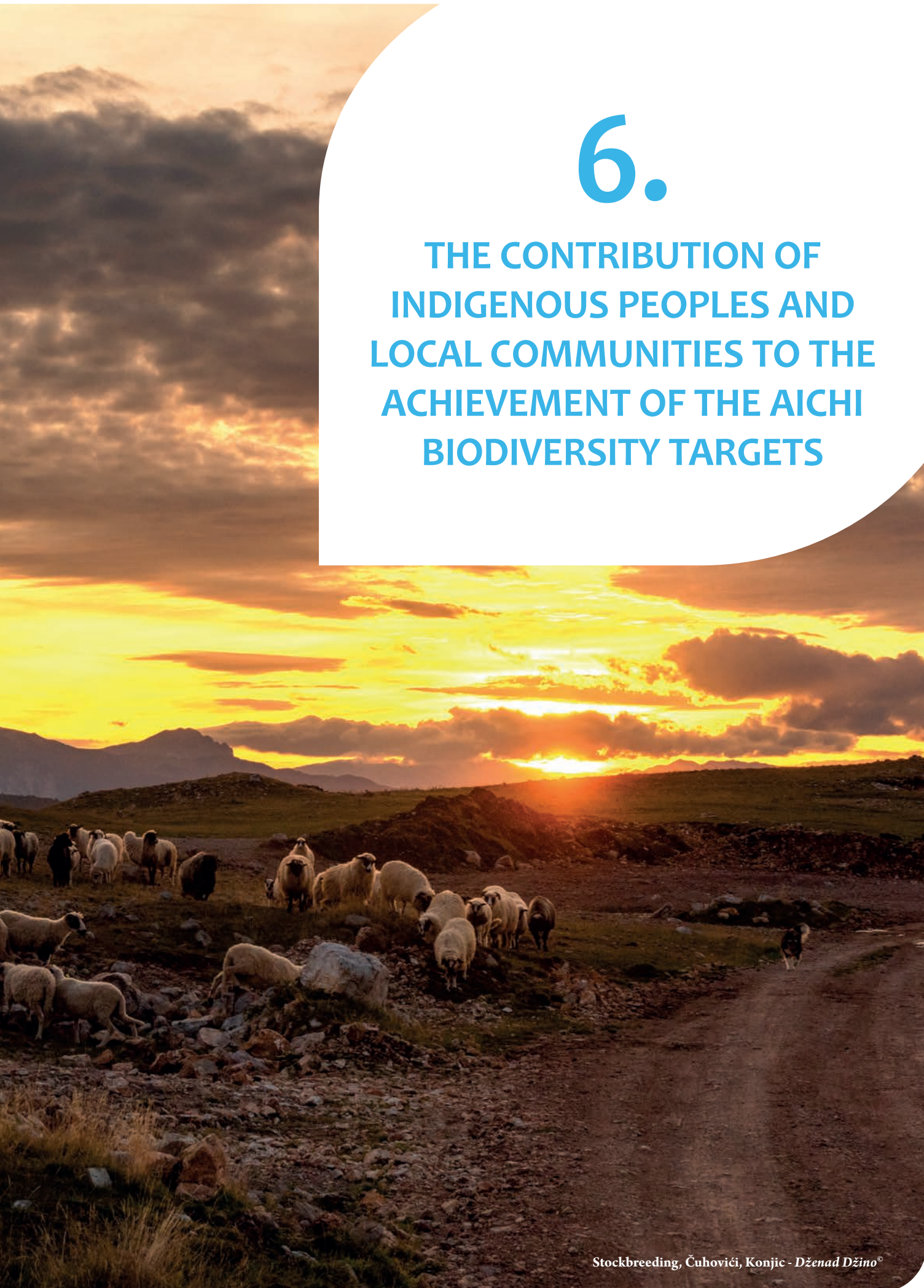
National targets corresponding to the GSPC targets	GSPC target	9. 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge (knowledge of local communities and indigenous population).
	Corresponding national target	14. By 2020, prepare and implement in situ and ex situ programs for protection of domestic varieties, breeds and their animal relatives, including their inventory and establishment of indigenouness parameters.
	Level of correspondence	Medium correspondence
Measures for plant protection	Actions/ measures for plant protection	Gene banks are established in Bosnia and Herzegovina at the entity level and maintained by institutions responsible for genetic resources. Gene bank in the Republika Srpska is a part of the Genetic Resources Institute of the University in Banja Luka. In the Federation of BiH, gene bank is maintained by the Faculty of Agricultural and Food Science of the Sarajevo University. Republika Srpska is the only of the two entities who deposited copies of its unique seeds in the Svalbard Global Seed Vault (Norway), owing to the Genetic Resources Institute of the University in Banja Luka. In 2015, an Gap analysis in the system of environmental monitoring and reporting under the Rio Convention in BiH was carried out within a UNEP/GEF project titled Capacity development for the integration of global environmental commitments into national policies and development decision making in Bosnia and Herzegovina. This analysis, among other things, identified incompliant methodologies of gene bank maintenance in the entities, in terms of ex situ indicators. One of the results of the analysis was a recommendation for development of a collection of genes of plant and animal species in BiH and improvement of gene banks maintained by the entity institutes for genetic resources and enhanced coordination among all institutions dealing with genetic resources in BiH in preparation of ex situ indicators for indigenous genetic resources.
	Documents issued for the purpose of plants protection	Gap Analysis in the system of monitoring of the state of environment and reporting under the three Rio Conventions in BiH, prepared within a UNEP/GEF project titled Capacity development for the integration of global environmental commitments into national policies and development decision making in Bosnia and Herzegovina.
Category of progress towards the national target corresponding to the GSPC target	Category of progress	Progress towards target at national level but at an insufficient rate
	Explanation for the category of progress	Programs of in situ protection of indigenous varieties and their relatives, including inventory thereof and determination of indigenouness parameters are not on track with the dynamics of activities for ex situ protection, which also applies to gene banks. In situ protection requires greater financial, technical and human resources than those that Bosnia and Herzegovina currently has. Inventory of domestic varieties and their wild relatives is a complex process which requires research on the ground, relevant capacities and adequate data bases. It should be noted that the migration rate in BiH is high and that the population is leaving rural areas. This has led to a sudden decline in traditional knowledge and practices, which has had an impact on indigenous varieties. Bosnia and Herzegovina is undertaking measures to make the best use of the current capacities for ex situ protection and to strengthen those capacities in light of the mentioned limitations and circumstances.

	Relevant websites, web links and files	Bank of the plant genes of RS https://www.nezavisne.com/nauka-tehnologija/nauka/Odrzivo-koriscenje-genetickih-resursa-osigurava-njihov-opstanak/489945 http://www.unep.ba/tl_files/unep_ba/PDFs/Analiza%20stanja%20u%20BiH%20-%20Nagoya%20protokol%20+%20tekst%20Protokola%20final.pdf
National targets corresponding to the GSPC targets	GSPC target	14. The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes.
	Corresponding national target	19. By 2020, strengthen the role of the scientific research and professional institutions, NGO sector and media including improvement of scientific technologies. 1. By 2020, increase the public awareness level in the field of biological diversity protection.
	Level of correspondence	High correspondence
Measures for plant protection	Actions/ measures for plant protection	Importance of plant diversity has always been recognized in the curricula of the faculties of natural sciences and mathematics (biology departments) as well as bio-technical, forestry, agricultural and pharmaceutical faculties in Bosnia and Herzegovina. Curricula is regularly reviewed and updated to ensure that education continues to play an important role in raising awareness on biodiversity. It should be noted that some faculties, through their programs, enable students to learn about the strategic global, regional and national processes of planning and developing biodiversity policies. Students also learn about the national and regional mechanisms and protection instruments as well as sustainable utilisation of biodiversity. Public awareness of plant diversity is also present in the content of different media outlets. There is a number of media channels in BiH that produce and air educational programs on flora diversity in BiH and often rerun those programs and other such programs of older date. One of those programs is a docuseries titled Natural Heritage, which has aired several times in Bosnia and Herzegovina over the years. This series documents the varieties of species found across BiH, focusing on their distribution and utilisation value. In recent years, social media has played an important role in the promotion of plant diversity, especially its utilisation value.
	Documents issued for the purpose of plants protection	Barudanović, S., Masic, E. Macanovic, A (2017): Peatland on Bosnian Mountains, Faculty of Natural Sciences and Mathematics, University in Sarajevo http://www.fzofbih.org.ba/v3/vijest.php?akt_id=139
Category of progress towards the national target corresponding to the GSPC target	Category of progress	Progress towards target at national level but at an insufficient rate
	Explanation for the category of progress	BiH did not identify national targets for GSPC, but some activities implemented in the country at the moment contribute to the achievement of these targets.
	Relevant websites, web links and files	http://www.pmf.unsa.ba/biologija/index.php/studijski-programi/i-ciklus-studija/ekologija#vii-semestar http://www.pmf.unsa.ba/biologija/index.php/studijski-programi/i-ciklus-studija/ekologija#viii-semestar



6.

THE CONTRIBUTION OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES TO THE ACHIEVEMENT OF THE AICHI BIODIVERSITY TARGETS



This chapter summarises the contribution of indigenous peoples and local communities to the management, protection and sustainable utilisation of biological diversity in Bosnia and Herzegovina.

Bosnia and Herzegovina boasts extensive traditional knowledge as a country in which different cultures and traditions have converged throughout the history. The long process of ethnogenesis of diverse cultures allowed enough time for the practice of diversified utilisation of natural resources to develop. This practice is reflected, for example, in the use of wild medicinal and aromatic plants in ethno-pharmacy and wild edible plants in the preparation of food as well as the use of traditional biotechnologies which rely on indigenous varieties and breeds. It is believed that the traditional knowledge is particularly preserved in the communities residing at high altitude and in remote, unexplored areas rich with biological diversity, because this indigenous population, thus isolated, had depended solely on the natural resources available to them.¹¹

However, due to the increasing rate of migration of rural dwellers into towns, villages and rural activities are vanishing. This is particularly the case with farming and cattle breeding. These migrations have also contributed to the decline of the biological diversity of species in Bosnia and Herzegovina.

This situation is made additionally problematic by the lack of proper legislative framework and reference institutions as well as the low level of awareness among the general population about the consequences of overexploitation of autochthone species. Bosnia and Herzegovina still does not have efficient institutions to ensure conservation and protection of genetic resources of domesticated plants and animals. Traditional knowledge of rural communities is a valuable asset in the conservation of autochthone biological diversity. It contributes to a sustainable utilisation of natural resources in agriculture and cattle breeding. Traditional knowledge is also an important commercial resource and an accomplishment essential to community's identity. Traditional knowledge, therefore, must be protected adequately, fully and efficiently with relevant legal instruments. However, this is not recognized as a statutory obligation in Bosnia and Herzegovina.

Traditional knowledge and practices preserved by local communities and autochthone population in Bosnia and Herzegovina are used in the production of food and medicines from homemade and natural products. Some households still rely on the old methods of food production and cultivating and conserving of domestic varieties of fruit and vegetable (apple, pear, plum, cherry, etc.) and wild fruit (cornelian cherry, rose hip, mushrooms, etc.). Fruit picking is especially important because it helps conserve general habitats. It is practiced in central and northern Herzegovina (hilly areas), central Bosnia, Podrinje and in the communities residing in the valleys of the rivers Neretva (valley near Mostar and Čapljina), Bosna and Vrbas. In the Federation of BiH, the Alliance of Associations of Organic Producers of FBiH, ORGANSKO FBiH, was founded in 2009. It has 17 members (7 cantonal associations of organic producers and 10 associations developing organic production). In 2015 in the Republika Srpska, the Association of Organic Producers and Processors was established. There are 26 organic agricultural producers in the Republika Srpska, working mostly in the sector of medicinal herbs and berries. Local farmers are working to preserve traditional practices and autochthone varieties and breeds through organic production. Manufacturers cultivating medicinal herbs on plantations usually grow camomile, mint, sage, immortelle, etc., and some of those manufacturers have recently become eligible for certification of organic production of medicinal herbs. It is important to note that some natural habitats of medicinal herbs have become quite barren because Republika Srpska and Federation of BiH do not have mechanisms to control gathering of these plants.

Cultivating medicinal herbs for commercial purposes helps reduce the effects of uncontrolled gathering of autochthone medicinal herbs (sage, immortelle, lavender) and degradation of natural habitats. Commercial production of immortelle, sage and lavender is located predominantly in southern Herzegovina. Farmers are usually private landowners and cooperatives for cultivation and purchase of medicinal herbs (no records are kept in Bosnia and Herzegovina on the number of medicinal herb farmers).

Traditional livestock products include different types of cheeses and dried meat. These traditional products are prepared and consumed in almost all cattle breeding farms. Communities in the mountain areas of southern Bosnia and northern Herzegovina have a tradition of producing these products (Vlašić cheese, Livno cheese, mountain sack cheese, Herzegovina prosciutto, sujuk, etc.)

11 Leopold Glück, *Narodni lijekovi iz bilinstva u Bosni: etnografska študija*, Glasnik zemaljskog muzeja, 1892.

Sulejman S. Redžić, *Wild edible plants and their traditional use in the human nutrition in BiH*, Ecology of Food and Food Nutrition, 45 (3): 189-232., 2006

NERDA, *Zaštita izvornosti, geografskog porijekla i tradicionalnog ugleda proizvoda u prehrambenoj industriji*, Tuzla, 2009.

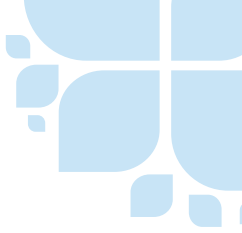
Traditional livestock breeding is still practiced in the small communities residing in the mountains of Bjelašnica, Igman, Jahorina, Čvrsnica and in other pre-mountain and mountain areas, contributing to the conservation of biodiversity of the meadow ecosystems. Continuous grazing and hay harvesting restores and strengthens meadows and contributes to the development of the entire ecosystem.

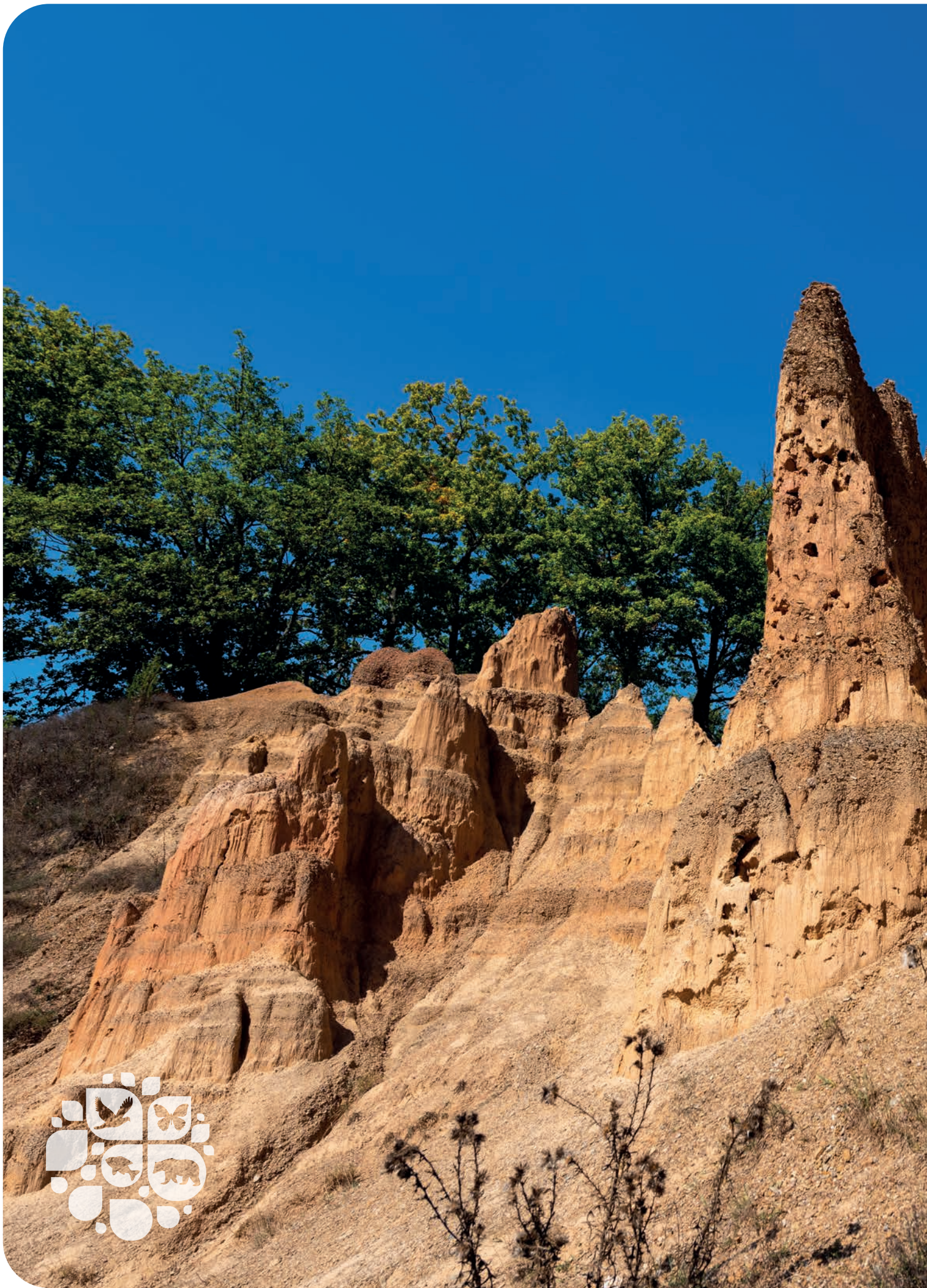
Conservation of autochthone varieties is ensured also through revitalisation and commercialisation of artisanal trades. One of those trades is cultivation of industrial willow used in traditional wickerwork. Industrial willow is cultivated mostly on private land owned by self-employed entrepreneurs in Posavina. The project titled *Self-employment through wickerwork* implemented by the Citizen Association *Don* from Prijedor and financed by the UNDP BiH is a positive example of this practice. The project was implemented in 12 municipalities and towns in Bosnia and Herzegovina and has delivered training for 17 new wicker workers, among other things. (http://www.ba.undp.org/content/bosnia_and_herzegovina/bs/home/ourwork/povertyreduction/successstories/korparstvo-u-posavini-povratak-tradiciji-i-biznis-na-kunom-pragu.html)

Traditional production of plant-based products from Bosnian pine endemic variety is carried out in Blidinje Nature Park. This park is home of the agricultural farm Borovit which produces these products (available at <https://boroviti.com>). Bosnian pine forests are protected from logging and degradation of forest cover. Bosnian pine has healing properties and is used in treatment of respiratory problems. It is one of the reasons why forested areas should be expanded and carefully selected for selective cutting. More information available at: <http://blidinje.net/med-ili-sirup-od-borovih-iglica-ljekovitost-i-recept/>.

Breeds like Buša cattle, Bosnian Mountain Horse, Posavina cattle, Herzegovina donkey and Mangalitza pig are endangered. Conservation breeding of Buša cattle is undertaken at the Buša cattle farm in Buhovo (Herzegovina). The project of conservation of autochthone domestic breeds is implemented through the Centre for Conservation of Autochthone Domestic Breeds with the help of the Education and Information Open Centre, the construction of which was financed by the European Union within the project titled *Sustainable development of border areas through conservation of indigenous breeds and the establishment of gene-centres in Buhovo and Biokovo*. More information available at: <https://youtu.be/7UUtDAH4vPA>.

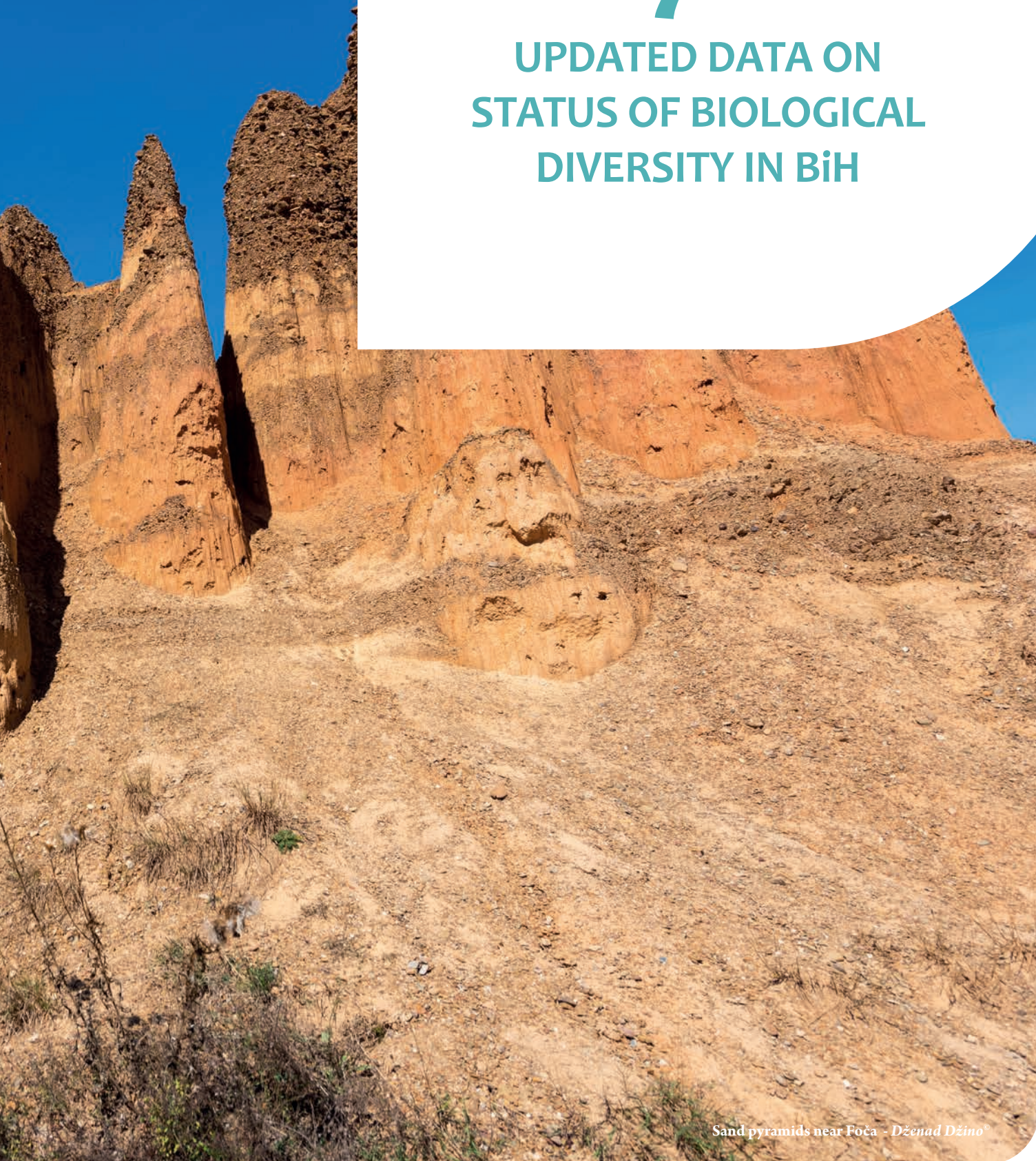
Endangered indigenous Herzegovina donkey is bred at donkey farms and very rarely by individual cattle breeders. Processing and sale of donkey milk is a lucrative business which has led to an increase in the number of heads. The most known farms are those in Tihaljina (Ljubuški) and the farm near Zavidovići. More information available at: <https://mali-farmer.com/magarecemlijeko/> ; <https://www.grude-online.info/tihaljina-drazen-rasic-uzgaja-magarce-tvrda-je-njihovo-mlijeko-ljekoviti-eliksir/>. Association of Bosnian Mountain Horse Breeders is undertaking activities to conserve indigenous Bosnian Mountain Horse. This Association gathers breeders who are investing in farm development. Today there are 5 paddocks across BiH working to increase the population of Bosnian Mountain Horse, among other things, by educating the public and undertaking promotional activities. All these measures are focused on saving Bosnian Mountain Horse from extinction. More information available at: <https://www.akta.ba/vijesti/pasmina-je-sacuvana-povecava-se-brojno-stanje-bosanskog-brdskog-konja/96607> Another noteworthy example in the context of conservation of natural values is the protection of the rare yellow beech. The Government of the Republika Srpska has issued a Decision on protection of the natural monument Yellow Beech (Official Gazette of the Republika Srpska, No. 30/12). This decision is a result of the initiative to protect yellow beech. The initiative was followed by the preparation of the relevant study and time was allowed for public inspection before decision was issued. This the first dendrologic natural monument protected under the Law on Nature Protection of the Republika Srpska (Official Gazette of Republika Srpska, No. 113/08). Initiative to protect yellow beech came from the ethno village *Yellow Beech* from Kotor Varoš. This ethno village is responsible for the management of the protected area under the Decision on protection of the natural monument. Yellow beech tree *Fagus moesiaca* (K.Maly) *Czecz var. aurea serbica* Tošić grows in the hamlet of Stolići, village of Zaselje, Municipality of Kotor Varoš. According to the available data, this natural good is the only such variety of beech in Europe and that is its principal value. The yellow beech tree is not only rare in Republika Srpska and Bosnia and Herzegovina but in other countries too. This tree is around 300 years old. The size of the protected area is 5,002 m². Dendrometric features of this natural monument are as follows: (i) trunk volume 1.30 m and trunk diameter 1.30 m, (ii) tree height 15.0 (iii) height to main fork 2.3 m and (iv) crown width 18x17.5 m. More information available at: http://www.nasljedje.org/docs/pdf/Odluka_zuta_bukva.pdf





7.

UPDATED DATA ON STATUS OF BIOLOGICAL DIVERSITY IN BiH



This section of the Report includes the data on status of biological diversity in BiH, as well as the data on implementation of Convention of Biological Diversity in BiH. The data will be shown on BiH profile of biological diversity that is available through the link : <https://www.cbd.int/countries/?country=ba>.

7.1 Status of biological diversity in BiH: status and trends, including benefits from biological diversity and ecosystem services

BiH is a country on the Balkans Peninsula, and it borders the Republic of Croatia (931 km) in the north, northwest and south, and the Republic of Serbia (375 km) and Republic of Montenegro (249 km) in the east. The size of the territory of BiH is 51,209.2 km², 51,197 km² of which is covered by land, and 12.2 km² by sea. To the north, BiH has access to the Sava River, and to the south, in Neum, where it has an exit to the Adriatic Sea. By its geographic position, BiH belongs to Adriatic and Black Sea basin. BiH is prevalingly mountainous country, covered with forests. Average altitude above the sea is 500 meters, and the highest peak is Mt. Maglić (2,387 m). Out of the total land area, 42% are mountains, 24% hills, 29% karst area, and 5% lowlands. BiH has a high value of water resources in the Balkans Peninsula, because it has many surface and underground water streams. There are seven main river basins in BiH (Una, Vrbas, Drina, Bosna, Sava, Neretva, Trebišnjica and Cetina), of which 75.5% belong to the Black Sea Basin, and 24.5% to the Adriatic Sea basin.

With respect to biological diversity, although it is a matter of general knowledge that BiH is rich in terms of genetic and species diversity, as well as diversity of ecosystems, there are no accurate and up-to-date general and specific data on status of biological diversity in BiH. Systematic gathering and analysis of data on biodiversity and monitoring status of biological diversity is almost non existent.

According to the current laws on protection of nature in the entities and the Brčko District (BD), entities and the district are obliged to establish information systems for protection of environment. The complete inventory of flora, fauna and fungi in BiH; (ii) ecosystems and types of habitats in BiH has not been done in the way to have lists of flora or fauna, or data bases. Progress in implementation of this provision is seen in the establishment of information system for protection of environment in RS with modules, where some of the modules are active and contain part of the data on endemic species and registry of plant species in RS. It should be noted that the information system has been in use for relatively short time so far, and the data base will have more information in the coming period. Flora of RS is the registry of data on distribution and taxonomy of higher plants in RS, with almost 70,000 collected spatial data, which are related to 2,638 taxons at the level of species and sub-species. The data base is of "open" type, which implies ongoing work on collection and unification of the existing and new information on flora of RS. Also, in FBiH the Fund for Environmental Protection of FBiH performs activities on the establishment of the information system for nature protection of the Federation of BiH.

The first serious step in direction of identifying ecosystems and landscape diversity in BiH was made when making the First National Report of BiH for UNCBD from 2008, under the title *Overview and status of biological and landscape diversity in BiH, BiH - land of diversity*. The 2008 report summarizes the most important research and results. The data shown in the report can be considered the only attempt to develop inventory of ecosystems and landscape diversity in BiH to date. Biological diversity of BiH is a result of the overall diversity of environmental conditions in this area, and based on the information from 2008, the following types of landscape may be identified in BiH: (i) Mediterranean; (ii) submediterranean; (iii) Mediterranean-mountainous; (iv) hilly; (v) upland; (vi) peripanonic; (vii) panonic; (viii) mountainous; and (ix) karst landscapes, and in them more than hundred different ecosystems.

Speaking of inventory data for different groups of organisms according to the Fifth National Report, 30% of endemic flora of the Balkans (around 1,800 species) are found on the territory of BiH. Flora, fauna and fungia of BiH are among the most diverse in the whole of Europe, and high share of endemic species and relics give it importance at the level of global biological diversity. The best studied are the chordates and vascular plants, while the least known are the invertebrates, fungi and bacteria.

According to the NBSAP BiH 2015-2020, status of biological diversity in BiH is shown in the table below.

Table 20: Status of biological diversity, BiH

Taxon	Popular name	English name	Known number of species
Eucaryota	Višecelijski organizmi	Multicellular organisms	17,223
Plantae	Biljke	Plants	4,696
Thallophyta*	Niže biljke	Thallophytes	514
Alge**	Alge	Algae	514
Rhodophyta	Crvene alge	Red algae	15
Chlorophyta	Zelene alge	Green algae	461
Xanthophyceae	Žutozelene alge	Yellow-green algae	13
Chrysophyceae	Zlatne alge	Golden algae	25
Lichenes	Lišajevi	Lichen	>300
Cormophyta*	Više biljke	Cormophyta	4,182
Bryophyta	Mahovine	Mosses	565
Pteridophyta	Paprati	Pteridophytes	61
Spermatophyta	Sjemenjače	Spermatophytes	3,256
Fungi	Gljive	Fungus	552
Ascomycota	Gljive mješinarke	Sac fungi	51
Basidiomycota	Gljive stapčarke	Higher fungi	501
Animalia	Životinje	Animals	12,016
Porifera	Spužve	Sponges	14
Cnidaria	Žarnjaci	Cnidarians	9
Platyhelminthes	Pljosnati crvi	Flatworms	90
Nemertea	Vrpčari	Ribbon worms	1
Nematoda	Oble gliste	Roundworms	47
Nematomorpha	Strunaši	Horsehair worms	5
Acanthocephala	Kukaši	Spiny-headed worms	9
Mollusca	Mekušci	Mollusks	347
Annelida	Gliste	Ringed worms	133
Arthropoda	Zglavkari	Arthropods	10,643
Bryozoa	Mahovnjaci	Moss animals	2
Echinodermata	Bodljokošci	Echinoderms	19
Chordata	Kičmenjaci	Chordates	697

*Names without a taxonomy position.

**Cyanobacteria, Euglenophyta, Dynophyta and Bacillariophyceae pertain to the groups that today belong to other taxa (bacteria, unicellular eukaryotes).

Source: NBSAP BiH 2015-2020

Preservation of biological diversity includes both the conservation activities, and activities that help recovery of endangered species and rehabilitation of natural resources. One of the first steps in preserving biological diversity is inventory of species and habitats, followed by identification of level of risk they are exposed to.

The Red List of the Republika Srpska (RS) includes 818 species of vascular flora, 304 bird species, 46 fish species, 57 mammal species, 20 amphibian species, 25 reptilian species, and 273 insect species, while the Red List of the Federation of BiH (FBiH) includes 658 plant species, 27 mammal species, 40 bird species, 6 reptilian species, 4 amphibians, 36 fish, and large number of species from various groups of invertebrates. Methodology that was used for developing Red List of RS is different from the methodology used to define the Red List of FBiH. Therefore, the information obtained and collected is not comparable or appropriate for compilation and presentation at BiH level.

Monitoring status and trends in biological diversity in BiH is conducted partially through various studies and strategies, but there is no ongoing monitoring system that would allow assessment of status and changes in biological diversity in BiH. Continuous monitoring is present only in certain segments, and it monitors certain ecosystems, for example: monitoring of water ecosystems. Many pressures that will be described below that endanger biological diversity of BiH, however, it needs to be said that activities are implemented the objective of which is to preserve and improve status of biological diversity. For example, efforts are being made to increase the protected area in BiH. Protected areas in BiH cover 2.28%, 3.24% in FBiH and 1.30% in RS. The greatest percentage are the protected land / mountainous areas, while water / moorland habitats make a very small percentage, and they are the IBA areas, or areas of international importance. According to the spatial plans, additional 15-20% of the area is to be protected.

Geographic position of BiH, characteristics of its relief and ecological heterogeneity of the space, along with geo-morphological and hydrographic characteristics and diversity of eco climate have produced a particularly rich life in the area. Ecosystems of BiH can be grouped in different ways. One of the simpler classification distinguishes 19 major groups of ecosystems, which are internally very varied. These are: glacial ecosystems, ecosystems of mountainous and pre-mountainous meadows, ecosystems of heath, ecosystems of gorse and pine, ecosystems of spruce forests, ecosystems of beach forests, ecosystems of high greenery, ecosystems of oak forests, shrubby ecosystem of ostrya and oriental hornbeam (*Carpinus orientalis*), ecosystems of rock fissures, colluvial ecosystems, ecosystems of hemophilic meadows, mezzophilic meadows ecosystems, higromezzophilic and riparian meadows ecosystems, ecosystems of forests of alnus (alder) and willows, moorland ecosystems, freshwater and saltwater ecosystems, ruderal and tillage vegetation ecosystems.

In connection with high diversity of ecosystems is the diversity of services they provide, including: food, raw materials, potable water, medicinal and vitamin resources, regulation of local, regional and global climate, carbon absorption and storage, preventing and mitigating natural disasters, cleaning waste waters, soil erosion control, disease regulation and control, production of organic matter, pollination, circulation of mater, recreation, mental and physical health, tourism, aesthetic, cultural and artistic inspiration, spiritual experience and learning, and numerous other resources. Ecosystem services in BiH have not been mapped in space, and written information on them are very few and far between. In most cases, they can be found in research papers and technical reports on generally useful functions of forests in BiH.

The most important ecosystem services are provided by forest ecosystems, water ecosystems and agricultural ecosystems.

Forest ecosystems. Forest and forest land cover the area of around 27,100 km², or around 53% of territory of BiH. Around 2.6 million ha is suitable for agricultural use. Fertile lowlands in BiH are made of 16% agricultural land, 62% are less fertile hilly and mountainous areas, while Mediterranean area makes around 22%. According to the NBSAP, the greatest part of the forest ecosystems in BiH still have original, natural structure. From the aspect of production of wood mass, as one of the first essential services for population of BiH, the forest ecosystems can be roughly differentiated as high productive (forests in hilly and mountainous belt), and low productive (thermophile forests and thickets). From the aspect of protective role of forests, the alpine forests (upper border of forest) and riparian forests (forests around rivers and moorland habitats) stand out. Riparian forest habitats are presently under strong pressure also because of planned construction of many small hydropower plants in BiH on mountain streams.

Water ecosystems. BiH possesses considerable water resources. These are the ecosystem of rivers, mountain streams, glaciers, lake ecosystems and wetland habitats, along with moorland ecosystems, where the peat ecosystems have special value, as well as the marine ecosystems. Particular environmental and natural value

in BiH are the canyon ecosystems in relict-refugial landscapes of the Una, Vrbas, Drina, and Neretva rivers. However, their water is more and more seen as commercial resources, and this is the cause of one of major conflicts in sustainable water management.

Agricultural ecosystems. 46% of BiH land is suitable for agricultural production. In spite of that, and in spite of high number of people working in this industry (19%), share of agriculture in gross domestic product (GDP) for 2010 was only 6.2%, while in 2016, share of agriculture was 6.3%¹². In 2016, agricultural and food products made 16.4% of total imports, and around 10% of total exports. Changes in agricultural industry may be linked to global anthropogenic pressures, such as population growth, and consequently urbanization and unplanned construction and uncontrolled use of pesticides and fertilizers, and uncontrolled introduction of invasive and allochtonic species, as well as the uncontrolled introduction and manipulation with genetically modified organisms (GMO).

Pressures to biological diversity (direct/indirect):

Pressures to biological diversity actually include all impacts that may lead to endangering or altering the current status of biodiversity in BiH. Generally, according to the origin, pressures to biological diversity are divided into natural and anthropogenic.

Natural pressures may take the form of infrequent catastrophic natural events, such as floods, fires, landslides, or as ongoing processes of low intensity, such as natural erosion, natural selection, natural extinction. On the other hand, anthropogenic pressures include various activities of humans, which have direct or indirect impact on biological diversity. Main identified anthropogenic pressures that are at the same time causes of changed status of biological diversity include:

- Construction of wholesome infrastructure (construction of road network, construction of power plants / water reservoirs for hydropower plants, power transmission infrastructure, pipelines, gas lines, construction of water supply structures / watersheds, ditches, artificial lakes with dams, sluices, dams;
- Agricultural activities (melioration, exhaustion of habitat by monocultures, use of pesticides and mineral fertilizers);
- Uncontrolled urbanization and ruralization;
- Lack of harmonization among strategic goals by sectors.

Natural pressures are less invasive than anthropogenic pressures because (i) they happen very infrequently, or (ii) they develop at low intensity and over a long period of time, during which the species manage to adjust to the new conditions.

Pressures to biological diversity may be viewed on global level, as well as on different levels of biological diversity, genetic and species diversity. First of all, pressures may be differentiated by the way they act, i.e. depending of whether they are direct or indirect pressures.

In BiH, direct pressures at the level of genetic diversity and diversity of species include logging, degradation and destruction of forest ecosystems, and unsustainable collection of economically important species, which leads to irreversible loss of genetic material and destruction of biological diversity of flora. Direct pressure to biological diversity of fauna is first of all caused by hunting and poaching, which destroys sources of genetic material and reduces biological diversity.

Indirect pressures to biological diversity of flora and fauna include, first of all, permanent pollution of all spheres of environment, fragmentation of ecosystems, and various disturbances of nature reserves of untouched nature, as well as the unsustainable use of natural resources.

¹² Agency for Statistics BiH (BHAS), 2017.

7.2 Measures to enhance implementation of the Convention

Implementation of the NBSAP

The NBSAP BiH 2015-2020 was developed under the project “Support to Bosnia and Herzegovina (BiH) in revising Strategy and Action Plan for Protection of Biological Diversity and Development of the Fifth National Report under Biological Diversity Convention”, which was financed by the Global Environment Fund – GEF, and implemented by the United Nations Environment Programme – UNEP). NBSAP BiH 2015-2020 was made to be fully implementable and effective in achieving the Aichi targets, while taking into consideration status of biological diversity and its management. Since the NBSAP 2015-2020 was adopted by the Council of Ministers of BiH in May 2017, it is impossible to evaluate at this time how effective the document was. It may be noted that achieving the national NBSAP targets largely contributes to achieving the Aichi targets because when developing the national targets, the Aichi targets were used as a basis.

As already mentioned, the NBSAP BiH was adopted in May 2017, when many of the prescribed measures should have already been implemented. In addition, implementation of national strategies related to environment, according to the existing legislative solutions, can only be done through entities. The entity level is not synchronized in terms of time with the preparation of the strategy. The entity strategies for environment need to incorporate targets and measures already provided under the NBSAP BiH in order to facilitate implementation of the NBSAP BiH and measures contained therein also at lower levels. According to this model of operation, it is clear that implementation of Strategic Plan for Biological Diversity 2011-2020 in BiH requires far more time than provided under the current framework. However, this does not mean that the measures from the NBSAP are not being implemented. The entity ministries responsible for environment protection, when issuing calls for financing projects, take into consideration the NBSAP BiH and alignment of the project to be financed with the targets identified in the NBSAP BiH. However, the said funds, although relevant, are not significant in consideration of their share in overall entity budget expenditures.

NBSAP BiH has been only partially implemented. Many of the targets contained therein have been implemented only partially, while many of the measures provided have not been implemented at all. It is important to note that the main prerequisites for its implementation are in place, that funds are being allocated from the budget for the purpose of implementation of measures that contribute to biological diversity, although the said funds cannot be considered significant. Laws have been adopted that concern protection of nature, and they serve as a basis for declaring protected areas and their sustainable management, as well as preservation of ecosystems that are located within the said areas. In the coming period, the efforts will need to focus to increase funding and enhancing activities that are aligned with the NBSAP BiH targets. With respect to implementation of the NBSAP BiH, it implies active involvement of a great number of institutions that had been involved also in the stage of development of this document, as they appear here as bodies responsible for implementing measures for achieving the National Targets.

Activities that contribute to the implementation of the Strategic Plan for Biological Diversity 2011-2020

As stated in the Sixth National Report, the main implementation mechanism for the Strategic Plan for Biological Diversity 2011-2020 is NBSAP BiH 2015-2020. When developing the NBSAP BiH, and its targets and indicators, full use was made of SMART methodology. NBSAP BiH 2015-2020 contains 21 national targets for biological diversity, which are divided in five global strategic directions (A, B, C, D, and E), identified in the Strategic Plan 2011-2020. When developing each individual national target that was included in the NBSAP BiH, used were the requirements from the Aichi targets, and so the national targets are very much aligned with the Aichi targets, but adjusted to accommodate situation in BiH.

NBSAP BiH was produced with the aim of being fully implementable and effective in achieving the Aichi targets, while taking into consideration the status of biological diversity and managing it in BiH. Since the NBSAP BiH was adopted by the Council of Ministers of BiH in May 2017, it has not been possible to achieve any greater progress in terms of implementation of national targets and Aichi targets. It can be said that achieving the national targets of NBSAP BiH greatly contributes to achievement of the Aichi targets because the Aichi targets were relied upon when developing national targets.

As regards the contribution to achieving Aichi targets, it was shown in the Sixth national report. Based on the information provided in the Report, it was concluded that the measures implemented in BiH have made significant contribution to achieving Aichi targets 1 and 17. Moderate contribution has been identified in achieving Aichi targets 2, 6, 11, 13 and 15, while somewhat significant progress was achieved with respect to Aichi targets 3, 4, 5, 7, 8, 9, 10, 12, 14, 16 and 20. The measures implemented in BiH contributed almost nothing to achieving Aichi targets 18 and 19.

Main obstacles to implementation of the measures include: (a) delays in disbursement of international; (b) lack of human and technical capacities; (c) complexity of institutional framework; and (d) short time given for implementation of the targets.

Mechanisms to support implementation of the Convention in BiH (legislation, coordination plans, financing, capacity building, etc.)

Although the implementation of NBSAP BiH has not been completed due to lack of funding and technical institution capable of conducting technical and scientific activities, it is important to note that mechanisms have been established in BiH that contribute to implementation of the Convention in BiH.

Firstly, cooperation between the entities needs to be emphasized as it is one of the most important factors in implementation of the adopted Strategic Plan for Biological Diversity. Entity ministries competent for protection of environment have been working on coordination of activities that concern biological diversity. However, improvement of operability at entity level requires some more work.

As regards legal mechanisms, at the level of entities and BD BiH, laws have been adopted that are related to protection of nature and biological diversity (Law on Protection of Nature of FBiH (Official Gazette of the Federation of BiH, No. 66/13), Law on Protection of Nature of RS (Official Gazette of Republika Srpska, No. 20/14), and Law on Protection of Nature of BD BiH (Official Gazette of Brčko District of BiH, No. 24/04, 1/05, 19/07 and 9/09)). These are the main legislative acts the protection of nature relies upon, as well as the sustainable management of protected areas and the procedure for establishing their protection, and all issues related to endangered species. In addition to this, other official document that deserve to be mentioned as document dealing with endangered species is the Decree on Red List of Protected Species of Flora and Fauna of RS (Official Gazette of Republika Srpska, No. 124/12), and the Red List of Endangered Plants, Animals and Fungi in FBiH (Official Gazette of the Federation of BiH, No. 7/14). The red list of protected flora and fauna species of RS includes the list of vascular flora, birds, fish, mammals, amphibians, reptiles and sub-kingdom of metazoa, without specifying risk categories. The Red List of FBiH includes species of plants, mammals, birds, reptiles, amphibians, fish and cyclostomata, with an overview placing each species in the appropriate category of threat. The list also includes the endangered species of fungi in BiH, classified by categories, as well as a breakdown of the species from order Ephemeroptera (mayflies), Odonata (dragonflies), Plecoptera (stoneflies) and Trichoptera (caddisflies), a breakdown of daytime butterflies, ground beetles and dung beetles in the FBiH, then the species from the orders of Amphipoda (crayfish), Decapoda (decapods), Opiliones (harvestmen) and Pseudoscorpionida (pseudoscorpions).

As already mentioned, the laws on protection of nature also prescribe sustainable management of protected areas and procedure for declaring their protection, while planning protection of new areas has been proposed in spatial plans. Spatial plan of FBiH (2008-2028), which is still in the adoption procedure, sets out to establish 14 new protected areas of total area of around 4,488 km², or 18.5% of the territory of FBiH. Spatial plan of RS by 2025 has set the objective to place under protection 15% to 20% of territory of RS. By establishing the proposed protected areas BiH could achieve 17% of protected areas, as foreseen in the Strategic Plan for Biological Diversity 2011-2020, although the currently protected areas in BiH covers only 2.28% of its territory, 3.24% in FBiH and 1.30% in RS respectively.

Financing activities related to biological diversity is implemented at entity level, level of BD BiH, cantonal and local levels, but without a common data base that would show all the funds allocated to this purpose. Ministries competent for environment protection provide some funding for implementation of projects that contribute to achieving the NBSAP BiH targets, however, when all the costs shown in the budgets are taken together,

they make only a small percentage. Entity level environment protection funds also allocate significant funds for protection of biological diversity; these funds are regulated by the Law on Fund for Environment Protection of FBiH (Official Gazette of the Federation of BiH, No. 33/03), and the Law on Fund and Financing of Environmental Protection of RS (Official Gazette of Republika Srpska, No. 117/11 and 63/14), and other secondary legislation. In addition, some funds are provided through various grants and European funds that finance specific project activities that have direct or indirect impact on preservation of biological diversity. In terms of applications to international funds, it must be said that in addition to institutions, individuals may also compete for these project. Also, cross-border cooperation projects may be included here. The National Target 20 foresees development of a Strategy for mobilization of financial resources for conservation of biological diversity, as a mechanism that would ensure a more effective implementation of the NBSAP BiH (2015-2020) and Strategic plan 2011-2020. The said Strategy should include analysis of the current status (estimated allocation of funds from national and international sources for the area of biological diversity over the past 5 years, identification of donors and financiers), estimate of funds available for implementation of national targets / measures for biological diversity by 2020, indicators, action plan, and method of implementation and monitoring of use of financing. However, the described Strategy has not been developed yet, what makes implementation of provisions of the Convention more difficult.

It needs to be said that one of more successful mechanisms for implementation of the Convention in BiH is the established cooperation at international level. A successful indicator are the projects implemented by the Open Regional Fund for Southeastern Europe (ORF BD), which was established and supported by the GIZ. The said projects are focused at conservation and sustainable use of biodiversity in the Southeastern Europe region. Of particular importance for BiH is the Project of establishing Regional Network for Biodiversity Information Management and Reporting (BIMR), which is expected to enable regional sharing of data and information for the purpose of collaboration in monitoring, reporting and managing (common) resources in the domain of biodiversity. The project went in the direction of introducing unified technical standards for the purpose of sharing data, lists of species and habitats, as well as continued dialogue, coordination and communication among all relevant stakeholders in the region. Implementation of the said projects aims to establish information systems for protection of nature. In BiH, the activities on establishing two information systems at entity level are in progress. These entity level information systems will be mutually compatible, and regionally compatible and unified together with Montenegro and Macedonia. The data base that is part of the information system was developed in accordance with the Darwin Core standard and it supports elements for further development of modules such as flora, fauna, protected areas, Natura 2020, GIS Platform, red lists, etc.

The BiH portal with mechanism for sharing of the biological diversity information, i.e. CHM BiH, was established in 2013. The aim of CHM is to provide comprehensive information about biological diversity through efficient information services not only to the general public but also to interested parties, and facilitate technical and scientific cooperation, knowledge sharing and information flow to help decision makers and all interested parties to fulfil obligations defined by CBD. CHM BiH currently has the information about values and state of biological diversity in BiH, and about events (e.g. workshops, conferences, meetings, and the like).

Mechanisms for monitoring and reviewing implementation of the NBSAP

Regarding monitoring of implementation of the NBSAP BiH, it is important to emphasize that the list of indicators has not been adopted in BiH that would be applied at entity levels for monitoring status of biological diversity and achieving targets contained in the NBSAP BiH. Currently, the procedure of adoption of list of indicator is ongoing, which is expected to be implemented at entity level in future in order to monitor status of biological diversity.

Achieving national targets of NBSAP is monitored against indicators proposed in the NBSAP itself. As a part of reporting to the Secretariat of CBD, National Reports on Implementation of CBD, Aichi targets and National Targets are prepared using the said indicators. Monitoring implementation of NBSAP BiH is done through reports that are regularly sent to the CBD Secretariat.

7.3 National contacts

Table 21: National contacts

National Focal Points			
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