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INDICATOR BASED ECOTOURISM PLANNING

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Abstract

There is a growing interest for sustainable tourism and ecotourism on a global level. The concept of ecotourism stresses the human responsibility to the natural environment in a way that ensures the sustainable and responsible relationship of tourism and travel industry to environment. Ecotourism is particularly important as it succeeds in having minimum impact on natural resources while providing maximum economic benefit for the local communities. However, ecotourism has to be carefully planned taking into account environmental, economic, socio-cultural, experiential and managerial indicators. This paper considers development of indicators framework as a tool for sustainable management od ecotourism destination.

Key words: ecotourism, indicators, management

JEL Classification: C1,C32, C35

INTRODUCTION

Ecotourism is the part of sustainable tourism which is made up of cultural, rural, and natural tourism aimed to conserve biodiversity, sustain the well-being of local people, including learning experience, involving responsible actions on the tourism industry and requiring lowest possible consumption of non-renewable resources and stresses (Anderson, 2009; Wood, 2002 in Pasap et al., 2015). There are many definitions of ecotourism pointing out that ecotourism is about traveling to and visiting natural areas, places where nature still exists in a relatively unaltered state.

However, all-embracing definition is provided by the International Ecotourism Society. According to it (TIES, 2019), the ecotourism can be defined as "responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education". The characteristics of ecotourism are as follows:

- has low negative visitor impact on natural resources,
- reduces threats to biodiversity,
- promotes conservation and sustainable use of natural resources,
- respects local cultures and traditions,
- provides economic benefit for local people,
- generates income for the conservation of protected areas,
- helps educate the travellers.

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Protected areas are attractive ecotourism destination because of their ecological value. Well preserved and clean natural resources within the protected areas are the greatest value to the tourists and there is a definite relationship between the value of the protected areas and the benefit of ecotourism activities.

Potential benefits according to Leung (2018) are divided into 3 groups:

  i. environmental benefits such as public education on conservation issues, creation of awareness of the value of natural resources, and support to research and development of good environmental practices to influence the tourism businesses;

 ii. economic benefits in form of increase of jobs and income for local residents, stimulation of new tourism enterprises and diversification of the local economy, improving local facilities, transportation and communications, encouraging the local manufacture and sale of goods, and providing financial support to protected areas through payment of tourism fees and charges.

iii. Social/Community benefits such as improving living standards for local people, supporting environmental education for visitors and local people, improving intercultural understanding through social contact, encourage the development and conservation of culture, crafts and the arts, or contributing to mental health by reducing stress.

The economic benefit for protected areas managing authority can be very significant such as the case in South African national parks which earned 58 million USD from accommodation, canoe trail and houseboat concessions, combined with rentals of shops in the period 2002-2012 (SANParks, 2012 in Leung, 2018).

Although positive impact of ecotourism is widely recognised, there is a solid criticism towards ecotourism and some negative impacts are recognised. For example, the increase in revenues generated is believed to be seasonal and thus it may create restrictions when planning community development takes place. What is more, it could be destructive to local communities, natural environment and local culture (Eagles et al., 2002; Pasap et al., 2015). Therefore, the visitor management in protected areas is crucial to ensure that the natural capital they protect can be enjoyed by future generations. (Bartula & Radun, 2020).

There are different methodological approaches to visitor management planning, among which the Limits of Acceptable Change (LAC) framework has been used and accepted worldwide. In order to set up framework for Limits of Acceptable Change appropriately, the important step, after identifying issues and describing opportunity classes, is selection of indicators for resource and social conditions. This step identifies specific standards which require inventorying and monitoring. Therefore, the purpose of this paper is to present indicator selection process important for efficient ecotourism planning.

1. SUSTAINABLE TOURISM INDICATORS

In Agenda 21, the UN Conference on Environment and Development in 1992 drew attention to the importance of indicators as tools of sustainable resource management. According to the UNWTO, indicators of sustainable tourism are defined as "a set of measures that provide the necessary information to better understanding the links between the impact of tourism on the cultural and natural setting in which this takes place and on which it is strongly independent." Establishing sustainable tourism indicators for

ecotourism management serves as early warning system and a way of detecting potential future problems.

Study conducted by Agyeiwaah et al. (2017) identified four core and three peripheral groups of indicators. The core group of indicators comprises economic, social, environmental and cultural ones, while political, management/institutional and technological indicators belong to the peripheral groups.

The economic indicators measure impact of ecotourism on employment opportunities, local business development and revenues created by ecotourism. The environmental indicators measure impact of biophysical changes such as changes in air, water and soil quality, water quantity, wildlife habitat and/or habituation of animals, while socio-cultural indicators measure impact of ecotourism on the living standards of local people and interaction of tourists with tradition of local communities such as different events or manifestations, local food and handicrafts (Drumm et al. 2004).

Each core group of indicators has variety of key indicators as presented in Table 1, that could be easily adapted to the local conditions.

During the process of indicators selection, the following criteria should be taken into consideration: relevance, availability of data to evaluate them, and the feasibility of comparing results over time. In addition to that, good indicators have the added advantage of separating central from peripheral issues which tend to obscure priorities and hence retard progress (Agyeiwaah et al., 2017).

Among core groups, the cultural indicators have the lowest frequency, while technological indicators have the same position within the peripheral groups.

Table 1. Core indicators and indicator themes (adapted from Agyeiwaah et al. (2017)

Indicator core groups	Key indicators
Economic	Revenues and profitability
	Employment
	Visitor satisfaction
	Tourist arrivals, volume and numbers
	Accommodation quality, capacity and occupancy
	Local ownership in business
	Repeat visit
	Expenditure
	Unemployment rate
	Length of stay
Social	Residents' involvement, participation and awareness
	Congestion and overcrowding
	Community satisfaction
	Safety and security
	Access
	Community health
	Wellbeing and quality of life
	Residents attitude and complaints
	Education
	Crime rate and harassment
	Gender equality
	Sex tourism and child sex abuse
	Tourists visits to local doctors
Environmental	Water quality and management
	Solid waste discharge and management
	Recycling rate
	Air/atmospheric quality
	Energy consumption
	Environmental awareness

	Air pollution
	Noise pollution
	Number of endangered species
	Others
Cultural	Retention of local customs and language
	Maintenance of cultural sites
	Actions and events taken to promote indigenous culture
	Satisfaction with local integrity
	Loss of authenticity

2. METHODOLOGY

The indicator framework for ecotourism planning and monitoring in the Zasavica Special Nature Reserve in Serbia is customized methodological approach developed by Agyeiwaah et al. (2017) and Drumm et al. (2004).

The Zasavica Indicator framework contains three core indicator groups: (i) environmental, (ii) economic and (iii) socio-cultural, as well as experiential indicators which belong to peripheral indicator group.

For each group of indicators (core and peripheral), both the key indicators and site specific indicators were defined. For each site specific indicator, the standards were established that required placing a quantitative value on the selected indicators that set acceptable limits.

3. RESULTS

The Special Nature Reserve Zasavica is situated in the Republic of Serbia, close to the Sava River on the territory of Sremska Mitrovica and Bogatić municipality. It is a mosaic of aquatic, wet meadows and alluvial forest ecosystems reach in rare and endangered species. The protected area covers 1,128.55 ha, while buffer zones encompass 3,462.65 ha. Zasavica is designated as a Ramsar site, an Important Plant Area, Important Bird Area and Prime Butterfly Area.

Ecotourism of Zasavica has a long tradition, hence the development of Indicator framework for ecotourism planning and monitoring was of utmost importance for sustainable management of Zasavica natural resources. The economic, socio cultural and experiential indicators are presented below.

3.1. Economic indicators showing economic benefits for the SNR Zasavica

The key economic indicators for the SNR Zasavica, as presented in Table 2, are as follows: (a) number of ecotourism entrepreneurs in neighbouring local communities, (b) amount of collected entrance fees, (c) willingness to (pay for) travel to Zasavica, (d) average duration of stay in the area; (e) overall financial contribution of ecotourism, and (f) level of tourism employment.

The specific indicator that shows direct economic benefits for the Reserve is the amount of collected entrance fees. This amount should be at least 30,000 EUR per year, considering the fact that 70% of the visitors to the Reserve are schoolchildren. This amount enables the basic maintenance of the tourist infrastructure and visitor management. Visitors who make a day trip of over 40 km should make 80% visitors to the Reserve. A detailed marketing plan has been developed to reach this target.

Table 2. Economic indicators for monitoring impacts of tourism on the local economy in the Special Nature Reserve Zasavica

Key indicators	Site-specific indicators	Standards for indicators
Number of ecotourism entrepreneurs in neighboring communities	Number of ecotourism entrepreneurs within the Association of SME for Zasavica	Four new accommodation providers in Association of SME for Zasavica. Now: 11 in Association of pig breeders, 10 in souvenirs, 1 in accommodation.
Amount of entrance fees collected	Amount of entrance fees collected in a year (in euros)	€ 30,000 collected in a year
Willingness to (pay for) travel to Zasavica	Visitors who make a day trip of distance over 40 km (percentage)	80% visitors make a day trip of distance over 40 km
Average duration of stay in the area	Average number of days of stay in the area per tourist	Two days average duration of stay in the area
Overall financial contribution of ecotourism	Overall contribution of ecotourism to the Reserve's budget	Ecotourism revenue contributes 25% of the Reserve's overall budget
Level of tourism employment	Employees from local community (percentage)	80% employees from local community At present 60% persons from villages are seasonally employed in construction works, agriculture, physical works in nature and tourism at the SNR Zasavica in a year

An average number of days of stay in the Reserve per tourist is now 1.2. The standard is set to 2 days per tourist. This indicator is intertwined with a willingness to travel to Zasavica from the distant areas, as well as with the accommodation provided by the local community.

The overall contribution of ecotourism to the Reserve's budget should be at least 25%. This amount will be reached not by increasing the total number of tourists in comparison to the current state, but by increasing the number of tourists willing to spend more time in ecotourism destination.

The economic indicators that will contribute benefits to local communities are: a) number of entrepreneurs from the neighbouring communities engaged in ecotourism and b) level of employment in a local community. All entrepreneurs dealing with ecotourism in the SNR Zasavica in neighbouring local communities are members of the Association of SME for Zasavica. The Association has now 11 pig breeders, 10 souvenir producers and sellers, and one accommodation provider. According to EMP plan, the target to be reached is four new accommodation providers in the Association of SME for Zasavica. The level of employment coming from nearby local communities should reach target of 80% of total staff number.

3.2. Socio-cultural indicators

The three core socio-cultural indicators were identified as priority: (a) maintenance of traditional practices, (b) number of visitors at local cultural events, and (c) general perception of ecotourism activities by residents (Table 3).

Table 3. Socio-cultural indicators for monitoring impacts of tourism on the local economy in the Special Nature Reserve Zasavica

Key indicators	Site-specific indicators	Standards for indicators
Maintenance of traditional practices	Cattle/pig breeding in a traditional way	100% cattle/pig bread in traditional way (extensively)
	Food processing in a traditional way	80% food processed in traditional way, 100% for meat products
	Serving of a traditional food	80% typical traditional local food served in local restaurant
	Facilities built in traditional style	90% facilities built in authentic Srem or Mačva ethno-style Desirable: 100%
Number of visitors at local cultural events	Number of events at Zasavica visitor centre	Minimum 10 events per year Desirable: One event per month
	Number of site visitors who also visit local cultural events at Zasavica	30% of site visitors who also visit local cultural events/sites
	Number of Sirmium Caesar's Palace visitors who also visit Zasavica	50% of Sirmium Caesar's Palace visitors who also visit Zasavica
General perception of ecotourism activities by residents	Number of negative answers in questionnaire about visitor behaviour	Three negative answers to questions about visitor behaviour in the Zasavica protecet area

According to the standards defined for the specific indicators for the maintenance of traditional practices, all cattle have to be bred in the traditional way, while food processing should reach a target of 80%. Furthermore, all meat products must be processed in the traditional way. It is very desirable that all facilities should be built in the vernacular, local traditional style.

The number of visitors to local cultural events and manifestations/festivals will be attracted by organizing different happenings at Zasavica visitor center, at least 10 events per year, while the number of the Reserve visitors who also visit local cultural events at Zasavica should reach the target of 30%. Additionally, the number of visitors to the Sirmium Caesar's Palace, situated in the city of Sremska Mitrovica, who also visit Zasavica, should be at a level/frequency of 50%.

The socio-cultural aspects of the ecotourism are closely linked to local communities. As already mentioned, EMP was developed in a participatory way by involving all relevant stakeholders, particularly representatives of the local communities.

3.3. Experiential Indicators

The following core experiential indicators were identified as a priority for SNR Zasavica: (a) safety violations, (b) evidence about solid waste, (c) number of students using area for environmental education, (d) visitor satisfaction, (e) number of visitors who return to the Reserve and f) visitor perception of nature interpretation (Table 4).

Table 4. Experiential indicators of ecotourism development in the Special Nature Reserve Zasavica

Key indicators	Site-specific Indicator	Standards for indicators
Safety violations	Number of safety violations per month	Two visitor complaints about illegal picking of herbs (e.g. Water Lilly in spring)
	Number of illegal fishermen encountered at Zasavica river	Four per year (one quarterly)
Evidence of solid waste	Number of visitors who indicate that they were disturbed by evidence of solid waste in inappropriate locations	One visitor's complaint per month
Number of students using area for environmental education	Number of students receiving environmental education classes within the visitor centre at the same time	100 schoolchildren/students simultaneously
	Number of students with special admittance	30 young researchers per year using all zones for education and research
Visitor satisfaction	Percentage of visitors pleased with their visit to the area	90% of visitors who indicate that they were "very satisfied" or "satisfied" with their visit to the area
Number of return visitors	Percentage of return visitors	60% at least
Visitor perception of nature interpretation	Visible positive reaction during and after a guided tour	90% guided tours result in an approval or a positive oral/written comment

The purpose of safety violations indicators is to detect illegal tourist behaviour threatening the biodiversity in the Reserve and to keep them at the standard level. The number of safety violations regarding illegal picking of herbs should not exceed two visitor complaints per month, while the maximum number of illegal fishermen at Zasavica river is four per year.

In order to minimize pollution by solid waste, the number of visitors who indicate that they were disturbed by presence of solid waste in inappropriate locations is maximum one visitor's complaint per month.

The number of students employing area for environmental education is also regulated by standards. The number of students receiving environmental education classes within the visitor centre at the same time should not exceed 100, while number of students with special admittance to use all zones for education and research is 30 young researchers per year.

The standard of visitor satisfaction with their visit is 90% of visitors, and they indicate that they were "very satisfied" or "satisfied" with their visit to the area. Furthermore, the number of visitors who return to the Reserve after first visit should be at least 60%.

CONSLUSIONS

Development of ecotourism based on carefully selected indicators secures positive environmental, economic, social and cultural impact on protected area as ecotourism destination.

The Indicator framework serves both as tool for both ecotourism planning and monitoring. Protected area manager has to take care that economic benefit never outweighs the potential risks to the environment and local culture. Take adequate measures and changing the way of site management as soon as the limit of acceptable changes is exceeded secures sustainability of ecotourism destination on long ran.

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