DEVELOPING AND SCREENING SUSTAINABLE TOURISM INDICATORS IN THE ILE-ALATAU STATE NATIONAL NATURE PARK

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Abstract

The concept sustainable tourism does not work without monitoring, assessing and implementing indicators for a destination. The idea of sustainability concept, have a well-established connection with the protected areas but has received limited attention. Consequently, the development of sustainable tourism indicators for the national parks have not developed conveniently. Tourism in protected areas produces benefits and costs for the local community, therefore the indicators help to identify both.

This paper investigates the question of how to monitor sustainable tourism development in the Ile-Alatau state national park (hereafter the Park) in Kazakhstan. It describes some of the methodological tools used in the development of sustainable tourism development indicators. This paper is part of a PhD thesis and the research is not finished yet.

Key words: *sustainable tourism, development, indicators, protected areas, Kazakhstan*

1. INTRODUCTION

According to the Development Strategy of the Republic of Kazakhstan until 2030, the country should become clean and green, with fresh air and clear water. To achieve these goals, Kazakhstan became an active participant in international programs and agreements on the issues of ecology and sustainable development. Since independence, institutional foundations for sustainable development have been formed in Kazakhstan, which include ministries of environmental protection, labor and social protection, health, special bodies for the management and protection of forests, biodiversity, water and land resources. In the early nineties, the state environmental council and the first commission on sustainable development were established. Various interdepartmental commissions and working groups were created and successfully worked: on health, employment, environment, climate change, education and other target structures, and mechanisms. The ratification of global conventions on climate change, biodiversity conservation, combating desertification, as well as regional conventions on transboundary watercourses, public participation (Aarhus Convention) and others promoted the reform of management systems and the achievement of certain results (Yesekin, 2013). In 2007, the Concept of the country's transition to sustainable development until 2024 was adopted, which later became invalid. Despite many achievements and participation in international programs, the problems of the environment have not been resolved, for example, the deterioration of the ecological situation in the Aral Sea, the Caspian Sea and the Balkhash Basin.

One of the tools for achieving sustainable development is the creation of a system of specially protected natural areas. According to Woodley (1993), sustainable tourism in parks (and other destinations) should be determined primarily from the point of view of sustainable ecosystems. In Kazakhstan, only 8.5% of the entire territory is allocated for specially protected natural areas and by 2020 it is planned to increase to 10%, which is equated to world standards. Among the specially protected areas, national natural parks have developed in Kazakhstan only in the last 30 years. The first national park was established in 1986. The main idea of creating national parks is to preserve the unique corners of the wild nature while providing people with opportunities to engage in recreational activities, to get knowledge about nature. Natural parks and tourism are interrelated, while there is a need for tourists to travel to ecologically clean areas of the earth.

In Kazakhstan, there are 12 national parks, 3 more are planned to open. Ile-Alatau State national nature park (hereafter the Park), one of the 12 national parks of Kazakhstan, was created in 1996 with the 164 450 hectares territory in the southeast part of the country (Decree of the Government of Republic of

Kazakhstan, 1996). For today the territory of the park is extended to 199 392 hectares. For tourism are allocated to 13% of territory (Park report, 2016). The purpose of creating the park was to save a unique natural, historical and cultural resources of north slopes of Tien-Shan Mountains. The Park's nature is unique. Dark coniferous forests dominated by Schrenk's spruce, or Tien Shan - the most important element of the landscape of middle mountains in the national park, also the wild apple - Malus sieversii. On the territory of park there are a lot of monuments of archeology, for instance cemeteries of the Early Iron Age, Talhiz hillfort (IX-XIV centuries) and Karakemer (IX-XII centuries), petroglyphs. There are 42 routes in the park, including 7 nature trails and 35 tourist routes, of which 27 are horseback riding, 8 for bicycles. During the period from 2011 to 2015, the park was visited by 515,176 people. In 2015, 113,260 visitors were accepted, of which 76 foreigners were sent by travel agencies (Park report, 2016).

The climate of the territory is continental, with a long warm period and a snowy, fairly cold winter. Such conditions are favorable for both summer and winter holidays. Mountains create an obstacle to the winds, the presence of forests softens the temperature fluctuations, coniferous trees are a generator of clean, air-saturated phytoncides, which provides comfortable conditions for rest. There are outcrops of mineral springs.

The richness of the species of flora and fauna, their high numbers, the uniqueness of the combination of species of different genesis in ecosystems is very attractive for customers interested in scientific tourism, sports hunting. However, an uncompleted inventory of flora and fauna reduces the attractiveness of the territory for tourists of a special scientific and scientific-cognitive orientation. This is not the only problem of the park. Making a literature review on the subject of the study, the authors found the following problems:

1) Increased load on the natural systems of the park. Direct contact with the settlements, dacha massifs, and megalopolis located near the borders of PAs causes large loads on the natural systems of the park. Tourist activities in the park are more massive. The main difference between the models of mass and sustainable tourism lies in the fact that part of the benefits obtained in the case of sustainable tourism development is directed to the restoration of the resource base and the improvement of production technologies (Table 1).

Table 1. Main differences between sustainable tourism and mass tourism (Source: Novikov, 2007)

Comparison Factors	**Sustainable tourism**	**Massive tourism**
Attracting tourists	The volume of provision of tourist services is consistent with the socio-economic and environmental capabilities of the territory, which determine the nature of tourism activities	Tourist activity is focused on the constant increase of tourist flows. The volume of provision of tourist services is limited only by the capacity of the material and technical base
Tourist behaviour	Visitors during their stay follow a certain model of behavior in accordance with the culture of the visited territory. The behavior of visitors does not damage the natural resources, traditions, and customs of the local population	Visitors bring their way of life and behavior to the recreational area
Relation to nature	For the visitors, the very value of the existence of natural objects is important, and not their consumer value	The consumer attitude of visitors to natural objects dominates. Natural objects are estimated on the basis of their usefulness to humans
Relationship between tourists and local people	Friendly, respectful relationship, the purpose of which is the knowledge of a new culture	Formal relations. Visitors consider themselves masters who should be serviced

2) Increasing general pollution of the territory, air basin and degradation of ecosystems due to increased anthropogenic load, insufficient attention to the problem of garbage collection and general pollution of the territory;
3) The registration of visitors present on the territory of the Park is very difficult, because of the territory of the park has a long border, accessible from almost all sides, especially for pedestrians. The system of passes requires the elaboration of a clear mechanism for issuing passes and control, in order to avoid the formation of queues at checkpoints and conflict situations that reduce the psychological comfort of a holiday in the SNNP;
4) Lack of research in the field of tourism and recreational activities. Between the SNGP and third-party organizations, such as Kazhydromet PVC, Institute of Geography LLP, National Science and Technology Holding Parasat, Physical-Technical Institute LLP, contracts are concluded, the main results of the work are focused on meteorological, hydrogeological and glaciological observations And does not pay attention to marketing research and market segmentation of potential consumers of tourism services;
5) Lack of conditions and incentives for innovation, "green" technologies and attracting environmental investments to reduce pollution, save natural resources;
6) Lack of effective monitoring of recreational and tourist activities, which does not allow regulating the recreational load and redistribute flows of tourists in order to preserve the ecosystems of the SNNP;
7) The unsettled relations with owners, tenants, and settlements in the protected zone within the territory make it difficult to effectively manage the Park;
8) Lack of informational materials about the tourist opportunities of the Ile-Alatau National Public Service, about the types of tourist services and the prices for them;
9) Insufficiently active work in the field of environmental education in relation to the whole range of available target groups, which does not contribute to the careful treatment of the environment by all participants of tourism and recreational activities.

Grouping the identified problems, the authors set the following goals: 1) Identification of sustainable tourism development indicators for the Ile-Alatau National Park; 2) Determine the recreational capacity on the territory of the Park. According to experts, short-term interests and frequent changes in policies, renewable energy and other sectors of the green economy that are important for the population and the future of the country are one of the obstacles to achieving Kazakhstan's sustainable development (Yesekin, 2013). Great opportunities for reforming the whole system of nature management and environmental protection are related to planning and monitoring. One of the key modern planning tools in many countries is strategic environmental assessment, which allows to take into account long-term consequences in the development of economic programs and strategies and to prevent potential conflicts. Another effective planning tool is the targets and indicators widely used in international practice and having a regulatory status.

After Brundtland's report in 1987, which led all sectors of society to take a course on sustainable tourism, sustainable tourism concepts were developed around the world, destination development indicators based on key traditional indicators such as the number of tourists, the number of nights, the occupancy of places, etc. Choi and Sirakaya (2006) defined traditional indicators as inadequate or inappropriate to measure sustainable growth accurately. Consequently, we should use a wider set of indicators to develop sustainable tourism indicators for the national park. Also, to develop sustainability indicators we can use two approaches: scientific and policy-maker. Policy-maker approach based on simple, data available, synthetic indicators, while scientific approach uses a large amount of information, using both scientific and technical methods (Tanguay, G.A., Rajaonson, J. & Therrien, M., 2013). The development of clear and measurable indicators forms the basis for a monitoring and evaluation system for any project. The goal of the indicators is to simplify complex data for end users in order to improve the quality of subsequent decisions (Miller, 2001). Another simple definition was given by Hart (1997), calling the indicators tools that help us understand where we are, on what path we are moving and how

far we are from our goal. According to tourism researchers, public and non-governmental organizations, the sustainability indicators can be considered as a crucial part of destination planning and management, help them to assess the quality of life residents, to do their job effectively (UNWTO, 2004, Miller and Twinning-Ward, 2005). The concept sustainable tourism does not work without monitoring, assessing and implementing indicators for a destination. Torres-Delgado and Saarinen, (2014) state that the concept of sustainable tourism is futile without indicators, and other monitoring instruments, that can effectively capture, and express the impacts of tourism, while also being able to depict if impacts are acceptable or not. What can give us a creating sustainable tourism indicators? According to WTO (2004), some of the benefits from good indicators include:

1) better decision-making - lowering risks or costs;
2) identification of emerging issues - allowing prevention;
3) identification of impacts - allowing corrective action when needed;
4) performance measurement of the implementation of plans and management activities – evaluating progress in the sustainable development of tourism;
5) reduced risk of planning mistakes - identifying limits and opportunities;
6) greater accountability - credible information for the public and other stakeholders of tourism fosters accountability for its wise use in decision-making;
7) constant monitoring can lead to continuous improvement - building solutions into management.

2. METHODOLOGY

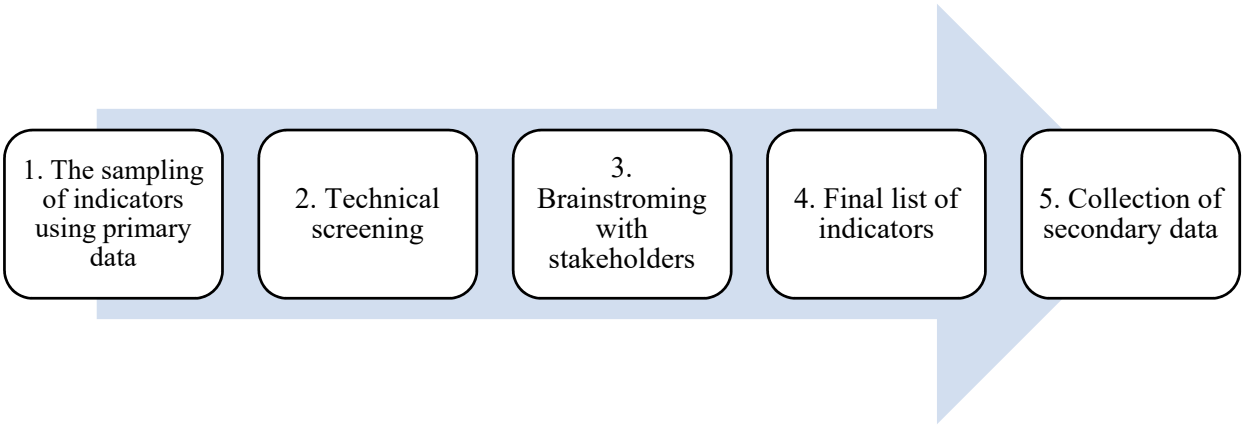
The idea of sustainability concept, have a well-established connection with the protected areas (Dewhurst, Thomas, 2003, Woodland, Acott, 2007). Also Boyd and Butler (2000), mentioned: "Sustainability, as a concept within parks, has received limited attention". Consequently, the development of sustainable tourism indicators for national parks have not developed conveniently. As explained in the introduction, many tourism researchers recommend the development of sustainable tourism indicators, but few of them discussed the technical aspects of indicator development or monitoring (Miller and Twinning-Ward, 2005). One of the well-known approaches is the WTO's Indicators of Sustainable Development for Tourism Destinations: a Guidebook (WTO, 2004). Developed by a large number of experts, this guide recommends 12 steps to indicator development and use, grouped in three phases (Box 1).

Research and Organization
Step 1. Definition/delineation of the destination.
Step 2. Use of participatory processes.
Step 3. Identification of tourism assets and risks.
Step 4. Long-term vision for a destination.
Indicators Development
Step 5. Selection of priority issues.
Step 6. Identification of desired indicators.
Step 7. Inventory of data sources.
Step 8. Selection procedures. Implementation
Step 9. Evaluation of feasibility/implementation.
Step 10. Data collection and analysis.
Step 11. Accountability, communication and reporting.
Step 12. Monitoring and evaluation of indicators application.

Box 1. Indicator development phases (WTO, 2004)

Following these steps, it was first necessary to investigate the issue and identify the problems. International definitions of sustainable development and indicators were the starting point for the study. At the same time, it was necessary to find indicators that reflect the priorities and problems of sustainable tourism development in the Kazakhstan context. They should clearly reflect the objectives set by the concept of sustainable development.

The study is divided into 5 main stages (Box 2). At the first stage, the authors made a full literature review of foreign and domestic authors, made a potential list. As an example, the authors used the following authors research and cases: Indicators of Sustainable Development for Tourism Destinations: a Guidebook (WTO, 2004), G.Miller, T.Choi & E.Sirakaya, Strategy of development of tourist industry of Kazakhstan up to 2020, Travel & Tourism Competitiveness Report: Kazakhstan, European system of tourism indicators, etc.



Box 2. Research stages

In general, the development of sustainable tourism is based on three aspects: economic, socio-cultural and environmental and, accordingly, indicators should be determined by these categories. However, according to Mowforth and Munt (2009), sustainable development of communities is associated with additional aspects: ecological, institutional or political, cultural, national, regional, local communities, etc. And given the special role of tourism in the lives of residents, we cannot ignore other indicators related to tourism activities. Therefore, the potential list of indicators was summarized for an additional fourth group of indicators "tourism management" (see Appendix).

Armed with a potential list of indicators, the next important step was the selection of indicators for assessing whether these indicators are measurable and appropriate to the situation in the park and by counting the extra ones using technical screening (Table 2) that did not meet these requirements, reduce the number of indicators in an achievable set up to 50.

Table 2. Technical screening table (Source: Miller, 2001)

	Name of indicator				
	Type of indicator				
				Yes	**No**
1	Is the indicator applicable to Kazakhstan?				
2	Is the indicator a complete indicator?				
3	Is the indicator applicable for all types of tourism in the national park?				
4	Are the data for the indicator easily obtained?				

5	Is the calculation required for the indicator simple?		
6	Is the indicator understandable?		
7	Is the data objective, quantifiable and reliable?		
8	Does the indicator point towards sustainable development?		
9	Can the indicator be measured on an ongoing basis?		
	Links to other indicators		
	Notes		

For technical screening, the indicator that did not receive a "yes" answer from 1 to 6 questions, and at least two "yes" from 7 to 9 questions were excluded from the list. As a result, the number of indicators decreased to 65.

In order to conduct this study, a multi-step process was planned that combines the collection of primary and secondary data in the following ways:

1) Visitor survey;
2) Interview with local residents: since the Ile-Alatau National Park is located near the most populous city and region of Kazakhstan, a poll is being conducted not only among residents of settlements in the park but also among Almaty residents;
3) Staff survey;
4) Interviews with enterprises operating in the national park;
5) A collection of primary data through a literature review of Kazakhstani, Russian and other foreign researchers on sustainable development, as well as statistical data, annual and quarterly reports of the Park, regulatory documents of the Republic of Kazakhstan, etc.
6) Stakeholder's workshop.

Based on the collected data, we will also achieve one more research task: calculation of the recreational capacity of the SNNP territory. Recreational loads for the Ile-Alatau SNGP were first developed during the preparation of the project "Correction of the feasibility study of the Ile-Alatau National Natural Park in terms of developing a master plan for the development of infrastructures" in 2007 by the Centre for Remote Sensing and GIS "Terra". According to this document, the existing tourist routes of the Ile-Alatau SNNP of different directions can accommodate 275 people of organized vacationers daily, taking into account the demand for routes by 100%, per month this figure is 8245 people, per year 33710 people. In addition, the GNPP is visited by a large number of people who have their own holiday. Due to lack of control over the number of tourists on popular sites, it is necessary to reconsider the recreational load on the park's hiking trails. Since in 2015 the park was visited by 113 260 visitors, because of the problems of segmentation of groups of tourists, it is unclear the number of tourists who used hiking trails.

The maximum norm of recreational use can be ecological capacity, which is equal to the maximum permissible recreational load divided by the coefficient of environmental impact, depending on the type of recreation. According to the studies of Russian ecologists A.I. Tarasov and M.T. Serikov, this coefficient is for: road recreation - 0.01, roadless - 1, mining - 2, bivouac - 5, picnic - 7, motor transport and transport pedestrian – 13.

The maximum recreational load per 1 ha of forest per day should be from 0.3 to 3.5 people. Depending on 5 main factors: 1) length of roads; 2) prevailing breed; 3) age group; 4) group of bonitas classes; 5) group of forest types and type of growing conditions. Admissible recreational loads are higher in mixed herbage types and fresh and humid types of forest-growing conditions, in uneven-aged and mixed stands, in high-productivity plantations of Class I and I, in natural stands of trees, in semi-open types of spatial

structure with courteous tree arrangement. Chizhova V. developed standards for permissible loads, depending on the types of forest and forest conditions (Maltceva, 2007).

According to the Rosgiproles Institute research, the permissible recreational loads, depending on the functional zones, were determined within the limits of: in the quiet rest zone - up to 5 people/ ha, in the recreation area - up to 20, in the active recreation zone - from 20 to 100 people/ha.

As an example, take the frozen Kokzhailau project, which was planned to be built on the territory of the Park. By the Decree of the Government of the Republic of Kazakhstan of November 14, 2011, on the total area of the zone of influence of the ski resort will be 2865.0 hectares. At the same time, the total area of the land plot occupied for construction is 1002 hectares, of which 216.76 hectares are planned for the building, and 45, 32 hectares for landscaping (Zelt & Kireev, 2012).

The maximum permissible loads on recreational areas, which are usually calculated per unit area and must correspond to natural recreational tanks, are determined as follows:

$$\Sigma_т = \frac{M_{load}}{S_{area}} * k \times f \times g \times j \times q,$$

where $\Sigma_т$ - index of a natural recreational capacity of the territory, people/ha;

M_{load} - the indicator of the maximum load of the territory, related to the influence of the anthropogenic factor (number of people), people;

S_{area} - Total area of the territory under consideration, ha;

k, f, g, j, q - a system of corrective correction factors that take into account the degree of development of the ecological infrastructure and the level of development of the recreational area.

Similarly, the coefficient of coverage of the recreational area is calculated by the system for collecting, storing, transporting and disposing of solid domestic waste (f). The values of this coefficient also vary from 0.1 to 1.0 (Akimova, etc., 2011).

The calculations should also take special account of the degree of influence on the specially protected area (g), depending on the vulnerability and status of the territory.

This coefficient, taking into account the degree of influence on the specially protected territory, also depends on the degree of vulnerability and status of the specially protected territory and is determined by the formula:

$$g = g_v * g_c,$$

Where g_y is the coefficient of the vulnerability of the territory, in our case 0.7.

The following values of this coefficient are proposed depending on the category of specially protected natural areas, for example, the territory of the natural complex of the city, and also taking into account the status of these territories. The coefficient applied depending on the status of the specially protected area (gc) is given in Table 3.

Table 3. Determination of the vulnerability index of the territory depending on the category of the specially protected natural area (Source: Maltceva, 2007)

№	Specially protected area category	Applicable vulnerability coefficient of the territory, g_v
1.	Reserve	5
2.	National Park	2.5
3.	Wildlife sanctuary	0.9
4.	Natural monument or feature	0.8
5.	Health resorts	0.7

In order to adjust the recreational load on the environment, it is also suggested to take into account the coefficient of environmental restoration, which depends on the period (from 1 to 10 years) and the level of its self-recovery (low, medium, high). This coefficient ranges from 0.1 to 1.5. In addition, the calculation should also take into account the coefficient of recreational development of the territory (q). This coefficient depends on the share of involvement of the territory in the economic turnover.

Table 4. Determination of the coefficient taking into account the status of a specially protected natural area (Source: Zelt & Kireev, 2012)

№	Status of the specially protected area	Applicable vulnerability coefficient of the territory, g_y
1.	Specially protected territory of national importance	25
2.	Specially protected territory of regional importance	15
3.	Specially protected area of local importance	5

The coefficient that takes into account the impact category on the specially protected area (g), depending on the degree of vulnerability and the status of the specially protected area, is calculated for the Kokzhailau as follows:

$$\mathbf{g=gy*gc=0,7*25=17,5}$$

The coefficient of self-recovery of the natural environment (j) is taken as 0.3, based on the self-recovery period of the natural environment - 3 years, the level of self-healing is low. The coefficient of recreational development of the territory (q), depending on the percentage of involvement of the territory in economic circulation, in accordance with the table is 0.4.

$$q= \frac{S_{manuf}+S_{rec.}*100\%}{S_{perm.liv}} = \frac{216,76+1002ha*100\%}{261,96} = 0,04\%$$

At the same time when calculating the load on recreational facilities, it is proposed to take into account not only the number of visitors who are vacationing taking into account the seasonality factor, but also the residents living in the given territory. In the total area of the territory for which the recreational load is provided, there are included, in addition to specially protected territories, lands occupied with agricultural production, residential and recreational buildings, etc.

When calculating the recreational capacity of the territory, it is proposed to use a number of correction factors, including the coefficients of coverage of the recreational area by sewerage networks, the system

for collecting, storing, transporting and disposing of solid domestic waste, a coefficient that takes into account the degree of influence on the specially protected territory, depending on the vulnerability category and the status of the territory nature reserve, national park, health resort area, etc.), the coefficient of self-recovery of the natural environment, which depends on the time period itself Recovery and degree of self-recovery (high, medium, low), as well as the coefficient of recreational development of the territory, depending on the level of its involvement in economic circulation.

To determine the optimal recreational capacity of the territory, it is proposed to use the average indicator, which is calculated by the formula:

$$\Sigma_{opt} = \frac{\Sigma_{max}}{\Sigma_{min}}$$

where $\Sigma_{max.}$ - maximum natural recreational capacity of the territory, people/ha;

Σ_{min} - minimum natural recreational capacity of the territory, people/ha;

Thus, the maximum actual recreational capacity of the Kokzhailau is:

$$\Sigma_{max} = 150131*0,002*0,31*17,5*0,3*0,04=19,5 \text{ people/ha}$$

Calculation of the minimum natural recreational capacity of a given territory, taking into account its permanent residence on the territory of the population, is:

$$\Sigma_{макс.т} = 121381*0,002*0,31*17,5*0,3*0,04=15,8 \text{ people/ha}$$

The average index of the natural recreational capacity of the GLK territory will accordingly be:

$$\Sigma опт.т_{т\ мак} = 19,5/15,8=2 \text{ people/ha}$$

It should be noted that the aggravation of environmental problems caused by increased anthropogenic impact on recreational areas, especially in large cities, inevitably leads to aggravation of the problems of socio-economic development. As a tool for assessing and regulating the use of recreational facilities, the procedure for environmental auditing of the territory may be recommended.

3. RESULTS AND CONCLUSION

This paper offers further research in the area, which will result in the analysis and assessment of indicators and their impact on the sustainable development of the Ile-Alatau State National park. The results of the study will be reflected in a PhD dissertation in 2018.

This study explores the use of indicators of sustainable development in the Ile-Alatau SNGP, as well as the definition of recreational capacity of the territory. Through a literature survey and brainstorming, the authors found the main problems, as a result of which a potential list of indicators was made. Then 56 indicators were selected, which will be further investigated by stakeholders. Also during the study authors have calculated a recreational capacity of territory in the example of the part of the Park.

Ile-Alatau State National Park has a huge potential for the development of tourism activities. The results of this study can help park managers better manage recreational activities from a sustainable perspective. While the development of tourism is at the initial stage, it is necessary to take a course on sustainable development and this will be helped by indicators.

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Appendix - Potential list of indicators

	Criteria	**Name of indicators**
1.	Economical	% of full-time jobs in tourist accommodation facilities that are located in rural areas
2.		% of GDP generated by national park in local economy
3.		% of jobs in tourism that are seasonal
4.		% of people who derive all or some of their income from tourism
5.		% of site facilities foreign owned
6.		% of tourism companies sourcing locally produced food, drink, goods and services
7.		Amount spent on marketing the protected area;
8.		Average length of stay of tourists (nights) in peak season
9.		Cost of entry or transport access expressed in hours work at local wage)
10.		A number of beds available in commercial accommodation establishment per 100 residents
11.		A number of guides/operators permitted to use park/protected area
12.		Number of local people (ratio men to women) employed in tourism (also ratio of tourism employment to total employment)
13.		Number of same day visitors per month/quarter/year
14.		Occupancy rate in commercial accommodation establishments per month and average for the year
15.		Revenue from paid visitors
16.		Total number of visitors to park and to key sites
17.	Socio-cultural	% of businesses that communicate their sustainability efforts to visitors in their products, marketing or branding
18.		% of events/festivals that are focused on traditional/local culture and heritage
19.		% of full-time tourism employees who have been on training courses during the year
20.		% of men and women employed in the tourism sector
21.		% of public transport that is accessible to people with disabilities and with specific access requirements
22.		% of rooms in commercial accommodation establishments accessible for people with disabilities or participating in recognised accessible sites
23.		% of tourism businesses registered under women/men.
24.		Number of traffic accidents per annum.
25.	Environmental	% hunting or fishing in destination by locals, tourists;
26.		% of tourism accommodation and attraction infrastructure located in “vulnerable zones”

27.		% of tourism enterprises that use renewable energy resources
28.		% of tourism establishments with water treated to international potable standards
29.		% of tourist facilities using recycled/secondary or tertiary wastewater system(separating a different type of waste)
30.		% of tourists and same day visitors using different modes of transport to arrive at the destination
31.		% of visitors who do not pay for entry (where entry fee is charged);
32.		% trails and routes (length) in damaged condition;
33.		Average carbon footprint of tourists and same day visitors travelling from home to the national park
34.		Average volume of water used per guest night in hotels with water meets
35.		Energy consumption per tourist night compared to general population energy consumption per resident night
36.		Minimum viable area (MVA) for visitors (visitor surveys)
37.		Number of crimes against tourists;
38.		Number of endangered species
39.		Number of good air quality days
40.		Number of human/animal contacts reported involving injury or risk of injury
41.		Number of incidents of poaching identified
42.		Number of incidents of vandalism;
43.		Number of sites/ecosystems/assets considered to be damaged or threatened (% of all defined systems/assets in protected area);
44.		Number of wardens or control staff (and number per tourist).
45.		Total number of cars to park and key sites
46.		Waste volume produced by the destination (tons) by month
47.	Tourism management	% employees with tourism/management education
48.		Number of camping zones in the national park
49.		% of main attractions open in shoulder/off seasons;
50.		% of newly registered tourist accommodation facilities that have had an environmental assessment conducted
51.		% of residents who are satisfied with tourism
52.		% of the top 5 most visited attraction sites rated either good or excellent in terms of their services, facilities and environment
53.		% of visitors who note that they are aware of destination sustainability efforts
54.		% tourist establishments open all year (accommodation and services)

55.		Existence of integrated site/area management strategy with tourism/environmental components
56.		Level of cooperation among stakeholder groups
57.		Number of facilities offering alternative activities during shoulder and low season (capacity and use levels per activity type)
58.		Number of informative, directional, and interpretive signs