

## PROTECTING MARSH AREAS WITHIN THE DANUBE RIVER BASIN AS TOURIST LANDSCAPES – PLANNING AND MANAGEMENT, NEW PERSPECTIVES IN THE REPUBLIC OF SERBIA

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### Abstract

The paper presents a general overview of the main framework for sustainable landscape planning and tourism development in the Republic of Serbia in respect to the water resources and wetlands. In particular, it stands out the ratification of the European Landscape Convention and adoption of the Law on Ratification of the European Landscape Convention in 2011 as positive steps in creating main preconditions for further development of landscape planning. Taking into consideration basic tourist motives of the Danube river basin, recording them as future peak European tourist destinations, the main aim of the paper is to determine new perspectives within planning and management of the marshes areas in Serbia as tourist landscapes in the Danube river basin. Therefore, the paper points out the specificity of the marsh areas that stands out from the other tourist landscapes and destinations, in: diversity in the form of biotopes, species and their communities, representatives, authenticity, integrity, aesthetic value and vulnerability. In order to provide effective protection of these tourist landscapes and enable controlled access for tourist purposes, there is a need for integral planning, management, use and revitalization. The Spatial Plan of the Area for the Specific Purposes of the International Waterway E-80 Danube (Pan-European Corridor VII) is specially distinguished. The Plan represents concept of the integral landscape planning, initiating measures for revitalization, protection and sustainable management of the tourist-recreational potentials of the marshes areas considering them as one of the most exclusive tourist landscapes of the Danube resources.

**Keywords:** marsh areas, tourism development, Danube river basin, landscape planning.

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## 1. INTRODUCTION

Due to their values, the conserved natural marshy areas are of the great ecological, scientific, cultural, educational and tourist importance. These areas represent specific complexes of marshes - wetland ecosystems, characterized by the presence of various orographic hydrographic forms of marshes - islands, water effluents, meanders, marsh ponds, wetlands, that are associated with numerous ecosystems - rushes, reeds, swamp forests and meadows. What distinguishes marshy areas, in addition to diversity, are aesthetic values, authenticity, rarity and vulnerability, taking into consideration the fact that their surface is constantly decreasing, primarily due to changes in the water regime as a result of unplanned and other negative impacts, including the climate change.

In order to ensure effective protection and management, the continuous innovation of legal and planning framework is necessary. During the last decade the Republic of Serbia (RS) paid special attention towards the harmonization of legal and planning basis with the EU framework - a set of laws in the fields of nature conservation and environmental protection (Law on Environmental Protection "RS Official Gazette" No.135/04, 36/09, Law on Nature Protection "RS Official Gazette" No.36/09 Law on Planning and Construction "Official Gazette of RS" No.72/09, 81/09, 64/10-US and 24/11 and others) has been adopted. Taking into consideration the extreme value of the landscape and the concentration of natural and cultural heritage for sustainable development and protection within the Danube region in Serbia, within the planning process, in addition to the set of relevant legislation also relevant are: EU Danube Strategy, the Convention on the Protection of the Danube River Basin, Management Plan for Danube river, the European Convention for the Protection of wild flora and fauna and Natural Habitats (Bern Convention, the Emerald network and NATURA 2000), the Convention on Biological Diversity, the Convention on Wetlands (Ramsar Convention), the Convention on the Protection of the World Cultural and Natural Heritage, the European Landscape Convention, the European Convention on Archaeological Heritage and others. Also, the ongoing cross-border cooperation projects with Romania, Bulgaria, Hungary and Croatia, related to the establishment of network for the protected areas are important (Danube - Drava - Mura, the Carpathian regions, Danube parks and green corridors, etc.). This framework represents an important prerequisite for protection and conservation of marsh areas and the starting point for providing management and protection framework for the use in touristic purposes.

The paper aims to emphasize the importance of integral planning of marshes that stands out from the other landscapes and tourist destinations, as a basic starting point for their preservation and promotion and, as an example of good practice points out the Spatial Plan of the Area for the Specific Purposes of the International Waterway E -80 Danube (Pan -European Corridor VII).

## **2. LANDSCAPE AND TOURISM PLANNING IN THE REPUBLIC OF SERBIA**

In addition to the Constitution of the Republic of Serbia (Official Gazette of RS No.98/06), which provides the right to a healthy environment, the adoption and innovation of the legal basis, special attention has been given to the development of strategic documents within the last decade - the National Sustainable Development Strategy, the National Programme for Environmental Protection, the Strategy for sustainable use of natural resources, the Strategy for biodiversity conservation and others. Ratification of the European Landscape Convention (ELC) - The Law on Ratification of the ELC ("Official gazette of the RS" No.4/2011) and the adoption of the Law on Spatial Plan of the Republic of Serbia (SPRS) ("Official gazette of the RS" No.88/11) created the prerequisites for the integral approach to landscape planning. Taking into consideration the character of the development and the degree of modification of the natural landscape, the SPRS provides a "preliminary typology", identifying the natural and cultural landscapes, and within the cultural the rural and urban landscapes. However, innovated legal base still does not provide adequate support for landscape planning, so that, as it was pointed out, "the inclusion of this issue is caused by strategic direction of planner - developer of the planning documents, their knowledge and appreciation of the need for treating the subject issues, ... and existing conditions" (Crnčević et al., 2012: 32). Thus, within the example of the Spatial plan of the Area for Specific Purposes (SPASP) of the National park (NP) Djerdap, the preparation of the Landscape study is initiated within the planning process, it represents an integral approach to landscape planning and, the rules for maintenance and landscape management are established based on the preliminary typology of SPRS. However, "under the circumstances where there are no basic - strategic - information resources for its development" it was evaluated as "the beginning - the first step towards recognition and the integration of landscape planning in the planning process" (Ibid : 32).

Management of spatial tourism development in Serbia in accordance with the relevant principles and standards in Europe, is based on the strategic integral spatial planning, within the interdependence of physical, environmental, economic, social and cultural factors of sustainable development. According to the strategic concept of spatial development of tourism, Serbia is divided into zones/clusters as geographical units with integrated tourism offers. Tools for managing spatial development of the tourist areas and locations are spatial and urban plans under the Law on planning and construction, based on the development programs for the local population, tourism and complementary activities, taking into account the needs and interests of the economic, social and cultural development, environmental protection, natural and cultural heritage and cross-border cooperation. The realization of the integral spatial tourism planning development in Serbia is limited by various factors, primarily by the dominant sector treatment of tourism as an economic activity, with the occurrence of the spatial neglect of environmental, social, and cultural aspects (Dabić et al., 2009, Maksin & Milijić, 2010) taking into consideration that "environmental issues are only partially incorporated into the segments of tourism documents and regulation" (Orlović-Lovren et al., 2013:52). By adopting the SPRS (1996 and 2010) a system of planning tourist areas in Serbia was established, enabling the harmonization of conflicted interests in development and use of space, respectively the protection and rational use of resources.

The Danube represents the primary tourist destination. The values of the Danube are, within the aspect of tourist valorization, significant in terms of the wealth of motifs, ecological preservation, values of natural and cultural heritage and partly regarding the affordability of destinations (Maksin & Milijić, 2012). Existing tourism products are: manifestations, hunting, fishing, cities and health tourism (spa, wellness). Tourism products of great potential, but not regulated and established enough are: the complex of navigation and ship touring, special interests, rural tourism, events, etc.

## **3. MARSHY AREAS AS TOURIST REGIONS**

### **3.1. Danube waters and coastal areas in the context of tourism development**

The Danube river, with its geographical and strategic location connects the eastern and western Europe. It represents the only pan-European waterway corridor, the most important waterway, which (together with

the Rhine and Main) connects the Black Sea to the North and the backbone network of inland waterways. The central position of the RS within the Danube flow gives it special importance to the development of water transport and sustainable tourism. What distinguishes the Danube in the context of tourism development, in addition to the waterway (Mitrović & Milijić, 2000) is:

- Large urban centers along the coast - where tourists remain 2 to 4 days, places where marine and winter harbors should be located;
- Cultural - historical monuments and other important motives - the stay is from of a few hours to a day and the port with a link to tourist boats and boaters in transit should be provided within the supporting infrastructure;
- Islands and shoals - the places for daily visits and for spending several days, depending on the distance in terms of recreation and tourism services; and
- Marshes as ecological - safari zones with options of several days stay with provision of an exclusive eco-tourism offer; for development of tourist offer it is necessary to provide a marina with winter ports within the supporting infrastructure, bearing in mind that the sailors are fans of nature, sports and recreation and, it can be say, the backbone of marshes tourist offer and their environment throughout the whole year.

The Danube has several attractive ambient aquatory units with coastline which specifically characterize marshes and forelands, islands (53), reefs (about 10) and the Djerdap gorge, as well as a number of suitable sites for marine and other types of tourist and recreational use. Serbia with the Danube has at the disposal, within the European scale, two highly valuable and unique zones for development of tourism, which permeate at the contacts and mutually reinforce, as follows:

(1) Marsh zones of the Upper and Middle Danube as "Ecological zone of the Danube" with authentic ambient and preserved flora and fauna (especially ornitho and ihti): from the Hungarian border downstream to the confluence of the Drava - Special Nature Reserve "Upper Danube"; from Bogojevo to Novi Sad foreland marsh types, mainly on the left bank (Plavanski - Novi Sad - marsh, Selište with Karadjordjevo and Tikvara, around Neština and Futog); and from Novi Sad to Čenta (Koviljsko - petrovaradinski marsh, zones around the confluence of the Tisa, canal Karas and others); and also "archipelago" of many islands (mainly downstream to the Futog); and

(2) Zone of the Lower Danube region as a "Historic zone of the Danube" representing a rich treasure of attractive cultural monuments, especially from the prehistoric and ancient Rome period, in the unique landscape formed on the infiltration of the Danube between the Carpathian and Rhodope mountains through Djerdap, the largest and most attractive river gorge in Europe, and in the broadest aquatic zone within the flow of the Danube between Moldova and Golupca, before entering the Golubac gorge.

The marsh landscapes, as characteristic of the Danube and its coastal areas, represent the common feature of two distinct tourist spatial areas - the Upper and Middle Danube. Marshes are protected from the wind and the temperature of the marshy waters is warmer than running Danube water. Water is renewed by filtration with Danube "underground" water through the gravel - sand layers of marshy land and thus, obtaining water of the first category, which quality is affected by occasional floods. Touristic excellence of marshes is both in their diversity and abundance of life where "diversity of vegetation is for the needs of birds, fish and wild animals, respectively of the perfect harmony of unique marsh ecosystem" (Mitrović & Milijić, 2000). Marshes are habitats: for birds and fish hatcheries; natural reservoirs of food for water birds; deer habitats (marsh and shovels), wild pigs, foxes, rabbits, wolves and other large and small wild animals. Taking into account the above mentioned, it can be highlighted that their ability regarding the context of organizing tourist activities is limited to certain areas where the activities can take place, such as fishing, hunting and eco - safari; art colony, swimming, sailing and rowing, organizing educational excursions ecological type, and more.

### **3.2. Approach to planning and protection of the marsh landscape**

Marshy areas in Serbia are recognized by the legal framework and, through planning processes. On the UNESCO list of internationally important wetland habitats there are nine Ramsar sites (with total area of 53.714ha) altogether in Serbia, which are also nature reserves: Obedska swamp, Ludaško Lake, Carska swamp - Old Begej, Zasavica, Slano Kopovo, Vlasina, Upper Danube, Swan shaft, Pešter field and Koviljsko-Petrovaradinski marsh.

SPASP of the international waterway E-80 - Danube (Pan European corridor VII) represents the integral planning approach and has the aim, taking into consideration the different spatial - functional entities, to

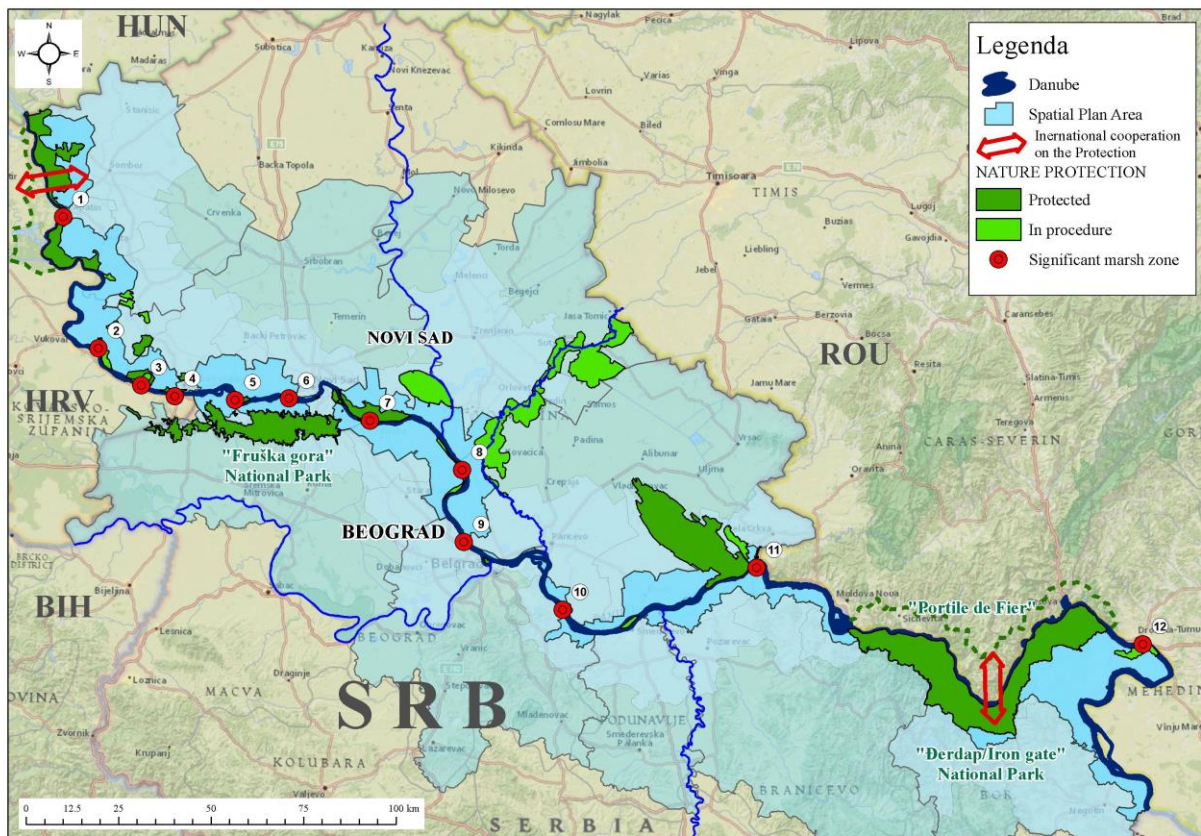
consolidate development programs and comply with the defined priorities of individual activities. As part of the Spatial Plan, marshes are valorized as a significant tourist potential, natural and landscape value. The total area of the protected areas in the immediate corridor of the Danube in Serbia is about 1072 km<sup>2</sup>, of which 77.4 km<sup>2</sup> includes the Danube watercourse. Protected areas in the length of 230 km are situated on the Danube banks, and the large part is related to the marshes. Table 1 provides an overview of marsh areas and their protection status. As it can be seen, 12 marshes have been allocated, among which Apatinski marsh stands out because of its size, conservation status and links to Kopački marsh in Croatia.

**Table 1.** Overview of the important marshes area within the territory of Danube basin in Serbia

	Marshes zones	Municipality	River (coast)	Watercourse kilometer	Surface (ha)	Protection status
1	Apatinska marsh	Sombor (Bezdan), Apatin, Odžaci	Danube (left)	1433-1347	10.000	Regional park "Upper Podunavlje"
2	Plavansko - Novoselski marsh	Bač	Danube (left)	1334-1320	1300	/
3	Bukinski marsh	Bačka Palanka	Danube (left)	1314-1310	800	Special Nature Reserve "Karadordevo"
4	Palanački marsh (Tikvara)	Bačka Palanka	Danube (left)	1305-1297	508	Nature Reserve "Tikvara"
5	Begeško-Neštinski marsh	Novi Sad	Danube (left and right)	1290-1270	1000	In the process (Nature Park)
6	Beočinski marsh	Beočin	Danube(right)	1270-1262	850	/
7	Koviljsko-Petrovaradinski marsh	Novi Sad	Danube (left and right)	1250-1230	4.841	Special Nature Reserve
8	Čentansko-Opovaški marsh	Zrenjanin Palilula	Danube (left)	1218-1195	500	/
9	Crvenkovački marsh	Palilula	Danube(left)	1184-1174	1000	/
10	Ivanovački marsh	Pančevo	Danube (left)	1140-1135	400	/
11	Dubovački marsh	Kovin, Bela Crkva	Danube (left)	1075	320	In the process (revizion Special Nature Reserve "Delib. pešč.")
12	Mala Vrbica	Kladovo	Danube (left)	930	1.900	Planned protection IBA

The observed problems within marsh landscape are the result of: construction of infrastructure systems (sections of roads, railways, bridges) and forest exploitation roads which intersected many channels (all with different functions - circulation of marsh water, the movement of fish, the passage for boats, etc.) and green corridors, influencing the reduction in space for the survival of wild animals and birds; construction of the dam that caused the change of water regime in marshes; existence of a large number of actors in the protection, planning and management of coastal areas and marshes (over 15) and overlapping of jurisdiction of public companies (Srbijašume, Srbijavode, Vojvodinavode, National park Fruška Gora and Djerdap, Fishing areas, Hunting clubs - hunting areas, etc.).

The Figure 1 shows protected marsh landscapes and the ones in the process for protection. The ones due to its location, that are subject to cross border cooperation are specially indicated. The basic framework for landscape planning regarding the use of wetlands for tourist purposes advocates preserving and improving the landscape, by promoting, strengthening and creating new values among the other things. Taking into account the preliminary landscape typology that promotes SPRS, these landscapes are belonging to the natural landscapes (with the status of 1st category protection) and cultural - rural landscape. The Plan promotes the protection and preservation of marsh landscape as tourist landscape specifically promoting: protection of marsh landscape structure and the smooth functioning and continual implementation of remediation - rehabilitation and restoration; providing continuous protection of specificity of the ecosystem, revaluation of values and creating conditions for the presentation of natural and aesthetic values of the marsh landscape; not planning accommodation and other facilities that would endanger the ecological balance of marshes - noise, wastewater; locating tourism infrastructure (entertainment and sports courts, horseback riding, a marina with winter ports, nautical services, and creating the connection with the surrounding villages and rural households, as the main providers of accommodation and food) downstream of the marsh zone, in the zone protected from flooding; limitation of tourist visits within a day (except in case of the safari when staying is in the specially positioned places).



**Figure 1.** Protected marches areas within Danube river basin as tourist landscapes

In defining the concept and planning solutions for sustainable development and protection of the landscape in the Danube region, it was necessary to identify the basic conflicts and determine the method for relativization of the conflict (conflicting interests) that occur in the area of influence within the spaces for specific purpose. This primarily relates to the impact of the waterway of the Danube and other water infrastructure, and partly transport, tourism, agriculture, industry and other aspects to the sustainable use of natural and man-made resources. The primary conflict is between the development of the waterway and protection of the environment, natural and cultural and landscape values which, as a starting point stands for the revitalization of habitats and re – establishment of contacts with old river backwaters. Principles for relativization of conflicts are:

- Respect the water regime in flooded parts of the protected areas within the parameters and characteristics that are determined by the act on the protection; preservation of the natural structure of the coast landscape on watercourses sections through the protected areas or its minimal changes;
- Increasing the area under water mirrors in the nature reserves - the achievement of good ecological status by ensuring constant water level in the protected part of the Reserve and revitalization of water ecosystems - backwaters, ponds and wetlands; construction works (digging of canals, culverts and installation of the constitution to regulate the flow of water) at "dunavci" where the flow of water is difficult or impossible as well as control flow and water levels in the defended area;
- Preservation of fish hatcheries and update network backwaters and other waters as necessary compensatory measures violating the integrity of aquatic habitats of river traffic (air pollutants, noise, waves);
- Promoting the development opportunities of the waterway and complementary activities (nautical tourism, etc.) in the conservation and enhancement of natural and cultural heritage, traffic management of small recreational motor boats in protected areas.

#### 4. CONCLUSION REMARKS

Aiming to provide the conditions for controlled access for tourists, the selected case study - the SPSP of the international waterway E-80 - Danube (Pan-European corridor VII), shows the used integrated

planning approach based on the principles of sustainable development with respect to the impacts of climate change, as a starting point for providing conditions for management, protection and the use of the marsh landscape for tourist purposes - as tourist landscapes.

Landscape planning although insufficiently promoted within current legal and planning framework, shows by the selected case study that counting on the specifics of the marshes, it is possible to plan their further responsible development and preservation as a representative potential tourist destinations and tourist regions - tourist landscape. The integrated protection and planning of the selected tourist landscape is established by the respect of marshes areas as tourist areas and accordingly by formulating planning solutions and measures as basis for management and promotion of the quality and value of these tourist regions - tourist landscape.

The instructive factor is not only the status but also the position of these landscapes, that open possibilities for trans-border cooperation (Danube-Drava-Mura, the Carpathian regions, Danube parks and green corridors, etc.). In this context, it could be concluded that this paper represents contribution to the improvement of valorization of values and management of marsh landscape in the Danube river basin. This is having special importance because marshes zones are representing the last oasis of authentic landscapes within Danube river basin and Europe, what is from the aspect of sustainability, precondition for the development of eco-tourism and nature conservation.

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