

Cultural ecosystem services for development of nature-based tourism in Bulgaria

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ABSTRACT

Key words:

natural heritage, protected areas,
tourism regions

The rich and diverse Natural Heritage of Bulgaria is a prerequisite for the development of nature-based tourism (NBT) of a new type. The research is carried out by the implementation of the ecosystem approach. The results include an assessment of the natural heritage capacity to provide goods and services for the development of NBT in the Tourist Regions (TR) of Bulgaria. The results show the spatial distribution of the natural heritage sites in all nine TR in Bulgaria and their natural capacity for development of different types of NBT. There are only 37 municipalities out of 265 with not a one Natural Heritage (NH) site, and all the rest have natural resources to develop NBT. The results can be of use for the achievement of the goals for sustainable tourism by assessment of the capacity to provide recreation ecosystem services (RES).

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1. Introduction

The role of natural heritage for the development of recreation and tourism has been studied in several publications (Popova 1993, Tengberg et al. 2012, Gordon 2018, Osipova et al. 2014, Georgiev 2006, Toncheva 2014, Vasileva 2018, Ihtimanski et al. 2019, Nikolova et al. (2018, 2020, 2021, 2021a), Nedkov et al. (2014, 2018, 2021, 2021a), Havinga et al. 2020, Zhiyanski et al. 2021, Dodev et al. 2021). These studies illustrate well the link between NH and ecosystem services for recreation, health, education, sports, spiritual practices, etc. Varadzhakova (2017, 2018, 2019) investigate different aspects of the concept for the sustainable and modern type of tourism. Nikolova (2016) analyses the Smart specialization for the development of mountain regions in Bulgaria.

This paper aims to assess the potential of the cultural ecosystem services provided by the National Natural Heritage (NH) for development of nature-based tourism in Bulgarian Tourist Regions (TR). The TR was established to form regional tourism products, to implement regional marketing and advertising and to coordinate and manage tourism at the regional level (Tourism Act 2002). Given the development of sustainable tourism, the assessment of the potential of these territorial units to develop one or another type of tourism should be consistent with the capacity of ecosystems to provide relevant ecosystem services for recreation and tourism, which we tentatively call recreational ecosystem services.

All protected areas are also sites of national natural heritage (Nedkov et al. 2021a), and some of them are included in the World Heritage List. Tourism is one of the few permitted anthropogenic activities within most protected areas. However, the tourist pressure in them should not lead to changes in the state of ecosystems and the quality of the provided ecosystem services but should be consistent with them.

The development of NBT depends on the diversity of natural tourist resources and their conservation. According to Weaver (2001) among the main subtypes of this type of tourism are ecotourism,



3S (sun, sand, sea), adventure tourism, tourist visits for observations of animals living in a controlled environment (zoos, etc.), hunting and fishing tourism, as well as some forms of health tourism. Ecotourism is the only type of nature-based tourism that contains in its characteristics an educational element and sustainable behavior. The definition given by the UN World Tourism Organization states that: “Ecotourism is all natural forms of tourism, in which the main motivation of tourists is the observation and evaluation of nature, as well as traditional cultures prevailing in natural areas.” (UNWTO 2021).

The rich and diverse National Natural Heritage is a prerequisite for the development of NBT of a new type, which implies the creation of a smart economic ecosystems of activities and services bound, flexible and adaptable to the natural and socio-economic changes, with low carbon footprints and with a high social effect, leading to sustainable regional development. NBT integrates all tourist activities practiced and known as ecotourism up to now, the “green” technologies in maintaining of the tourist infrastructure, and the “green” thinking in all entities in the tourist business. The results could be a good foundation for the achievement of the goals for sustainable tourism by keeping in mind the NH’s capacity to provide recreational ecosystem services.

2. Methods and data

We assume that all protected areas (PA) are part of the Bulgarian established Natural Heritage. According to the definition given by Nikolova et al. (2021a), “Natural heritage is a geospatial natural element of the socio-ecological system, which provides material and spiritual benefits of timeless importance for previous, present and future generations”. Some of the protected areas in the country are also included in the UNESCO World Heritage List because of their Outstanding Universal Value: Biosphere Reserve Srebarana (since 1983), National Park Pirin (since 1983) and nine sites in Central

Balkan National Park which are part of the serial UNESCO site with cross-border significance “Ancient and primeval beech forests of the Carpathians and other regions of Europe” (since 2017). Protected areas occupy 5.3% of the country’s territory. These include 3 National parks, 11 Nature parks, 55 Reserves, 35 Maintained reserves, over 500 Protected areas and 350 Natural landmarks (MOEW 2021).

The role of protected areas for the development of NBT could be significant under the new challenges and opportunities stemming from the EU green policy. We understand NBT as tourism of new type, which implies the creation of a smart economic ecosystem of activities and services bound, flexible and adaptable to the natural and socio-economic changes and realities, and at the same time, with low carbon footprints and with a high social effect, leading to increased well-being in the regions. By putting such content in the term “nature-based tourism”, we offer an innovative approach to the development of ecotourism. It is developed on the implementation of an ecosystem-based approach which provides an opportunity to assess the natural heritage capacity to provide cultural services for the sustainable tourism.

The ecosystems approach is applied in this study. The assessment of the natural heritage potential to provide goods and services for the development of nature-based tourism carried out in the following steps:

1) Identification of the established sites of Natural Heritage (NH) in TR

Protected natural areas are intended to protect the biodiversity of the ecosystems and the natural processes running within them as well as typical or remarkable objects of inanimate nature and scenery. The categories of protected natural areas correspond to the IUNES classification as follows: reserve (category I), national park (category II), natural landmark (category III); maintained reserve (category IV); natural park (category V), and protected area (category VI) (Protected Areas Act 2013). A protected area may belong to one or more TR or municipalities.

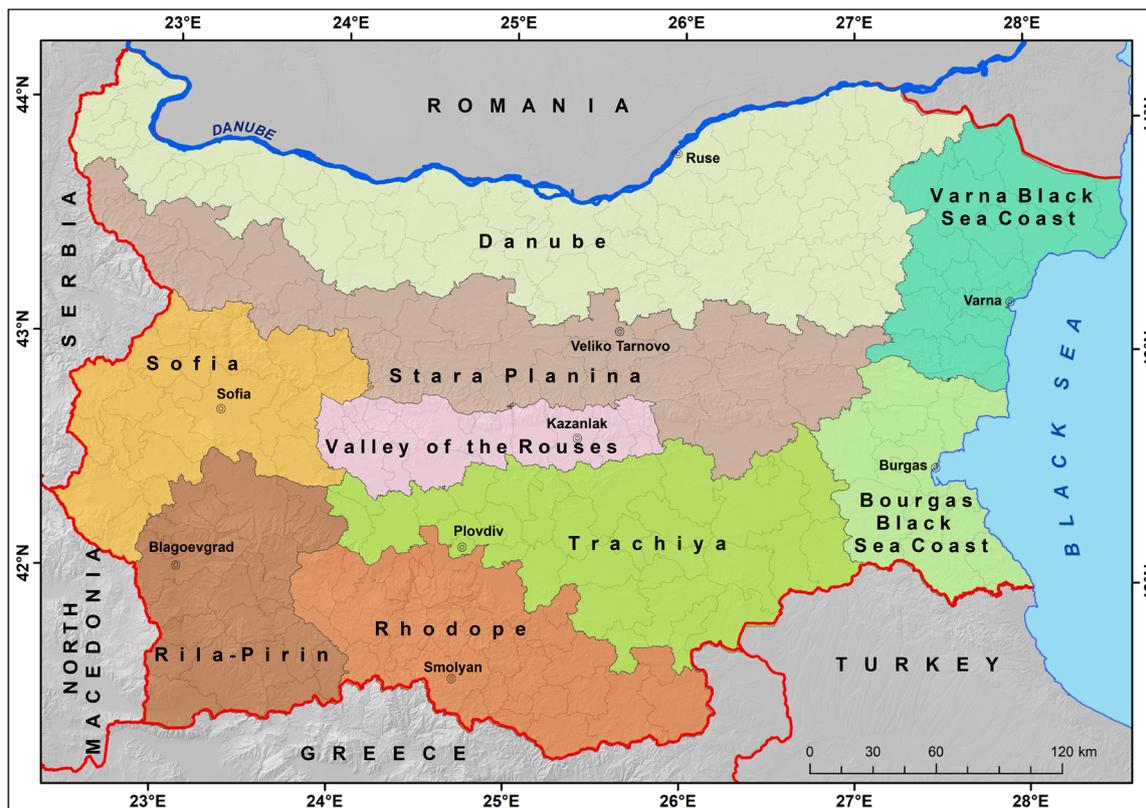


Figure 1. Tourism Regionalization of Bulgaria (after Concept for...2014).

Table 1. Tourism Regions in Bulgaria and their main specialization (after the Concept for..., 2014).

Tourism region / Center	Number of municipalities	Main specialization
Danube /Rousse	67	Cultural and cruise tourism
Varna Black Sea Coast /Varna	25	Sea and sports tourism
Stara Planina /Veliko Tarnovo	32	Mountain and ecotourism
Sofia / Sofia	23	Business and cultural tourism
Valley of the Rouses / Kazanlak	19	Health and cultural
Trachiya / Plovdiv	35	Cultural and wine tourism
Burgas Black Sea Coast / Bourgas	13	Sea and cultural tourism
Rila-Pirin /Blagoevgrad	23	Mountain and religious tourism
Rhodope /Smolyan	28	Mountain and religious tourism

According to the Concept for Tourist Regionalization of Bulgaria (2014), the territory of the country is divided into nine TR (Figure 1) with corresponding centers, and specialization Table 1. The main and additional specialization for each region is based on the results of surveys and consultations with more than 500 organizations and individual stakeholders acting in the field of tourism in Bulgaria (Marinov et al. 2015).

Spatial databases for PA in Bulgaria from the MOEW (2021) and data from the Concept for Tourism Regionalization of Bulgaria (MT 2021) were used for the identification of the established sites of NH by categories in the TR.

2) Identification of the priority CES provided by the NH

The Recreation ecosystem services (RES) are all ecosystem services relevant to the recreation and the recreation industries. These services may be provisional (biotic and abiotic), regulating and maintenance (biotic and abiotic) or cultural (biotic or abiotic) according to The Common International Classification of Ecosystem Services v 5.1. (CICES v 5.1). There are 96 individual services at “class” level in the classification. After a process of prioritization

of ES were selected 12 CES which are the most relevant for the assessment of the recreational activities on a national level (Nedkov et al., 2021), Table 2. The CES are defined as “All non-material, and normally non-rival and non-consumptive, outputs of ecosystems (biotic and abiotic) that affect physical and mental states of people” (Haines-Young and Potschin 2017). The NH provides a wide range of cultural ecosystem services (CES) of which we assess 12 listed in Table 2.

3) Identification of recreational activities in the NH sites

We identify the recreational activities in NH sites applying the Classification of recreational activities in Table 3, proposed by Nedyalkov and Bekiyaryova (2000). It was developed based on the recreational benefits provided by ecosystems, and this makes it compatible with the chosen ecosystem approach for this study. The authors write that “Recreational complexes set up for recreational work must meet environmental quality requirements for ecosystems, ensuring that full recreational benefits and services are provided” (Nedyalkov and Bekiyaryova 2000).

Table 2. Selected cultural ecosystem services for recreation and tourism (after Nedkov et al. 2021).

Division	Code	Service	
Cultural (biotic)	3.1.1.1	Characteristics of living systems that enable activities promoting health, recuperation or enjoyment through active or immersive interactions	
		Characteristics of living systems that enable activities promoting health, recuperation or enjoyment through passive or observational interactions	
	3.1.2.1	Characteristics of living systems that enable scientific investigation or the creation of traditional ecological knowledge, education and training	
		Characteristics of living systems that enable education and training	
	3.1.2.3	Characteristics of living systems that are resonant in terms of culture or heritage	
	3.1.2.4	Characteristics of living systems that enable aesthetic experiences	
	3.2.1.1	Elements of living systems that have symbolic meaning	
	3.2.1.2	Elements of living systems that have sacred or religious meaning	
	3.2.1.3	Elements of living systems used for entertainment or representation	
	Cultural (abiotic)	6.1.1.1	Natural, abiotic characteristics of nature that enable active or passive physical and experiential interactions
		6.1.2.1	Natural, abiotic characteristics of nature that enable intellectual interactions
		6.2.1.1	Natural, abiotic characteristics of nature that enable spiritual, symbolic and other interactions

Table 3. Classification of recreational activities (by Nedyalkov and Bekyarova 2000).

Type of recreation activities	Kind of recreation activity
Recreational - therapeutic	Climate therapy, balneological therapy, etc.
Recreational and healing	Walks, bathing, sun and air baths, games, passive recreation, etc.
Recreational and sport	Sports games, mountaineering, ski sports, water sports, speleotourism, fast or long walks, etc.
Recreational-cognitive	Acquaintance with ecosystems, recreational forests, unique landscapes, protected areas, natural landmarks, flora, fauna, endangered species, cultural monuments, watching movies, listening to music, exercising amateur creativity, etc.

4) *Assessment of CES provided by the different categories PA*

The protected areas operate under different regimes according to the Protected Area Act. Depending on them, the conditions for use of some CES may be limited. For example, the most restrictions on the practice of various recreational activities there are in the reserves. The assessment of CES in each category of protected areas was performed by expert-based valuation on a scale from 0 to 5 for each class of CES in respect to each category of PA.

5) *Assessment of the weighted value of NH in the TR*

The distribution of PAs within the TRs is not uniform. In addition, often a protected area falls within the boundaries of more than one TR. Since a municipality cannot be divided between two or more TRs, we first estimate the number of PAs by categories within each municipality. Then we assign a weighed value coefficient for each PA category Table 4. The sum of the weighted values of all categories PA in a given municipality represents the weighed value of its NH. The sum of NH weighed values for all municipalities in a given TR represents the weighted value of its NH.

Table 4. Weighted values of PA by categories.

Protected area	Category	Weighed value
Reserve	category I	1,6
National Park	category II	1,5
Natural Landmark	category III	1,4
Maintained Reserve	category IV	1,3
Natural Park	category V	1,2
Protected Area	category VI	1,1

6) *Assessment of the NH capacity for the development of NBT in Bulgarian Tourism Regions*

Based on the results of the CES assessment provided by NH, an expert assessment of the types of recreational activities that can be practiced in each PA category was performed. The rating scale is from 0 to 5, where 0 indicates the lack of conditions for practicing a given type of recreation, and 5 - the optimal conditions for the development of a given recreational activity. The results are summarized for the territory of each TR. Based on this assessment, the potential of the region for the development of NBT has been assessed.

3. Results

There are two ways to identify the established sites of Natural Heritage in TR. The first one is to calculate the number of PA in each TR, and the second one is to calculate the percentage of the NH area from each TR. The relative share of natural heritage sites in tourist

areas is presented on Figure 2. This indicator reflects the workload of the municipalities in the TR with NH sites and not their actual number. This is because a national park can include dozens of municipalities, each of which can benefit from belonging to the park. For example, the municipalities in TRs Stara Planina and Rhodope have the greatest variety of PAs and respectively more opportunities for the development of various recreational activities.

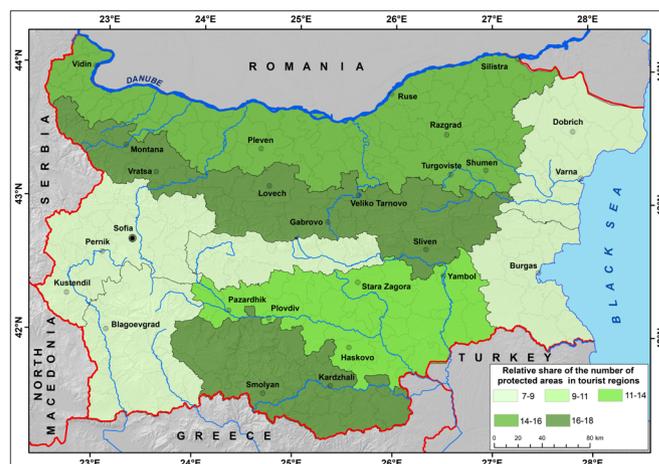


Figure 2. Workload on the territory of the TR with NH sites.

The territory of PA in TR gives a realistic idea of their scope and their relative share of the TR area, Figures 3 and 4. The figures show that the PAs in Varna Black Sea Coast TR have the smallest territory (87.97 ha). The largest protected areas are in the TRs Rila-Pirin (1959.7 ha), Stara Planina (1179.24 ha), and Bourgas Black Sea Coast (1373.4 ha). It makes sense, as there are located respectively the three National parks - “Rila”, “Pirin”, “Central Balkans” and “Strandzha” - the largest Nature Park in the country.

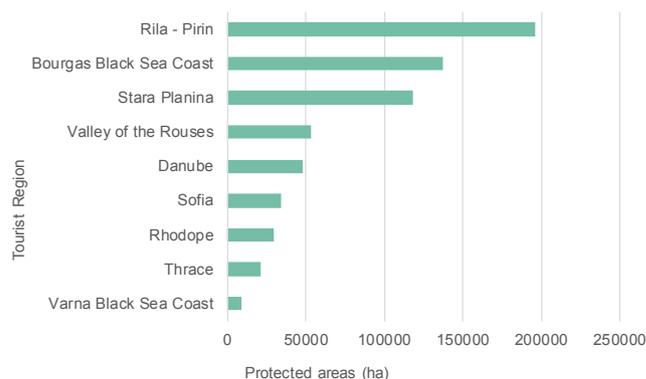


Figure 3. Size of the protected areas in the Tourism Regions.

The complementarity of the information from Figure. 2 and Figure 3 shows that 28 municipalities in TR Rhodope are replete with a much greater variety of PA sites than 23 municipalities of TR Rila-Pirin, in which the sites of PA occupy the largest area.

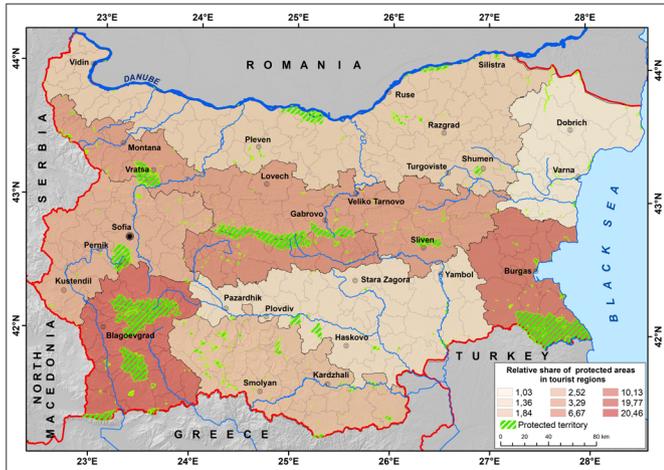


Figure 4. Relative share of protected areas in the tourism regions.

The assessment of the priority cultural ecosystem services (Table 2), that the NH in the TR provides for the development of recreation and tourism, has been carried out for each protected area category (Fig. 5).

The sites of NH with the greatest potential to provide CES are from the following categories: “Natural Park”, followed by the “Natural Landmark”, “National Park” and “Protected area” (site). The sites of categories “Maintained Reserve” and “Reserve” have smaller potential due to the restrictive usage regimes in them.

The weighted value of the established NH sites is highest in the TR Stara Planina, Rhodope, and the Danube, but all the rest regions demonstrate relatively high values Fig. 6.

The recreational activities in the NH sites correspond to their capacity to provide various CES. NH from category “Natural Park” gives equal opportunities for the development of all main types of recreational activities, followed by “National Parks” and “Protected Area”, Figure 7.

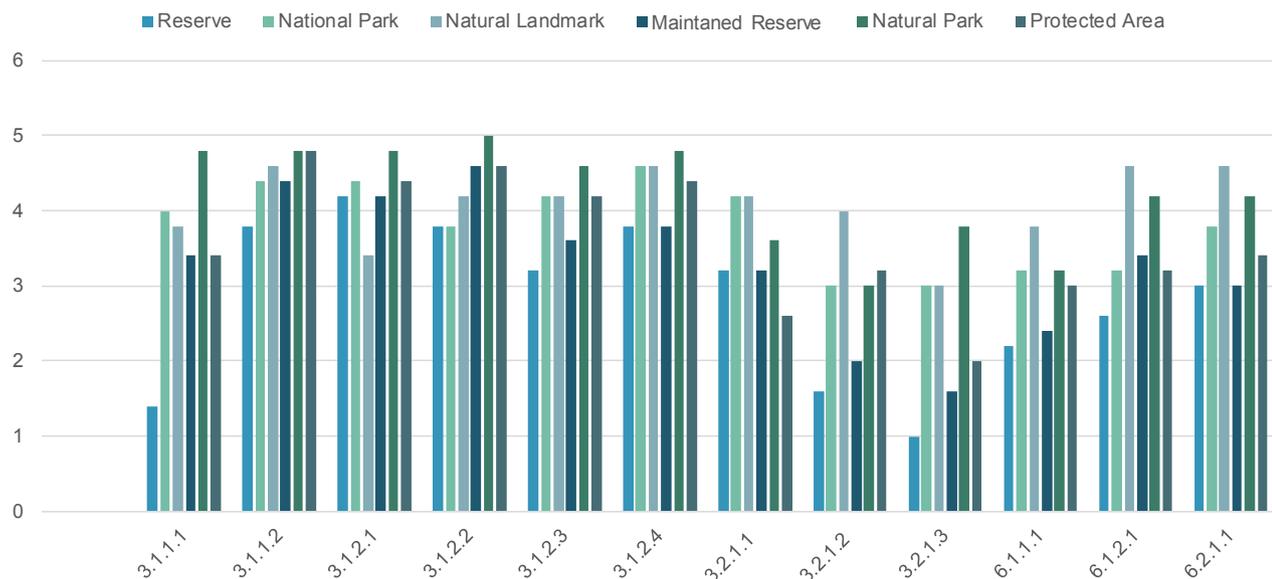


Figure 5. Assessment of CES provided by the different categories PA.

Recreational - sport and recreational – therapeutic activities depend significantly on the state of ecosystems, while recreational-cognitive activities depends more on the diversity of the natural complex (biodiversity, geodiversity, natural and cultural heritage).

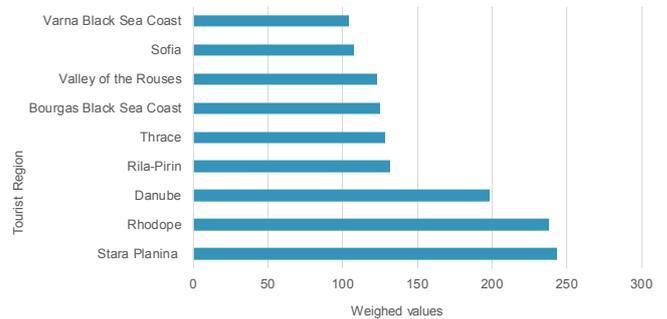


Figure 6. Weighed values of the established sites of NH in Bulgarian Tourist Regions.

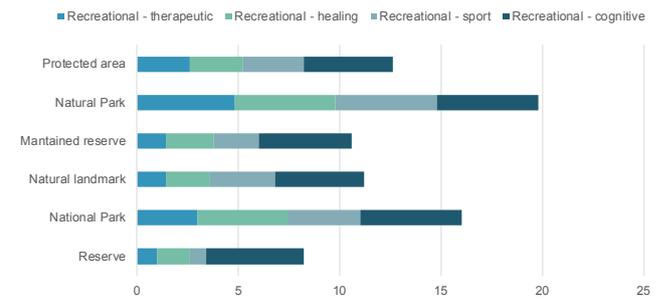


Figure 7. Capacity of NH to provide different types of recreational activities for NBT.

4. Discussion

The results show that there are only 37 municipalities of 265 in the country, with no NH site. All the rest of the municipalities in Bulgaria have natural resources to develop NBT of a different type. The ecosystem approach is strongly recommended if we want to keep a good balance between the capacity of NH to provide RES and the demand for recreational benefits. This may help for optimization of the TR management in respect of better and sustainable use of the NH resources in their borders. The potential of the national Natural Heritage is still under development and not fully utilized for tourism and recreation. Even the sites from the UNESCO World Heritage List in Bulgaria “do not have their well-deserved place in the tourist policy and practice” (Levkov 2019).

The national NH has good potential to provide a “greener” alternative for the development of the territories within tourism regions. The Tourism Satellite Accounts (TSA) is a method of collecting and presenting tourist demand and its impact on the economy at a national level. TSA for 2019 show that the tourism revenue is 8.1% of Bulgaria's GDP, and in 2020 this share has fallen to 3.7% because of the spread of COVID-19 and the accompanying consequences and limitations of people's mobility (UNWE 2021). The sector could be affected in a similarly unfavorable way as result of climate change (National Climate Change Adaptation Strategy and Action Plan 2018). Therefore, tourism, like all other economic sectors in the country, must make efforts to adapt to climate change and implement sustainable development models. We believe that NBT provides a wide range of opportunities in this direction, and the results of the survey also show that the NH of Bulgaria also has the necessary capacity for this.

This study would correspond well to develop sustainable models for transition to a low-carbon economy in the context of the new European Green Deal which is a set of policies that should make Europe climate neutral by 2050 by reducing greenhouse gas production by at least 50% compared to 1990 levels (UNFCCC 2021). The shift to a low-carbon economy will put the recreative industries and tourism faced new challenges that, under certain conditions, could become serious advantages for NBT development. Tourism growth should not lead to an increase in energy consumption. The sector has to look for alternatives, increasing the share of renewable energy and tourism with low levels of carbon footprint. Nature-based solutions in tourism provides a wide range of opportunities for social innovation that can keep local people in the region and improve the quality of tourist activities, as well as create livelihoods in marginalized mountainous and other territories, which are most often the subject of ecotourism activities. At the same time, most protected areas are concentrated in these regions, which are an essential part of the natural capital and natural heritage of the country. They provide a wide range of ecosystem services for the development of nature-based tourism.

5. Conclusions

The results show the opportunities for practical implementation of the ecosystem approach for sustainable management of Bulgarian Tourism Regions. The rich Natural Heritage of the country provides cultural ecosystem services for the development of NBT of the highest quality in each one of them. All types of NBT are relevant to the CES capacity provided by PAs.

The TRs have significant natural potential for the development of NBT of a new type, which also includes natural-based solutions to reduce the carbon footprint from tourism. At the same time, TR has specific management functions that can be used to stimulate various “green” innovations in tourism.

The transition to carbon neutral economy answers the new realities and challenges by innovative models for development like social innovations, the development of recreative industries, smart villages, eco settlements, etc. Nature-based tourism provides different opportunities for social innovations that can hold local people in the region and improve the quality of tourism activities and the livelihoods in the marginalized mountain and rural territories which are the most common subject of ecotourism activities.

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References

- Concept for Tourism Regionalization of Bulgaria (2014) National Center for Territorial Development Ltd., Ministry of Economics and Energy, Sofia, 72 p. (in Bulgarian).
- Dodev Y, Zhiyanski M, Glushkova M, Borisova B, Semerdzhieva L, Ihtimanski I, Dimitrov S, Nedkov S, Nikolova M, Shin W-S (2021) An Integrated Approach to Assess the Potential of Forest Areas for Therapy Services. *Land*, 10(12), 1354, Multidisciplinary Digital Publishing Institute (MDPI), ISSN:2073-445X, DOI:doi.org/10.3390/land10121354
- Georgiev G (2006) Some Problems of Recreational Uptake of Protected Areas in Bulgaria. http://oldweb.ltu.bg/jmsd/files/articles/14/14-29_G_Georgiev.pdf
- Gordon JE (2018) Geoheritage, Geotourism and the Cultural Landscape: Enhancing the Visitor Experience and Promoting Geoconservation, *Geosciences* 8(4):136. doi:10.3390/geosciences8040136UK
- Haines-Young R, Potschin MB (2017) Common International Classification of Ecosystem Services (CICES) V5.1 and Guidance on the Application of the Revised Structure. Available from www.cices.eu
- Havinga I, Bogaart P, Hein L, Tuia D (2020) Defining and spatially modelling cultural ecosystem services using crowdsourced data. *Ecosystem Services* 43: 101091.
- Ihtimanski I, Nedkov S, Semerdzhieva L (2020) Mapping the natural heritage as a source of recreation services at national scale in Bulgaria, *One Ecosystem* 5 <https://doi.org/10.3897/oneeco.5.e54621>
- Levkov K (2019) The Role of local Heritage Sites for the Development of Cultural Tourism in Bulgaria. International Scientific Conference “Culture and art in Contemporary Context”. Conference materials. Batumi: 481-484
- Marinov V, Assenova M, Dogramagjieva E, Evrev P, Motev S, Ohridska-Olson R, Ivanova M, Novakova M, Valchev P (2015) The New Tourism Regionalization of Bulgaria: Approaches and Results. Annual of Sofia University “St. Kliment Ohridski” book 2 – Geography, Vol. 108: 17-36
- MOEW (2021) Register of protected areas in Bulgaria. <http://pdbase.government.bg/zpo/bg/index.jsp>
- National Climate Change Adaptation Strategy and Action Plan (2018) <https://www.globalwps.org/data/BGR/files/National%20Climate%20Change%20Adaptation%20Strategy%20and%20Action%20Plan.pdf>
- Nedkov S, Borisova B, Koulov B, Zhiyanski M, Bratanova-Doncheva S, Nikolova M, Kroumova J (2018) Towards integrated mapping and assessment of ecosystems and their services in Bulgaria: The Central Balkan case study. *One Ecosystem*, 3: e25428, Pensoft. doi: 10.3897/oneeco.3.e25428
- Nedkov S, Gikov A, Nikolova M, Dimitrov P, Gachev E (2014) Mapping of Ecosystem Services Supply in Mountain Areas: A Case Study of Seven Rila Lakes, Bulgaria. Proceedings from 5th International Conference on Cartography and GIS, 15-20 June, Riviera: 488-497.
- Nedkov S, Borisova B, Nikolova M, Zhiyanski M, Dimitrov S, Mitova R, Koulov B, Hristova D, Prodanova H, Semerdzhieva L, Dodev Y, Ihtimanski I, Stoyanova V (2021a) A methodological framework for mapping and

- assessment of ecosystem services provided by the natural heritage in Bulgaria. *Journal of the Bulgarian Geographical Society* 45: 7-18. <https://doi.org/10.3897/jbgs.e78680>
- Nedkov S, Nikolova M, Mitova R, Borisova B, Hristova D, Semerdzhieva L, Zhiyanski M, Prodanova H (2021b) Prioritization of ecosystem services related to the natural heritage of Bulgaria. *Journal of the Bulgarian Geographical Society* 45: 19-30. <https://doi.org/10.3897/jbgs.e73687>
- Nedyalkov S, Bekiyarova D (2000) *Recreational Ecology*. Varna Technical University: 238
- Nikolova M (2016) Smart Specialization for the Development of Mountainous Regions in the Republic of Bulgaria. Conference papers "Geographical Aspects of the Planning and Use of the Territory in the Context of Global Change, Bulgarian Geographical Society, ISSN:978-619- 90446 Varshets, Bulgaria, 23– 25 September 2016: 1- 6
- Nikolova M, Nedkov S, Borisova B, Stoyanova V, Mitova R (2021) Cultural Ecosystem Services Provided by Natural Heritage Sites in Karst Territories of Smolyan Region, Bulgaria *Scientific notices. Heritage BG Bulletin* issue 1 (in print).
- Nikolova M, Nedkov S, Dimitrov S, Borisova B, Zhiyanski M (2021a) Conceptualization of natural heritage in the context of the ecosystem approach. *Scientific notices. Heritage BG Bulletin* issue 1 (in print).
- Nikolova M, Nedkov S, Kiryakova M (2018) Assessment and Mapping of Aesthetic Ecosystem Services in the City of Varna, Bulgaria. *Traditions and Innovations in Contemporary Tourism*. Mariana Assenova, Maria Vodenska, Vasil Marinov, Elka Dogramadjieva (Eds.), Cambridge Scholars Publishing, ISBN:978-1-5275- 0829-3, 259-272
- NSI (2016) Share of protected natural areas. <https://nsi.bg/en/content/5301/sustainable-development>
- Osipova E, Wilson L, Blaney R, Shi Y, Fancourt M, Strubel M, Salvaterra T, Brown C, Verschuuren B (2014) The benefits of natural World Heritage: Identifying and assessing ecosystem services and benefits provided by the world's most iconic natural places. Gland, Switzerland: IUCN. vi + 58
- Popova N (1993) *Natural Recreation Resources*. Univ. Pub. St. "Kliment Ohridski", Sofia, 1-127
- Protected Areas Act (2013) *State Gazette* #133 /11 November 1998, S., 2014 1-98
- Tengberg A, Fredholm S, Eliasson I, Knez I, Saltzman K, Wetterberg O (2012) Cultural Ecosystem Services Provided by Landscapes: Assessment of Heritage Values and Identity, *Ecosystem Services*, <http://dx.doi.org/10.1016/j.ecoser.2012.07.006>
- Toncheva T (2014) *Impact of Biodiversity on the Development of Tourism, Avangard Prima*,
- Tourism Act (2013) *Promulgated State Gazette* No. 30 / 26.03.2013.
- UNWE (2021) Opportunities to Create an Analytical Framework and Toolkit to Assess the Contribution of Tourism to the Economy. Institute of Economics and Policy. https://www.tourism.government.bg/sites/tourism.government.bg/files/documents/2021-05/turizum_ikonomika.pdf
- UNWTO (2021) *Ecotourism and Protected Areas*. <https://www.unwto.org/sustainable-development/ecotourism-and-protected-areas>
- UNFCCC (2021) The EU long-term strategy, reflecting the climate neutrality objective <https://unfccc.int/process/the-paris-agreement/long-term-strategies>
- Varadzhakova D (2017) Bulgaria as slow tourism destination: opportunities and perspectives. In: *Proceedings of International Scientific Conference "Contemporary tourism– traditions and innovations, Sofia University "St. Kliment Ohridski"*, Sofia, 263-275
- Varadzhakova D (2018) Modern types of tourism: the case of Bulgaria, *Science journal "Economics and Finance"*, Publishing house „BREEZE“, Montreal, Canada, 192-195
- Varadzhakova D (2019) Perspectives for sustainable transborder tourism development: the case of Burel region. *SocioBrains*, issue 58.
- Vasileva V (2018) *Natural Tourism Resources of Bulgaria*. Shumen: 1- 313.
- Weaver D (2001) *Ecotourism*. Milton, Qld. : J. Wiley: 386
- Zhiyanski M, Glushkova M, Dodev Y, Bozhilova M, Yaneva R, Hristova D, Semerdzhieva L (2021) Role of the cultural ecosystem services from the natural heritage in forest territories for sustainable regional development. *Journal of the Bulgarian Geographical Society* 45: 61-66. <https://doi.org/10.3897/jbgs.e72766>
- MT (2021) Concept for Tourist Regionalization of Bulgaria <https://www.tourism.government.bg/bg/kategorii/strategicheski-dokumenti/konceptiya-za-turistichesko-rayonirane-na-bulgariya>

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