

# Pandemic as an impulse for the development of sustainable tourism along the Danube river

## AUTHORS:

**Ľubica Vitková\***

**Dominika Štrbíkóvá<sup>2</sup>**

<sup>1, 2</sup> Slovak University of Technology in Bratislava, Faculty of Architecture and Design, Institute of Urban Design and Planning, Slovakia

---

### \*CORRESPONDING AUTHOR

E-mail: [lubica.vitkova@stuba.sk](mailto:lubica.vitkova@stuba.sk)

---

### ARTICLE INFO

**Sent:** Nov 18, 2020

**Accepted:** Jul 12, 2021

**ABSTRACT:** The coronavirus (COVID-19) pandemic is a challenge to the world – primarily from the medical and economic point of view – but also to the search for new forms of tourism and the urban environment. Prior to mass vaccination, the main strategy to manage a pandemic were non-pharmaceutical interventions. Global travel restrictions and "home" regulations have caused the most serious disruption to the global economy since World War II. International travel bans affecting more than 90% of the world's population, widespread restrictions on public gatherings and community mobility have severely curtailed tourism since March 2020. Evidence of impacts on air transport, shipping and accommodation has been devastating. World tourism fell by 35-90% in 2020 compared to 2019. Yet, there are differences between countries. Tourism is particularly sensitive to measures against pandemics due to limited mobility and social distances. The paper compares the effects of COVID-19 with previous epidemics, pandemics or other types of global crises. It examines how a pandemic can change the society, economy, tourism and its projection into the territory. It discusses why COVID-19 is analogous to the ongoing climate crisis and why the mass growth tourism model needs to be questioned. The method to improve responsible access to our planet and ensure safe recreation for its population is sustainable tourism. The Danube Region has a great potential for the development of sustainable tourism in Slovakia with its transport accessibility, connection to the Danube River and through it to the surrounding areas. However, the potential of the region lies mainly in its hitherto underused cultural and natural conditions, as well as in the exploitation of the abilities of its inhabitants. The presented study analyzes the mentioned conditions and points out the possibilities of their development.

### KEYWORDS:

sustainability, Danube, genius loci, identity, image, city, COVID-19

## INTRODUCTION

Pneumonia of unknown cause, detected in Wuhan, China and first reported to the WHO Country Office on 31 December 2019, has had a major impact on tourism and the tourism industry. Despite the rapidly spreading virus in the Wuhan region, political leaders in other parts of the world have ignored it (although intelligence services have issued warnings of a potential cataclysmic event) [1]. Through global air travel, the virus spread from Wuhan to all continents. By mid-March 2020, the coronavirus had been confirmed in 146 countries. The number of confirmed infections worldwide has doubled rapidly, due to many events, such as the ski destination of Ischgl in Austria [2]. From there, the rate of infection increased through community transmission, and by 15 April, confirmed cases had approached 2 million (with more than 125,000 deaths) in more than 200 countries [3]. Due to the fact that there was no vaccine to protect against the disease at that time, most countries responded with various forms of non-pharmaceutical interventions. They have

introduced various measures: quarantine (domestic isolation), social distancing (working from home, school closures), interruption or postponement of events (major conferences, fairs, concerts, festivals, political debates, elections, sporting events, summer Olympics, etc.) and a ban on the assembly of people.

International, regional and local travel restrictions have directly affected national economies, including tourism systems, i. e. international tourism, domestic tourism, daily visits, as well as segments related to tourism, such as air transport, cruises, public transport, accommodation, cafes and restaurants, conferences, festivals, concerts, or sporting events. International and domestic tourism in countries that have introduced travel bans, closed borders or introduced quarantine periods, has fallen sharply over several weeks. Countries have sought to bring passengers back home that meant hundreds of thousands of citizens from all parts of the world. For example, on 23 March 2020, the British Foreign Secretary called on British tourists to return home. At the same time, he emphasized that

international travel is becoming difficult to be realised *"with airlines suspending flights, closing airports and imposing further restrictions on a daily basis"* [4]. Cruise ships were soon the worst-case scenario for those stranded in the global tourism system. Starting with the cruise ship Diamond Princess (1 February, 2020), another approximately 25 cruise ships confirmed the COVID-19 infection by 26 March, 2020 [5]. Subsequently, at the end of March, the last ten ships remained at sea, unable to find a port where they could dock. The idealized safe environment at sea has turned into a trap where thousands of passengers had been quarantined without the possibility of returning home [6].

Within a few months, the global tourism framework has shifted from "overcrowding" [7] to "non-tourism", as illustrated by blogs and newspaper articles depicting photographs of popular tourist sites in the "before" and "after" periods [8]. While some commentators have speculated on "what travel with coronavirus will be like", optimistic perspectives have quickly proved wrong [9], and the belief that tourism would bounce back from previous crises was equally questionable [10]. The situation in tourism remained more or less unchanged during 2020 and in the first quarter of 2021, with the exception of a partial release during the summer. The second or third wave of coronavirus, with the exception of a few countries, has paralyzed tourism.

However, there is ample evidence that COVID-19 will have a different or even transformational impact on the tourism industry. Governments are gradually beginning to realize that, unlike other business sectors, tourism revenues are steadily lost because unsold capacity – for example in accommodation establishments – cannot be sold in the coming years, with corresponding consequences for employment in this sector.

## PANDEMIA, TOURISM AND GLOBAL CHANGE

It is important to note that global tourism has been exposed to a wide range of crises in the past. Between 2000 and 2015, the main disruptive events were the terrorist attacks of 11 September (2001), the outbreak of severe acute respiratory syndrome (SARS) (2003), the global economic crisis in 2008/2009 and the epidemic of respiratory syndrome (MERS) in the Middle East (2015). None of them led to a longer-term decline in global tourism development, with only SARS (-0.4%) and the global economic crisis (-4.0%) leading to declines in international tourism [11]. This would suggest that tourism as a system is resilient to external events. However, there is much evidence that the impact and recovery from the COVID-19 pandemic will be much more challenging.

Due to global changes, the incidence of major epidemics and pandemics is increasing. It is widely acknowledged that there were three pandemics in the twentieth century. The so-called "Spanish" influenza in 1918-1919, the "Asian" influenza (H2N2) in 1957 and the "Hong Kong" influenza in 1968. Four pandemics occurred in the twenty-first century: SARS in 2002, "bird flu" in 2009, MERS in 2012 and Ebola, which peaked in 2013–14, with the increase in pandemic outbreaks since 2000 considered to be related to global change factors [12, 13].

The perception of pandemics in terms of the safety of tourist destinations and the natural consequence of their reduced attendance have also been examined. Research has focused, for example, on the effects of Ebola. It created uncertainty and a negative perception of African tourist destinations, even those outside its focus [14]. One of the central results of pandemic research is that travel has essential effect on epidemiology and disease surveillance [15]. Travel and tourism contribute to and are dramatically affected by the spread of diseases and their economic consequences [16]. Baldwin and Weder di Mauro were therefore sceptical at the beginning of the pandemic: *"The reality is that in the 21st century we currently have no medical tools to combat COVID-19"* [17]. In April 2020, there is hope thanks to ongoing vaccination. The idea of "green pass" should open travelling to those who have been vaccinated.

Researchers follow a parallel between the spread of COVID-19 and Spanish influenza. The pandemic has travelled the world in three waves and can therefore be described as the first "modern" pandemic characterized by rapid mobility through the international transport system (shipping and rail) [18]. Spanish influenza is an important analogy with COVID-19 not only because of its similar course, but also because many of the measures used at that time were used to mitigate the spread of COVID-19 (e. g. quarantine, travel restrictions) [19]. Research suggests that the introduction of such measures in the event of a 1918-1919 pandemic has reduced the death rate by approximately 50% [20].

## EXPECTED IMPACTS

Many organizations have already published estimates of the impact of COVID-19 on the international tourism industry in 2020. Although important programmes have already been implemented, it is currently unclear what benefits they will have for the tourism industry or whether demand for tourism will be stimulated. The following sections discuss individual sectors and subsectors of tourism, including aviation, accommodation, conferences and exhibitions and sporting events, restaurants, and cruisers. The key questions all sectors of tourism are dealing with, is when (international and domestic) travel will be safe again or when it will be possible to reopen tourist attractions, restaurants, accommodation, cafes or restaurants.

### Airlines

IATA (The International Air Transport Association) estimates that revenues will be 38% lower in 2020 than in 2019, with a consequent loss of revenue of \$ 252 billion [21]. Airports, as well as airlines, are also facing a financial crisis with estimated losses of USD 76.6 billion in 2020 [22]. Given the very significant contributions of state aid and industry pressure to delay decarbonisation efforts [23], climate change activists have called on governments to support airlines only on the terms of reducing emissions, setting higher prices of carbon, or levying for frequent flights [24].

## Accommodation

Most hotels are closed or tourism is significantly reduced, and revenue forecasts for 2020 point to a significant decline. Firstly, a recovery in domestic markets can be expected.

## Sports events

During most of 2020, all forms of events where larger groups of people meet were limited, including events such as concerts, meetings, conferences, and sporting events. For these reasons, major sporting events were postponed, including the 2020 Summer Olympics or the UEFA EURO 2020. Sports tourism could thus be one of the most affected sectors of tourism.

## Restaurants

Due to the closure of catering facilities and the expectation that social distance will have to remain a key strategy against COVID-19 for several months, restaurants can be expected to face difficulties in reopening.

## Cultural facilities

The COVID-19 pandemic has hit the arts and culture industries worldwide. Due to closed museums, cultural institutions, world heritage sites and other historical monuments, society is devoid of culture. At the peak of the global pandemic, 90% of countries closed their World Heritage sites.

## Cruises

In the first year of the pandemic, it was unthinkable for cruise ships to be able to sail again before the vaccine was found or unless passengers were tested negative before boarding. However, the rapid assays available are not reliable enough to detect COVID-19 infection at an early stage. PCR (abbreviation for "polymerase chain reaction") tests are also likely to affect and potentially enhance risk perception. They are the most sensitive and reliable method of detecting the presence of the COVID-19 virus.

## DATA ON SLOVAKIA

Tourism is one of the sectors most affected by the measures taken against the spread of the COVID-19 virus. The development of tourism has been very specific since March 2020. The consequence of the extraordinary situation was a sharp decline in the number of accommodated guests and the number of overnight stays. The almost complete closure of tourism operations and radical restrictions on travel at the national and international level led to a decrease in traffic in Slovakia by 65% compared to the same period in 2019. In April, accommodation facilities in the Slovak Republic had only 6.7 thousand visitors, while a year ago it was more than 440 thousand [25]. In July 2020, the Statistical Office of the Slovak Republic recorded a year-on-year decline, which was the result of persistently lower attendance of foreign guests, but reported a higher number of domestic guests, which was recorded especially in selected regions. The number of domestic visitors at the level of Slovakia exceeded last year's record numbers in the successful summer season of 2019. Compared to the previous month, accommodation establishments recorded an almost threefold

increase in attendance in July, but this number remained one-fifth lower year-on-year [25].

The negative impact was visible especially in the Bratislava Region, where the total attendance was lower by 55.9% year-on-year, because the number of foreign guests decreased by more than two thirds. The capital city of Bratislava itself recorded a decrease in the number of visitors – foreign tourists by more than 70% [25]. Extensive travel restrictions, especially at the international level, were also significantly affected by the sum of traffic for the first eight months of this year. Almost 2.6 million visitors were accommodated in tourist facilities during this period, which represented a year-on-year decrease of 41%. [25]

## MASS TOURISM VERSUS SUSTAINABLE TOURISM AFTER COVID-19

Since the 1970s, mass tourism has grown significantly. Not only recreational tourism developed, but also conference tourism, cognitive tourism, entertainment tourism, etc. Tourism has become an important sector of the economy and a part of state or local policy. As a consequence, state and local representations are supporting the development of tourism, which is conditioned by raising living standards, education, changing lifestyles, increasing leisure time, improving transport and transport connections and other factors. As a part of the economy, tourism therefore tends to follow mainly the economic effect. It focuses on increasing the number of visitors, overnight stays and the growing share of the country's GDP. However, the economic criterion cannot be relevant to assessing tourism in terms of its long-term effects.

The current pandemic has shown the vulnerability of mass tourism and confirmed the obvious, inappropriate, and even devastating impacts of mass tourism on the environment or local communities for a long time. The negative manifestation of mass tourism is its uncontrolled development and exploitation of cultural and natural resources, often beyond the limits of the carrying capacity of the environment. The tourist industry is most often associated with extremely valuable areas, both in terms of natural and cultural values. Mass tourism facilities, especially in developing countries, are mostly developed by imported transnational tourist chains, which do not always respect the uniqueness of the site and its limits. Their primary goal is profit, backed by the attractiveness of the destination and its "novelty", and the provision of standardized services expected by the visitors. Global tourism also attacks the centres of tourist attractions. Its facilities, accommodation and services are subordinated to tourists at the expense of the locals and their needs. In many cases, tourism pushes locals out of their own environment. Mass tourism also enormously increases traffic, making it unsustainable both locally (congestion, parking, etc.) and internationally (air transport).

With the growing pandemic of COVID-19, there is also a growing need not to return to the previous state after the crisis. The opportunity offered to review the transformation of the system of international tourism and align it with the goals of sustainable development. The challenge today is to learn together from this

global tragedy and to accelerate the transition from mass tourism to sustainable tourism. It is necessary to start monitoring the balance between quantity and quality. To observe the balance between economic gain, which depends on the number of tourists, and the quality of life in the area. In exchange, it guarantees the safety of recreation during periods of pandemic, is environmentally friendly, and supports local communities.

The topic of sustainable tourism is not new. It began to resonate especially in the last two decades. It is the opposite of long-term unsustainable mass tourism with its negative impacts. Sustainable tourism based on the principles of sustainable development, which is founded on the principle of "meeting the needs of the present without compromising the ability of future generations to saturate their own needs" [26]. Bramwell & Lane see sustainable tourism as a system of targeted strategies, regulation and control of its development, while addressing the issue of sustainable tourism in a comprehensive way – i.e. from different perspectives and in different environments [27]. The sustainable development of tourism is based on three basic pillars: environmental, economic and social sustainability [28]. McKercher, as one of the proponents of the importance of socio-cultural aspects, bases sustainable tourism on four pillars: economic, ecological, cultural and communal [29].

Sustainable tourism is based on the following principles:

- Long-term viability;
- Respect for its natural and cultural heritage, as well as for the people who live there;
- Supporting the local economy; sustainable tourism creates jobs for local people and engages local businesses;
- Environmentally friendly development;
- Preference for efficient and sustainable transport to and within the destination;
- Generating revenue that is reinvested in improving the environment.

Sustainable tourism and its various forms, such as short distance tourism, rural tourism, and slow tourism, are the opposite to mass tourism. In addition, sustainable tourism is a guarantee of a "safe tourism" during pandemics. The preconditions for the development of sustainable tourism are in the regions that have hitherto been in the background in terms of tourism and yet they have the preconditions for its development: they have a hitherto "undiscovered" and yet rich and diverse cultural or natural heritage. They are easily accessible (by train, boat or bicycle), without the need for long transport, demanding time and distance.

### National and regional tourism along the Danube

Potential areas for the development of sustainable tourism include the regions around the Danube, with the exception of their large, usually capital cities. On the contrary, before the

COVID-19 pandemic, these cities (Budapest, Vienna, Belgrade and Bratislava) were among the most popular international and mass tourist destinations [30]. As part of international tourism, some popular areas resonate, such as the Romanian Delta, the Austrian Wachau region, the Iron Gate area, or some cities on the upper reaches of the Danube, such as Linz, Passau or Regensburg [30]. The high number of visitors to these destinations is due to the high number of cruise ships operating as well as direct flights to major cities.

However, many development projects focused on the development of tourism in areas that have been little visited so far. At the same time, the mentioned regions around the Danube have valuable, hitherto undiscovered and unused historical monuments, natural parks, river landscapes, rural environment or wine-growing areas. A special category is the Danube regions in connection to capital and larger cities. These represent a natural potential for local tourist destinations and sustainable tourism, which were already used mainly at the national level. This was confirmed by the conducted national research related to the middle and lower reaches of the Danube [31]. This statement also applies to Slovakia [32]. As part of their research, Kádár & Gede [33] mapped all movements related to tourism in areas along the Danube using the user-generated Flickr.com system. Based on an analysis of the visitors' goals, they generated target clusters separated by state borders, i.e. used mainly at the national level. Exceptions are some border areas. However, all border areas between individual neighbouring countries have far greater potential to develop cross-border tourism.

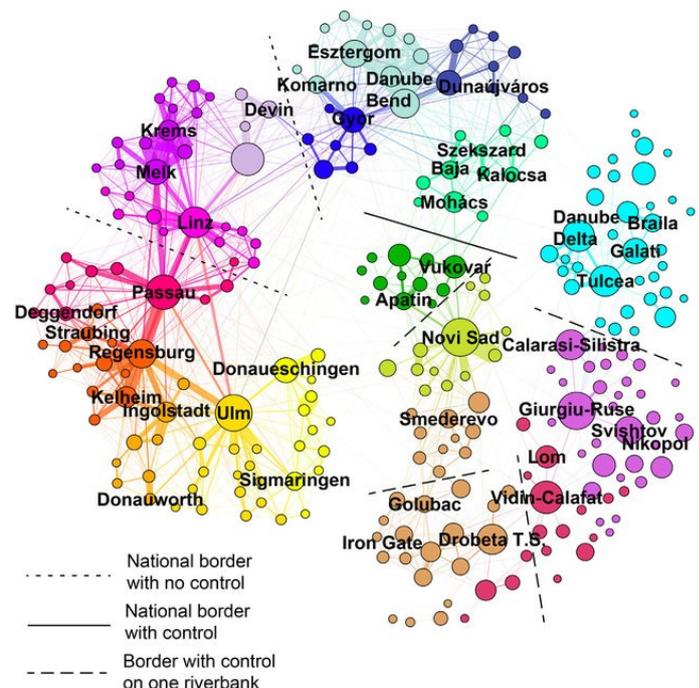


Figure 1: Distribution and intensity of tourist links along the Danube [33]

### Danube Region in Slovakia

Regional tourism along the Danube as a basis for sustainable tourism is well-developed, especially around large cities. All of them have their favourite tourist destinations tied mainly to

short-term and weekend recreation. The situation is more difficult in peripheral regions [30], while they have a lot to offer.

The development of regional tourism in the Danube Region has its basis in the categorization of Slovakia's tourist centres from the 1960s, which conditioned the level and degree of development of recreation and tourism in individual areas of Slovakia. The Danube Region was included in category three. The regions included in this category were to provide mainly short-term, partly long-term recreation in connection to larger cities and industrial agglomerations. The mentioned tourism plan even included only the wider hinterland of Bratislava and Komárno, as a regional tourist centre. For this reason, no significant investments in tourism were directed to the Danube Region. These were targeted at regions of international or national importance to tourism (the Tatras, Liptov, the northern part of Váh and Hron, etc.) or spa centres of international importance [34].

However, the Danube Region in Slovakia has valuable cultural and natural features. In the 1960s, its healing springs began to be more widely used for weekend and short-term recreation. During this period, the infrastructure of several thermal swimming pools was built, such as Patince (since 1966), Vadaš in Štúrovo (since 1952), thermal swimming pool in Komárno (in 1967), and Veľký Meder (since 1974). Due to its regional importance, recreation in the Danube Region mainly focused on activities in the open country and in connection with water: what was natural due to the nature of the landscape near the Danube, its branches, tributaries or bodies of water, gravel pits. Various types of water sports, fishing and skating developed. These were activities without the right to a more fundamental development of infrastructure and services. In the 1970s, the establishment of gardens and cottage colonies intensified. Residents coming from the countryside to work in the cities, living mainly in housing estates, lost contact with the land. The link with land was characteristic for agrarian Slovakia. Therefore, this need as well as a kind of escape from normalization was compensated by many working in the garden, or by cottage farming in horticultural and cottage colonies. The most popular were the areas around the Danube and near Bratislava, or other smaller or medium-sized towns (Devín, Štúrovo, Komárno on the Elisabeth Island, etc.) [34].

The most important event in the 1980s was the construction of the Gabčíkovo waterworks. The construction of a hydroelectric power plant in Slovakia, as well as in the Slovak-Hungarian territory was planned in the 1930s, 1950s and 1960s. The actual implementation was accelerated by a catastrophic flood in 1965 which affected more than 65 municipalities. The construction of the Gabčíkovo-Nagymaros waterworks was to prevent not only cyclically recurring floods, but also to serve the production of electricity or the improvement of environmental parameters (stopping the decline of groundwater). The Gabčíkovo waterworks were built (1977 - 1992) on a large part of the inner Danube delta, which has been a unique natural environment with 17 protected areas. A special chapter in the planning of the dam was the question of recreation around it [35]. However, only a very small part of the planned recreational areas has been implemented since the 1990s – the Čuňovo water sports

complex, the Danubiana Museum complex, the cottage settlements around the lakes of Vojka and Šulany, and the X-BIONIC® Sphere sports and leisure complex in Šamorín.

The most popular regional tourist and recreational destinations in the Danube Region of today include natural water areas, nature reserves [36], thermal baths and aqua parks built during the new millennium. Today, the interest in short-term sightseeing or adventure tourism offered by cities and places with various cultural or technical monuments, as well as local fairs and markets, or various cultural events, comes to the fore. Wine routes, cycling and boating trips are becoming increasingly popular, as is a growing network of golf courses. Most of these activities are characteristic of sustainable tourism. Thus the Danube Region has an ideal basis for its further development.

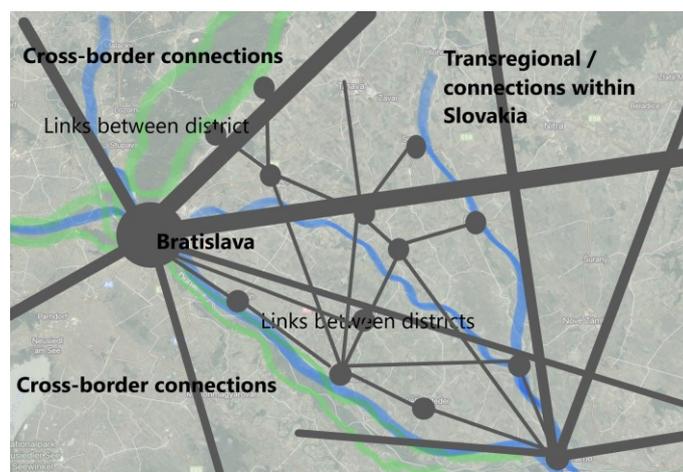


Figure 2: Network of recreational activities in the Danube Region and their attractiveness. Strong outbound flows for recreation across the borders of Slovakia. Source: Ľubica Vitková

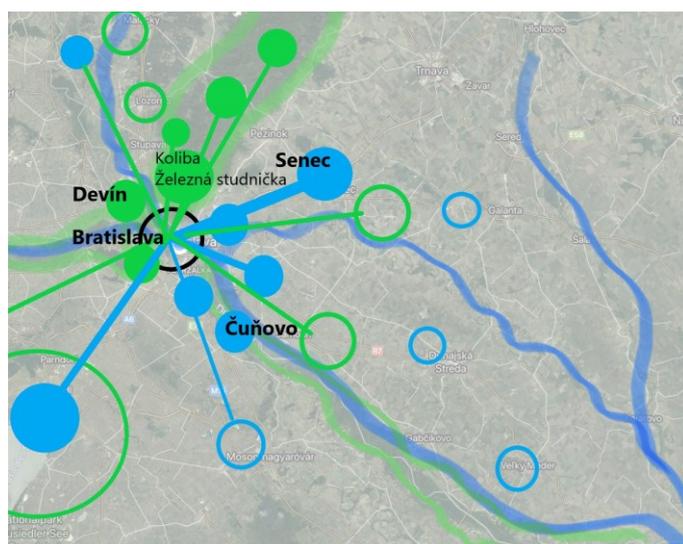


Figure 3: Major recreation areas around Bratislava. Source: Ľubica Vitková

The largest tourist assets, especially of small and medium-sized towns along the Danube, not yet affected by mass tourism, is their local value. These are mainly linked to the uniqueness of the Danube landscape [36, 37] and to the cultural richness of the cities [38, 39], largely used mainly by the local population in a completely harmonious way. Agriculture, viticulture,

fishing, traditional gastronomy, markets, festivals, arts and crafts, but also a stay in the wild, cycling, and water sports are tied to the natural environment or public areas.

The unexplored cultural and natural potential, and the authenticity of the Danube areas can be particularly attractive to a group of visitors looking for peace, knowledge, less demanding sports, healthy and experiential gastronomy, contact with nature, a desire for authenticity. Regional-rural tourism or tourism associated with small and medium-sized towns outside the centres of mass tourism is attractive to groups of people who prefer the possibility of relaxation near their place of residence (travel time of one, a maximum of two hours), short-term recreation (weekend tourism or recreation during the year).

To some visitors, the local culture or crafts are also attractive. This is the basis for the development of creative tourism and cultural tourism. It can offer a number of creative activities, such as craft workshops, fine arts workshops, or workshops focused on gastronomy. The agricultural character of the area provides ideal conditions for the development of rural tourism associated with agritourism, gastronomicism, wine tourism, hunting or fishing. The basis of these types of tourism is the support of local customs and valuable interaction between locals and tourists.

The number of tourists with such preferences has increased significantly in European countries over the years [25]. Interest in this type of tourism has grown, especially during the COVID-19 pandemic period from March 2020 to the present. In Slovakia, the same trend is being manifested.

Thanks to the stated values of sustainable tourism, a holiday or short-term rest in the towns and countryside around the Danube can be more intense, more active and safer than in crowded tourist centres, which is crucial especially for the pandemic period 2020-2021.

The potential for the development of sustainable tourism in small and medium-sized towns in the Danube Region consists in:

- Appropriate natural context for the development of rural tourism;
- Rich cultural heritage;
- Preserved cultural traditions in many areas;
- Free labor applicable in tourism;
- Traditional hospitality of the population of smaller towns and in the countryside;
- The potential of existing infrastructure for tourist services (traditional houses, abandoned settlements, empty industrial heritage);
- Lower prices of service offerings compared to collective tourist destinations;

- Support of relevant ministries within Slovakia and from the EU;
- Existing local and regional tourist organizations as well as a network of cultural educational and advisory institutions.

The Danube Region also has the potential for developing sustainable tourism in an international context, thanks to the following conditions:

- The Danube as an integrating element of different regions and states;
- Possibilities of using ecological and attractive transport: water (network of existing ports ...), railway and Eurovelo cycle route 6;
- Existing cross-border relations and international cooperation.

### **Tourism of lower density and short journeys**

The basis for safe tourism is the availability and accessibility of the open country, whether natural or cultural [38, 39] which provides a large number of recreational activities. The optimal balance between the utilization of recreational areas and facilities by local residents and visitors is essential. The balance is also important in terms of efficiency of urban fabric and connections, local economy and especially for buildings and services related to tourism and sports and cultural facilities. Without visitors, many facilities would not be sustainable in terms of lack of resources. On the other hand, too many visitors force locals to find other places for their recreational needs and push them out of places with the best natural and cultural potential. The key is a well-managed network of attractive locations, with an optimal distribution of visitors, a suitable time and space distribution of both tourists and locals in this system. From the point of view of sustainability, it is therefore necessary to find a balance between economic efficiency and the burden on the territory. It is therefore optimal to use the potential of unused capacities of existing buildings and spaces in the cities of the region and the potential of existing localities and hitherto unused waterfronts and natural areas [40, 41]. Most of small and medium-sized towns in the Danube Region are characterized by a declining population. This means that they have the natural potential to absorb the growth of "short-term" visitors.

The tolerable load of the area outside the main economic and cultural centres can be achieved by a balanced distribution of visitors in the area, thanks to the diverse and approximately even distribution of natural and cultural attractions in the Danube Region. It can also be fostered by the creation of unique thematic routes, such as wine routes, a system of bicycle routes, routes to "lost" monuments, fortress systems, etc. Significantly, the uniqueness of these routes can be enhanced by cross-border cooperation and connections to common and characteristic routes for the entire Danube (Limes Romanus, historic fortress and castle systems, historic cities, socialist architecture, technical monuments, spas, vineyards, nature

reserves, unique nature). These thematic routes are a great tool for distributing visitors. The capacities of more developed regions should be directed towards less developed regions, which makes it possible to prevent excessive tourism in individual places.

Plenty of recreational areas in the hinterland of cities is important in considering the quality of life of their inhabitants. Short-distance tourism and recreation in the open country is crucial in the period of pandemics we have experienced. "District closures" were a common phenomenon in Europe, due to reduced mobility and thus reduced coronavirus spread. Recreation thus tied exclusively to the district in which the citizen lived, which, in the absence of recreational areas, caused considerable problems, an unbearable concentration of people.

In this respect, Bratislava has a great potential for the development of recreation in direct contact with the built-up area thanks to the natural conditions, represented by the Danube River and the associated floodplain forests and massif of the Little Carpathians. They are already on the map of present valuable recreational areas. Linear development of residential structures along the foothills of the Little Carpathians (Krasňany, Rača, Lamač, Záhorská Bystrica), around the Devínská Kobyla (Dlhé Diely, Karlova Ves, Dúbravka, Devín, Devínska Nová Ves), and along the Danube River (Devín, Petržalka, Rusovce Čuňovo) creates an ideal connection between residential and natural environments. Nevertheless, some recreational areas are already congested. Especially during the pandemic, the situation was critical due to the closure of Bratislava by its borders, as popular localities had to saturate the demand for outdoor recreation for a population of more than 450,000 people. This situation pointed to the fact that it is necessary to ensure a much higher degree of diversity and hierarchy of recreation areas as well as their more even distribution within the city. Their better accessibility is essential – ideally within walking distance.

A similar principle needs to be developed with middle-sized and smaller cities of the Danube Region. Cities located on the Danube have ideal opportunities to apply the principles of the city of short roads. Paradoxically, these cities often do not make sufficient use of the potential of the Danube. The urban fabric is not sufficiently connected to it.

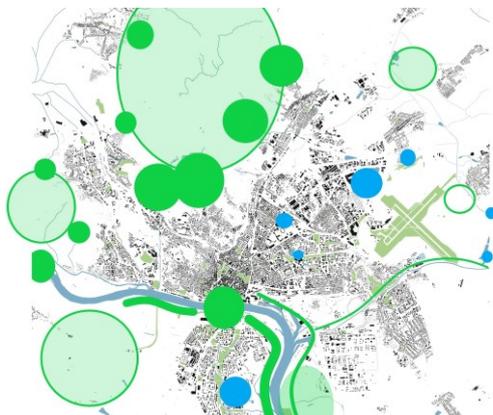


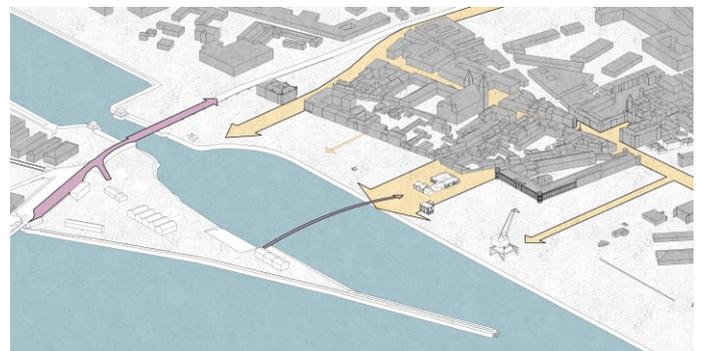
Figure 4: Concentration of recreation areas in the immediate vicinity of Bratislava in relation to its natural conditions. Source: Ľubica Vítková



Figure 5: Potential for the development of natural recreational areas around Komárno. Source: Ľubica Vítková



Figure 6: Potential for the development of recreational areas in the built-up part of Komárno, based on the cultivation of the waterfront parts of the Danube and the Váh. Diploma project: Dávid Podešva; supervisor: Ľubica Vítková (2021)



Figures 7, 8: Recreational area with direct connection to the city centre. Student project: Michal Kováč, Viera Gurová; supervisor: Ľubica Vítková (2018)



Figures 9, 10: Recreation area with direct connection to the residential zone.  
 Student project: Branislav Stojkov, István Toma;  
 supervisor: Ľubica Vitková (2017)

## CONCLUSION

The Danube Region is one of the regions in Slovakia that has seen a decline in industrial production since 1989. While the decline has been partially replaced with new business activities based on a market mechanism currently reflected in the outflow of population from this region, the Danube Region has a natural and cultural heritage, and the abilities of its population, which should be adequately assessed. The Faculty of Architecture and Design STU in Bratislava mapped the unused cultural heritage and resources in small and medium-sized towns on the Danube River. Research in individual regions, including the Danube Region, evaluated the special character of the environment, cultural and natural heritage and pointed out the possibilities of its valorisation in the form of a developed strategy. Based on the principle of sustainability, its goal is to transform regions and cities through sustainable tourism, which can bring economic benefits to declining regions.

Based on common research results of the DANURB, the following subject areas typical of the regions around the Danube with potential for sustainable tourism have been identified:

- Fortifications – fortresses, castles, and bunkers from different periods - Limes Romanus, from the period of

Byzantium, the medieval period, the period of Turkish invasions, the 20th century);

- Building culture – church buildings, monasteries, archaeological sites, historic buildings, historic city centres, art galleries, museums ...;
- Technical buildings and monuments – bridges, ports, mills, industrial buildings and areas, water towers ...;
- "Water" tourism – spas, swimming pools - thermal baths, natural swimming pools – beaches, waterways, but also the waterfront and waterfront promenades;
- Green tourism – tied to the natural landscape (nature reserves, floodplain forest ...) and the cultural landscape (vineyards, gardens, orchards, fields ...);
- Traditions – intangible culture, such as theatre, folklore, music and art culture, festivals, gastronomy, viticulture [42].

In the territory of small and medium-sized towns of the Danube Region in Slovakia, historical monuments (historical town centres, fortification system, churches...), technical and industrial monuments, or interesting architecture of the socialist period are a valuable potential for cognitive tourism. The region is rich in natural conditions connected mainly to the Danube, its tributaries and other water areas, but also to thermal springs and a cultural landscape cultivated for many centuries, which creates ideal conditions for relaxing tourism, sports, but also the so-called slow and experiential tourism.

The strategy for the development of sustainable tourism in the Danube Region is based on several pillars:

- The specific conditions of the region support relaxation-sports-residential tourism, such as medical-recreational tourism linked to thermal springs, water areas, agro-tourism, or golf stays ...;
- The thematic or cognitive circles along the Limes Romanus and fortress systems, or wine routes, including their connection to adjacent regions;
- The comprehensive experience within one region linking different thematic areas.

In the proposed strategies based on the support of urban and regional identity, it is necessary to monitor both the spatial characteristics of the area (peculiarities of urban and natural structure) and their human activities. Only a balanced relationship between these factors provides the preconditions for the formation of a harmonious and sustainable environment, both for residents and visitors.

*The presented paper is an output of the DANUrB project (Danube Urban Brand and regional network building through tourism and education to strengthen the “Danube” cultural identity and solidarity) and the currently implemented follow-up DANUrB + project (DANube Urban Brand + Building Regional and Local Resilience through the Valorization of Danube’s Cultural Heritage).*

## REFERENCES:

- [1] Harris, S., Miller, G., Dawsey, J., Nakashima, E. (2020) “U.S. intelligence reports from January and February warned about a likely pandemic”, Washington Post. Available at: [https://www.washingtonpost.com/national-security/us-intelligence-reports-from-january-and-february-warned-about-a-likely-pandemic/2020/03/20/299d8cda-6ad5-11ea-b5f1-a5a804158597\\_story.html](https://www.washingtonpost.com/national-security/us-intelligence-reports-from-january-and-february-warned-about-a-likely-pandemic/2020/03/20/299d8cda-6ad5-11ea-b5f1-a5a804158597_story.html) [Accessed: 29 Oct 2020]
- [2] Anderson, R. M., Heesterbeek, H., Klinkenberg, D., Hollingsworth, T. D. (2020) “How will country-based mitigation measures influence the course of the COVID-19 epidemic?”, *The Lancet*, 395 (10228), pp. 931–934.
- [3] European Centre for Disease Prevention and Control (2020). Available at: <https://www.ecdc.europa.eu/en> [Accessed: 29 Oct 2020]
- [4] FCO (The Foreign & Commonwealth Office) (2020). Available at: <https://www.gov.uk/government/news/foreign-secretary-advises-all-british-travellers-to-return-to-the-uk-now> [Accessed: 29 Oct 2020]
- [5] Mallapaty, S. (2020) “What the cruise-ship outbreaks reveal about COVID-19”, *Nature*, 580 (7801), pp. 18–18.
- [6] Cordesmeier, M., Papathanassis, A. (2011) “Safety perceptions in the cruise sector: A grounded theory approach”. In: Gibson, P., Papathanassis, A., Milde, P. (Eds.). *Cruise sector challenges* (pp. 127–146).
- [7] Dodds, R. & Butler, R. (Eds.) (2019) “Overtourism: Issues, realities and solutions”, De Gruyter.
- Seraphin, H., Sheeran, P., Pilato, M. (2018) “Over-tourism and the fall of Venice as a destination”, *Journal of Destination Marketing & Management*, 9, pp. 374–376.
- [8] Condé Nast Traveller (2020) “Before and after: How coronavirus has emptied tourist attractions around the world”. Available at: <https://www.cntravellerme.com/before-and-after-photos-tourist-attractions-during-coronavirus> [Accessed: 29 Oct 2020]
- [9] Forbes (2020) “What will travel be like after the coronavirus?” Available at: <https://www.forbes.com/sites/christopherelliott/2020/03/18/what-will-travel-be-like-after-the-coronavirus/#4febdd623329> [Accessed: 29 Oct 2020]
- [10] CNN (2020) “What will travel look like after coronavirus?” Available at: <https://www.cnn.com/travel/article/coronavirus-travel-industry-changes/index.html> [Accessed: 29 Oct 2020]
- [11] World Bank (2020a) “Air transport, passengers carried” Available at: <https://data.worldbank.org/indicator/is.air.psgr> [Accessed: 29 Oct 2020]
- [12] Wu, T., Perrings, Ch., Kinzig, A., Collins, J.P., Minter, B. A., Daszak, P. (2017) “Economic growth, urbanization, globalization, and the risks of emerging infectious diseases in China: a review”, *Ambio*, 46 (1), pp. 18–29.
- [13] McKercher, B., Chon, K. (2004) “The over-reaction to SARS and the collapse of Asian tourism”, *Annals of Tourism Research*, 31 (3), pp. 716–719.
- [14] Novelli, M., Burgess, L., G. Jones, A., Ritie, B. W. (2018) “No Ebola... still doomed—The Ebola-induced tourism crisis”, *Annals of Tourism Research*, p. 70, pp. 76–87.
- [15] Hon, K. L. (2013) “Severe respiratory syndromes: Travel history matters”, *Travel Medicine and Infectious Disease*, 11 (5), pp. 285–287.
- [16] Nicolaidis, Ch., Avraam, D., Cueto-Felgueroso, L., González, M. C., Juanes, R. (2019) “Hand-hygiene mitigation strategies against global disease spreading through the air transportation network”, *Risk Analysis*, 40 (4): pp. 723–740.
- [17] Baldwin, R., Weder di Mauro, B. (2020) “Introduction”. In: Baldwin, R., Weder di Mauro, B. (Eds.), *Economics in the time of COVID-19* (pp. 1–30). CEPR Press.
- [18] Taubenberger, J. K., Morens, D. M. (2006) “1918 Influenza: the mother of all pandemics”, *Emerging Infectious Diseases*, 12 (1), pp. 15–22.
- [19] Ferguson, N. M., Cummings, D. A., Fraser, Ch, Cajka, J. C., Cooley, P. C., Burke, D. S. (2006) “Strategies for mitigating an influenza pandemic”, *Nature*, 442(7101), pp. 448–452.
- [20] Hatchett, R. J., Mecher, C. E., Lipsitch, M. (2007) “Public health interventions and epidemic intensity during the 1918 influenza pandemic”, *Proceedings of the National Academy of Sciences*, 104 (18), pp. 7582–7587.
- [21] IATA Economics (2020) “COVID-19 updated impact assessment”. Available at: <https://www.iata.org/en/iata-repository/publications/economic-reports/third-impact-assessment/> [Accessed: 29 Oct 2020]
- [22] Airports Council International (2020) “The impact of COVID-19 on the airport business”. Available at: <https://aci.aero/wp-content/uploads/2020/03/200401-COVID19-Economic-Impact-Bulletin-FINAL-1.pdf> [Accessed: 29 Oct 2020]
- [23] Carbon Brief (2020) “Airlines lobby to rewrite carbon deal in light of coronavirus”. Available at: <https://www.carbonbrief.org/daily-brief/airlines-lobby-to-rewrite-carbon-deal-in-light-of-coronavirus> [Accessed: 29 Oct 2020]
- [24] Stay Grounded (2020) “No unconditional airline bailouts - taking care of people, not airlines”, ECDC. Available at: [https://stay-grounded.org/wp-content/uploads/2020/03/Open\\_Letter\\_EU\\_Transport\\_Ministers.pdf](https://stay-grounded.org/wp-content/uploads/2020/03/Open_Letter_EU_Transport_Ministers.pdf) [Accessed: 29 Oct 2020]
- [25] Statistical Office of the Slovak Republic (2020) “Vývoj cestovného ruchu v ubytovacích zariadeniach SR v auguste 2020” (Development of tourism in accommodation facilities in the Slovak Republic in August 2020). Available at: <https://slovak.statistics.sk/> [Accessed: 29 Oct 2020]
- [26] World Commission on Environmental Development (WCED) (1987) “Our common future”, Oxford: Oxford University Press. The Brundtland Commission - formally the World Commission on Environment and Development, 16. Available at: <http://www.un-documents.net/our-common-future.pdf>
- [27] Bramwell, B., Lane, B. (1999) “Sustainable Tourism: Contributing to the Debates”, *Journal of Sustainable Tourism*, 7(1), pp. 1–5.
- [28] Giddings, B., Hopwood, B., O’Brien, G. (2002) “Environment, economy and society: fitting them together into sustainable development”, *Sustainable Development*, p. 10, pp. 187–196.
- [29] McKercher, B. (2003) “Sustainable Tourism Development – Guiding Principles for Planning and Management”, pp. 1–10.
- [30] Kádár, B., Vitková, L. (2019) “Sustainability options for tourism development.” In: *Book on the unexplored cultural heritage in communities by the Danube, DANUrB 2017 – 2019*, 1st edition, Prague, Czech Republic, Gasset, pp. 88–95, ISBN 978-80-87079-63-8.

- [31] Widawski, K., Wyrzykowski, J. (2017) "The Geography of Tourism of Central and Eastern European Countries", <https://doi.org/10.1007/978-3-319-42205-3> [DOI]
- [32] Kasagrandá, A., Rajčáková, E., Vystoupil, J. (2016) "Urban tourism in Slovakia - its quantification, spatial differentiation and typification", *Geographica Pannonica*, 20(2), pp. 105–113, <https://doi.org/10.18421/GP20.02-08> [DOI]
- [33] Kádár, B., Gede, M. (2018) "Mapping the attractivity of tourist sites all along the Danube using geotagged images from Flickr.com", In: 5th International Academic Conference on Places and Technologies, 26-27 April 2018 (pp. 1–13), Belgrade, University of Belgrade - Faculty of Architecture.
- [34] Kissfazekas, K., Krkljes, M., Stan, A., Vitková, L. (2019) "Changes in waterfront land use along the river Danube in the state-socialist era", In: Book on the unexplored cultural heritage in communities by the Danube, DANUrB 2017 – 2019, 1st edition, Prague, Czech Republic, Gasset, pp. 70-77, ISBN 978-80-87079-63-8.
- [35] Urban, J., Lacková, A. (2018) "How (not) to design a landscape". In: *Periodica polytechnica architecture*, Vol. 49 (1), pp. 77-85, ISSN 1789-3437.
- [36] Kristiánová, K. (2018) "Prírodná a kultúrna krajina Dunaja: Reflexie dedičstva vo výskume DANUrB". In: *ALFA*, Vol. 23 (2), pp. 24-31, ISSN 1335-2679.
- [37] Kristiánová, K. (2018) "Promenade as Landscape Architecture Strategy for Riverbanks of Small Danube Cities: Komárno and Štúrovo". In: *Landscape Architecture: The Sense of Places, Models and Applications*, 1st edition. London, UK, IntechOpen, pp. 289-306, ISBN 978-1-78923-712-2.
- [38] Vitková, L. (2018) "Východiská pre rozvoj a transformáciu mesta Komárno v rámci projektu DANUrB" (The bases for the development and transformation of Komárno as part of the DANUrB project). In: *DANUrB - Impulzy pre Komárno (Impulses for Komárno)*, 1st edition, Bratislava, Slovakia, Spektrum STU, pp. 16-29, ISBN 978-80-227-4814-8.
- [39] Vitková, L. (2018) "Východiská pre rozvoj a transformáciu mesta Komárno v rámci projektu DANUrB" (The bases for the development and transformation of Komárno as part of the DANUrB project). In: *DANUrB - Impulzy pre Komárno (Impulses for Komárno)*, 1st edition, Bratislava, Slovakia, Spektrum STU, pp. 16-34, ISBN 978-80-227-4814-8.
- [40] Lacková, A., Smatanová, K. (2018) "Udržateľný rozvoj malých a stredných miest na Dunaji: Vymedzenie území a ich valorizácia v prípadovej štúdii Komárno". In: *ALFA*, Vol. 23 (2), pp. 18-23, ISSN 1335-2679.
- [41] Joklová, V., Djukic, A., Harmanescu, M., Jančová, N. (2019) "Conceptual approaches to environmental quality and livability in smaller cities". In: Book on the unexplored cultural heritage in communities by the Danube, DANUrB 2017 – 2019, 1st edition, Prague, Czech Republic, Gasset, pp. 104-109, ISBN 978-80-87079-63-8.
- [42] Fonyódi, M., Tomic, Carevič, M., Kaisheva, M. (2019): "Possible thematic tourism network cooperation". In: Book on the unexplored cultural heritage in communities by the Danube, DANUrB 2017 – 2019, 1st edition, Prague, Czech Republic, Gasset, pp. 70-77, ISBN 978-80-87079-63-8.