

1. Sustainable Tourism Indicators in Protected Areas

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Introduction

Sustainable development requires the integration of its principles into all activities. This means that its development does not include only the environmental aspects, but also the positive conditions for residents and other stakeholders connected with the social and economic benefits. The sustainable development of tourism in a destination is closely linked to natural, historical and cultural heritage. If these resources are damaged, the destination is not attractive anymore and its development will not be successful¹. The link between protected areas and tourism is as old as the history of protected areas. Though the relationship is complex and sometimes argumentative, tourism is always a critical component to consider in the establishment and management of protected areas. To ensure that the sustainable development of tourism in protected areas can be realistic and not-only a theoretical concept, it is necessary to apply appropriate tools to measure its economic, socio-cultural and environmental impacts. It is, therefore, necessary to identify instruments that are able to quantify the impacts of tourism and allow the application of the principles of sustainable tourism development in practice. There is no generally accepted approach to address the sustainability of tourism development, but the most common frameworks include sets of indicators.

Indicators of sustainable tourism development

Indicators of sustainable tourism development are evaluated for a certain period of time (yearly, monthly) or refer to a specific type of destination (official administrative unit, protected areas). Indicators follow the concept of sustainability and its

¹ UNWTO 1994, *National and Regional Tourism Planning – Methodologies and Case Studies*, London: TJ International, 171 p., p. 5.

tools, and they involve a set of variables that provide information to understand the relationship between the impact of tourism on the cultural and natural resources on which tourism depends².

In the context of measuring the sustainable development of tourism, the initiatives of international organisations (GSTC, ISO 21401 standard, Green Destination award) and especially UNWTO are important. In 2016, UNWTO, in cooperation with the United Nations Statistics Division (UNSD), launched an initiative – the Statistical Framework for Measuring the Sustainability of Tourism (MST). The role of MST is to promote the credibility, comparability and achievement of various measurement and monitoring programs aimed at sustainable tourism development, including the objectives of the 2030 Sustainable Development Agenda (SDGs) and indicators of the UNWTO International Network of Sustainable Tourism Observatories (INSTO). The MST provides an integrated information base on sustainable tourism development to facilitate inter-sectoral dialogue and to support integrated decision-making at international, national and local levels³. Several countries (Austria, Italy, the Netherlands, Germany, Spain, Portugal, Greece, the United Kingdom) and institutions (OECD, European Commission – Eurostat) joined the UNWTO. UNWTO attempts to develop an internationally comparable standard (statistical framework) that will enable the sustainable development of tourism to be measured with its economic, socio-cultural and environmental impacts. In Slovakia, the attention to this initiative from responsible institutions is not sufficient.

There have been numerous approaches to identify indicators of sustainable tourism development (Table 1.1).

TABLE 1.1. Sets of indicators for evaluating sustainable tourism development

Author (organisation)	Year	Dimension/Issue	No
UNWTO	1998	10 Basic Dimensions	10
McCool et al.	2001	National, Regional, Local	26
UNWTO	2004	13 Dimensions of Sustainable Tourism Development	768
Choi & Sirakaya	2006	Economic, Social, Cultural, Ecological, Political, Technological	125

² UNWTO 2004, *Indicators of sustainable development for tourism destinations: A Guidebook*, Madrid: WTO, 516 p.

³ UNWTO 2019, *Measuring the Sustainability of Tourism (MST)* [online] [cit. 2019-27-02]. Available at: <http://statistics.unwto.org/mst>.

Author (organisation)	Year	Dimension/Issue	No
Pulido & Sanchez	2009	Driving Forces, Pressures, State, Responses	14
Castellani & Sala	2010	Population, Housing, Services, Economy and Labour, Environment, Tourism	20
Blancas et al.	2011	Economic, Environmental, Socio-Cultural	77
Lozano-Oyola et al.	2012	Economic, Environmental, Socio-Cultural	85
Šimková & Rybová	2012	Economic, Social, Cultural, Ecological, Political, Technological	45
European Commission	2013	Economic Value, Environmental Impact, Social and Cultural Impact, Destination Management*	67
Global Sustainable Tourism Council	2013	Sustainable Destination Management, Economic Benefits, Benefits to Communities, Visitors, and Culture, Benefits to the Environment	105
Margina & Partal	2013	Economic, Environmental, Socio-Cultural, Political	32
Tanguay et al.	2013	Comparison Of Most Used Indicators	27
Torres-Delgado et al.	2014	Economic, Environmental, Socio-Cultural	26
Blancas et al.	2015	Economic, Environmental, Socio-Cultural	89
Bulatović & Rajović	2015	Economic, Environmental, Social, Crosscutting	34
Jurigová & Lencséssová	2015	Economic, Environmental, Socio-Cultural	77
Mearns	2015	Economic, Environmental, Social, Crosscutting	34
Romão & Neuts	2017	Territorial Capital, Tourism Specialization, Tourism Performance, Sustainable Regional Development	11
Ministry of Environment of SR	Annually	Tourism Trends Related to the Environment, Interaction of Tourism with the Environment, Political, Economic and Social Aspects of Tourism	12

* ETIS is based on 27 core and 40 optional indicators.

SOURCE: the authors.

Selected sets categorise indicators into three key areas of sustainable development or distinguish between social and cultural dimensions. Some authors also include other dimensions (technological, political), or apply a different classification (e.g. driving forces, pressures, state, responses). Their content, however, in most cases matches the basic dimensions. The choice of indicators depends on for whom the system is intended and who should be entrusted with its collection and interpretation.

The indicators are merely a proposal on how to examine the impact of tourism on sustainable development. They can be applied to all types of destinations and levels of tourism development planning. The availability of relevant data is therefore crucial.

Aim, material and methodology

The aim of this paper is to examine the availability and limitations of data for the measurement of sustainable tourism indicators in protected areas of Slovakia. We select the indicators based on a literature review of foreign and domestic authors and institutions (Table 1.1). Furthermore, we focus on the indicators that are most commonly used in measuring the sustainable development of tourism, with an emphasis on its economic, socio-cultural and environmental development, regarding the protected areas⁴. The sustainable development of tourism in protected areas of Slovakia has been researched already in 2015 and 2017^{5,6}. Protected areas have the opportunity to participate in the certification system of PAN (People and Nature), which aims to harmonise nature protection and tourism development. Certification is based on the following criteria: (1) natural values, (2) land management, (3) visitor management, (4) sustainable tourism and (5) park partners. The management of protected areas in Slovakia

⁴ Committed to the sustainable development of tourism in protected areas, the Federation of Nature and National Parks of Europe has defined the European Charter for Sustainable Tourism in Protected Areas as a process-oriented methodological procedure that can be applied in all types of protected areas. The Charter respects the environmental, local and tourism needs and formulates 10 principles (Europarc Federation 2010): (1) To involve all those implicated by tourism in and around the protected area in its development and management; (2) To prepare and implement a sustainable tourism strategy and action plan for the protected area; (3) To protect and enhance the area's natural and cultural heritage, for and through tourism, and to protect it from excessive tourism development; (4) To provide all visitors with a high-quality experience in all aspects of their visit; (5) To communicate effectively to visitors about the special qualities of the area; (6) To encourage specific tourism products which enable discovery and understanding of the area; (7) To increase knowledge of the protected area and sustainability issues amongst all those involved in tourism; (8) To ensure that tourism supports and does not reduce the quality of life of local residents; (9) To increase benefits from tourism to the local economy; (10) To monitor and influence visitor flows to reduce negative impacts.

⁵ M. Gúčik, M. Marciš 2017, *Sustainable tourism development in the Tatra National park*, in: *Ekonomika i šrodowisko*, 2(61), p. 76-87.

⁶ Z. Lencséssová, T. Gajdošík, M. Gúčik 2015, *Ensuring the sustainable development in protected areas in Slovakia*, in: *Ekonomika i šrodowisko*, vol. 2015, no. 4(55), p. 124-137.

is under the jurisdiction of the Ministry of Environment of the Slovak Republic (MoE SR). The protected areas account for 22.65% (1 110 599 ha, September 2019) of territory. The highest level of protection applies to 9 national parks (6.48% of the territory). In these parks, numerous tourist centres are located, which are frequently visited, and some of them are on the edge of sustainable development (Picture 1.1).



FIGURE 1.1. National Parks and Protected Landscape Areas in Slovakia. *TANAP – National Park High Tatras; NAPANT – National Park Low Tatras

SOURCE: Slovak Environmental Agency, 2018.

When selecting indicators, we consider three criteria: (1) relevance to the problem regarding protected areas, (2) the frequency of authors who used the indicator (from Table 1.1), and (3) the maximum number of 30 indicators. We select the relevant indicators that respect the specificities of the research of sustainable development of tourism in protected areas in Slovakia. The data will be obtained from the Statistical Office of the Slovak Republic, tourism-related ministries, destination management organisations, nature conservation agencies and other relevant institutions.

Results and discussion

The indicators can simplify, clarify and with aggregated information, help integrate economic, natural and social effects into decision-making, measure and refine progress in sustainable development.

Identifying the indicators of sustainable tourism development

The literature-based analyses defined the most frequently- used indicators in the evaluation of sustainable tourism development. We divided the indicators according to their character into the economic, social and environmental category.

When defining the indicators, we looked at equivalents and similar purpose of the indicator (e.g. the existence of a regional development plan that includes tourism and the self-government’s approach to tourism development planning) and the time period (e.g. number of overnight stays per year and per month) expressing identical content. We also consider their application in various types of tourism destinations.

The selected indicators form a set of the most frequently used indicators that authors and institutions respectively applied, and recommended to use in the monitoring of sustainable tourism development (Table 1.2).

TABLE 1.2. The most frequently used indicators of sustainable tourism development

Tourism carrying capacity	
Economic	<ul style="list-style-type: none"> • Number of overnight stays • Direct tourism employment as a percentage of total employment in the destination • Average spending per tourist (including accommodation, food and other services) • The occupancy rate in commercial accommodation • The average length of stay of tourists • Involvement of residents in the tourism services • Seasonal jobs in tourism • Contribution of tourism to the destination’s economy • Plan or policy that includes the sustainable development of tourism • Direct support of tourism development from public sources
Social	<ul style="list-style-type: none"> • Percentage of residents who are satisfied with tourism • Percentage of tourists who are satisfied with tourism • Participation of residents in tourism development • Social-carrying capacity (Number of tourists per 100 residents) • Percentage of tourism establishments accessible for people with disabilities • The contribution of tourism to the promotion of local culture, traditions, customs and regional products • Public-private partnerships (existence and activity of destination management organisation)
Environmental	<ul style="list-style-type: none"> • Contribution of tourism establishments to environmental protection • Tourists’ modes of transport to the destination • Water quality in natural swimming pools • The share of protected areas in the destination • The share of the area affected by soil erosion due to tourism • Energy consumption in tourism establishments • Water consumption in tourism establishments • Waste production • Tourism density

SOURCE: the authors, 2019.

Data collection for indicators of sustainable tourism development

Data collection and processing of tourism statistics is managed by the Statistical Office of the Slovak Republic (SO SR). The Statistical Office collects data from accommodation establishments, tour-operators and sample statistical questioning of households and foreign visitors. It compiles the System of tourism statistics of the Slovak Republic, which is in line with the Regulation 692/2011 of the EU concerning European statistics on tourism⁷.

The Statistical Office also provides data on revenues, the average monthly wage of employees and the average number of employees (monthly and quarterly indices) (SO SR publishes these data only at the national level). The SO SR publishes data on accommodation facilities at the national and regional level and for selected cities (e.g. Bratislava, Košice, Banská Bystrica). At the regional level, SO SR provides data for self-governing regions – Nomenclature of Territorial Units for Statistics (NUTS 3) and some data also for NUTS 4. Several data, although they are in the SO SR database, are not available (e.g. guest's home country) or with limited access. The employment impact of tourism cannot be explicitly expressed due to the unavailability of data presented total employment. However, we consider destinations as special-purpose territorial units, which may not be part of the official statistical territories and monitoring (such as NUTS 3, NUTS 2). The minimum level of statistical monitoring and reporting of employment is NUTS 4. Furthermore, the official statistical unit does not process data on enterprises with less than 20 employees. To measure the impact of employment in tourism, the data on employment in all sectors in a specific destination (municipality) are needed.

In the case of socio-cultural indicators, secondary and especially primary data are needed. Several indicators, e.g. the perception of visitors and residents about the development of tourism, the proportion of tourism facilities and attractions friendly to disabled visitors and the contribution of tourism to promoting local culture are not regularly monitored and systematically evaluated. Visitors and residents perception can be examined by selected criteria, such as the condition of natural, cultural and historical attractions, quality of accommodation and restaurant services, variety of organized events, transport accessibility, information about the destination, the price level of tourism services, friendly behaviour of residents/tourist and cleanliness in public areas. The engagement of residents in the development of tourism can be assessed by the proportion of respondents expressing their opinion on the development of tourism (e.g. at city council meetings, DMO, tourist information centre, or through local councillors).

The environmental indicators need to be expressed by relevant quantitative indicators (e.g. water consumption, energy consumption, waste production in tourism facilities). The Ministry of Environment of the Slovak Republic evaluates sectoral

⁷ T. Gajdošík, Z. Gajdošíková, 2016.

indicators and the degree of integration of environmental aspects into sectoral policies (including tourism). The impact of tourism on the environment is evaluated by indicators such as the amount of waste generated in hotel and restaurant establishments, water quality in natural pools, number of cave tourists, soil erosion due to tourism, number of small protected areas threatened by tourism, number of nature and landscape interventions due to tourism activities, costs for environmental protection in tourism, and environmental certification in tourism. These data are monitored and evaluated only at the national level.

Ensuring the sustainable development of tourism in protected areas can be reached by limiting the number of visitors or their duration of stay, limiting movement on more select routes, supporting demand outside the high season, banning certain activities, redirecting visitors to other areas, etc. Therefore, the education of visitors and emphasis on their environmental enlightenment is important. The carrying capacity can be expressed in several ways and it can be different for each destination. It requires a comprehensive indicator that contains several subsystems (economic, social, environmental, psychological, technological, etc.). Measures to ensure sustainable tourism need to be translated into tourism development strategies and plans. All stakeholders should be involved in the monitoring of sustainable tourism development.

Conclusion

This paper aimed to examine the availability and limitations of data for the measurement of sustainable tourism indicators in protected areas of Slovakia. We have found that the available statistical data can express only some of the most frequently used indicators of sustainable tourism development. This data can be used to measure only basic tourism statistics (number of accommodation facilities, the number of overnight stays, etc.) and their collection does not consider an examination of the sustainable development of tourism. Secondary data, however, are not sufficient to measure the development of tourism in protected areas in Slovakia. The social impacts (e.g. examination of stakeholders' opinions) and the environmental impacts (waste production, energy consumption, etc.) of tourism development are not systematically monitored and evaluated. The social and environmental impacts of tourism development are not evaluated even regionally or nationally. Data collection depends on the willingness of stakeholders (service providers, residents, visitors). The optimal solution is to combine different data sources and adapt the data collection methods to the conditions and capabilities of each destination.

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Summary

Indicators of sustainable tourism are used for the multidimensional evaluating of destination development. The application of indicators must be custom-made to each destination and depends on various factors, including data availability, type of destination, stakeholders' contribution and tourism development objectives. In Slovakia, there is little attention to the measurement and evaluation of sustainable tourism development. The aim of this paper is to examine the availability and limitations of data for the measurement of sustainable tourism indicators in protected areas of Slovakia. The paper deals with the availability and relevance of the data of the official statistical unit, tourism-related ministries, destination management organisations, nature conservation agencies and other institutions in assessing the sustainable development of tourism. In order to arrive at an impression of which data are available, we conduct literature-based research and comparative analyses. The article deals with the availability of data for measuring sustainable development of tourism and its limitations in Slovak protected areas.

Key words: Sustainable Tourism, Indicators of Sustainable Tourism Development, Protected areas, Data Collection

Streszczenie

Wskaźniki zrównoważonej turystyki na obszarach chronionych

Wskaźniki zrównoważonej turystyki są wykorzystywane do wielowymiarowej oceny rozwoju miejsc docelowych. Zastosowanie wskaźników musi być dostosowane do każdego miejsca docelowego i zależy od różnych czynników, w tym dostępności danych, rodzaju miejsca docelowego, wkładu zainteresowanych stron i celów rozwoju turystyki. Na Słowacji niewiele uwagi poświęca się pomiarowi i ocenie zrównoważonego rozwoju turystyki. Celem opracowania jest zbadanie dostępności i ograniczeń danych potrzebnych do pomiaru wskaźników zrównoważonej turystyki na chronionych obszarach Słowacji. Opracowanie dotyczy dostępności i przydatności danych oficjalnej jednostki statystycznej, ministerstw związanych z turystyką, organizacji zarządzających miejscem docelowym, agencji ochrony przyrody i innych instytucji w ocenie zrównoważonego rozwoju turystyki. Aby zorientować się, które dane są dostępne, prowadzone są badania literaturowe i analizy porównawcze. Opracowanie dotyczy dostępności danych do pomiaru zrównoważonego rozwoju turystyki i jej ograniczeń na słowackich obszarach chronionych.

Słowa kluczowe: zrównoważona turystyka, wskaźniki zrównoważonego rozwoju turystyki, obszary chronione

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