



# Hybrid SWOT - ANP - FANP model for prioritization strategies of sustainable development of ecotourism in National Park Djerdap, Serbia



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## ABSTRACT

The paper presents the results of the research for prioritization strategies of sustainable development of ecotourism in National Park Djerdap (NPDJ), Serbia. Ecotourism as a possible type of tourism in national parks is observed through SWOT situation analysis of NPDJ, Serbia. Based on the results presented in the TOWS matrix - possible SO, WO, ST and WT strategies, which enable sustainable development of ecotourism in the national park, were defined. Using multi-criteria Analytical Network Process (ANP) and Fuzzy Analytical Network Process (FANP) the prioritization defined strategy was determined. It allows sustainable development of ecotourism in NPDJ, Serbia, through the promotion of EU standards for the NPDJ involvement of academic institutions and non-governmental organizations (NGOs). By applying the defined prioritization of certain strategies, there is a possibility of a continuous increase of NPDJ performances which would contribute to the sustainability of the defined ecotourism concept.

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## 1. Introduction

Examples of international best practice confirms that with the development of ecotourism in national parks in addition to protection and conservation of biodiversity and cultural values, they can certainly improve regional development (Ceballos-Lascuráin, 1996; Hong and Chan, 2010; Sayyed et al., 2013; Puhakka and Saarinen, 2013; Öztürk, 2015; Cobbinah, 2015; Santarem et al., 2015).

However, management of national parks could face with the main challenges that occur during the implementation of the concept of ecotourism in order to promote the potentials of national parks. Therefore, they have to address a functional way of management, which comprises compliance with social needs and development priorities, i.e. this means controlling the area of the national park, protecting biodiversity and making the connection between protection and economic development. Therefore, managers of many national parks in the world are under increasing pressure to attract more visitors and to provide adequate facilities for the different needs of visitors. The expansion of tourism in many national parks is causing serious concern for the safety of the natural environment (La Page, 2010). Numerous researchers dealing with this issue have noticed the tension that arises between the need of tourists for various recreational activities in protected natural areas and the need to preserve the environment (Bernard et al., 2009; Luo et al., 2016).

Concerning this, within this research, National Park Djerdap - the largest national park in Serbia was discussed, facing such a challenge, since from the management of the company better organization of people and resources is being expected so that sustainable harmony, which will contribute to the development of this region, would be achieved. Furthermore, with the Management Plan for the National Park Djerdap for the period from 2017 to 2026 is foreseen support for the development of ecotourism content in the national park (Management Plan for the NP Djerdap, 2016). However, a clear strategic plan which can accomplish so defined a strategic objective, i.e. the development of ecotourism in the National Park Djerdap is still underdeveloped, which was the main motive for the authors of this paper to realize this research. Considering the "in situ" situation, this paper suggests a comprehensive management plan that sets out guidelines for the management in order to accomplish several objectives regarding ecotourism development (Masberg and Morales, 1999; Chan and Bhatta, 2013; Biglarfadafan et al., 2016). This plan will include controlled use of NP so that realized tourist movements in this area would not lead to a distortion of the natural balance (Buckley, 2004) on one hand, while on the other, it would enable economic development of the region (Hovardas and Korfiatis, 2008).

Also, there is a lack of literature concerning this research topic i.e. promoting the strategic concept of ecotourism in protected natural areas in South East Europe, therefore the obtained results can give valuable insight for all decision makers who are dealing with the similar decision making dilemma. This reason encouraged the authors of this study to apply the mentioned methodology to the case of the largest national park in Serbia. For the purposes of the development of NP Djerdap

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as an attractive destination for ecotourism, not only for domestic but for foreign tourists as well, a hybrid SWOT-ANP-FANP model for prioritization strategy of sustainable development is being defined in this paper. Thus, this study contributes to the expansion of the mentioned methodology in the field of ecotourism. Also, by the obtained results, it suggests a new approach to strategic decision-making.

This model has been applied in the paper through the following sections: [Section 2](#) gives the relevant literature background regarding introducing and developing the concept of ecotourism in protected areas; [Section 3](#) describes the research area of NPDJ and formulation of the four steps methodological framework for defined research topic; [Section 4](#) discusses the implications of the results of proposed SWOT-FANP model in case of NPDJ; [Section 5](#) presents a discussion of the obtained results and analyses the contribution as well as the life cycle of each proposed strategy and [Section 6](#) presents the main conclusions and recommendations.

## 2. Literature review

Ecotourism is a new type of tourism that is not a consumable resource, it is for educational and adventurous character, focused on undeveloped and sparsely visited natural, cultural and historical sites ([Mayaka and Prasad, 2012](#); [Liu et al., 2013](#); [Lenao and Basupi, 2016](#)). The purpose of such movement in tourism is understanding and appreciation of the natural and social culture of certain destination ([Sirakaya et al., 1999](#)). The development objective of ecotourism is to protect natural areas through the provision of income, environmental protection, education and involvement of the local population ([Ross and Wall, 1999](#); [Das and Chatterjee, 2015](#)). It is based on the idea that eco-environment is a local resource that creates economic value of attracting tourists ([Björk, 2000](#); [Chiu et al., 2014](#); [Cobbinah, 2015](#)). Ecotourism is defined as: “Environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features both past and present) that promotes conservation, has low negative visitor impacts, and provides for beneficially active socioeconomic involvement of local people” ([Ceballos-Lascuráin, 1996](#); [Sayyed et al., 2013](#); [Ghorbani et al., 2015](#)).

Implementation of ecotourism has numerous positive impacts. Many authors have stated that ecotourism contributes to the conservation of endangered species ([Steven et al., 2013](#); [Santarem et al., 2015](#)) and cultural heritage in the world ([Nepal, 2004](#)). Also, ecotourism represents a reliable tool for improving the local economy, particularly in underdeveloped regions. In remote and pristine areas ecotourism is responsible for generating revenue for the protection of the environment ([Honey, 2008](#); [Steven et al., 2013](#); [Santarem et al., 2015](#)).

Moreover, given that the traditional tourism and recreational services in some cases do not meet the needs of tourists in terms of quality of services provided ([Selby et al., 2011](#)), there is a significant space for improving the offer of protected areas by implementing appropriate strategies that will contribute to the development of the whole area, where the trend of ecotourism is gradually gaining in importance ([Arabatzis and Grigorodis, 2010](#)). When it comes to the needs of ecotourists, they also vary from country to country, but basically they come to the same requirements. For this reason, numerous studies have been conducted dealing with the examining the behavior of ecotourists according to their needs ([Kerstetter et al., 2004](#); [Trangeland, 2011](#); [Sirivongs and Tsuchiya, 2012](#)). According to the United Nations, there are three types of ecotourists: hard ecotourist, soft ecotourist and the adventure ecotourist ([Fennell, 2008](#)). They share a common interest, but enjoy slightly different flavors of green travel as well as levels of exertion. For those looking to explore the rugged outdoors with others wanting to enjoy luxury done green. They are experienced travelers and are shaping the market. Therefore, each of these groups has different requirements for tourist facilities and recreational activities ([Lee, 2009](#)). Therefore, during the implementation of strategies which

accompany the introducing of ecotourism, it should be considered which of these tourist's requirements are possible to actualize.

Regarding to that, many authors have defined the most important factors which have influence on planning and implementation of the concept of ecotourism in the world. Moreover, in many studies are listed challenges with which the management may confront when introducing the concept of ecotourism. Hence, when introducing the concept of ecotourism in the new area, the answers to initial problems should be sought in the best benchmarking in the world which is applied in national parks with the already achieved level of successful implementation of ecotourism ([Masberg and Morales, 1999](#); [Biglarfadafan et al., 2016](#)).

To meet the needs of ecotourism development in a national park, it is necessary to meet a number of prerequisites which are achieved by applying appropriate strategies for sustainable development ([Arabatzis and Grigorodis, 2010](#)). It is necessary to complete the implementation of international standards to ensure the quality of services which are offered in the world ([Selby et al., 2011](#)). The fact of great importance is that many protected natural sites from neighboring countries unite, through the realization of joint programs of cooperation thus achieving the possibility of reducing the competitiveness of the region by placing a joint tourist offer ([Nicula et al., 2013](#)). Moreover, in order to make ecotourism a recognized activity in these areas, it is necessary, first of all, to improve communication between stakeholders that complement the ecotourism offer ([Bernard et al., 2009](#); [Randle and Hoye, 2016](#)) and the management of NP. A common problem which NP deals with is insufficient education in the field of ecotourism ([Ke, 2012](#)). Many local residents recognize the potential of ecotourism, but do not have enough knowledge and experience of starting an independent business and its promotion to potential visitors ([Arabatzis and Grigorodis, 2010](#)). For this reason there is a need to educate the local population regarding the way of the appropriate product and services, placement in order to meet the needs of visitors. Another significant issue in this area is poor infrastructure that does not meet the needs of visitors as well ([Haukeland et al., 2010](#)). Therefore, it is necessary to invest in this segment, so that adequate accommodation and catering facilities could be built ([Öztürk, 2015](#)). For such a significant investment it is of crucial importance to engage both state institutions and EU through projects which will provide funds to finance these needs. The role of official state institutions for the development of ecotourism in national parks is extremely important because of the both financial and legal support ([Luo et al., 2016](#)).

As an example of good practice is the Community of Capirona in the Amazon Region of Ecuador. In order to attract ecotourists, beside the visit to the protected area or jungle hikes, they organized a cultural presentation of songs, visit to the local theater that was made only for the visitors, exhibition of traditional handicrafts of the region. In their spare time, visitors are also being offered bathing in the river, walking on the beach and educating related to the history of this area as well as going on excursions to the local residents where they have the opportunity to taste traditional delicacies ([Wesche and Drumm, 1999](#)). Also, the management of the Galapagos National Park, Ecuador introduced the controlled use of the park which meant organizing tours and individual trips in the presence of competent guides and guards ([Benitez, 2001](#)). This measure significantly reduced the negative influence of ecotourism. The study, which was carried out in the Sarikum Nature Protection Area is focused on defining a comprehensive control strategy due to the fact that this protected area does not have any management plan. On the basis of the data collected and defined SWOT analysis, the ranking of the defined strategies based on SWOT factors, using the method of multiple criteria analysis, has been carried out. This made it much easier for a decision maker to define future management actions. Cayambe Coca Ecological Reserve, Ecuador for the sake of successful implementation of the concept of ecotourism decided that the management in cooperation with the local community forms an ecotourism committee in order to help stakeholders, which eventually resulted in the formation

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