

## Conditions for ecotourism development – Lessons learned from Protected Landscape Area Dunajské luhy and National Park Duna-Ipoly

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**Abstract:** This article is dedicated to ecotourism in cross-border areas and presents the lessons learned from two case-study areas in the Slovak Republic and in Hungary. The study compares the Slovak and the Hungarian territorial nature and landscape protection systems and protected area management categories, and evaluates ecotourism activities in two areas – in Protected Landscape Area Dunajské luhy in the Slovak Republic and in National Park Duna-Ipoly in Hungary. Furthermore it provides proposals for the improvement of ecotourism to encourage cooperation between protected areas in cross-border regions.

**Key-Words:** ecotourism, rural development, nature conservation, cross-border areas

### Introduction

Ecotourism is nowadays a well-known concept. The number of protected areas offering activities in harmony with sustainable principles grows day by day. Ecotourism ('eco' as in ecological) is founded primarily on a specific interest in the natural history of a region [1]. Sirakaya, Sasidharan, and Sonmez refer to ecotourism as a type of tourism that does not expend resources, is educational and focuses on undeveloped and undervisited natural areas [2]. The purpose of such tourism is to protect natural areas, and understand and appreciate the natural and social culture of the target location by the involvement of local residents [2]. Protected areas are prevalingly situated in the countryside, surrounded by rural areas. They have the potential to attract visitors, which may be especially significant in remote, less visited cross-border areas, as the area of Slovak-Hungarian border. This article presents the lessons learned from two case-study areas from the Slovak Republic and Hungary. We investigated ecotourism activities in a cross-border context in two protected areas, which were Protected Landscape Area (PLA) Dunajské luhy in the Slovak Republic and National Park (NP) Duna-Ipoly in Hungary (see Fig. 1).

Protected Landscape Area Dunajské luhy or Danube floodplains is one of the youngest of the 14 protected landscape areas in the Slovak Republic. It was established in 1998 and consists of five separate parts in the Danube Lowland, stretching from Bratislava in the north-west, following

the Danube and the borders between the Slovak Republic and Hungary to a river island called Veľkolélsky ostrov near to Komárno. The biggest part is Žitný ostrov, the largest river island in Europe. Altogether, it protects 12,284 hectares of floodplains, wetlands and numerous water bodies, such as lakes, oxbow lakes, ponds, and streams. [3] National Park Duna-Ipoly is the ninth national park of Hungary established on 60,314 hectares in 1997, and includes the Pilis, Visegrád and Börzsöny Hills, the undisturbed sections of the Ipoly Valley as well as parts of the Szentendre Island on Danube. The park includes areas in Budapest, Pest County, Komárom - Esztergom County and Fejér County. It protects mountainous regions, caves carved in limestone and river floodplains of the Danube and Ipoly. [4]

Fig. 1 The location of Protected Landscape Area Dunajské luhy (PLA DL) in the Slovak Republic and National Park Duna-Ipoly (NP DI) in Hungary



## Material and Methods

While developing the study on ecotourism in cross-border and protected areas various methods were used. First of all information on Slovak and Hungarian territorial nature and landscape protection systems and protected area management categories was needed. The necessary data were extracted from the Act no. 543/2002 Coll. on nature and landscape protection in the Slovak Republic and Act no. LIII/1996 on nature conservation in Hungary. A comparative analysis about legislation was carried out and two case-study areas were chosen; PLA Dunajské luhy in the Slovak Republic and NP Duna-Ipoly in Hungary. It was an important requirement to choose protected areas located near to the Slovak-Hungarian border. PLA Dunajské luhy and NP Duna-Ipoly are both situated near the border and connected indirectly, by the Danube. Information on ecotourism activities were gathered at the Directorate of PLA Dunajské luhy and at the Directorate of NP Duna-Ipoly. Afterwards the current situation was evaluated. Due to occasional cooperation of these protected areas, the proposals for cross-border cooperation in the region were drafted.

## Results

The results of this study can be divided into two sections. The first section deals with the comparative analysis of the protected area management categories in the Slovak Republic and in Hungary. The second section provides information on the current situation of ecotourism in the two case-study areas.

## Comparison of the protected area management categories

This part of the article refers to the comparative analysis of the protected area management categories in the Slovak Republic and Hungary. Obviously it is not possible to analyse and compare these systems without providing some information on International Union for Conservation of Nature (IUCN) protected area management categories. The IUCN defines a protected area as a clearly defined geographical space, recognized, dedicated and managed through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values [5]. The IUCN protected area management categories are a global framework for categorizing the variety of protected area management types. There are six categories in use: strict nature reserve (Ia), wilderness area (Ib), national park (II), national

monument or feature (III) habitat/species management area (IV), protected landscape (V) and protected areas with sustainable use of natural resources (VI) [6]. The names of the categories used by IUCN do not necessarily reflect the names used at national levels in the Slovak Republic and in Hungary (see Table 1).

To gain information about Slovak and Hungarian systems two legislative regulations connected to this field were analysed in detail. In the Slovak Republic Act no. 543/2002 Coll. on nature and landscape protection is applicable, while in Hungary Act LIII/1996 on nature conservation is in force. Act no. 543/2002 Coll. on nature and landscape protection from the Slovak Republic considers that territorial nature and landscape protection is a special treatment or care of the state and its citizens of wild flowers, wild animals and their communities, habitats, ecosystems, minerals, fossils, geological and geomorphological formations, as well as land use systems. Nature and landscape protection is realized mainly by limited and guided interventions into nature and landscape, by support and cooperation of the owners and users of land, and by cooperation with public authorities. [7] The third part and first chapter of the Act no. 543/2002 Coll. is dedicated to the territorial nature and landscape protection. According to this act territorial protection involves the nature and landscape protection in the territory of the Slovak Republic or in its part. The territorial protection specifies five levels of protection. For each level of protection different limitations and restrictions are declared. Sites hosting natural habitats of European interest or natural habitats of national interest, and habitats of species of European interest or habitats of species of national interest and habitats of birds including migratory species, important landscape elements or areas of interest, can be designated protected areas. [7] The categories of protected areas in the Slovak Republic are the following ones: protected landscape area (§ 18), national park (§ 19), protected site (§ 21), nature reserve or national nature reserve (§ 22), nature monument or national nature monument (§ 23), protected landscape element (§ 25), protected bird area (§ 26) and municipality protected area [7]. If required the nature protection body designates protective zones for a protected area. In the Slovak Republic all natural caves and natural waterfalls are nature monuments or national nature monuments. [7]

Table 1 Overview of the protected area management categories defined by IUCN, applicable in the Slovak Republic (SR) and in Hungary (HUN)

Organization/ Country	IUCN	SR	HUN
Category	strict nature reserve (Ia)	nature reserve or national nature reserve (§ 22)	nature conservation area (§ 28/1)
	wilderness area (Ib)	-	-
	national park (II)	national park (§ 19)	national park (§ 28/1)
	national monument or feature (III)	nature monument or national nature monument (§ 23)	natural monument (§ 28/1)
		protected landscape element (§ 25)	
		protected site (§ 21)	
	habitat/species management area (IV)	protected bird area NATURA 2000 network (§ 26)	protected bird area NATURA 2000 network
		areas of European interest NATURA 2000 network	areas of European interest NATURA 2000 network
	protected landscape (V)	protected landscape area (§ 18)	landscape protection reserves (§ 28/1)
	protected areas with sustainable use of natural resources (VI)	-	-
-	municipality protected area	-	

The mission of territorial nature and landscape protection according to Act LIII/1996 on nature conservation in Hungary is to identify which natural values and areas deserve strict protection out of geological, hydrological, botanical, zoological, scenic, cultural, historical or any other public interest; to determine the dangers threatening protected natural values or areas; to prevent or avert any damage to protected natural values and areas, and to reduce or to eliminate damage already occurred; to conserve protected natural values and areas for the present and future generations, and, if necessary, to restore them or ensure their maintenance. [8] It shall be a priority to meet the society's need for a healthy and aesthetic natural environment; to foster the traditions of nature conservation and improve its achievements; and to protect, conserve, maintain and enhance Hungary's natural values. The third part of the Act LIII/1996 contains the provisions for the special protection of natural values and natural areas in Hungary. There are no levels of protection in Hungary. A special, stricter protection of a natural value or natural area can only be ensured by taking special measures. In

this case the natural value or natural area can be declared to strictly protected. Article 28 states that protected natural areas may - according to the comprehensiveness, objectives, national and international significance of the protection - be categorised as national parks, landscape protection reserves, nature conservation areas and natural monuments. [8] The territory of all national parks shall be classified in natural, managed and demonstration zones. According to the Act LIII/1996 in Hungary all springs, bogs, caves, sink-holes of sinking streams, salt lakes tumuli and earthen fortifications are protected as protected areas of national importance. [8]

In both country protected bird areas (the equivalent of Special Protection Area-SPA), areas of European interest (the equivalent of Special Area of Conservation -SAC) and their protective zones form a part of the coherent European network of protected areas, the NATURA 2000. It aims at conservation of a favourable status of both natural habitats of European interest and species of European interest. The arrangement of these protected areas is very similar in the Slovak Republic and Hungary and stems from the European

Union's Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC).

### **Ecotourism in the selected case-study areas**

This part of the article describes and compares the arrangement of ecotourism in PLA Dunajské luhy and NP Duna-Ipoly, evaluates the current situation, and provides proposals for the improvement of ecotourism to encourage cooperation between protected areas in cross-border regions.

### **Ecotourism in PLA Dunajské Luhy and NP Duna-Ipoly**

In the Slovak Republic State Nature Conservancy of the Slovak Republic is in charge of all protected areas. It operates directorates of national parks and PLA, which are in charge of the management of protected areas. [9] One of them is the Directorate of PLA Dunajské luhy, which has three offices, in Bratislava, in Dunajská Streda and in Komárno and has many obligations connected to nature conservation and other fields. This study focuses just on area connected to ecotourism (infrastructure, environmental education, projects, publications, information availability etc.). In relation to infrastructure PLA Dunajské luhy unfortunately does not have an information centre or a conveniently located facility for working with the public. It is possible to obtain leaflets, information materials or publications directly at the office of the directorate, at the office of BROZ or at regional information centres of NATURA 2000 areas. [10] Due to lack of finances the network of educational locations and educational trails is growing slowly. Most of the time the nearby municipalities or non-governmental organizations initiate and replace information panels, maps and playgrounds to inform visitors about the unique sights of the protected area (eg. Šúr, Podunajské Biskupice, Čičov etc.). Regarding environmental education employees of the directorate provide professional explanations with a focus on nature and landscape protection to visitors of the protected area; propose, build and foster educational trails, and operate other facilities connected to nature protection. There is an opportunity for schools to order lectures connected to nature protection in LPA Dunajské luhy directly from the directorate. At the weekends there is also a possibility for field visit in form of bird-watching, botanical and geological walks organized seasonally. [10] Non-governmental organizations, for example Regional Association for Nature Conservation and Sustainable Development (BROZ) realize plenty of activities in the area. The dissemination of information about events is very poor. There is no common website or platform,

where the activities of the directorate, non-governmental organizations and other partners could be summarized and published.

The Ministry of Rural Development of Hungary supervises the directorates of the national parks in Hungary. These directorates are independently operating central bodies managing not just the area of the national parks, but also the area of landscape protection reserves and natural monuments situated in their area of competence. [11] Regarding ecotourism at NP Duna-Ipoly, the Directorate of NP Duna-Ipoly has a separate Department of environmental education and ecotourism, which coordinates the programs and activities and is responsible for the tourist information office "Green Dot", visitor centres, information centres, educational sites, educational trails and outdoor schools. [12] Financial resources for the projects and activities are drawn from funds such as European Union's Life +, the Program of cross-border cooperation between Hungary and the Slovak Republic (HUSK), Swiss Funds, programs like BioEuparks, Periurban Parks and Hungarian funds Új Magyarország and Új Széchenyi Terv. [12] Since 2009 the infrastructure for ecotourism has been gradually constructed and completed. Now, in 2014 it contains the following elements: tourist information office located in Budapest, three visitor centres, educational and information centres, marked hiking trails, educational locations, 16 educational trails and two outdoor schools. Educational trails can be visited with the employees-guides of the directorate every weekend. The directorate organizes courses for teachers on nature protection, environmental education and guiding in nature. Everyone is invited to participate in voluntary activities, which are aimed at the restoration of marked hiking trails and their tourist signs, waste collection, removal of invasive species, frog rescue activities and bird nest guarding. [13] Publications about the NP Duna-Ipoly provide a clear message and simple information for the public. They are available at every visitor and information centre. Every year the annual program of the national park is issued. In every three months the directorate issues the magazine of the national park "Cincér". Furthermore, those who are interested in programs and activities can register on the website of the national park and receive weekly electronic news letter via e-mail. The directorate of the national park is very active on Facebook. [13] The brand-new website dedicated to ecotourism in the national park was launched last year. The website provides information about protected areas, on-going projects, educational localities and educational

trails. It is possible to download publications and materials connected to each site. The only weakness of the website is that it provides information only in Hungarian language. [14] Directorate of NP Duna-Ipoly is also aware the fact that in case of ecotourism the carrying capacity of the ecosystems has to be taken into consideration. Before the development of the ecotourism activities the area of the national park was mapped and divided into sensitive parts called core areas, areas suitable for tourism and protective zones. Specified limits for the ecosystems are applied, which in practice means some limitations in space and time in the protected areas. These restrictions are implemented carefully, so visitors have access to important areas without compromising the protection of the valuable localities. [12]

### **Proposals for cross-border cooperation between the case-study areas**

There are already existing initiatives regarding cross-border cooperation between PLA Dunajské luhy and NP Duna-Ipoly. Both protected areas are part of the Network of protected areas on Danube, called DANUBEPARKS. Moreover the State Nature Conservancy of the Slovak Republic and the Directorate of NP Duna-Ipoly has an agreement of cooperation, in which cooperation areas are summarized in 14 bullet points. This agreement relates mainly to the field of species conservation and monitoring, but also involves parts about the development of cross-border ecotourism and environmental education between the two protected areas.

PLA Dunajské luhy as well as NP Duna-Ipoly both separately and jointly have a great potential for ecotourism. The Danube river connects these protected areas and offers many opportunities for water activities like daily or longer boat tours. [15] The international Danube cycling route crosses the area of PLA Dunajské luhy. NP Duna-Ipoly also has a potential for the development of cycling activities. Another possibility to connect the two case-study areas is by developing existing cycling infrastructure between them. By creation of programme and service packages for different target groups (eg. package of school trips, water sports package, package for families, cycle tour package etc.) it would be possible to increase the number of visitors in these protected areas. [15] PLA Dunajské luhy and NP Duna-Ipoly are located in close proximity to capital cities of the Slovak Republic (Bratislava) and Hungary (Budapest), which provides further opportunities. Their potential should not be ignored. It would be useful to organize training courses for

the employees of Directorate PLA Dunajské luhy and Directorate Duna-Ipoly, for teachers and other guides performing in the region, both from the Slovak and Hungarian side on nature protection and environmental education. Establishing cross-border relationships between primary and secondary schools and youth exchanges within the frame of environmental education could increase the public interest in visiting cross-border protected areas. The implementation of the proposed measures, however, is highly dependent on the available financial resources.

### **Discussion**

In this part of the article we would like to focus on the two main topics of the study. Firstly, the similarities and differences of the territorial nature and landscape protection systems and protected area management categories are presented. According to the results of the comparative analysis the territorial nature and landscape protection system is similarly adopted in the Slovak Republic and in Hungary. The subjects of nature and landscape protection are the same. Legislation connected to this field is slightly different. Regarding territorial nature protection there are five levels of protection in the Slovak Republic. The whole territory of the Slovak Republic is provided with the first level of territorial nature protection according to § 17 [7]. Second level of protection is valid in protected landscape areas, third level for eg. in national parks etc. The fifth level is the strictest level of protection. There are no levels of territorial nature protection in Hungary. It is possible to designate and declare unique protected natural areas of national importance as strictly protected [6]. Both countries adopted the IUCN protected area management categories, slightly modified and implemented them into their national legislation. In the Slovak Republic there are three extra management categories, it is possible to establish a protected site, protected landscape element and municipality protected area. Protected site is an area, usually up to 1,000 ha with existence of natural habitats of European interest or natural habitats of national interest in which favourable status of these natural habitats depends on human economic activities [7]. A significant landscape element fulfilling a function of a biocentre, a biocorridor or an interactive element, especially of local or regional interest may be designated as a protected landscape element [7]. A municipality protected area is a relatively new category in the Slovak Republic, it is a locality, usually up to 100 ha, with cultural, scientific, ecological, aesthetic or landscape significance and is

operated by a municipality [7]. According to § 31 there is a possibility to declare private protected area with protective zones in the Slovak Republic [7]. In Hungary there are four protected area management categories, approximately equivalent to IUCN categories and categories applicable in the Slovak Republic. The arrangement of NATURA 2000 network is very similar in the Slovak Republic and Hungary and stems from the European Union's Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC).

The second part of the study addresses ecotourism in the Slovak Republic and in Hungary. According to the collected information and own experience we evaluated and compared the arrangement of ecotourism in two case-study areas, PLA Dunajské luhy and NP Duna-Ipoly. The Slovak side has a great potential and suitable conditions for these kind of activities, yet the ecotourism is still in its infancy. PLA Dunajské luhy doesn't have a coherent concept of ecotourism development. Few measurements connected to ecotourism have been implemented for eg. in surrounding municipalities under tourism development activities. Regarding infrastructure and information dissemination there is still a room for improvement. Establishment of at least one visitor centre in the protected landscape area is necessary. Launching a website or other common information site for potential visitors about the activities would also be useful. In Hungary the Directorate of NP Duna-Ipoly has successfully implemented the concept of ecotourism development in the last six years. The necessary infrastructure for ecotourism activities was completed recently. The directorate proudly promotes the opportunities in the area of the national park and attracts more and more visitors every year. In our study the arrangement of ecotourism in a landscape protected area and in a national park was investigated. However, we must take into consideration that these protected area management categories are similar, but not the same and not equivalent. A protected landscape area in general has less financial supply than a national park. Not to mention that our case-study areas are located in different countries with different financial mechanisms. Consequently the results of the study might be slightly distorted. In the future, we would like to prepare another comparative study regarding the management of national parks in the Slovak Republic and Hungary to get more accurate and clearer picture.

## Conclusion

The situation in the National Park Duna-Ipoly in Hungary is a positive example of a functional

ecotourism. This area may become a suitable inspiration for the Slovak side, because it is possible to adapt ideas from abroad and implement in the area of Protected Landscape Area Dunajské luhy or in other protected areas. Ecotourism integrates several positive impulses necessary for sustainable development of protected areas. It particularly increases the environmental awareness of visitors but also local inhabitants, who improve their relationship with the surrounding environment. Another important dimension of ecotourism is the fact that it contributes to rural development of cross-border regions.

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