

## ECOTOURIST RESOURCES – PREMISE FOR THE ECONOMIC DIVERSIFICATION OF SETTLEMENTS IN THE DANUBE FLOODPLAIN (DOLJ COUNTY)

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**Abstract.** The Danube Floodplain (Dolj County) comprises a mosaic of semi-aquatic, aquatic and terrestrial biotopes, which explains the high diversity of flora and fauna. The limitation or the degradation of specific habitats required conservative approaches that led to the official recognition and establishment of natural reserves (Gighera halophile meadow, Zăval Forest), to which there are to be added three Sites of Community Importance (The Danube at Gârla Mare - Maglavit, Ciuperceni - Desa, The Jiu Corridor) and five Special Protection Areas for birds (Maglavit, Calafat - Ciuperceni - Dunăre, Bistreț, the Jiu-Danube Confluence and Dăbuleni Sands) within the framework of NATURA 2000 European Ecological Network. The biological diversity, paralleled by the existence of protected areas in the Danube Floodplain could represent an important ecotourist resource for the area under study; moreover, they constitute the source of significant opportunities for local development through the proportion of ecological tourism and of agritourism, the endurance of traditional fishing activities, the broadening of leisure activities in the area of the fishing ponds, as a true alternative for increasing the revenues. Starting from the characteristics of an ecotourist destination and the requirements of local development, there have been identified several directions that would orient the activity for ecotourism growth in Dolj settlements located along the Danube: the harmonisation of local policy concerning ecotourism development, constitution and improvement of specific infrastructure, elaboration and diversification of ecotourist supply, rising public awareness and promotion of ecotourist offer.

**Keywords:** the Danube Floodplain, ecotourist resources, Natura 2000 European Ecologic Network, local development.

**Rezumat. Resursele ecoturistice – premiză pentru diversificarea economică a așezărilor din Lunca Dunării (județul Dolj).** Lunca Dunării (județul Dolj) include un mozaic de biotopuri semiacvatice, acvatice și terestre, ceea ce explică și compoziția foarte variată a florei și faunei. Restrângerea sau degradarea habitatelor specifice au impus demersuri conservative concretizate în declararea rezervațiilor naturale (Pajiștea halofilă Gighera, Pădurea Zăval), la care se adaugă trei situri de importanță comunitară (Dunărea la Gârla Mare - Maglavit, Ciuperceni - Desa, Coridorul Jiului) și cinci arii de protecție specială avifaunistică (Maglavit, Calafat - Ciuperceni - Dunăre, Bistreț, Confluența Jiu-Dunăre și Nisipurile de la Dăbuleni) din cadrul Rețelei Ecologice Europene Natura 2000. Biodiversitatea și existența ariilor protejate din Lunca Dunării pot reprezenta o resursă ecoturistică importantă pentru aria analizată, constituind sursa unor semnificative oportunități de dezvoltare locală, prin promovarea turismului ecologic și a agroturismului, continuarea practicării activităților de pescuit, dezvoltarea activităților recreative în perimetrul bazinelor piscicole ca o alternativă la creșterea veniturilor. Pornind de la caracteristicile unei destinații ecoturistice și necesitățile de dezvoltare a zonei analizate, au fost identificate mai multe direcții de acțiune pentru dezvoltarea ecoturismului în cadrul localităților dunărene din județul Dolj: armonizarea politicii locale cu privire la dezvoltarea ecoturismului, dezvoltarea infrastructurii specifice, crearea și diversificarea ofertei ecoturistice, creșterea nivelului de conștientizare publică și promovarea ofertei ecoturistice.

**Cuvinte cheie:** Lunca Dunării, resurse ecoturistice, Rețeaua Ecologică Europeană Natura 2000, dezvoltare locală.

### INTRODUCTION

At the turn of the new millennium, we can no longer speak of rural societies, but rather of rurality to describe the European rural space, which is no longer a place confined to agricultural activities, but it includes multi-sectoral activities (EC, 2007). Despite the changing character of the rural space, there are still varied and heterogeneous structures of rural areas even within the European Union, ranging from consumption countryside and diversified regions with strong secondary sector or strong private services sector making a patchwork in the western part of EU to agrarian regions in the east, showing numerous characteristics of the socio-economic process of 'depletion' (COPUS, 2011).

Many of the Romanian rural areas fall under the latter category, with a high share of primary activities, poor infrastructure and declining population. Still, some of them have the advantage of a picturesque environment, vibrant local culture and traditions, and could capitalize these particular elements to diversify away from the traditional primary activities. Tourism, under various forms, is praised by various European programmes and international researchers as one of the activities that can greatly contribute to the rural development.

One such form is ecotourism, defined by the International Ecotourism Society as a *responsible travel to natural areas that conserves the environment and improves the well-being of local people*, since it has registered one of the highest increase, with an average of 20 to 34% / year beginning with the 1990, in 2004 increasing at a rate three times higher than the tourism industry as a whole and it is among the sectors that will gain momentum in the next decades. Although there are over 80 different definitions of ecotourism (DOWLING & FENNEL, 2003), they all point to three elements having a relationship with ecotourism, i.e. Activities related to nature, outdoor adventure and cultural experiences in the countryside or in the wilderness. In Romania in particular, the definition of ecotourism accepted by the National Authority for Tourism in partnership with the Ecotourism Association in Romania and the National Institute for Research and Development in Tourism implies the existence of at least one protected area as a criterion for the designation of an ecotourism destination.

The International Union for Conservation of Nature (IUCN), World Nature Organization and the European Federation of National and Natural Parks see ecotourism as a useful tool for safeguarding the cultural and natural assets following some special protection policies. Ecotourism implies a direct and personal experience in nature, and it is based on the use of geomorphological, biological, physical and cultural characteristics.

According to IUCN, in order to include a tourist activity in the ecotourism framework, it must satisfy the following nine requirements:

- to promote positive environmental ethics and to improve participants' activity;
- not to damage the resources – it does not include the consumption or erosion of natural environment (consequently, hunting and sport fishing can be mostly included in the adventure tourism and not in the ecotourism);
- the facilities and services that are supplied must not be presented as main attractions, but together with the ecosystem of which they are a part;
  - to be oriented towards the environment (where it takes place), not towards the people;
  - to lead to advantages for the wildlife and the environment;
  - to provide authentic experiences within the natural environment. Visiting the zoological gardens does not represent an ecotourist experience (even if they can contribute to the development of a person's interest towards ecotourism). The info centres can be considered components of an ecotourist activity only if, by this means, people are led towards an authentic experience in nature, such as the marking of ecotourist routes;
    - to actively involve local communities in the tourist activities, so that they would benefit from the tourism;
    - to scale the success and the tourist satisfaction degree in accordance with the level of acquired knowledge and/or appreciation, not according to the entertainment level;
    - to involve significant preparation and solid knowledge on the part of the leaders (guides, amateurs), as well as on that of the participants.

Considering the global urbanization trend, triggering the fragmentation and even destruction of natural habitats, as well as the effects of the climate changes, it is estimated that areas featuring a rich biodiversity will become ever more attractive destinations (BŐSZE & MEYER, 2014). The most important component of an ecotourism product is the intrinsic quality of the landscape and wild fauna (TERZIEVA et. al., 2009), since it is the biodiversity resource base which mainly attracts an ecotourist to a particular destination (UNEP, 2002).

There are three main categories of ecotourism attractions: flagship attractions (which may provide the main reason for visiting an area), complementary attractions (which give added value to the area and encourage a longer stay for the tourist), and supporting attractions (the physical facilities and tourist services found in that place) (UNEP, 2002). The two first categories correspond to the natural and cultural heritage of the area. The latter category facilitates visitation to the area.

Tourism activities that take place within protected natural areas have a significant economic contribution to the local economy. A research conducted by BANN & POPA (2012) that evaluated five of the most important protected areas (PA) from Romania estimates the value of the tourism and recreational activities within these PAs to be around 110 million Euros in 2010. According to the Ecotourism Association in Romania, up to 80-90% of the money spent by ecotourists remain in the area where the tourism program takes place, with multiple benefits for the rural settlements. The development of activities such as wildlife watching, bicycle rides and sustainable fishing should be considered as good opportunities, since they attract nature lovers and, at the same time, provide quality fish for restaurants and guest houses (BŐSZE & MEYER, 2014).

## STUDY AREA

The study area of the present paper overlaps the local administrative units (LAU 2, according to Eurostat, 2014) located in Dolj County, along the Danube, in south-western Romania, respectively between 43°42' and 44°09' N and 22°58' and 24°13' E. The researched administrative area covers a total surface of about 173,337 hectares, ca. 50 percent of it laying in the floodplain of the Danube and of its main tributaries, while the rest belongs to the terrace plains (Fig. 1).

Southwards, the Danube marks the administrative limit with Bulgaria (Figs. 1; 2), this being a permeable border, which enables the joint ecotourist and scientific capitalization of the natural and anthropic resources located on both banks of the great river.

The Danube course that stretches between Cetate and Dăbuleni settlements is part of the south-Pontic sector and it is generally adapted to the contact of the Romanian Plain and the Pre-Balkan Tableland. The northern limit of the Danube Floodplain is marked by the settlements located at the geomorphologic contact between this unit and the neighbouring terrace, or on the terrace flat: Cetate, Maglavit, Calafat, Salcia, Ciuperceni, Rast, Negoii, Catane, Bistreț, Cârna, Măceșu de Jos, Gighera, Zăval, Ostroveni, Bechet, Călărași, Dăbuleni. Along this leading line, there are sectors on which the important altitude differences between floodplain and terrace distinctively mark the geomorphologic limit, at the same time offering the privilege of great belvedere points for tourists (such as in the area of Cetate - Hunia - Maglavit - Basarabi - Calafat settlements). On other sectors, this limit is almost impossible to decipher, one of the main reasons being the significant presence of Aeolian sands that often induce a wavy landscape, with dunes and inter-dune ponds (such as in the Ciuperceni - Rast - Bistreț area). Some of the tributaries of the Danube (the Deznățui, the Balasan,

etc.), among which the Jiu is the most important in the sector, extend the floodplain of the great river with their own, which creates important environmental corridors that can be attractive for ecotourism.

The archaeological discoveries and the historical documents highlight the economic importance - sometimes even strategic character - of the riverine space; the diverse ecosystem services provided by the Danube Floodplain and ponds explain the ancient habitation of the space under study. The present permanent settlements located in the Cetate - Dăbuleni sector are distributed in 19 LAUs. The deeply rural character of the region is obvious at this level, which is dominated by communes (16), to which there are to be added two towns (Bechet, Dăbuleni) and a municipality (Calafat). The network of settlements comprises 34 villages and 3 urban settlements (Fig. 2).

In 2011, the population of the area totalled 97,716 persons (*National population and housing census/RPL 2011*). Around 29,000 persons, i.e. 30 percent of the total population, were theoretically urban citizens. The analysis of the demographic potential of the rural settlements displays the dominance of average villages (44 percent of total), while the demographic size of the urban settlements divides them into small towns (Calafat - 13,482 inhabitants, Dăbuleni - 12,182) and very small towns (Bechet - 3,657 inhabitants) (*RPL 2011*) (Fig. 2).

The socio-economic activities of the area are generally reflected by the land use, which highlights a clear difference between The Danube terrace plain (with prevalent agricultural use of the land, within small and average exploitations) and the Danube Floodplain (where extended surfaces in semi-natural regime still exist, especially in the sector located westward of Ghidici settlement; moreover, some of the human-induced elements that changed the natural landscape could be used in tourism activities: dikes, channels, forest vegetation, etc.). In 2011, out of the total surface of the 19 LAUs located along the Danube in Dolj County, about 121,771 hectares (i.e. 70 percent) were included in the agricultural domain, while the rest of 51,566 hectares was represented by land without agricultural use, especially by forest areas and aquatic surfaces that could trigger the development of various forms of tourism.

The economic functions of the settlements under analysis carry important information on their capabilities for sustainable capitalisation of the local resources. With about 65 percent to 90 percent of the occupied population struggling in agriculture, the communes of the sector display dominant and marked agricultural functions, the socio-economic problems of this deeply rural space being accentuated, for example, by the high proportion of inhabitants dependent on social support (about 6 percent of the total were unemployed persons registered at the end of 2011). Among the rural settlements, only Poiana Mare displays values slightly under 70 percent of the population occupied in agriculture, while 9 of the 16 rural LAUs account for corresponding values above 80 percent. The three towns of the sector also face economic problems, such as the lack of economic dynamics, agro-industrial functions, low attractiveness, high unemployment rates, etc.), as well as poverty and population ageing. Thus, Calafat is characterised by mixed economic functions, displaying some advancements towards the tertiary sector (the latter concentrating ca 48 percent of the active population, followed by the primary sector, with 27 percent); Bechet, with too little justification raised at urban status almost ten years ago, keeps dominant agricultural functions, also with a slight transition towards the tertiary activities (51.4 percent of the active population was comprised in the primary sector in 2011); with 59 percent of the active inhabitants working in agriculture, Dăbuleni preserves an even more accentuated rural character.

The demographic indicators show that in the future, if no adequate measures are developed and implemented for the sustainable capitalization of local resources, the labour market will continue to be affected by the migratory flows originating in the sector, subsequently leading to even more significant socio-economic issues.

In this framework, it is not to be neglected the importance of the investments in the human capital and in the development of ecotourism, as a premise for economic diversification and for local sustainable development. Agriculture may gradually lose its significance while tourism and nature conservation will become more important. In the future, recreation, tourism and the protection of nature could become decisive factors in determining land use and in maintaining quality of life in the area. Ecotourism could also be ideally combined with floodplain restoration.

From the viewpoint of the general transportation infrastructure (Fig. 2), there are to be noticed at least two elements. Firstly, on road, the area under study is easily reachable from all important urban centres of Oltenia (relevant examples are offered by the connection of the regional pole - Craiova Municipality - with Bechet and with Calafat by means of the national roads DN 55 and DN 56/E79 respectively). The main modernised ways - the national roads - generally follow the floodplain - terrace contact (Dăbuleni - Bechet - Calafat - Cetate: DN 54A, 55A, 56A). The more important roads that penetrate the floodplain are DN 55 (Bechet - Bechet Port), DJ 561D (Rast - Rast Port), DJ 533 (Poiana Mare - Desa - Ciupercenii Noi - Ciupercenii Vechi - Calafat). Besides these directing lines, the transportation network that crosses the floodplain mostly consists of unpaved or partially modernised roads. Secondly, the presence of the two important customs stations over the Danube (at Bechet and Calafat) enables the connections of the area with the south-eastern Europe.

Taking into consideration a different type of infrastructure that is characteristic for the area, i.e. the flood-control dykes built along the Danube and its main tributaries, as well as those constructed with partitioning purposes, it must be stated that these civil engineering structures could receive complex functions after special improvement works and under technical monitoring conditions. Besides its main hydraulic function, this network could be capitalised in the framework of various ecotourist activities: bicycle lanes, thematic routes for pedestrians, etc.

The tourist infrastructure is presently limited and certain local accommodation units are not present in the official statistics. Tourist housing structures are located in the settlements of Cetate (a hotel), Calafat (2 hotels and a hostel), Bechet (a hotel and a guesthouse) and Zăval (bungalows and camping, but with limited accessibility and virtually no promotion).

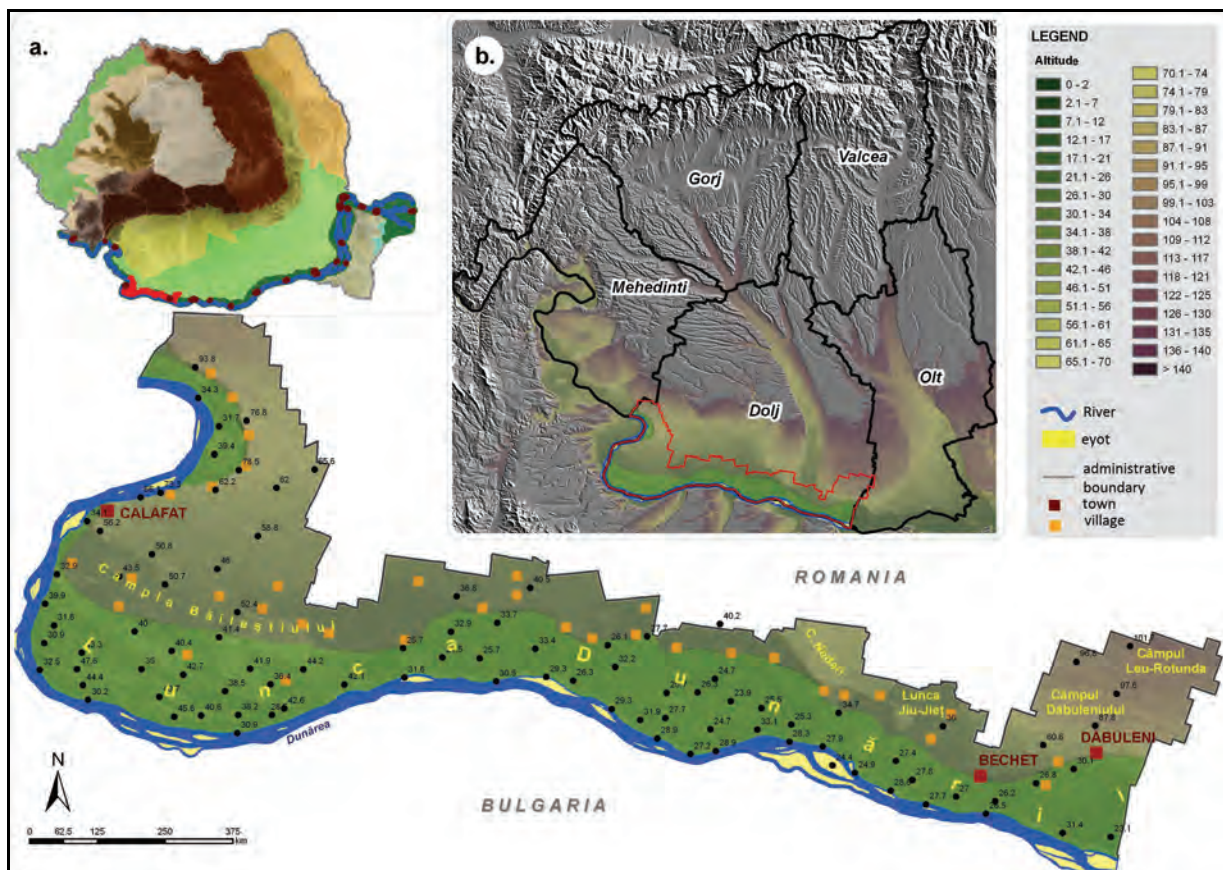


Figure 1. Location and main hypsometric features of the study-area.

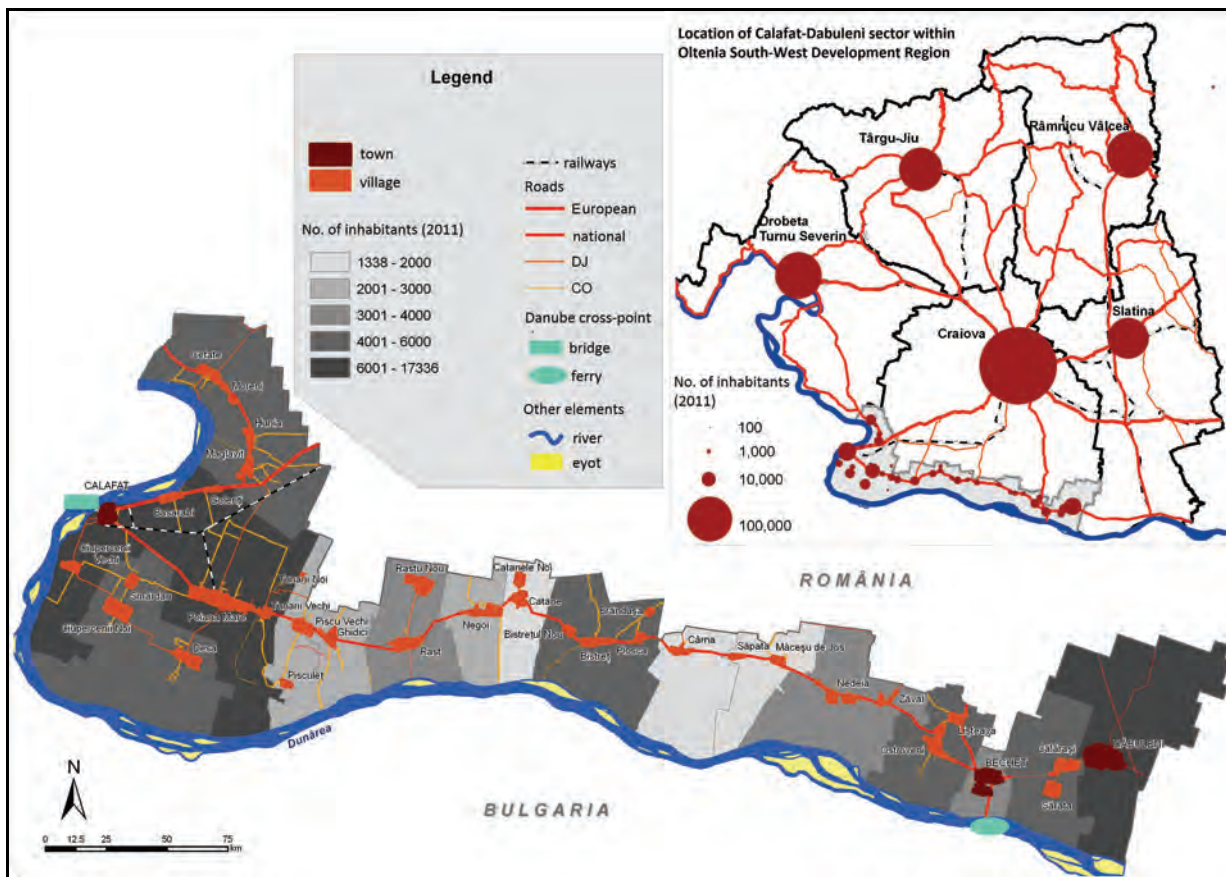


Figure 2. Main characteristics of the settlements and infrastructure network in the Cetate – Dăbuleni sector.

## DATA AND METHODS

Considering the limits of the study area, a methodological explanation is required. Among the permanent settlements of the area, only two, i.e. Desa and Pisculeț, are located in the proper floodplain, while the Danube islets of the sector do not present permanent human habitation forms. Consequently, most of the built area of the settlements falls outside the floodplain, but the extension of their estates and, thus, of their ecological footprint within the riverine unit, as well as the important role played by the Danube in the habitation dynamics required their inclusion in the present analysis. The geographical position of the towns situated in close connection with the Danube axis, sometimes extending within the floodplain or even up to the banks of the great river enabled their development as important contact points between the territories located north and south of the Danube and, during their history, as landmarks in the fluvial transportation and commerce. In this framework, the present paper will follow the borders of the LAU 2 along the Danube, underlining, within the qualitative study, the differences between the floodplain and the neighbouring units. The statistical data reflect the situation at administrative level, but their analysis underlined the characteristics of the Danube Floodplain in relation with the factors or the processes under study.

The analysis of the natural and human-induced tourist potential of the Danubian space was conducted on the basis of the spatial and qualitative data provided by available cartographic materials (topographical and thematic maps, satellite imagery), of the information extracted from the databases of field organisations (Romanian Ministry of Environment, National Institute for Heritage etc.), which have been compared and completed with terrain observations conducted between 2008 and 2014.

The use of basic GIS techniques enabled the transition from the individual analysis of the tourist resources to the comprehensive vision required in the achievement of useful hypotheses for the ecotourism development; thus, the potential resources can be transformed into important ecotourist attractions. In order to better understand the real possibilities for ecotourism development, as well as the advantages triggered by this type of activity upon the local stakeholders, the present study took into consideration the present demographic and socio-economic context of the area (information selected from the INS database and subsequently completed through field observations and documentation, in order to limit the inconsistencies between sources).

## RESULTS AND DISCUSSIONS

### 1. The natural tourist resources

The great variety of forms and aspects displayed by the Danube Floodplain creates true geographical individualities at local level. Result of the complex fluvial, aeolian and geomorphologic interactions that were strongly modified through anthropogenic insertions, the present microrelief of the Danube Floodplain represents less a genuine tourist resource, but rather a local feature that offers great opportunities for the development of ecotourist activities in the area. In this context, the complex network of dykes especially built eastwards of Ghidici could be used for various forms of tourism: bird watching, sport fishing, bicycle routes around the lakes, along the Danube, within the seminatural areas, etc. A road on top of the existing dikes would offer attractive views on the Danube and its banks, being a link in the European Danube bicycle route. In an integrated approach, not only the improvement of flood control is pursued but at the same time also the improvement of other functions like ecology, agriculture and tourism.

From the relief viewpoint, several sub-units display different characteristics in the area:

**I. Cetate - Calafat sector** develops on a general north-south direction. The Danube Floodplain, together with the characteristic ponds (Fântâna Banului, Maglavit, Golenți) were formed in an old fluvial meander. The contact of the floodplain with the terrace slope is very steep, which leads to important altitude differences. The eastern unit is represented by the Băilești Plain, with rising altitudes towards north, reaching more than 90 meters north of Cetate.

**II. Calafat - Dăbuleni sector** displays a clear east – west orientation. The Danube Floodplain acquires significant and more homogenous extensions, its uninterrupted surface being almost entirely located on the left side of the great river; northwards of the floodplain, the territory of the LAUs under study overlaps the Desnățui Plain (the Băilești Plain and the Nedeia Field) and the Romanați Plain (the Dăbuleni Field).

The northern part of the study area displays a relatively homogenous and quite dull aspect, characteristic of the terrace plains (sometimes interrupted by the presence of sand dunes) with dominant agricultural land use (cereals). The lower part, corresponding to the Danube Floodplain is much more heterogeneous and interesting from the morphologic viewpoint, which leads to the differentiation of several distinct units:

- Calafat - Ciuperceni - Rast subunit, where the floodplain displays the most intense Aeolian sands accumulation in dune and inter-dune formations that sometimes shelter ponds isolated from the Danube.

- Rast - Gighera subunit, where the significant positive micro-relief diminishes considerably (more extended sandy areas are located southwards of Bistreț and Nedeia settlements), appearing characteristic lake depressions (Bistreț and Călugăreni lakes are the most important such elements that outlasted the draining activities). Southwards of Gighera there are to be found mineral springs with relevant therapeutic potential, which are not capitalised at present.

- the Jiu river - Bechet subunit corresponds to the alluvial fan of the most important tributary of the Danube in the sector. The units prolongs the Danube Floodplain and preserves traces of the former riverbeds of the Jiu, out of which only the Jieț is preserved as an active stream.

- Bechet - Dăbuleni subunit is marked by the presence of the aeolian micro-relief (generally, mobile or semi-fixed dunes).

**III.** A distinct sector is that of the *Danubian islets and beaches*, which catch the interest through the number of accumulation forms within the riverbed, through the dimensions acquired by some of them and through their general dynamics and potential capitalization. There is to be noticed the increased density of accumulation forms within the riverbed downstream of Calafat (more than 10 islets and numerous fluvial beaches). Alluvia accumulation on the secondary river branches is also quite a frequent process, sometimes giving rise to temporary ponds, such as that located near the former Ghidici islet (BADEA et al., 1969). Among the most significant Romanian islets in the sector, there are to be noticed: Ostrovlul Mare (Calafat), Acalia (Ciupercenii Noi - Desa), Pietriș (Desa – Poiana Mare), Vană (Rast), Copanița (Gighera), Păpădia (Dăbuleni); each of these units extends on more than 10 hectares and they generally represent a space where the human influence is much reduced as compared with the northern territories.

The main tourist resources of the space under study are represented by the Danube and the complex network of channels and ponds (Fig. 3), where sport fishing and other ecotourist activities (boat rides, bird-watching, trails for nature interpretation, etc.) can be developed.

After the intensive landscape changes mostly realised during the 20<sup>th</sup> century, numerous floodplain lakes were limited or even totally drained. Nevertheless, the hydrography of the floodplain remains attractive, as this unit shelters the most extended lake in Dolj County (Bistreț Lake, 2,000 hectares, Fig. 4), as well as other natural lakes of significant dimensions (Golenți - Fig. 5, Maglavit, Fântâna Banului). Other hydrographic components that represent important potentialities for ecotourism are located in the semi-natural areas, such as Calafat - Ciuperceni - Desa – Pisculeț, where the floodplain unit preserves many of its original characteristics, including an important number of ponds and significant wetlands: Manginița, Jdeglă, Arcear, Lată - Fig. 6, Lungă, Cărămizilor, Țarova Ponds and many others.

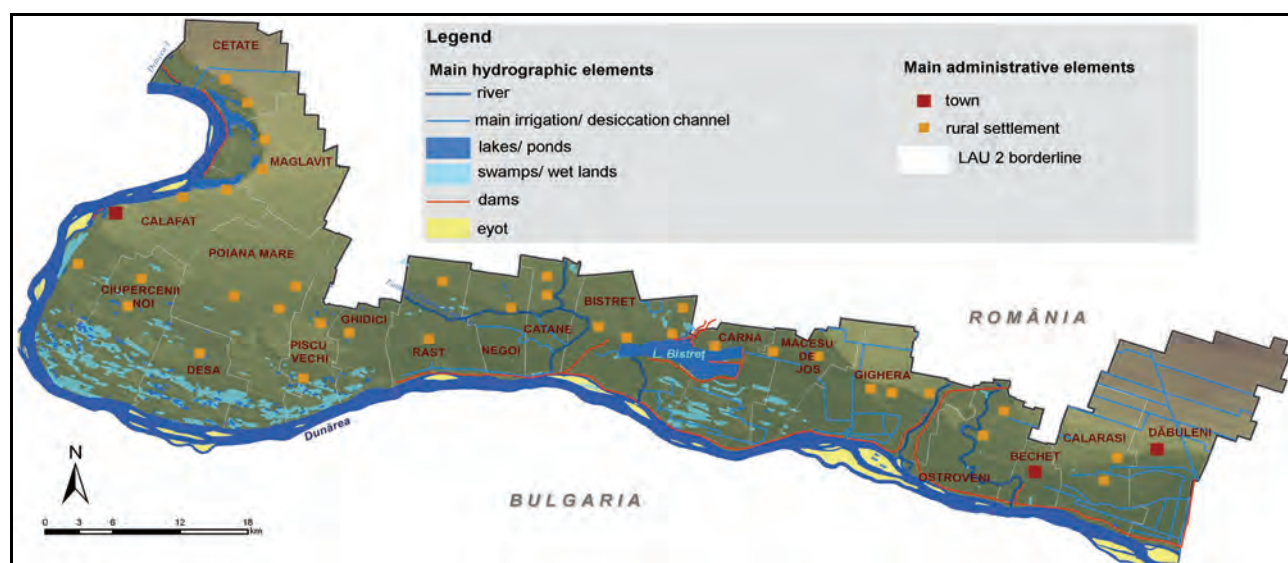


Figure 3. Main hydrographical characteristics of the Cetate – Dăbuleni sector.



Figure 4. *Philomachus pugnax* on Bistreț Lake (original).

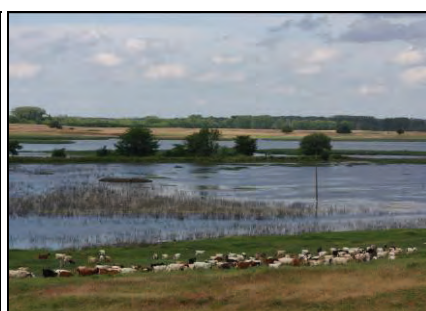


Figure 5. Golenți Pond, Calafat (original).



Figure 6. Wide Pond, Desa (original).

An essential part in ecotourism development could be played by activities conducted inside the natural protected areas that cover almost half of the study area. During the last decades, the initiatives regarding the protection and preservation of the biological diversity were more numerous and they were impelled by the *Convention on Biological Diversity*, adopted in 2002 and by the implementation of the *European Directives concerning Nature Conservation*, at the level of the 28 member states, including Romania after 2007.

The Danube Floodplain comprises a mosaic of semi-aquatic, aquatic and terrestrial biotopes, which explains the high diversity of flora and fauna. The limitation or the degradation of specific habitats required conservative approaches that led to the official recognition and establishment of natural reserves (according to *Law 5/2000* concerning the territorial planning – Section III – *Protected areas*, subsequently modified and completed): *Gighera Halophile Meadow*, *Zăval Forest*, *Cetate Meadow from the Danube Floodplain*, *Ciuperceni-Desa*, *Black Pond*, *Wide Pond*, to which there are to be added three Sites of Community Importance (*the Danube at Gârla Mare - Maglavit*, *Ciuperceni - Desa*, *The Jiu Corridor*) and five Special Protection Areas for birds (*Maglavit*, *Calafat - Ciuperceni –the Danube*, *Bistreț*, *the Jiu-Danube Confluence* and *Dăbuleni Sands*) within the framework of NATURA 2000 European Ecological Network..

The exceptional natural capital of the Danube Floodplain required the necessity to protect extensive areas by including them in this network (Fig. 7). These national or European preservation efforts were doubled by Dolj County Council Decisions that rendered the status of natural protected areas to forest surfaces: *Braniștea – Bistreț Greyish Oak Forest*, *Ciurumela Tunari - Piscu Vechi Forest*, *Nisipeni – Ciuperceni Forest*, *Cioace – Desa Forest*, *Başcov Forest*, *Calafat*). The Danube floodplain lies along the migration route of various species of aquatic birds, some of them pertaining to the world natural heritage (RIDICHE, 2011; RIDICHE & BOTOND, 2011). These particular species, as well as the entire protected areas, could form the flagship attractions of the area.

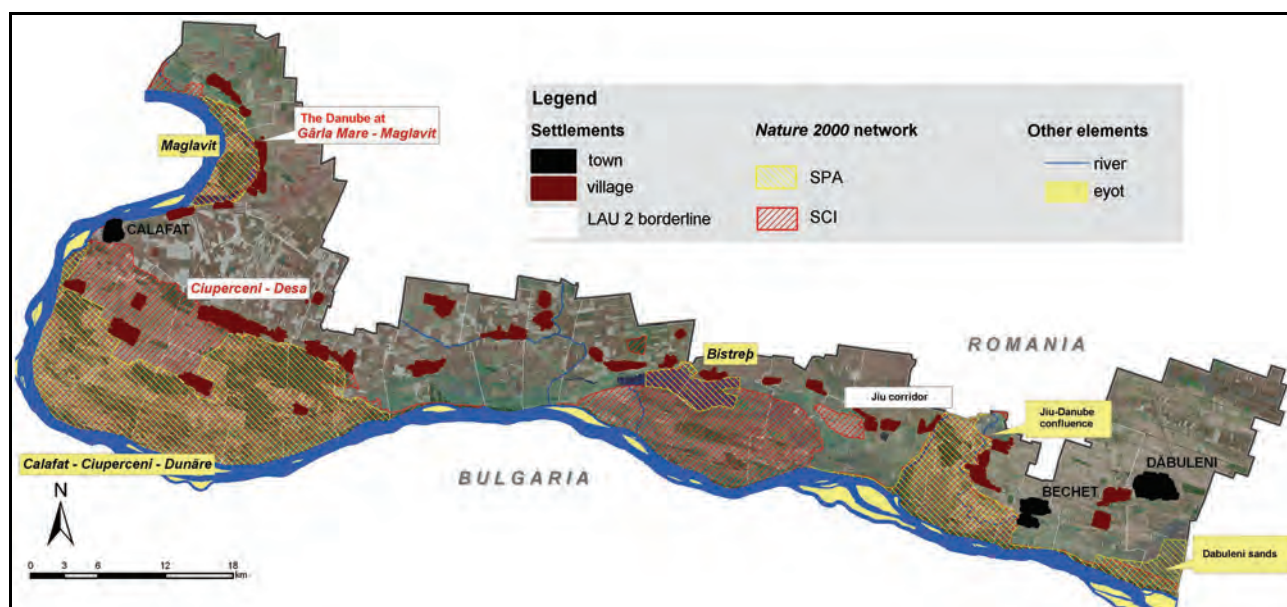


Figure 7. Components of NATURA 2000 Ecological Network within the Cetate – Dăbuleni sector.

Taking into consideration the principles that stood as fundament for the organisation of this network at European level, as well as the specificity of the sites located within the Cetate – Dăbuleni sector, it can be stated that Natura 2000 is the source of significant opportunities for local development, i.e.:

- the promotion of an ecological tourism, of the agritourism based on local traditions and ecological products;
- to continue the activities conducted on the fish ponds, by observing the measures implemented for the protection of aquatic fauna and especially of birds;
- the tourist activities conducted in the precincts of water bodies could constitute an alternative for increasing the revenues (including the sustainable management of the fish ponds);
- European and national financing funds can be accessed in order to develop and improve the general and ecotourism infrastructure (accommodation units, access lines, fauna, especially bird observatories, information panels and centres, etc.).

The existence of species and habitats with good conservation status, even on areas with strong human impact, certifies that the sustainable management of natural resources is not incompatible with human activities (LAZĂR et al, 2007).

The field observations highlight the value of these sites and underline the fact that, in order to obtain good results in the area of environmental conservation, as well as in that of ecotourist capitalization, the protected areas require the achievement of information centres, the placing of informative/warning panels in key-spots, bird observatories near the wetlands with important avifauna agglomeration, well-marked visiting trails, thematic routes, camping places with the necessary facilities, such as those for garbage collecting or fireplaces, etc. Presently, the facilities to enjoy the various tourist opportunities are very limited.

The study area displays an important natural potential for ecotourism. The Danube scenery, lakes and wetlands are unique, but are hardly known or safely accessible. The construction or improvement of access ways on the Danube dikes would definitely improve the accessibility and attract more tourists. Romanians are generally not attracted and foreign tourists, bicycling the extended Danube trail, now bypass the area in the absence of sufficient data or required infrastructure. The establishment of lodging facilities (campings, guesthouses, hotels) and promotion of agritourism should be considered a prerequisite.

## 2. Cultural attractions

Following the long existence of population in the area, there are various cultural attractions for ecotourists, historical sites, old churches included in the national heritage list (Fig. 8), museums and human activities being the most important attractions for ecotourists, that could represent the complimentary attractions to encourage a longer stay of tourists in the area. One significant archaeological site is found at Cârna, the archaeological findings from here forming the theoretical base for the research about the Neolithic period and the Bronze Age (AVRAM et al., 2004). This archaeological site (necropolis including 114 incinerator tombs) is considered the most representative necropolis for Gârla Mare culture (CIMEC, 2015).

In the past, the villages from the Danube valley were famous for the Oltenian carpets (called by the locals *chilim*) and for mat knitting. One workshop that still manufactures chilim using traditional methods and is successful on the international market is located in Bechet; it is called *Art in the countryside*. Traditional handicrafts and art should be kept alive by supporting and encouraging the young people to learn these crafts and thus be able to sell their products (mats, bags, carpets etc.) to the tourists, as well as to the guesthouses and restaurants in the area. If the area could be properly promoted and if it would become an ecotourist destination, these traditional handicrafts would bring significant economic benefits for the locals involved.

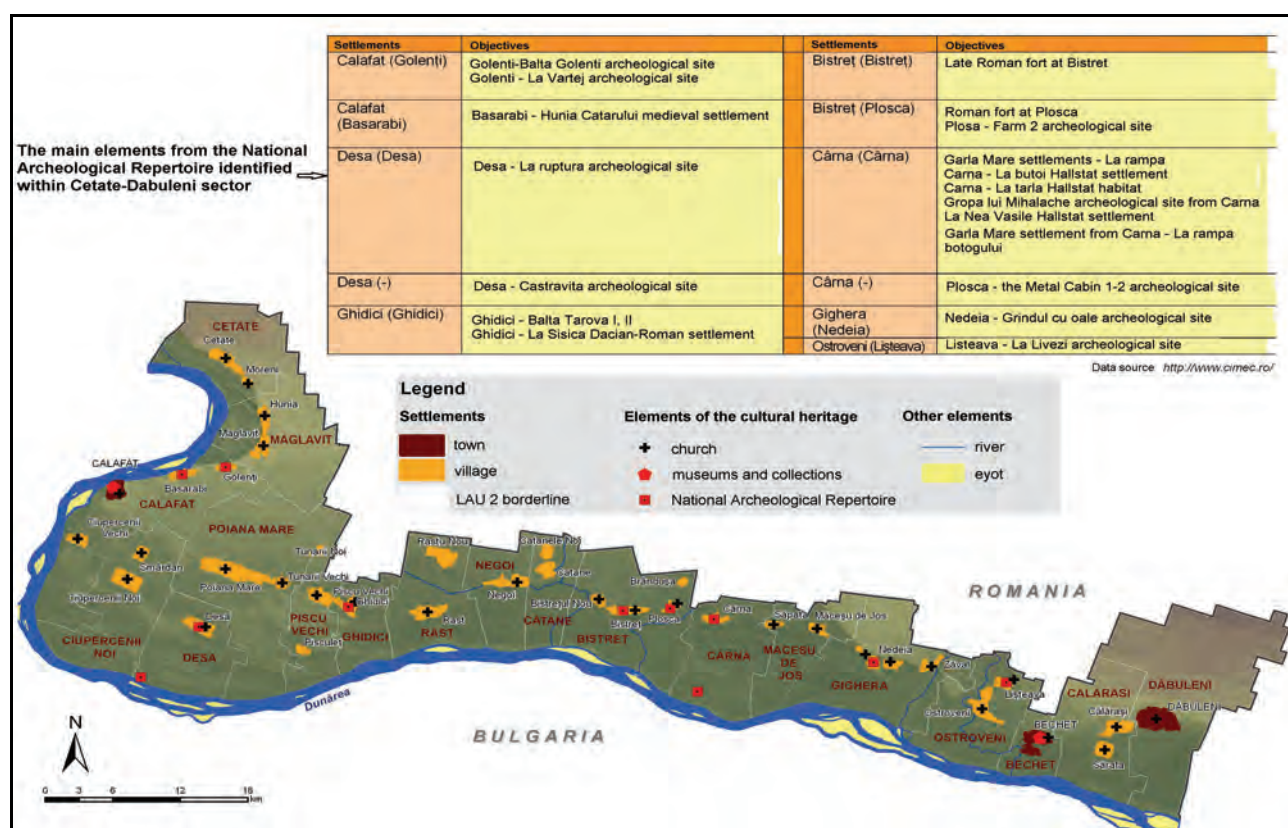


Figure 8. Main elements of the cultural patrimony within the Cetate – Dăbuleni sector.



### 3. Direction lines for ecotourism development

Although the rural periphery cannot survive from tourism alone (STASTNA et al., 2015), the international experience has proven that the existence of natural protected areas favours the diversification of small and medium businesses, providing a source of income for the local communities (SCHEYVENS 1999; WUNDER, 2000; STEM et al. 2003, HE et al., 2008). Taking into account the characteristics of an ecotourism destination and the development necessities of the analysed area, there were identified the following directions for actions within the Danube floodplain.

- **Harmonizing the local policy for the development of ecotourism**

In order to have a real chance to become an ecotourism destination, the settlements within the Danube floodplain should act together, in a coherent manner, to integrate the principles of ecotourism in the development plan of each settlement, but more important, for the entire area. This is quite opportune, since there is already a local development group – Calafat *Local Fishing Group*, that has contracted several projects aimed at ecotourism development and promotion. In this case, specific urbanism rules should be adopted with the specific purpose to preserve the local construction style and uniform signalling of tourist sights in the area.

- **Development of specific infrastructure**

It is highly necessary to stimulate the entrepreneurial interests to develop the ecotourism infrastructure parallel to the increasing awareness of local communities regarding the importance and value of local traditions and authentic culture for the creation of a highly attractive ecotourism destination.

There are no accommodation facilities in the rural area under study except for Cetate and the towns. None of the existing facilities is in line with the local style (neither the architecture, nor the interior design or gastronomy). The only exception might be Cetate Cultural Port, called by the locals *Dinescu's manor*. In each settlement included in the ecotourism network, there should be identified several houses that keep the local style, that should be reconsolidated and transformed into accommodation facilities, acting also as a *living museum* of the area. Since in the past the semi-buried earth-huts were characteristic for the area, we think that building some earth-huts as *eco-lodges* can be a significant advantage for the touristic image of the Danube floodplain.

Particular attention should be paid to the infrastructure needed for information, visits, nature interpretation, development of active tourism activities. Thus, thematic routes are needed for protected areas; museums, traditional houses, craftsmen workshops for carpet weaving, mat and bags knit, *in situ* exhibitions of traditional art for cultural activities; proper development of the cycling route that overlaps Euro velo 6, trail marking and signalling, rent-a-bike centres for cyclotourism.

- **Increase the public awareness about ecotourism concept**, the importance of ecotourism development and the relevance of local traditions and unspoiled nature for ecotourism

Both the local communities and the decision-making actors should first understand the principles and trends of ecotourism, the ecotourist profile and what he is searching for, in order to correctly put in practice these concepts. Consequently, informative documents, work groups and information campaigns are highly desirable.

- **Creation and diversification of ecotourism offer**

So far, tourism offer in the area is quite poor, aiming only fishing activities. In order to be able to assert itself as ecotourism destination, the area should diversify the ecotourism offer, by:

- planning and fitting some thematic routes for one-day journeys – nature expeditions for students and other visitors, in small guided groups, to study the terrestrial/ aquatic flora and fauna;
- conceiving some activities to capitalize and protect the green areas, cultivate medicinal herbs;
- initiate a working camp for volunteers and local specialists to manufacture souvenirs from local natural materials, to mark trails or to plant trees;
- planning and proper signalling of bicycle lanes since the area overlaps the Danube EuroVelo 6 corridor;
- boat rides on the Danube and Jiu, photo-safari, ecological pick-nicks, fruit picking, summer schools for learning the traditional crafts in the area such as basket and mat knitting, carpet weaving (Oltenia chilim);
- involve school eco-clubs and tourism associations to plan and capitalize the attractive natural and man-made attractions. These eco-clubs should exist in each school from the settlements where there are Nature 2000 sites, in order to encourage positive attitudes towards the environment.

Tourism service providers from the settlements that make up Calafat Local Fishing Group Association, that aims at diversifying the economic activities, should be also involved in the development of ecotourism products, such as thematic trails, ecological meals, traditional cultural events. Moreover, the local communities should be encouraged to get involved in this action, to offer some specific services such as accommodation and meals for tourists, show customs and traditional crafts such as weaving and knitting.

- **Proper promotion of the area**

The tourist offer, no matter how diversified and irrespective of the quality of experiences tourists may have, will bring few tourists unless it will be properly targeted to the market, so as to reach directly the segment of tourists that are keen of this form of tourism.

## CONCLUSIONS

Considering the existence of the Nature 2000 sites that are found within the Danube floodplain in the southern part of Dolj county, the existence of other reserves as well as the legal framework for the environment protection, the existence of a national strategy for ecotourism development and the identification of the tourism sector as an economic priority of the national strategies of sustainable development, we consider there are favourable premises for ecotourism development in the study area.

The sustainable use of the natural resources and biodiversity of the Danube floodplain could bring significant benefits for the local communities and authorities as well, since ecotourists are looking for untamed nature and cultural authenticity, and not least, contact with local communities. All these elements are still found in the settlements from the southern part of Dolj county; the challenge, therefore, is to support the development of ecotourism, while respecting the need for nature preservation and authenticity.

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