

DEVELOPING GREENWAY CORRIDORS IN SERBIA – CASE STUDY OF THE DANUBE REGION’S CULTURAL HISTORICAL AND NATURAL RESOURCES’ POTENTIALS

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Abstract

The greenway corridor project for the Danube area is to be marked mostly with 4 “e”: economy, environment, education and ecology. The author of the paper is pleading for realization of the pilot project for the greenway corridor in the Danube area as substantial part of sustainable development. This is the way to intensify new approach in planning that is in accordance with the idea of sustainable development. This approach includes cultural and natural resources protection, healthy and stable (economically and socially balanced) environment affirmation. Researches made so far, presented as numerous studies, explorations and plans, provide quality material for creating necessary database, as one of the steps suggested in methodological approach for realization of greenways. The Danube area, by its natural characteristics, richness of culture and historical heritage and international significance offers ideal possibilities for location of a greenway trail. Therefore the paper, besides theoretical background, offers a review of advantages of the Danube area for creation of one of the main corridors of the future greenways in Europe.

Streszczenie

Projekt korytarza jako zielonej drogi (greenway) w obszarze Dunaju ma zostać oznaczony jako z 4 “e”: gospodarka, środowisko, edukacja i ekologia. Autor artykułu optuje za realizacją pilotażowego projektu utworzenia zielonego korytarza dla obszaru Dunaju jako części planu zrównoważonego rozwoju. Tą drogą można by ustanowić nowe podejście w planowaniu, które jest zgodnie z ideą zrównoważonego rozwoju. To podejście zawiera ochronę kulturowych i naturalnych zasobów, ochronę zdrowia, ustala ekonomiczną i społeczną równowagę w środowisku. Dotychczasowe liczne badania i studia zapewniły wartościowy materiał dla utworzenia koniecznej bazy danych, jeden z kierunków zasugerował metodologiczne podejście do realizacji projektu greenway. Obszar Dunaju, przez jego naturalne cechy, bogactwo kultury i historycznego dziedzictwa oraz międzynarodowego znaczenia, oferuje idealne możliwości dla lokalizacji zielonego szlaku. Artykuł oprócz teoretycznego tła, przedstawia zalety obszaru Dunaju dla utworzenia jednego z głównych korytarzy przyszłego zielonego szlaku w Europie.

Keywords: The Danube region; Greenway corridors; Cultural and historical resources; Potential archaeological parks; Natural potentials; Non-renewable resources.

1. INTRODUCTION

The Danube region’s potentials are many: cultural and historical resources, potential archaeological parks, natural potentials – national assets, greenway corridors etc.

1.1. The Danube region

The Danube is more than Europe’s second longest river, extending 2,778 km from its source in Germany to its delta at the Black Sea. It is more than a line on a map and a political boundary for 10 countries experiencing vastly different political, economic and historical contexts. It is even more than a cultural and romantic symbol of Central and South East Europe's



Figure 1.
Danube Region in Central and South East Europe

rich past and hopes for future integration. It is an immense basin that drains water from countries, much like a huge bowl. With over 80 million people, the Danube is the most international river basin in the world.

There are many different stories from the Danube region, where many valuable international and national projects are involved. Starting with the development of policies and ending with small projects implemented by local communities, the Danube Regional Project is involving all Danube stakeholders at international, national and local level.

The European Council and Environment Ministers from all of the 16 countries sharing the Danube River Basin and Black Sea region adopted a new Declaration on the Enhancement of Cooperation. The Declaration recognizes that more cooperation and efforts are required by all to improve the environment, especially to fulfill the European Union Water Framework Directive by 2015 and to solve the shared nutrient pollution problem.

The protection of the Danube became an issue over past years. The economic development in the Danube region brought not only improvement of quality of life but also threat to the environment and to the river. Increase of industrial activities, extensive agriculture, growing municipal communities, all those are potential sources of pollution if not properly managed and can have negative impact on functions of the river, water quality, water uses, e.g. water supplies for inhabitants, aquatic life, etc. In particular, pollution by nutrients and toxic substances becomes a serious problem, since it is affecting not only the Danube but also the Black Sea.

Danube countries' governments and organizations are doing good projects that help protect and restore

valuable areas in the Danube River Basin. But more projects are needed to make better use of these areas. Today, there are many countries, organizations and projects that are meeting the challenge to protect the Danube region's cultural and natural environment, but there is still a need to establish and strengthen environmental networks of governments, regions, communities and non-government organizations of the countries in the Danube region.

The purpose of all those projects is to reinforce regional cooperation of the Danube countries and support development of national policies and legislation and the definition of priority actions for pollution control in order to ensure common approach to protection of international waters, sustainable management of cultural and natural resources and biodiversity. They work on a wide variety of themes and issues. The following represent some of the key themes: agriculture, wetlands, river basin management, municipal water supply and waste waters, cultural resources, public participation and communications.

The five main areas of actions are: policies development (creation of sustainable ecological conditions for land use and water and cultural resources management); capacity building and trans-boundary cooperation (capacity building and reinforcement of trans-boundary cooperation for the improvement of water quality and environmental standards in the Danube region); public participation and awareness (strengthening of public involvement in environmental decision making and reinforcement of community actions for pollution reduction and protection of ecosystems and cultural heritage); monitoring and evaluation (reinforcement of monitoring, evaluation and information systems to control trans-boundary pollution, and to reduce nutrients and harmful substances), and pilot projects and case studies.

But there is still an urgent need to develop economic activities and not just transportation on the river Danube, so that the Danube does not become a river only for transit. For that sake three main projects which will be implemented on the Danube in the upcoming years are recently presented.

At the working meeting devoted to "Danube region cities of Serbia – economic, scientific and cultural potential" which was held on the International Danube Day, Serbian part presented a master plan for the development of transport on the Danube. This project envisages an analysis of the investment and tourism potential of the Danube, so that incentive can be given to economic development of the

international river through cooperation between the Danube region cities.

It has been stressed that the advantage of the master plan is that it will give an overview of investment potential along the course of the Danube and will bear the quality stamp of the European Union, considering that it has been given support by the European Commission. If the Danube region countries do not reach agreement on cooperation concerning the river, some other country might take the precedence in the matter and dictate terms. Regional cooperation along the Danube must be supported at all levels of governments across the region. Cooperation at the highest political level and in all the areas of economy, especially agriculture and culture is essential

A catalogue of ten biggest hindrances on the river course through Serbia will be made soon, so that greater security in navigation may be achieved by removing them. Similarly an overview of high school establishments in Serbia will be conducted which will specialize in the area of river navigation, so that captains of river shipping can train in the country instead of having to go abroad. Danube harbors will be researched, so that they can specialize for cross-border commerce.

1.2. Cultural historical resources

Danube region has some of European most ancient cities and towns, archaeological sites and places of historic interests. It is the crossing of many cultures and civilizations, across the millennia, the clot of histories. An appearance of magnificent assemblies dispersed throughout landscapes from the Black Forest Mountain in Germany downstream all along to the Black Sea, still shows lots of talent of prominent architects, builders and gardeners in combination with the refined taste of customers, monarchs of all kinds. A bulk of built achievements across the region was created by their initiative.

With an eye to form the future tourism sphere specialists' cultural level, to develop their knowledge in the sphere of native land history, of spiritual enrichment, high vocation catering and tourism schools need to be prolific in each country. The scientific and practical work on different valuable studies and introduction to the educational process of cultural and historical heritage of the region, and namely, the histories of particular periods need to be held. In cooperation with institutions in the area of cultural and natural heritage the scientific and practical con-

ferences help to build the awareness of the issue constantly high. The education system representatives shall take part in conferences what proves general interest in preserving cultural and historical heritage and acknowledgement of its importance in rising generation's education.

The education of students positively influences the development of not only the future specialists within tourist industry but also other which are related to it. It refers particularly to the services field: hotel and restaurant services, industry of hospitality as a whole. The hospitality is the fundamental conception of human civilization and this one transfers into industry, united tourism, hotel and restaurant business, catering, rest and entertainment, conferences and meetings organization. Nowadays the cultural and economical potential of every country in the Danube region considerably depends on the hospitality industry condition. The trade economic dictionary defines the meaning of 'hospitality industry' as the system of modern technologies, service establishments and organizations, specialized on people who come in the place for comparatively short period with the purpose to rest for business meetings or personal aims.

The choice of the right strategy of the tourism and hotel industry development for the region supposes with another fact the development of high qualified tourism service that means multi-pronged training of specialists of the tourism sphere in the profiled educational establishments. Having in mind all changes which occur in the tourism services industry, the Danube region countries' exit on the international level of hospitality industry demands considerable attitude to formation of qualified education, introduction of innovative methods and practical activity of the tourism sphere specialists. Modern educational establishment demands introduction of new ways in education, providing the development of the communicative, creative and professional competences, needs in self-education based on multivariate content and organization of educational process. Therefore the prospect of educational processes at the education level becomes renewal of the content and the methods of education itself.

Nowadays, education is the most important leg of progress of high developed civilized states, the formation of high spiritual intelligence, culture, and feeling of the social responsibility for the introduction of the results of scientific and technique ideas or new technologies. Studying of the region's history and particular periods became in recent years one of the trends that includes innovative educational

processes for the needs of tourism industry. Research work on this range of themes is usually conducted by creative groups which consist of engineering-pedagogical schools' staff and students who are studying specializations of different scopes.

Innovation work is meant to inculcate the new pedagogical and informational technologies to the schools' activity as the condition of improving of scientific, methodical, and educational production. Information search on the theme of research work is conducted with the help of modern communicative technologies: on-line and off-line accesses to full-text electronic recourses of libraries across the globe, recourses of own electronic libraries, electronic encyclopedia and materials of archives.

Essence of work of the cultural and historical heritage studying of the Danube region consists in the following:

- Studying of customs, traditions, rituals of peoples and nations;
- Historical events and happenings restoration according to the true data;
- Decoding out-of-date terminology, terms on editions, and
- Establishing cultural and natural heritage routes.

This work shall make substantial contribution to scientifically methodical and educational potential of the society. The results normally are:

- Formation and filling of electronic database ("Ancient cities, towns and harbors", "Historic and archaeological terminology", "Traditions and customs", "Etiquette and ceremony", etc.);
- Creation of thematic presentation ("Dates", "Events", "Living with histories of the Danube", "Roman military campaign at Diana Karatas", "Housing at Lepenski Vir" etc.);
- Theatre performances with saving ancient traditions and use of modern technical equipments with the programmatic management ("Dance at the King's Court", "Tsar Dušan's Codex and Etiquette", "Battle at Fetislam", etc);
- Tables serving according to the ceremony of rulers ("Roman Emperor's Feast at Felix Romuliana – Gamzigrad", "Serbian Despot's Feast", etc.);
- The scientific-practical conferences and presentations ("Viminatum Cuisine", "Tsar Lazar's Hunting Campaign", etc.);
- Proceedings' books that include produced material of research works and past events and feasts.

The studying of the Danube region cultural and historical heritage promotes to widen the framework of social partnership with scientific, cultural and other organizations and establishments:

- Studying the making elements of the region's culture that's very important for the hospitality industry;
- The making of an annual scientific-practical conference on questions of the region tourism development with an aim of serving cultural heritage and rational use;
- The studying, generalization and distribution of pedagogical experience on questions of skilled personal training for all sorts of services and tourism, and
- Integration of the research work results on studying the Danube regions' cultural and historical heritage in the educational process system.

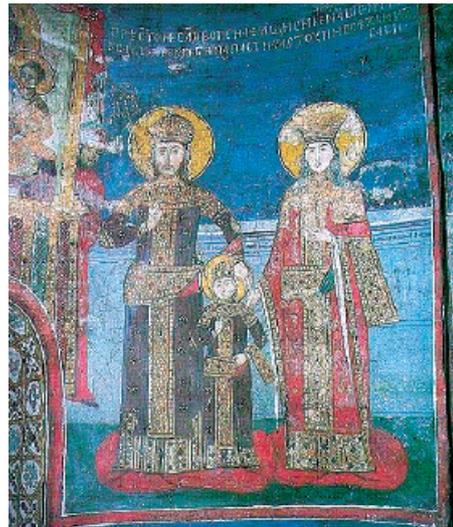


Figure 2 and 3.
Tsar Dušan, first and the only one Emperor of Serbia with his family, and his coin



Figure 4 and 5.
Sarcophagus at Roman Palace in Felix Roumuliana – Gamzigrad, near Zaječar, and its builder, Roman Emperor Galerius

Information-technology transformations of the 20th Century objectively stipulated the necessity of wide introduction's in innovative approaches to professional education in the condition of continuous teaching and qualitative changes.

Along with tourism development in the Danube region one can notice intensive development of regional hospitality industry, hotel and restaurant service. The interest in history and the fates of outstanding historical events and personalities, who used to live here at different times, is considerably increasing.

Cultural and historical potential of the region is shown in its historical heritage and it needs the study and advancement to the market of tourist services. The presence of unique historical objects can predetermine a successful development of tourism in a region. An acquaintance with history and historical objects is actually the strongest incentive tourist cause. Therefore one of the priority tasks of modern societies along the Danube is also to be engaged in distribution of information about historical potential of the locality.



Figure 6 and 7.
Despot Đurađ Branković's of Serbia coat of arms, and consecration in 2006 of foundations of his Grave Church of the Annuntiation inside fortress of Smederevo, his Capital on the Danube River

The problem of studying and preserving historical heritage of the region takes on special significance under modern conditions, in particular – for the education system. This problem is especially urgent for countries in transition due to their respective regional peculiarities. The fact is that first and foremost tourism sphere specialists deal with people. Their professional training is to take into account the knowledge of cultural and historical heritage of the respective country i.e. society.

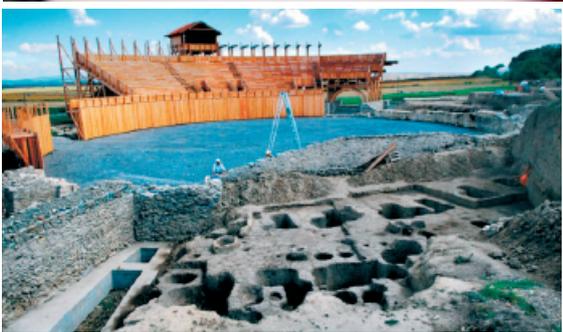


Figure 8, 9, 10 and 11.
Roman Castrum Viminatium, near Kostolac, its still very refreshing original frescoes and jewelry, and its recently reconstructed amphitheatre, but in wood

The paradigm of social cultural education substantially changed in the last decades in the whole world, but especially in former socialist countries now in transition. It explains the orientation on new understanding of culture and its role in the educational system. The development of civilized society will be productive only in case of education integration with a culture that conduces to becoming of cultural personality. Each activity can be in a harmony with culture and to be based on it.

Actuality of cultural and historical specialist' education in the sphere of tourism in modern societies is largely conditioned by the necessity of the state to build democratic society on the principles of humanism, democracy and social justice. The teaching of future specialists activity promotes to the matter of saving historical and cultural values of the country, theirs comprehensive popularization, theirs integration to the world cultural space, economy of originality and uniqueness of national culture.

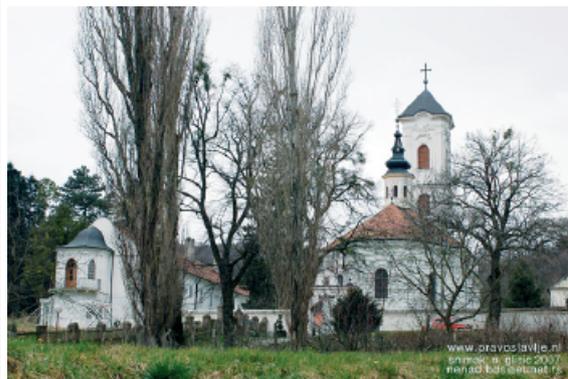


Figure 12 and 13.
Tsar Lazar and his Endowment, Monastery Vrdnik Ravanica, Fruška Gora Mountain, Srem

The cultural and historical interest of every country causes the desire to keep its own historical traditions, achievements of natural culture at its citizens, a necessity better to experience spiritual roots and features of national mentality of the people.

1.3. Natural potential – natural assets under the first level of protection

Ever increasing pressures on the natural environment within the Danube region necessitate measures to detect and ameliorate problems of contamination, construction and overuse, before they become critical. This is particularly the case in national parks and monuments where the tide of visitors is continually growing. The underground resource of natural caverns is especially vulnerable to damage, due to its fragile features, rare and delicate biota, open communication with groundwater, and its invisibility beneath the ground surface. It is important that we are able to recognize the existence of a cavern system prior to the planning of roads and facilities that may encroach upon or introduce waste and hazardous materials into the underground system.

The natural potentials for the development of tourism in the Danube region are very often reflected in the gentle landscape of the Danube riverbank and the hilly terrain covered in vineyards and orchards, the moderate continental climate, the wealth of surface waters of the Danube, its river-system and artificial lakes, the protected ancient oak and other forests and an abundance of small and large game, and various fishes.

The first body of water destined for the peoples of Danube region was the Panonian Sea, a connection to the pre-Slavic and other people demons, protectors and avengers, because they built their cities, towns, villages, fortresses etc. on the former bottom of the Panonian Sea, if not on the fringes as more often happen. In the forgotten lagoons of branches of the river, washed out by the Danube ever since those times, the mischievous demons remain, who in some cases “upset the boats of drunken fishermen” to this day.

The Danube is the second body of water after the former sea, people here are destined to be tied to. It was the waterway by which they used to send their culture and gentry to the world in ancient and medieval times, and it was how the world came back to them. The assets of some particular parts of the region are many.

Natural resources departments shall manage a vari-

ety of habitat types in their areas. Forests, wetlands, old fields and meadows predominate much of the landscape within the Danube region, i.e. possible park-systems. These habitats are managed actively when necessary. In old field and meadow habitats the management involves limiting the natural progression of plant communities.

Keeping vegetation in an early state of growth by periodic mowing or burning and occasional use of herbicide, is a common practice for land managers and can be done to minimize disturbance to animals nesting. The park system shall however, monitor its forested land to ensure exotic plant and prevent pest infestations from threaten forest health.

Wetland, river and stream habitats are monitored and protected from exotic plant infestations as well. The region is fortunate to have one major river and its countless associated tributaries flowing through it. These important natural features shall become the framework for land protection throughout the park-systems.

Other active management practices include a nest box program, annual fish stockings, park-wide tree planting, an ongoing animal impact study and active resource monitoring and mapping. Researchers have identified and managed a large number of naturally occurring wetlands on some holdings. Many of these wetlands are vernal pools, shallow wet areas in forests that contain water for all or part of the year. Other natural wetland areas include lakeshore marsh environments and riverine floodplain wetlands found throughout the region. These naturally occurring wetland sites provide important places for biodiversity within the parks. They serve as breeding areas for wildlife as well as protected environments for high quality plant communities. Wetland mitigation is a process by which lost wetland areas impacted by development or other activities are mitigated through the preservation, creation, enhancement or restoration of other wetland areas. The regulatory branches of government typically administer this process.

Sandy beaches and scenic overlooks characterize many future riverbank parks. Danube riverbank beaches are recognized for their recreational value, but are also highly threatened ecosystems. Due to the natural fluctuations of the level of Danube, these coastal ecosystems are always changing.

1.4. Protection of nature

The Danube and its tributaries host a variety of fascinating and diverse ecological territories with many

unique plants and animals. The rich and unique biodiversity and riverine habitats have been under severe pressure due to human activities for centuries. However, today the protection of environment and biodiversity is on the political agenda of the states in the region.

The rich and unique biodiversity and riverine habitats along the Danube and its tributaries have been under severe pressure due to human activities ever since the 19th century. In order to enhance nature conservation along the Danube, the work has been in progress to compile an inventory of the species and habitats conserved in protected areas based on a list currently containing 250 sites officially nominated by the states in the region. The final selection of areas for protection was completed when the European Natura 2000 Network finished their research in 2005. Natura 2000 is one of the European Union's most ambitious environmental programs. The national laws of countries along the Danube and other European states are crucial factors, since each state is authorized to define the limits, extents and restrictions for every protected area within its territory. Agreements under international law, such as the Danube River Protection Convention, the Convention on trans-boundary river courses and lakes, the Ramsar Convention on Wetlands, the World Heritage Convention and others, determine the procedures for the designation of protected areas.

1.5. Creating archeological parks

Archaeological sites insufficiently explored and protected within "greenways" can be accomplished by creating archeological parks. In the archeological parks the structure of fortress or settlement is being marked by plantings (if possible the plants that were present in the period that is reconstructing), while the net of paths of the former settlement forms future net of the park paths. There are possibilities of conserving archeological sites in order to be exploited as tourist itinerary. The aim is to make archeological sites available to the public and to be preserved for future explorations. Creating archeological reserves also carries great significance for the future. The reserves are the zones with archeological sites left for the future generations in undamaged environment.

An archaeological park is an archaeological site that has been preserved and opened to the public. Commonly, they preserve archaeological sites with above-ground remains, such as the large and impressive Roman military camps, Serbian kings' com-

pounds, castles, war battlefields, early towns, villages and complexes. Archaeological parks are usually managed by governments, as part of parks systems, historical societies, museums, and universities. There is a great deal of diversity among archaeological parks in their areas of development, management, and programming, although many of them offer interpretive exhibits, educational programs, and special events. Some sites tend to be more readily identified as historic sites/museums, suggesting a somewhat different focus, development, and support network from prehistoric or antique archaeological parks. When one enters the archaeological park he can abandon the present and be submerged by the past and still be able to hear the echoes of the past people: emperors, kings, warriors, philosophers' and scholars' steps.

The Danube region countries' commitment to conservation is manifested in three major ways: preservation of open space and natural and historical areas, wise land use and facility development, and conscientious natural and historical resource management. The solutions must provide an environment that is "more than a simple walk in the park". It must provide good maintenance of the land, comprising: conservation easements, management agreements, and, last but not least, donation of the land. The same applies to the nature, watershed and air protection, wetlands and the riverbanks, historic and other human resources management, rare plants and animals, renewable energy resources, recycling and waste management, partnerships and possible alerts.

Conservation easement is a legally binding agreement involving the transfer of certain rights within a property from the seller to the buyer. The seller typically transfers the right to develop their property and alter its natural state to the park district. For example, a landowner may transfer to the park district the right to build structures on the property or the right to harvest timber from the property. The easements can be sold or donated, often depending on the financial and tax situation of the seller. They can also be tailored to fit specific circumstances of the land use. For example, conservation easements can be written to allow continued agricultural operations. It's important to remember that the seller of the conservation easement continues to hold title to the land and typically retains the right to restrict access to the property and to use the property in ways that don't conflict with the terms of the easement.

For the sake of proper development, the Danube region countries shall enter into a number of lease-

management agreements with various state and local government agencies. These agreements effectively transfer management responsibility for specific parcels of open space to the park district for a given number of years. This allows the park district to employ its skills in land management and visitor service to open areas up to public access and make improvements.

Some of most popular parks could be the result of lease-management agreements. Here are some examples: lakes, natural and artificial; rivers and creeks; canyons; forests; harbors; riverfronts; natural and historic areas and preserves; portions of cities, towns, townships and villages. Some of the best parks throughout the world were acquired in full or in part through the incredible generosity of landowners who donated their property to the park district. It should be the same in the Danube region.

2. CASE STUDY – THE GREENWAY CORRIDOR IN THE DANUBE REGION OF SERBIA

2.1. Description

The term greenway is originated from combination of two words, where the word green means *green* corridor with all its properties, and the word *way* points to the possibility of moving. It is important to emphasize that networks of greenways are formed on local, regional, state and interstate level. Functions of *greenways* were best defined by Phil Lewis naming them E-ways (environment, ecology, education, exercise). The recreation function is in placement of different types of paths in natural corridors, as well along canals, abandoned railway roads, pipelines and others. Ecological function is achieved by connection of important natural corridors and areas of natural protection, often along rivers and streams and by it is enabled animal migration, biodiversity protection etc. Cultural and historical greenways are places and paths of historical and cultural values and enable education, experience of a landscape, recreation and benefit of it.

Along green and blue corridors cycle routes are laid out, promoting the following: development of an alternative way of movement by cycle and afoot, promoting the idea of “sustainable” transportation – healthy movement which does not pollute the environment and spend resources; development of “green tourism” and benefit of it (in the Netherlands, for instance, the network of long distance cycling

routes generates at least euro 7 million per year); development of sport industry which also has its positive economic effect; activation of cultural potential by designing pathways in such a way that they include the visiting of cultural and traditional heritage.

2.2. Natural potential – natural assets under the first level of protection

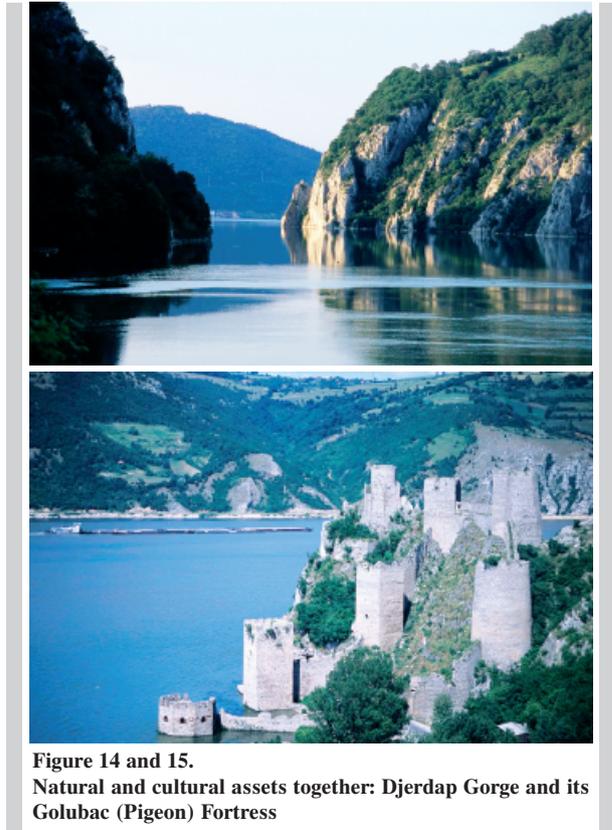


Figure 14 and 15.
Natural and cultural assets together: Djerdap Gorge and its Golubac (Pigeon) Fortress

The combination of orography, microclimate, biotic factors and specific natural history in the area of Djerdap has created this exceptional natural phenomenon and unique refugium. Development of flora and vegetation, in this relatively small area, has been continual since the period of Pliocene, resulting in preservation of numerous relict species and associations and whole developmental series. The term natural asset here refers to those areas in which certain characteristics of flora and vegetation of relict species confirm the theory of vegetation development series in the natural history of this region. In the area of the National Park Djerdap there are ten nature reserves, and proposals for establishment of another three reserves are under way.

2.3. Cultural – historical resources

The valley of the Danube was the route used by numerous European and Asian people in their migrations and military campaigns over the centuries. Many different civilizations have been present in the area of Djerdap, leaving permanent imprints behind them. As early as early Neolithic, about 8,000 years ago: an impressive culture of prehistoric man which lasted for a couple of centuries – situated at the site of Lepenski Vir. From the Roman time: the most prominent among these monuments are Tabula Traiana and the Roman road cut into the rocky cliffs of Kazan, and remnants of the Roman palace Diana-Karatas. Medieval fortress Golubac: a monument to the power of Serbian principals and building skills of the time. From Ottoman time: fortress Fetislam near Kladovo. The majorities of those sites are very well presented and are also toponyms of certain areas.

The protection of the architectural, monumental, and archeological heritage and the sites involved to that heritage in greenways' network made basic idea for the protection of respective culture heritage like a non-renewable resources.

2.4. Recreational potential

Encouraging cycling as a hobby is therefore a good way to re-launch its more general use. When drawing up a network of cycle routes, this should always be conceived in part as a way of joining together tourist routes (including, typically, canal towpaths, paths through woods, disused and refurbished railway lines, etc.). Such routes will in any case attract many users. By linking together the daily route network and the cycling-for-leisure network, economic benefits can be accrued from tourism. Cycle routes are being constructed with the aim of developing green tourism, which is less of a burden of the environment.

The same paths that bring the nature into the cities along the trace of the Danube “greenway” can lead the people from the city in to the nature. The paths could start from park to recreational area, alongside certain paths by the water. The paths could unite transit traces or connect urban centers and regions.

2.5. EuroVelo routes in Serbian part of the Danube region

European Green Ways Association (EGWA) works on the development of a network of corridors designed to different ways of movement. At European level, the European Cyclist Federation



Figure 16 and 17. Prehistoric archeological site Lepenski Vir and remnants of the Roman palace Diana-Karatas



Figure 18 and 19. Subsequently Celtic, Roman, Medieval, Turkish and Austrian fortress of Belgrade, in the background below the parachuter, and Medieval fortress Fetislam on the Danube

(ECF) is promoting, with the help of the European Union, a network of 12 trans-European cycle routes, called “Euro Velo”. Several sectors have already shown great interest in “Euro Velo”: 52 sponsors from 22 countries have provided financial support to get the project going. The majority of associations cooperating in this project is active at national level and can assist in developing this network.

It is of a great importance for Serbia that two of those trans-European routes shall be passing through the country, both crossing Belgrade: the route 11 from Tart to Athens (from the North Sea to Aegean) and route 4 from Nantes (with a connection to the

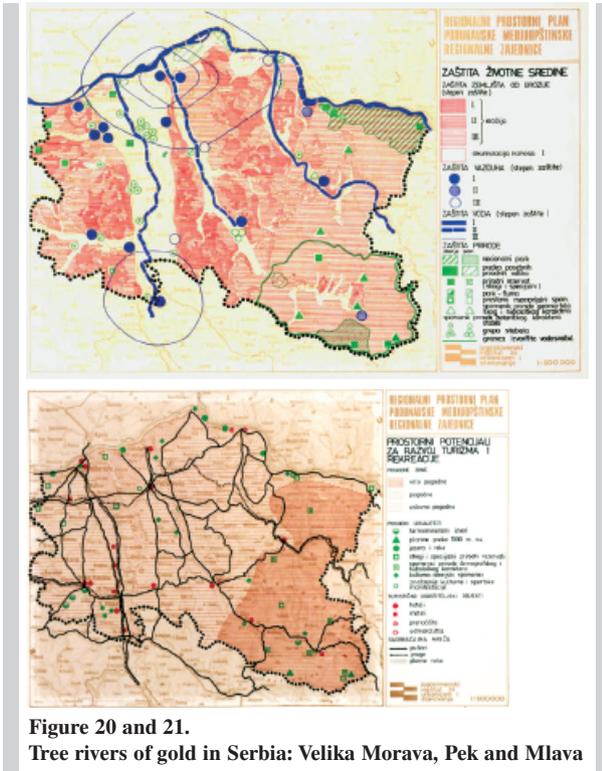


Figure 20 and 21. Tree rivers of gold in Serbia: Velika Morava, Pek and Mlava

Channel – La Manche) to Constance (from the Atlantic coast to Black Sea). Itineraries of the route 11 shall be passing by river Tisa area, crossing Belgrade jointly with route 4 and continue than after to the South by rivers Velika and Južna Morava, Danube tributaries too, over a distance of 592 km. Itineraries of cycle route 4 shall be passing by the Danube itself, therefore located in natural green and blue area, over a distance of 588 km.



Figure 22. Euro Velo routes in Europe

2.6. Protection of nature

In Serbian part of the Danube region the most important is the National park Djerdap. This park is divided into zones with three levels of protection. Type of protective regime for each zone is determined on the basis of the purpose and function of that particular zone:

- First level of protection requires strict protection of exceptional natural and cultural values. All protective measures are carried out under special regime;
- Second level of protection is protection of especially valuable natural systems (characteristic ecosystems, landscapes and other natural assets) and natural environment of immovable cultural monuments. In the zones activities such as research, education, presentation of the national park, sport and recreation, water supply development, traffic, forestry, agriculture and husbandry, are allowed under certain, pre-established conditions, and
- Third level of protection is also applied in those areas. Activities pertaining to tourism, sport, recreation, forestry, water supply, exploitation of mineral raw materials, development and regulation of settlements, etc., are allowed.

For planning of greenways significant are: national park, natural reserves (strict and special), areas of special natural characteristics, park-woods, natural monuments with geomorphologic and hydrologic characteristics, natural monuments with botanic characteristics, small river islands, protected spring areas, tourist and picnic areas, existing woods and the remains of riverside woods, embankments, deserted railroads etc.

2.7. Creating archaeological parks

Many joint activities recently aspires to launch Serbian or a cross-border itineraries of the paths of Roman castles and cultural landscapes that involves scientific and tourist evaluation of precise cultural heritage in certain parts of the Danube region, particularly that one involving Roman castles, strongholds, fortified towns and specific architectural elements of rural landscape. Aforementioned structures exemplify how different architectural styles in castle engineering have been interwoven, rather than devastated, throughout different historic periods, as well as to testify about multinational and multiethnic co-existence in the region.



Figure 23.
Post stamps of Serbia, with Felix Romuliana – Gamzigrad illustrated

Figure 23: Post stamps of Serbia, with Felix Romuliana – Gamzigrad illustrated

There are also joint activities that attain to create a cross-border itinerary of sacral art involving the evaluation of sacral art monuments and architecture incorporated mostly in monasteries and rural cultural landscape. Special emphasis used to be laid on rich inheritance of Serbian medieval frescoes that still today attract many visitors and cultural researchers. Experts in charge of scientific evaluation will always select particular frescoes in order to elaborate and gather obtained information so as to create a cross-border itinerary. An additional joint activity aims at producing the cross-border itinerary of the path of the traditional practices and heritage of Danube cities and towns, and shall include the evaluation of the cultural heritage of the riverbank and inland towns, through the study and presentation of the key urban elements. Emphasis will be laid on Roman and medieval city and town histories and documents, for instance Smederevo and Belgrade. The documents represent distinctive expression of culture and identity.

2.8. Planning potential of the Danube Greenway Trail

The realization of the project of greenways network implies few steps: mapping existing natural corridors; researching existing planning documentation; identifying possible connections; creating special plans such as: nature protection, recreation, historical and cultural resources, and the plan of various types of paths, and at the end, creating complex all-inclusive greenway. The idea of a Danube greenway trail could be broadly adopted.

Generally the concept in short term might boost and improve:

- Traffic connections within the region and broader in this part of Europe, through research and affirmation of a sustainability concept along in coun-

tries the river. Pilot-project of a greenway trail along the Danube might be the way. That would emphasize new approaches in planning contained in an idea of sustainable development, which supports cultural and natural resources, improving healthy and stable environment, economically and socially balanced. Recent research in the area, presented through numerous studies, plans and designs offer a very sufficient and necessary database that is a step suggested within the greenways' methodology.

- Historic experiences which are witnessed in architectural heritage and urban patterns in the region: respect to the water in all of its forms and uses, openness and integration of the Danube within architectural and urban complexes, cityscapes and landscapes. Research in transformation of urban structures across centuries along the Danube and near by shows basic micro urban values continuously intact throughout all times and changes. That includes last 50 years too, not earlier centuries only, and in spite of certain discontinuity of thoughts and approaches to the development of spatial structures of all sorts. Hence urban development in the future needs to be supported by positive values of continuity.

Extraordinary landscapes made by the Danube from the Black Forest all the way down to the Black Sea, changed if not improved by human hands during millennia should be inspiration for architects, urban planners, spatial planners, and investors as well. Alien built solutions need to be avoided by all means, because they are often opposite to the spaces, landscapes and cityscapes, and the spirit that used to build them one by one and altogether. Cultural heritage within its natural environment needs to be fully preserved.

Thinking broader, and for a long term, the concept might boost and improve:

- Making of planning documents which should amalgamate all substantial goals of the development of Serbian and all other parts of Danube Basin, but Spatial Plan of Serbia and Vision Planet as well.

For that sake exchange of information and opinion within Serbia (local communities, regions, public and private enterprises etc.) is necessary, but between Serbian and planning institutions abroad too. That would highly help to make clear insight to the relevant planning documents of neighboring states along the river and to all documents of strategic and broader regional and European importance approved by

the European Union or still in progress. Only incorporated to the broader vision the Danube region in Serbia and neighboring countries may expect a substantial step forward.

3. DESIGN OBJECTIVES AND PATHS

Design objectives – what are possible benefits? The list of presumed advantages has never been established exhaustively. There are various kinds, including:

- Economics benefit – such as benefits and incomes from and for tourism industry along the greenway corridor and elsewhere in the area, also as benefits and incomes from and for the residents who serve the facilities and use a recreation in open space, and substantial increase in real estate values near greenway corridor up to 20%. The network of long distance cycling routes and walking routes can generate very desirable incomes for all included.
- Environmental improvements – such as aesthetic values of ambient, also as quality of environment.
- Education impacts – such as educating people in the direction of proper use of their own natural and cultural environment.
- Ecological impacts – with a distinction between local, short-term effects – notion of the environment – and non-localized long-term effects – notion of ecological balance; such as a reduction in dependence of energy, saving non-renewable resources.
- Cultural values promotion – such as emphasis culture heritage.
- Socially advances – such as democratization of people's mobility, greater autonomy and accessibility of all facilities to both young and elderly people.

Design paths – what are necessary inputs? They are as follows:

- Natural potential – Natural assets under the first level of protection: the combination of orography, microclimate, biotic factors and specific natural history in the area of Djerdap has created this exceptional natural phenomenon and unique refugium. The term natural asset here refers to those areas in which certain characteristics of flora and vegetation of relict species confirm the theory of vegetation development series in the natural history of this region. In the part of Danube area that belongs to Serbia (and Romania as well) the most important natural asset is the National Park Djerdap.

- Protection of nature – For planning of greenways significant are: national park, natural reserves (strict and special), areas of special natural characteristics, park-woods, natural monuments with geomorphologic and hydrologic characteristics, natural monuments with botanic characteristics, small river islands, protected spring areas, touristic and picnic areas, existing woods and the remains of riverside woods, embankments, deserted railroads etc. In the part of Danube area that belongs to Serbia (and Romania as well) the most important natural asset is the National Park Djerdap.
- Cultural-historical resources – The valley of Danube was the route used by numerous European and Asian peoples in their migrations and military campaigns over the centuries. Many different civilizations have been present in the area of Djerdap, leaving permanent imprints behind them.
- Creating archaeological parks: Including archaeological sites, insufficiently explored and protected, in the “greenways” can be accomplished by creating archaeological parks. There are possibilities of conserving archaeological sites in order to be exploited as tourist itinerary. The aim is to make archaeological sites available to the public and to be preserved for future explorations.
- The realization of the project of greenways network imply few steps: mapping existing natural corridors; researching existing planning documentation; identifying possible connections; creating special plans as: nature protection, recreation, historical and cultural resources, and the plan of various types of paths, and at the end, creating complex all-inclusive greenway.

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