

## CAPITALISATION OF NATURAL RESOURCES FOR TOURISM PURPOSES IN THE DANUBE DELTA

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### **Abstract**

*The Danube Delta outstands by a number of characteristics that outline its uniqueness at national, regional and world level, pattern that is recognized by its multiple natural reserve status (biosphere reserve, Ramsar site, UNESCO natural heritage site, Natura 2000 site). Despite major technical works that were prior performed for the development of transportation, agriculture, and mining in the Danube Delta, the territory still preserves untamed ecosystems that create breath-taking landscapes and allow a powerful transformative experience of wilderness with major sustainability education potential for its visitors.*

*Meanwhile, traditional economic activities are declining and local communities are experiencing mainly the drawbacks of remoteness instead of harnessing the valuable opportunities born within the current economic trends that emphasize the need to capture the positive externalities of well-preserved natural ecosystems. The Danube Delta is already a well-known tourism destination, but this status still fails to improve local wellbeing. Thus the richness of natural resources is conflicting with the wellbeing of communities with most of the people living at the edge of poverty. This “resource curse” like situation is the main reason that motivates our study that envisages outlining how tourism development and management could create the economic capacity that delivers prosperity for local communities without jeopardising the conservation goals of the natural reserve.*

*In this respect we revisited a number of characteristics of tourism potential, tourism indicators, patterns of tourism products, and the current tourism management. This analysis revealed that there are a number of positive trends, but also the need to strengthen the measures that support high value added tourism products that allow avoiding the threat of numerous visitors and the development of mass tourism infrastructure. The relevance of these conclusions is limited by the lack of more precise assessment of tourism preferences, value added of current tourism products, and social and environmental impact of the novel tourism facilities.*

**Keywords:** *natural resources, Danube Delta, tourism, sustainable regional development*

**JEL Classification:** *O13, O18, R11*

### **1. Introduction**

Preserving natural ecosystems with their rich biodiversity is no longer a restraint to develop economic activities. According to the fourth principle of the ecosystem approach, approved by the 2000 Conference of the Parties of the United Nations Framework Convention on the Conservation of Biological Diversity, it is necessary to improve the understanding about the economic context of nature conservation and any management program should pursue to reduce the market distortions that threaten biodiversity by internalizing the costs and benefits of maintaining a certain ecosystem. This need is also stressed within the European policy regarding biodiversity, it being outlined within both Birds Directive (2009/147/EC) and Habitats Directive (92/43/EEC). In other words, the management of protected areas

should consider, among others, an appropriate economic integration by harnessing the ecosystem services of the protected area within income generating activities.

The Danube Delta is a complex association of ecosystems that host a rich biodiversity consisting in more than five thousand species and create breath-taking landscapes. The uniqueness of this territory and its importance for biodiversity preservation is recognized by the establishment of more natural reserves. Thus the Danube Delta shares the status of Biosphere Reserve, UNESCO world natural heritage site, Ramsar site for its importance as wetland and habitat for aquatic birds, and Natura 2000 site, part of the European ecological network. Meanwhile, this territory also hosts a number of local communities and has economic potential for activities like fishing, agriculture, forestry, mining, and transportation. For the development of these activities, important technical works were performed starting with the nineteenth century. These include the Sulina channels streamlining and arrangement of areas for agriculture and aquaculture.

The Danube Delta has an area of over four thousand square kilometres. It consists of a dense network of channels, streams, ponds and lakes alternating with dry land. Considering the surface composition, but also the variety and originality of landscape and fauna, the Danube Delta is one of the most valuable and complex tourist areas in Romania. Danube Delta has a number of components that makes it an area of great attraction. These components include: coastal beaches, sand dunes, varied vegetation, fish and ornithological fauna.

The variety of the landscape, untamed ecosystems, richness of bird species that animate these ecosystems, hospitality of local people still living within the path of ancient traditions and customs are amongst the most important motivations of tourists to become visitors in the Danube Delta. Meanwhile, the Danube Delta is one of the most precious natural reserves of Romania with the most advanced management of ecosystems at national level. Tourism development is one of the local goals and some important management stages were already performed in this direction. Thus, the Administration of the Danube Delta Biosphere Reserve adopted a visiting strategy that outline nine territorial units based on tourism attractions and possible tourism activities.

Nevertheless, almost half of the population is living in poverty and the development of physical and social infrastructure is very poor. In other words, local communities of the one of the most valuable natural ecosystems are having little or no benefits on the behalf of the rich economic potential especially for the development of ecotourism, which records the highest growth rates in the tourism industry. This situation reminds the “resource curse” paradox, although it refers to renewable resources instead of the mineral ones. Consequently, the capitalization of natural resources for tourism purposes necessitates an improvement of management including a better knowledge regarding the potential of natural resources and the current trends in tourism development.

## **2. Danube Delta – natural resources and their potential for tourism**

The Danube Delta is a complex combination of interconnected ecosystems that is dependent on the hydrological regime of the Danube, which through its fluctuations contributes to substantial changes to habitats at intervals more or less constant [3].

Due to the uniqueness of its ecosystems, in 1990, the Danube Delta has been recognized by UNESCO as “wetland”. Also, it is included in the “World Cultural and Natural Heritage List”, and in “Man and Biosphere”. It occupies 2.5% of Romania’s territory and covers over half of the Tulcea County. The northernmost point of the Danube Delta is given by Chilia Veche, and the easternmost is Sulina. This city is the easternmost point of Romania. The boundaries of the territory are: North - Bugeac Plateau, southwest - Tulcea Hills and Southeast - the Black Sea.

In terms of biodiversity, the Danube Delta contains 30 types of ecosystems and more than 5400 species. The Danube Delta Biosphere Reservation hosts the largest part of the European population of white pelicans and Dalmatian Pelican, 60% of the world population of pygmy cormorant and 50% of the world population of Red-necked goose.

The Danube Delta is characterized by a varied and beautiful landscape and a rich biodiversity. This is one of the reasons why this is a very important tourist region in Romania. Due to its natural resources, population and human settlements, over time, many tourists were attracted to this region. The Danube Delta is promoted nationally and internationally. For Romanian tourism, the Danube Delta is representative by the diversity and uniqueness of natural tourism resources.

The Danube Delta Biosphere Reserve include 20 strictly protected natural reserves, where the biodiversity is at highest levels. These cover around ten per cent of the total territory and are listed in table 1.

People were attracted to these places since ancient times. Many species of animals and plants were natural resources that were exploited economically. By harnessing the natural resources were developed traditional economic activities and social relationships that favoured over-exploitation of natural resources especially of the fish populations.

With different natural resources, Delta comprises various forms of tourism. These forms of tourism can be practiced as of April-May to October-November. Tourism forms that can be practiced in this area include sand-sun-sea (3S) tourism (Sulina, Sfântu Gheorghe, Gura Portitei, Corbu), scientific tourism, fishing and hunting sports, leisure, ecotourism, and others.

Table 1. Areas strictly protected Biosphere Reservation „Danube Delta”

Current Issue	Strictly protected areas	Area (ha)
1	Roșca-Buhaiova	9.625
2	Răducu Lake	2.500
3	Vătafu-Lunguleț	1.625
4	Sărături Murighiol	87
5	Popina Island	98
6	Periteasca-Leahova	4.125
7	Lupilor Grind	2.075
8	Chituc Grind	2.300
9	Potcoava Lake	652
10	Ceaplace Island	117
11	Letea Forest	2.825
12	Nebunu Lake	115
13	Caraorman Forest	2.250
14	Arinișul Erenciuc	50
15	Sacalin Zătoane	21.600
16	Doloșman Cape	125
17	Istria-Sinoie	1.095
18	Rotundu Lake	228
19	Belciug Lake	110
20	Prundu cu Păsări Islands	187
Total strictly protected areas		51.789

Source: developed by authors based on data available on the website of the Ministry of Environment, Water and Forests (<http://www.mmediu.ro/>)

Scientific tourism has emerged as a result of the special characteristics of the Danube Delta landscape values determined by the variety of species of plants and animals. Tourists visiting the Danube Delta for this purpose have as points of information in Tulcea, Murighiol, Sulina, and Sfântu Gheorghe.

Another attraction for tourists is the fishing. In this regard, the Danube Delta is famous for its variety of fish species. Moreover, here also can be organized sport hunting activities. Within the Danube Delta, the fishing and hunting sports are organized and authorized by the Danube Delta Biosphere Reservation and hunting permits are leased by the Association for Hunting and Fishing. All these forms of tourism can be practiced in an organized (group) or unorganized (individual) manner.

Danube Delta has 9 tourist areas, outlined in the visiting strategy: Sulina-Sfântu Gheorghe, Roșu Puiu, Gorgova Uzlina, Canal Mila 35-sat Mila 23, Iezere-Bogdaproste și Matița-Trei. The most visited tourist areas are Mila 35-Mila 23 and Sulina.

Transportation is by boats, motor boats, pontoons, fast ships, tugs. In the Tulcea port congestion occurs during summer than numerous ships and boats wait for or release their customers. Crowding is also possible in Sulina, Crișan, Maliuc, Sfântu Gheorghe and Murighiol.

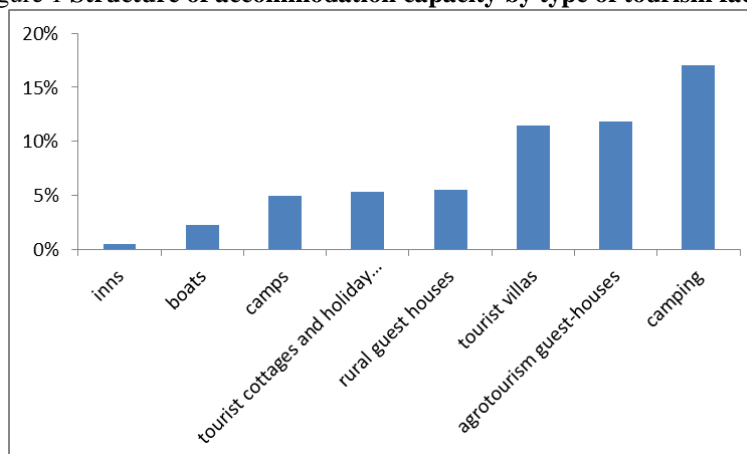
Along with its rich and well preserved natural wilderness, the Danube Delta also has as tourist attraction some archaeological remains, museums, and historical monuments. These include the city remain Argamum (Jurilovca), Byzantine fortress of Lake Razim (Bisericuța Island), the ruins of the fortress Mahmudia (Beștepe), ruins of the fortress Noviodunum (Isaccea), ruins of Enisala fortress and others. The territory also has a multinational patterns being inhabited by various ethnic groups like Russians, Turks, Tartars, Greeks that preserved their culture and religion during centuries [6].

### 3. Indicators of tourism development

Tourism development is considered one of the most important goals of the local administration, including the one of the natural reserve. Private initiative created an important progress by supplying more and more appealing tourism products aimed to respond to a broad range of tourism preferences. To support these trends, the tourism infrastructure underwent a rapid development in quantitative terms. In 2014, this was represented by a total of 138 structures with tourism accommodation function having a capacity of 4283 places. By types of units this breaks down

in favour of hotels that comprise 41% of the accommodation capacity. The rest of it is shared by tourist villas, boats, agrotourism guest houses, rural tourism guest houses and others as it is presented in figure 1.

Figure 1 Structure of accommodation capacity by type of tourism facility



Source: developed by authors based on data available on the website of the National Institute of Statistics (<http://www.insse.ro/cms/>)

In table 2 is presented the evolution of tourism structures with accommodation functions (tourism facilities) in the period 2010-2014. The largest increases were recorded for rural guest houses (125%), with important leaps for hotels (33%) and agrotourism guest houses (33%) too.

Table 2. Evolution of tourism facilities in the Danube Delta

Type of tourism facility	2010	2011	2012	2013	2014
Hotels	15	17	18	17	20
Inns	3	3	1	1	1
Tourist villas	83	71	80	80	80
Tourist cottages and holiday villages	4	4	3	4	4
Camping	1	1	1	1	1
Camps	1	0	1	1	1
Rural guest houses	4	2	7	9	9
Agrotourism guest houses	12	10	18	15	16
Boats	4	2	7	7	6
<b>Total</b>	<b>127</b>	<b>110</b>	<b>136</b>	<b>135</b>	<b>138</b>

Source: developed by authors based on data available on the website of the National Institute of Statistics (<http://www.insse.ro/cms/>)

In terms of accommodation capacity, it could be noticed that the overall trend is steady. Nevertheless, by type of tourism facility there are important changes. Thus boats doubled their accommodation capacity, while important increases were recorded for hotels (67%), rural and agrotourism guest houses (more than 40%) (table 3).

Table 3. Evolution of tourism accommodation capacity by facilities in the Danube Delta

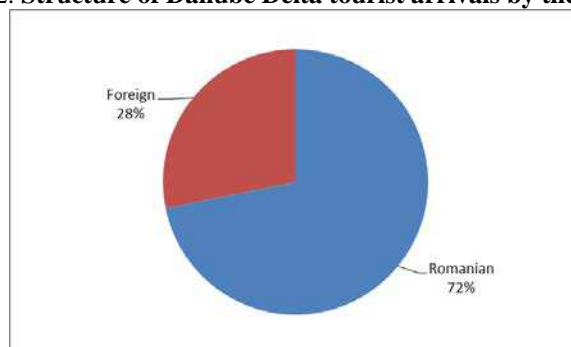
Type of tourism facility	2010	2011	2012	2013	2014
Hotels	1080	1589	1843	1758	1757
Inns	215	225	21	21	21
Tourist villas	516	516	1246	492	492
Tourist cottages and holiday villages	1003	251	125	251	229
Camping	730	730	430	730	730

Type of tourism facility	2010	2011	2012	2013	2014
Camps	180	0	200	200	214
Rural guest houses	161	85	193	237	237
Agrotourism guest houses	354	208	588	468	505
Boats	48	30	121	140	98
<b>Total</b>	<b>4287</b>	<b>3634</b>	<b>4767</b>	<b>4297</b>	<b>4283</b>

Source: developed by authors based on data available on the website of the National Institute of Statistics (<http://www.insse.ro/cms/>)

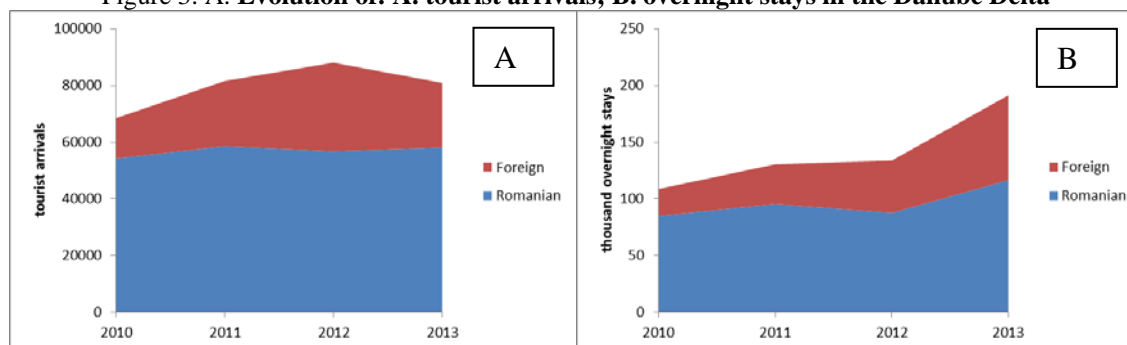
The number of tourists that visit the Danube Delta in one year is around 80 thousands. Most of them are Romanian tourists, representing 72% (figure 2).

Figure 2. Structure of Danube Delta tourist arrivals by their origin



Source: developed by authors based on data available on the website of the National Institute of Statistics (<http://www.insse.ro/cms/>)

Figure 3. A. Evolution of: A. tourist arrivals; B. overnight stays in the Danube Delta



Source: developed by authors based on data available on the website of the National Institute of Statistics (<http://www.insse.ro/cms/>)

During the last four years the total number of tourists could be considered flat. This trend is determined mainly by the evolution of the arrivals for Romanian tourists, because their proportion is very high (figure 3). The variation was of 7%, representing an annual growth of 2%. Nevertheless, comparing the data for foreign tourists it resulted that their number increased with 60%, with an annual rate of 20%. Despite their low number, the trends of foreign tourist arrivals indicate a favourable tourism development since the annual growth rate is comparable with the global rate for nature based tourism which is estimated to be of 30%. This trend is strengthened by the data regarding the overnight stays of foreign tourists (figure 4).

#### 4. Types of activities comprised in tourism products

The great variety of Danube Delta's tourism potential allows the deployment of a wide range of tourism activities that could be combined in tourism products. Although this diversity could be interpreted as a positive characteristic it also raises the question of optimum structure of these activities, since each activity has a specific economic, social, and environmental impact.

The activities that could be combined in tourism products include:

- Leisure: tourists hosted in hotels, boats, guest houses, villas etc. spend most of their time within the tourism facility or in the surroundings performing sports or just hanging out in informal groups;
- Visiting the Danube Delta: tourists hosted by any facility are engaging in short travels, individually or in groups, in order to visit certain attractions meanwhile experiencing the landscape through that they are passing;
- Research: tourists hosted in any facility make observations, measurements, and other field research concerning bird ecology, ecosystem status and functioning etc.;
- Youth programs: children from camps participate in various activities including visiting, waste collection, nature observation etc.;
- Rural tourism: tourists are hosted in houses specially arranged for them and expect to experience traditional food, witness traditional activities and enhance their knowledge about local culture;
- Aquatic sports: include use of motorboats, water ski, wakeboard, banana, kayak, canoe etc.;
- Photo-safari: tourists are traveling along various routes and take photos of the landscape or different species, especially birds;
- Sport fishing and hunting.

These categories are not outlined sharply and other types could be also identified. What is important is to create a standard list of tourist activities and to further assess their impact by considering the triple bottom line of sustainable development. This will allow a significant improvement in tourism management by readily providing information on how the tourism will impact on local development and on ecosystems and species.

## 5. Conclusions

The Danube Delta is one of the most valuable collections of natural ecosystems that withstood the impact of important technical works performed in periods then biodiversity loss was not a concern. The wilderness of its nature and uniqueness of its multicultural heritage is a powerful tourism attraction that responds to a major international trend – increasing the genuine experience within nature and traditional cultures. By revisiting the main elements of the Danube Delta tourism potential and analysing the tourism indicators were explored some explanations for the “resource curse” paradox in this area.

Regarding the potential for tourism development it could be confirmed the need to further invest effort in this direction, although tourism development should consider the restraints of conservation goals for ecosystems and species diversity. The indicators analysis revealed that tourism has an upward trend which is bolder in case of foreign tourists. In fact, the growth rate for this category is in accordance with global trends and managers should establish the limits of this growth. Goals should be also established for the structure of tourism activities, along with the development of assessment tools by using the triple bottom line framework of sustainable development. In this respect, there is necessary to perform more detailed research on tourists’ preferences, value added, social and environmental impact of tourism activities, quality of tourism services and others.

## 7. Bibliography

- [1] **Bran P.**, Managementul prin valoare, Editura Universitară, București, 2009;
- [2] **Bran F., Manea Gh., Ioan I., Rădulescu C.V.**, Globalizarea: manifestări și reacții, Editura Economică, București, 2012;
- [3] **Bran F., Ioan I.**, Terra – casa vieții, Editura Universitară, București, 2013;
- [4] **Ioan I., Bran F., Rădulescu C.V.**, Dimensiunea managerială a conservării naturii, Editura Universitară, București, 2009;
- [5] \*\*\* <http://www.madr.ro>, Ministry of Agriculture and Rural Development;
- [6] \*\*\* <http://www.mmediu.ro>, Ministry of Environment, Water and Forests;
- [7] \*\*\* <http://statistici.insse.ro>, The National Institute of Statistics
- [8] \*\*\* [http://ec.europa.eu/index\\_ro.htm](http://ec.europa.eu/index_ro.htm), Comisia Europeană
- [9] \*\*\* <http://www.consilium.europa.eu/ro/home>, Consiliul European