

Supporting a Sustainable Future for People and Nature in the Osogovo Mountain

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Fig. 1 Transboundary monitoring network meeting in Osogovo Mountain (© BBF)

Final report

**EuroNatur Foundation, Bulgarian Biodiversity Foundation (BBF)
and Macedonian Ecological Society (MES)**

Content

List of figures	3
Abbreviation	3
1. Summary.....	4
2. Summary in German.....	5
3. Introduction and objectives of the project	6
4. Working steps and methods	8
4.1 Support sustainable forest management in Osogovo.....	8
4.2 Improve knowledge about large carnivores in Osogovo.....	9
4.3 Analyse and demonstrate potential of Osogovo for nature-based tourism.....	9
5. Results and challenges	10
5.1 Support sustainable forest management in Osogovo.....	10
5.2 Improve knowledge about large carnivores in Osogovo.....	12
5.3 Analyse and demonstrate potential of Osogovo for nature-based tourism.....	15
6. Public relation.....	17
7. Conclusions.....	18
7.1 Support sustainable forest management in Osogovo.....	18
7.2 Improve knowledge about large carnivores in Osogovo.....	19
7.3 Analyse and demonstrate potential of Osogovo for nature-based tourism.....	20
7.4 General	21
8. Annex.....	22

List of figures

Fig. 1 Transboundary monitoring network meeting in Osogovo Mountain (© BBF).....	1
Fig. 2 Area of Osogovo Mountain (© MES).....	6
Fig. 3: Number of independent registrations by species through the camera trapping in the Bulgarian part of Osogovo. The focal large carnivore species are presented in bold and their prey are underlined.....	12
Fig. 4: Number of independent registrations by species through the camera trapping in the Macedonian part of Osogovo. The focal large carnivore species are presented in bold and their prey are underlined	13

Abbreviation

BBF	Bulgarian Biodiversity Foundation
FU	Forestry Unit
HA	Hunting association
HNVF	High Nature Value Forests
HU	Hunting Unit
LC	Large carnivores
MES	Macedonian Ecological Society
MN	Monitoring Network
NGO	Non-Governmental Organization
PE	Public Enterprise
SWSE	South West State Forest Enterprise (Bulgaria)

1. Summary

Osogovo Mountain is located at the border between Macedonia and Bulgaria. It is part of the Balkan Green Belt and thus part of the European Green Belt Initiative - a pan-European effort for joint cross-border activities in nature conservation and sustainable development along the former Iron Curtain. Around 60 % of the total area of Osogovo is covered by forest. The outstanding importance of the biodiversity of the mountain is represented by several endemic, relict and rare plant species. Additionally, the area was declared as Important Bird Area (IBA) and the Bulgarian part of Osogovo is included in the European Natura 2000 network. The region is not only of high natural value but also an example of a long-lasting human presence in the region and its positive interaction with nature. However, human pressure on the natural resources is constantly increasing and has its effects on the status of biodiversity values in the region.

The long-term goal and vision of the project “Supporting a Sustainable Future for People and Nature in the Osogovo Mountain” is the conservation of the outstanding biological diversity in joint efforts with the local population and through the implementation of environmental friendly use of natural resources and biodiversity.

The main objectives of the project are:

1. To support sustainable forest management practices in Osogovo
2. To improve knowledge about large carnivores in Osogovo as a foundation for decision-making processes
3. To analyse and demonstrate the potential of Osogovo for nature-based tourism

Overall, the project objectives were achieved. Only minor adjustments were necessary during the implementation. Through capacity building activities as well as the support of the HNVF assessment and identification of management measures the sustainable forest practices in the region could be enhanced. The HNVF approach was useful to sensitise and train representatives of the forest units for sustainable forest management and nature protection as well as to start cooperation. A LC monitoring scheme was developed and implemented jointly with the local population. Thereby further data about large carnivores in Osogovo was collected and shared with the public and decision makers to increase the awareness of about LC and nature protection. Also it improved the support of local stakeholder for the integration of LC aspects in the management and protection of the area. In addition, a conducted analysis confirmed that Osogovo is a suitable site for nature-based tourism and different mountain bike tours were developed as best practice example. The analyses of the potential for nature-based tourism and the development of examples clearly show the representatives of municipalities and tourism provider the potential and possibilities for sustainable development in this field.

2. Summary in German

Der Osogovo Gebirge liegt an der Grenze zwischen Mazedonien und Bulgarien, am Grünen Band Balkan und ist somit Teil der Europäischen Grünen Band Initiative - einer paneuropäischen Initiative für gemeinsame grenzüberschreitende Aktivitäten zum Naturschutz und zur nachhaltigen Entwicklung entlang des ehemaligen Eisernen Vorhangs. Rund 60 % der Gesamtfläche von Osogovo ist mit Wald bedeckt. Die besondere Bedeutung des Osogovo Gebirges zeigt sich in einer Vielzahl an endemischen und seltenen sowie an Reliktarten. Das Gebiet wurde als Important Bird Area (IBA) ausgewiesen und der bulgarische Teil von Osogovo in das europäische Natura 2000-Netzwerk aufgenommen. Die Region hat nicht nur einen hohen Naturwert, sondern auch ein Beispiel für eine lange Anwesenheit des Menschen in der Region und die damit verbundenen positiven Wechselwirkungen mit der Natur. Der Druck auf die natürlichen Ressourcen nimmt jedoch ständig zu, was negative Auswirkungen auf Biodiversität in der Region hat.

Langfristiges Ziel und Vision des Projekts "Supporting a Sustainable Future for People and Nature in the Osogovo Mountain" ist die Erhaltung der herausragenden biologischen Vielfalt in Zusammenarbeit mit der lokalen Bevölkerung und durch die Umsetzung umweltfreundlicher Nutzung der natürlichen Ressourcen und der biologischen Vielfalt.

Folgende Aspekte werden im Rahmen des Projektes bearbeitet:

1. Unterstützung einer nachhaltiger Forstwirtschaft im Osogovo Gebirge
2. Erweiterung der Kenntnisse über Große Beutegreifer im Osogovo Gebirge zur Verbesserung der Entscheidungsgrundlagen
3. Analyse und Aufzeigen des Potentials des Osogovo Gebirges für naturnahen Tourismus

Insgesamt wurden die Projektziele im Rahmen der Projektumsetzung erreicht. Bei der Umsetzung waren nur geringfügige Anpassungen erforderlich. Durch Capacity Building sowie die Unterstützung der HNPF-Bewertung und die Identifizierung von Bewirtschaftungsmaßnahmen konnten die nachhaltigen Waldpraktiken in der Region verbessert werden. Der HNPF-Ansatz war hilfreich, um Vertreter der Forstverwaltung für eine nachhaltige Waldwirtschaft und den Naturschutz zu sensibilisieren und schulen sowie eine Zusammenarbeit einzuleiten. Gemeinsam mit der lokalen Bevölkerung wurde ein LC-Monitoringprogramm entwickelt und umgesetzt. Dabei wurden weitere Daten über große Beutegreifer in Osogovo gesammelt und mit der Öffentlichkeit und den Entscheidungsträgern geteilt, um das Bewusstsein für LC und den Naturschutz zu erhöhen. Außerdem wurde die Unterstützung der lokalen Interessengruppen bei der Integration von LC-Aspekten in das Management und den Schutz des Gebiets erhöht. Darüber hinaus bestätigte eine durchgeführte Analyse, dass Osogovo ein geeigneter Ort für naturnahen Tourismus ist und verschiedene Mountainbike-Touren wurden als Best Practice-Beispiel entwickelt. Die Potenzialanalysen für den naturnahen Tourismus und die Entwicklung von Beispielen zeigen den Vertretern von Kommunen und Tourismusanbietern deutlich das Potenzial und die Möglichkeiten einer nachhaltigen Entwicklung in diesem Bereich.

3. Introduction and objectives of the project

Osogovo Mountain is located at the border between Macedonia and Bulgaria (see Fig. 2). About two thirds of the total mountain area of 1,357 km² is located in Macedonia while the rest is situated in Bulgaria. Osogovo is part of the Balkan Green Belt and thus part of the European Green Belt Initiative - a pan-European effort for joint cross-border activities in nature conservation and sustainable development along the former Iron Curtain.



Fig. 2 Area of Osogovo Mountain (© MES)

Forests cover about 60 % of Osogovo Mountain. Deciduous forests are the dominant forest type. The abundant and mostly unfragmented oak and beech forests characterize the mountain. The Southern slopes of the mountain are converted into pastures, and some of the areas that were once covered with natural forest, are now planted with pine plantations. But most parts of the forest are still well preserved though with old-growth forests.

The outstanding importance of biodiversity of Osogovo is represented by several endemic, relict and rare plant species. Also, various birds of prey, vultures and large carnivores are present in the area. Osogovo Mountain was declared as Important Bird Area (IBA) and the Bulgarian part of Osogovo is included in the European Natura 2000 network. Additionally, the so-called "Osogovo rural landscape" located in the forest mountain belt in both countries, is a special characteristic of the region. It is not only of high natural value but also an example of a long-lasting human presence in the region and its positive interaction with nature. Since the fall of the Iron Curtain, however, human pressure on the natural resources is constantly increasing and has its effects on the status of biodiversity values in the region.

Bulgarian Biodiversity Foundation (BBF) and Macedonian Ecological Society (MES) are long lasting partners in Osogovo Mountain. In 2006 they joined forces for the protection of the natural and cultural resources of Osogovo as an integral part of the Balkan Green Belt and to foster the sustainable development of local communities. EuroNatur joined the activities in 2014.

The long-term goal and vision of the project “Supporting a Sustainable Future for People and Nature in the Osogovo Mountain” is the conservation of the outstanding biological diversity in joint efforts with the local population and through the implementation of environmental friendly use of natural resources and biodiversity.

The main objectives of the project were:

1. Support sustainable forest management in Osogovo

Main task of this objective was to enhance forest management practices in the region towards sustainable forestry. The process of forest certification is an important tool to improve forest management towards more sustainable practices. The concept of High Nature Value Forest (HNVF) is one of the ten Forest Stewardship Council (FSC) International Standard principles. Therefore, the concept of HNVF as a model for better management of biodiversity was the basis for activities in the present project. HNVF is already well accepted and applied in some parts of Bulgaria. In Macedonia the procedure just starting so that the aim was to transfer knowledge and know-how and to develop Osogovo as a model for Macedonia.

2. Improve knowledge about large carnivores in Osogovo as a foundation for decision-making processes

The main aim was to improve the knowledge about large carnivores (LC) in Osogovo as a basis for decision-making processes. Large carnivores are a prominent aspect of the biodiversity of Osogovo Mountain. Nevertheless, before the project there was not much information about their occurrence available and for management discussions and decisions this knowledge was missing. Monitoring of species is a crucial activity to show which species are present in a region and to provide important insights of their status. The monitoring results also expand the available information on animal species diversity in Osogovo.

3. Analyse and demonstrate the potential of Osogovo for nature-based tourism

Main task was the analysis and demonstration of the potential of Osogovo for nature-based tourism. Osogovo was already known before as an attractive place for different forms of leisure activities. But the development of an offer for nature-based tourism in the frame of the project is important to promote the sustainable use of biodiversity and natural resources.

Overall the project was successfully implemented. The project was well structured, the activities interlocked well. Where needed suitable experts were successfully engaged.

4. Working steps and methods

This chapter illustrates the conducted working steps as well as methods for each of the three project objectives.

4.1 Support sustainable forest management in Osogovo

In Bulgaria

The direct support of the assessment of HNVF in the Bulgarian part of Osogovo was not necessary, because the process of FSC (Forest Stewardship Council) certification (incl. HNVF assessment) was started by the Bulgarian Southwest State Forest Enterprise (SWSFE) parallel to the project. Therefore BBF focused on the capacity building for foresters and hunters of the region.

In Macedonia

For the assessment of HNVF for the forest units (FU) Kochani and Makedonska Kamenitza the following working steps were conducted:

- Data collection
- Field-visits
- Analysis of data
- Preparation of report and maps
- Identification of management recommendations

The assessment was performed by MES in close partnership with the respective FUs and the support of different experts from Macedonia and Bulgaria (for HNVF, forestry, botany and fauna).

In both countries, different national as well as transboundary trainings for capacity building and knowledge exchange regarding sustainable forest management, HNVF and monitoring, FSC auditing process (for Bulgaria), bark beetle control and management as well as usage of geo-information systems were conducted for key stakeholders – mainly foresters and hunters of the region. Thereby questionnaires helped to identify knowledge gaps and to specify the training needs.

4.2 Improve knowledge about large carnivores in Osogovo

In order to improve the knowledge about large carnivores (LCs) in the region, the following working steps were conducted:

- Development of a joint strategy for a monitoring network in Macedonia and Bulgaria (annex 01);
- Establishment of a monitoring network with local stakeholders from different sectors;
- Implementation of the monitoring scheme by the monitoring network and large carnivore experts;
- Analysis of the collected monitoring data and development of recommendations for the future of Osogovo (annex 02).

For the monitoring scheme, the following monitoring methods were chosen:

- Questionnaire survey – although low in quality it provides quick overview of possible target species presence, large carnivore damages and human dimension of the carnivore presence;
- Sign survey (mud and snow tracking) – low to medium quality of data, which nevertheless is less time consuming;
- Camera trapping – high quality data which requires limited amount of devoted people

In order to increase the capacity of the local population and the LC monitoring network members, several trainings were conducted prior to the start of the monitoring session.

The LC experts of both countries were in regular contact to synchronize the implementation of the monitoring, exchange experiences and knowledge as well as to discuss results.

Cross-border meetings of the monitoring network members were organised in order to exchange knowledge and present results from the monitoring on both sides of the mountain. In addition the meetings were important to improve and encourage cross-border cooperation between the network members from the two countries.

4.3 Analyse and demonstrate potential of Osogovo for nature-based tourism

The potential of Osogovo for nature-based tourism was analysed with support of external experts through desk and field work as well as meetings and workshops with local stakeholders. The assessment encompassed gathering and analysing different data sets such as statistical data, natural conditions, points of interest, infrastructure, inventory of existing trails and tourism offers as well as target groups and tourism providers. Based on the outcome of the study, best practice examples were developed.

Different public fora were organized in order to inform different stakeholders (municipalities, local business sector, local CSOs, tourism providers, etc.) and to promote the idea of nature-based tourism and later the development of best practice examples. In the beginning these meetings were also important to identify key partners and to collect additional data.

In addition, different promotional events were conducted to present the identified tourism offers of both countries.

5. Results and challenges

Overall, the project objectives were successfully achieved. Only minor adjustments were necessary during the implementation. Throughout the course of the project the conservation of the outstanding biodiversity was further advanced and secured through the support of environmental friendly management of the forest and its wildlife as well as the demonstration of nature-based tourism as development opportunity.

The main results as well as challenges for each objective of the project are presented in this chapter. Mostly, the results are allocated to a specific country. Nevertheless, some results apply for the whole region.

5.1 Support sustainable forest management in Osogovo

For Bulgaria

The process of FSC certification, incl. HNVF assessment for the FU Nevestino was started by the Bulgarian Southwest State Forest Enterprise (SWSFE) parallel to the start of the project beginning of 2016. The work is in progress for the whole South West State Forest Enterprise. First results are visible in a public information map (<https://gori.uzdp.bg/>). To avoid double funding BBF did not directly contribute to the process of this assessment of HNVF, but supported the process through capacity building trainings of foresters for all units in the region of Osogovo. In January 2017, the state hunting unit (HU) of Osogovo (territorial unit of SWSFE) was successfully granted a FSC certificate. This success was partly based on efforts from previous BBF projects in which the HNVF assessments have already been conducted. In spring 2018, the FSC certificate and the underlying HNVF assessment of the state HU of Osogovo needed to be updated according to the certification rules. On 13th of August 2018, the external audit took place, but up to now, no public information is shared. The update of the HNVF assessment was done mainly by the forestry employees themselves without hiring external services. This is a very positive sign and probably partially a result from the capacity building trainings organised by BBF within the project. In addition, BBF experts support the updating process by consulting the employees on several small arising questions.

Even though the FUs on the Bulgarian side of Osogovo decided to conduct the identification of HNVF without the involvement of BBF, the cooperation especially in the frame of capacity building was successful. In addition the Forestry Enterprise Nevestino joined the monitoring network (see below).

For Macedonia

The final version of the document of the national guidelines for HNPF in Macedonia (prepared by CNVP¹ in cooperation with the Ministry of Agriculture, Forestry and Water Economy and other involved parties, including MES) are now accepted by the Programme for the Endorsement of Forest Certification (PEFC).

The assessment of HNPF for the forest unit (FU) Kochani was completed. The assessment of HNPF for FU Makedonska Kamenitza is still in preparation process, because additional time-consuming field work to collect data was necessary. Throughout the project, two assessments of HNPF in Macedonia were successfully conducted, which can be used as example for other regions. In addition, the experiences and results will contribute to the ongoing forest certification process in Macedonia. The implementation of the project component was successful and the HNPF assessment will support the sustainable use of the forest and is an important step for forest certification.

For both countries

In both countries, the capacity and knowledge about sustainable forestry as well as the assessment and monitoring of HNPF by representatives of the forest sector were increased through various trainings and knowledge exchange. This will enable the respective forest units to update the HNPF report independently, to implement the identified measures and to continue the process of forest certification.

Management recommendations regarding ongoing problems with the bark beetle in the region were also provided in the frame of the project (annex 03) by an expert from the Austrian Federal Research and Training Center for Forests, Natural Hazards and Landscape within the frame of a seminar. In addition, the already existing knowledge could be increased and specified. Also it was identified that some of the problems are connected to a lack of appropriate legal regulations.

In addition, through the different joint activities the NGO partners BBF and MES managed to strengthen the cooperation with the respective forest units across borders and the mutual understanding and trust were increased.

¹ CNVP (Connecting Natural Values and People) is a development partner in the Balkan region. It works with public, private, donor and CSO/NGO stakeholders using evidence-based analysis to improve the sustainable livelihoods of rural communities and civil society affected by the ongoing process of environmental and climate change (<http://cnvp-eu.org/eng/index.php>)

5.2 Improve knowledge about large carnivores in Osogovo

For Bulgaria

For the LC monitoring network, an effective cooperation was established with the border police, because of interests' overlap. The camera traps were set in areas with both intensive animal and human movement, thus possible illegal crossings of immigrants could be monitored as by-product. This was a good starting point for cooperation which further expanded into a genuine interest from the border police staff in animals' movement and behavior. The remaining area was covered by the LC expert. In April 2017 representatives of the forestry enterprise (FE) Nevestino joined the network. Until now the monitoring network in Osogovo on the Bulgaria site consists in total of 5 reliable people from the border police and the FE Nevestino. Unfortunately, despite meetings, trainings and efforts there is still little interest for direct involvement in the monitoring from the hunters and staff from the State Hunting Enterprise (SHE) Osogovo.

For the LC monitoring, 23 camera traps were set up in the field in 29 different locations between 27.09.2016 and 12.01.2018, which accumulated 7,160 camera trap days. Fig. 3 presents the large carnivores as well as other medium and large mammals registered in the Bulgarian part of Osogovo during this period.

Species	Number of independent registrations
<u>Roe deer (<i>Capreolus capreolus</i>)</u>	<u>520</u>
<u>Wild boar (<i>Sus scrofa</i>)</u>	<u>444</u>
European badger (<i>Meles meles</i>)	235
Red fox (<i>Vulpes vulpes</i>)	162
<u>European hare (<i>Lepus europeus</i>)</u>	<u>71</u>
Marten - unidentified (<i>Martes spp.</i>)	59
Wildcat (<i>Felis silvestris</i>)	48
Grey wolf (<i>Canis lupus</i>)	46
Stone marten (<i>Martes foina</i>)	32
Edible dormouse (<i>Glis glis</i>)	25
Red squirrel (<i>Sciurus vulgaris</i>)	11
Pine marten (<i>Martes martes</i>)	1
Brown bear (<i>Ursus arctos</i>)	1
Total	1655

Fig. 3: Number of independent registrations by species through the camera trapping in the Bulgarian part of Osogovo. The focal large carnivore species are presented in bold and their prey are underlined

For Macedonia

The LC monitoring network was established with local representatives of the hunting societies (3 persons), forest units (4 persons) and border police (1 person) in the beginning of the project.

During the summer-autumn period in 2017 the LC monitoring activities stopped mainly because the Macedonian Ministry of Agriculture Forestry and Water Economy (MAFWE) took an incalculable step and sent a ban letter to all involved partners to stop the cooperation in the monitoring activities led by MES in the region. Therefore, MES organized different meetings with representatives of the Public Enterprise Macedonian forest in order to secure continued monitoring. After the elections in Macedonia and establishment of a new Government, the new management team from the MAFWE and PE Macedonian forest has shown the willingness for strengthened cooperation with MES. Joint activities and actions were discussed and the demand of the future cooperation was emphasized. Nevertheless MES continued with the monitoring activities in the late autumn/early winter period 2017 by setting cameras only in the border areas in cooperation with the respective hunting societies.

For the LC monitoring, 27 camera traps were set up in the field in 35 different locations between 15.03.2016 and 12.01.2018 and 3,849 camera trap days were accumulated. Fig. 4 presents the large carnivores as well as other medium and large mammals registered in Macedonia during this period. Thereby the presence of brown bear, golden jackal and edible dormouse was registered for the first time in the Macedonian part of Osogovo.

The monitoring results are already used for the preparation of the proclamation process of Osogovo Mountain (as IUCN category V - protected landscape), especially for the definition of key areas for the protection of large carnivores.

Species	Number of independent registrations
Red fox (<i>Vulpes vulpes</i>)	528
<u>Brown hare (<i>Lepus europeus</i>)</u>	<u>308</u>
<u>Wild boar (<i>Sus scrofa</i>)</u>	<u>266</u>
Wildcat (<i>Felis silvestris</i>)	232
<u>Roe deer (<i>Capreolus capreolus</i>)</u>	<u>228</u>
European badger (<i>Meles meles</i>)	179
Stone marten (<i>Martes foina</i>)	158
<u>Red deer (<i>Cervus elaphus</i>)</u>	<u>100</u>
Grey wolf (<i>Canis lupus</i>)	32
Edible dormouse (<i>Glis glis</i>)	4
Red squirrel (<i>Sciurus vulgaris</i>)	3
Golden jackal (<i>Canis aureus</i>)	2
European polecat (<i>Mustela putorius</i>)	1
Brown bear (<i>Ursus arctos</i>)	1
Total	2042

Fig. 4: Number of independent registrations by species through the camera trapping in the Macedonian part of Osogovo. The focal large carnivore species are presented in bold and their prey are underlined

For both countries

As preparation for this activity, a strategy for LC and deer species monitoring was developed (annex 01) as well as a report comprising the already existing information about LC in Osogovo Mountain (annex 02) was elaborated. In addition, the results of the monitoring were summarized and analyzed in a common document for Bulgaria and Macedonia (annex 04). The results of the analyses give a first impression of the situation of LC in Osogovo, which can be used for decision making processes. In addition, it gives an outlook of protection need for LC in the region.

Through the engagement of local people the geographical reach of the monitoring was increased and thus more data could be collected. Through trainings the capacity and respective knowledge of the monitoring network members regarding LC and its monitoring were increase. Also the awareness and appreciation of biodiversity and nature were raised.

In addition, the establishment of cooperation between the NGO partners with different local stakeholders in the frame of the monitoring increased the communication as well as the understanding and trust between the different parties. Also, through the monitoring activities the transboundary work and communication between the LC experts from Bulgaria and Macedonia improved.

5.3 Analyse and demonstrate potential of Osogovo for nature-based tourism

The project team defined nature-based tourism as following:

In its broadest sense, nature in tourism involves experiencing natural places, typically through outdoor activities that are sustainable in terms of their impact on the environment. Nature-based experiences are intimately linked to all other aspects of the visitor's total experience of a destination, such as food, culture, relaxation, health, escape, family needs, accommodation, transport, etc.

This form of tourism is based on the natural attractions of an area. Examples include bird watching, photography, stargazing, camping, hiking, hunting, fishing and visiting parks. These experiential tourists are interested in a diversity of natural and cultural resources.

The assessment of the potential for nature-based tourism (only available in the respective country language) showed that Osogovo has a high potential as nature-based tourism destination.

Osogovo offers the following features that provide a good basis for nature-based tourism development:

- Mild relief: Large areas with moderate hills and river valleys which are suitable for many different activities; but also steep slopes in the highest parts suitable for trekking
- Mild climate: Accessible for a long time period per year
- High diversity of animal and plant species : Makes the area interesting; suitable for special observation programs
- Diversity of landscapes: High number of different habitats make the area interesting
- Well-developed forest road network: Area is easy and good accessible
- Vicinity of major cities (Sofia, Blagoevgrad, Skopje): Potential target group in close distance

In addition, tourism is underdeveloped in the region and the generated income through tourists is low.

The comparison of different outdoor activities showed that trekking/hiking as well as mountain biking are the most suitable tourism offers for Osogovo. The project team chose mountain biking as a best practice example of developing an offer for nature-based tourism. Even though mountain biking is relatively new in Bulgaria and Macedonia, it gets more popularity continuously. In addition, walking/trekking is traditionally well known and practiced in every mountain since the 19th century and it is expected that the interest of such offer will be quite low. Another argument for the biking as model example was the profile of the mountain bike rider according to IMBA 2015, which state that the rider is usually a well-educated young person with good income, who rides in the mountain to enjoy nature and to escape everyday life. The proximity of Osogovo to major cities, where young well-educated people with good income are concentrated (in comparison to the general average in both countries), is an important pre-condition. Consequently, mountain bike tourism in Osogovo was considered to have a high potential to contribute to the regional economic development of nature-based tourism.

For each country a best practice example was developed, built on the concept "self-guided tours". This concept is in harmony with the trends, described by European Travel Commission (<http://www.etc-corporate.org>) that most people today travel individually, make choices about their destinations and routes in short terms before their travel, based on the information about places and local services, which they find on the internet.

The best practice examples are called “Osogovo – the unknown mountain bike destination”. For each country, three mountain bike tours have been identified and developed. The offers for each tour include information about length and difficulty of the routes, local service supplies, description of facilities and infrastructure as well as the most characteristic natural and cultural values and features of the area.

The mountain bike tours are presented in brochures in English (annex 05 and 06) as well as the respective country language – available in paper (provided to local stakeholders in Osogovo) and electronic format (Link Bulgarian Tours: <http://bbf.biodiversity.bg/en/New-velo-routes-in-Osogovo-detailed-description-and-GPS-tracks.p1925>; Link Macedonian Tours: <http://mes.org.mk/en/leaflet-for-bike-trails-on-osogovo-mountain/>). In addition, an interactive map with all bike/trekking routes identified in the frame of the project for the Bulgarian part of Osogovo were uploaded into a geoserver and prepared to be embedded into different websites and portals. For example, the routes in Bulgaria were uploaded on the mountain bike forum webpage:

<http://www.mtb-bg.com/index.php/trails/routes/5560-route-2017-osogovo-beginners>

<http://www.mtb-bg.com/index.php/trails/routes/5578-route-2017-trite-buki-predela-dvete-reki>

<http://www.mtb-bg.com/index.php/trails/routes/5573-route-2017-osogovo-obikolka-choveka>

Furthermore, the starting positions of the mountain bike tours were marked in the field. In addition, on different occasions mountain bikers of local bike associations tested, reviewed and photographed the tours.

The tours were promoted on several national as well as cross-border events. The developed bike tours received great interest of different media. Many digital articles were published, but also printed in newspapers. Radio stations informed about Osogovo and the bike tours in both countries, which showed the high interest in mountain bike destinations. The promotion already showed first positive results with an increase of the number of mountain bike groups. In addition, the municipality of Kyustendil picked up the idea and issued a tourist information leaflet about the city showing Osogovo as a mountain bike destination.

6. Public relation

The project partners published general information about the project implementation and its results as well as the Osogovo Mountain as important pearl along the Balkan Green Belt to the broad public via different media.

Bulgarian Biodiversity Foundation

A short description of the project plus pictures from activities were published on BBF's website: <http://bbf.biodiversity.bg/en/Supporting-a-Sustainable-Future-for-People-and-Nature-in-Osogovo-Mountain.p1630-y>. In addition, during the project implementation news were published in Bulgarian and English on the website (<http://bbf.biodiversity.bg/>).

A facebook page named WildOsogovo was created in November 2016 by the Bulgarian LC experts (<https://www.facebook.com/search/top?q=wild%20Osogovo>). On this page different interesting or funny camera trap pictures get posted on a regular basis. Till September 2018 the facebook page has 986 followers and 980 likes. The posts are also shared by BBF's main Facebook page.

Macedonian Ecological Society

Short information and progress of the project activities were presented on the MES website on regular bases: <http://mes.org.mk/nov-sajt/?lang=en>.

In addition the project activities were presented in the MES newsletter 'Informator':

Edition 30: http://mes.org.mk/nov-sajt/wp-content/uploads/2016/05/Newsletter_30.pdf

Edition 33: <http://mes.org.mk/nov-sajt/wp-content/uploads/2017/05/Informator-33-eng.pdf>

MES Annual Report 2017: <http://mes.org.mk/wp-content/uploads/2018/09/predfinalna-verzija.pdf>

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EuroNatur published a mailing about Osogovo Mountain as part of the European Green Belt in March 2016. The mailing was sent out as printed leaflet as well as pdf version via E-Mail (see annex 07).

In addition the mailing is available on the EuroNatur website:

https://www.euronatur.org/fileadmin/docs/mailings/Mailing_04-2016_Gruenes_Band_Osogovo.pdf

Furthermore EuroNatur shared regularly posts of the facebook page WildOsogovo.

In addition, the bark beetle seminar was presented via the EuroNatur facebook page:

https://www.facebook.com/pg/euronatur/photos/?tab=album&album_id=1856999137667925&_tn=-UC-R

7. Conclusions

This chapter illustrates the conclusions from the implementation of the project activities and its results. Conclusions are drawn for each objective as well as in general for the overall implementation.

7.1 Support sustainable forest management in Osogovo

Through capacity building activities as well as the support of the HNMF assessment and identification of management measures sustainable forest practices in the region could be enhanced.

In the frame of the project, the first two forest units ever in Macedonia were successfully assessed for HNMF. They are thus an important example for other regions in the country. During the project, the involved foresters from the region in Macedonia recognized the HNMF approach as useful tool to improve the forest management towards sustainability as well as to make useful changes in the current management plan. Due to the fact that HNMF and forest certification is a continuous process (e.g. data update and revision of management plan) as well as a new concept in Macedonia, further capacity building and support is needed. In this context future knowledge exchange with the Bulgarian foresters and experts is very valuable, for which the basis was laid in the frame of this project.

In addition, further promotion of the HNMF approach and sustainable forestry in Macedonia especially on governmental level is necessary in order to increase acceptance and to secure further implementation. For a successful implementation the support of the respective ministries is required.

Furthermore, the HNMF assessment and forest certification is a good starting point for cooperation between foresters and NGOs. The mutual interest offers the opportunity to exchange information and knowledge as well as the respective goals and motivations, which leads to more trust and understanding of each other. This builds the base for a successful long-term cooperation.

A lesson learned is to plan with a longer time period for the HNMF assessment as it is a time-consuming and challenging process. In addition, some data can only be collected as well as respective trainings done during a specific vegetation period. In addition, the implementation of the project activities made clear that it is important to also train the respective logging companies in the aspects of HNMF and sustainable forestry in order to secure the correct implementation of the management plan.

7.2 Improve knowledge about large carnivores in Osogovo

In the frame of the project general knowledge about LC occurrence in Osogovo could be increased. The monitoring results provide clear parameters for the current state of the species diversity in Osogovo. The data gathered throughout the monitoring will be used to improve the management of the area and to gain the necessary public support for future steps for the protection of the biodiversity of Osogovo.

The development and implementation of the LC monitoring scheme was successful, due to the experience and knowledge of the project partners and the involvement of experts. Especially the camera trapping is a methodology which gives good results about large carnivores and its prey. The experience gained so far about the local groups involvement show that the local knowledge and assistance can be an effective tool if the scientific methods for monitoring coincides with local interests. During the project, the data collected with local help is much more than the usual amount an expert can gather by himself. At the same time there is the need for knowledgeable persons to take the lead and keep the monitoring network together. Finding – and if needed training - such people is a crucial step for forming an effective alliance with local target groups.

In order to increase the number of participants in the monitoring network, it is necessary to identify joint interest points and/or benefits for the respective persons/groups. Also, it is important to establish a trustful cooperation with the monitoring members. Both aspects need time and presence in the area. In addition, the involvement of local people helps to change their attitude and appreciation for large carnivores.

The setbacks within the frame of these project activities showed that despite good cooperation, the project may take a different direction than planned. The implementation of monitoring activities depends on the willingness of the land managers as well as the land owners. Therefore, it is important to establish continuous and open communication with the respective institution/person. However, all involved parties recognized the positive results and remain motivated to apply them in the improvement of their monitoring and management activities.

As a next step, the development of a common online or other type of database is needed. Also members are not prepared for data analysis and have insufficient knowledge about the biology and ecology of target species, which should be upgraded through trainings. The continuation of the monitoring is important to further collect information as well as to increase the necessary public support for the protection of Osogovo.

In Bulgaria the monitoring is continued until the end of 2018 in the frame of a project financially supported by the University Sofia. In this frame the monitoring network members will continue to work with the camera traps purchased and installed in the frame of this project. In addition, BBF is in communication with SWSFE to identify and discuss possibilities to continue the monitoring after 2018.

For Macedonia, MES strive to continue with the monitoring activities with potential support by the Nature Protection Program in Macedonia (supported by the Swiss Agency for Development and Cooperation). This year LC monitoring activities will especially benefit the proclamation process of Osogovo as protected area. For this it is essential to actualize the monitoring activities in the following winter season (2018).

7.3 Analyse and demonstrate potential of Osogovo for nature-based tourism

The analysis confirmed that Osogovo is a suitable site for nature-based tourism and has a high potential especially for bike and hike/trekking activities. For each country best practice examples for self-guided mountain bike tours were successfully developed and promoted. Local stakeholders were involved in the development of the tours throughout the project duration. This also helped to establish a good baseline for further cooperation.

At the beginning of the process, local stakeholders and municipalities were skeptical about the idea and it was a challenge to gain their support. But at the end the positive effects of the bike tour promotion made locals aware of the potential.

Further activities are needed in order to develop Osogovo further as bike tour destination, e.g.:

- Development and field marking of (cross-border) trails and tours,
- Development and instalment of info boards as well as hard-copy information material,
- Increase the capacity of accommodation facilities as well as improving the conditions of resting areas,
- Capacity building of local tourism providers and information about possibilities for sustainable business development,
- Training of local guides to promote nature values,
- Increase cross-border cooperation between local stakeholders.

In addition, the promotion and marketing of Osogovo as nature based tourism destination has to be increased. In this context it is important to support local tourism providers to better network and present their offers via different communication means and channels.

7.4 General

Overall the project was successfully implemented. The project was well structured and the activities interlocked well. Where needed suitable experts were successfully engaged. For the implementation of some activities, more time than originally foreseen was needed. A few setbacks occurred which were mainly related to unforeseeable external circumstances to which the project team had to react.

More specifically, the following successes could be achieved:

In the frame of the project, the HNMF approach was useful to sensitise and train representatives of the forest units for sustainable forest management and nature protection as well as to start cooperation. Through the LC monitoring not only important data could be gathered, but also the support of local stakeholders for the integration of LC aspects in the management and protection of the area was improved. The analysis of the potential for nature-based tourism and the development of examples clearly show the representatives of municipalities and tourism providers the potential and possibilities for sustainable development in this field. The cross-border exchange of experts and stakeholders from Bulgaria and Macedonia was very valuable in order to learn from each other and to find cross-border solutions or opportunities.

EuroNatur had an advisory and supportive function within the frame of this project. The contribution of expertise to the different topics helped to refine and improve the activities. In addition, an important task was to always encourage and support the cross-border cooperation between MES and BBF.

In the end the project was prolonged for three more months, in order to present the final results of the project to key stakeholders in the region as well as to foster and strengthen the established cooperation. In addition, the positive spirit was used for planning follow-up activities, i.e. the continuation of the monitoring, the proclamation process of Osogovo in Macedonia as protected area as well as further strengthening the cooperation regarding sustainable tourism and the assessment of HNMF.

During the project implementation and specifically based on unforeseen events, the project team understood how important it is to involve not only authorities and stakeholders on local level, but also on regional and possibly also national level.

In addition, it is also necessary to approach the local stakeholders in person on regular basis and to search for overlapping interests as this proved to motivate them to participate. The experience was that practical exercises and facilitated discussions get people into action.

These lessons learnt will be taken into consideration in future projects in Osogovo, but also beyond.

8. Annex

- Annex 01 Strategy for the LC monitoring network Osogovo
- Annex 02 Analyses of existing information of LC in Osogovo
- Annex 03 Recommendations against bark beetle outbreaks
- Annex 04 Result report of the LC monitoring
- Annex 05 Brochure of the bike tours at the Bulgarian part of Osogovo