4th Euro-Mediterranean Conference & Exhibition

"VISIONING MED 2020+ / Mediterranean in Transition:
Preserving the Past – Preparing for the Future"

BOOK OF ABSTRACTS

Under the auspices of:

National Technical University of Athens,
School of Rural and Surveying Engineering,
Dept. of Geography and Regional Planning

MINISTRY OF ENVIRONMENT & ENERGY

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www.smartbluecity.com

https://ec.europa.eu/info/events/visioning-med-2020-mediterranean-transition-2020-oct-09_en

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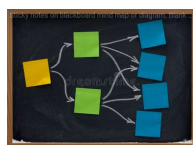
Results of questionnaire purposely circulated by the Organizing Committee to participants and members of the Scientific Committee of the Conference.

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Members of the Panel (in alphabetical order)	
Bakogiannis Efthymios (F2F)	Urban/Transport Planner, Assist. Professor NTUA, General Secretary of Spatial Planning and Urban Environment, Ministry of Environment and Energy, Greece **Urban Development / Academia & Policy Maker**
Bekiaris Evangelos (F2F or Online - tbc)	Director of Hellenic Institute of Transport (HIT), Director of Centre for Research and Technology Hellas (CERTH), Greek Representative Horizon2020 Programme Committee "Smart, green and integrated transport", President of the European Conference of Transport Research Institutes (ECTRI), President of the European Rail Research Network of Excellence (EURNEX), Greece **Mobility / Research Community**
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Lamprogiorgos Nikolaos (F2F or Online - tbc)	Senior Account Manager, Public Sector, CISCO Hellas, Greece **ICTs / Industry**
Potsiou Chryssi (Online)	Professor NTUA, UNECE Committee on Urban Development, Housing and Land Management (CUDHLM), Working Party on Land Administration, Greece **Urban Development / Academia**
Termont Daniël (Online)	Member of the EU Mission Board on Climate-Neutral and Smart Cities, Former Mayor for 12 years of Ghent - Belgium, Former President of Eurocities, Honorary member of the Global Parliament of Mayors **Urban Development / Policy Maker / Practitioner**
Vassilopoulou Vassiliki (F2F)	Research Director at the Hellenic Centre for Marine Research (HCMR), Greece **Marine Environment / Research Community**
Questions – Discussion	

Linking with the Industry

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"HEDNO - Connecting every Corner of Greece through Energy"

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(F2F or Online - tbc)

Session 3

Broadening Smart, Sustainable and Creative Pathways in Urban Environments

Chair: Yiota Theodora (Online)

Uncovering Future Trends in Smart Cities

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Abstract

Technology is naturally the fundament of smart city developments. It yields functional improvements and recourse savings, and can be a very important driver of local/regional economic development, competitiveness and innovation. However, within the current, highly volatile scientific and technological environment, smart city advances that address crucial societal issues require strategies that quickly capitalise on available knowledge while successfully anticipating future socioeconomical advancements so as to be duly prepared.

Under this light, the Horizon 2020 RRI2SCALE project is a three-year project funded by the European Commission. One of its primary objectives is to support the development of territorial Responsible Research and Innovation (RRI) across Europe in the smart cities' domain. In this paper we will present RRI2SCALE's literature review that will map the trends, drivers and 'black swans' (or 'wild cards') of forthcoming developments in the field of smart cities, as well as the socioeconomic and environmental impacts that could be anticipated thereof. The literature review will be complemented by a European wide Delphi exercise with at least 90 renowned experts in RRI and smart cities. The Delphi will validate the outcomes of the literature review and provide further insight on the potentiality of the trends, their desirability and magnitude of impacts anticipated. All in all, a variety of stakeholders will be approached so as to ensure a multi-perspective inclusion in the formulation of the trends and drivers' section of the foresight, and ensure its successful completion.

Using the results of this exercise, territorial R&I system actors will have a thorough view and understanding of how the future R&I landscape will formulate, in order to create strategies that will effectively anticipate and prepare for future Science and Technology (S&T) developments while simultaneously incorporating societal views.

Keywords: Smart cities, Responsible Research and Innovation, Future urban and regional development, Expert survey

GEODESIGN Workshop and Operational Approaches for New Urban Agenda

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Abstract

GEODESIGN represents a suitable framework in order to develop an "urban vision" in urban planning practices. It is an effective way to organize and deploy participatory planning according to the negotiation approach, as witnessed by a number of experiences reported in scientific literature. GEODESIGN represents a relevant research focus for LISUT Laboratory; and several efforts had been carried out in recent years on selected case studies. Mainly we included GEODESIGN among those technical tools necessary to support planning processes at different scales, promoting especially the methodological integration of GEODESIGN with, among others, the Logical Framework Approach. According to C. Steinitz, GEODESIGN represents an inclusive approach (it involves not only technicians but all actors engaging in decision-making processes), supporting "informed negotiation". Concerning negotiation, we address this concept in a positive procedural vision of building agreements: GEODESIGN it is not a way to aggregate some strong individual interests against other weakest groups of participants, but mainly a way in which the spatial evidences of decisions (namely "designs" in GEODESIGN taxonomy) become a way to make more and more explicit the evidences of individual proposals, contributing to the strategic decision-making process.

The huge demand for training people, citizens, technicians and politicians in participatory planning processes represents the basic step of this work. In facts, we adopted GEODESIGN in order to simulate a process of urban design according to the rules of ITI planning (Integrated Territorial Investments procedure, promoted by EU Operative programs 2014-2020). Through this simulation and the active participation of politicians and technicians of the Municipality of Potenza (Capital city of Basilicata Region), the basic learning by doing approach had been developed.

This paper reports general consideration concerning the advantages in adopting GEODESIGN for New Urban Agenda development purposes. Then the "Potenza Political Academy" case study is described, reporting details about GEODESIGN workshop's organization and implementation. Finally, the discussion and conclusions' section reports the main evidences of the learning-by-doing-process, re-launching research perspectives in GEODESIGN applications in urban sustainable development planning.

Keywords: GEODESIGN, New Urban Agenda, Strategic planning

Embedding Smart, Sustainable, Resilient and Inclusive Concerns into the Assessment of Cities' Performance - An Integrated Indicator Framework

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Abstract

Despite the tremendous emphasis placed on the smart city phenomenon, especially during the last two decades, a huge gap concerning the assessment of its performance is still pretty evident. Literature review reveals a plethora of indicator frameworks that cover various urban dimensions; nonetheless, a commonly accepted and shared one, which treats the smart city as a multifaceted concept, is not yet introduced. This pluralism is mainly emanating from the lack of a consistent comprehension of the smart city concept, which would serve as a common ground of mutual understanding; and therefore, of establishing a standard and commonly accepted way for estimating the performance of each city. The particular paper elaborates on aspects of sustainability, resilience and inclusiveness that contemporary smart urban environments entail; and focuses on the development of a coherent and multidimensional indicator framework for measuring their performance.

Initially, a thorough analysis of globally initiated, state-of-the-art indicator frameworks that reflect cities' smartness, sustainability, resilience and inclusiveness is undertaken (top-down approach), followed by a systematic endeavor to integrate them into a more enriched and comprehensive indicator framework. This framework aims at supporting policy makers and urban planners in evaluating, monitoring, managing cities, and making more informed and knowledgeable decisions; while being in alignment with arising concerns in the urban planning realm (e.g. resilience, disaster risk reduction) and recently introduced global sustainability goals and frameworks (SDGs). The paper proceeds with the demarcation of the rationale behind the indicator selection process that should be followed, meaning the navigation in the proposed framework in order to determine the most suitable city- and citizen-specific indicators for implementing relevant assessments and guiding robust policies (bottom-up approach). Finally, some critical conclusions are drawn regarding the significant issues raised while navigating in the proposed indicator framework; and the problems that need to be confronted in every smart city assessment effort.

Keywords: Smart Sustainable Resilient and Inclusive Cities (S2RIC), Indicator frameworks, Urban planning, S2RIC assessment, Performance measurement

A Systematic Research on the Relationship among Spatial Planning, Digital Transition of Smart Cities and Collaborative Innovation

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Abstract

'Digital Transition' refers to the transition of cities toward more sustainable and inclusive urban development models, guided by digitised information and digital applications for the activation of collaborative innovation and the provision of better services to citizens. In its most recent form, digital transition is manifested in co-creation methodologies, circular cities, sharing economy and the maker movement; and it uses technologies such as digital twins and blockchain. Despite the fact that a large number of researchers call for research insights on the relationship between spatial planning, digital transition and collaborative innovation, still the interconnection between them has not been investigated.

Addressing this need, the present work lays out the first results of an ongoing research on the spatial planning dimensions of digital transition. Specific topics addressed are the: i) digital transition of cities with a simultaneous adaptation to the local environment, ii) spatial characteristics of smart city applications, and iii) support of spatial planning with digital tools. The used research method is bibliometric analysis, based on exhaustive literature review, content analysis of published research reports, and scientific papers of academics and researchers, with a specialisation in smart city issues from the viewpoint of social sciences.

Keywords: Urban planning, Urban innovation, Smart cities, Sustainable development, Social issues

Skills for Municipalities' Workforce of Smart and Resilient Cities

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Abstract

Covid-19 epidemic has created new challenges for the development of Smart and Sustainable Cities. It has proven that it is not anymore sufficient just to focus on providing services for quality of life, or for a better business ecosystem, but we need to prepare cities, so that they are able to manage, adapt, maintain and ensure city services and enhance quality of life in the face of hazards, shocks and stresses. According to this definition, resilience does not include only earthquakes, fires, floods, etc. but also whatever disrupts significantly the operation of a city either occasionally or periodically as well. Examples include high unemployment; endemic violence; health epidemics and chronic food and water shortages.

Even though some standards and projects exist in this area, we have not yet reached consensus on a common city resilience model that will able to describe what exactly constitutes resilience and what a resilient city. Furthermore, up to now little emphasis has been given to the way municipalities are organized for addressing hazards; and even less on training their personnel to the new skills required. Currently, these new required job profiles do not exist, they are overlooked, or they are partially described.

Rockefeller Foundation, founded in 2013 the "100 Resilient Cities (100RC)" project, having as objective to help cities face three major threats and challenges: urbanization, globalization, and climate change. In the context of this project, a job profile named "City Chief Resilience Officer" was defined, but without sufficiently describing the required skills. In parallel, other projects e.g. "Smart DevOps competencies for smart cities" (devops.uth.gr) are attempting to define the required skills and job profiles needed for Smart and Sustainable Cities professionals. Obviously, we need to address the skills' gap between today's and future's skills demand of municipal workforce by emphasizing on these emerging needs and by combining the needs for smart and resilient cities development. Exactly on this subject area, this paper presents the results of a survey that attempts to define the required skills for a "Smart and Resilience City Officers".

Keywords: Smart cities, Resilient smart cities, Skills' development

Towards the Next-generation City: Big and Open Data for Spatial Planning

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Abstract

Big data is being increasingly advocated as a fresh and promising approach to urban challenges, particularly through the notion of smart cities, which are able to cope with climate change, citizen empowerment, disaster planning and resilience, health and quality of life, social equity, sustainability, equal access to ICT and urban competitiveness. How can we effectively build a spatial knowledge, strongly based on the contribution of communities to planning policies and projects, through online platforms, social media, and participatory GIS that need to handle big and open data?

The field of big data and new ICT technologies is now profoundly modifying the way regional and urban planning is done, but at the same time it is a path of innovation, whose long-term consequences and operational implications are difficult to foresee. It is certainly a very attractive field for researchers who can apply such theories in various disciplines. Nevertheless, this research issue requires significant awareness in using these data and tools with a real responsiveness of their applicability. Besides, it requires a deep consciousness by web users about the potential uses of community shared data.

This paper aims to launch glances between disciplinary sectors that normally do not communicate and offer new research perspectives on common problems. Applying the concepts and methods of big data science in spatial planning and urban studies is today necessary to understand the evolutionary processes of complex territorial systems. These systems are characterized by the interaction of institutional and socio-economic actors with environmental and landscape resources, making often difficult to understand the dynamics and actions towards predetermined objectives. This paper discusses critical reflections and attempts to hybridize methods and disciplinary approaches trying, through some "field invasions", to treat the complexity of the spatial knowledge by constructing new interpretative categories that seem nowadays not aprioristically defined and integrated.

Keywords: Big data, Open data, Smart city, Urban and regional planning, ICT, Next-generation city

Session 4

Smart, Sustainable and Resilient Cities and Communities I

Chair: Martin Koplin (F2F)

The People's Smart Future

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Abstract

We are on the beginning of new understanding of cities as "Hybrid Cities". In a future Hybrid City, creatives together with the public, will shape their urban environment in fresh and unexpected ways, based on science, art and emotions. How can a local, highly diverse community join this participatory process, in which artists, designers and researchers respond and imagine alternate futures and integrate what might ultimately happen to our planet due to climate change and take up people's needs. We should be able to envision the future that we want in a new, cultural way, and then build towards it, continually asking if the direction that we are taking is the right one for the humanity and the natural world. Wanting the future to be socially fair, culturally and artistic rich, green, technically up-to-date, and peaceful – a future where we can flourish – demands also transitions, both in the mindset and in actions that can take us there. This talk is about participative concepts and practice examples and about tools, technologies and methods for the participation of people, the support of co-design, citizens science, participative art processes, and audience development with new methods and tools. A work on visions of European life and life in Europe in the future – a new visionary urbanity as a cultural model.

Keywords: Digital art, Green hybrid cities, Smart participation, Urban culture, Digital impact Lab Bremen

Facing the Fold

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Abstract

Over the last two years, we have at the Department of Digital Design work with Augmented Reality and Climate Fiction with one of our online courses as a surface of communicating and testing our student's ideas in that realm. We, in parallel, investigate how our design students deal with the ideas of sustainability, how young design students face their future in relation to global challenges. Many disciplines have nature and nurturing to explore, create, and tell stories about possible worlds. Design is one activity of creating the future, not solving old problems as much as inventing new opportunities, still with strong ties to empirical science and engineering, but also with the storytelling of branding and marketing. In parallel, industries and design have evolved from producing products to services, and recently to experiences, expressing basic human tenets to create and tell stories. This of course is at the core of fiction, helping us make sense of what it means to be human, how to plan and live our lives, and to find some purpose behind our journey. Inspired by the Climaginaries Research Project in 2019, we encouraged our students to try to capture interesting and comprehensive perspectives, which through design, should incorporate surprising visual and technical proposals. Initially using scenarios that create narratives of alternative environments in which today's decisions may be played out. Through their design work put forward hypotheses of different futures specifically designed to highlight the risk and opportunities involved in specific strategic issues like UN's 17th climate goals. When looking back on both the results and the work process we were not satisfied with what we saw, it was too closely related to already developed regulations, solutions, and ideas. We noticed that there was something crucial to design thinking missing - Imagination.

Keywords: Imagination, Design fiction, Climate-fiction, Augmented Reality, Design thinking

From Sonic Experience to Urban Planning Innovations

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Abstract

Urbanization and fast-growing cities have catalysed the importance of designing urban spaces that the citizens find pleasant, homey and that support the communal style of living. The key element of the cities are the people and every one of them has an effect and also a unique sonic experience of the city. It is widely accepted that a personal response to a soundscape is more dependent on the listener's emotions and attitudes than on sounds or their physical features alone.

Unfortunately, there are no standardised methods, tools or techniques to translate sonic experiences into measurable and reliable data that urban planning professionals, manufacturers or building industry could turn into innovations and solutions. Much of the noise pollution and city soundscape data is still based on predictive acoustic models and they rarely take into consideration any real-life experience or physical measurements.

This paper presents a concept of a smart and participatory method for gathering and analysing sonic experiences and translating it into measurable values. The aim of the method is to search for patterns in desired and undesired urban soundscapes. Even though verbal and written data gathering has offered a significant knowledge base about our sonic environment, the concept of designing sonic environments is still missing. The concept aims to transform subjective experiences to objective measures. In this paper, we discuss how to improve the understanding and communication between citizens and the planning and building professionals.

Digital Tools for Social Resonance in Urbanity

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Abstract

The R&D project "Exploring and transforming resonance spaces" (RESet) tends to provide direct impulses for a better participation of people in the urban sphere via digital tools in order to show a view of society and political contexts that is as constructive and creative as possible. We would like to use the impulses to counter individual tendencies of radicalisation, apathy and isolation towards the democratic system and promote social participation in our cities in the long term.

A lack of trust in state institutions, a lack of understanding of social values and, above all, breaks in social cohesion are omnipresent in Europe today. The core idea of the BMBF research project RESet is to increase people's participation in a phase of the digital transformation of social environments in the urban sphere; and to enable them to take a constructive view of society again. RESet tested possibilities of participation by means of innovative formats and the use of digital tools. RESet is part of the German federal initiative "Strengthening cohesion in times of crisis and upheaval". Here, the project focuses on how to deal with current social change and the resulting social challenges in urbanity.

The target group of RESet are people in our cities who feel socially dependent. By creating such resonance spaces, people are directly involved and thus given new opportunities for participation in the context of work and social affairs 4.0. RESet, thus, works against tendencies of apathy, isolation or radicalisation in the digital society.

M2C Institute for Applied Media Technology and Culture, with its long experience in the field of digital innovations, directly contributes by the connection of theory and practice as core concerns of the project. Innovations in educational formats and digital tools were tested in the West of Bremen by the Digital Impact Lab Bremen.

Keywords: Social participation, Strengthening cohesion, Crisis and upheaval, Digital tools

Emerging Smart Technologies as a Complement to Sustainable Urban Design in Favour of Mediterranean Inner Cities

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Abstract

Post-industrial city planning, trying to bring well-being and prosperity for citizens and restraint climate change, seeks, in sustainable ways, to raise quality of urban environment, as these elements are fundamental conditions for an urban space, attractive for dwellers, visitors and investors. Historical urban form of many Mediterranean cities and especially lack of sufficient public space in densely populated areas, is the main obstacle to efforts of cities to sustainably improve urban space. The small average size of properties/city blocks, leads to waste public space by an abundance of streets, resulting to prevent substantial innovative design.

Application of smart technologies [5G, IoT, robotics, autonomous (self-driving) vehicles, electric vehicles, RES, etc.], as follows, could finally eliminate on-street parking, decrease traffic, giving opportunities to redesign public space, by: establishing a sophisticated transport system, capable of offering flexibility and personalized services, so as to increase its attractiveness and reduce use and ownership of private cars; creating smart traffic and parking guiding systems, so as to reduce traffic; developing a network of parking/charging facilities for electric vehicles, emanating from RES, so as to reduce on-street parking; establishing directly, pilot/experimental car free zones; finally, in a medium/long-term, ridding citizens from car ownership and streets from on-street parking, through an innovative transport system, based on smart, autonomous (self-driving) vehicles of mass transport, on rented autonomous electric cars and on light electric vehicles for short travels.

Freeing streets from on-street parking, combined with systematic redesign of public spaces, should be a central strategic goal for cities, seeking improve quality of life and well-being of their dwellers and the prospects of global environment. Especially for Mediterranean cities lacking vital public space, integrated use of smart technologies, is an opportunity for a rapid upgrade of their urban environment and the quality of life of citizens, as it opens a new field of promising urban design.

Keywords: Urban design, Sustainable design, Smart technologies

The Greek Challenges and Strategy for Cooperatively Dealing with the Mission on 100 Climate-neutral and Smart Cities by 2030 – by and for the Citizens

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Abstract

The European Program "The Mission: 100 climate-neutral cities by 2030 – by and for the citizens" aims to support the systemic transformation of 100 European cities towards climate neutrality by 2030, contributing to the implementation of the 2030 UN Agenda and the Sustainable Development Goals (SDG's), as well as of the European Green Deal until 2050. These cities are going to function as experimentation and innovation hubs of energy management through renewable sources and advanced technologies, smart networks and changes in citizen behaviour (e.g. cycling). This bottom up effort requires the participation of the entire local ecosystem (Municipality, citizens and civil society, business community, academia, etc.) and support from all levels of government.

The Hellenic Ministry of Environment and Energy, and more specifically the General Secretariat of Spatial Planning & Urban Environment, as the responsible governmental authority due to its operations' circle, can undertake to promote this initiative systematically towards the climate neutrality. Our goals should be the: a) overall support of the Program, b) coordination of cities' actions with relevant policies promoted by the Ministry (energy saving, urban cohesion, completion of urban planning, bicycle strategy, accessibility strategy, strategy for the energy and climate, strategy for the circular economy, electro-mobility, sustainable urban mobility plan, BIM, etc.) with the climate neutrality, c) improvement of the national regulatory framework, legislation and initiatives in order to move to a real climate neutrality regime by 2050, according to the European guidelines.

Through this Program, the selected cities will have the opportunity to redefine their identity (city re-branding); extract multiple environmental/social/economic/educational benefits; motivate the business community towards climate change-friendly investments; and introduce holistic urban planning solutions, smart technologies, data platforms and urban systems for better energy management of urban centers.

Keywords: Climate transition, Innovation, Smart technologies, Participatory governance, Financing and economic models of climate action, Circular economy, Integrated urban planning, Urban systems modelling

Session 5

Data Management and Smart Urban Developments for Coping with COVID-19
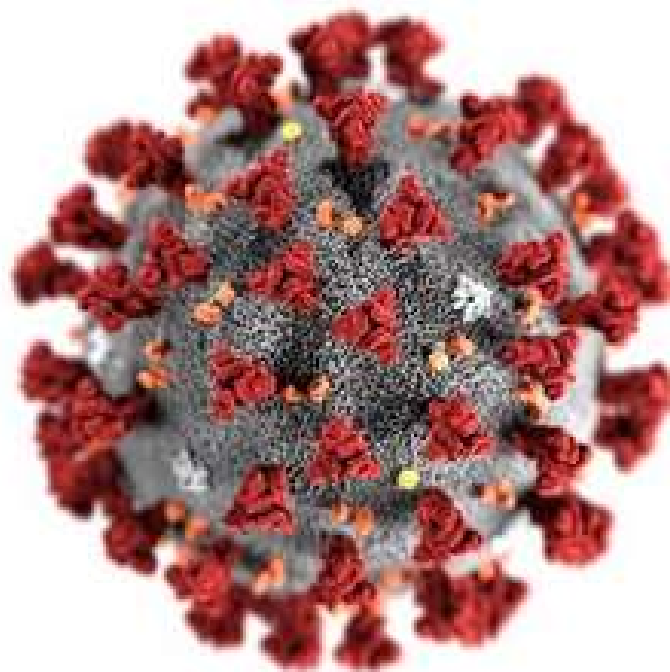
Chair: Yiota Theodora (Online)

Can a Pandemic Change the Environmental Consciousness and Responsibility?

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Abstract

The urban transport system, as a necessary element of the structure of a city, satisfies the mobility needs for various activities of daily life. Its operation significantly burdens the environment, contributing to the phenomenon of climate change. In recent years, efforts have been made to shift to mild forms of transportation, pedestrians, cycling and the use of public transport.

With the advent of Covid 19 and its rapid spread around the world, mechanisms based on feedback have been developed to tackle the pandemic phenomenon by all countries. Significant restrictions and prohibitions have been imposed: on the daily movement of population, strict observance of distances between individuals, changes in the way of working, educating, transacting, supplying goods and services. Actions that significantly restricted travelling resulted in the reduction of the environmental pollution and noise as well as in limited energy consumption.

As a result, from the first days of the lockdown, there is a drastic reduction of car traffic, almost empty public transport and the simultaneous release of road space. The quality of the urban space was improved and gave the opportunity to walk with comfort and safety in the free streets of the city, which is finally more friendly to its citizens.

For this reason, both initially and during the de-escalation of restrictive measures, Barcelona provided twelve kilometres of road network to pedestrian traffic and at the same time increased infrastructure and bicycle services, following the example of other European cities, to encourage mild forms of movement and prevent the use of private motor vehicles.

The purpose of this study is to present the situation in cities in terms of mobility, before and after the Covid 19 pandemic and to propose measures that will contribute to the transition to more humane, clean and smart cities in the context of sustainability.

Keywords: Sustainability, Sustainable mobility, Covid 19, Smart cities

The Role of Spatial Planning and Geographical Analyses for Covid-19 Risk Containment

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Abstract

This research develops from a set of basic geographical questions about the outbreak of COVID-19 out of China in Europe. Questions that are dealt with attempt to explore why Italy has been seriously hit with such strength, one of the most important cases in the world in terms of death toll out of Hubei Province and mainland China, making the country a worldwide study case for epidemic concentration and diffusion. Questions were also related to geographical similarities among the areas hit, and particularly the Po Valley region and Wuhan metropolitan region in Hubei province, and also related to why such a divide of the virus spreading was identified in Italy between Northern and Central and Southern regions and provinces.

In order to try to give an answer to these questions, authors realized a vast and articulated database of indicators at provincial level in Italy, performing several geographical analyses - ecological approach - based on Spatial autocorrelation and Geographical Weighted Regression, coming to the conclusion that aspects such as land take and pollution can seriously influence the phenomenon and justify a pattern as the one observed in Italy. The analyses and observation of the phenomenon also suggests that policies based on urban regeneration, sustainable mobility, green infrastructures, ecosystem services can create a more sustainable scenario, capable of supporting public health quality.

Keywords: COVID-19, Italy, Po-Valley, Air quality, Climate change, Land take, Spatial diffusion processes

Geographical Analysis of Covid19: Fallacies and Opportunities

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Abstract

The COVID-19 pandemic has influenced most countries directly or indirectly and has set the agenda for economic and administrative policy-makers on pandemic measures of the 21st century. The comparison among regions and countries has been used for a number of reasons and has been the base of regionalized policies in Greece but also in the EU.

This work illustrates and discuss the project CHRISTINA (CoRona vIrus SpaTIal aNAlysis), which examines the time series progress of COVID-19 events in 177 countries of the world. It uses daily data for COVID-19 events as well as government interventions; and associate them with geographical time-series datasets in order to evaluate the rate of change. We also estimate future events based on assumptions of previous events in a time window of 5 days.

Furthermore, this work will set the agenda for possible geographical fallacies and opportunities regarding the comparison between countries and regions. It will present a number of misunderstandings when comparing geographical areas and present the potential opportunities of using geo-spatial sciences for assisting spatially-aware decision-making process.

Keywords: Geographical analysis, Covid-19, Pandemic, Fallacies, Opportunities

… NEETs and the Impact of the COVID-19 Pandemic upon Regional Labour Markets: An Analysis across the Mediterranean European Economic Area

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Abstract

The paper in hand assesses the impact of the COVID-19 pandemic upon youth Not in Employment, Education or Training (NEETs) across the Mediterranean European Economic Area (MED EEA) regions. Based on a theoretical framework inspired by geographical cultural political economy, the paper discusses the spatial dimensions of the NEETs phenomenon vis-a-vis contemporary labour market restructuring and youth employment policies. It has a threefold objective, namely to: i) analyze the interrelationship between contemporary flexibilization / precarization and the NEETs phenomenon, ii) critically discuss the effectiveness of mainstream policies and their true impact upon youth unemployment, and iii) scrutinize recent data revealing highly increasing NEETs rates due to the COVID-19 pandemic. The focus is on NUTS-2 MED EEA regions and the most recent data available. The study's major findings reveal a high increment of NEETs rates in certain labour markets, especially in those regions that heavily rely upon tourism, food services and transportation. Such an increment, as argued, is in many cases associated with an equally high expansion of precarity for young entrants into the labour market. The results contradict the prevailing beliefs that a 'healthy trade-of' between flexibilization and less security can act as a remedy to economic recessions and boost youth employment and productivity. Also, the results strongly support contemporary scepticism regarding mainstream youth employment policies; and underline the pressing need for more radical and spatially-sensitive interventions that foster socially-just growth and labour protection.

Keywords: Cultural political economy, NEETs, Labour flexibilization, Regional spread of virus and the impact on NEETs

Diversification of Activity Pattern of University Students during the COVID-19 Lockdown: Results from Online Survey at the University of West Attica, Greece

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Abstract

In 2020, the newly emerging coronavirus SARS - CoV-2 and the COVID-19 global pandemic forced governments all around the world to take strict measures so as to reduce the spread of the virus infection. In Greece, the whole country was under total lockdown from March 23, 2020 to early May 2020. Universities were under suspension of operation since March 11, 2020 and teaching activities were and are still carried out online, using distance learning platforms.

Herein are presented the results of a Web survey with regard to the activities of students of the West Attika University prior, during and after the lockdown. Data were collected by an online survey by use of Google Forms. In total 992 University's students responded, from May 08, 2020 to May 17, 2020. Participants were asked to describe their daily routine before and during the lockdown and their expectations for the after-lockdown era. Research results identified spatiotemporal diversification of students' activity patterns prior and during the lockdown. Furthermore, students' willingness to continue to participate in activities that started during the lockdown is revealed. Finally, research results indicate that students are reluctant to return to university campuses despite the provisions of protection measures.

Keywords: University students' activity pattern, Spatiotemporal diversification, COVID-19, Lockdown

A Smart City Initiative: The Case of Peristeri

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Abstract

Information and communication technology is changing the way in which cities plan and organize policy making and urban growth. Several factors from the industry, governments and society are creating the demand for smart cities. Smart cities base their strategy on the use of information and communication technologies for transforming the city's infrastructure and services. This paper focuses on the city of Peristeri and intends to analyze its transformation from a traditional city to a twenty-first century Smart City. As Peristeri is the third bigger municipality of Attica and considered to be a leading city in western suburbs, the case of it is of special interest.

In particular, the recording and assessment of the transition of Peristeri to a Smart City will capture the current situation and also future directions and planning. This paper analyses Peristeri's transformation in several fields such as environment, mobility, local governance, digital services and assets. First, it presents the existing literature in Greece's Smart City initiative. Then, it presents the existing infrastructures and services of the city of Peristeri, connected to information and communication technology. Moreover, the case study analyses and correlates the COVID-19 period with the transition of Peristeri to a Smart City. Then the strategy for the aftercovid-19 period is further explored and the establishment of Peristeri as a Smart City. This paper also reveals certain benefits and challenges related to citizen's demands and needs and their fundamental role in conformation of Smart City.

The results of the case study analysis indicate that Peristeri has been effectively implementing the Smart City strategy, step by step, with an aim to constitute a Smart City model for the less developed western suburbs of Attica Region.

Keywords: Peristeri, Smart city, Citizens, COVID-19

Session 6

Smart, Sustainable and Resilient Cities and Communities II

Chair: Georgia Pozoukidou (F2F)
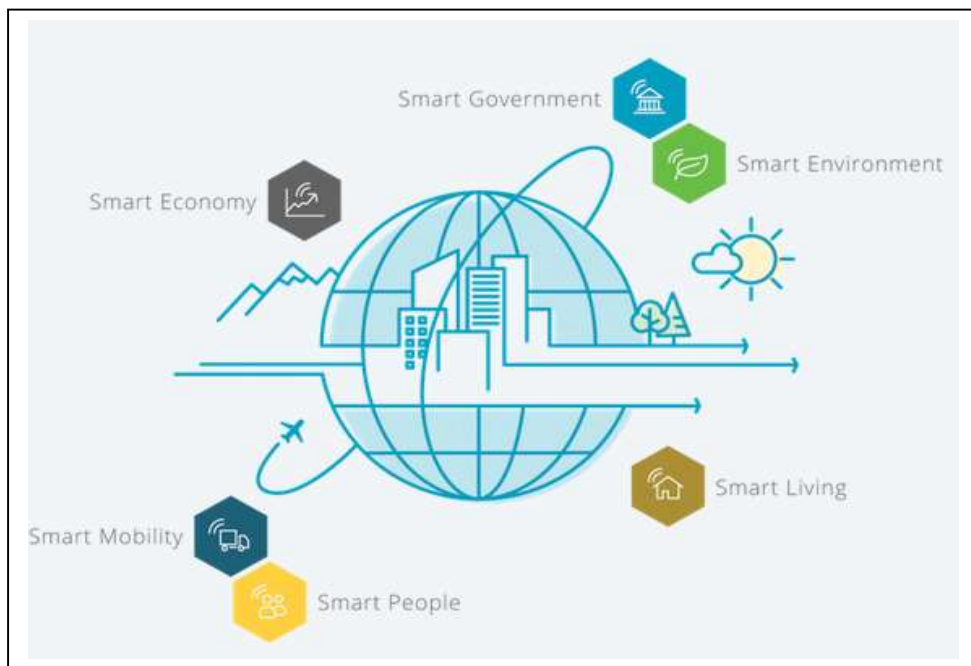
Best Management Practices for Stormwater Retrofit of Existing Greek Urban Blocks

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Abstract

The water cycle in Greek cities is characterised by rapid collection and drainage of rainwater, minimal infiltration and evaporation, which, combined with the negative effects of climate change, has contributed to the deterioration of the urban environment microclimate and living conditions. This water cycle change can be attributed to the intense urbanisation that occurred in Greece after the second half of the 20th century, resulting in the rapid expansion of urban areas and the construction of thousands of multi-storey apartment buildings.

In order to avoid an aggravation of the problem of the current urban water cycle and remedy the environmental imbalance caused by conventional water management models, a philosophical change is required in the way urban areas are planned and designed, based on the principles of Water Sensitive Urban Design (WSUD). WSUD is a way of planning, which promotes retention and reuse of rainwater, and the application of natural water treatment systems. For WSUD implementation, stormwater Best Management Practices (BMPs), such as porous pavement, bioretention, green roofs, rainwater harvesting are used to manage rainwater close to its source. However, WSUD is a relatively new concept in Greece, with limited applications or research efforts focused on it. Greek urban blocks could benefit from the runoff mitigation as well as from the evaporative cooling during summer periods that BMPs offer.

The paper will provide a description of specific BMPs that could be applied on selected surfaces (flat roofs, rear facades and inner block voids) of existing Greek urban blocks. BMPs are selected, after taking into consideration retrofit challenges in Greek urban blocks and climatic parameters, such as solar radiation, temperature, humidity and wind circulation patterns in and around these urban blocks. The paper will also suggest sustainability indicators to assess the applicability and effectiveness of the selected BMPs in Greek Urban blocks.

Keywords: Stormwater best management practices, Water sensitive urban design, Greek urban blocks, Runoff mitigation, Evaporative cooling

Vulnerability Analysis of a Sewer Network Using a Network and Urban Data-Driven Approach

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Abstract

Urban storm and waste water management have become a complex and fast-growing problem. Moreover, it is one of the main challenges of the smart cities because the sewer service is essential to improve the citizens' quality of life. In addition, variability in rainfall and uncertain scenarios linked to climate change, drives us to explore new approaches to prevent and mitigate the impacts of sewer system failures, such as flash floods.

There are few studies that focus on how to develop quantitative tools to assess the impacts of sewer system failures on the inhabitants, as well as the degree to which the functioning of the city is affected. This research focuses on studying the properties of a sewer system from two alternative points of view. A methodology is proposed to measure the degree of impact of blockage failures in a sewer network based on a static approach (topology) and a dynamic approach (urban data). The first approach uses the indicators of graph theory, which is an under-explored alternative in urban sanitation networks. The second strategy employs the analysis of urban data by iterative and interactive visualizations in order to reveal interactions between urban dynamics and failure location.

To test the methodological design, the sewer and drainage network of the city of Nice (France) is analyzed. Topological indicators can be effective in capturing a fraction of the reliability status of a wastewater network. Studies have suggested that topological methods for urban water networks should be coupled with other techniques (hydraulic or probabilistic models) to achieve satisfactory results. The combination with a visual analysis model, used in this study, is an option that deserves further research. This type of methodological approach has the potential to become a tool for decision support, for example in municipalities or companies in charge of public sanitation services.

Keywords: Network vulnerability, Sewer systems, Network topology, Urban data

Urban Security as Part of the Smart Cities Strategy - Experience of Polish Cities

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Abstract

One of the basic human needs is the need for security: certainty of existence, survival, possibility of development and lack of threats. Due to the new opportunities related to the development of technology, as well as the unforeseen and unknown threats, cities of the future require flexibility in their design. The variability of social and economic conditions, the needs of residents, social relations, the changing way of functioning of urban life in the face of threats makes it necessary to include new SMART technologies in the flexible design of settlement complexes in terms of their safety. The beginning of every process of action for sustainable development is an intelligent plan initiating new strategies. In the area of public security, information technologies are playing an increasingly important role in communication with residents and effective crisis management. The use of the Internet and the provision of e-platforms for residents for the purpose of joint, pro-social city management and decision-making can promote both a sense of belonging to the place (identification) and public security.

The authors of this paper, based on the examples of projects for the development of public spaces in several cities in Poland, aim at pointing out directions and ways of creating flexible forms of security. In many Polish cities there is a process of separating and fencing housing communities. Creating barriers and partitions has a dual effect: on the one hand, it increases the sense of security, and on the other it limits mobility, social interaction, and generates hostility. Minimizing barriers gives the possibility of unrestricted movement, but also increases accidental social contacts and the possibility of dangerous incidents. With current threats of unpredictable scale and range, monitoring of public spaces, ensuring flexibility of solutions to increase security, and the possibility of their rapid modification seem to be a necessity.

Keywords: Urban security, Smart cities, Developmental strategies, e-platforms

Smart Energy and Aesthetic Renovation in the City Scale: Scenarios of Upgrading Urban Blocks"

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Abstract

Contemporary cities face many challenges as the degradation of the urban environment is affecting the overall quality of life conditions and threatens the sustainable development of urban areas. The target towards carbon-neutral cities emerges as a new promising way to overcome the environmental pollution and the indisputable climate change connected to it, but it can also be the chance for the overall improvement of the quality of life in cities by promoting as well upgrading the often low aesthetic quality of the majority of urban environments.

The objective of the current research is to investigate smart renovation strategies in the city scale that will not only contribute to the limitation of carbon gas emissions, but they will also promote improvements of the city's aesthetics. The basic assumption of the research is that, in an urban block scale, the implementation of energy renovation interventions could also improve the aesthetic quality of the city. Different typologies of urban blocks of the Greek city are examined according to form, geometry and density; and four scenarios of renovation interventions are designed and analysed according to energy and aesthetic criteria.

For the energy performance assessment of the intervention scenarios a dynamic energy simulation approach is used. The four scenarios include: i) improving the thermal transmittance of the exterior surfaces; ii) use of smart materials in the urban block's shells in order to improve the thermal mass properties; iii) construction of green roofs in the urban blocks' flat roofs; and iv) integration of passive solar and shading techniques in the facades of the urban blocks.

The findings of the research prove that the energy interventions in an urban block scale can define the degree of efficiency in the energy performance level without compromising aesthetics. On the contrary, the added value resulting from higher aesthetics is a basic criterion for the overall improvement of the quality of life.

Keywords: Urban block energy efficiency, Energy efficiency, Aesthetic improvement in the city scale, Smart urban renovation

Review of Energy in the Built Environment: A Case Study of the Netherlands

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Abstract

Urban areas are responsible for a significant part of energy consumption and associated greenhouse gas emissions, and this share of greenhouse gas emissions is likely to increase as global urban populations increase. At the same time, urban environments can be key to sustainable energy in terms of driving innovation and action. As over half of the human population will live in cities in the near future, the management of energy supply and demand in urban environments will become essential. Developments such as the transformation of the electricity grid from a centralised to a decentralised system as well as the electrification of the transportation and heating systems in buildings will transform the urban energy landscape.

In this paper, the state-of-the-art development of emerging energy technologies and concepts in the built environment in the Netherlands is presented on the basis of four main areas, namely, energy demand, supply, storage, and integration aspects. The Netherlands is used as a case study for demonstrating evidence-based results and feasibility of innovative urban energy solutions, as well as supportive policies. The Dutch government has set a target to reduce the total greenhouse gas emissions by 49% in 2030 compared to 1990 levels and zero emissions in 2050. This target involves different sub-targets per sector, based on existing policies, and the National Climate Agreement, which stems out from the Paris Agreement in 2015. Main historical developments and projections are presented for emerging energy technologies in the Netherlands with focus on the sectors of mobility, electricity and the built environment.

Keywords: Energy, Built environment, Electric mobility, Distributed generation, Case study, The Netherlands

The Escape from the Cities - The New Rural Revival

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Abstract

The new way of social functioning, triggered by the prevention of the spread of Covid-19 restrictions, leads to a revision of the thinking about urban development. The "social distance" has gained in importance, and its impact on urban development trends can be of great relevance. The trends to date in urban development have been dominated by migration, depopulation of rural areas and small towns and development of larger cities, metropolises. The reason was the growing differences in the living standard between metropolises and their peripheral areas, in favour of cities, offering more chances for educational opportunities, attractive jobs, social contacts and the entertainment. Remote urban areas were stagnating, with the observed aging of the local population. Some of these areas regained momentum of prosperity due to tourism, which, however, did not provide them with the possibility of a steady growth.

Since the outbreak of the pandemic, an increase of interest in rural areas and small towns has been observed as an alternative to metropolitan live, due to better isolation and security in the pandemic times. Forcing social isolation also indicated the possibility of virtual communication - including working, studying, running a business - at a distance via Internet. It also pointed to the possibility of trading goods without the need to do shopping in a traditional way. It has been possible and accepted to conduct conferences, meetings of various bodies, conduct lectures and exercises in a remote form, without the need for time-consuming and dangerous travels in the era of a pandemic. Therefore, Covid-19 creates perhaps, imperceptibly new urban trends, to live in distant and often abandoned places. There, thanks to the Internet and cellular connections, drone transport networks, etc., it will become possible to lead life, study and work in a way more compatible with nature, reducing energy consumption and CO_2 emissions.

Keywords: Rural development, suburbanisation, Internet, Covid-19, tourism

Session 7

Tools and Technologies for Informed Decision-Making

Chair: Chiara Garau (Online)

Source: https://www.idg.com/what-drives-executives-to-adopt-data-driven-decision-making/

Renegotiating Spatial Planning Practices: The Role of Collective Initiatives and Informal Networks

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Abstract

This paper deals with the issue of collective initiatives and informal networks at the local scale as a means to strengthen tactical practices in spatial planning and the way these practices can function as a section to established planning processes for the production of resilient places.

Urban resilience has become a core concept in the spatial planning discourse. Transition from the theory of resilience to its practice drew attention to the intrinsic structural inequalities that it might be helping to strengthen, as well as to the institutional processes that created them to preserve the status quo. An alternate view of urban resilience, where the city is considered as an evolving organism, emphasizes the value of community and its prospect to create bottom up, less capital-intensive and non-bureaucratic urban change.

Community, informal networks and collective initiatives seem to be essential elements to the production of resilient places in fragile environments. Small-scale, informal bodies and collectives – such as households, neighbourhood groups and local communities –, rely on proximity and constitute networks with "strong ties", which make possible long-term social transformations through incremental, tactical and gradual changes. To this end the paper examines the notion of urban resilience through the lenses of community resilience and the prospect for renegotiating spatial planning practices as bottom up, user-generated processes. Two prominent case studies Christiania, Copenhagen, Denmark and PERKA, Thessaloniki, Greece are examined to identify the critical elements, processes and tactical practices employed, while emphasis is given to the transformations evoked in the formal spatial planning domain.

Keywords: Spatial planning, user generated processes, collective initiatives, informal networks

Personalization or Standardization? The Use of Instagram by the Two Main Political Leaders of Greece

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Abstract

Recently, researchers have begun to explore how Instagram is used by politicians and parties to manage their image. The purpose of the present study is to examine how Instagram was employed by the leaders of the two main parties in Greece, namely Kyriakos Mitsotakis of New Democracy and Alexis Tsipras of SYRIZA (Coalition of Radical Left) from December 2018 until July 7, 2019. This period allows for the comparison of Instagram use between electoral and non-electoral periods, given that within this timeframe electoral contests were held in Greece at three levels: local, European, and national.

Building on prior research, this study will try to answer two main research questions, namely: (i) Is Instagram in Greece a platform where politicians perform 'politics as usual' or is it an alternative image making tool? (ii) Which posts, based on content, features, and issues addressed, are the most engaging in terms of likes and comments?

Specifically, this study will examine the level of personalization or standardization of political messages published by the two leaders on Instagram. Selected posts will also be analyzed and interpreted by taking into consideration the political climate or situating the posts within the prevalent frames that circulated during the period under investigation. In addition, the present study will also reveal differences regarding the issues addressed by each politician through their Instagram posts as well as differences in the post features (such as number of photos, usage of videos, links, mentions, and tags). Taking the analysis one step further, the study will reveal which Instagram posts were the most engaging ones in terms of likes, and comments received. Findings of the present study will be of value to social media managers or consultants of politicians wishing to manage effective their clients' Instagram accounts.

Keywords: General elections; social media campaigning; Instagram; Greece; Political leaders; User engagement

Labour Market Diagnosis Mechanism: Supportive Tools for Evidence-Based Policy Making

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Abstract

In this paper we navigate through the processes of supporting and building up evidence-based labour market policies, as the effective utilization of data can play a vital role in how labour market is perceived and regulated. Research on data-driven decision-making is gradually evolving as the amount of valuable data grows exponentially and new smart ways of analysing them are introduced. This study aims to contribute to the critical thinking around data-driven labour market policies in the context of their implementation in Greece. The main research questions are how evidence-based policies can be generated, what are the supportive tools that can be implemented and what are their problems, restrictions, capabilities and prospects.

In order to approach the research questions, we review five different case studies of Greek projects that have utilized data-driven dashboards derived from employment data, in order to support labour market policies. These projects are based on the Greek Labour Market Diagnosis Mechanism, a decision-making support system that was introduced in 2016 under the aegis of the Ministry of Labour and Social Affairs, and became gradually a central point of reference. It incorporates statistical data from the Hellenic Statistical Authority, salaried employment data from the Ergani Information System, registered unemployment from the Hellenic Manpower Employment Organization and skills/competences data from European Commission's ESCO. The cases under study include the: a) preparation of the Annual Report of the abovementioned Mechanism, b) optimization of Public Employment Services' functionality, c) support of policy making for the European Globalization Adjustment Fund, d) creation of evidence-based policies regarding unemployment, and e) support of digital transformation policies. The critical evaluation of the feedback from these cases produces significant insights regarding policy making. The successful incorporation of these cases into policy design and implementation and the increased demand for such inputs from other areas of policy making demonstrates the added value of building intelligent infrastructure and tools for evidence-based policy.

Keywords: Evidence-based policies, Labour Market Diagnosis Mechanism, Decision-making, Greece

Broadening the Scope of Participatory Spatial and Developmental Planning Endeavours: An e-Decision Support System

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Abstract

Spatial and Developmental Planning (SDP) endeavours are nowadays carried out within an evolving and globalized scene, shaped by contemporary glocal (global/local) challenges. In such a scene, SDP objectives, such as sustainability and resilience, still remain complex and intriguing issues, while their pursuance is largely grounded on the collection and elaboration of distributed knowledge as well as attainment of social consent. These can be largely accomplished through participatory SDP, engaging a variety of actors in relevant planning processes, and aiming to add value to both the planning process, by enriching its ground with multi- and interdisciplinary or/and experiential knowledge and enabling maturity of those engaged; and the planning outcome, steering consensus as to the planning outputs and proposed policy interventions.

For effectively engaging participants in SDP exercises, planners and/or decision makers, as the main coordinators of participatory processes, need to make decisions on a range of issues (purpose, type of participants, resources, timetable, planning core issue, etc.). A critical decision in this respect is associated with the choice of proper participation methods for developing a concrete participatory methodology. This is of decisive importance for the success of participatory SDP and rests upon: a) contextual and decision factors relevant to the planning issue at hand, type of participants engaged, and attributes of the coordinator of the planning process; and b) attributes of participation methods. Supporting planners and decision makers in properly handling participatory SDP processes is the main goal of this work, pursued through the exploration of the aforementioned issues and their use as building blocks for designing and deploying an e-Decision Support System (e-DSS). This e-DSS embeds an integrated knowledge base, capable of supporting choice of relevant participation tools; a stepwise tools' selection process; and a friendly users' interface. The e-DSS is hosted in an online platform, where information about the theoretical ground of participatory SPD is provided and users' interaction on relevant issues is enabled.

Keywords: Spatial and Developmental Planning, Participation, Participation Methods, Participatory Planning, e-Decision Support System

The Economic Impact of the Smart City on the Greek National Economy based on Input-Output Analysis

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Abstract

Nowadays, cities are increasingly investigating strategies in digitalising their services and impacting the ICT economic sector of their regions. Through a set of new and systematic approaches, involving the extensive use of newly available technological tools, 'smart' cities are enabled to impact the various economic sectors, create an intertwined smart industry (SI) and stimulate the industry 4.0 revolution, taking place in Greece.

The present research is focused on examining the defining characteristics and the economic impact of the Smart Industry in the Greek economy as its cities are transforming themselves into smart ones. For the purposes of this research, the methodological and empirical background is based on the construction and externalisation of the SI economic subsector by the relative decomposition of the aggregated relevant Greek industrial sectors from the national input-output tables. The analysis tries to capture the broader impact of the SI subsector by examining four categories of interest for all other sectors. First, effects on total production output of the economy; second, effects on gross domestic product and value added; third, effects on employment, and last effects on capital, using gross fixed capital formation (GFCF) data for investment in physical capital. The main method used for estimating the economic impact of the SI is the input-output analysis, based on the basic principles introduced by the seminal work of Leontief. In general, this study relies on the calculation of the relevant coefficients and indices from the appropriately constructed Input-Output tables for the Greek economy. The highly impacted economic sectors from the SI are identified by an analysis of the linkage effects leading to the importance of the economy. In conclusion, the results indicate the key role and the raising effect of the SI in the national smart economy and in the growth of smart cities.

Keywords: Smart city, Input-output model, Change drivers, Smart government, Smart economy, Input output analysis

Public Participation in Sustainable Mobility Plans of Small Historic Island Communities. The case of Milos, Tinos and Kithira in Greece

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Abstract

Sustainable mobility is a term used to describe climate-neutral mobility. Enhancing active transportation, like walking and cycling, or energy-efficient forms of travelling, like collective passenger transport, do not only protect the natural environment, but also help to preserve local culture, history and landscape, which are highly valued in historic small island communities. Following the overall communicative turn in spatial planning, sustainable mobility plans have included public participation methods in the planning procedures.

The paper investigates three case studies, each in a different historic island of the Aegean Sea in Greece, namely Milos, Tinos and Kithira; and describes public participation in the sustainable mobility planning procedures in these islands. Giving space to touristic development in small historic island communities is a challenging task: policies have to protect their fragile ecosystems, preserve the unique beauty of their culturally important landscape, reduce the footprint of human activities, preserve their traditional character and their history. In such places sustainable mobility has strong economic influences and should be a matter of common interest.

Public input is analyzed in all cases investigated and the following three basic research questions are examined: i) Do the public participation procedures foster social change? ii) Is people's input useful to planners and decision makers? iii) Which public participation method seems to be more effective? The analysis shows that public participation procedures were attended mainly by people already in favour of sustainable mobility. The overall participation level was low. Due to the lack of participatory planning culture in Greece, people are reluctant to take part. Some of the comments provided useful insights and it can be concluded that public participation procedures improve the final outcome of the plan, but they do not foster cultural change. Virtual platforms and forums used had shown almost no attendance. Most effective and communicative were meetings with real, face-to-face interaction.

Keywords: Sustainable mobility, Public participation, Participatory planning, Sustainable Island Mobility Plans

Session 8

Smart, Sustainable and Resilient Cities and Communities III

Chair: Christina Kakderi (Online)

Source: https://www.smartcitiesworld.net/news/news/chief-resilience-officers-announce-the-global-resilient-cities-network-5021

Participative and Exploratory Learning for Climate-conscious Construction

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Abstract

The paper attempts to develop a participant- and future-oriented, inspiring offer for climate protection in building trades in the context of SDG 13. It uses innovative and digital methods of peer learning, participation, networking and visualisation. It serves the goal of promoting climate protection through sustainable building and it attempts to show what alternative building practice can do. Therefore, it fosters reflection of action by exploratory learning. Three partner institutions - the Norddeutsches Zentrum für Nachhaltiges Bauen (NZNB), the M2C Institute for Applied Media Technologies and Culture (M2C) and the Bildungswerkstatt für nachhaltige Entwicklung e.V. (BiWeNa) – research and develop 18 learning modules on building and construction for climate protection in cooperation with the target group of apprentices, craftspeople, architects, vocational education teachers and trainers. Each of the 18 modules integrates cross-sectional topics, such as the reflection of one's own reference to sustainable action, the house as a system or interdisciplinary cooperation. In the sense of a construction turnaround, knowledge about and the application of climate-protecting, resource-saving alternatives to conventional construction methods are promoted. Participation of target groups is desired in such a context, both in the development of learning content and beyond. For this purpose, innovative concepts are developed and implemented, supported by the integration of social dynamics and social media.

Keywords: SDG 13, Participation, Climate protection, Alternative construction, Crafts, Social media

Circular Business Models in Greek Cities: Current State and Future Prospects

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Abstract

The problems caused by the depletion of natural resources and the environmental degradation, coupled with also other long-standing issues, such as the growing inequalities and the accumulation of wealth, make the transition to a more sustainable economic system or in other words the transformation from a linear production – consumption model to a circular one imperative. In this direction, the use of appropriate business models, both in the private and public sector, is of great importance. Sustainable business models and in particular circular models fall into this group.

A Circular Business Model (CBM) is cradle-to-cradle and aims, like the sustainable and closed-loop models, at serving environmental sustainability objectives and reductions in the use of finite resources, while at the same time it seeks to preserve materials, components and products by reusing, repairing, and remarketing.

Speaking of the Greek context, although certain steps have lately been made in the field of Circular Business Models, a lot remains yet to be done. The goal of this paper is to look into the concept of circularity, the basic types of circular economy business models and their current use, but also the prospective applications in the various aspects of a city's functions in Europe and particularly in Greece.

Keywords: Resources, Environment, Sustainable development, Circular business models, Cities

Planted Roofs over Buildings - Case study at a School in Athens

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Abstract

In recent years, human action in addition to other factors have resulted in the increase of the planet's environmental pollution. Solutions to this problem must be immediate and effective, especially in high-populated cities, like Athens, demonstrating air quality problems due to the poor quality of constructions, high temperatures during summer time, noise, lack of city plans, etc.

The scope of this study is the investigation of the benefits emanating for urban environments by use of planted roofs in their buildings. As planted roofs are defined all types of garden configurations on buildings' roofs. All these types of planted roofs have many environmental, constructional, social, and financial benefits, e.g. improving the climate conditions of cities, producing more oxygen, absorbing pollutants and dust. This research suggests a method that covers all the way from the design and study to the construction stage, using inclusive decision-making processes for informing citizens and taking into account their views. It also states that an integrated energy strategy, such as planted roofs for maximizing the benefits to the environment and human beings should be incorporated in the original design of buildings. Additionally, the interdisciplinarity of the subject is highlighted.

Research results are demonstrated through a planted roof case study in a school building in Athens. The advantages and disadvantages of the planted roof usage are depicted, focusing on environmental, social and construction aspects. The proposed method is applied and the construction steps are analyzed despite the very few data availability. A range of issues are exemplified, like factors related to the roof (slope, drainage system, accessibility), static adequacy and stability, cost-related aspects, etc.

Keywords: Planted roofs, Plants, School, Climate, Sustainable development

Measuring Insularity Effects for In-land Areas

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Abstract

Detecting "insularity effect" in inland areas deals with the operative identification of marginal and remote territorial portions, where an adequate level of quality of live and equitable distribution of opportunities if far to be ensured to local inhabitants.

Our approach goes in the direction to adopt quantitative analytics used for the polycentric territorial organization in order to define targets and metrics, characterizing territorial insularity in a specific context, Basilicata region. Defining a polycentric territorial model means organizing spatial data and information that includes mechanisms that, at the local scale, determine the organization of demand and consequently the provision of services and facilities. It seeks to interpret the dynamics of settlement, infrastructure and organizational changes that condition territorial accessibility and that lead citizens to self-define residence and systematic displacements according to criteria of optimization of the use of the space and the territory.

The rules and criteria, which contribute to the definition of the settlement model, are useful in the planning of sustainable forms of territorial development: a substantial and particularly critical exercise in the management of the territories (i.e., low settlement density), in which rules and standards, defined for the organization of large metropolitan aggregates, loose their effectiveness. Additionally, the "in-land island" goes absolutely out of any standard classification in services and infrastructures supply/availability or "standard costs" estimation for public endowment.

These considerations are at the origin of the research question that underlies this work: identify "insularity effect areas" through the analysis of the polycentric territorial organizational model of Basilicata region (Italy), one of the regions with the lowest population density of Italy (56,3 inhabitants/sq.km), affected by a development delay that results from a secular infrastructural deficit.

In this work, two main information components are considered for the definition of polycentric geographies of spatial planning, organized on a four-level hierarchy of the Lucanian centers: the demographic structure of the population and the provision of services and equipment. The first refers to the Istat data, the second comes from a work of recollection and mapping of detail of the current offer of public and private services that together determine different levels of territorial endowment. Assessing accessibility in terms of the time needed to travel to centers providing primary services has been decisive for the definition of the geographies highlighted in the research.

This spatial pattern was then compared with a planned dimension, which takes into account the evolution of the demand for services and equipment by 2050, according to the current demographic growth rates of ISTAT (in reality of depopulation) for each municipality in Basilicata. The map of insularity effects comes as the complementary geography of the polycentric regional structure. This result opens to a more structured research and analytical

investigation about the issues of sustainable and inclusive development that should be completely reconsidered for those territories. The regional government, but also the national government, should act in order to define concrete actions overcoming the standardized governance models that are actually applied to development programs both in EU cohesion framework and extraordinary national development planning tools ("il Piano per il Sud").

The Maker Movement as a Grassroots Approach to Urban Regeneration and Planning in Thessaloniki and Piraeus

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Abstract

This paper presents the first results of the Horizon 2020 Pop-Machina project (Grant Agreement n. 821479) with a specific focus on the pilot cities of Thessaloniki and Piraeus. During recent years, collaborative production and the makers movement have been gaining significant traction. The prosumer trend, the rapid expansion of open workshops (makerspaces), the increase of availability and affordability of digital fabrication tools, such as 3D printers and laser cutters and the advance in certain collaborative technologies have led to the creation of a rapidly increasing number of Do-It-Yourself communities. Pop-Machina grasps this opportunity in order to create and support bottom-up maker communities to stimulate innovation, business opportunities, and job creation in both established and newly created sectors. The project uses urban regeneration and urban planning as tool to guide and empower collaborative production (both with urban/spatial analytics and with architecture and design) and it targets areas at risk, to help their adaptation to emerging economic, social and environmental challenges and to include ways of sustainably reusing and (mixed-use) reprogramming of existing buildings, open spaces and (infra)structures. The project's collaborative production pilot cities, among which are Thessaloniki and Piraeus, aim to develop innovative solutions for closing the loop of urban material and recyclables; and supporting an increase in the regenerative capacity of the city, while delimiting pollution of the environment. Up to date, a thorough, spatial-based investigation of the cultural, socio-economic, regulatory and technological characteristics of the maker community ecosystems of Thessaloniki and Piraeus has been co-created with the stakeholders through interviews, surveys and workshops. This paper presents the innovative co-creation methodologies of the two cities and the results of their application.

Keywords: Urban planning; Urban regeneration; Circular economy; Collaborative technologies; Co-creation; Greek cities

3D Underground Property Rights in Greece: A Case Study of Piraeus Metro Station, Greece

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Abstract

Vast urbanization and cities overpopulation made inevitable the use and disposal of Urban Underground Space (UUS). Underground development covers a wide range from transportation and infrastructures networks to water and energy storage facilities; and from community and municipal spaces to underground housing, business and manufacturing facilities. In many old cities, like Athens, a vivid archaeological wealth is also found underground. As UUS enhancing into urban planning process and development, important issues like underground land values, underground construction costs, or setting the depth of land ownership arise and need to be addressed. In many countries land ownership and/or property rights, on plots, are defined by numerous clauses principles. The need for detailed spatial and geometric documentation of plots subjected to property rights has led to development of cadastral systems, which in many countries co-exist with land registries. Current cadastral systems use 2D parcels to record plots. But as the need for exploitation of underground space is raising, the detailed spatial and descriptive documentation of 3D underground property rights, serving the scope of their registration in a 3D cadastral system is essential. This research presents technical and legal documentation of 3D underground property rights of the Piraeus Metro Station, correlated to cadastral current 2D spatial data.

Keywords: Underground property rights, 3D Cadastre, Piraeus metro station

Session 9

Technological Innovations, Planning Approaches and Data Considerations for Managing Cities and Insular Communities in the MED

Chair: Francesco Scorza (Online)

Cinque Terre, La Spezian maakunta, Italia
Source: https://unsplash.com/photos/aRbhfdbq484

COREALIS - Sustainable Innovative Footprints for Future Ports

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Abstract

Ports are essential for the European economy; 74% of goods exported or imported to the EU are transported via its seaports. At the same time, the challenges they face are only getting greater: Volumes of cargo increase while they also arrive in a shrinking number of vessels: Post-Panamax vessels have a capacity of more than 18k containers. Port operators need to comply with increasingly stricter environmental regulations and societal views for sustainability. A sustainable land-use strategy in and around the port and a strategic transition to new, service-based, management models that improve capacity and efficiency are paramount. They are key enablers for ports that want to keep pace with the ocean carriers needs and establish themselves as trans-shipment hubs with a 'societal license to operate'; for ports whose land strategy, hinterland accessibility and operations are underpinned by circular economy principles. COREALIS proposes a strategic, innovative framework, supported by disruptive technologies, including IoT, data analytics, next generation traffic management and 5G, for modern ports to handle future capacity, traffic, efficiency and environmental challenges. It respects their limitations regarding the port land, intermodal infrastructure and terminal operation. It proposes beyond state-of-the-art innovations to increase efficiency and optimize land-use, while being financially viable, respecting circular economy and being of service to the city. Through COREALIS, the port will minimize its environmental footprint to the city, it will decrease disturbance to local population through a reduction in the congestion around the port. It will be a pillar of business innovation, promoting local start-ups in disruptive technologies of mutual interest. COREALIS innovations are key both for the major deep-sea European ports in view of the new mega-vessel era, but also relevant for medium sized ports with limited investment funds for infrastructure and automation.

(https://cordis.europa.eu/project/id/768994, https://www.corealis.eu/)

Locally Integrated Partnership as a Tool to Implement the Port of Ravenna Smart Management Strategy

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Abstract

Italian ports have scattered traffic volumes and there is still a poor coordination for connectivity between ports, hinterland and city centers. The area on which all Italian ports stand is state property and through the Reform 84/94 the Italian ports became landlord ports, in which Port Authorities (PA) are in charge to coordinate, promote and plan the port activities, but are limited to be proactive to address and cope with the shipping and logistics sector challenges. This paper will describe the undergoing process of development and implementation of the Roadmap for the development of the Smart Port management strategy of Ravenna Port. Besides being the only Industrial port of Emilia-Romagna, and one of the richest and more industrialized Region in Southern Europe, the Ravenna Port is characterized by the following peculiarity: the state-owned areas managed by PA are limited to 50mt-width harbour quay, while the remaining areas are owned by private companies. This peculiarity strongly influences the port development and in order for the Ravenna Smart Port Strategy (SPS) to be implement, a multi-stakeholder engagement process, aimed at setting up a public-private people partnership (PPPP) is required. Focused on developing the port landside, the municipality of Ravenna set up a Locally Integrated Partnership (LIP), where companies closely collaborate with Local Authorities, supported by different intermediaries of knowledge. Thanks to LIP in Ravenna, many public funds to modernize port infrastructure were obtained, domestic investment were triggered and a process to share innovations in goods and people logistics among private partners is undergoing. In conclusion, the SPS implementation is still undergoing, and LIP can be a proper instrument to accelerate it, thanks to the engagement of all port ecosystem actors, leading the Port infrastructure to face the main challenges of the next decade: digitalization, climate and energy, city-port dialogue, resilience of the infrastructures reaching the UN SDGs.

Keywords: Ports Management, Smart port management strategy, Stakeholder Engagement, PPPP - Public Private People Partnership, LIP - Local Integrated Partnership, Regional Ecosystem of Innovation

Supporting Maritime Innovation Ecosystems in the Mediterranean Region

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Abstract

Blue economy constitutes an integral part of the economy of Mediterranean countries, with maritime transport and tourism accounting for the largest contribution. In order to sustain and support the further growth of those sectors, considering the current business environment which is more dynamic and is being characterized of fast technology penetration, emerging market trends, new business models, etc., Mediterranean countries need to invest on initiatives and structures supporting business innovation and entrepreneurship, thus fostering the establishment of efficient links with private investors (e.g. business angels, venture capitalists, etc.) for creating funding opportunities supporting business up-scale. To this end, within the framework of the Cluster ACT project, a mapping of the maritime innovation ecosystem in 5 Mediterranean countries (i.e. Greece, Italy, Spain, Croatia and Egypt) was undertaken and a questionnaire survey was conducted for collecting valuable insights on the challenges currently faced with regard to business development, and the skills that both innovators and investors should present for addressing them.

The mapping process highlighted the existence of several early-stage innovative companies in Italy, Spain and Greece supported by targeted incubators, hosted in various co-working spaces, and benefiting from relevant events that are regularly taking place in each country. More premature proves to be the relevant context in Croatia and Egypt, where such initiatives are still at their infancy.

The questionnaire survey highlighted highly complex and time-consuming administrative procedures being the main challenge that innovators are facing, while investors pointed out the difficulty in finding out about promising business ideas and getting into contact with the relevant teams. With regard to required skills, innovators highlighted that having a deep understanding of the current and expected competition is an important prerequisite, while investors acknowledged that interesting markets should be closely monitored and expert knowledge should be developed for timely identifying emerging opportunities.

Keywords: Blue economy, Maritime transport and tourism, Innovation ecosystems, Start-ups, Private investors, Mediterranean region

Promoting Urban Resilience in Europe through Earth Observation: The CURE Project

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Abstract

Urban areas are exceptionally vulnerable to climate change and their vulnerability is increasing over time. Hence, resilience has become an important necessity for cities, in order to properly preserve their functions and to adapt or transform their systems in the face of climate change. Therefore, city administrations and spatial planning community are prompted to embed climate change mitigation and adaptation in both urban planning and development. However, they should be supported with spatially disaggregated environmental information at neighbourhood and city scales. Such information can be provided through innovative Earth Observation (EO) methodologies deploying satellite and in-situ measurements. Plenty of EO datasets are available from Copernicus (European Union's Earth Observation Programme) and its Core Services can constitute the main data sources for these methodologies.

In this context, the CURE (Copernicus for Urban Resilience in Europe) project, funded by Horizon 2020, will provide the means to cope with the EO data in the domain of sustainable and resilient urbanization, by combining products of both Copernicus and third-party data. Specifically, CURE will develop a system, consisting of individual cross-cutting applications for climate change adaptation and mitigation, energy and economy, as well as healthy cities and social environments. Moreover, these applications will be tested in several European cities of different magnitude and typologies towards validating their utility. Focusing on Copernicus, CURE deploys four Copernicus Core Services: Land Monitoring Service (CLMS), the Atmosphere Monitoring Service (CAMS), the Climate Change Service (C3S) and the Emergency Management Service (EMS), while the system will be developed in Copernicus Data and Information Access Services (DIAS). Consequently, CURE aims to contribute to the scientific and operational exploitation of the existing and upcoming European space infrastructure, by providing novel ideas on how Copernicus can promote valuable information for urban resilience, considering both urban form and function through a multidisciplinary perspective.

Keywords: Urban resilience and sustainability, Earth observation, Copernicus earth services, Climate change adaptation and mitigation, Energy and economy, Health cities and social environments

Paving Smart and Sustainable Pathways for Port Cities in a Challenging Era - Open Issues of Development and Planning

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Abstract

Port cities represent distinguished types of spatial entities, highly critical in the formulation of environmental, spatial, sectoral and developmental policies. Their multi-functional nature and strong dynamics entailed to the evolution of their socio-economic characteristics assign to port cities multiple roles and perspectives. These fragile vulnerable loci are, at once, sites of geopolitical importance, parts of urban networks, entry and exit gates for people, goods, services and ideas, centres of knowledge - innovation, unique multi-cultural hubs as well as pockets of environmental degradation. Their dual role - as developmental nodes and historical sites - raises numerous environmental, spatial, socio-economic, local and supra-regional issues related to the port, the city and their dynamic relationship. The multidimensional nature of their problems, coupled with the need to manage different (often conflicting) interests / requests, complicates the development of port cities turning into a dominant spatial planning issue. Experience and practice have shown that the planning of the port and the city need to be closely linked. This raises the question of co-managing and ensuring democratic planning processes amongst public and private sector agencies, and citizens. The challenge and pledge are to set up new innovative governance structures and appropriate methodological approaches to explore, record, assess and monitor the complex port-city relationship. Especially in the current era of a globalised context of networking, technological revolution, climate change, multi-faceted crisis and pandemic, where port cities seek their new role as entrepreneurship, tourism and leisure centres in alignment with their historic / cultural trajectory and their new relationship with water. What sparked the interest was the experience gained from author's recent academic activity which brought about the need for rethinking port cities' development. On this basis, the article attempts to contribute to the debate, introducing relevant considerations, highlighting crucial questions, and formulating proposals to address them.

Accessibility and Public Transport Mobility for a Smart(er) Island: Evidence from Sardinia (Italy)

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Abstract

In the world, many islands have defined a set of strategic guidelines aimed at improving their smart growth. One of the main objectives inside these strategic guidelines is to improve territorial accessibility through strategic projects, by using digital technologies on innovative data. These projects, especially in geographically closed systems such as the island contexts, affect the attractiveness of the public transport service (PTS). In fact, the PTS travel times, the modal share, and the general quality of the system are linked not only to the quality of transport infrastructures, place-based organization, and population distribution, but also to the physical conformation of the territory.

The PTS in Sardinia (Italy) reflects the actual population distribution, disseminated in many small and low-density municipalities. Inner areas show a huge depopulation trend, while the major cities in coastal areas are growing their population. The island exhibits a profound transformation during the last decades, and people move from inner areas to coastal ones, mainly for business and leisure reasons. Only 12% of travels use PTS, and almost 67% use private cars. Moreover, the tourist sector attracts 3,100,000 vacationers during the summer, a fact that brings forward new mobility tendencies because more than 92% of them travel by private vehicles. Despite this situation, the traditional PTS organization in Sardinia does not take into account these specificities. Based on these assumptions, the focus of this paper is to underline the main characteristics of the Sardinia transport domestic accessibility. The main results show that domestic accessibility is poor from the inner to coastal areas and vice versa. Therefore, the paper suggests rethinking current patterns and bring on board new solutions, in order to provide a smarter, safer and more sustainable PTS's development model that integrates the new tendencies in mobility.

Keywords: Accessibility, Place-based organization, Sardinia Transport System, Smart and sustainable island, Public Transport Service

Session 10

Planning and Technological Dimensions of Cultural Resource Management

Chair: Dimitris Kavroudakis (Online)

Source: Ioannidis et al., 2020

Source: Koutsi and Stratigea, 2019
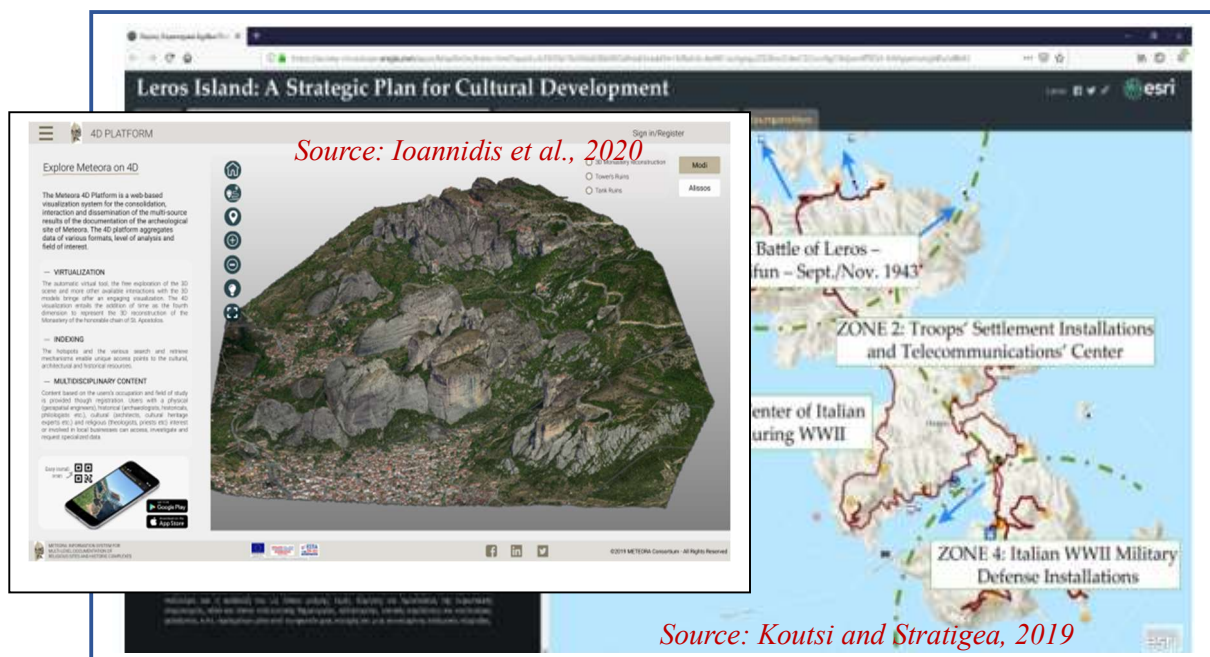
Digital Media in EU Heritage - From Interactive Remembrance to Megalithic-VR

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Abstract

Digital media in cultural heritage here work on two levels: as instantiation of concepts for digital learning methods on the one side; and on the people´s user culture and the attractiveness of a medium to motivate visitors' participation in the topics of the site or situation on the other. Participation itself has a long cultural tradition in Europe.

The aim of our effort is to preserve cultural heritage and remembrance in Europe for posterity and to pass on the knowledge about it to future generations. Since the early 1990s, cultural heritage has been a testing ground for digital visualization and participation practices. Using the latest 3D technologies, VR and AR, conservation data are the basis for new scientific research and at the same time, because of their high level of vividness, they are also suitable for communicating current research to a broad audience. However, the increasing complexity of digital media also requires complex workflows for low-threshold communication and a hybrid learning about the needed competence. The EU Heritage project works on a new transnational curriculum for cultural heritage professionals, focused on digital skills, transferable and transversal competences, soft skills, and skills connected to remembrance in Europe and experience tourism in the field of cultural heritage. In our case studies about new digital media bases communication and audience interaction, we address these new workflows of different disciplines, using the example of the LidiceHaus in Bremen, a memorial and a reminder of the crimes and cruelty of fascist reign in Europe and the Grosse Sloopsteene near Lotte-Wersen, the best-preserved megalithic tomb in North-West of Germany for to deduce requirement for a new learning about cultural heritage in Europe.

Keywords: EU Heritage, Digital media, VR, Lidice Haus, Megalithic culture, eLearning Europe

A Web-Based Platform for Promoting Cultural Tourism: The Case Study of Meteora, Greece

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Abstract

The holistic documentation of sites of archaeological, historical or religious interest is one of the most important processes for preserving our cultural heritage and promoting cultural tourism. In this paper, an innovative web-based platform for the promotion of smart cultural tourism is introduced. The platform aims to upgrade the cultural electronic services and attract a new generation of tourists, by integrating culture into the tourism experience and promoting the history and the culture of a site. The platform supports the multi-dimensional documentation of the natural, religious, historical and cultural characteristics of significant sites, with the following functionalities: (i) visualization of detailed and highly accurate 3D models; (ii) differentiation of the details of the 3D models based on scale; and (iii) link to a database with various kinds of spatial and non-spatial data (e.g., archaeological and historical information, architectural drawings, images, videos, 3D models). The platform may be used by tourists before, during and after visiting a site of interest. The different user scenarios are the following: (i) virtual tour to a site of interest through either supervised or free navigation; (ii) virtual tour to a site of interest and simultaneous search for information; (iii) search for information about a site of interest; (iv) localized virtual tour; and (v) detection of alternative activities and points of interest. Additionally, a mobile augmented reality application for tourists, complementary to the web-based platform, for enriching their perception of the surrounding cultural landscape with additional elements/information related to the earlier form or current state of a site is available. The case study is part of the UNESCO world heritage site of Meteora, Greece, which combines an impressive natural environment with a unique monastic complex at the top of inaccessible huge rocks.
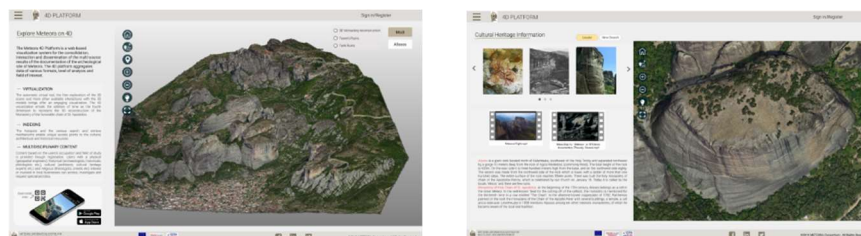
Keywords: Cultural tourism, visualization, 3D model, Documentation, Information System, Virtual tour

Unveiling Underwater Cultural Heritage (UCH) Narratives in the Mediterranean – Key Methodological Considerations

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Abstract

Current noticeable trends in the tourism industry depict a steady increase in tourist demands toward an experience-based recreation pattern. Such trends have brought to the forefront a multitude of previously less-known destinations, competing on the basis of their distinguished Cultural Heritage (CH). Among them lie small and medium-sized islands in the Mediterranean Region which, although endowed with exquisite natural and cultural, tangible and intangible, land and Underwater Cultural Heritage (UCH), are lagging behind due to insularity repercussions. The exceptional role of (U)CH in the Mediterranean and its potential for paving sustainable future development trails in these peripheral and disadvantaged insular regions is currently highly acknowledged. Furthermore, it has guided efforts towards the preservation of (U)CH as a mean for exploring and reviving the past; and exploiting it in a smart, sustainable and resilient way through attractive narratives' creation that can meet both the evolving tourist market demand for experience-based products and the expectations of local population for future local development of these remarkable parts of land.

However, while land CH is to date rather sufficiently explored and documented, UCH (e.g. wrecks of World War I and II) in the Mediterranean remains still largely unexplored and untapped. Preservation and sustainable exploitation of UCH, as an inseparable part of CH and historical paths of the Mediterranean islands, is the focus of this work. These are perceived to rely mainly upon the: a) conceptualization and deployment of a spatial database, integrating location of UCH with qualitative data, associated with other important attributes and historical/cultural interpretation; b) integrated, multi- and interdisciplinary, multilevel, land- and maritime-related planning approach; and c) citizens and stakeholders' engagement for safeguarding and steadily enriching / updating UCH knowledge (crowdsourcing). Methodological considerations of the aforementioned issues are explored in this work, in an effort to identify gaps that need to be addressed in order for Mediterranean islands to be promoted as outstanding ensembles of people's history and culture.

Keywords: Mediterranean Region, Islands, Underwater Cultural Heritage (UCH), Local development, ICT, Crowdsourcing

Identifying the Industrial Cultural Heritage of Athens, Greece through Digital Applications

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Abstract

Cultural heritage can be defined through various meanings: widely known as the tangible and intangible remains of the past, it is a legacy for societies around the world. The cultural artifacts usually refer to historical monuments, museums and their collections, works of art, written and oral traditions, including natural landscapes. Cities, as a wider form of human urban settlements, consist of buildings belonging to cultural heritage attributed to different chronological periods, each one unique for its identity through the passage of time.

A large number of buildings dated in the Industrial Revolution can be traced, incorporated in the modern cities of our times and presenting historical architectural features worthy to be preserved. It is important to acknowledge their identity and highlight their potential to serve new uses through multiple adaptation projects. The 19th c. industrial buildings can be identified as cultural monuments of the past and assist to the reconstruction of urban landscapes.

In Greece, the appreciation of industrial buildings is relatively recent, as the legal authorities recognized their historical value by listing them as monuments. Additionally, individual initiatives organized by volunteers-groups of engineers, architects, historians, present the necessity for their documentation through relevant research projects. The re-use of industrial buildings for cultural activities is lately a common phenomenon.

Following the philosophy of smart cities, this paper presents a digital inventory of the industrial buildings located in the historical centre of Athens, many of them lately re-adapted to host cultural activities. The use of smart technology by creating a digital application for smart phones will provide access to a continuously enriched registry, via interactive maps. The initiative would promote the buildings' past and present use and moreover the creative concept of their multiple function. The presented model of cultural management will be applicable for every industrial building in Athens.

Keywords: Cultural management, Industrial heritage, Inventory, Digital application, Urban landscape, Smart city

Spatial Data Management for Unfolding Potential of Cultural Tourism Pathways in the Greek Territory

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Abstract

Tourism constitutes the "heavy industry" of the Greek economy, capitalizing on its abundant and highly appreciated natural and cultural resources, mild climate, coastal and insular land and seascapes, to name a few. Sustainable exploitation of the natural and cultural capital is an essential part of, among others, the spatial, developmental and tourism policy, in an effort to promote spatially-defined tourism development pathways; and articulate policy directions that motivate the entrepreneurial community to undertake initiatives, which can add value to regional and national wealth.

But how successful are these policies in matching the widely spread natural and cultural capital with tourism entrepreneurship in the various Greek regions, taking into consideration the distinct assets of each single one of them? Or how effective are these in promoting a sustainable, resilient and durable, tourist model by instigating entrepreneurial community to invest in the vibrant natural and cultural resources of the Greek territories? How can Greece accomplish the transition from a "summer myth" to an all year round experienced-based destination, offering a rich and diversified, spatially dispersed and highly emotional tourism narrative, a win-win perspective for both local population and visitors?

These questions lie at the core of this work that aims at broadening the scope of the Greek tourism development policy towards this end. In doing so, a thorough analysis of spatial data and information, relevant to the distribution of cultural resources and tourism entrepreneurship throughout the Greek territory is carried out [50 out of 52 Regional Entities (NUTS3 level) are explored]. Outcomes of this spatial analysis are contrasted with the fundamental tourism policy directions in order for critical disharmonies to be addressed and fruitful conclusions for policy reformulation to be drawn.

Keywords: Cultural resources, Tourism entrepreneurship, Spatial data management, Regional development, Cultural tourism policy

Skimmed Risk Coffee: Fuzzy Statistical Analysis for Determining Specific Spatial Market Structures that Correlate with Coffee Shops

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Abstract

When starting a new business venture, one of the main considerations of business owners is the characteristics of the property from which they will conduct their business. As coffee is a growing industry in the United Kingdom, it is important for owners seeking to set off new businesses to embed intelligence into their decision-making processes, in order to mitigate risk of losses associated with rental agreements, transportation, settlements costs and other.

This research work examines geospatial data in order to ascertain whether coffee-shop locations are correlated with other geospatial entities, which may potentially narrow down the options regarding area selection. Four English cities (Liverpool, Manchester, Leeds, Newcastle upon Tyne) are examined. To accomplish this, nearness is defined using fuzzy logic, and the resulting datasets are controlled for the existence of correlations using random forest regression in Python. Finally, after the existence of consistent correlations valid for all four datasets is validated, a brief critical analysis of possible relations between important factors and coffee-shops is discussed.

Keywords: GIS, Business Intelligence, Location Intelligence, Location Theory, Coffee Shops

Session 11

Aspects of Ocean and Coastal Zone Management in the MED – I

Chair: Vassiliki Vassilopoulou (F2F)

Coastalization in the Mediterranean: Comparing Urban Sprawl Patterns in Tourism Development Areas

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Abstract

The densification of coastal urban development with concentration of population and of economic activities is a dynamic process, reshaping the Mediterranean landscape. Mass tourism development and suburbanization trends, accompanied by large-scale infrastructure are the main drivers of urban sprawl in coastal areas, posing severe threats to the ecosystems and consuming land in an unsustainable way. The aim of this research is to develop a methodology analysing the spatial patterns of built-up areas in coastal zones. High-resolution multi-temporal data, provided by the Global Human Settlement Layer (GHSL) database for the period 1975-2014, are used. Methodology involves processing of these data using geospatial tools; and estimating a set of spatial metrics characterizing the density, aggregation/clustering and dispersion of built-up areas along the coastal zones. Four Mediterranean case study areas are analyzed and compared, all located in highly developed tourism areas: Costa Blanca in Spain, Cote d'Azur in France, Emilia-Romagna's Adriatic Coast in Italy and Northern Crete in Greece. At a first step, gradients of built-up density, based on different distance-zones from the coast, are constructed and changes through time are evaluated. At a second step, spatial metrics are estimated using the Fragstats Software: Built-up areas are identified for each period (1975, 1990, 2000, 2014) and are categorized based on different land use zones (Urban, Industrial/Commercial, Agricultural, Transportation Infrastructure, Leisure, Natural/forest areas). Landscape and class level spatial metrics are estimated and compared, highlighting the different typologies of coastalization. Results show that Costa Blanca and Cote d'Azur are most heavily affected by coastalization processes, the first presenting a more dispersed and fragmented pattern of development while the second a more compactly built-up pattern. Emilia Romagna is characterized by important rates of inland development along transportation networks, while in Northern Crete dispersed development takes place in a narrow zone of 2 km from the coast.

Keywords: Coastalization, Mediterranean, Urban sprawl, Tourism development, Spatial metrics, Global Human Settlement Layer

The Development of a Spatial Data Infrastructure to Support Marine Spatial Planning in Greece

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Abstract

The multiple pressures put on coastal zones and the maritime space in general, often by incompatible uses, require a comprehensive approach for space planning and management, as indicated by the European Directive 2014/89 on the establishment of a framework for Marine Spatial Planning (MSP). Marine spatial planning is a public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas, to achieve ecological, economic, and social objectives. Its implementation in Greece is based on the integrated view of the maritime and coastal area, which will contribute to the preparation of the National Maritime Space Strategy. In this context, the project " THAL-HOR 2: Cross-Border Cooperation for the Application of Marine Spatial Planning" is being implemented, funded by the INTERREG V-A Greece-Cyprus Program 2014-2020. The project aims to the modernization of the technological base (geographic database, metadata catalogue and Web-GIS) for better information management and distribution, and to data update and knowledge expansion for marine and coastal areas. More specifically, project's tasks include: (a) capturing the current situation by the acquisition of spatial data on the natural environment and human activities at sea and on the coast, (b) processing and documenting datasets in accordance with the European INSPIRE Directive, and (c) developing a Spatial Data Infrastructure (SDI) in order to support MSP procedures and stakeholders. The system intends to offer an integrated set of services for geographical datasets and maps (like incorporation, documentation, discovery, cartographic navigation and distribution), in order to achieve their optimal utilization in the MSP framework. Capitalizing the results of the previous project "THAL-HOR: Cross-Border Cooperation for the Development of Marine Spatial Planning" (INTERREG Greece-Cyprus Program 2007-2013), the ultimate goal of the current effort is the establishment of maritime spatial plans capturing the vision of sustainable development of Greece and Cyprus.

Keywords: Marine spatial planning, Spatial data infrastructure, Geographical data

Knowledge Integration in Participatory Planning: An Essential Component of Scenario Building for the Effective Allocation of Maritime Uses

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Abstract

A critical component of developing alternative scenarios aiming to effectively allocate human uses to appropriate ocean areas is stakeholder engagement through a transparent participatory process. This process can reveal stakeholders' perceptions, related to the management of marine uses and guiding the scope, objectives, and key elements of marine spatial plans (Pomeroy & Douvere, 2008).

The Interreg AMAre project has laid the foundations for integrated knowledge, fine-scale assessments, and maritime uses spatial scenario building, as a result of continuous collaboration with targeted stakeholders throughout the lifetime of the project, in the National Marine Park of Alonnisos and the Northern Sporades.

The design of a transparent participatory process and the selection of suitable participatory tools have helped develop a continuous and engaging dialogue and have gradually fostered relevant data collection and integration of different knowledge systems.

In working together for participatory research and actions, the following participatory tools were selected to collect and integrate knowledge: questionnaires, semi-structured interviews, a conference event, participatory sampling, and finally, public participatory process scenario workshops. In developing a constructive dialogue and knowledge exchange among scientists, local stakeholders, and policymakers, these tools have helped in: (a) raising awareness on the project's objectives, (b) informing on best practices and showcased solutions implemented in Marine Protected Areas (MPAs), (c) developing potential synergies aiming towards the area's sustainable development, (d) collecting and validating spatial and ecological data, and e) jointly discussing future marine spatial scenarios.

Project outcomes have indicated that even though biodiversity protection and ecosystem sustainability are unanimously deemed as the overarching principles when drafting development plans within MPAs, further targeted research and efficient knowledge integration among different science disciplines and stakeholder actors are needed to address the big challenge of dealing with trade-offs between different objectives linked with the attainment of SGD under the UN 2030 Agenda.

Keywords: Knowledge integration, Participatory planning, Scenario building

Introducing Smart Marine Ecosystem Planning (SMEP) Concept - How SMEP Can Drive Marine Spatial Planning Strategy and its Implementation in Greece

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Abstract

The paper reviews the status of the Marine Spatial Planning (MSP) in Greece and relates its development with the realization of a Marine Spatial Data Infrastructure (MSDI). The concept of Smart Marine Ecosystem Planning (SMEP) is introduced for more interactive and responsive marine administration, safer marine spaces and meeting better the needs of the marine population, through 'smart' marine related digital services. SMEP results from continuous data capturing of spatial-temporal physical phenomena and human activities in coastal areas and sea, the corresponding data analysis and the decision-making for achieving continual improvement in the marine planning & management processes. Since MSP needs to have an ecosystem-based approach, which is constantly changing, including both the living and the non-living components of the marine environment interacting as a system, best available and science-based data are required at various resolutions. SMEP is an adaptive strategy to incorporate changes, being driven by the environment and the climate change forces, the blue growth economy targets of the respective EU programming periods, as well as the implications from the geopolitical chess of the East Mediterranean Sea basin. All these factors require deep knowledge and rational decisions for achieving collaboration, even consensus, for the sustainable development in the Eastern Mediterranean and for the common well-being of the people living there.

Keywords: Smart Marine Ecosystem Planning (SMEP); Marine Spatial Data Infrastructure (MSDI); Maritime Limits & Boundaries (S-121); Marine Protected Areas (S-122)

New Cartographies Strengthening a Sustainable and Responsible Island Tourism

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Abstract

The rapid growth of tourism and the high demands of the modern responsible traveller impose the management of the tourist destination in a smart way, which ensures the sustainable development on the one hand and the optimal satisfaction of the visitors on the other. Through smart technologies, new applications are constantly being developed that help to improve access to information and services, contributing to the choice of destination and travel planning. This provides the prospective visitor with the sense of security needed to travel even individually today to areas that may have been unknown a while ago.

The protection of destinations from uncontrolled tourism development necessitates appropriate management of tourist areas with essential sustainability criteria as well as design strategies combined with modern data, tools and trends.

Spatial information in the form of novel smart web maps can become a significant factor in documenting the identity of the destination. As geoinformatics and cartography evolve, they can play a substantial role in promoting the tourist destination and eventually, sustainable tourism development for the region, which is required by all stakeholders.

The paper presents the use of map information in prominent tourist platforms for popular destinations and island areas, as well as, their evaluation in terms of content, based on the satisfaction of the sustainability principles for the modern responsible visitor, but also the policy makers. The paper is part of research into New Cartographies for island tourism.

Keywords: Sustainable tourism, Island tourism, New cartographies, Geoinformation, Platforms, Responsible tourism

Development of a Tourism Carrying Capacity Index (TCCI) for Sustainable Management of Coastal Areas in Mediterranean Islands – Case Study Naxos, Greece

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Abstract

The Region of Mediterranean is nowadays perceived as a hot spot in various respects, including the environmental and climate change dimension. In fact, accelerated climate change has exacerbated environmental deterioration in the Mediterranean Region in general and islands in particular. Furthermore, Mediterranean islands, as globally acknowledged tourism destinations mostly hosting mass tourism activities, are currently confronted with severe threats, more intensely presented in the increasingly crowded coastal parts. These are predicted to have, in the long term, adverse impacts on their local ecosystems, economy and society. Global challenges, coupled with the rather irrational and unsustainable use of resources in island regions due to overtourism raise, in a rather severe and urgent way, issues of sustainable resource management, especially in areas close to their coastal zone.

In such a framework, the paper attempts to outline the carrying capacity approach as a means for assessing the thresholds of tourism development in coastal areas of the Mediterranean islands. Using as a starting point the Pressure-State-Response (PSR) framework, a Tourism Carrying Capacity Index (TCCI) is developed in this respect, having a specific focus on the environmental and manmade dimensions. Main components/variables of TCCI are atmosphere/climate, land resources, water resources and the quality of natural resource management. Based on TCCI, acceptable tourist development limits in coastal areas can be depicted, as shown in the case study of this work, the Island of Naxos, Greece. Conclusions relating to the replicability of TCCI as well as barriers to its implementation are also drawn.

Keywords: Carrying capacity, Coastal management, Pressure-State-Response (PSR) framework indicators, Mediterranean coastal areas

Session 12

Historical Urban Landscapes' Management in the MED

Chair: Beniamino Murgante (Online)

Ancient columns in the Kato Pafos Archaeological Site
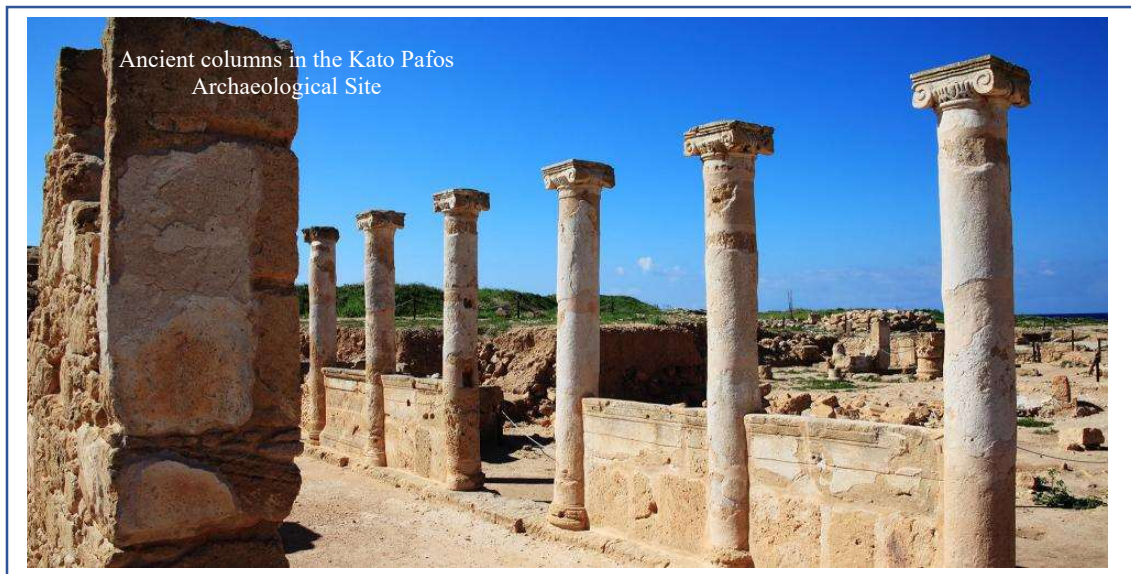
Source: World Heritage Europe, https://visitworldheritage.com/en/eu/pafos-paphos-cyprus/966d9645-f4b9-47aa-93e6-f294957f9600

The Politics of Urban Regeneration in the East Mediterranean: Notes on the Change of the Cultural and Social Heritage

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Abstract

The paper approaches different models of urban regeneration in the East Mediterranean, applied in urban areas with high attractiveness of history, culture, and climate; and examines their impact on regional cultural resilience. Greece and Cyprus, two countries that recently experienced financial crises, allow for extensive real estate development in pursuit of the encouragement of the business activity, the improvement of the attractiveness of areas of cultural interest, and the regeneration of the built environment. In Cyprus, large-scale urban residential projects have appeared in areas close to the traditional city centers and coastal strips and have dramatically transformed the urban morphology. In Greece, authorities use the strong tourism industry to promote existing properties as an inventory for sale to international investors. Both countries have focused on the spatial reorganization of the Mediterranean based on a foreign investment and the use of public or privately-owned land to generate a sophisticated economic strategy involving global real estate agents. As a result, large-scale projects are applied without an assessment of their impact on the social and cultural context and in the absence of local specific planning frameworks. Thus, this paper analyses these models respectively and draws comparative conclusions from the evaluation of three aspects of the current models: the degree of urban adaptation/compatibility, the nature of social and cultural reference, and the associated impact on the physical and socio-economic context. Specific case studies' evaluation reveals the qualitative and quantitative parameters, such as the structure, application, extent, morphological outcome, and cultural assimilation that contribute to the loss of cultural heritage. The paper attempts to describe an alternative approach to urban regeneration that urges for cultural preservation. It focuses on the importance of a socio-cultural resilience plan and aims to provide academics and the public at large with a comprehensive framework about social and urban sustainability.

Keywords: Urban regeneration, East Mediterranean, Cultural preservation, Urban originality, Social sustainability

The Cultural Paths Assessment Tool (PAST) for Evaluating the Historical Center of Cagliari (Italy)

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Abstract

Processes of urbanization, market liberalization and exploitation of heritage can engender the fragmentation and deterioration of historical urban landscapes. Thematic paths are a central aspect of policies of cultural heritage valorisation. In fact, thematic paths are a storytelling tool central for structuring the image of an historic landscape. This issue is herein re-interpreted within the smart city model. The smart city, in fact, encompasses a framework that integrates ICTs and data collection and analysis into governance practices to address, in a systematic way, the issues of the contemporary city, while responding to citizens' expectations of transparency and accountability. Hence, this study proposes the Cultural Paths Assessment Tool (PAST) as a methodological framework for individuating a network of paths connecting cultural heritage components and for assessing their usefulness. Usefulness is herein defined as the potential of a network of paths to support the meaningful experience of a historic urban landscape. PAST combines Space Syntax techniques, GIS analytic tools and qualitative analysis within a Multi-criteria analysis framework for addressing four aspects of connecting cultural heritage components, including: i) individuation of relevant assets; ii) identification of the sub-network of most central segments; iii) definition of the network of thematic paths; iv) assessment of the usefulness of thematic paths, according to criteria of usability, imageability and accessibility. The proposed methodology -applied to the analysis of the historical district of Marina in the city of Cagliari (Italy)- supports place-shaping processes within a smart city governance framework in two ways: 1) by identifying paths and nodes comprising a network of thematic paths; 2) by individuating high-leverage interventions for improving their usefulness. Consequently, the proposed study addresses the need to establish methodologies and analytic tools that support decision-making processes for conserving, managing and valorising historic urban landscapes.

Transfer of Development Rights and Cultural Heritage Preservation: A Case Study at Athens Historic Center, Greece

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Abstract

History and modern world co-exist in Greece's landscape. Urban space in Greek cities embodies elements and structures from their long-term history and contemporary constructions, especially in city centers and old towns. According to Greece's Constitution, preservation and protection of cultural environment is a constitutional mandate, along with the protection of anthropogenic and natural environment. Even though cultural heritage protection and urban planning must co-exist, intense urban development and exploitation of city centers, like in Athens Historic Center, and conflict of interests has led to imbalances, resulting in the inadequate protection of cultural heritage. At the same time, owners of listed buildings or with properties within archaeological sites found their properties locked-into a rigorous framework on cultural heritage protection. Thus, they are unable to exploit their property in its full extent and usually have to endure long judicial dispute over compensation. As the debate on cultural heritage protection is more topical than ever, the recent legal re-introduction of Transfer of Development Rights (TDR), gives new prospects for exploitation of properties that are classified as listed buildings or archaeological/ cultural sites of great importance. This paper presents a theoretical and methodological framework for visualization and representation of development rights, adjusted to the recent Greece's TDR legal framework. Besides the typical 3D visualization of the build environment, potential development rights, as those are defined by urban planning legislation but restricted due to cultural heritage protection regulations, are also visualized. Legal and technical aspects affecting TDR are herein emphasized as a key element for TDR successful implementation.

Keywords: Transfer of development rights, Cultural heritage protection, Athens Historic Center

Co-creation of narratives for "minor" sites of cultural heritage in Euro Mediterranean peri-urban areas. The case of a small temple on the east coast of Attica, Greece

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Abstract

This paper explores processes of raising awareness of those historical and archaeological sites which, considered "minor" as they lack "exceptional character", fall marginally within the scope of the general measures to protect and enhance the vast Euro-Mediterranean cultural heritage. They are often not accessible because they are delimited by protective fences and not open to the public due to insufficient funds. The result sometimes involves the state of abandonment of the sites and their complete isolation from the contemporary environment.

The creation of a narrative of these sites that makes their meanings and values more understandable to the public can be facilitated by the expert use of new documentation and visualization technologies and made accessible through the enhancement of the museum websites of sites belonging to the same cultural and territorial context. At the same time, the construction of these contents can be favoured through the active participation of citizens.

These initiatives can create a meeting interface between top-down and bottom-up actions through the involvement of institutional stakeholders, museum bodies, citizens and visitors. They can foster a wider awareness, sharing and co-creation of issues related to the protection and enhancement of places of cultural heritage and their contemporary context.

The small temple of the beach of Loutsa in Attica today retains only a part of the original structure and is delimited by a very close perimeter fence that isolates it from the contemporary context. Starting from this condition of isolation and marginality, this paper aims to identify possible measures for the shared rediscovery of its values, meanings and connections with other sites thanks to the use of digital resources, web platforms and the participation of citizens and cultural heritage institutions. By promoting a recontextualized narrative through co-creation of this "minor" site, these processes can contribute to its preservation and enhancement.

Keywords: Co-creation of cultural heritage, Historical & archaeological sites, Smart preservation and enhancement, Peri-urban

Smart, Creative and Sustainable Tourism: An Integrated Approach to Urban Cultural Tourism

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Abstract

The significant developments in the field of information and communication technologies and the increasing urbanization have given birth to a new scientific field, the 'smart cities'. In recent years there has been a strong interest in integrating 'smart' technologies into various functions or areas of interest in cities such as mobility, energy, environmental protection, security, etc. Existing solutions, either in terms of applications or strategies, are characterized by a vertical or otherwise sectoral dimension, which fails to incorporate the complex interdependencies created in the urban fabric and affecting more expansive functions / sectors, such as tourism. Unlike existing solutions, this paper seeks to combine tourism - a key area of interest in modern cities - with the field of intelligent cities, in order to produce an integrated, sustainable and effective model of tourism development that meets the modern needs of cities.

We focus on urban cultural tourism as the main form of tourism in urban centers, as well as on two new approaches to tourism, that is 'sustainable' and 'creative' tourism, which aim at reducing the impact of tourism on cities. Looking at examples of new technologies used by smart cities, emphasis is placed on the concept of 'smart' tourism as a way of enhancing sustainability and creativity in tourism. We perform an extended analysis of existing applications and online services in four European cities that constitute major tourist destinations and examine the level of integration of the three notions -"smartness", "creativity", "sustainability"- in different tourism services. Based on our findings, we end up with a set of basic smart tourism services and smart tourism service requirements which every city should adopt, as well as with a list of key recommendations for achieving an integrated approach to smart, creative and sustainable tourism.

Keywords: Smart tourism, Creative tourism, Sustainability, Smart tourism apps, Urban cultural tourism

Provence Academy: Exploring the Tension between Territory, Stratification and Connectivity in Times of Social Media and Digitization

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Abstract

STRATIFICATION: The Provence Academy has its roots in a small social community and in an extraordinary complex cultural landscape of the Luberon. The cultural heritage of the Provence makes ideas and utopias tangible, as everything resonates here and thus silences the echo chambers of social media and put things back to earth, woven into an over 35.000-year-old history of visuals, music, social activity. The traces go through the strata of major European phases like the Celts, Greeks, Romans, dark ages with migration, Christianity and Crusades, war of religions and nationalism, revolution, world war, the European Union and finally the concept of a post national geological and cultural entity of the Mediterranean. Whatever is happening in Cyberspace at the moment, it is tested through this stratification. CONNECTIVITY: A globalized, digitally nomadic self-exploiting workforce of a 'soul at work' needs places to connect. Traditional formats like Conference, think tanks, professional networks are centralized by power, i.e. they are in- and exclusive and have accumulative tendencies. The Provence Academy tries to reflects those structures and is open to everyone with interest.
TERRITORY: The European Union, globalization, and complex networks of institutions fabricate a spiderweb of personal links that is not yet traceable in cyberspace. In the Provence many of these traces are imprinted in the geology of the landscape and form a cultural landscape of great complexity. The institutional map of the area with the MUCEM in Marseille, the festivals in Avignon, Orange, Aix-en-Provence, Arles and the historic sites there is a creative presence that attracts artist from all over the world.

Therefore, we develop an innovative e-learning platform to connect the local cultural heritage with global learning environments and provide a meeting point in the spaces of an open Provence Academy.

Keywords: Provence, Cultural heritage, Datafication, Landscape, Learning

Session 13

Aspects of Ocean and Coastal Zone Management in the MED – II

Chair: Orli Ronen (Online)
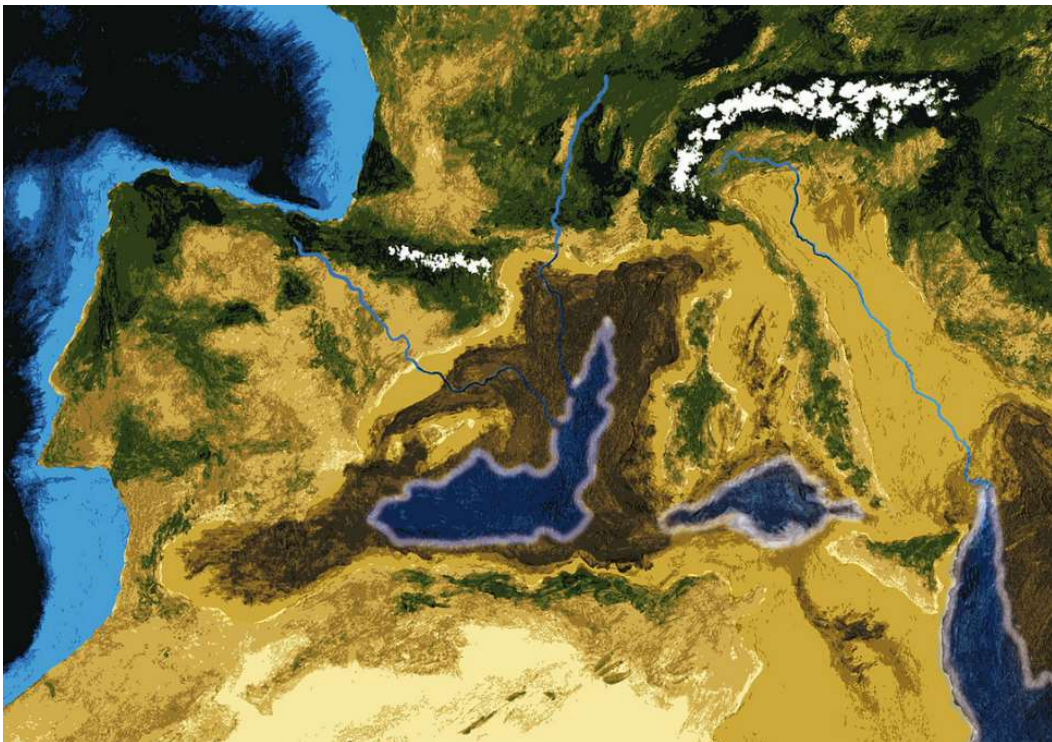
Source: https://en.wikipedia.org/wiki/Mediterranean_Sea#/media/File:Souostrov%C3%AD_Pakleni_otoci.jpg

Climate Adaptation in Coastal Cities

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Abstract

Hot and Stormy – Preparing for Climate Change in Mediterranean Coastal Cities

Coastal cities are at the forefront of Climate Change, however, around the Mediterranean they seem to be less prepared.
According to a 2018 study of 885 European cities, only 13 coastal Mediterranean cities have adaptation plans, 10 of which are French, where these plans are mandatory.
In March 2019, the OECD published a special policy document on the likely response to sea level rise. The report presents a recent analysis of the effects of climate change on coastal authorities and stipulates that while coastal communities are already experiencing flooding and flooding damages, in the OECD countries implementation of adaptation measures for sea level rise is too slow. Only five states devoted resources to means of adaptation in the coastal strips. In Israel, preparing for Climate Change is a newcomer in the policy arena. In June 2018, a government decision was passed to establish an inter-ministerial administration for the preparation of a national plan for climate change adaptation. The administration is compiling a national strategy for adaptation, including a governmental plan to support and advance Local Adaptation Plans, recognizing the unique needs of coastal authorities.

This paper presents the preliminary assessment of the current data and information resources on the sensitivity and vulnerability of the coastal authorities in Israel to Climate Change. Adapting to climate change is critical, but timely, today we have better understanding and abilities to gather and share information, to improve preparedness and overcome vulnerabilities facing the foreseen changes in our region.

Sea Level Rise Adaptation and Urban Planning. Virtuous Synergies in Boston

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Abstract

Contemporary urban coastal settlements are globally experiencing the increasing disasters related to what Environmental Sciences have recognized as the 'Climate Change issue'.

In recent times, the scientific debate about the 'anthropogenic Climate Change' (CC) and its effects on human settlements is mostly focused on the capabilities of public policies and integrated partnerships to rethink visions and implement virtuous strategies to face the increasing threats and manage urban and metropolitan vulnerabilities.

Institutions, governments, scientists as well as enlightened enterprises and community stakeholders are nowadays aware that in the incoming years CC impacts on waterfront cities and their hydrographic systems will keep on blowing up (IPCC 2014) and show fragility to extreme events, such as devastating floods and alarming sea level rise (EEA 2012). Therefore, the emerging imperative for contemporary communities is not only tackling 'ex post' the perverse effects of CC, but mostly developing long term policies and 'ex ante' strategies trying to transform threats into potentials.

The Boston area (MA, USA) represents a paradigmatic case of virtuous integration in CC management and urban planning aimed at making Boston more resilient, equitable and prepared. The initial 'Climate Action Plan' (2007, updated in 2011 and 2014) and the recent ongoing initiative - 'Climate Ready Boston' - pursue the virtuous harmonisation of environmental strategies with urban policies and social consciousness, integrating urban sustainable redevelopment, mobility infrastructures, multi-purpose green spaces, stormwater systems, protected shorelines, prepared/connected communities. Concerning flood prevention, the initiative delivers for intriguing projects intertwining the three coastal response options to sea level rise - protection, accommodation and retreat - focused by distinguished schools of thought (Biljsma et al. 1996) and adopted by international authorities (IPCC 2001).

The paper argues about the CC 'Boston approach' as potential trigger towards new virtuous urban adaptive ecosystem models to be applied to international contexts.

Keywords: Climate change issues, Waterfront cities, Sea level rise adaptation, Urban planning innovation

Exploring Site Suitability for Aquaculture Development in the Greek Ionian Sea

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Abstract

Marine aquaculture is one of the most important production sectors in Greece and is expected to double its production by 2030, in order to meet the growing demand and maintain its market position globally. The selection of Allocated Zones for Aquaculture (AZAs), is crucial for supporting the sustainable development of this sector, which under the EU Blue Growth Strategy is considered as having a high potential for sustainable growth and jobs. In this effort, we present the results of the module for AZAs identification which was developed within the framework of the INTERREG ADRION project PORTODIMARE, that aims to support the implementation of the EU Directive 2014/89/EU "Maritime Spatial Planning", in the Adriatic and Ionian region in line also with the respective Macro-regional (EUSAIR) pillar 1 provisions.

The AZA module, based on a Spatial Multi-Criteria Evaluation (SMCE) analysis, enables the identification of marine areas where the development of aquaculture, and in our case seabass and seabream cage farming, may be suitable. Indeed, the application of SMCE analysis can assist in the site selection process, by combining different criteria in complex decision-making procedures. For the analysis, we used as criteria finfish optimal growth, significant wave height and distance to harbour. Then, possible conflicts with conservation priority areas/ecosystem components (e.g. Natura 2000 sites, Posidonia oceanica meadows) as well as other activities/uses (e.g. small and medium scale fisheries) were addressed, and overlay mapping contributed further to the identification of sites that may be considered as suitable for AZA development.

Keywords: Aquaculture, Multi-Criteria analysis, Suitability

S.O.S. Climate Waterfront: New Planning Challenges for Thessaloniki's Shoreline

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Abstract

Urban waterfronts are facing new challenges when dealing with climate change. The effect of climate change is increasing at an unprecedented rhythm, which demands adaptation and strategic planning of vulnerable territories. The problem affects the citizens, the environment, and the local economy. Under this pressure, even within the pandemic crisis era, traditional strategies are not any more efficient to manage urban waterfronts. This paper attempts to present a "Plan Zero" for the Thessaloniki's Waterfront including the following pillars: resilience – a pillar focusing on the capacity of physical planning to anticipate the consequences of climate change through suitable land management; interaction - a new interaction between the sea and the land through the development of a sustainable Sea Urban Transport System; short and long-term planning for a successful transition toward soft, multimodal mobility that improves citizen wellbeing; participation – a pillar focusing on an ecosystem approach, where place, people and local policies constitute a livable, inclusive, and resourceful system based on community trust and participatory planning solutions.

The paper will sum-up the above by presenting the results of an urban design workshop that took place in Thessaloniki in the framework of the H2020 Marie Curie project "S.O.S Climate Waterfront". Focusing on two locations, at the SE and SW extremities of Thessaloniki's waterfront, the workshop brought together academics, public authorities, stakeholders, and students of architecture for two weeks of intense discussion, strategic planning, and detailed urban design. This is an interdisciplinary project that aims to explore waterfronts in Europe that are facing climate change. The project involves different disciplines to create new strategies for sustainable solutions concerning urban waterfronts planning in Europe. Relating historic and geographic records of specific waterfronts, the project constructs patterns of development, feed algorithms and integrate the support of artificial intelligence to design future possible scenarios.

Keywords: Urban waterfronts, Climate change, Urban resilience, Sea urban transportation, Participatory planning

A Tool for Visualizing Small and Medium-Scale Fisheries Footprints Using Multi-Criteria Decision Analysis: The fprmcda R-package

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Abstract

Identifying what drives fishing pressure in a marine environment is crucial to design effective management plans for the sustainability of fish stocks. However, this is a challenging topic because multiple conflicting factors act synergistically to determine the most suitable habitats for fishing. In this study, we present a visualization package built in R, called fprmcda, that aims to visualize small and medium scale fisheries by integrating diverse environmental and human components affecting coastal fisheries. To achieve this, first, the most influential components affecting coastal fisheries in a study area are identified: e.g., fishing capacity, bathymetry, distance from the coast, sea surface chlorophyll concentration, legislation, maritime traffic activity, trawlers and purse seiners fishing effort and no-take zones. Then, fprmcda combines these components using multi-criteria decision analysis and geospatial techniques and produces a series of indicators that define fishing footprint. We demonstrate the applicability of the package for the central Ionian Sea fishery. Further avenues for improvement and expansion of fprmcda are discussed.

Keywords: Small and medium sale fisheries, MCDA, Visualization tool

Integrated Spatial Planning for the Sustainable Development of Northern Sporades Islands

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Abstract

In the recent years, the interest of global community has turned to the marine environment and coastal areas. It is a fact that the pressure of these areas, including the impacts of mass tourism, has downgraded the marine environment. In this context, this study illuminates a methodological approach for structuring an alternative plan for the future development trail of the Northern Sporades complex, based on the sustainable management of its natural and human resources as a whole and on each island separately. Northern Sporades consist of three islands with different characteristics. Thus, the planning exercise is based on these features and an integrated scenario is developed, focusing on the broadening of alternative tourism forms for each island with respect to and in close interaction with the marine park of Alonnisos island. The methodological approach is composed by the following steps: i) literature review on the relevant policy framework for maritime and land space, ii) investigation of current state of the study region, iii) identification of the key variables affecting future development of this area, emanating from both the internal and the external environment, by use of the MICMAC module of the LIPSOR planning model, and iv) structuring of future development scenarios, focusing on thematic cultural networks. The study can, in its entirety, form the ground for implementation by means of the Regional Operational Program of Thessaly and the Community-Led Local Development (CLLD) tool.

Keywords: Marine environment, Spatial planning, Sustainable development, Northern Sporades Islands, CLLD

Fisheries Sustainability and the MSP Process in the Mediterranean: Justice and Equity Related Challenges

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Abstract

Competing claims for marine allocation are, potentially, home for conflicts but they may alternatively lead to joint benefits if intelligent and creative planning concepts that involve co-location and assemblages of uses are sought, taking into account that not all uses are compatible with each other and that complexity results from the potential co-existence of traditional activities (fisheries, maritime traffic..) with the new blue growth industries (marine aquaculture, wind farms, sea bed mining etc.).

This work deals with the role of fisheries as a poorly represented professional group that has limited possibilities to sustain their claims, thus risking being ignored and marginalized in the MS planning process.

For fishers, MSP as a trade-off procedure, may add further burdens and cause severe failures both for them and for the fishing communities. The presentation will review existing experience and will develop a case-study in the Mediterranean basin, e.g. the case of small-scale fishers in Greece thus presenting, through surveys and co-development procedures a comparative approach as far equity and justice issues are concerned in MSP focusing on the sensible Mediterranean artisanal fisheries and their coastal and island communities.

Keywords: Fisheries, sustainability, Maritime Spatial Planning, Insular communities, Justice, Equity, Mediterranean

Session 14

Management of Cultural Heritage

Chair: Vasilike Argyropoulos (F2F)

Ancient Olympia, Greece

The Future of Post-Militar Patrimony: The Case of Portuguese Coastal Defense

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Abstract

Coastal Artillery Regiment (RAC) is a unit of the Portuguese Army with the mission of guaranteeing the coastal defence of the ports of Lisbon and Setúbal. The set consists of fixed, secret, camouflaged and fortified batteries, installed along the entrance to the Sado and Tejo rivers as an enormous territorial panoptico.

Abandoned on the coast as a skeleton, the bunker is the last theatrical gesture in the history of Western military architecture. Paul Virilio compares bunkers to seaside houses and asks why these mysterious structures cannot be perceived or recognised? This example of military architecture represents the exception that reveals total war in a mythical dimension. The mid-20th century bunker represents the climax of thousands of years of military architecture, from the Roman wall to the great wall and the fort. Its horizontality, strange underground configuration and rudeness material hide a high pragmatism; and the brutalism reminds us that it is done on a war scale. The military field is a territorial field of action, but the cybernetization of systems allows the construction of this miniature scale with cyclothymic activity: hibernating during peacetime and awakening to war.

Unlike previous forts, coast batteries were designed to be invisible. A new geography was created facing the coast of Western Europe, with several independent surveillance poles for territorial control (Bentham, 1791; Keith and Ottar, 1973; Foucault, 1975).

Technically obsolete, this military coastal territory has fallen into extinction. These territorial voids must be discussed in the inevitable territory reorganisation. Should they display archaeology or just be absorbed in the surroundings? How to deal with post-military heritage? Can we deal and operate in such a territorial resilience example, in a way to take profit from this particular long extension of waterfront regarding Climate Emergency?

Keywords: Military architecture; Post-Military architecture; Bunker architecture; Landscape architecture

Envisaging Rural Areas' Future Resilience Based on their Heritage: The CultRural+ Paradigm

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Abstract

At present, European rural areas face depopulation, ageing, heritage and resources' neglect. All this has crucial consequences on the quality of life and the environment. It is therefore of vital importance to implement smart strategies to empower those that strive to remain in the countryside and create conditions for resilience in these fragile areas.

Entrepreneurs who have opted for remaining, living and working in towns/villages are key factors of this survival. Cultural Heritage innovative management can become a lever for economic growth opportunities, if carefully planned and monitored.

Festivals, museums, thematic cultural routes, agri-food, historical recreations are examples of good practices where creativity, innovation and entrepreneurship can impact on rural areas as fundamental tools. To reinforce the resilience of these areas, the Erasmus+ project "CultRural+" seeks to introduce rural entrepreneurs to strategic training and networking.

The project focuses on the creation of a community of practice for mutual and peer-to-peer acquisition of competences, for transferring strategic thinking skills and for constant networking, in order to build up strong interrelated communities and start up branding attempts in the involved areas.

Innovation is a keyword in all the processes and activities of CultRural+, which brings together rural municipalities, universities and SMEs in order to search for the best e-learning opportunities and build up a chain of training, knowledge and sharing of ideas and good practices, introducing digital skills in rural communities.

The Project's scopes focus on competences' up-skilling, ability of adaptation to changes in the labour market, networking, rural entrepreneurship, rural mediation, governance and internationalization, coaching for active citizenship, lifelong learning, and tangible - intangible cultural heritage for the creation of integrated territorial added value. Some of the project's best-practices will be highlighted in order to envisage ways of building on local resources and identity to strengthen sustainability in rural areas.

Keywords: Culture, Rural regions, Resilience, Innovation, Upskilling, Networking

Cultural Heritage as a Tool of Smart Specialization for Insularities

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Abstract

Insular regions are treated as territories that bear certain degree of vulnerability covering culture, community, economy, and health and environment aspects. In an attempt to strengthen insular regions and secure their sustainable development, a series of strategies, approaches and tools have been introduced in the framework of the territorial governance approach. The scope of this paper is to explore the contribution of cultural heritage to the insular regions' resilience, while recognizing possible directions for innovative governance, smart utilization of resources and protections of insular specificities.

Initially, the concepts of territorial capital and smart specialization will be approached in order to provide a framework for the enhancement and utilization of insular communities' material and intangible resources.

Insular remoteness, cultural identity distortion, community isolation, natural habitat degradation, population decrease etc. may be recognized as general factors that increase vulnerability. Current multifaceted crisis of Greek insular regions, affecting local identity, health, geopolitical issues, etc., create additional pressure.

Cultural heritage may be used as a tool for smart specialization of Greek insular territories, contributing to effectively address the above challenges. Thus, local heritage and its impact on insular territorial and community capital (social capital, financial capital, natural capital, etc.), which are differentiated or coincide (in cases of territorial convergence), will be analyzed. The goal is the evaluation of cultural heritage as a tool for smart territorial development in a framework that ensures heritage protection, cultural and local identity preservation and insular community engagement in participatory actions and decision making.

Keywords: Territorial capital, Territorial competitiveness, Cultural heritage

Addressing Smart Technology Involvement in Cultural Tourism

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Abstract

Tourism can be a way for increasing people's participation in cultural venues. Several studies have correlated smart tourism with growth. More specifically, smart destinations are linked to correspondent smart cities. Smart tourism enables tourists to communicate more effectively, interact with cities and ultimately build deeper relationships with city residences, local businesses, local government, attractions and finally its culture.

Smart tourism is a personalized experience that takes advantage of smart city infrastructure to provide increased visitor and service opportunities. In order to promote effective smart tourism, there is a need for possession of personal mobile and geographic localization systems as well as intelligent applications to provide the appropriate information at the time and location of the visit. However, in order to provide effective smart tourism services, the different requirements of users as well as the change of requirements over the time should be taken under consideration.

In our work, we initially shared digitally a questionnaire asking "How many trips with culture as a springboard did you go in the last two years". Then we approached the people with the largest number of cultural visits with a new questionnaire, asking them to evaluate some effects and characteristics of cultural infrastructures of a smart city, which will positively affect their decision to visit that city. The travellers responded their opinions about smart points and automated guides, incorporating knowledge into mobile applications, on line estimation about the number of visitors per attraction amid social distancing, virtual reality services in museums, smart devices for outdoor cultural experiences, on demand location subsystem and orientation on the cultural map and their interest in security of personal data, produced by the above services.

Keywords: Smart tourism, Smart cities, Cultural tourism

The Salvage of Local Laographic Heritage in the Framework of Cultural Sustainability

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Abstract

"Erasing a piece from the past is like rubbing out, a corresponding piece from the future. "
G. Seferis

Folklore heritage raises awareness of the range a personality can be expressed and can be an inspiration of authentic creation.

Everything that has been passed down through the generations must be saved, as an evidence of culture in order to be handed over with the culture of the present generation, to the next generations as a treasure and a source of knowledge and awareness. This is cultural sustainability.

The Covid-19 pandemic confirmed that there is no time to waste. We have a duty to save what we can since consequences are unknown. The State and Local Government need to enact the: strengthening of cultural associations for the collection and study of tradition; operation of a permanent folklore museum in each city; presentation of issues with three-dimensional simulations on screens that will be inside the museums but also in squares, parks, etc.; recording of stories by the elderly as the folklore information is lost with them or is altered; digitization of files and the creation of electronic libraries as a database; creation of an electronic platform, for research, finding material and exchange of views; provision of incentives and aid to the owners of traditional houses to maintain them so that they acquire additional value and join the modern city in the context of cultural sustainability, for the benefit of their owners and all of us.

The purpose of the study is to illustrate the pathogenesis of the salvage of folklore heritage and to propose actions aimed at raising awareness, especially at the local level, so as not to allow oblivion to cover the life and work of our ancestors.

Keywords: Cultural sustainability, Folklore, Heritage, Salvage

The Contribution of Technology and Design to a Smart, Sustainable, Friendly and Accessible to all, Model for Cities and Islands in the Mediterranean

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Abstract

Mediterranean Region with the countries, islands, the surrounding seas and particular the Greek Archipelago constitutes an historical peculiarity and belongs to birthplaces of our civilization. In almost all Greek picturesque villages we can see paradigms of sustainability, bioclimatic technology, vernacular architecture, material and incoming production.

Vernacular architecture in the Greek villages, exhibits a sense of building simplicity and environmental determination that correspond to standard arrangements of grouping for protection and functionability, providing a 'household centred' site system. This system is constituted by adaptable and well-coordinated architectural design principles that can be useful as prototype principles for a modern version of ecological bioclimatic, sustainable architecture in general.

Mediterranean Region raises issues and problems that our planet presents (severe climate changes, the expand of urbanization, loss of biodiversity, increase in migratory flows,) which effect to socio-political and urban sustainable future.

As professional people, we have understanding the nature of the wider situation and clearly operating within it. It is our responsibility to save and protect the invaluable heritage of our countries and use all that provided knowledge. It is our moral duty to maintain, organize and make all these beautiful places accessible to people with any kind of kinetic difficulties as disabled and elderly people, by keeping the character of the place and using technology as a tool for our success.

Design of course plays a critical role in the creation and manipulation of space and form and technology solves many building problems that people can tolerate and enjoy. Technology and social change are relevant. Technology is commonly linked with the historical developments of society in an economic and political way and integrates the development process.

Keywords: Mediterranean Region, Vernacular architecture, Accessible places, Disabled people, Design, Technology

The Byzantine Village of Messinian Mani

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Abstract

Mani on the southern tip of the Peloponnese is accompanied by the charm and myth of the past, where the ruthless Maniates for centuries repulsed the Ottoman Empire, while maintaining the customs and traditions that are heard today as fairy tales. This unruly place, strewn with picturesque settlements and tower houses, captivates the visitor with its unique landscape, surrounded by the sea of Tainaros. The most representative part of Mani, Mesa Mani, keeps until today the unique image of a hard and, at the same time, charming place that is worth discovering while walking. Today when someone refers to Messinian Mani recognizes Kardamyli, Stoupa and coastal settlements under the new carriage road. But this is not Mani. Mani is the Byzantine mountain villages. Following the old road from Kardamyli and Karyovouni to Platsa and the Aeropolis, someone can find all the charm of the past unchanged. Stone-built villages with a number of Byzantine churches dominate the steep hills, while others are drenched by the blue-green waters of breath-taking bays. The wild beauty of Mani welcomes its visitors through a network of cultural routes with a focus on highlighting its monuments, for a special trip.

This paper is related to the research project "The experience of living as a mean of highlighting the architectural heritage of a place" and wants to demonstrate the possibility of connecting the cultural heritage of a place through a network of routes and the possibility of staying within authentic traditional settlements.

The utilization of tourism as an experience is now more relevant than ever. The reuse of historic buildings and complexes with the aim of preserving and utilizing them, could serve as an example of eco-friendly destination as it would use existing unused shells and connect the residence with the history of the place.

Keywords: Messinian Mani, Byzantine villages, Experience of accommodation, Architectural heritage, Eco-friendly tourism

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