

ABSTRACTS

OF Dr. BOIAN KOULOV'S PUBLICATIONS

submitted within the procedure for participation in the competition for the academic position of "**professor**" in a professional field 4.4. Earth Sciences, scientific specialty "Economic and Social Geography", announced in SG, issue 93 / 30.10.2020, p. 35, for the needs of the Department of Geography

B3.1 Koulov, B. (2020) Europe's Core-Periphery Relations and Horizontal Disparities (Отношенията „ядро–периферия“ и хоризонталните неравенства в Европа). Национално издателство за образование и наука „Аз-буки“ към МОН. ISBN 9876197065305. ISSN 9876197065312.

Abstract

This research studies the „horizontal“, i.e., regional, disparities in the standard of living in Europe, in view of the risks they may pose to its cohesion and social stability. A secondary goal is to devise a tool for designing efficient policies, which will support a more socially acceptable geospatial balance. To pursue the above goals, the investigation has to address several tasks: First, to apply a holistic approach to the European socio-economic geospace, as far as both its core and periphery are responsible for its cohesion. The second task is to identify, locate, map, classify, and analyze the elements, geospatial structures and boundaries, and their dynamics, which result in the transformations at all relevant scales during the 2007-2017 period. Third, the study has to reveal any newly formed structures, patterns of geographic distribution, classify them, according to their socio-economic status, and identify tendencies, that would produce new understanding and support the prognostication of the directions of the geospatial transformations on the European continent. Finally, it has to produce the latest available information on the horizontal disparities in Europe and examine their origin, magnitude, and tendencies of development, which are of interest, not only to scientists, but also policy makers and planning practitioners and, especially the public. Additionally, drawing attention to the some of the factors of peripheralization, of the origin of areas with specific geographic characteristics would facilitate evidence-based conclusions about policies and instruments to confront and ameliorate them.

This investigation applies the systems approach and uses Eurostat's Nomenclature of Territorial Units (NUTS, 2016) to model the European socio-economic space, as a hierarchical geospatial system. GIS-aided comparative and historical analyses of the Core and the Periphery subsystems identifies their geographic locations, elements, boundaries, geospatial structure, and dynamics

at each scale from pan-European through NUTS 0 to NUTS 3 during the 2007 - 2017 period. The NUTS 0 (country) and NUTS 2 regions -scales of investigation receive special attention, since they are of greater interest to policy makers and planners. The NUTS 3 scale analyses, on the other hand, provide the most detailed information about the level of cohesion and regional policy efficiency, which is of utmost importance to the public.

Most valuable in this respect should prove the analyses, assessments, and forecasts, which outline the geospatial directions of the ongoing socio-economic changes in Europe. The magnitude of the horizontal disparities, as well as their dynamics, are estimated by using a 'disparity ratio' indicator, which measures the differences between the 'top' and 'bottom' geospatial elements within the Core, the Periphery, as well as between them, in a historical perspective. The classification of regions takes place on the basis of Eurostat-provided regional data for their standard of living, measured as the GDP per inhabitant (PPS) in percent of EU-28 average (Eurostat 2019b). In this respect, the work concludes that a lack of the necessary and sufficient recognition of the crucial importance of regional data collection and provision in general exists in a number of countries, as well as at EU level.

Two geospatial processes, opposite in direction, are observed within the highly dynamic structure of the European Socio-Economic System: advancement, by acquisition of new elements and withdrawal, expressed in 'losing' countries and regions to the other subsystem. These processes, caused by the variations in the regions' standard of living, are indicative of the general socio-economic status of System. In addition, they provide evidence for prognostication of the Core–Periphery relations, potential magnitude, and directions of the geospatial transformations on the European continent.

The investigation findings show that, during the 2007-2017 study period, the Core retreats, geospatially, in size, mostly in the Southern and, to a lesser extent, in the Western part of the continent. Nevertheless, it remains 'anchored' in Northwestern Europe at all scales. The Core structure includes a geospatial 'nucleus' – a group of contiguous countries, in which the majority of regions qualify as Core elements at all four NUTS scales. Like the Core itself, its nucleus also retreats geospatially during the study period. In 2017, seven countries have been identified as making up the nucleus and contributing the most to the socio-economic status and stability of the European Socio-Economic System: Luxemburg, Norway, Sweden, Denmark, Netherlands, Austria, and Germany.

Most European regions form a second structural element of the Core: a geospatial 'band', situated just outside the nucleus. At the same time, the Core nucleus contains a 'Super Core' category of regions, characterized, in 2017, by GDP (PPS) per individual between the 125 percent and 1 311 percent of the EU-28 average. This work considers the group of regions above, as a significant potential source for positive geospatial change: reduction of the horizontal socio-economic disparities in the Europe. In the European Union only, fifteen percent of the 1348 NUTS 3 regions fit in this Core category, which also determine potential locations for growth

outsourcing. Germany proves to be the largest contributor to the Core's structure and Austria also positively affects its balance of regions. Poland (2016) is the only state that joined the EU after 2007, which has added other regions (four), besides its capital, to the Core. Thereby, this state is on its way to become another geospatial 'pillar' of Europe's Core, especially in Central and Eastern Europe.

As a result of the prevalent decrease in the living standards particularly in Western Europe, in some cases well below the EU-28 average, three countries from Europe's South - Cyprus, Spain, and Italy – have 'left' the Core. Moreover, at the NUTS 1 scale, some of the largest economies and societies in Europe – United Kingdom, France, and Spain - after 'losses' of Core elements of their own, continue to participate in its structure with only two regions each. United Kingdom and France probably best demonstrate the geospatial process, which has been typical for the Core: continuous concentration of the standard of living growth in fewer regions. The negative social and geopolitical consequences of this geospatial process are momentous and their lessons should be carefully considered.

An opposite process of geospatial expansion prevails in the Periphery between 2007 and 2017, despite the growing standard of living in the European Union. At the politically most important NUTS 0 scale, the European Socio-Economic Periphery encompasses nineteen countries. Most of them are situated in Eastern Europe, while some - Portugal, Malta, and Greece – reside in the Southern part of the continent. At the beginning of the study period in particular, the majority of the Periphery elements, have been situated to the East of the European Core, where they form a new specific geographic pattern – a North-South –oriented zone - separating Western Europe from its Easternmost parts and the Near/Middle East. The Periphery expansion is hereby forecasted to continue in the Eastern/Southeastern direction.

The geospatial advance of the European Socio-Economic Periphery indicates that, between 2007 and 2017, the number of regions in Europe that offer below EU-28 average standard of living conditions, has increased. During the period of the investigation, three macro-regions, each with specific characteristics of its own, result from the geospatial transformations within the European Socio-Economic Periphery Subsystem. In the West European macro-region, the majority of the countries and regions from the Periphery fall into the Upper Periphery category. The Eastern European regions, which make up the second macro-region of the Periphery, fall in the Middle Periphery category at all scales throughout the study period. However, all countries, and, generally, the regions at all scales in Eastern Europe, which are adjacent to the Socio-Economic Core, exhibit significant socio-economic growth. This achievement should be interpreted as a success story of EU Cohesion policy.

Southeastern Europe, the third macro-region, houses the states, in which Deep Periphery regions prevail on at least one scale. In 2007, this category of regions has completely dominated all scales in seven states: Romania, Bulgaria, Serbia, Montenegro, North Macedonia, Albania, and Turkey. By 2017, however, all of the Deep Periphery regions, except for Serbia (data since 2012), have

improved their standard of living, in some instances, significantly. The Deep Periphery category of regions forms a special zone at the European Union's politically-sensitive eastern and southeastern borders (with Russia, Ukraine, Belarus, Moldova, and Turkey). Its geopolitical significance closely ties regional development and territorial planning to EU security, and neighborhood policies. This research forecasts a stable future for the Deep Periphery category, especially in the Southeastern Europe Macro-region, due to the significant 'reservoir' of regions, first, among the geospatial elements at NUTS 2 scale, which presently barely pass 25 percent of the GDP per inhabitant (PPS) of EU average - the threshold that qualifies them for the category. Second, in 2017, certain number of regions in Europe still have a standard of living which does not meet the threshold above. The increase of the standard of living during the study period has diminished their number considerably, but some of them, situated exclusively in the Southeastern Macro-Region, are still observed, albeit at the NUTS 3 scale only. EU Member State Bulgaria and candidate for EU accession North Macedonia can each still point to two regions in this GDP quartile, as well as Albania, in which half of the NUTS 3 regions do not qualify for European Deep Periphery.

This Europe-wide, multi-scale, and multi-aspect study draws public and specialists' attention to the 'Deep Periphery' areas and adds to the knowledge of their origin and characteristics. On the basis of the case study of Bulgaria, it suggests and tests a method for their identification. The prognostication of areas, which exhibit the highest development needs enables better geospatial targeting of regional development policy and, thereby supports national and regional governance, as well as the security of EU external borders. The discussion of the 'overlap of peripheries' effect contributes to the literature on peripheralization. It offers conclusions on core-periphery interactions that specifically concern the magnitude of the geospatial impacts of the European Core, including the influences of capital city regions on the peripheralization of areas with specific geographic characteristics.

The research results at the NUTS 3 scale – which is the closest to the everyday experiences of the Europe's citizens - provide one of the best illustrations of the magnitude of the horizontal disparities between the European Socio-Economic elements, as well as their dynamics. The investigation also pinpoints the centers of socio-economic growth and decline in Europe, the geospatial elements, which 'need' to become regional policy 'targets', and provides information about their patterns of distribution, and potential to create, transfer, and utilize socio-economic opportunities. As a result of the Core-Periphery transformations and, mainly, the relative increase of the average standard of living in the Periphery, the horizontal disparity, between the 'top' and 'bottom' NUTS 3 -scale elements of the European Socio-Economic Geospatial System, is narrower in 2017, compared to 2007: it fell from 90.1 to 72.8. Despite this generally positive tendency, the magnitude of such disparity is hardly rational and poses risks of equal scale to both Europe's cohesion and social stability, which policy makers should not overlook.

Г7.1 Nedkov, S., B. Borisova, B. Koulov, M. Zhiyanski, S. Bratanova-Doncheva, M. Nikolova, J. Krumova. Towards Integrated Mapping and Assessment of Ecosystems and their Services in Bulgaria: The Central Balkan Case Study. *One Ecosystem*, 2018, doi: 10.3897/oneeco.3.e25428. – Scopus.

Abstract

The aim of the EU Biodiversity Strategy 2020 is to maintain and enhance ecosystem services (ES) in Europe and requires all Member States to map and assess the state of ecosystems and their services in the respective national territories. The EU-funded project ESMERALDA analyzes ES mapping and assessment methods and approaches in their biophysical, social, and economic perspectives, as well as their application in different case studies. The project also aims at the development of an integrated and consistent assessment framework. In Bulgaria, methodological guides for evaluation and mapping of the services provided by the nine main types of ecosystems have been prepared together with the respective proposals for their implementation in the national assessment. The Bulgarian research team analyses and tests various aspects of ecosystem services mapping and assessment, such as alternative economic assessments, multi-criteria analyses and biophysical assessment approaches, mapping challenges and local population surveys. This paper reviews the ES activities in Bulgaria and present selected mapping and assessment methods tested in the Central Balkan case study area. It provides relevant examples for the implementation of integrated mapping and assessment of ecosystem services at local and regional level, where different mapping approaches and techniques are embedded within diverse policy contexts. The main goal of the study is to investigate how the assessment results can support the integration of the ecological functions of the Central Balkan National Park with the economic opportunities that it creates for the local and regional communities. A tiered approach has been used to organize the mapping and assessment exercises in the study area, in order to meet the needs for integrated ecosystem assessment and overcome the limitations of data availability. At tier 1, the study performs identification and initial ES mapping of the whole area. At tier 2, it applies economic valuation for the Municipality of Karlovo by using statistical data and the contingent valuation method. At tier 3, the investigation applies modelling methods to assess carbon storage and flood regulation on a larger scale. The results are presented in the form of maps at all levels, which use a uniform 0 to 5 assessment scale. The integrated approach presented here ensures a clear communication of the end results to the respective decision-makers.

Г7.2 Koulov, B., E. Ivanova, B. Borisova, A. Assenov, A. Ravnachka. GIS-based Valuation of Ecosystem Services in Mountain Regions: A Case Study of the Karlovo Municipality in Bulgaria. *One Ecosystem*, 2017, doi: 10.3897/oneeco.2.e14062. – Scopus

Abstract

This study aims to apply approaches, methods, and indicators from the conceptual framework of ecosystem services valuation to a real world, local level case study. It tests aGIS-based mapping and valuation of ecosystem services model in a typical mountain municipality in Bulgaria. Investigation results address opportunities, challenges and limitations in the practical application of the ecosystem services concept. They include an integrated assessment of the ecosystem services in a specific administrative territorial unit and suggest its Total Economic Value. The introduction of the term “ecosystem services dysergy” should contribute to valuation theory and practice. The study upgrades the currently available knowledge base that supports geospatial planning and sustainable development of the Karlovo Municipality and offers recommendations for improvement of the municipal ecosystem services utilization, which include identification, analysis, and visualization of hotspots and dysergy areas.

Г7.3 Koulov, B. EU Deep Periphery: A Case Study of Mountain Borderlands in Bulgaria. *Revue Roumaine de Geographie/Romanian Journal of Geography*, 60:1, 2016, 61-72. http://www.rjgeo.ro/atasuri/revue%20roumaine%2060_1/Koulov.pdf - Scopus

Abstract

Geographic research and constant monitoring of EU periphery and its dynamics are necessary to identify and outline priority areas for regional development policy. This work proposes that “deep” periphery areas form where peripheries of a different geographic nature (physical, economic, political) and scale overlap. The investigation applies GIS-aided mapping and comparative scale analysis to the case study of Bulgaria to identify “deep” periphery areas and affirm that they are disproportionally situated in the mountain regions along the EU external borders. These study results suggest special regional development policy attention to such areas, among which adoption of a Mountain Sustainable Development Strategy for all mountains within the EU geographic space, and, in particular, a Southeast European Convention on Sustainable Development of Mountain Regions.

Г7.4 Koulov, B., M. Nikolova, G. Zhelezov. Mountain Development Policies in Bulgaria: Practices and Challenges. Koulov, B. and G. Zhelezov (eds.) *Sustainable Mountain Regions: Challenges and*

Perspectives in Southeastern Europe. Dordrecht: Springer, 2016, 3-16. ISBN:978-3-319-27903-9.
– Scopus, Q4.

Abstract

The main goal of this research is to analyze the regulatory framework and related geographic problems of regional development policies that concern Bulgarian mountains in the post-socialist period. Based on the need to establish and implement a state policy for integrated sustainable governance of mountain regions in this country, the investigation identifies and structures the challenges to regional development policy making.

At the European Union scale, the most important challenge is related to the absence of territorial policy integration and inept regional development priority setting. Mountain areas of South-eastern Europe need to become a special focus of EU policy making, because they make up the most sizeable parts of the Union's "deepest" periphery. In these areas, the overlap of peripheries of different geographic scales and diverse nature (physical geography limitations, depopulation and aging, severely lagging economies, and increasing political insecurity at the external EU borders) additionally intensifies their unfavorable characteristics.

At the state scale, identification of the territorial units eligible for assistance from the hilly belt presents the most socially and politically sensitive challenge for both geographers and regional policy makers. Policy instability, inadequate scale of territorial governance of mountainous regions, and significant deficiencies in territorial policy integration are also among the challenges to sustainable mountain development policies in Bulgaria.

Г7.5 Ivanova E., B. **Koulov**, B. Borisova, A. Assenov, K. Vassilev. GIS-based Valuation of Ecosystem Services in Mountain Regions: A Case Study of the Chepelare Municipality in Bulgaria. *European Journal of Sustainable Development*, 5:4, 2016, 335-346. ISSN: 2239-5938, EISSN 2239-6101, DOI:10.14207/EJSD.2016.V5N4P335, WoS.

Abstract

This study imports the Ecosystem Services concept in the economic valuation of the resources of a typical mountain municipality in Bulgaria. It applies a GIS-based approach and employs a system of methods, which include benefit transfer, market price, and contingent valuation, as well as local survey and statistical data for the following key ecosystem services: timber production, forest/agricultural products, and tourism and recreation. The investigation interprets the CORINE Land Cover (2012) classes as spatial units of identification, analysis, and valuation of selected Ecosystem Services, on which the welfare of local mountain population depends. Its results,

among which is a map of the total economic value of a set of ecosystem services in the Municipality of Chepelare, is intended to support sustainable local governance in mountain regions.

Г7.6 Assenov, A., K. Vassilev, H. Padeshenko, B. **Koulov**, E. Ivanova, B. Borisova. Research of the Biotope Diversity for the Purposes of Economic Valuation of Ecosystem Services in Chepelare Municipality (The Rhodopes Region of Bulgaria). *European Journal of Sustainable Development*, 5:4, 2016. P. 409-420. ISSN:2239-5938 EISSN 2239-6101, DOI:10.14207/EJSD.2016.V5N4P409 - WoS.

Abstract

The application of the philosophy or the management model for sustainable development has two main shortcomings – the condition of the global environment gets worse and the social inequalities deepen. Regardless of the integrity of UN Sustainable Development Goals 2030, the manifestation of the effect of the false demarcation between ecology and development continues. The integrated philosophy for sustainability and development is enriched with new terms, such as natural capital and ecosystem goods and services, while their assessment and evaluation is crucial for the achievement of sustainable development. The habitat, biotope and landscape diversity interpreted in GIS environment through evaluation of ecosystem goods and services in Chepelare Municipality is the main aim of the research, illustrated with maps of the biotopes, habitat types and landscapes. The obtained data through a GIS-based approach for evaluation and assessment of the ecosystem services is of high importance for the well-being of the municipality's population. The results about the economic value of two main ecosystem services – wild fruits and herbs and genetic resources are comparable with results from other similar studies. An attempt is made for harmonization of information from different scales for examination – land cover classes with habitat types, biotopes and landscapes aiming at the precise evaluation of the studied ecosystem goods and services.

Г8.1 Железов Г., **Б. Кулов**. Конвенция за планинските региони в Югоизточна Европа (Балканска конвенция). Проблеми на географията, кн.1-2, 2018. ISSN 0204-7209 (Print). ISSN 2367-6671 (Online). <http://www.geoproblems.eu>.

Abstract

The article observes the problems of the mountain regions in Southeastern Europe. The other aspect of the publication is related with review of the main researches and activities for the

mountain regions in Bulgaria and Southeastern Europe. The two main European conventions for the mountain regions (Alpine and Carpathian) are also presented. Development of the convention for the mountain regions in Southeastern Europe (Balkan convention) is key problem of the study. The experience and results of Alpine and Carpathian conventions can be used for a model in the process of foundation and realization of a convention for the mountain regions in Southeastern Europe.

Г8.2 Koulov, B. Social and Economic Transformations in a Bulgarian Mountain Area: A 1986-2014 Comparative Analysis. Journal of the Bulgarian Geographical Society, v.39, 2018, pp. 73–78. ISSN 0375-5924 (Print), ISSN 2682-986X (Online).
<http://geography.bg/publication/magazines/itemlist/category/47-izvestiya-na-balgarskoto-geografsko-druzhestvo>

Abstract

The goal of this study is to produce a comparative analysis of the socio-economic transformations in a typical mountain administrative district at the NUTS 3 level since the 1989 transition to market economy in Bulgaria. Demographic and economic indicators are utilized to provide a diagnosis of the current state of affairs, but also to highlight tendencies, which are noteworthy for the investigation and administration of districts that belong to both border and mountain peripheries. The main proposition of this paper is that in the post-1989 conditions the Oblast's "double" periphery position is severely impairing its overall development in relation to the rest of the country. The large and widening discrepancies between national and regional demographic and economic indicators point to a pronounced process of marginalization of certain areas, which necessitates the implementation of a specifically targeted development policy.

Г8.3 Кулов, Б., Б. Борисова. Екосистемни услуги: концепция, възможности и ограничения за нейното прилагане в България. Научни трудове на Съюза на учените в България–Пловдив, серия Б. Естествени и хуманитарни науки, т. XVIII, ISSN 1311-9192 (Print), ISSN 2534-9376 (On-line), 2018. <https://usb-plovdiv.org/scientific-works/>;
http://www.subplovdiv.com/images/nauchni_trudove/2018_estestveni_i_humanitarni_nauki_tom_XVIII.pdf

Abstract

The main goal of this study is to offer a theoretical review and critical analysis of the current experience in the development of the concept of ecosystem services (ES) for the conservation

and management of natural resources over the past 20 years in the world, as well as in Bulgaria. The necessity for up-to-date and comprehensive information on the needs of sustainable development is analyzed, emphasizing the interrelationships between constant monitoring, information provision, and evaluation indicators. Conclusions are drawn on increasing the flow of data in the lower geospatial scales, and the scientific support needed to address specific local governance issues, such as public access to ES, their consumption, as well as the pressure exercised on them. The scientific progress is analyzed, in terms of the GIS-supported ES mapping and evaluation processes and the achievements, which imply higher data management, economic, and managerial efficiency. The practice-related scientific results of this study refer to the challenges of the introduction of the respective new terminology in Bulgaria, new evaluation indicators, methods of ES assessment, as well as the opportunities and limitations they present for the practice of sustainable governance.

Г8.4 Недков, С., К. Найденов, М. Николова, Г. Железов, Б. **Кулов**, Б. Борисова. Територия и глобални промени. Железов, Г., Недков, С., К. Найденов, М. Николова, Б. Кулов, Б. Борисова. Географски аспекти на планирането и използването на територията в условията на глобални промени. Сборник доклади, Вършец, 2016. стр.10-15. ISBN 978-619-90446-1-2, <http://geography.bg/news/nkmu/itemlist/category/48-dokladi>

Abstract

This introductory chapter aims to present the scientific achievements of the geographical community of Bulgaria in the field of global environmental change, which have been achieved over the last few decades. The main driving force of global change is human society in view of the decisions it takes in the process of its interaction with the natural environment. This interaction has its natural expression in the process of territorial management. The beginning of these changes can be traced back to the 1950s, but they have become more noticeable in the last three decades. Global changes include long-term changes in social and natural systems, such as climate change, changes in land use and land cover, urbanization, changes in the global economy, including energy production, migration, changes in environmental management policy and more. Global changes are complex and simultaneous in nature and have an impact at the regional level. For these reasons, knowledge of the processes that change the living environment is an important task facing scientists from various fields of knowledge, including the geographical scientific community. The materials presented demonstrate that the Bulgarian geographical community is working on the most current aspects in the respective areas. The results of the research offer concrete solutions and innovative approaches for territorial management, in the conditions of ongoing geopolitical, economic, informational, technological, demographic, ecological, climate dynamism. The wide application of interdisciplinary approaches in the

presented research undoubtedly emphasizes the significant advantages of geographical research in this field, as well as its practical importance for the territorial and land use planning. The participation of many young scientists and PhD students further emphasizes the promise of these studies.

Г8.5 Koulov, B. Geographic Perspectives on Technological Hazards and their Mitigation. Проблеми на географията, 4, 2014, 43-63. 0204-7209, <http://www.geoproblems.eu>.

Abstract

Deficiencies are identified in the new regulations on the conditions, organization, and methods for analysis, assessment, and mapping of disaster risks that have been recently introduced in Bulgaria. This leads to the conclusion that hazard sources research receives insufficient attention by policy makers. This investigation aims to demonstrate the potential of the geographic perspective on technological hazards to contribute to the theory and practice of hazards mitigation. To this end, the paper defines the term “technological hazard” from a geographer’s point of view and points to aspects in which geographic expertise plays a crucial part. Second, it provides a critical review of specific techno-hazards’ typologies and provides suggestions for further investigation in that field. The investigation proposes a classification of ten municipalities, according to their hazard source(s) characteristics and degrees of risk. Finally, this research puts forward basic principles of a theoretical model of a Hazard Mitigation GIS and propose its elements, structure, and most important functions. The paper uses data and materials from extensive field work at the local level (2012–2013) in the Northwestern Bulgaria. Research methods include critical geographic analysis and assessment of Bulgarian, EU, U.S. Nuclear Regulatory Commission, and International Atomic Energy Agency (IAEA) regulations, regional and municipality-level administrative documentation and databases, as well as geographic typology, classification, and modeling. Nuclear power production, one of the best internationally regulated industries, serves as a methodological example in dealing with other hazard sources.

Г8.6 Koulov, B. Mountains between Sustainability and Development: Managing Sustainable Development in Mountain Areas. Ankara University Journal of Environmental Sciences, 5:1, 2013, e-ISSN 2146-1562, DOI:10.1501/Csaum_0000000076, 87-93.

Abstract

The goal of this investigation is to examine sustainable development management in mountain areas. On the basis of the author’s field research in the Western Rhodope Mountains of Bulgaria,

this work examines the assertion that sustainable development policies are most effective when they address all salient natural and anthropogenic elements on which sustainability of the managed system depends. The research applies the system's approach to the understanding of the sustainable development concept and employs a geographic system model to reveal the guiding principles of sustainable management in mountain areas. It analyzes the necessary elements that make sustainable development possible and concludes that political and cultural aspects are paramount to understanding of the sustainable development concept. The research examines the specific dynamics of mountains' natural and anthropogenic characteristics and introduces the term "overlap of peripheries" to better explain the genesis of peripherization in the mountain areas of Southeastern Europe. It concludes that inclusion of all elements on which sustainability depends, as well as their integrated management are guiding principles of sustainable administration. Mountains can be managed sustainably only at the "whole mountain" scale and within the boundaries of the entire geographic system.

†8.7 Balteanu, D., D. Dogaru, G. Zhelezov, B. **Koulov**. Geographic Characteristics of the Region Calafat-Vidin – Turnu Magurele-Nikopol. Zhelezov, G. (ed.) Hazard Assessment and Mitigation in the Danube Floodplain Calafat-Vidin – Turnu Magurele-Nikopol Sector. Sofia: TerArt, 2013, 11-23; Balteanu, D., M. Sima (eds.) Hazard Assessment and Mitigation in the Danube Floodplain Calafat-Vidin – Turnu Magurele-Nikopol Sector. Craiova: Universitaria, 2013, 13-20. ISBN 978-606-14-0779-8.

Abstract

The purpose of this research is to analyze the geographical context of the section of the Bulgarian-Romanian cross-border region, situated between the towns of Vidin and Nikopol in Bulgaria and, respectively, Calafat and Turnu Magurele in Romania. The Romanian Academy -led project, funded by the EU Cross-Border Cooperation Program under the European Fund for Regional Development and the Governments of Romania and Bulgaria, aims to assess the natural and technological risks, prevalent in this part of the Danubean Plain, and offer measures for their prevention. The geo-spatial characteristics of this Danube region support the setting up of the theoretical background for addressing the most probable natural and technological hazards and risks that threaten the population and economy, as well as the structuring of a database for the purposes of mapping and assessment of the region in a GIS environment. The description, analysis and assessment of the natural and social elements of the region and the hazards that characterize it, include the features of the relief, climate characteristics, surface and groundwater, biodiversity, soil qualities, characteristic landscapes and their zoning, protected areas, settlement network, density and dynamics of the population, as well as economic-geographical and social aspects and changes in the period since the beginning of the transition

from centrally planned to “market” economy. The investigation emphasizes that the region on both sides of the Danube belongs to a territory with special geographic characteristics that necessitate application of respective development policies.

Г8.8 Кулов, Б. Инфраструктура за гео-пространствени данни (ИГД): терминология, проблеми, добри практики. Под ред. на: Николов, Т., Ст. Дерменджиева, Н. Димов, Г. Железов, М. Николова, Б. Кулов, Д. Владев, М. Пенерлиев, С. Станкова, F. Martins, H. Pina. Географски науки и образование, Сборник, Международна конференция, Университетско издателство „Епископ Константин Преславски, Шумен, 2012, 183-7. ISBN 978-954-577-653-3.

Abstract

Geo-spatial data infrastructures facilitate access, sharing, and exchange of data and data-based products and services, which makes them a valuable management tool in almost all spheres of public life. Infrastructures' effectiveness determines their rapid development from the early 1990s onwards at all territorial levels - from global to local. Critical analysis of the most commonly used terminology and definitions of the term "(geo-)spatial data infrastructure" and the implementation of the systems approach allows for the formulation of a new definition of the term and for consideration of this type of infrastructure as an integral part of a "geo-spatial information system." From a systems approach point of view, the design and construction of geo-spatial data infrastructures must necessarily be executed on the basis of a model of the respective system.

Г8.9 Borisova, B., B. **Koulov**. Environmental Policy Integration for Sustainable Regional Development. Младенов, Ч., М. Николова, Р. Вацева, Б. Кулов, И. Копралев, М. Върбанов, М. Илиева (ред.) География и регионално развитие. Сборник от международна конференция, София: БАН, 2010, 61-66. ISBN: 978-954-9649-07-9.

Abstract

The substantial deepening of European Union (EU) integration and its continuing spatial expansion have forced policy-makers to look for new approaches to manage conflicts that span different policy sectors and incorporate environmental and territorial/regional policies across sectors and regions. The attempts at integration of territorial/regional and environmental policy objectives in sectoral policy-making have produced newly emerging policy fields, like territorial policy integration (TPI) and environmental policy integration (EPI). This paper reviews selected

literature and analyzes the innovative approaches and some instruments used within these fields. It also presents preliminary conclusions on their applicability in a concrete political-administrative region – the recent EU Member state of Bulgaria.

Г8.10 Недков, С., А. Коцев, М. Николова, А. Попов, С. Димитров, Б. **Кулов**. Разработване на ГИС база данни за оценка и управление на риска от опасни природни явления за археологическите обекти в България. Младенов, Ч., М. Николова, Р. Вацева, Б. Кулов, И. Копралев, М. Върбанов, М. Илиева (ред.) География и регионално развитие. Сборник от международна конференция, София: БАН, 2010, 385-95. ISBN: 978-954-9649-07-9.

Abstract

Geospatial research and risk assessment of natural disasters in areas with high concentration of significant archaeological sites requires an interdisciplinary approach, combining methods from different scientific fields - geographers, archeology, geography, geomorphology, hydrology, climatology, statistics, engineering and others. A wide range of spatial and temporal data is needed to analyze and assess the risk of natural disasters. GIS and other geoinformation technologies provide very good opportunities for transforming the original spatial information depending on the set research goals. The main purpose of this paper is to present some of the results achieved in the implementation of a research project which aims to assess the risk of dangerous natural phenomena in areas with a concentration of significant archaeological sites from a geospatial point of view.

Г8.11 Vatsseva, R., B. **Koulov**. Land Use/Cover Changes and Sustainability of Tourism Development in the Bulgarian Black Sea Coastal Zone. Car, A., G. Griesebner, J. Strobl (eds.) Geospatial Crossroads @ GI_Forum '10. Proceedings of the Geoinformatics Forum Salzburg. Berlin and Offenbach: Wichmann, 2010, ISBN 978-3879074969, 215-218.

Abstract

The land use/cover pattern of the Black Sea coastal zone in Bulgaria has undergone a significant change over the past years, as a result of the rapid built up of the region mainly related to tourism development. This study aims to analyze spatio-temporal land use/cover changes (LUCC) and the sustainability of tourism development in the Bulgarian Black Sea coastal zone for the period 1990-2006. An integrated approach of GIS, remote sensing and spatial analysis tools were applied to detect and analyze the LUCC. The focus is placed on two aspects: detection of land use/cover change at municipality level and assessment of the impacts of tourism development on LUCC in

the coastal zone. Land use/cover data were interpreted from satellite imagery in GIS environment. The remotely sensed data used includes multispectral images from Landsat TM, Landsat ETM+, IRS-P6, SPOT 4 and SPOT 5 acquired in 1990, 2000 and 2006. Results indicate that a substantial urban area has been extended during 1990-2006, along with the shrinking of arable land and woodland. The observed types of change identified in the study were urban expansion or densification. Besides, the results provide an estimate of the extent, pattern and direction of land cover dynamics in the study area. The tourism development impact analysis helps to explain changes in terms of land use, sustainability and in the way in which coastal resources are affected.

Г8.12 Кулов, Б. Защитени територии, рекреация и управление на горите в САЩ: проблеми и решения. Борисова, Б., Б. Кулов, Г. Бърдаров, К. Найденов, С. Димитров, С. Недков. (ред.) География и регионално развитие. Фондация "ЛОПС", 2020. ISBN:978-619-91670, 81-89.

Abstract

The article reviews US forest resources, their use, conservation, and territorial management in relation to the development of recreational and other activities. The influence of the forms of ownership on the ways of using the forest areas is analyzed. The impact of the nature and environmental protection movements and NGOs for establishing the principles of integrated use and sustainable development of natural resources is explicitly emphasized. Evidence is provided for the importance of functional geographical zoning for the long-term and effective management of resources for public benefit.

06.12.2020

Подпис:

Б. Кулов

