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**Re-shaping Territories, Environment and Societies:  
New Challenges for Geography**

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**FACULTY OF GEOGRAPHY**

**Department of Human and Economic Geography**

**RE-SHAPING TERRITORIES, ENVIRONMENT  
AND SOCIETIES: NEW CHALLENGES  
FOR GEOGRAPHY**

**Conference Abstracts**

**Bucharest, Romania  
November 20<sup>th</sup> – 21<sup>th</sup>, 2020**

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## **Analysis of the tourism phenomenon in peri-urban tourist destinations**

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Tourism is undoubtedly one of the most important economic sectors in the world. The development of metropolitan area has increased the number of forms of tourism involving leisure activities, recreational and weekend tourism and, accordingly, the development of peri-urban recreational areas. Forests and lakes in the neighbourhood of Bucharest have been organised for this purpose, becoming peri-urban tourist destinations over time, due to increasing recreational needs of the urban inhabitants. The absorption capacity of these recreational and leisure areas in the peri-urban environment entails the intensity of weekend tourism.

Weekend tourism is seen as the main form used by Bucharest inhabitants, being influenced by a number of factors: increasing leisure time; the possibility for the people to purchase and use cars; diversification of the road network; increasing labour demand and training.

Among many leisure areas close to city, Comana has a development toward the status of a peri-urban weekend tourist destination, highlighted by the completion of the accommodation, food and leisure infrastructure, by the source and the intensification of tourist flows.

Regarding the behaviour of the tourists and the agreed structures available in Comana, it appears that the tourism phenomenon is seasonal, mostly during the summer, due to favourable temperatures and a higher willingness of tourists to spend their leisure time in a pleasant way. The high pressure and density of tourism phenomenon in the summer months compared to winter are proved also by the climate-tourist indicators.

## **Globalization and actual size of decision tree structure method useful in prognosis studies of penitentiary**

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Continuous development of human society involves permanent changes of great complexity. For these reasons, prognosis study should be viewed as a tool of guidance in the relational system occurred between

involved domains, to assist the transformation and self-regulation process of functional systems, but also to maintain a balance in social relations and collaboration between different partners. The application of decision tree method in studies of prognosis is based both on the graphical representation of the decisions and the order in which they are taken, as well as the consequences of those decisions. For these reasons, the decision tree structure is presented based on actions, consequences, limits between activities, entry and exit mode from an activity, because the activities as a whole, have different probabilities of achievement. At present, have been identified, however, problems in the development of capacities for efficient management of spatial development issues, systems that would provide useful information to identify major risks and opportunities. The application of modern management methods contributes substantially to the ability of solving problems, to increase the quality of services and economic and social performance. The structure of the decision tree, over time, has proved useful in the process of designing a penitentiary system, because the ultimate goal was to obtain optimal solutions through efficiency, equity, sustainability and creativity.

## **Territorial-urban development of the Bucharest-Ilfov area. Delimitation and analysis of peri-urban space**

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Due to the accentuated urban expansion in the last two decades, the landscape in the immediate surrounding area of Bucharest registered an unprecedented urbanization process. This article stresses both the extension of the urban characteristics and the peri-urban and rural transformations - -. Consequently, we developed a model after which Bucharest expanded in the territory, depending on the main factors that have left their mark on the urbanisation process.

The population density, the technical facilities, the density of the companies, and the public amenities play a significant role in the classification of the spaces around the capital. This paper will also highlight communities with similar characteristics (urban, rural or mixed) in order to develop regional development strategies to increase synergy and local sustainability, but also to outline a limit for a future metropolitan area of Bucharest.

## **Development and promotion of wine tourism in Romania in the context of COVID-19 pandemic**

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Wine tourism has its roots in the 19<sup>th</sup> century, when visiting vineyards became part of the tourist packages of many destinations. In Romania, wine tourism has not benefited from a promotion directly proportional to the potential it has for this type of tourism; Eurostat data puts us in fifth place in Europe in terms of areas cultivated with vines.

The current pandemic context offers Romania the opportunity to diversify the domestic tourism market, and wine tourism can lead to the economic recovery of certain regions, severely affected by the measures taken to stop the spread of the virus. We consider that an efficient promotion of wine tourism in Romania would motivate Romanian tourists to practice tourism activities within the country, and in the long run, would help the development of local communities and attract foreign tourists. The purpose of this paper is to identify strategies for the development and promotion of wine tourism in Romania.

The objectives of the study are: knowledge of the concept of wine tourism; delimitation of the areas for development and promotion; identification of viticultural and tourist potential; determining the perception of tourists regarding wine tourism in Romania; analysis of the impact of the pandemic on tourist flows in Romania; identification of practical solutions and proposals to help develop effective promotion strategies in the current context.

The results of this study are: identification of wine-growing areas with potential for the development of wine tourism; proposing models of strategies to promote wine tourism.

## **The emergence of local food systems in Croatia**

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Local food systems imply short food supply chains that bypass middlemen and develop cooperation and relationships between producers and consumers based on trust and respect. This also encourages economic involvement on the part of small local producers who were marginalized by the development of the global market and large corporations. Agricultural households in Croatia are often very small. Of the total number of agricultural

units, around 60% of them use an average of 1.2 ha of agricultural land, and only 6% use more than 20 ha. Croatian agricultural production does not satisfy the country's needs in many segments. For example, in 2015 Croatia produced only 60.9% of the needs of its domestic market (not a single kind of vegetable was produced in sufficient quantity for the needs of the domestic market) so there is a lot of room for improvement. Local food systems that have begun to develop in the last ten years are an incentive for many small food producers looking for a way to reach their customers. This research takes particular interest in the development of local organic food systems. Ecological production in Croatia is just starting to catch on - only 6.07% of total agricultural area is used for eco-production. However, the number of ecological producers is increasing from year to year (from 1.494 in 2011 to 4.374 in 2018). The presentation will present the results of a research based on 25 semi-structured interviews with organic farmers and their customers conducted in the period of 2017-2019, as well as information gained through participant observation method.

## **How global warming has affected agriculture in a Transilvanian city. Case study: Sighișoara**

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The phenomenon of global warming is by no means new, and this is the challenge of the century. It affects the entire planet, from Greenland, where about 11 trillion ice has been lost, according to CNN, to Romania where agricultural crops suffer due to lack of rainfall, according to local media and data provided by the National Institute of Statistics. While areas destined for agriculture suffer, in Romania, in Mureș County people discuss how they can remedy this issue. Thus, for Sighișoara, a city in this county, projects that focused on climate change were implemented. But in order to make them work, the people need to know about how the agricultural areas are affected and how much of the production has been lost.

This paper aims to explain how agricultural areas in Sighișoara suffer, analyse the decline in agricultural production and propose viable solutions to combat this phenomenon that Sighișoara farmers are trying.

## **Automated versus manual mapping for detailed morphometry of small gravel pit lakes using Remote Sensing and GIS**

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The increase in the demand for mineral resources worldwide in recent decades determines the opening of new quarries or increasing existing ones with a direct impact on land use, natural habitat degradation and numerous pollutant emissions to air, inland water, soil, etc. Monitoring the spatio-temporal impact of these exploitations is absolutely necessary and involves, for field monitoring, time and numerous human and financial resources. At the moment of interception of the groundwater or abandonment / cessation of exploitation, many of the negative forms of relief / excavations resulting from the exploitation of mineral resources are filled with water and will gradually turn into lakes and wetlands.

In these conditions remote sensing is a very useful solution and allows monitoring the environment and land-cover changes on the large scale. The use of remote sensing in the evaluation of the spatio-temporal distribution, of the morphometric, physical, chemical and biological characteristics of the lakes in the mining areas, characterized by an accentuated dynamics, represents an extremely versatile tool due to the increasing number of options. Thus, it is possible to improve the quantification of the number and morphometric characteristics of small lakes and reduce the uncertainties generated by statistical models.

## **Dysfunctionalities in ecotourism development in Grădiștea Muncelului - Cioclovina Natural Park Călin Alexandru Cosmin**

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Grădiștea Muncelului - Cioclovina Natural Park, one of the 16 natural parks in Romania, declared as a protected area of category V IUCN since 2000, benefits from a special attractiveness through five of the six Dacian fortresses included in the UNESCO world cultural heritage in our country but also through the spectacular karst area, from which the Șura Mare and Ponorici - Cioclovina cu Apa caves stand out due to their length. At twenty years of existence, the park faces many dysfunctions, which are barriers in its overall functionality, but especially in its sustainable development through ecotourism. In this context, this study aims to identify the dysfunctionalities that currently slow down tourism and implicitly ecotourism in the Grădiștea



Muncelului - Cioclovina Natural Park by causes- effects analysis. The research methodology included field observations and surveys, consultation of specific documents and cartographic processing in ArcGis10.3.1. The results show that there is a lack in managerial vision regarding preservation of the Dacian fortresses, excepting Sarmizegetusa Regia, that conducted to archaeological poaching, vandalism of sites, the spreading of invasive plants which cover these historical monuments and also to the missing of access improvements required in ecotourism. A second category of dysfunctions is generated by the weak involvement of the local entrepreneurship, the area being affected by the reduced capacity in offering tourist services. The third group of problems is maintained by legislative gaps regarding the boundaries of protected natural areas (especially reserves and natural monuments in the park) which overlap with the lack of acceptance by the local population of the limitations imposed by the status of protected natural area. In conclusion, ecotourism as an alternative to sustainable tourism is far from being applied due to the lack of specific infrastructure, involvement of local communities, organization of visitor flows and outdoor activities to know the nature and cultural elements of this park and protection of valuable sites.

### **Extreme weather phenomena associated to the geomorphological processes in Orșova town**

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The extreme manifestations of the natural phenomena such as powerful earthquakes, slides, crashes, floods, drought and others, can have a direct influence upon the life of every person and upon the entire community. Due to the global warming climate, felt, especially in the last decade, it has been noticed a growth in the frequency of the extreme climate phenomena and in their intensity. Among these, the most frequent are the draught and the high amount of rainfall that cause great floods. The two examples that are been treated in this research, the draught and the high amount of rainfall are particularly eloquent because if they occur simultaneously, they can have an impact on the entire environment, triggering great damages.

The Danubian Canal, where the town of Orșova is being situated, has not been protected from these extreme weather phenomena of the climate risks associated with the geomorphological processes very rare occurred in this region.

## **Study on planning and urban environment issues in the Prelungirea Ghencea area, Bucharest**

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Our paper follows the faulty way in which territorial expansion and territorial planning have been achieved in the last 20 years in the Prelungirea Ghencea area of Sector 6 of Bucharest. The final result is a chaotic neighbourhood, with serious problems of urban quality. The objectives of our study are (I) to follow a chronological evolution of the building area, the way it was built and the height regime adopted (II), scoring the planning problems arising from field studies (III) and the analysis of urban problems in the new neighbourhood.

## **The relationship between meteorological drought and soil moisture in south-eastern Romania**

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Meteorological drought propagates to agricultural drought, impacting agricultural production and driving economic vulnerability. Soil moisture is a key variable within this process, regulating hydrological and ecological components at the land-atmosphere interface. In the last decades, remotely sensed soil moisture gave the opportunity to overcome the challenge of monitoring water deficit on extensive areas. In this study, the combined passive-active surface soil moisture of the ESA Climate Change Initiative (CCI) at 0.250 resolution was used to explore the capabilities of large-scale monitoring of soil moisture for drought detection in the surface soil layer. Precipitation extracted from the E-OBS dataset was used to calculate the Standardized Precipitation Index (SPI) for meteorological drought event identification in the 1992 – 2019 period. Soil moisture anomalies during drought events were analysed to investigate the impact of meteorological drought in four regions in south-eastern Romania – Dobrogea Plateau, Baragan Plain, Teleorman Plain and the Subcarpathians. Lagged correlations were performed between soil moisture and SPI at different time scales to assess the potential for early detection of agricultural drought. Remotely sensed soil moisture is a useful indicator for water and agricultural managers providing the opportunity of early risk detection, especially in regions where in-situ observations are missing or deficient.

**Geography... where? Students perception of the study of  
geography in the online scenario**  
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The pandemic caused by COVID-19 virus generated problems in all fields of activity, and the education is one of the most affected. Students, but also teachers are facing an uncomfortable situation, that of organizing online classes, in a different way they were used to. In order to observe how this pandemic affects the teaching-learning and assessment process, we completed a questionnaire of 15 questions that we applied in various educational units. Thus, the opinions of 609 students were analysed, in an attempt to identify the barriers and obstacles encountered by them, the receptivity and the way in which geography folds and, implicitly, the study of this discipline in the current conditions.

The purpose of the research is to analyse the students' perception of how they adapt to geographical methods and resources in the context of the issue generated by the COVID-19 pandemic.

Through the general purpose we aimed to establish the degree of receptivity of students to online teaching, identifying the advantages and disadvantages of learning.

Among the specific aims of the research, we can mention: identifying the problems encountered by students in learning geography in the current context, the particular analysis over the room issues during classes, preparation and application of a Google form in Bucharest schools; the realization of a SWOT analysis of students' perception regarding the Geography teaching-learning and assessment process in the current context based on the answers received and formulating a point of view of the students' perspective regarding the way Geography is taught in the current context.

**Geotourism in Romania - inventory, assessment, capitalization**  
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Geotourism represents a form of tourism that capitalizes on the elements related to geosphere. It has an educational role, in order to make the general public more aware of the geomorphosites/geosites and to boost their tourist capitalization, without producing an imbalance in the environment. Specific ways of achievement are: through thematic excursions (especially in schools and faculties, with target groups) that benefit from specialized

interpretation and through the use of geotourism products (especially maps and routes).

In Romania, the implementation of this form of tourism is still in an early phase (far behind other countries). Thus, there is no inventory of valuable geomorphosites (situation present in most European countries), but only separate and fragmented achievements in various scientific papers or projects.

For the achievement of our approach, 100 representative geomorphosites were chosen as genesis, degree of complexity, tourist capitalization and geographical location. The geomorphosites that are included in the IUCN (category 3, geomorphological reservations) and that are proposed to be included in the UNESCO natural heritage list have been taken into account.

The selected geomorphosites were evaluated in terms of tourist values but especially by the degree and modality of exploitation in geotourism. The geomorphosite that obtained the highest value, the Danube Gorge, was chosen as a case study, being analysed as a model for introduction into geotourism by creating specific routes.

The values obtained by the analysed geomorphosites prove that Romania has a rich geotourism potential, but still insufficiently known and exploited. It must be understood that they are representing an asset, especially for the benefit of local communities, for their development in close interrelation with the protection of the natural environment and sustainable development. It is necessary to take measures and actions at national and regional level that must be included in coherent projects / programs for the implementation of this form of tourism in Romania.

### **The role of the synoptic conditions in the dispersion of the pollution indicator – the nitrogen dioxide. Case study: Slatina town (Romania)**

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Nowadays, the higher the degree of the human society development has become, the more the degree of the environmental pollution has increased, so that, besides the beneficial effects of the technical progress, the humanity may bear the adverse effects of the industrialization. The atmosphere exerts a complex role in terms of the pollution generated by various fixed or mobile sources, manifested in three ways: receiver, conservator and vehicle. In this study, we will analyse the role of the synoptic

conditions in the dispersion of the pollution indicator – the nitrogen dioxide (NO<sub>2</sub>), highlighting the three stages in which atmosphere manifests in the area of Slatina town. We will use the daily, monthly and annual average data for the pollutant indicator – NO<sub>2</sub> from the automatic air quality monitoring OT-1 industrial type station, which is part of the Air Quality Monitoring Network in Romania for the 2015 year. Also, we will correlate the pollution data with the synoptic maps from the German Weather Service in Offenbach, with the upper-air charts from the Bucharest – Afumați station and the climatological data from the National Meteorology Administration (ANM). The methods will use for the data analysis are logical, spatial and comparative, operations in GIS, statistical analysis, bibliographic research and field observations. This is complemented by characterizing the pollutant – the nitrogen dioxide and the main emission sources, and at the end of the paper, there are presented the conclusions of the authors. To know the way of dispersion of the pollutants in relation with the influencing factors is the starting point in finding the most appropriate means of combating the air pollution.

## **The dynamics of the Neajlov Valley landscape in the delta sector over the last 100 years**

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This paper aims to present the dynamics of the Neajlov Valley landscape between the confluence with the rivers Câlniștea and Argeș. The purpose of this study was the diachronic analysis of the landscape of the Neajlov Delta over the last hundred years, under with a series of indicators to assess the degree of anthropogenic pressure on it and to establish the degree of influence on the development and preservation of the Comana Natural Park, a protected area mostly subscribed to the area of study. The objectives of this study were to establish the types of changes that took place in three-time intervals analysed (1912-1949-1990-2018), to calculate the indicators of anthropogenic pressure on the environment, and to analyse water bodies dynamics in the context of the evolution of the Comana protected area.

The methodology included a series of geospatial analyses of landscape elements in the study area, determining the Environmental Transformation Index, the Landscape Naturality Index, the analysis of the dynamics of water bodies, and identification of main elements of anthropogenic pressure on the landscape.

In carrying out these stages of work, GIS methods of geospatial and geostatistical analysis, some formulas for calculating anthropogenic pressure indicators, and not least field analysis, have been used.

The results of this study revealed time intervals with significant changes in the local landscape and highlighted generating factors of these changes. This study is intended to be a starting point for a larger research project in this area, including a series of morphological and geomorphological analyses that would enable viable scenarios of conservation and even ecological reconstruction of this area to be achieved.

## **Danube - the study of the Romanian territory, starting from interpretations of the old navigation maps**

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The presentation proposes an interpretation of the graphic signs that appear on the Romanian territory following the ideogram of the Danube course and its outflow into the Black Sea, on different maps, taking into account the projection system used in the design of navigation documents.

Although with seemingly different drawings from current cartography, these works required multiple knowledge, both orientation, astronomy, geometry, drawing, and direct knowledge of the shores and places to transmit information with a certain degree of accuracy.

We can consider the first maps as the first documentation of spatial planning and urbanism, respectively the drawings for the Analysis of the existing situation.

Map Mundi or Portolane, the maps contain data of travellers, being executed differently for sponsors: navigators or sovereign leaders, also having a didactic character for the children of the ruling families.

Navigation maps have much more detailed data on water surfaces and shores and contain less data on land territory, which we follow in the present study.

Starting from Ptolemy who used knowledge of astronomy in the mathematical drawing of maps, from Isidore of Seville, one of the founders of medieval culture, seeing the drawings of Al Idrisi, other representations preserved in religious books or portulans from the fourteenth century and later, the territory of Wallachia it is identified by macrogeographic elements, namely the Danube and its discharge into the Black Sea.

## **The role of transhumant population in the preservation of traditional elements in the city of Novaci Cruceru Cristina-Maria**

The paper follows the history of Novaci settlement, from its first historical dating in 1502 to the present day while remarking the elements of traditional and cultural geography and the way they influenced its development over the ages.

Customs are part of the spiritual treasures of any people, which are highlighted in the city of Novaci by the existence of two separate populations (locals and "ungureni") each with their defining traditions. As the main element, the paper presents the celebration of moving the sheep up the mountain, central part of the transhumance process and of any pastoral society.

In conclusion, by analysing the traditional culture of Novaci region, we conclude that the role of the sheep herder is not one of creator, but of distributor and hence an integral part of the spiritual identity of the Romanian people.

### **Geomorphological services - a new vision**

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In the current context of European GreenDeal policy, spatial analysis has a great importance for the efficient development of the areas.

For a more accurate assessment of a terrain to be used for new projects, there is a need for an analysis to be performed in the GIS environment and to integrate all the essential elements in terms of sustainable development: the geological substrate, the risk of floods, current land use, morphometry and morphography of the area but also the boundaries of protected areas or archaeological sites.

Thus, geomorphological services that use GIS techniques are widely sought in Europe and become vital for local, regional or national development plans, especially for those projects that are carried out with external funds.

The analysis presents several case studies related to the development of transport infrastructure in relation to other physical or socio-economic components. Also, we present several proposals in order to change the legislative framework in Romania to allow the integration of geographical analysis in pre-feasibility and feasibility studies and to increase the importance of geography in line with the evolution of this domain in Europe.

## **Iron Gates, the land of hidden identities**

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The theme attempts to shed the area and the recent history of the Iron Gates under a different light and perspective when it comes to its heritage. The area is one of the most dynamic and dramatic border sectors of Romania concerning not only its history but its social, political and economic local development. Despite its dynamic history and its rich heritage, the recent significant tourist development of the area is based rather on natural resources. It not only fails to capitalize on its historical and cultural heritage but there is evidence that part of its most valuable heritage is rather unheard of due to particular paradoxes. The results of the study point towards the inability of exhibiting the social value of this place due to the hidden identities and the different versions of the past which are deeply rooted in the scattered collective memory.

## **Usage of “earthengine.google.com” and “maps3d.io” methods in on-line teaching**

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Teaching process needs certain adjustments, due to the advance of technology, of students' comprehension requirements and skills. The attraction of the teaching way, of the way of transmitting information, is a must, very well expressed in the educational process. Providing that the attention and the whole process is centred around the pupil, it becomes even more necessary. The current situation, in which on-line teaching is more and more practiced, only boosts us become creative and discover new solutions within the process of teaching and of implementing the recommended educational platforms, as well as a variety of different methods, as, for instance, maps3d.io and earthengine.google.com. By the means of all these platforms, we have succeeded into getting students' attention and stimulate pupils' creative capacity. The results of students' reactions and involvement by using these programs, have been empirically obtained by applying a questionnaire to the 8th and 12th grade pupils. The most of them, ranging between 87 - 93%, have considered that they understood, by the help of these methods, by individual study as well and by playing games, the differences of



altitude ranking from a higher relief form to a lower one, as well as the dynamics on what concerns the dwelling and site of the towns and cities for a certain period of time. For the development of the educational process in an attractive and high - quality manner, there is necessary to have a different approach of teaching and learning. The new on -line methods, by which children are attracted to discover and consolidate knowledge should be hold as perfect normality.

## **Changes in the number of students coming from Romania to Hungary between 2013 and 2019**

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The emergence and spread of globalization have brought with it a wealth of opportunities that can be exploited and experienced in all parts of the world. One example of these potentials is the process of internationalization in higher education, which provides a new opportunity not only for the institution and the educators, but also for the borderless development of students. In higher education nowadays, geographical boundaries and distances have disappeared, thereby making it possible to reap the benefits of academic migration. Study-related emigration can have two main purposes, the goal of obtaining a degree and the goal of obtaining credits; hereinafter the life path of the people participating in the degree programs is presented. First of all, the development of the number and proportion of students coming from Romania to Hungarian higher education institutions will be described in international terms.

The data presented in the lecture was based on the database registered by the Hungarian Education Office. According to this, during the examined years (2013-2019), approximately 3000 students from Romania obtained their diplomas in a Hungarian higher education programme. During the analysis, the development of the number and proportion of students based on the examined years is examined. It also provides a breakdown by young people's chosen disciplines and levels of education, which can provide an overview of which areas of higher education are fulfilling the needs of young people. In addition to this, the lecture briefly mentions the decisions made by young people in the post-graduation period as well as their long-term career plans.

## **The Anthropocene - epoch of geological time. Arguments and counter-arguments**

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Over the past decade, the Anthropocene Working Group (AWG) of the International Commission on Stratigraphy (SQS), under the auspices of the International Commission on Stratigraphy (ICS), has made continuous efforts to accept the International Union of Geological Sciences (IUGS) inclusion of the Anthropocene in the Geological Time Scale (GTS). The Anthropocene would have epoch status during the Quaternary period, following the Holocene.

This proposal, rejected so far, will be brought back to the attention of IUGS next year, 2021. AWG continues to accumulate new data to establish the lower limit of the Anthropocene, looking for suitable stratigraphic markers.

**Metropolitan efficiency in providing public and private services  
throughout their territory**  
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Urbanization is manifested throughout the world at an accelerated pace due to people's pursuit of better quality of life. Therefore, local policy makers have established metropolitan areas as a way of governance within urbanized areas, aiming to enhance a balanced distribution of goods, services and resources to all dwellers. Romania's first metropolitan area was established in 2004 and shortly after Romania gain membership within the European Union several other were declared. Through this study we aim to determine whether the Romanian metropolitan areas are functional in terms of providing their inhabitants the required public and private services. We have selected 9 metropolitan areas as case studies, and we assessed whether the existing transportation network provides equitable access towards 6 types of public and private services. Our results emphasize that most of the declared metropolitan areas have been established using mostly political criteria, neglecting the theoretical reasoning behind this type of governance. We focused on developing mobility indexes to determine the easiness to reach various amenities within metropolitan zones and we have mapped our results for better emphasis of the existing flaws. We have highlighting how the location of most services are concentrated within the core urban areas meaning that the other metropolitan members are highly polarized. The level

of polarization could indicate that the core urban areas are vulnerable to agglomeration putting pressure on their livability.

### **Assessing the media portrayal of high-profile investments in relation with the Environmental Impact Assessment procedure**

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Various economic activities have been acknowledged to have an irreversible impact over the environment, thus most of the world's governments have created legal frameworks to assess the complexity of impact these activities generate. The Environmental Impact Assessments (EIA) procedure is a tool desired to pre-assess the potential impacts that a certain economic activity will project on the environmental components, constraining the agent to make his investment more environmentally friendly. However, some activities are considered of strategic or national security importance in some countries, involving world-wide actors. Critics, especially NGOs, are claiming that the EIA procedure in this situation is just a formality, ineffective in preventing polluting activities to occur. Through our study, we assessed how the EIA procedure is covered in media article using four notorious projects from Romania: 1) the construction of third and fourth reactors at the Cernavodș nuclear plant; b) the used oil processing plant from Oltenița; c) the mining activities from Certej and d) the Moldova Nouă tailing dumps. We have assessed the timelines of the subject coverage for each case study and assessed whether there are any mentions of the EIA procedure within the media topic exposure. We have also gone further and made a Sentiment Analysis to determine the manner the topics were presented in the media. Our results reveal that the construction of the third and fourth reactors from Cernavodă was the most covered topic of all our 4 case studies. All projects involve actors beyond the Romanian borders and all of them generated debates about their environmental impacts. However, only articles tackling the Certej exploitation topic have mentioned EIA procedure while in the other three cases there was no mention of it. The sentiment analysis showed that most of the articles were positive about the project excepting the Moldova Nouă tailing dumps.

### **Principles, rules and stakeholders of resort planning in Romania - a diachronic approach**

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The development of tourist resorts in Romania followed the legal, urban, economic, but also fashionable rules from the epochs in which they were created or which they have crossed since then. Thus, according to the planning principles and rules of each historical period, their morphological structure and urban characteristics are very different. In addition, as economic progress accelerated and tourism has turned into a mass phenomenon, several principles were abandoned, and planning rules were applied poorly. The research aims to highlight the technical, legal and societal mechanisms that have marked the evolution and morphological dynamics of tourist resorts in Romania in the last two centuries.

**Public perception on flood risk in Romania**  
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The floods produced in recent decades and the resulting consequences have led to a new approach to flood risk management, an approach in which awareness and the involvement of human communities play a key role in preventing human and economic losses.

Romania is among the countries that have big problems in this regard and has not applied enough measures to reduce this risk. The research aims at the public perception of Romanian citizens on floods. The methodological approach consisted of conducting an online survey to quantify and analyse the public's perception of floods.

The results of the survey showed that people are not aware of the risks associated with floods, nor are they prepared to take measures to prevent them. Following the analysis of the results, one of the conclusions is that people, not being aware of the risks, deny their positioning in an area prone to floods. Another conclusion is that the population is not sufficiently informed about floods and it would therefore be necessary to introduce new ways to make people more aware of the risks they may be exposed to.

**Geography of religion; Faith and spirituality**  
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The interdisciplinary character of the geography of religion, using a vast historical background, certainly does not allow a clear classification of the science as geographical or religious studies. Modern scientists agree that the geography of religion studies the dependencies between religion and the geographical area. Although they stress that “as a branch of geography, it deals with the impact of religion and religious societies on the geographical environment, and as a branch of religious studies – with the role of concepts and groups”, they also admit that drawing a clear border between both research approaches is impossible, or at least very difficult. For a long time, the mutual relationships between religion and the geographical environment have been a subject of analysis for both geographers and specialists in religion, where faith and spirituality cannot be quantified.

**Risk of dynamics of the river stream in tectonic areas  
(Carpathians of Curvature and Atlas -NE of Constantine)  
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The tectonic characteristics of the alpine orogen allow highlighting some similarities in the genesis of landforms over large areas. The paper analyses the role of tectonic manifestations in two subsiding areas and with uplift movements.

1. The overall tectonics requires the formation and evolution of the hydrographic network in relation to the major relief structure, thus forming: Streams parallel to the high-altitude line, Consistent and transversal streams, Subsequent streams. The processes are accompanied by antecedents and / or epigenesis, common in the Eastern Carpathians. Thus, the Bistrița river is longitudinal compared to the Bistrița Mountains and the Stânișoara Mountains, but also transversely in other sectors. In the Tellian Atlas, in the ZiroudYoucef area, the water balance between the adjacent 5th order sub-basin Smendou (Rhumel basin) and Bouhadjeb (Safsaf basin) is subject to regressive erosion processes, landslides specific to an imminent capture. In the Northeast Atlas (in Algeria - Constantine area), the morphography and morphometry of the river basins reveals reorganizations of the river network through their transversal or longitudinal characteristics compared to the structure and tectonics of the region.
2. The uplift movements and the subsidence movements impose reorganizations of the hydrographic network by catchments at the alternation of the erosion and accumulation processes and therefore at the creation of a

certain fluvial style. In the Carpathians of curvature, the Buzău river formation shows a staging of the formation due to the subsiding areas around Buzău and the Romanian plain with varying intensities but around Buzău there are intense processes of accumulation in islands, on the background of a longitudinal profile with extremely low slope, so there are frequent floods. In the Romanian Plain, meadow processes (lateral erosion, accumulation) are accompanied by floods and excess moisture. The risk of floods imposed the riverbed regularization works, with methods specific to each river segment in the mountains, sub-Carpathians, and the plains.

## **Fostering Urban Resilience through Regeneration Practices in Dynamic Cities of Peripheral Areas. The Case Study of Cluj-Napoca**

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Most recently, development and planning prescriptions tend to lose ground, at least in the developed countries, in favour of the many local inputs of various actors, with forms of including both technical and non-technical knowledge, thus democratizing practices, enhancing place awareness for many groups and enabling civic empowerment, bottom-up approaches, participation, and community building.

Among others, three interdependent concepts are mainly used to explain and assess the impact of this focus shift: sustainability, resilience and regeneration. We interpret resilience, an emergent concept, as creative change or the renewal capacity within the urban region, as opposite to its other meaning, which is adaptation after or performance in face of crises. Thus, resilience is the dynamic feature resulting from ongoing development and supporting long-term evolution of places and communities, making them more functional and attractive. Reflecting the systemic meaning of resilience, the actors and resources involved into urban regeneration are highly varied. Our research pays attention to the territorial dimension of resilience and regeneration considering the case of Cluj-Napoca. The aim is to analyse its resilience based on urban regeneration initiatives. Thus, we answer to how this city transformed over the last twenty years through renewal approaches and to how it reacted to various changes at the national, European and global level.

The research questions are the following: Which is the status quo of urban renewal in Cluj-Napoca? Which was the focus of the renewal initiatives: social, environmental, economic, integrating two or all three? Which are the roles and contributions of inhabitants, public administration, experts,

developers, other citizens in the decision-making process during the urban regeneration processes?

We concluded that urban regeneration, as a comprehensive framework for action, and resilient urban and territorial planning should include a strategy for urban renewal, as an adaptive mechanism to change.

## **Dealing with sustainability in a divided world – Romanian environmental institutions**

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In 2015, the 2030 Agenda for Sustainable Development was launched, considering 17 strategic ways (Sustainable Developments Goals) oriented through "end poverty and set the world on a path of peace, prosperity and opportunity for all on a healthy planet". Besides of general consensus related with sustainability, the implementation of the 2030 Agenda requires deep transformation of the financial, economic and political systems and a huge change in terms of collaboration of all stakeholders. These changes face with the reality that show a much-divided world. Poor and rich, developed and undeveloped, owners and workers, men, women and LGBTQ, young and old, Islamic, Christian, Buddhists, Hindu, agnostic and other 4200 religions, Liberal, Socialist, Conservative, Green and others, pro and against globalization, illiterate and high educated are only few criteria that divided people around the world. Apart from these, the collaboration between institutions has an important role. The presentation proposes an initial analysis related with the potential of Romanian institutions to manage these differences and to implement SDG.

## **How much Chinese students spend when studying abroad? A quantitative research from Central and Eastern Europe**

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The growing number of international students is a global phenomenon, and it is widely researched among scholars from various fields in the past decades. As a special type of migration, it has significant effects on the local and regional economy and society, therefore it is crucial to expand our understandings on these impacts. The scale of student mobility rises all over from Central and Eastern European (CEE) region, however, the speed of growth and the composition of international students by country of origin, by

field of studies, and by level of studies vary widely among the host countries. The largest sending country, China, exports nearly one million students globally, yet they are underrepresented in the CEE region, the most dynamic growth can be observed in Hungary. The government and the higher education institutions (HEIs) in Hungary put a great effort into attracting foreign students to study at Hungarian universities, with the result of 38422 registered international students in the academic year of 2019/2020. In the same year, Chinese students were the second-largest international student group, 2766 Chinese students studied at Hungarian HEIs. The increasing number of Chinese students and their different cultural backgrounds establish the grounds of this study. In early 2020 for a government commission research was conducted on the economic impacts of inward student mobility, the results of the related survey provided a comprehensive database, which allowed us to examine the spending habits of Chinese students and construct their consumer profile. The presentation will introduce the major Chinese student mobility tendencies and its backgrounds in relation to the Hungarian higher education, moreover it will demonstrate the results of the analyzation the mentioned database, such as the spending structure and volume of Chinese students, and finally the conclusions that could be drawn from these findings. The outcome of this study provides practical and beneficial insights to various stakeholders, not just for the HEIs, but also for governmental actors, local service providers.

## **Overtourism in historic cities- Will it return in the post-COVID era?**

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One of the research problems in tourism geography is the limitations of tourism development in cities. Historical cities, where the statistics on tourism, especially inbound tourism, reach alarmingly high rates, are particularly important in this context. These high rates are related, inter alia, with the development of low-cost airlines and a network of low-budget air connections, as well as the emergence of new forms of accommodation in cities (e.g., apartments, Airbnb). The city break offers based on fun, a cursory glance at some attractions, cheaply available alcohol, underwent increased criticism. In the field of tourism geography, the problem of the limits of tourism development and the actions taken to stop the phenomenon of overtourism appeared. In this talk, the problem of overtourism in Krakow, its spatial aspects, social consequences, and economic relations will be highlighted. Referring to the present COVID pandemic and closure of tourist



destinations in many cities, catering facilities and attractions for tourists, the authors wonder whether overtourism will return and seek answers in this regard in the actions of municipal authorities.

### **The role of accommodation and public catering units on the tourism market in Târgu-Jiu**

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Cultural-historical tourism contributes to the diversification and development of tourism in the municipality. This fact is determined by a constant increase, in the last 10 years, of the number of tourists arriving in the area and of the number of arrivals in the accommodation units in the locality. The study debates the importance of accommodation and catering units for increasing the number of overnight stays in Târgu-Jiu. Statistical data provided by the National Institute of Statistics of Romania were used, processed and capitalized by a series of tourist indicators. The method of analysis and opinion poll was also used to outline an overview. Following this study, economic agents involved in accommodation and catering services may be aware that cultural-historical tourism contributes to the economic development of the locality but must be supported by diversifying services and raising their quality level.

### **Study trail surveys - Monitoring and visitor feedback in case of European Geoparks**

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Balaton Uplands National Park and Bakony-Balaton Geopark provide various facilities, which have been realized as a well-positioned segment in domestic tourism. If we mention the demand side both in active tourism and ecotourism, both in other open-air sports activities, they have already existed in a conscious way of changing thoughts and habits. This mode of thinking is also detectable in tourism marketing. The study paper illustrates an effective form of tourism research in the Northern-Balaton region of the Carpathian Basin, which kind of methodology is used for other regional samplings. Balaton Uplands Nature Reserve area became one of the most attractive Hungarian destinations, thanks to the geological diversity, biological habitats, traditional customs, and historical-cultural sites. In evidence, the geosites and

cultural attractions introduce the visitor into a scientific experience: karst topography, volcanic activity, post-volcanic exhales, wetlands, and virgin forests, but the built environment, farming practices, folk art, and history also demonstrate a living atmosphere for those people who participate a geo-thematic event.

Methods of primary sources have been introduced as online mapping and localizing geo-coordinates by GPS, survey-analysis through qualitative indicators, digital data collection, and big data analysis. The research puts the focus on supposed or real context according to the visitor's perception in an exact local place, so the question is, that what are the primer expectations, preconceptions, and space-specific patterns. Survey of visitor attitude becomes clear by the external features and geographical characters, the evaluation of infrastructure objects, and a more general approach of study trail assessment. Of course, the sheet contains some questions about the personal recommendation, willingness to return, and the purpose of visiting other study trails. The order of some key priorities - as value categories - does imply ranking in their importance. From another perspective, it is also considerable, how could the geopark management use effectively the management tools to attract more potential tourists. However, not even the domestic geopark but also the foreign institute needs to introduce some practices of visitor management tools.

## **Sustainable rural regeneration by capitalizing on cultural and social heritage in Feldioara commune, Braşov county**

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Rural development has long been based on agriculture, forestry and other primary production functions. Globalization, industrialization and transition of society from production to consumption have had a fundamental impact on the rural environment, constantly emerging new models of social and economic organization, and agriculture losing importance. Investors see in rural areas primarily new opportunities for development in tourism and industrial activities, predominantly in those localities at the rural-urban interface. Rural tourism has become a creative and sustainable solution to the many problems currently facing these areas. However, the promotion of tourism has led to the commercialization and modernization of the rural area, affecting its natural, cultural and social diversity. Nevertheless, the rural environment is far from homogeneous, as it is marked by a diversity of cultural and natural features that create a unique and varied area. Due to diverse agricultural practices, unique lifestyles and other cultural features (e.g.

gastronomy, clothing), the countryside becomes attractive for visitors who are looking not only for natural landscapes, but also want to experience local culture and local lifestyle.

Local culture is part of rural capital, which, by definition, also includes natural capital, architectural capital and social capital. The local culture characteristic of a certain area is the potential for local development and regeneration enhanced by location and specific characteristics. It is most often connected with the natural, social and historical endowments of a space and can represent a competitive advantage over other areas. Social capital, on the other hand, refers to the totality of the relations established between the members of the community, the cohesion and the capacity to collaborate being thus essential for an efficient and sustainable regeneration of the rural space.

Therefore, the use of cultural and social capital can produce a regeneration of rural space, a process that means a reversal of decline by improving the physical and economic structure of the locality to ensure a balanced, sustainable and integrated development, as well as by creating a strong local identity.

In Romania, there is no clear definition of cultural or social heritage in legislation. Also, there is no methodology by which rural localities can use the cultural and social capital they have to generate sustainable development. In the context of globalization, weak territorial governance in most rural areas, the increasing process of depopulation and demographic aging, the inefficiency of capitalizing on cultural and social heritage, etc. there are generally two models of territorial development that can be observed in Romania: 1. old traditions and customs are lost, historical monuments remain in ruins, the population leaves the locality of origin, leaving only the elderly population and without financial means; or 2. some traditions and customs are preserved and some of the historical monuments are renovated, being introduced in the tourist circuit, generating money for the local budget, without taking into account the cultural and social specifics of the locality and without generating social development, the inhabitants remaining in reality as little connected to their place of origin as before.

This paper seeks to propose a model of local development in rural areas situated in urban-rural interface of Romania through which existing cultural and social capital can be used both for economic development and for creating a local identity that leads to the attachment of people to a space unique ethnic and cultural. Thus, the paper analyses a third solution at territorial level: sustainable regeneration of rural areas by capitalizing on the cultural and social potential.

Posibil un rezumat prea lung

## **Dynamics of the urban-rural interface of Pitești Municipality after 2000**

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The urban-rural interface represents the space on the periphery of cities (usually the first 1-2 rings of localities), being a transition between urban and rural environments. This space needs an integrated, transdisciplinary and trans-territorial administration, the classic management style at local level being insufficient, too slow for the dynamic processes happening today and not sufficiently adapted to contemporary problems. The paper stresses the stages in which Pitești municipality evolved in the post-transition period and to identify the factors that led to its current dynamics. Also, the goal of this paper is to come up with intelligent and sustainable solutions for public administration institutions to manage the interface.

## **Dealing with Mental Health Issues in Urban Romania – A Study on Youth’s Perception of Depression**

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Multiple studies prove that poor mental health is usually correlated to other health and behavioural shortcomings, and these issues are more and more common, especially among young people. One of the main problems in investigating mental health in general, apart from a limited number of mental health professionals and their sometimes-limited qualifications is the considerable patient stigma that comes with this subject.

This study aims to breach the issue of depression and mental health issues among teenagers and young adults (15-35 years old) in urban Romania. The objectives of the study included obtaining an image of what depression means for this target group and how it acted when faced with one symptom that is mostly associated with depression: sadness. The authors also measured how the target group would deal with their own or someone else’s diagnosed depression.

The methodology had several steps: constructing a radiography of the Romanian health system and emphasising its shortcomings, organising focus groups with mental health professionals as well as with members of the

target group, creating and disseminating a questionnaire to more than 1.000 respondents.

The results showed that the target group has a solid understanding of the importance of the issue, many times due to their own experiences or because this phenomenon affected someone from their family or circle of friends. However, the study shows that the target group mostly lacks the mechanisms to address depression, be it in themselves or others.

## **Responses in local management of COVID 19 crisis as an adaptive process for future pandemic waves in Romania**

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The COVID 19 pandemic meant the change of priorities in the management of settlements, when economic, social, institutional activities were carried out under emergency measures or pandemic alert. The aim of the study was to identify response models in the management of human settlements in Romania to ensure the simultaneous protection of the population but also socio-economic functionality in the wave manifestation waves of the COVID 19 pandemic. The research objectives aimed to identify dysfunctions and conformity in social, economic and environmental management, establishing the degree of adaptability for the future stages of the pandemic and outlining the management priorities in settlements. The study is based on the survey method, the online interview tool, applied to local authorities in 278 human settlements, processed in SPSS v.27. The results reveal that the first pandemic wave was appreciated as a managerial task of medium to high difficulty with slight differences between urban and rural areas, which raised the threshold of adaptability and solution relatively little for future epidemic waves. Problems of dysfunction in utilities were experienced in waste informal spreading and sewerage malfunction. The most injured activities were education, waste collection, and public mobility. The management of the pandemic was under the initial risk of the lack of masks, disinfectants and implicitly the decontamination of the streets. At the social level, communities, especially the elderly, have been largely cooperative, benefiting from food and health welfare. Pandemic social conflicts have been linked to non-compliance with specific measures, neighbourhood, poverty and the environment. The functionality was provided by the mayor's office staff, the police and then the family doctors. In order to improve the management of future waves, in local authorities' vision, focus on financial

instruments, purchase sanitary resource, communication and information on the preventive and cleaning settlements are vital.

## **The impact of European Capital of Culture status on tourism development. Case study: the municipality of Timișoara**

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The cultural project 'European Capital of Culture' is focused on promoting the defining cultural elements of the cultural cities and on increasing the international profile of the city and the region: e.g. organizing a program of varied cultural activities and artistic events throughout a calendar year, aiming to outline a vibrant cultural project. Cities have to prove their ability to manage a complex cultural event. In order to win the title of European cultural capital, it is important both the cultural heritage of the candidate city and the way of enhancing the heritage buildings. As a European project, any awarded city must emphasize both common European cultural values and cultural diversity. This paper aims to analyse the role of the program "European Capital of Culture" in the development of the municipality of Timișoara, which will hold title in 2021, by highlighting the effects generated in economic and cultural plans. The European Commission (EC) has proposed that Timișoara becomes the European Capital of Culture in 2023, two years later than initially decided, as the COVID-19 pandemic has negatively impacted tourism and cultural initiatives.

Several researchers consider relevant to examine the economic effects before the year when the candidate city obtains the title, respectively from the year in which the announcement is made regarding the winning of the ECoC title, because the local and central public administrations prepare the cultural program: e.g. urban regeneration projects, renovation of heritage buildings, organization of the cultural activities. The announcement of the titles of European Capital of Culture being announced 4 years before, stimulates the attraction of tourist flows from the stage of preparation of the project.

## **The effects of the national cultural policy on the economic capitalization of the cultural heritage**

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The characteristics of uniqueness and irreversibility of historic buildings raise the issue of their sustainable use. Accelerated development specific to large cities and mass tourism can affect the sustainable use of historical monuments: e.g. inappropriate use, abandonment correlated with the high conservation costs of historical monuments.

In Romania, the cultural heritage is underfunded, so the number of preserved historic buildings is low. The problem of conservation of historical buildings and their proper use or reuse seems to be a barrier to urban development worldwide.

Heritage buildings can, over time, generate a flow of capital services that can go directly into final consumption or can be combined with other inputs to produce other cultural goods and services. Therefore, a historic building can offer commercial and residential spaces, or it can be a site that offers cultural experiences for tourists. The cultural services generated by the heritage properties are also used by the local population. A great economic impact is exerted by the cultural heritage on tourism. At the same time, the economic benefits of conserving the cultural heritage surpass the costs. Conservation is a sound investment (e.g. renovation and maintenance work of heritage buildings). The aim of this paper is to analyse the value of material urban heritage in order to present the particular characteristics of its valuation process within the historical centre of Bucharest Municipality. The authors used two types of valuation process: the non-monetary indicators and the economic indicators. The analysis of the results obtained by using the valuation process highlights the economic potential of the historical centre of the capital city. The diversity of the historical buildings reuse is noticeable, with particular commercial, tourist and cultural services.

## **Benefits and constraints of joint decision making in Romania. From public participation to collaborative Environmental Impact Assessment**

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Although the core Environmental Impact Assessment (EIA) procedure is comparable worldwide, several issues obstructing proper EIA process implementation are common in developing countries (e.g. lack of public participation, low level of cooperation etc.). Even though it is difficult to perform a transparent and qualitative EIA process due to the large number of participants involved, little is known about the factors explaining its performance and no current approach captures the level of cooperation

among EIA actors. Because actors cooperate, compete or support one another, these ties make a difference in finding the key to success. As a result, it is necessary to demonstrate that links between EIA actors can have a crucial impact on the procedure's quality and effectiveness. Our project aims at using Social Network Analysis (SNA) (i.e. Structural holes' metrics & Brokerage, ERGM / ALAAM models) to explore EIA networks structure in order to develop a novel framework for increasing the effectiveness of EIA, and providing solutions for a better collaboration during the administrative procedure. The specific objectives are: to investigate the EIA reports quality; to identify the main benefits, issues and common conflicts of the EIA procedure at national and international level; to identify the predictors of successful in participatory EIA implementation, by analysing the efficiency, constraints and hierarchy of involved actors; to evaluate the networks fragmentation and identifying critical network hubs and opportunities to strengthen connections, using state-of-the-art multilevel models for cross-sectional EIA networks; to predict alternative network scenarios. The outcome of the project will help to change the traditional approaches based exclusively on single institutional actors and rethink the EIA collaborative process leading it towards sustainable holistic planning by learning from past experiences, best practices and public attitudes.

### **How big can the suspended sediment load get in the Jiu river basin? Insights from the most severe hydrological events in the decade of 2000-2010**

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This study investigates the production and transfer of suspended sediments load variability during several major floods in the Jiu River basin (extended on over 10080 km<sup>2</sup> in South-Western Romania) between 2001 – 2010. We calculated the flood event efficiency index (EEI in g-l/s<sup>2</sup>), computed as ratio between the suspended sediment concentration (SSC, g l<sup>-1</sup>) and the liquid flow (Q, m<sup>3</sup>-s<sup>-1</sup>), divided by 1000. To account for the impact of anthropic activities (coal industry, reservoirs) during the analysed flood events, we chose the gauging stations (g.s.) located on the Jiu River (at Isroni, Sadu, Rovinari, Filaşi, Podari), for which both measured (affected by human activity) and natural (reconstructed) liquid discharges were available, as well as the suspended concentration. We analysed the 10 most important floods in the period between 2001 – 2010, which occurred during the months of March



to August and in October - November. These were chosen according to the amount of suspended sediment loads recorded at the Zăval g.s., at the Jiu rivermouth.

The calculated values of EEI were presented on a logarithmic scale and related to the potential sources of suspended sediments and to the general characteristics of the catchments corresponding to the g.s. In some cases, the suspended sediment loads were found to be lower downstream than upstream because there are sometimes intermediate storage areas and local sources of suspended sediment which do not play in the alluvial transfer occurring further downstream. The results show a higher transport efficiency of suspended sediment load during floods occurring in the summer months, compared to other floods taking place in autumn or spring.

The variation in the EEI is able to explain the upstream - downstream relationships both in the context of a continuum of uninterrupted alluvial transport and in cases where sediment transport is affected by intermediate storage along a river's course.

## **Analysis of Timișoara tourism brand in the online environment Musteață-Pavel Mărioara, Lixăndroiu Cristina**

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The promotion of tourist destinations is currently being done in an overwhelming proportion, in the online environment, on social media networks, therefore a special importance is given to the visual identity and the specific content of these communication media. Social media is the most commonly used way of creating online communities, based on common values and interests that provide the management of the tourist destination a series of data on tourist products, consumer profile, travel motivations, etc. These communities connect demand with supply at all stages of the travel cycle (before, during and after the trip) and at all stages of the life of the tourism product.

The development of social media platforms that provide travellers with information about direct experiences and useful holiday tips, in the form of reviews and ratings, has completely changed the way tourism and the hospitality industry attract and serve their customers. The ability to share information about experiences has been developed through a simplified method, with people having access to the internet on any device around the world. According to Hootsuite and WeAreSocial, in January 2020 there were 15.35 million Internet users in Romania.

For a better understanding of the social media phenomenon, this article presents an in-depth analysis of information about Timisoara, as a

tourist destination, available on the main social media channels (Facebook, Pinterest, Instagram, Twitter, YouTube), on booking and reviews websites (Booking, Tripadvisor), on travel blogs and forums, mobile applications and search engines (Google, Yahoo). Following the analysis, it was observed that the data available in online media have a significant impact on the decision-making process of tourists, and the use of social media as a marketing tool by tourism is essential to meet the trends of the current generation.

### **The health and health care: Reading between the lines. Narratives and experiences of online users**

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Health systems, with all their forms and structures, are very dynamic and subject to societal changes. Coping with structural and institutional shortcomings, political and financial realities, the Romanian health system is part of a much deeper reaching process. The extraordinary potential of the Internet as an essential tool in research is undeniable. Advanced Internet technology and different apps provide information on health issues and health caregiving. The paper explores the narratives and discursive understandings of health among online users using an adaptive ethnographic technique. Narratives for analysis were obtained by using the Google search engine and multiple searches to get publicly postings of people related to the health care system and reform via snowball sampling. The documentary corpus (150 articles and the subsequent selection of 100 discourses) was analysed in an iterative analytic process. The stages of coding were manually conducted. The processing of the data was partly carried out using open source software for qualitative data such as Wordalyzer 1.5 and voyant.tools.org. The findings provide an understanding of the shared experiences of users as patients, of the people's everyday experience of reality, in great detail, to gain a reflection of the phenomenon in question: the malfunction of the health care system. The recurring themes of discourse analysis are structured around the system's malfunctions, the organisation of health care system, the progress of health reform, the practice of bribes, and the privatisation of emergency medical services. The poor organization of hospitals and the inadequate management of their budgets have ultimately affected the quality of services and health care. New health policies could be implemented to improve the responsiveness of the Romanian health system.

### **Simion Mehedinti, the man who lived before his times Neacșu Marius-Cristian**

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This year marks 120 years since the inaugural dissertation, written by Simion Mehedinți (November 3, 1900). The presentation took place at The University of Bucharest, in front of a distinguished auditorium including Mehedinți's junimist mentor, Titu Maiorescu. Simion Mehedinți was ahead of his time. Not only that he is the founder of modern geography as a science and university subject in our country, but he also gave us a consistent and extremely valuable legacy much wider than we imagine.

### **Identifying the Romanian genius personalities with a patrimonial value for the purpose of developing a cultural tourist product**

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Cultural heritage is constantly evolving and contributes fundamentally to human development and increases collective life's quality. This domain, considered a treasure that must be protected accordingly and passed on to future generations, is an essential resource for promoting Romania's identity and individualize it as a nation among the peoples of the world. The purpose of the study is to identify the genius personalities in Romania in order to develop a tourist product based on the attractions generated by such personalities' life and activity. The research method is based on the survey with open questions which targeted two groups: the Romanian Academy members and domestic tourists. The results have been analysed both from qualitative and quantitative perspective. The data processing of respondents' nominations has been done by validating a set of selection criteria. The results show that the list of Romanian geniuses on the two different groups are slightly unlike; in the collective mind, the selection criteria relay on the elements of uniqueness left in the fields they enriched during their life, on the legacy the Romanian people inherited as a result of their life and activity, materialized in innovation, pieces of work, scientific discoveries. The study helps in further development of a specific tourist package dedicated to the Romanian geniuses, by capitalizing the elements of heritage and tourist attractions generated by their activity.

## **Study on the traditional household and the typology of rural settlements in Mehedinți county**

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The household represents the central element of the family life and a mirror of the humanization processes of the Romanian space, respectively of the Mehedinți County space. The different typology of the Mehedinți household is the result of the active adaptation of the communities to the characteristics of the natural, historical, socio - economic and cultural realities. If towards the end of the 19<sup>th</sup> century and the beginning of the 20<sup>th</sup> century the changes in the Mehedinți household occurred slowly under the influence of the transformations in the Romanian society, the villager being strongly anchored in the tradition, after this period the changes are substantial, the old peasant houses, huts, and mansions built according to tradition, are slowly disappearing despite their integration in the list of historical monuments as a last effort to preserve them. The changes that occur later are accepted and perceived as necessary to increase the quality of life. The different typology of households generated the individualization of diversified typology of rural settlements on the territory.

### **Assessing the use of collective residential gardens in cities**

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Urban areas are under a constant pressure due to population increase and challenges related with their accelerated development. The quality of life in urban areas is influenced by the deterioration of the environmental quality indexes, the security level and the socio-economic aspects. Coherent spatial planning based on the development of urban green infrastructure is considered the optimal solution for reducing the negative changes in environmental quality and increasing social cohesion and ecosystem services. In this context there is a serious deficit of information related with the interactions between nature and society in regard with the use of collective residential gardens.

The paper aims to analyse the use of collective residential gardens using Bucharest as a case study and focusing on aspects like design, quality, perceived benefits and activities inside the gardens. The analysis was based on

around 1700 observation sheets and 550 questionnaires applied in all main collective residential neighbourhoods in Bucharest between 2018 and 2019.

The results show that 47% of the collective residential gardens aren't used by the residents even if in the majority of cases they, together with the building administrations, are responsible for its management. The population seems to understand the importance of the residential gardens for the environmental quality since they highlight benefits like climate moderation, shadow and aesthetics. The major problems related with collective residential gardens are waste and parking.

Our study contributed to increasing the public awareness in relation with the benefits and problems of collective residential gardens. Such analysis could be very useful in the planning process of small urban green areas highlighting the needs and demands of the local population which could be integrated in an integrated urban management process.

## **Problems and prospects of sustainable cultural tourism development in Neamț county**

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Cultural tourism supports the resilience and economic growth of local communities. The aim of this study is represented by the assessment of local and regional policies of cultural tourism in Neamț County from a sustainable development approach. Including the investigation of general statistical tourism indicators, the analysis focuses on the examination of development strategies and associated projects of cultural tourism development in the last 20 years, highlighting the problems of policy determination and implementation. The main results of the study evidence that cultural tourism development in Neamț county lacks cohesion and sustainability while decisions and actions are taken without respecting an integrated approach at local and regional level. The conclusions bring policy recommendations for the sustainable development of cultural tourism in the specific territorial context of Neamț county and under the current socioeconomic conditions.

## **The new European integrating economic paradigm of Romania's industry**

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31 years after the change of the statist political regime, Romania's industry has reorganized on the principles of the free market and continues to be an engine of the country's development, contributing over 22% to GDP (in 2017-2018), but registering a moderate contraction in 2019- 2020. The important capital infusions, especially after entering the European Union, determined a rapid development of the Romanian industry. The current paradigm shift has several dominant spatially and temporally delimited as a result of government economic policies:

-1990-2000, the decade of Romanian statist deindustrialization.

- 2001-2005, the period of privatization of the heavy industry of statist origin to the concern in the extra-community space (Russia, in particular), which aimed at creating an economic "bridgehead" to the European Union, balancing and selling large state-owned companies public services and utilities: electricity ("Electrica"), extraction and processing of oil ("Petrom"), natural gas and coal, telephony, etc. ;

- after 2007, "reindustrialisation or the period of reconversion and modernization" by attracting large Western European and North American investments to the automotive and automotive industries, granting green certificates for wind and solar renewable energy and developing industrial parks;

- industrial parks on peri-urban areas have determined the rapid urban remodelling of proximity through the force of attractiveness and new functional connectivity transforming peri-urban space into new integrated industrial landscapes, to which is added the liquidation of non-performing economically and polluting mining;

- urban regeneration of large industrial platforms from the old economic regime, liberation of urban spaces from halls and adjacent buildings and urban remodelling in these perimeters by developing residential and commercial spaces (Bucharest, Braşov, Iaşi, Cluj-Napoca, Timișoara, Ploiești, Bacău, Suceava, Arad, Craiova and others).

At present, the Romanian industry has two large regional groups: the Bucharest-Ploiești-Braşov-Sibiu-Sebeş axis with the Pitești-Mioveni branch and the western axis, Timișoara-Arad-Oradea-Satu Mare.

## **Teatro Labirinto: Landscape and Storytelling** **Penone Anna, Mantovani Magda**

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The present study is a result of the project "BABEL\_técnicas de difusión del patrimonio literario y oral", an European project, on behalf of the

association La Corte della Carta. In 2019 this led us to Bucharest, in the city of our partner Universitur (Asociația Universitur). Here, in a mutual exchange workshop, we have been trained to use this technique/experience - the Labyrinth Theater. As we went back home, we opened a call and we invited 15 people to work with us for 3 days in SOS La Fornace, an active social centre on the outskirts of Milan (Rho-Però) which has found a home in an abandoned factory. We have been working with the intent to explore the idea of "accoglienza" - "welcoming". However, due to the fact that the technique is deeply rooted in the space identity, the performance did not take the shape we planned. The landscape speaks. And the labyrinth became a storytelling of that space. This is the most powerful lesson we learned from this experience.

### **The human capital analysis in Dâmbovița County**

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The analysis of human capital is an essential component for understanding the disparities of individual earnings among people and also among communities and also it may reflect the well-being of the population. The analysis of the component of human capital is crucial for the evaluation of competences of the communities, thus future economic and social prospects must be made taking into consideration the quality and quantity of human capital. The objectives are the evaluation of the three main components of human capital: education, health and workforce and to point out different distribution by area which will result in areas with higher human capital and areas with lower human capital, depending on different premises of development. The present study aims to identify the vulnerable administrative units which are in shortage of human capital and to evaluate the factors that caused these shortages and therefore to propose measures for the uniformization and improvement of human capital which will ensure a sustained economic and social development of the community.

### **The perception and active participation of Gen Y in Romania from the social dimension perspectives of sustainable tourism**

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Sustainable management, at the level of destinations requires the simultaneous seek of multidirectional interactions, one of them being tourists,

structured differently on socio-economic, cultural and psycho-formative criteria. Taking into account the general features of Y Generation, the study aims to analyse the interaction perception-active participation of young tourists in Romania (RYT) regarding the social dimension of sustainable tourism (ST). The research has as a pivotal method the survey through the tool of the semi-structured questionnaire applied online in 2020. Using descriptive statistics, then the Fisher and T students tests, their responses were processed in SPSS v20. The results of the study highlight interesting psychological perspectives of young people in Romania, with emphasis on the social dimension, lack of conflict of any kind, spending time with friends, but also avoiding aspects that generate anxiety or physical exhaustion. Perceptions of positive actions for host communities differ on socio-demographic variables, but especially on the type of actions that require an active YG involvement. A predominantly commercial vs. a formative orientation is observed. In conclusion, YG is aware of the importance of their involvement in terms of social and cultural aspects in sustainable tourism, but there is a need for guidance in the management of tourism products on offers specific to a generation related to digital techniques, ways to achieve the formation of innovative solutions appropriate attitudes of the young generation.

### **Spatial patterns of livestock bear predation in the Carpathian landscapes**

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Romania harbours the largest brown bear population in Europe within the Carpathian Mountains, a stronghold for the European brown bear population, characterized by a low, but dispersed human footprint, mostly rural, and growing cattle and sheep represents the livelihood for many local rural communities. Understanding of the spatial patterns and predictors for Human - carnivores conflicts (HCC) has the potential to benefit local communities and wildlife management agencies by providing broad guidelines for reducing the level and frequency of conflict. The overarching goal of this study was to assess predictors and spatial distribution of HCC in a high-density brown bear landscape in Romanian Eastern Carpathians using a dataset of reported livestock damage collected by local Environmental Protection Agencies (EPAs) spanning nine years (2008-2016). We evaluated the occurrence and predictors of HCC by brown bears using binomial generalized linear mixed models (GLMM). We ran separate models for



different types of livestock damage: cows, sheep, and other (pigs, horses, chickens) and we developed a set of 32 models that tested hypotheses regarding influences of environmental and anthropogenic variables on the presence of HCC for each livestock type. Our results revealed that the likelihood of HCC caused by bears to livestock in Romania is influenced by a combination of landscape factors, local relative brown bear abundance, topography, and approaches to livestock management. Our predictions showed differences in the factors affecting the prevalence of damage for cows, sheep and other livestock, but altitude, distance from forest and land cover types are common to all livestock. Brown bear abundance was only positively associated with sheep and other livestock. The landscape configuration, composition, and heterogeneity were strong predictors of HCC, but the direction and strength were highly variables across livestock types.

## **Demographic vulnerabilities in the Tazlău hydrographic basin**

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Our research goal is to identify the demographic vulnerabilities of local communities from the Tazlău Basin, Bacău County, Romania, which impacts the socio-economic development of the area.

Thought demographic vulnerabilities we refer to those processes which expose the local communities to economic changes. We can evaluate the degree of exposure by different indicators and understand the specific vulnerabilities.

Most of communities from the area of interest are affected by low natality and youth migration, which triggers large changes in population structure (both on ages and gender), rapid increase of ageing and depended population; al of this leads to socio-economical imbalance and hence increasing the demographic vulnerability.

Poor availability of human resources, aged population, and large ratio of gypsies ethnical group makes a negative impact in the adaptability capacity of communities to socio-economic changes.

To evaluate the dynamic of demographic vulnerabilities in the area of interest, we have built up a specific data base, with INS data from the 1992-2019 period. By processing, we obtain specific demographic indicators that were correlated and plotted on maps for a better representation of vulnerabilities areal distribution, especially those with negative impact for the research areal.

## **Sustainability indicators frames for assessing urban sustainability**

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Sustainable development is a concept often associated with the balance between resources production and consumption. Moreover, sustainable development represents the balance for perpetuating human life on Earth in favourable conditions of living. Sustainable development assessment can be established quantitatively, quantifiable using a set of indicators and indices of sustainability. The study aim is to determinate which types of indicators and indices can be used for an appropriate assessment of urban sustainable development. The methodology we used contain both qualitative and quantitative analyses of data for indicators and indices suggested in literature and international programs, including criteria of the aggregation in a framework. We analysed 9 sets of indicators based on typology, domains, reference scale, number of objectives, targets and indicators. The results indicate a high variety of indices and indicators applied both globally and locally. For example, for SDG there are 169 targets and 244 indicators. 11% involve cities, on territorial planning and health domain. Other 11.1% of the indicators are aggregated and can be use on a scale other than national or urban. 48.8% of the indicators can be aggregate to national scale. In conclusion, for choosing the right indicators and indices for assessing urban sustainability is very important the relevance for the topic analysis, as well as the purpose for which they are used. Sustainability indicators and indices provide an overview based on concentrated information to provide decision-making support within the administrative framework.

## **The low altitude permafrost from temperate regions: new results from Detunata Goală, Romania**

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This work presents an update of the state of knowledge of low altitude permafrost from Detunata Goală, Metaliferi Mountains, in terms of thermal regime inferred from recent continuous ground surface temperature monitoring (by miniature data loggers) and internal structure from geophysical investigations (electrical resistivity tomography and refraction seismic) in the context of the new FrozenCore research project initiation.

## **Assessing interactions between terrestrial carnivores in the Romanian Carpathians**

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Recovery of apex predators is a critical component of reversing the loss of biodiversity. However, the top-down control processes exerted by apex predators may be influenced by bottom-up human-driven processes (e.g., habitat change, poaching, hunting), leading to calls for evaluating recovery actions through the lens of trophic ecology, as well as for considering humans as an integral part of the trophic system. Eastern Europe is one of the few places that harbor an intact terrestrial carnivore guild, with the Carpathians acting as the stronghold for European carnivores, albeit strongly influenced by human activities (e.g., forestry, hunting, livestock production, and farming). The Romanian Carpathians harbor viable, stable populations of all European terrestrial carnivores: brown bear (*Ursus arctos*), gray wolf (*Canis lupus*), Eurasian lynx (*Lynx lynx*), wildcat (*Felis silvestris*), red fox (*Vulpes vulpes*), as well as several mustelids: badger (*Meles meles*), European pine marten (*Martes martes*), beech marten (*Martes foina*), stoat (*Mustela erminea*), and least weasel (*Mustela nivalis*), while lacking basic understanding of species ecology and community structure like the circumstances in which apex predator restoration may trigger trophic cascades and whether human impacts can hinder these conservation efforts by influencing their ecological role. Thus, as few have studied such interactions in human dominated landscapes, therefore is a critical need to understand the interactions between carnivores in complex carnivore guilds, incorporating both space use and trophic relations concomitantly, and there is increased recognition that humans, through direct (e.g., exploitation) and indirect effects (e.g., land use change) may have a critical role in shaping trophic relations in animal communities.

Seeking to evaluate the direction and magnitude of such interactions and serve as a benchmark for the recovery of carnivore communities in human-dominated landscapes pushes the scientific boundaries of wildlife ecology and conservation, it also transcends discipline boundaries.

## **Assessing and mapping areas sensitive to land degradation and desertification in Romania**

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Land degradation has become a serious environmental issue that affects numerous countries worldwide, including Romania. This country is known as one of the most critically threatened European countries in terms of land degradation, as it is highly exposed to the degradation of various environmental biophysical conditions. This work aims to analyse and map the current state (in 2018) of lands susceptible to degradation and desertification (land degradation under aridity conditions) in Romania, based on multiple spatial datasets that were considered to be driving forces of land degradation. Based on the MEDALUS (Mediterranean Desertification and Land Use) methodology (widely used in similar international studies), which was applied via GIS techniques, geospatial results showed that 29% of the country's total area is critically sensitive to degradation. Spatially, it was found that extensive extra-Carpathian areas are the most heavily threatened by degradation and even desertification. The detailed statistical and cartographic results can help national/regional decision makers to implement concrete measures to fight the negative environmental effects triggered by this disruptive environmental process.

## **Changes and Challenges in Urban Residential Space: Case Study of Bucharest**

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The residential changes in the Municipality of Bucharest show a dynamic correlated firstly with economic factors, and secondly with social and administrative ones, and the transformations of the urban space are significant. This study aims to identify the transformations within the dynamics of the residential area, but also to determine their direct consequences – the challenges and inherent difficulties of the metropolis' transformation process. At the same time, it aims to analyse the implementation of urban planning legislation, to present the dysfunctions that appeared in the residential space and identify the possible actors to solve the issues. The changes and challenges are determined today by the difference of approach in terms of urban space planning in general and residential in particular. The characteristics of the new residential space represent a direct consequence of the relationship between supply and demand, with legislation only partially managing to correct any malfunctions. The methodology was based on direct field observation, as well as the case study method, using the structured interview as a research instrument. The objectives of the study focused on: highlighting the typology of residential dynamics within the

sample areas, enumerating the main dysfunctions, and identifying the possible actors to solve the issues. The changes in the evolution of the residential space reveal an accelerated increase in the number of constructions, with a tendency to extend towards the peri-urban area, some that do not respect legislative requirements. The challenges stem from trying to solve the dysfunctions related to housing quality, heavy traffic, sub-dimensioned public transport infrastructure, underdeveloped technical-urban facilities or the poor management of urban waste.

### **The evolution of the risk and impact of floods in the Giulești-Sârbi area**

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The study aims to analyse the risk of floods and its impact in the Giulești-Sârbi area, the marginal north-western district of Bucharest. The location of the accumulation lake has a hydrological importance for the studied area. The anthropogenic dam is one of the sources of floods, in addition, the inefficiency of the sewerage system is added, which frequently flows back when there are significant increases in rainfall.

The motivation for choosing the study is represented by the vulnerability of the Giulești-Sârbi area and by the lack of a current paper to analyse the water risks.

The authors applied a set of questionnaires locally, following which some results will be presented. The main objectives of the study refer to the spatialization at street level of the risk of floods and their following impact. It will also compare the risk of floods after two key periods: before the construction of the dam and present, respectively 1970 and 2020.

According to the authors' findings, the Giulești-Sârbi district is still susceptible to floods. The most affected streets are those in the SE of the district and punctually to the NW. On the other hand, the application of the questionnaire shows that the southernmost street (Răsadniței Street) did not register problems as often as the current hazard maps from the rowater source for which the highest risk was expected to show. The main solution that can reduce the effect of flood risk is the modernization of the sewerage system.

### **Spa tourism - basis for the development of Băile Olănești resort (Vâlcea County)**

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Băile Olănești is one of the largest and most important spas in Romania, being known internationally due to its rich and diversified hydromineral potential. The mineral waters here, besides the fact that they are numerous, also have a diversified chemical composition, to which is added the relief and a favourable climate for the development of the spa treatment. The need to capitalize on tourism in the area requires knowledge of both the hydromineral potential and especially the bases of treatment and procedures used locally. Another important aspect is the development perspectives in parallel with the existence of problems related to tourism.

## **Reflections of the Covid-19 Pandemics on Use of Technology in Geography Education**

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Especially since the second half of the 20th century, the use of technology has led to significant developments and changes in all areas of our lives, paving the way for significant developments in the education and training process as well. From planning to implementation of education and from material preparation to measurement and evaluation, geography education and training process have also been affected by these developments. The COVID-19 epidemic, which has great impact on the whole world as from the beginning of 2020, brought a quite different dimension to the use of technology in the education process, as in all areas of life, and introduced unprecedented developments. Thus, on the one hand, some problems were experienced due to the fact that all aspects of technology have not been adapted in the education process, while on the other hand the new situation has taken its place on the agenda with quite different approaches. Similarly, while there were various problems regarding the use of technology in geography education, this new situation, on the other hand, led to the emergence of some opportunities. In this context, various applications and materials that are recommended for use or could be used in geography teaching before the COVID-19 pandemic have come to light with the COVID-19 process. For example, previously proposed virtual field studies regarding the use of technology in geography have emerged as an important opportunity with the COVID-19 process. Based on the foregoing, this study will focus on the new situation that emerged with the COVID-19 process and its reflections on use of technology in geography teaching. The study will focus on the geographical realities of the new situation, the problems and threats it brings, and the possible opportunities it presents.

## **Weather conditions associated with floods and historical discharges on Lower Danube (1980-2010)**

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In order to understand the role of atmospheric conditions for the floods and historical discharges occurrence on Lower Danube we have analysed firstly each event in association with the phases of the most important teleconnection manifesting at continental scale (Arctic Oscillation-AO, North Atlantic Oscillation-NAO). Secondly we have assessed the regional atmospheric circulation conditions using Gross Wetter Types classification derived from COST733 catalogue.

Our diachronic analysis takes in consideration the atmospheric circulation from the occurrence day of the flood/historical discharge back to 3 months prior to the hydrological event. Generally, the events are preceded by neutral phases of NAO index and more negative values for the AO index, especially within the 3 months before the hydrological event. These conditions indicate, on the long term, the role of anticyclonic blocking conditions at continental level inducing prolonged interval with atmospheric instability over different parts of Danube basin, while on the short term zonal conditions can lead to cyclonic activity enhancing the increase of the river discharge. The results are reinforced by the GWT analysis that brings other valuable information depending on the season. In this way we can see that during winter and early spring the south-westerly circulation can lead to warm advection and the rapid melting of the snow cover especially in the mountain area, while in summer the atmospheric circulation types inducing large scale convection represent the main trigger of the hydrological events.

## **Mapping brownfield sites in Bucharest and Vienna**

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The presentation looks at the spatial transformation of former industrial sites in the agglomerations Vienna and Bucharest. Different methods were used to review, collect the data and information from a variety of sources. To analyse the transformation of the built-industrial environment, we need a cartographic record with the location and buildings of the factories. Recent expansions of publicly available high-resolution satellite images, like

those of Google, have increased temporal resolutions and brought substantial flexibility in spatial scales analysis. The works aimed to create a comprehensive digital mapping inventory of the buildings and industrial areas of the 1980s, which in turns inform related actors about current geographical distributions of brownfields.

## **The New Balkan Migration Route**

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Migration is a complex issue, with many facets that need to be weighed together. The year 2015 will probably remain in the migration history as the year that registered a record number of refugees. The closure of the Balkan Route used by migrants to reach Western Europe from Turkey and Greece has forced migrants to find alternative routes and for this reason, since February 2018, Bosnia and Herzegovina is facing an unprecedented wave of migration. The growing number of migrants and refugees who have started using the new Balkan route to reach an EU member state has raised deep concerns about a humanitarian and security crisis. The current system no longer works. With the new Pact on Migration and Asylum, the European Commission proposes a fresh start on migration: building confidence and striking a new balance between responsibility and solidarity.

## **Crossroads at the periphery of the urban system - the devitalization of Romanian small towns**

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Small towns have been in the shadow for a long period of time, placed at the periphery of the research and political agenda, while the large cities or rural areas were placed at the core of investigations. Lately, the 'small town' topic gained recognition at the European Union level, in regard to their importance for the territorial cohesion, outlining the need to develop dedicated policies. In Romania there are 225 small towns (under 20000



inhabitants) out of 320 urban settlements. This category of settlements is very heterogeneous, in terms of economic development, territorial role and urban functionality. The focus of this study is to identify the small towns with the lowest level of urbanity, positioned at the periphery of the urban system, and the driving forces which led to this trajectory, highlighting the macro-territorial inequalities. The methodology consists of several steps: (1) identifying the indicators relevant for measuring the urban features of small towns and computing a multidimensional index, using the Principal Component Analysis (PCA) method; (2) an exploration of the resulting hierarchy separated in four categories (very low, low, moderate, high); and (3) a presentation of the main findings. Results show that several small towns are undergoing a process of devitalization. Thus, after the fall of communism, in the absence of dedicated policies and financial investments, many did not succeed to find the path to revitalization and nowadays are suffering from many problems, such as shrinkage, ageing, lack of jobs opportunity, etc. In some cases, we noticed even structural and economic crises. A particular situation is related to the towns declared in the post-communism period, many located in the lowest category. This situation certifies that their presumed territorial role as polarising centres for the surrounding rural areas was forgotten by the policy makers.

**Floristic structure of cliffed coast along the Schitu Costinești-  
Olimp section  
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The Schitu Costinești-Olimp shore is part of the western Black Sea soft cliffed coast from Romania and one of the few coastal areas that have not been dramatically modified by public and private cliff-top infrastructures, coastal engineering defence and harbor works, yet. The results of the floristic survey carried up during June 2020 show plants species distribution and the community structure corresponds to the two features which compose the coastal landscape: the loess cliff and the sandy beach. On the loess cliff, and in particular on the glacia that cover the cliff foot, occur xerophytic steppe plant species, which are common in the Dobrogea Plateau, weeds, which migrates from the surrounding agricultural lands, and invasive species. The narrow shore beach, composed by coarse sand and shell debris, is colonized by typical seashore plant species, adapted to salt spray, sandblasting, strong wind, and desiccation. Several of them (*Cakile maritima* subsp. *euxina*, *Salsola kali*, *Leymus sabulosus*, *Crambe maritima*, *Eryngium maritimum*, *Argusia sibirica*)

are characteristic species of two habitat types of Community interest listed in Annex I of the Habitats Directive: Annual vegetation of drift-lines and Embryonic shifting dunes. The diversity of native shore plant species is threatened by human trampling because the beach is exposed to recreational use during the summer.

## **A geographical approach of the Bucharest's Jewish neighbourhood - from memory preservation to urban regeneration**

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The central area of Bucharest was affected by forced social transformation and aggressive renovation policies from the communist period. Complementary to this general context, the characteristics of the urban landscape and the spatial-residential structures of the Jewish neighbourhood were strongly transformed in the 1950-70 years as an effect of the quasi-total replacement of the Jewish population by emigration and housing nationalization, respectively of poor public space management by new owners - various public institutions, public sector tenants or landlords without relations with the origins of the neighbourhood. The study aims at spatial highlighting, through territorialized thematic analyses, of the results of communist and post-communist urban policies on housing and urban management of the Jewish neighbourhood in Bucharest, and opportunities to initiate and implement projects to preserve memory and urban renewal.

## **Paradigm shifts in public social housing in Bucharest during the three post-communist decades: from legislative approaches to territorial results**

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In Romania, three decades after the fall of communism, there is no harmonization of the legal framework on terminology, housing policies and the management of state-owned housing. There are thus: social housing, housing for young people, housing for doctors, housing for the needy, housing from the state fund, etc. The lack of a unitary approach to housing -

terminological and legislative - generates management confusions and eligible target groups, respectively poor management and socio-territorial effects of housing policies. The study highlights the dynamics and typological diversity of public housing in Bucharest, the relationship between specific legislative approaches, evolving, and their results, in terms of categories/typologies, respectively their representativeness in the map of Bucharest. The research highlights the role and limits of public social housing in building housing policies and sustainable urban development in Bucharest.

## **Geopolitical analysis of the Wilhelm Camphausen's lithography: "Episode aus der Schlacht am Berge Harsany"**

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At 1687 the united Christian army defeated the Ottoman troops at Nagyharsány (Hungary) and prohibited them to reoccupy Buda (Hungary). This battle has become widespread as „Second Battle of Mohács” in comparison with the first Battle of Mohács 1526 to highlight the similarities between the two battles.

The mentioned battle is not just the symbolical second version of the first Battle of Mohács (1526) but also the symbol of other ages political and geopolitical events. Wilhelm Camphausen’s lithography is about the Second Battle of Mohács (1687) and it embodies not just the victorious battle at Nagyharsány (Hungary) but also embodies the German political and geopolitical actions at the end of the 19th century. The geopolitical roots of his artwork are coming from the Franco-Prussian War (1870-1871).

Firstly, I analysed the biography of Wilhelm Camphausen (1818-1885) and its artwork. His artworks are fitting into the romantic and historical art and his life was hand in hand with the German geopolitical ambitions. In the second part of my research, I observed the portrayed landscape and its attributes of the „Episode aus der Schlacht am Berge Harsany”. So far, I can claim that the primary sources and the first-hand artworks about the landscape of the Second Battle of Mohács (1687) affected the forms, figures and the symbols of a portray on Camphausen’s picture. Few of the objects and symbolical places of the old battlefield have depicted on Camphausen’s artwork but in different compositions. The similarities and differences are visible between the depicted battle scenes from the 17<sup>th</sup> and 19<sup>th</sup> centuries pictures. In my work, I highlighted the symbols of Camphausen’s lithography and I would like to present the biographical, historical and geopolitical reasons that were affecting on his opinion and artwork about the Second Battle of Mohács (1687).

## **Heraldic and vexillological compositions in tourist presentations of heritage monuments - case study St. Gheorghe Church from Bucharest**

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The tourist presentations have the role of attracting attention due to the uniqueness of the information provided. Heraldic compositions are quite appealing and can become important elements in the discourse of a tourist presentation. Our study aims to highlight the coats of arms and the flag embroidered, sewn, engraved, painted, sculpted, cast or moulded, woven, objects that exist at the Church of Sfântul Gheorghe cel Nou Church in Bucharest, the place where, among others, there are buried the rulers of Wallachia, Constantin Brâncoveanu (1688-1714) and Ioan Mavrocordat (1716-1719). The funeral service of the poet Mihai Eminescu took place at this church, which is famous as a monument of Brâncoveanu art in the Romanian capital-city. For the preparation of this study we have researched the church building, the bell, the frontispiece, the inscription, the perforated railings of the front porch and the staircase at the back entrance, the tombstone of Constantin Brâncoveanu's tomb, the scraper cover lid of the tomb containing the relics of Constantin Brâncoveanu, a few tetrapodes, the iconostasis, the carpet, the tablecloths, the curtains and the special curtain (the church flag) inside it. Regarding the actual description of the different types of coats of arms and the flag, we have complied with the heraldic and vexillological norms. We have taken into account the interest that these testimonies may arise in tourists, pilgrims, teachers, pupils and students alike, especially since the vexillological and heraldic sources can serve both to a better understanding of some historical phenomena and to distinguishing the symbols by which the citizens and artists expressed their thoughts and aspirations. Our study is an impetus for the detection, analysis and placement in the scientific circuit and other sources of this kind, still unknown to tourists and to the general public.

**Ecological connectivity reflected in territorial planning**  
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In the Romanian Carpathian Mountains, the consequences of human pressure - such as uncontrolled expansion of localities and the transport infrastructure - have led to habitat loss and landscape fragmentation, affecting ecosystems and biodiversity. The lack of correlation between spatial planning and biodiversity conservation can create obstacles in the movement of species, such as the large carnivores. It is widely recognized that ecological corridors are tools for conserving biodiversity, since they ensure connectivity between natural protected areas and the travel needs of animal species, but they are also planning tools aimed at increasing the value of fragmented natural areas. Their identification and designation need a correlation between multiple intersectoral and interdisciplinary activities. Spatial development plans must be based on the economic values of biodiversity and ecosystem services and many countries have already included ecological networks in their planning documents. In Romania the principle of ecological networks has evolved due to the approach of this subject by numerous projects, such as the ConnectGREEN project, whose results are going to be a step towards the operability of the concept. Implementing ecological corridors in territorial planning documents is necessary in these conditions. Based on the methodology for identifying the migration corridors for large carnivores, proposed by the ConnectGREEN project, a model of including connectivity in spatial plans is presented in the case of a Romanian County (Buzău) based on its County Spatial Plan. The study identifies ecological corridors in the case of the brown bear, using data on road viability, traffic intensity and urban areas and is addressed to spatial planners and environmentalists.

**A great geographer: Simion Mehedinți  
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The paper includes a short presentation of a documentary film dedicated to the Founder of Modern Romanian Geography: Simion Mehedinți, in 1978, with the contribution of Professor Mihai Iancu, Professor Gheorghită Geană and the scientist's niece, Simona Mehedinți. The presentation is followed by the screening of the film (11 minutes).

**Assessing the attitude and behaviour regarding the disposal of  
unused or expired medicines. Case study: Bucharest, Romania**  
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Considering that unused and/or expired medicines represent a hazard both to the quality of the environment as well as to the health of the population, properly informing consumers everywhere about their correct disposal can contribute significantly to overall ensuring public health and a safer environment. Globally, each country or region have legislative regulations on the management and disposal of unused and/or expired medicines. In this context, the purpose of our study is to evaluate the attitude consumers of pharmaceutical products in Bucharest have about their management on their expiration, as well as the policies of pharmaceutical institutions on this matter. The results showed that most of those questioned do not return expired medicines, as 80% of them declared that, on expiration, they flush them, throw them in the trash or even burn them. Moreover, the population does not receive pertinent information on this topic, either through campaigns or by pharmacists. Another issue is that the management of unused and/or expired medicines is insufficiently regulated, especially in terms of mandates and sanctions for all the entities that market such products.

## **Changes within the economic landscape due to bank loans arrears in the current circumstances created by the SARS COVID-19 pandemic**

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The economic landscape of any country is influenced by internal and external factors, for certain periods. There are periods of economic growth, periods of stagnation or fumbling and crisis situations. The present study analyses the situation registered in 2020, for the months of January - July regarding the overdue bank loans of the Romanian population. The analysis is performed based on data provided by the National Bank of Romania and the National Bank Deposit Guarantee Fund of Romania (FGDB) and presents the situation in each county and development region in Romania. The situation of the arrears on bank loans does not represent just a delay in the payment of instalments on loans, regardless of their form - personal need loans or housing loans- but presents a much deeper situation of an economic situation. The COVID-19 pandemic influences in an unpredictable way the budgets of many Romanians and, implicitly, the entire Romanian economic landscape. The situation presented is not yet so visible, because it does not analyse a longer

period in which the imbalance is clear. We intend to continue the study for the next months after those specified.

## **A modern version of the karst map of Romania**

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The karst map of Romania is the most complex and detailed inventory of the rock surfaces on/within which the karst landforms have developed, encompassing most of the information that has been achieved so far. The karst and pseudokarst of Romania constitute the area of karstological and speleological interest and cover a surface of 6745.53 km<sup>2</sup> (2.83% of the national territory).

The main criterion involved the separation of lithological types of karst, which overall cover 6594.50 km<sup>2</sup> (2.77%), as it follows: carbonate rocks (limestone, dolomite, marly limestone, chalk, tufa, travertine, marble, carbonate skarns) – 5183.17 km<sup>2</sup>; siliciclastic rocks with carbonate cement (sandstones and conglomerates) – 1149.29 km<sup>2</sup>; and evaporitic rocks (salt, gypsum, anhydrite) – 262.04 km<sup>2</sup>. Pseudokarstic rocks cover ~151 km<sup>2</sup> (0.06%) and consist in: siliciclastic rocks (sandstones and conglomerates) – 29.70 km<sup>2</sup>; volcanic and pyroclastic rocks – 70.24 km<sup>2</sup>; metamorphic rocks (schists, quartzites, gneiss) – 51.09 km<sup>2</sup>.

Some data on the Romanian karst resumes as it follows: a) the total number of explored caves is ~10,500; b) the largest continuous karst area is 694 km<sup>2</sup> in the Reșița-Moldova Nouă synclitorium (Aninei and Locvei mountains, SW Romania); c) Vântului Cave in the Pădurea Craiului Mountains is the most developed cave (~50 km); d) The Grind Pit (Avenul de sub Vârful Grind) in the Pietra Craiului Massif is the deepest cavern (-769 m); e) the longest groundwater drainage (23.6 km) is located in the Godeanu and Cernei mountains (western South Carpathians).

The total area of karstifiable rocks comprised within various protected areas is 3347.42 km<sup>2</sup> (50.76%). A number of 132 caves (1.25% of the total) were individually designated as protected natural areas.

## **Monitoring the outcomes of restoration projects along the**

**Lower Danube River by satellite imagery**

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The last three decades, the Lower Danube River (in Romania) was the subject of several large-scale river restoration projects with lateral reconnection objectives. In practice, only small-scale projects were implemented to extend the floodplain and deltaic wetlands by opening levees or reshaping channels. We analyse the extension of these newly created surface-water patches by using the Normalized Difference Water Index on Landsat satellite imagery. For example, the Babina island in the Danube Delta, which was previously drained and embanked for agriculture, was restored by opening levees in 1994. In the first decade post-restoration, the area of surface-water patches increased, while the area of wetland patches registered no change. The hydroperiod is generally seasonal and corresponds to the high-water levels of the Danube in spring and early summer. In the second decade since the restoration, the increasing impact on the surface-water area was no longer statistically detected. Another example is the Gerai marsh, located south-west of the confluence with the Olt, previously drained for agriculture, and restored in 2011 by the construction of three dams on the drainage canals in order to retain water in the area and of a new canal aiming to supply the pond with freshwater. According to our methodology, no changes were detected in the area of surface-water and wetlands after the restoration. We conclude that the restoration of the Lower Danube River requires a new strategy – efforts to conduct maintenance works of restoration results and new actions at larger scales.

## **Consumers satisfaction analysis of emotional feedback on digital platforms -a way to improve the spa tourist offer in Băile Olănești Resort**

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In the context of the changing society, consumer's demands increased, thus the meeting tourists' expectations becomes the most important task which can both contributes to customer loyalty and increase business success in the hospitality industry. In this respect, the present study aims to identify tourists' emotional feedback regarding tourist services in Băile Olănești national resort, expressed on the Booking.com platform. The research is based on data mining on the Booking.com platform and data processing in the "R" program. The results reveal that most tourists, although they express themselves online, do not venture to tell the truth, remaining to a positive evaluation, while the negative reviews are written under anonymity. The dominant positive feelings belong to the emotional clusters of "Joy", "Surprise", "Trust", and the negative are grouping in "Anger", "Disgust", "Fear",



"Sadness". Hotels staff or owners still strive to respond individually to online tourists' feedback mainly to try trying to defend their business when they meet negative reactions, while they do not respond to positive feedback or just use a few words, such as "thank you". Therefore, this kind of tourist satisfaction feedback does not work justly for parties involved. There is certainly a tendency to not keep the sincerity in tourist reviews, probably for psycho-social reasons and for the hospitality staff a lack of professionalism in communication, which does not use emotional feedback to improve its offer which means an unsustainable approach from the business domain.

### **Protected areas in Romania – management plan coverage and efficiency**

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The management of protected areas in Romania is trying to ensure the fulfilment of ambitious conservation goals, while the country is still searching for ways to navigate economic, social and economic challenges. There are different categories of protected areas, each with specific characteristics, needs and requirements. Many organizations have important related tasks, the Romanian National Agency for Protected Areas (ANANP) being the dedicated institution for the management of protected areas. Extremely useful and also a legal requirement for the management of protected areas is the management plan. IUCN defines a management plan as a document which sets out the management approach and goals, together with a framework for decision making, to apply in the protected area over a given period of time. The jurisdiction over the protected areas territories is shared between multiple public and private shareholders, making decision making and management more difficult. Our objective was to identify the main problems, to evaluate their amplitude and to propose solutions. While on paper the management of protected areas is fully functional and complete, we have found in reality there are many gaps that need addressing, such as not enough local representatives of ANANP, lack of management plans, insufficient resources, conflicting prerogatives and competences between conservation organizations. Using statistical and spatial data, we have performed an analysis at national level, but also on study cases representing counties with diverse types of protected areas and related issues. We have found there are 1574 protected areas in Romania (including UNESCO biosphere reserves, Ramsar sites, Natura 2000 sites, UNESCO-designated world heritage sites and national protected areas) and only 833 protected

areas have a management plan. The existing management plans do not always provide adequate information, but there are initiatives in progress to cover this problem.

**Education for Sustainable Development (ESD) and school  
geography –  
different approaches on the example of Hungary and England**

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The ecological footprint of excessive economic growth has brought to the surface a whole network of global problems. The global challenges of the 21st century present our societies with challenges that, on their own, but together, seem particularly insurmountable. Along with the increasingly spectacular challenges, the concept of Education for Sustainable Development (ESD) was born, which integrates sustainable development (SD) issues into teaching and learning, with a strong emphasis on the application of active school paradigms. Agenda 21, published by the United Nations, was the first international document to state the role of education in the SD. The latest UN support program for SD, Agenda 2030, was released in 2015.

The subject of geography can be a frontrunner in the school implementation of the spreading ESD, and ESD can give reason to the existence of geography in school. Geography acts as a bridge that integrates the natural, social, and economic sciences' laws and achieved results, and interprets their dimensions in space, in the short and long term. Furthermore, geography can provide students with a new way of thinking. That, in addition to the two temporal dimensions that already exist in school, the past and the present, elevates the dimension of the future into learning. The Lucerne Declaration (Geography Teaching for Sustainable Development) issued by the International Geographical Union states the role of the subject of geography. The presentation aims to examine the subject-specificities of education and geography in two countries with different circumstances, Hungary and England, and the interpretations of ESD in school geography with a comparative analysis. To this end, it uses curriculum mapping as its main method, giving an idea of what the curriculum paints about the issue of sustainability among different endowments and opportunities.

**Methodological Issues for a Visible Learning**

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The year 2020 has brought an unprecedented challenge to the Romanian school so far: the rapid transfer of the teaching act from the classroom to the online environment. In these circumstances, teachers have had to radically restructure their teaching strategies, adapt content to new technologies, and identify solutions for motivating and actively involving students in this process. That means to move closer to the concept of visible learning, when teachers get to learn from and about their own teaching, and students become their own teachers, demonstrating self-regulation capabilities.

An adaptation of the online learning system involves restructuring of initial planning with significant interventions in the content taught and assessed, reconsidering of learning resources and even new types of interactions between teachers and pupils. The methodological approach used in this study was designed to support geography teachers in order to identify and remedy the insufficiently structured skills in the school year 2019-2020 and to recover the content taught partly or insufficiently assimilated by pupils in the period March-June 2020.

The proposed methodological issues follow the basic steps of remedial teaching: identifying the problem to be solved (milestones and tasks for initial assessment together with recommendations for interpreting pupils' responses) to quantify the degree of structuring of competences in the previous year; examples of building bridges between content in consecutive classes for the resumption of key concepts; examples of restructuring skills materialized in learning activities. To support the integration of digital tools and resources in teaching/learning, design models for online activities have been developed. Special attention was given to pupils at risk (due to lack of technical resources), through suggestions for individual activities remotely guided by the teacher.

All these elements of teaching intervention have a unique purpose: to ensure a visible learning of geography during online learning period, and their pedagogical efficiency can be assessed even at the end of the first semester of this school year.

### **Economic integration of lavender farms: policy lessons and knowledge exchange for achieving local development**

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Lavender farms are a relatively recent endeavour for Romania, with the plant having therapeutic properties and being used in the cosmetic and

food industry. The aim of the study is to evaluate the perception of decision-making actors and farmers about lavender farms in Romania and integrating this culture in the local economy, aiming thus at ensuring its development. The objectives of the study included: evaluating the perception of decision making actors about growing lavender farms in Romania; evaluating farmers' perception about the challenges they are confronted with when trying to increase and enlarge lavender farms; effects that lavender farms have already had on the local economy. The research methodology included direct field observations, GIS techniques, and the inquiry method. The results of the study showed that the small local farmers are interested in cultivating lavender because the profits obtained from growing this plant are relatively high compared with the investment costs needed for starting the farms. Moreover, lavender farms are suitable for farmers that do not have very extensive plots of land, and they are a very profitable way of capitalizing from the semi-subsistence and subsistence farms, specific in the Romanian agricultural landscape where plots are heavily fragmented, give an often unsatisfactory yield, and even more, are in danger of being abandoned. In conclusion, the development of competitive and performant agriculture among the Romanian lavender farmers requires further research, restructuring, and investments, as well as suitable policies for connecting the agricultural sector with other economic sectors. As such the most important role belongs to the agricultural decision-making actors, to whom farmers have already presented their requests: simplifying the procedures for accessing EU funding; increasing financing overall; supporting farmers in writing financing programs for starting lavender farms or developing processing units; facilitating farmers' access to the sales market.

## **Nitrogen Dioxide (NO<sub>2</sub>) Pollution Monitoring over Europe during the COVID-19 lockdown, based on Sentinel-5P Satellite**

### **Imagery**

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Nitrogen dioxide NO<sub>2</sub> is one of the main air quality pollutants of concern in many urban and industrial areas worldwide, and particularly in European region, where almost 20 countries exceeded in 2017 the NO<sub>2</sub> annual limit values imposed by European Commission Directive 2008/50/EC (EEA, 2019). NO<sub>2</sub> pollution monitoring and regulation is a necessary task to help decision makers to search for a sustainable solution for environmental quality and population health status improvement. In this study, we propose a comparative analysis of the tropospheric NO<sub>2</sub> column spatial configuration

over Europe between similar periods from 2019 and 2020, based on ESA Copernicus Sentinel-5P products. The results highlight the NO<sub>2</sub> pollution dynamics over the abrupt transition from a normal condition situation to the COVID-19 outbreak context, characterized by short-time decrease of traffic intensities and industrial activities, revealing remarkable tropospheric NO<sub>2</sub> column number density decreases even of 85% in some of the European big cities. The validation approach of the satellite derived data, based on cross-correlation analysis with independent data from ground-based observations, provided encouraging values of the correlation coefficients ( $R_2$ ), ranging between 0.5 and 0.75 in different locations. The remarkable decrease of the NO<sub>2</sub> pollution over Europe during the COVID-19 lockdown is highlighted by S-5P products, being confirmed by the Industrial Production Index and air traffic volumes.

## **Business Processes and Occupational Profiles challenges for Tomorrow's Geospatial Industry Workforce**

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This lecture will present an innovative method for deriving curricula for tomorrow's workforce in the geospatial sector, considering the market requirements through modelling business processes, deriving and analysing occupational profiles. The idea behind this approach reveals business processes models described by workflows of tasks that workforce needs to master in their daily work. In addition, business processes show who is involved in projects and needs to communicate with one another, and how the information is interrelated in order to obtain an output. Serving a variety of occupational profiles leads to a variety of curricula that will cover vocational training, re-skilling of existing workforce and academic education. The methodology for identifying the major business processes uses Business Process Modelling and Notation as for documenting the details of how a process operates as a visual representation of a work that shows who are the actors involved in the process, their interactions and the data flow of business process from task to task. A complex analysis of the whole range of business processes models was made by applying several criteria of similarities and differences, which set up the difference between the workflows, type of activities and occupational profiles related to them.

## **Application of Remote Sensing techniques on iron oxide detection in the former sulphur mining site of Căliman Mountains, Romania**

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Oxidation is a process that usually arises in former mining sites, causing environment degradation such as pollution, rock alteration and soil erosion. In Căliman Mountains mining activities took place between 1969 and 1997. At its peak activity, the mine employed 8000 people working, over an area of 4.79 square kilometres, in 80s and 90s. After 1997, when it was closed, the mining area most probably presented an increase in iron oxide accumulation over the years. Based on a series of geological indices derived from multispectral satellite imagery this study aims to analyse the level of iron oxidation of the soil within the area of the former sulphur mine in the Căliman Mountains starting from 1990 until present. Derived indices These indices are: Iron Oxide (IO), Ferrous Minerals (FM) and Normalized Difference Vegetation Index (NDVI). IO reveals the level of oxidation of a certain surface based on Red and Blue bands, FM is the ratio highlights iron-bearing materials, it uses ratio between the SWIR and the NIR band. An essential corroboration must be made between the presence of vegetation and the values of these geologic indices because less vegetation favors an accumulation of metals over time. The indices are derived from Landsat 5 TM acquired in 1990 and 2006 and Sentinel 2 Imagery from 2020.

From the initial results, the maximum values of the IO increased from x to y while those of FM from a to b within the last 30 years. This increase in values shows a clear accumulation of metals over time, corresponding especially to the absence of vegetation, where the rock is exposed.

## **PROCLIAS – a challenging COST Action: an overview** **Zaharia Liliana, Bîrsan Marius-Victor, Toroimac Gabriela Ioana, Moroşanu Gabriela-Adina**

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COST (Cooperation in Science and Technology) is a European founding organization for the creation of research networks, called COST Actions. These networks offer the framework for collaboration among scientists across Europe (and beyond) favouring the research advancements and innovation. A COST Action is organized through a range of networking

tools which are performed for the purpose of supporting the achievement of the objectives set out in each Action's Memorandum of Understanding.

This work presents an overview on the recently founded COST Action entitled "Process-based models for climate impact attribution across sectors" (PROCLIAS), where researchers from the University of Bucharest, the Romanian National Meteorological Administration (Meteo Romania) and the Institute of Geography of the Romanian Academy are involved as members of the Management Committee (MC) on behalf of Romania, along with members from other 30 countries, mostly from Europe.

According to its Memorandum of Understanding, the general purpose of PROCLIAS is to develop common protocols, harmonized datasets and a joint understanding of how to conduct cross-sectoral, multi-model climate impact studies at regional and global scales. It is intended that the action focuses on key interactions of climate impacts across sectors, their accumulated effect, the attribution of impacts to climate change and the quantification of uncertainties. The major operational objectives of the PROCLIAS Action are: to train young researchers to conduct and analyse multi-model simulations in a cross-sectoral way; to support a common platform for collecting impact model simulations and methods for analysing them and to disseminate the data, code and results to scientists and to stakeholders.

The COST Action PROCLIAS started on October 2020 when the first MC meeting took place, and it will be running for 4 years. A national network of researchers in the field of the action topic was established, including members from seven academic and research institutions.

## **Assessment of morphometric characteristics of river network within the Oltenia Plain using GIS techniques**

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GIS (Geographic Information System) techniques are useful tools for morphometric analysis, allowing high accuracy of mapping and measurement. This study aims to analyse the drainage network in linear (vectorial) form in Oltenia Plain (located in the in the western part of Romanian Plain), by overlaying in GIS environment, databases from two periods 2003 and 2017 (data source Jiu River Basin Administration) in order to identify the changes/differences appeared over time in the drainage network (length characteristics). This specific two periods were selected because in 2003 was the pre-accession of Romania to the European Union, time when where made

the first Drafts of the Management Plan at the level of hydrographic basin and in 2017 an update of the drainage network generated with geospatial techniques was made according to the new European INSPIRE Directive, this work started since 2015 and is a support for the re-editing of the Water Cadastre made by the National Institute of Hydrology and Water Management. Due to the raster and vector used database, the analysis will be performed within the boundaries of Jiu river basin.

The layer's used in GIS to analyse the length of the drainage network are the following:- the first version of the hydrographic network used in the first River Basin Management Plan (Vector - Line)- 2003; the last transmitted version of the drainage network according to Inspire Directive (Vector - Line) - 2017. The databases in GIS environment is accessed from the Jiu Water Basin Administration.

The study will highlight whether or not there are significant differences in the spatial shape of the drainage network.