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ENSURING THE SUSTAINABLE DEVELOPMENT IN PROTECTED AREAS IN SLOVAKIA

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ZABEZPEČOVANIE UDRŽATEĽNÉHO ROZVOJA V CHRÁNENÝCH ÚZEMIACH NA SLOVENSKU

SÚHRN: Cestovný ruch patrí v chránených územiach k významnej hospodárskej činnosti a je dôležitým zdrojom zamestnanosti, pretože rozvoj ostatných hospodárskych aktivít je v nich značne limitovaný. Rozvoj cestovného ruchu v nich sa musí uskutočňovať nielen tak, aby nepoškodzoval životné prostredie, ale v súlade aj s ďalšími princípmi udržateľného rozvoja – ekonomickým a sociálnym. Cieľom príspevku je preskúmať zabezpečovanie udržateľného rozvoja cestovného ruchu v chránených územiach na Slovensku prostredníctvom priorít manažérskych organizácií a analýzy uskutočnených inovácií.

KĽÚČOVÉ SLOVÁ: cestovný ruch, chránené územia, Slovensko, udržateľný rozvoj

Introduction

For the coordinated development of tourism destination the cooperation of all subjects is needed. The organization responsible for the coordinated development (management organization, local government or the dominant business) has to respect the special features of the destination, which can be weakness or strength, opportunities or risks. The most significant specific features of mountain destinations and protected areas are the needs to increase their competitiveness through sustainable development.

The aim of this article is to examine the ensuring of sustainable tourism development in protected areas in Slovakia by the analysis of implemented innovations and priorities of destination management organizations.

Theoretical background

Kučerová[1] emphasises that tourism does not have unlimited possibilities of growth, due to the fact that it relies on the natural resources. In some case is the natural environment so unique, that it is protected by several degrees of natural protection. Keller[2] adds that the natural environment is easily vulnerable and thus it influences all activities which are carried out within it.

Ensuring the sustainable development

The importance of sustainable development was defined in the document Our Common Future[3] created by World Commission on Environment and Development. According to the document, humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. The United Nations followed these ideas and in 1992 it organized international conference in Rio de Janeiro. The outcomes of the conference were expressed in the strategy Agenda 21, which defines that the essence of sustainable development lies in ensuring the quality of life, reducing the negative impacts on natural environment and maintaining the continuous use of natural resources.

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[1] J. Kučerová, *Trvalo udržateľný rozvoj cestovného ruchu,* Banská Bystrica 1999.

[2] P.F. Keller, *Changing Paradigm in Sustainable Mountain Tourism: A critical analysis from a global perspective*. EURAC Research. Conference on Changing Paradigms of Sustainable Mountain Tourism, Brixen 2012, www.eurac.edu [28-11-2012].

[3] World Commission on Environment and Development. 1987. *Our Common Future.* United Nations 1987, www.conspect.nl [20-03-2013].

The sustainable tourism is one of the approaches of tourism development, which should help tourism stakeholders to balance its positive and negative impacts for present and future generations. Several scientific authors deal with the sustainable development in protected areas, each of them focusing on different points of view (table 1).

Table 1
Examining the sustainable development in protected areas

Point of view	Authors
Social and environmental background of sustainable development	Todd and Williams,19961; Schendler, 20032; Eydal, 20043; Lewis, 20054; Kučerová, 20125
Quality of life	Hudson, 20006; Castle, 20047
Social equivalence	Moore, 20058
Democratic decision making about sustainable development	Flagestad and Hope, 20019
Careful adaptation to sustainable development	Bürki a Abegg, 200310; Scott et al., 200611

Source: own processing, 2015.

In 2012 Global Sustainable Tourism Council approved criteria for sustainable tourism development in tourism destinations. The proposal of these criteria was available to public on the web page of the council for 60 days and the professionals from the tourism sector could add their comments to it. These comments and recommendations were incorporated to the proposal and the 41 criteria were created. These criteria were divided to four groups:

1. application of the sustainable tourism development in the destination,
2. increasing the economic effects of tourism for the local inhabitants and minimizing its negative impacts,
3. increasing other positive effects of tourism for local inhabitants, visitors, cultural heritage and minimizing its negative impacts,
4. increasing the positive effects of tourism for environment and minimizing its negative impacts.

Therefore the sustainable development in protected areas has to be done in line with not only the environmental, but also the economic and social criteria. Only when these criteria will be fulfilled, it is possible to ensure the sustainable development by the innovations.

Protected areas in Slovakia

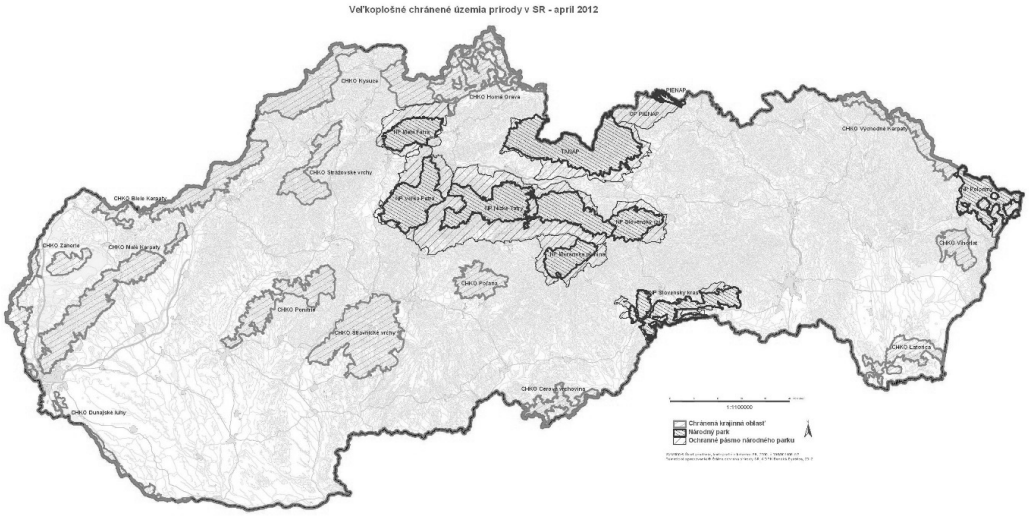
The protected areas in Slovakia are regulated by the Ministry of Environment. Their list is created and published by the State Nature Conservancy of Slovak Republic. The main law concerning the protected areas in Slovakia is the Law no. 543/2003 Coll. on the protection of nature and country. According to the law,

the protected areas are areas where the biotopes of European and national significance and biotopes of species of European and national significances, as well as the biotopes of birds are located. For the protection of these biotopes the protected areas, important natural elements or areas of international significance are established. The following categories of protected areas are defined:

- National Park
- Protected Landscape Area
- Nature Reserve and National Nature Reserve
- Nature Monument and National Nature Monument
- Protected Site
- Protected Landscape Element
- Protected Bird Area

The area of these protected areas is following (updated to 31.12.2014): 9 National Parks (6,48% of the area of Slovakia), protected zones of national parks (5,51% of the area of Slovakia) and 14 Protected Landscape Areas (10,66% of the area of Slovakia), which is together 22,65% (1 110 599 ha) of the whole Slovakia (figure 1).

Figure 1
Protected area in Slovakia



Source: www.minzp.sk [20-08-2015].

In these protected areas, several tourism destinations were created, mainly the mountain destinations. It is important to preserve the protected areas to the future generation, because of their uniqueness and therefore it is worth to examine the sustainable development in these areas.

Aim, material and methodology

The aim of this article is to examine the ensuring of sustainable tourism development in protected areas in Slovakia by the analysis of implemented innovations and priorities of destination management organizations.

In the analysis of sustainable tourism development 34 mountain destinations are examined by the questionnaire research. This method is used due to the fact that Slovak mountain destinations do not elaborate the annual reports or other documents concerning the sustainable development. The primary sources of information are taken from the structured interviews with the managers of selected mountain destinations – Donovaly, Kubinska Hola, Jasna Nizke Tatry, Strbske Pleso, Stary Smokovec and Tatranska Lomnica, which took place in 2014.

The findings will be examined by statistical methods. The Friedman rank test will compare the median values of the examined factors (activities, goals, and innovation factors identified in the questionnaire research) and generalize these factors for the all mountain destinations in Slovakia. For identifying the significant differences in the order, the Wilcoxon signed-rank test will be used. This test is used in small research samples ($n < 50$) and it verifies the conformity of the two middle values with the reliability of 95 %.

Results and discussion

When examining the sustainable development in mountain destinations it is important to firstly analyze the relevant legislation, which creates the framework for activities in protected areas and thus influences the ensuring of sustainable tourism development. Furthermore it is also important to analyze the opinions of managers of mountain destinations for ensuring the sustainable development.

Legislative and policy documents regulating the activities in protected areas

Destination management organization, the operator of mountain transport facilities, respectively the investor in the protected area must follow the applicable legislation. In the case that the mountain destination is situated in a protected area, it must respect the relevant legislation aimed at protecting the nature (Government regulation of national parks, Decree of the Ministry of Culture of protected landscape areas and the decrees of the Ministry of Environment of protected areas and natural monuments).

Concerning the assessment of the activities in the protected areas, the State Nature Conservancy of the Slovak Republic issue the statements to competent authorities of nature and landscape protection (environmental authorities) only for one component of the environment (nature protection), other components (air, water, waste) fall within the competence of other state authorities. The opinions of the nature conservation authorities, however, are just one of the docu-

ments for the issue of the development or building permit issued by the building authority (usually the municipality). State Nature Conservancy of the Slovak Republic, in their decision shall apply the following legislation:

- Law no. 543/2002 Coll. on protection of nature and landscape,
- Decree of the Ministry of Environment no. 24/2003 Coll., on implementing the Act on protection of nature and landscape,
- Law no. 15/2005 Coll., on the protection of species of wild fauna and flora by regulating trade therein (Act CITES),
- Decree of the Ministry of Environment no. 110/2005 Coll., on implementing the Act CITES,
- Law no. 24/2006 Coll. on the assessment of the environmental impact (Law EIA),
- Law no. 50/1976 Coll. on Territorial Planning and Building Code (Building Act).

The activities in protected areas are regulated not only by the legislation documents but also by policy documents. The principles of sustainable development, defined by the National Strategy of Sustainable Development, are biding for all sectors of activities.

The Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention) was adopted and signed by the seven parties (Czech Republic, Hungary, Poland, Romania, Serbia, Slovak Republic, Ukraine) in May 2003 in Kyiv, Ukraine, and entered into force in January 2006. It is the only multi-level governance mechanism covering the whole of the Carpathian area and besides the Alpine Convention the second sub-regional treaty-based regime for the protection and sustainable development of a mountain region worldwide.

The issue of protected areas is to some extent also addressed by the Tourism Development Strategy 2020, which was adopted in 2013 by the Ministry of Transport, Construction and Regional Development of the Slovak Republic. The strategy requires the development of a methodology for carrying capacities of individual regions in terms of sustainable tourism development and the creation of guidelines for the development of sustainable tourism in protected areas.

The presented documents are the most important in the securing the sustainable development in protected areas as well as mountain destinations.

Innovations in mountain destinations in Slovakia

In order to comprehensively examine the implemented innovations in mountain destinations, the opinions of selected managers were examined and after that these innovations were examined concerning sustainable development.

The primary goal of the activities of managers in mountain destinations in Slovakia is increasing the satisfaction of visitors (table 2).

Table 2
The rank of activities carried out by the management of mountain destinations according to Friedman test

Activity	Average value (1 – minimum, 5 – maximum)
Increasing the satisfaction of visitors	4,69
Increasing the quality of performed services	4,35
Increasing the revenues of the destination	4,07
Reducing the costs of the destination	3,22
Increasing the capacities in the destination	2,48
Ensuring the leadership on the marker	2,19

Source: Own processing, 2015.

In order to generalize the rank of innovation goals, the Friedman rank test was supplemented by Wilcoxon test that identifies whether there is a statistical significant difference between the orders of the individual goals (table 3). If the significance is greater than the specified significance level ($\alpha = 0.05$), then there is no significant difference in the order of goals and they can be regarded as equal.

Table 3
The rank of innovation goals according to Wilcoxon test

Rank	Analysed goals	Significance
1.	Increasing the satisfaction of visitors	-
1.	Increasing the quality of performed services	0,248
1.	Increasing the revenues of the destination	0,205
2.	Reducing the costs of the destination	0,046
3.	Increasing the capacities in the destination	0,025
4.	Ensuring the leadership on the marker	0,577

Source: Own processing, 2015.

Based on the findings we conclude that for the Slovak mountain destinations the most important innovation goals are increasing the satisfaction of visitors, increasing the quality of performed services and increasing the revenues of the destination. There is no significant difference between these three goals.

During the innovation process, managers of mountain destinations take into account, in particular, environmental condition and sustainable development (table 4). It is connected with the fact that most mountain destinations is located in protected areas, where almost all technological innovations are subject to the assessment of Environmental Impact Analysis - EIA (Law no. 24/2006 Coll. on the assessment of the environmental impact). However, it should be noted that the environmental protection did not appear in the innovation goals.

Table 4

Factors that are taken into account by managers during the innovation according to Friedman test

Innovation factors	Average value (1 – minimum, 5 – maximum)
Environmental condition and sustainable development	4,78
The need to create all-year-round destination	4,37
Carrying capacities of destination	4,31
Climatic changes	4,17
Regional development	3,80
Creation of summer products	3,76
Increasing the employment in the region	2,81

Source: Own processing, 2015.

Managers of mountain destinations take into account also the carrying capacities of destinations. On the one hand, they expressed this attitude in the questionnaire survey, on the other hand, it should be noted that these limits are not being quantified based on the criteria taken into account in regional planning, but the limits are estimated only based on carrying capacities of ski slopes. Kollár, Weck and Urban (2014)[4] expressed that the most important is safety, and the projected increase in transport capacities will not overload the ski slopes. At the same time, they agree that with the increase in transport capacities, new ski slopes are built, so the physical carrying capacities are not exceeded. However, they do not consider the environmental capacities that should be the first factor of innovations. They also agree on the fact, that the new slopes are built only on existing areas, and in terms of tourism they ate already developed areas, and not in the new environmental protected areas. The problems of carrying capacities of destinations lies in the fact that many managers refers to is as limits that are related to waiting time of skiers for the ski lifts and cable cars and not as the whole range of criteria considered in terms of regional planning.

[4] Kollár, Weck and Urban, Structured interviews with managers of mountain destinations 2014.

However, the order of the innovation factors which are taken into account by managers during the innovation process is remarkable. It was expected that with the need of creation of all-year-round destination, the climatic changes and creation of summer products are connected. These factors are taken into account after considering the carrying capacities and regional development. Climate changes cause the pressure to create the attractive products also in the summer season and the effort to offer all-year-round products because they cause warmer winters with less snow. This situation is also confirmed by many surveys e.g. by Demiroglu, Kučerová and Ozcelebi (2015)[5], who on the basis of calculations assume that the average annual temperature will rise by 2°C till 2050. On the other hand, some managers of mountain destinations believe that the melting of ocean glaciers will affect the accumulation of arctic air to northern Europe, causing the extreme frosts and significant snow cover also in the Central Europe.

The last factor taken into account during the innovation process is the employment in the region. Due to the fact that tourism in the mountain areas is often the only source of employment, it should be noted that the last rank is insufficient. Moreover, managers also note that barriers of innovations are the lack of time and lack of information about the needs of visitors and the market. Innovations could, on the one hand, contribute to increased employment in the region and to regional development and, on the other hand, to a better management action in mountain destinations. After the analysis of the role of tourism in mountain destinations as a factor of job creation, it is then possible to persuade the authorities of state and local governments to ensure support for management of mountain resorts and tourism development in them.

Table 5
The rank of innovation factors according to Wilcoxon test

Rank	Analysed factors	Significance
1.	Environmental condition and sustainable development	–
2.	The need to create all-year-round destination	0,029
2.	Carrying capacities of destination	0,910
2.	Climatic changes	0,783
2.	Regional development	0,432
2.	Creation of summer products	0,727
2.	Increasing the employment in the region	0,216

Source: Own processing, 2015.

[5] C. Demiroglu, J. Kučerová, O. Ozcelebi, *Snow reliability and climate elasticity: case of a Slovak ski resort*, "Tourism Review" 2015 nr 1(70), s. 1-12.

If we evaluate the order of the innovation factors generalized by Wilcoxon test (table 5), we conclude that the most important factor for innovation of mountain resorts in Slovakia is the environmental condition and sustainable development. Other factors are according to the level of significance at the same level.

Climatic changes and uncertainty of snow causes that technological innovations in mountain destinations are most often associated with artificial snow making (table 6). In the last years almost all destinations (97%) either built a new artificial snow making system or increased the area that is being operated by this system. Snow making has a significant impact on the environment because it needs a huge amount of water from retention lakes and also by the wiring and valves that must be incorporated into the ground in order produce the artificial snow. In addition to large quantities of water, also the electricity is consumed.

Table 6
Technological innovations in Slovak mountain destinations in 2013

Innovation	Share of destinations that introduced the innovation in 2013 [%]
Replacement of mountain transport facilities by new ones with the higher transport capacity	55
Newly built artificial snow making system	45
Increase of the area being operated by artificial snow making	52
Building of new or increase of the area of the parking place	52
Building of children ski park	41
Building of adrenaline park for skiers and snowboarders	34
Building the downhill trails for mountain biking	28
Building the bob sledges trail	14

Source: Own processing, 2015.

More than the half of the mountain destinations in 2013 innovated the mountain transport facilities by modification or replacement with new ones with the higher transport capacity. The new gondola cableway is located in Tatranska Lomnica, new chairlifts in Jasna, Rohace – Spalena, Zdiar – Strednica, Valcianska dolina, Skalka, Vadicov and Krusetnica. The new ski lift is available in the destinations Oravice, Plejsy, Kubinska Hola and Bachledova, Ostry Grun, Pezinska Baba, Liptovské Revúce, Tale, Ski Centre Drozdovo and Jasenska Dolina. New children's lift is located in Valcianska Dolina and Lazy pod Makytou and ski conveyor belts for children in Bachledova.

In the half of the mountain destinations new or large parking place was built. Among the frequent technological innovation in mountain destinations also the building a ski park for children, respectively ski school and related technical support (ropes, conveyor belts, children's ski lifts, etc.) belong. This innovation is considered as well-grounded because it does not require a high altitude, high vertical drop or great snow cover.

Another technological innovation implemented in mountain destination in Slovakia is an adrenaline park for skiers and snowboarders. Less frequently the innovations associated with the creation of downhill trails for mountain biking are implemented. They are also the first type of innovations, which are part of the summer product. Such a park was built nearly in one third of mountain destinations, and its impact on soil erosion, the appearance of the landscape and other impacts on the environment is disputable.

Table 7
Non-technological innovations in Slovak mountain destinations in 2013

Types of innovation	Innovation	Share of destinations that introduced the innovation in 2013 [%]
Product	Products for summer season	48
	Products for cyclists	34
	Products for non-skiers	31
	Public transport as a part of the service package	10
	Visitor card	9
	Products for beginners	9
Price	Creation of service packages	32
Communication	Creation of account in social network	83
	New web page of the destination	72
	Responsive design of web page	34
	Creation of the mobile application	17
	Sending of newsletters	17
Distribution	Sales of products through the web page	30
	Online sales of skipases	27

Source: Own processing, 2015.

Non-technological innovations in mountain destinations can be divided into four categories, namely product, price, communication and distribution innova-

tions (table 7). The most common implemented non-technological innovation in Slovak mountain destinations is the creation and offer of products for the summer season. In particular, it includes thematic hiking trails, biking trails and variety of extreme activities. Cycling routes and products for cyclists play an important role in innovations in the mountain destinations, as one third of the mountain destinations has innovated its range of products by products associated with cycling. An important non-technological innovation is also the creation of products for visitors of the mountain destinations who do not ski. Almost a third of resorts offer thematic hiking trails, sledding, snowshoeing, snow tubing and various other alternatives to winter sports instead of skiing. These activities do not required so great snow cover; therefore these innovations are regarded as appropriate.

It is alarming that less than a one tenth of mountain destinations provide transportation on public transport in the destination as part of a service package. These kinds of packages encourage visitors to use the public transportation and thus they have a significant impact on reducing the environmental load in a mountain destination.

It is also significant; that only a few destinations introduce the visitor cards, because their offer, on the one hand, helps to create the image of a destination as a one place, and, on the other hand, encourages participants to consume services that are part of the guest card, for example already mentioned public transportation.

Conclusion

Based on the conducted analysis it can be stated that all legislative and policy documents pay particular attention to the environmental principles of sustainable development. The economic approach is considered only in National Strategy of Sustainable Development and Tourism Development Strategy by 2020 and social criteria are discussed, besides these two documents, also in the Framework Convention on the Protection and Sustainable Development of the Carpathians.

It was also important to find the structure of implemented technological and non-technological innovations and their impact on sustainable development of a destination. Technological innovations are introduced more often, and they are aimed mainly at increasing the transport capacities of destinations, regardless of the carrying capacities of ski trails. Other common innovations are associated with new technologies of snowmaking system which, due to the high consumption of water and energy, does not contribute to sustainable development. Concerning the current capacity and performance indicators of mountain destinations it is necessary for future innovations to be focused mainly on qualitative growth, thus increasing the service quality and product innovation that will make the destination more attractive and reduce seasonal fluctuations. It is also recom-

mended to focus innovations in marketing communication and distribution on creating the unique products especially for domestic tourists (not sensible to changes in exchange rates), and off-seasonal products in order to provide employment opportunities for local residents and thus increasing their incomes and living standards. Not quantitative increase in capacity but purposeful innovations in line with the principles of sustainable development can currently lead to establishment of a unique competitive advantage of the protected areas and resistance for threats related to competitive pressures and climate change.

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