

**IDENTIFICATION AND MANAGEMENT OF HIGH CONSERVATION VALUE
FORESTS WITHIN POTENTIAL NATURA 2000 HABITATS: CASE STUDY
VRANICA MOUNTAIN**

**Identifikacija i upravljanje šumama visoke zaštitne vrijednosti u potencijalnim NATURA
2000 staništima: studij slučaja planina Vranica**

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Abstract

Nature conservation and sustainable management of forest resources become more important in Bosnia and Herzegovina, driven by the accession process toward the European Union as well as other international processes directed toward responsible management of forest resources. The forest certification has been widely adopted in the forestry sector and it implies meeting the sustainable forest management standard, whereas identification and proper management of high conservation value forests are one of the basic requirements. The NATURA 2000 ecological network is to become an important driver of reforms in the field of nature protection and forestry sector, due to the designation of new sites in forest area, which are under the responsibility of forestry institutions. This paper illustrates the scientific understanding of identification and management processes related to high conservation value forests that were proposed within potential NATURA 2000 habitats. The paper is based on analysis of main guiding principles for site designation and the role of the cross-sectoral approach applied identification and management of sites with high conservation value attributes. The case study research design was selected focusing on the Vranica Mountain due to recent activities implemented in this site. The in-depth face-to-face interviewing was used to collect qualitative data containing the key stakeholders' attitudes regarding the harmonization of NATURA 2000 habitats with the high conservation value forests – (HCVF), as well as the involvement of stakeholders in the processes of cross-sectoral cooperation. Results of this paper can be useful for the key forest and nature protection policy-makers, as well as to those responsible for managing of protected areas, or other stakeholders directly or indirectly involved in the process of identification and management of HCVFs and NATURA 2000 sites. Harmonisation of guiding principles and cross-sectoral cooperation during the identification and management of HCVFs and NATURA 2000 forest habitats enables the proper implementation of conservation and management measures based on sustainable forest management activities.

Key words: *High Conservation Value Forests, NATURA 2000, harmonisation, cross-sectoral cooperation, Vranica Mountain*

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INTRODUCTION – Uvod

Nature protection and sustainable management of forest resources become more important alongside with accession process of Bosnia and Herzegovina (BiH) toward the European Union (EU). Some of the reforms in the field of nature protection are directed toward preparation for the implementation of the Berne Convention, as well as EU Birds and Habitats Directives (OFFICIAL WEB SITE OF THE FEDERAL MINISTRY OF ENVIRONMENT AND TOURISM(a)). The accession process is challenging both in political and institutional terms, while implementation of reforms is with small progress. A new set of rules in the field of nature protection (e.g. NATURA 2000 ecological network) is to become an important driver of reforms in this field. The Vranica mountain, due to its biodiversity richness, is proposed as one of the 122 sites for the establishment of NATURA 2000 network in BiH (OFFICIAL WEB SITE OF THE FEDERAL MINISTRY OF ENVIRONMENT AND TOURISM(b)). Having in mind that the implementation of NATURA 2000 in other EU countries was characterized by many challenges, it is recognized that effective implementation of nature conservation is dependent on cross-sectoral cooperation and mutual coordination (KATIET et al. 2014). In that sense, this paper seeks to illustrate the scientific understanding of identification and management processes related to high conservation value forests (HCVF)¹ that were proposed within potential NATURA 2000 habitats. The paper is based on analysis of main guiding principles for site designation and the role of the cross-sectoral approach applied in site identification and management. For that purposes, Vranica Mountain has been chosen as a case study due to recent activities implemented in this site related to HCVF as well as NATURA 2000 process.

The forest certification process, in line with Forest Stewardship Council standards (hereinafter: FSC), has been widely adopted in the forestry sector of BiH covering the environmental, social, cultural and economic aspects of forest management (PEZDEVŠEK MALOVRH et al. 2019a). Forest certification implies meeting a certain, predefined, sustainable forest management standard, whereas identification and proper management of high conservation value forests are one of the basic requirements (Principle 9). At the moment, there are 9 valid SFM FSC² certificates issued to the public forest companies in BiH that are managing with state-owned forests (OFFICIAL WEB SITE OF THE FSC(a)). One of the public companies that holds the certificate is the "Šumskoprivredno društvo - ŠPD Srednjobosanske šume" d.o.o. Donji Vakuf that is managing with HCVFs on Vranica Mountain. During the certification process area of 1.284,52 ha was identified and designated as HCVFs (ŠPD/ŠGD

¹ The HCVF concept is a part of voluntary forest certification systems, which requires from forest managers to identify any high conservation values - HCVs that occur within their individual forest management units, to manage them in order to maintain or enhance the values identified, and to monitor the success of this management through applying the precautionary approach

² SFM FSC refers to Sustainable Forest Management Forest Stewardship Council

"SREDNJOBOSANSKE ŠUME"/"ŠUME SREDIŠNJE BOSNE" D.O.O. DONJI VAKUF, 2016), located within the potential NATURA 2000 habitats.

Although NATURA 2000 and HCVFs concepts origin from different sectoral policies, one can conclude that there are certain similarities in these approaches directed toward conservation of natural values and its attributes. Having in mind that in the study area (Vranica Mountain) NATURA 2000 and HCVFs are intended toward maintenance, enhancement and promotion of identified high conservation value attribute, using the mix of policy instruments can be recommended to efficiently and effectively conserve valuable forest areas (FAO, 2010). In that sense, this research is dealing with the analysis of precondition for applying a mix of forest/nature conservation policy instruments in the identification and management processes of HCVFs within potential NATURA 2000 forest habitats. The research is focused on the process of cross-sectoral cooperation primary between forest and nature protection departments. Having in mind that the institutional cooperation between the federal and cantonal ministries is modest (COM, 2019), lack of coordinated activities related to preparation and implementation of strategic and operational framework both for forests and nature protection is present. Thus, the conflicts between these sectors are not unusual and mainly based on lack of mechanisms ensuring the exchange of information, as well as mutual coordination and consultation between relevant institutions. Therefore, cross-sectoral cooperation and harmonization of guiding principles for site designation and management are considered as effective measures for the protection of high conservation value attributes (IUCN WCPA, 2019).

The issues on identification and management of HCVF are insufficiently analysed in previous research in BiH. Even though several authors provided guidelines for identification and management of HCVFs (IORAS et al. 2008; AVDIBEGOVIĆ et al. 2017a), covering the aspects of adaptation toward changes of FSC criteria and indicators, the cross-sectoral cooperation did not get needed attention as a tool for effective nature conservation. Compared to previous, forest policy research is more present in BiH and Western Balkan region, dealing with the use of the policy instruments in the process of nature protection, forest management and cross-sector cooperation. The aspects of nature protection policy implementation in some EU and Non-EU countries (PEZDEVŠEK MALOVRH et al. 2019b), and forestry activities in protected areas (POSAVEC et al. 2019) indicated the need for further research regarding the cross-sector cooperation and involvement of stakeholders in the nature protection process. Also, the importance of cross-sector cooperation in nature protection (MARIĆ, 2013; AVDIBEGOVIĆ et al. 2015) and forest management activities including the identification and management of HCVFs is identified in previous research (IORAS et al. 2009; AVDIBEGOVIĆ et al. 2017a; AVDIBEGOVIĆ et al. 2012; AVDIBEGOVIĆ et al. 2017b). Besides the overview of NATURA 2000 status in BiH (MILANOVIĆ et al. 2015), the issues related to this field are not covered by many research activities.

Considering that research activities on identification and management of HCVFs within potential NATURA 2000 sites are modest, the results of this paper can be useful for the key forest and nature protection policy-makers, as well as to those

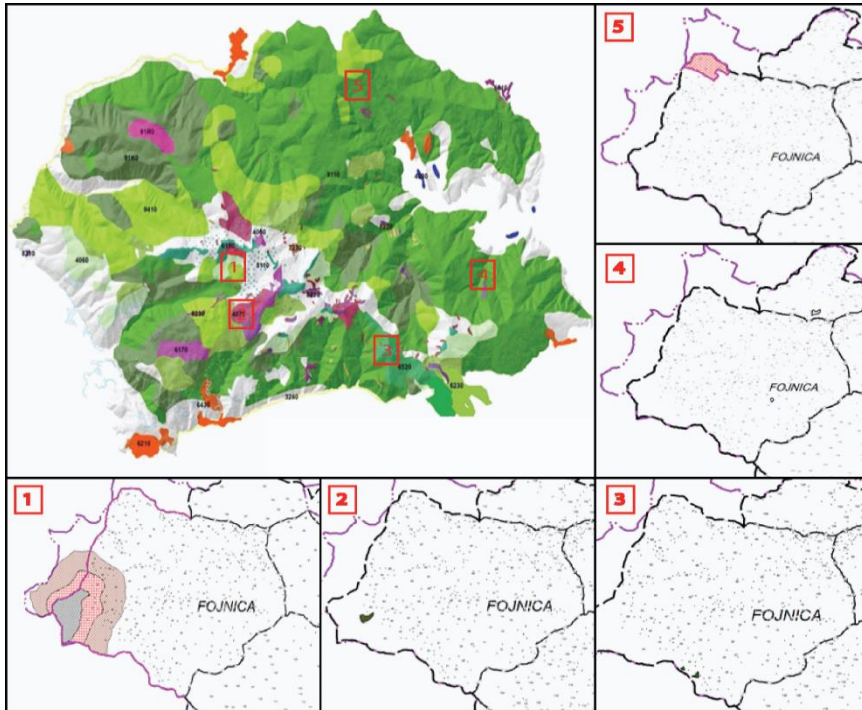
responsible for managing of protected areas. The results can be used by all actors directly or indirectly involved in the process of identification and management of HCVMs and NATURA 2000 sites, as well as scientific experts, the local communities and other non-governmental organizations. Harmonisation of guiding principles and cross-sectoral cooperation during the identification and management of HCVMs and NATURA 2000 forest habitats enable the proper implementation of conservation and management measures through sustainable forest management activities implemented by users and forest owners. In that manner, results presented in this paper can be useful for the wider public, as well as anyone interested in the process of identification and management of HCVMs within NATURA 2000 forest habitats.

RESEARCH AREA AND RESEARCH METHODS - *Područje i metode istraživanja*

Mountain Vranica is an important area for biodiversity conservation and thus it is one of the 122 sites proposed for the project NATURA 2000 in BiH (OFFICIAL WEB SITE OF THE FEDERAL MINISTRY OF ENVIRONMENT AND TOURISM(b) – Figure 1). The area incorporates many habitats and species considered endangered under the Berne Convention, as well as EU Birds and Habitats Directives. Moreover, due to extremely attractive natural and landscape values, in the recent decades, some areas (e.g. Prokoško lake) have been under extreme anthropogenic pressure, especially from the aspect of construction and continuous expansion of Prokos village. Around 87,2% of the Vranica Mountain is covered with forests (OFFICIAL WEB SITE OF THE FEDERAL MINISTRY OF ENVIRONMENT AND TOURISM(b)) and forestry plays an important role in maintenance and management. Considering that the most valuable and preserved forest ecosystems are consisting of mountain beech and its associations with spruce and fir in the northern part of the Vranica mountain, this area is of great importance not just from the economic, but also from the ecological and sociological point of view.

This research is based on case study research design that, according to YIN (2009), is common for contribution to the knowledge of individual, group, organizational, social, political and related phenomena. Therefore, the desk and field research methods have been used for data collection and analysis. The qualitative content analysis, as a technique for gathering and analysing the content of the text (NEUMAN, 2006), was used for determination of compliance (mutual harmonisation) between NATURA 2000 and HCVM principles. For that purpose, criteria for selection and designation of NATURA 2000 sites, as well as the criteria for selection of HCVMs in Vranica Mountain have been reviewed and compared. Besides, the qualitative filed research was conducted with the key stakeholders regarding the selection and designation of NATURA 2000 and HCVMs and the attitudes toward cross-sectoral cooperation in the nature conservation. During the field research, the trough in-depth face-to-face interviewing, qualitative data were collected containing the key stakeholders' attitudes regarding the harmonization of NATURA 2000 habitats with the

HCVFs, as well as the involvement of stakeholders in the processes of cross-sectoral cooperation when it comes to the identification of these sites.



1. Nature monument "Prokoško jezero"; 2. Habitat of mugo pine (*Pinus mugo*); 3. Habitat of green alder and yew tree (*Alnus viridis* and *Taxus baccata*); 4. Seed stand of beach and fir trees; 5. Habitat of western capercaillie (*Tetrao urogallus* L.)

Figure 1: The spatial distribution of NATURA 2000 and HCVFs in Vranica
Slika 1: Prostorni položaj NATURA 2000 staništa i HCVF šuma na Vranici

The initial selection of respondents was based on data gathered through the desk analysis, while during the interviewing process snowball sampling technique (NEUMAN, 2006) was used to identify missing representatives of key stakeholders. The initial interview was conducted with a representative of the Ministry of Foreign Trade and Economic Relations of BiH who was the coordinator of the project "Support to implementation of the Birds and Habitats Directives in BiH" (2012-2015). The next interview was conducted with the representative of ŠPD "Srednjobosanske šume" d.o.o. Donji Vakuf, that was responsible for the designation of certain areas of Vranica Mountain as HCVFs. The procedure of stakeholder nomination was followed when interviewing each new respondent, which resulted in the sample consisted of 9 respondents (Table 1).

Table 1: List of interviewed stakeholders and their abbreviations
Tabela 1: Lista intervjuisanih interesnih grupa i njihove skraćenice

Name of institution	Abbreviation
National level	
Ministry of Foreign Trade and Economic Relations of BiH	MVTiEO BIH
Entity level	
Ministry of Environment and Tourism Federation of BiH	FMOiT
Ministry of Agriculture, Water Management and Forestry of FBiH	FMPViŠ
Cantonal level	
Šumsko privredno društvo "Srednjobosanske šume"	ŠPD SBK
Ministry of Agriculture, Water Management and Forestry of the SBK	MPViŠ SBK
Ministry of Spatial Planning, Construction, Environment of the SBK	MPUGZOPiSP SBK
Cantonal forest office of the SBK	KUŠ SBK
Local level	
Municipality Fojnica	OF
Šumarija "Fojnica"	ŠF

To conduct qualitative research (i.e. collecting primary data) the guideline for structured in-depth interviews was created. It contained 13 questions divided into 3 groups: questions related to issues of harmonization between NATURA 2000 and HCVF principles, identification and management of HCVFs and NATURA 2000 forest habitats in Vranica Mountain, and attitudes related to the cross-sectoral cooperation in identification and management of these habitats. Qualitative research was conducted in the period July-December of 2018. Selected respondents expressed their positive, negative or neutral attitudes for most of the questions, therefore the results are presented in the form of opponent-advocate matrices.

RESULTS AND DISCUSSION - *Rezultati i diskusija*

Comparative analysis of NATURA 2000 and HCVF criteria for site designation - *Komparacija kriterija za identifikaciju NATURA 2000 i HCVF staništa*

NATURA 2000 network is aiming to ensure the long-term survival of Europe's most valuable and threatened species and habitats, listed under both EU Birds and Habitats Directives (OFFICIAL WEB SITE OF THE EUROPEAN COMMISSION (a)). Essentially, the network alleviates the negative consequences of habitat fragmentation, enable migration of the species, establish the functional link between protected natural resources and thus ensure the satisfactory status of species and habitats. NATURA 2000 sites are identified according to scientific criteria prescribed in the Directives to ensure that natural habitat types (listed in the directives' annexes) are maintained or, where appropriate, restored to a favourable conservation status in their natural range (OFFICIAL WEB SITE OF THE EUROPEAN COMMISSION (b)). Under the legal framework of Federation of BiH (FBiH), the government adopted REGULATION ON NATURA 2000 PROGRAM - PROTECTED AREAS IN EUROPE (2011) that prescribes

criteria for selecting sites that are in accordance to the NATURA 2000 EU Directives. According to the article 4 of the Regulation, these criteria apply to types of habitats, habitats of plant species and habitats of birds and other animal species in the FBiH listed as habitats and species whose conservation is of EU interest. Comparative analysis of criteria for designation of NATURA 2000 and HCVF sites are presented in Table 2.

Although BiH has no obligation to implement provisions prescribed with EU Habitat and Birds Directives, in recent period potential NATURA 2000 site were proposed (OFFICIAL WEB SITE OF THE FEDERAL MINISTRY OF ENVIRONMENT AND TOURISM(a)). Vranica Mountain area is one of 122 proposed NATURA 2000 sites in BiH. Approximately 25.158 ha of Vranica Mountain is designated to the NATURA 2000 (5% of the total area identified in BiH), comprising 22 habitat types from the Annex II of Habitats Directive (OFFICIAL WEB SITE OF THE FEDERAL MINISTRY OF ENVIRONMENT AND TOURISM(b)). Covering the same area, during the certification process public company ŠPD "Srednjobosanske šume" d.o.o. Donji Vakuf identified and designated 1.284,52 ha of HCVFs (ŠPD/ŠGD "SREDNJOBOSANSKE ŠUME"/"ŠUME SREDIŠNJE BOSNE" D.O.O. DONJI VAKUF, 2016). The HCVF concept is a part of voluntary forest certification systems, which requires from forest managers to identify any HCVs that occur within their forest management units, to manage them to maintain or enhance the values identified, and to monitor the success of this management through applying the precautionary approach (OFFICIAL WEB SITE OF THE FSC(b)). Considering that natural habitats possess inherent conservation values, including the presence of rare or endemic species, provision of ecosystem services, sacred sites, or resources harvested by residents, HCVs are defined by six categories (BROWN et al. 2013), while in BiH few subcategories emerges also (et al. 2008, AVDIBEGOVIĆ et al. 2017a).

Even though the NATURA 2000 and HCVFs concepts origin from different sectoral policies their overall objectives are similar. Both concepts seek to maintain, enhance, and promote the importance of identified attributes, advocating to ensure that activities in designated areas do not have a negative impact on biodiversity and the integral ecosystem, including forests as well. This means that these concepts are abutting, and moreover, since the approaches to conservation and sustainable use of areas largely rely on people working with nature rather than against it. Given that the aim of NATURA 2000 is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, this concept is compact to categories of HCV 1 (Species diversity) and HCV 3 (Ecosystems and habitats), which are presented in Table 2.

Table 2: Comparative analysis of criteria for designation of NATURA 2000 and HCVF sites
 Tabela 2: Komparacija kriterija za identifikaciju NATURA 2000 i HCVF staništa

NATURA 2000	HCV
Site assessment criteria for a given natural habitat type in Annex I	Site assessment indicators for HCV 1: Species Diversity Concentrations of biological diversity including endemic species, and rare, threatened or endangered species that are significant at global, regional or national levels.
<ul style="list-style-type: none"> – Degree of representativeness of the natural habitat type on the site – Area of the site covered by the natural habitat type concerning the total area covered by that natural habitat type within the national territory – Degree of conservation of the structure and functions of the natural habitat type concerned and restoration possibilities – Global assessment of the value of the site for conservation of the natural habitat type concerned 	<ul style="list-style-type: none"> – The presence of a recognized biodiversity priority area (e.g. IUCN recognised Protected Area, Ramsar Site, UNESCO World Heritage Site etc.) – A designation by national authorities, or by reputable conservation organizations, recognizing concentrations of biodiversity – The presence of natural habitat in good condition within such designations is a strong indicator of the presence of HCV 1
Site assessment criteria for a given species in Annex II	Site assessment indicators for HCV 3: Ecosystems and habitats Rare, threatened, or endangered ecosystems, habitats or refugia
<ul style="list-style-type: none"> – Size and density of the population of the species present on the site concerning the populations present within the national territory – Degree of conservation of the features of the habitat which are important for the species concerned and restoration possibilities – Degree of isolation of the population present on the site concerning the natural range of the species – Global assessment of the value of the site for conservation of the species concerned 	<ul style="list-style-type: none"> – In regions where many natural ecosystems or habitats have been eliminated, and others have been heavily impacted by development, remaining natural ecosystems of reasonable quality are likely to be HCV 3 – Where ecosystem proxies indicate the presence of RTE ecosystems, even if these are inaccessible or have not been confirmed on the ground.

Source: Regulation on NATURA 2000-protected areas in Europe, 2011; Brown et al. 2013; Avdibegović et al.2017

According to BROWN et al. (2013), HCV1 encompass significant concentrations of biodiversity that are recognized as unique or outstanding compared to other areas or recognized based on priority frameworks, through field assessments and consultations. In that regard following could be qualified as HCV1:

- a high overall species richness, diversity or uniqueness within a defined area when compared with other sites within the same biogeographic area;
- populations of multiple endemic or RTE (i.e. rare, threatened or endangered) species;

- important populations or a great abundance of individual endemic or RTE species, representing a substantial proportion of the regional, national or global population needed to maintain viable populations, either year-round (e.g. key habitat for a specific species) or seasonally, including migratory corridors, sites for breeding, roosting or hibernation, or refuges from disturbance;
- small populations of individual endemic or RTE species, in cases where the national, regional or global survival of that species is critically dependent on the area in question;
- sites with significant RTE species richness, or populations (including temporary concentrations) of priority species approaching those of key protected areas or other priority sites within the same biogeographic boundary;
- particularly important genetic variants, subspecies or varieties.

For the purposes of assessment, HCV1 BROWN et al. (2013) defined term 'rare', which includes naturally rare species, existing only at very low densities in undisturbed habitat, or rare because of human activities, and at the limit of their natural distribution. Threatened and endangered species include species classified by IUCN as vulnerable, endangered and critically endangered at a global or regional level, or whose trade is regulated under international agreements (e.g. CITES), as well as protected species by the national legal framework. Endemic species are those found within a restricted geographical region, which may range from a unique site or a geographical feature to a political boundary such as a province or country (BROWN et al. 2013). On the other hand, as mentioned before EU Habitats Directive defines criteria for site assessment of species listed in Annex II, which are size and density of the population of the species present on the site concerning the populations present within the national territory, degree of conservation of the features of the habitat which are important for the species concerned and restoration possibilities, degree of isolation of the population present on the site concerning the natural range of the species, global assessment of the value of the site for conservation of the species concerned (COUNCIL DIRECTIVE 92/43/EEC).

Along with HCV1, category of HCV3 is also interest in terms of harmonization with the concept NATURA 2000. According to BROWN et al. (2013), HCV 3 includes ecosystems, habitats or refugia of special importance because of their rarity or the level of threat that they face, or their rare or unique species composition or other characteristics. To define rare ecosystems, one must consider the presence of similar ecosystems in the same biogeographic region and/or country. The size, age, structure and species composition of an ecosystem may also be important criteria. Thus, the following would qualify as HCV3:

- ecosystems that are naturally rare because they depend on highly localised soil types, locations, hydrology or other climatic or physical features, such as some types of limestone karst forests, inselbergs, mountain forest, or riverine forests in arid zones;
- anthropogenically rare, because the extent of the ecosystem has been greatly reduced by human activities compared to their historic extent;

- threatened or endangered (e.g. rapidly declining) due to current or proposed operations;
- classified as threatened in national or international systems.

Within concept NATURA 2000, EU Habitats Directive defines criteria for site assessment of natural habitat type listed in Annex I. For identifying these sites degree of representativeness of the natural habitat type on the site, area of the site covered by the natural habitat type concerning the total area covered by that natural habitat type within the national territory, degree of conservation of the structure and functions of the natural habitat type concerned and restoration possibilities, and global assessment of the value of the site for conservation of the natural habitat type concerned are taking into account (COUNCIL DIRECTIVE 92/43/EEC).

Key stakeholders' attitudes on compliance of NATURA 2000 and HCVMs sites in the Vranica Mountain – *Stavovi ključnih aktera u vezi usklađenosti NATURA 2000 HCVM staništa na planini Vranici*

Along with the qualitative content analysis of the relevant documents the data about attitudes of key stakeholders regarding the compliance of NATURA 2000 and HCVMs sites in the Vranica Mountain was conducted. Special attention was dedicated to the participation process and the cross-sectoral cooperation when it comes to the identification of these sites. In that sense, all stakeholders recognized that harmonization of HCVM and NATURA 2000 sites can contribute to maintaining or improving the identified attributes. Furthermore, the harmonization level between the NATURA 2000 and HCVM principles, in terms of identification processes, attributes, management measures and managerial jurisdiction, was conducted (Table 3).

The majority of respondents have similar attitudes, except for the Cantonal Forestry Administration, which gave the lowest grade to all assessed categories. Other respondents gave intermediate grades (3-4), stating that identification processes are quite harmonized, given that both processes are based on scientific criteria. On the other hand, representative of the Cantonal Forestry Administration explained the response, indicating that these processes should be harmonized due to similar outcomes. This means that certain natural values should be recognized, and cooperation between nature conservation and other stakeholders is essential. Similar grades are given for the harmonization of identified attributes with the additional explanation that these processes are not fully aligned, since HCVM encompasses a wider range of natural and cultural attributes that are considered valuable, while NATURA 2000 focuses only on the protection of habitats and endangered species of flora and fauna, with particular reference to the birds' protection. The majority of respondents rated management measures with the highest grade, explaining that for the protection of identified attributes, management activities that have a scientific background or best practice experience could be applied. On the other hand, representative of the Cantonal Forestry Administration has the opposite opinion, indicating that NATURA 2000 has management measures that are under the Law

on Nature Protection. However, the forestry sector was modestly involved in most of the nature conservation activities implemented in BiH.

Table 3: Assessment of harmonization between NATURA 2000 and HCVF principles concerning identification processes, attributes, management measures and management rights
Tabela 3: Ocjena usaglašenosti principa NATURA 2000 i HCVF kada su u pitanju procesi identifikacije, atributi, mjere gospodarenja i upravljачka nadležnost

Stakeholders	Harmonization NATURA 2000 and HCVF principles (1 - not harmonized ... 5 – fully harmonized)			
	Identification processes	Attributes	Management measures	Management rights
MVTiEO BIH	-	-	-	-
FMOiT	4	4	5	-
FMPViŠ	4	4	5	4
MPUGZOPiSP SBK	3	3	-	5
MPViŠ SBK	3	4	4	2
KUŠ SBK	2	2	1	3
ŠPD SBK	4	4	4	3
OF	-	-	-	-
ŠF	3	3	4	3

Attitudes of the respondents differed when it comes to the assessment of compliance in terms of management rights. Some of them considered that management rights should be harmonised due to the fact the same area and activities are treated, and therefore the effectiveness could be improved if institutions manage the whole area. On the other hand, some stakeholders stressed out that NATURA 2000 fall under the responsibility of ministries related to nature protection, while HCVF is exclusively under the responsibility of the forestry sector and therefore the management measures, in most of the cases, are not harmonised. It is quite obvious that for the effective nature conservation cross-sectoral cooperation is needed. According to the EU Habitat Directive, there are three possible types of conservation measures for NATURA 2000 sites (OFFICIAL WEB SITE OF THE FEDERAL MINISTRY OF ENVIRONMENT AND TOURISM(b)):

- legal: protected areas established by a legal act;
- administrative: measures resulting from other regulations, e.g. solutions under the Law on Forests;
- contractual: the legal entity responsible for managing NATURA 2000 sites draws up an appropriate contract with the owner regarding specific measures in the area.

Having in mind that more than one type of measures is foreseen by NATURA 2000, it is certain that HCVF concept can be incorporated into the NATURA 2000 sites where they spatially overlap and where the valuable attributes are the same. The management activities must meet ecological requirements of target species and habitat, as well as be in accordance to the national legal framework.

The assessment of cross-sectoral cooperation in identification and management of NATURA 2000 habitats and HCVF on Vranica Mountain – *Ocjena međusektorskog pristupa prilikom identifikacije i upravljanja NATURA 2000 staništima i HCVF šumama na području planine Vranice*

The cross-sectoral cooperation, as a principle for effective nature conservation, is supported by all respondents. Respondents explained that, during the identification of sites on Vranica Mountain, there were continuous dialogue, meetings and workshops, while anyone interested could get enough information and be involved in these processes. Moreover, these processes were also present in media, whether through official sites, social networks, radio/TV stations and other types of promotional means. In that way, information was available to other groups that were not involved in these processes directly and they had the opportunity to learn about it. However, those respondents that were not directly involved in the identification of both NATURA 2000 and HCVFs stressed out that cross-sectoral cooperation should be improved. These attitudes were explained by the lack of timely provided information, while decision-making without the involvement of all stakeholders resulted with lack of cooperation during the identification process (Table 4).

Table 4: Presence of the cross-sectoral cooperation in the process of identification/designation NATURA 2000/HCVFs in the Vranica Mountain

Tabela 4: Prisustvo međusektorske saradnje u procesu identifikacije/izdvajanja NATURA 2000/HCVF na području planine Vranice

Admin. level	NATURA 2000			HCVF		
	Yes	Neutral	No	Yes	Neutral	No
National	MVTiEO BIH			MVTiE O BIH		
Entity	FMOiT			FMOiT		
	FMPViŠ			FMPVi Š		
Cantonal	MPUGZOPI SP SBK			MPUGZOPI SP SBK		
	MPViŠ SBK			MPViŠ SBK		
	KUŠ SBK			KUŠ SBK		
	ŠPD SBK			ŠPD SBK		
Local	OF			OF		
	ŠF			ŠF		

Furthermore, these respondents pointed out that the involvement of all stakeholders would contribute to the wider (cross-sectoral) perspective related to nature conservation issues. There is a common understanding that cross-sectoral cooperation is required during the implementation of all measures and activities related to NATURA 2000 and HCVFs sites.

Stakeholders suggested the following key measures for improvement of the management process related to NATURA 2000 habitats and HCVPs in the Vranica Mountain:

- to establish a management structure based on transparency, and to assign management role to one of the existing institutions;
- to involve all stakeholders and interest groups in these processes through the establishment of continuous dialogue, besides the formal meetings and presentations;
- to ensure funding for conservation of identified attributes, conduct field research and detailed inventory, to determine their status.
- to organize continuous monitoring;
- to develop more comprehensive and realistic management plans, and to implement specific management measures;
- to increase inspection control and the technical and human capacities for control of the most visited tourist areas;
- to include these areas in the legislative framework, management programs and spatial planning documents, as well as to develop strategic studies at the level of FBiH, and improve management planning for overall protection of the Vranica Mountain;
- to initiate cross-sectoral policy harmonisation and cooperation.

Key stakeholders recognised and outlined the most important aspects for effective nature conservation and stressed out that cross-sectoral cooperation, transparency and participation have to be respected during identification and management processes. Furthermore, enhancement of continuous monitoring, as well as the integration of existing plans and studies into spatial documentation depends on political and financial support.

CONCLUSIONS – *Zaključci*

Natural values recognized and protected by ecological network NATURA 2000 or concept HCVPs are often perceived as protected areas in line with the national legal framework. There is increasing demand toward organizations dealing with the management of all types of protected areas, in terms of sustainable management, contribution to livelihood and rural development, as well as protection of natural ecosystems. This can be achieved by synergies between traditional nature conservation and forest policy actors and other interest groups.

Designation of HCVPs within NATURA 2000 forest habitats has many advantages and enables the institutional and legal protection since a significant share of these areas are managed by public forest management companies. The results of this research indicate that during identification and management of NATURA 2000 and HCVPs multidisciplinary and cross-sectoral approach should be promoted, alongside

with mutual harmonisation all activities. This is a precondition for cooperation of nature protection sector and forestry directed toward the protection of natural values in general. Even though Natura 2000 and HCVF concepts have the same outcomes, still there is no common framework on harmonisation between HCVPs and NATURA 2000 concepts. Collaboration between the nature protection and forestry sectors is relatively poor and uncoordinated.

Having in mind criteria for identification of Natura 2000 sites and HCVPs, it can be concluded that these concepts are compatible in terms of their use in the same area. This means that the combination of these concepts can contribute to the effective protection of natural values. It is important to emphasize that the HCVPs concept has wider application, in terms of defining high conservation values and geographical area, compared to NATURA 2000. Categories HCVP 1 (Species diversity) and HCVP 3 (Ecosystems and habitats) are in line with NATURA 2000 criteria defined by Annex III EU Habitat Directive.

All stakeholders support cross-sectoral cooperation as one of the key principles in the harmonisation of NATURA 2000 habitats and HCVPs in the Vranica Mountain. In this regard, strengthening the cross-sectoral cooperation and continuous dialogue is supported by all stakeholders. One can conclude that continuous information flow, as well as development and implementation of the communication strategy, is required for future effective cooperation. Furthermore, this should be supported by an adequate legal framework that enhances cross-sectoral cooperation and harmonisation of the legal framework related to nature protection and forestry. Due to lack of research activities related to identification and management HCVPs within the NATURA 2000 habitats, it is recommended to create a consistent set of educational programs and training for all key stakeholders and interest groups.

The results presented in this paper may provide a useful basis for defining a consistent set of guiding principles for areas where HCVPs are overlapping with other forms of protected areas. Further analysis of these issues should be focused on understanding the institutional, policy, financial, legal and technical preconditions for institutionalisation and operationalisation of HCVP concept as a voluntary forest policy instrument for nature protection. For further research, this paper can provide guidelines for analysis of criteria for site designation, assessment of cross-sectoral cooperation and compliance in identification and management of HCVPs within NATURA 2000 habitats.

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SAŽETAK

Zaštita prirode i održivo gospodarenje šumskim resursima postaju sve važniji u Bosni i Hercegovini, podstaknuti procesom pridruživanja Evropskoj Uniji i drugim međunarodnim procesima koji su usmjereni prema odgovornom gospodarenju šumskim resursima. Certificiranje šuma je u velikoj mjeri prihvaćeno u sektoru šumarstva. Ovaj proces podrazumijeva dostizanje standarda održivog gospodarenja šumskim resursima koji uključuju identifikaciju i odgovarajuće gospodarenje šumama visoke zaštitne vrijednosti. Ekološka mreža NATURA 2000 postaje važan pokretač procesa reformi u sektorima zaštite prirode i šumarstva, zbog toga što se proglašenje novih područja dešava na teritoriji koja je pod nadležnošću institucija iz sektora šumarstva. Ovim radom se prikazuje naučno razumijevanje procesa identifikacije i gospodarenja šumama visoke zaštitne vrijednosti koje su uspostavljene na potencijalnim NATURA 2000 staništima. Rad je zasnovan na analizi principa za izdvajanje područja i razumijevanju uloge međusektorskog pristupa u procesu identifikacije i gospodarenja područjima sa atributima visoke zaštitne vrijednosti. Rad je koncipiran kao studij slučaja, a odabrana je planina Vranica zbog aktivnosti koje su implementirane na ovom području. Metodom intervjuisanja su prikupljeni kvalitativni podaci o stavovima ključnih aktera u vezi sa usaglašavanjem NATURA 2000 staništa i HCVF šuma i njihovoj uključenosti u proces međusektorske saradnje. Rezultati ovog rada mogu biti od koristi ključnim donosiocima odluka u sektoru šumarstva i zaštite prirode, onima čija je odgovornost upravljanje zaštićenim područjima, kao i drugima akterima koji su direktno ili indirektno uključeni u proces identifikacije i gospodarenja NATURA 2000 staništima i HCVF šumama. Usklađivanje osnovnih principa i međusektorska saradnja tokom identifikacije i gospodarenja HCVF šumama i NATURA 2000 staništima omogućava odgovarajuću implementaciju zaštitnih i gospodarskih mjera zasnovanih na aktivnostima održivog gospodarenja šumskim resursima.

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