ICSD 2022

8TH INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT

May 5 2022

ABSTRACTS BOOK

www.icsd.eu



8th INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT (ICSD)

ISBN 978-605-81426-3-3

BOOK OF ABSTRACTS OF THE

8th INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT (ICSD) MAY 04-08 2022, HYBRID CONFERENCE, BOSNIA AND HERZEGOVINA

Edited by

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Published, 2022

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WELCOME TO ICSD 2022

On behalf of the organizing committee, we are pleased to announce that the 8th International Conference on Sustainable Development (ICSD-2022) is held from May 04-08, 2022 in Bosnia and Herzegovina (Hybrid Conference). ICSD 2022 provides an ideal academic platform for researchers to present the latest research findings and describe emerging technologies, and directions in Sustainable Development issues. The conference seeks to contribute to presenting novel research results in all aspects of Sustainable Development. The conference aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results about all aspects of Sustainable Development. It also provides the premier interdisciplinary forum for scientists, engineers, and practitioners to present their latest research results, ideas, developments, and applications in all areas of Engineering and Natural Sciences. The conference will bring together leading academic scientists, researchers and scholars in the domain of interest from around the world. ICSD 2022 is the oncoming event of the successful conference series focusing on Sustainable Development. The scientific program focuses on current advances in the research, production and use of Engineering and Natural Sciences with particular focus on their role in maintaining academic level in Engineering and Applied Sciences and elevating the science level. The conference's goals are to provide a scientific forum for all international prestige scholars around the world and enable the interactive exchange of state-of-the-art knowledge. The conference will focus on evidence-based benefits proven in clinical trials and scientific experiments.

Best regards,

Prof. Dr. Özer ÇINAR





CONTENT COUNTRY PAGE Gis-Based Assessment Of Solar Radiation Capacity Of 3d Roofs 1 Turkey For Sustainable Energy Management Analysing E-Commerce Warehouse Site Suitability With Network-Turkey 2 Based Gis Techniques For Economic Sustainability Dialectics Of Sustainability: Contrasting Mainstream Neoliberal 3 Austria And Critical Ecosocialist Perspectives On Sustainable Development Effect Of Tree Locations In A Square During Hot Summer Period Serbia 4 Quality Of The Line Reproduction On Environmentally Friendly Croatia 5 Pressure Sensitive Labels Facestock Possibility Of Recycling Textile Residues Into Paper-Based Croatia 6 Products Astrotourism: Sustainability Framework For A Niche Tourism 7 Cyprus Market The Gender Gap In Entrepreneurship In Transition Countries And Macedonia 8 Mena Region The Effect Of Humic Acid Applications In Different Doses On The Turkey 9 Yield And Cluster Weight Of Table Grape Cultivar, Red Globe





GIS-BASED ASSESSMENT OF SOLAR RADIATION CAPACITY OF 3D ROOFS FOR SUSTAINABLE ENERGY MANAGEMENT

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Abstract:

Effective management of resources has become a very important requirement in cities that have become crowded with the intense and uncontrolled urbanization experienced in recent years. Therefore, the protection and effective management of natural resources such as groundwater, vegetation, soil, fossil fuels and underground mines against the danger of depletion become the primary duty of the governments within the sustainable development. With urbanization and population growth, the demand for energy has also increased rapidly, and this has brought about the decrease in natural energy resources and the increase in their costs. In this sense, states that turn to cleaner and sustainable new energy sources have started to give priority to projects for the effective use of renewable energy sources such as solar radiation, wind, biomass and water. As one of the most common renewable energy source for urban areas, solar roof radiation plays a key role for energy supply in urban. However, there is a research need for the assessment and analyses of solar radiation capacity for determining the energy efficient buildings. With this study, a geographic analysis tool was designed, and a GIS-based study was presented for determining the most suitable solar panel placement on 3D building roofs for sustainable energy. In this context, 3D building models obtained in CityGML format were used. In order to make the 3D Building model suitable for analysis, transformation to 3D SHP (multipatch) format was carried out. Then, Slope, Aspect and Solar Radiation analyses were performed by using 3D Building roofs. Also, building roof radiation values (Wh/m²) were produced for all months of 2021 with Solar Radiation analysis. By reclassifying and weighting the results of the analysis, the most productive roof areas were determined in terms of solar radiation capacity throughout the year.

Keywords: Energy Efficient Building, Solar Radiation, Geographic Information Systems (GIS), 3D Building Model, Citygml.





ANALYSING E-COMMERCE WAREHOUSE SITE SUITABILITY WITH NETWORK-BASED GIS TECHNIQUES FOR ECONOMIC SUSTAINABILITY

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Abstract:

In today's world, economic, social, and environmental responsibilities create a strategical approach for corporate sustainability by fostering societal value. Well-planned marketing operations are critical to long-term and sustainable economic growth. Therefore, firms should create workable strategic tools to successfully face their competitors and get the best of this competition. In this perspective, innovative and comprehensive approaches play a key role to achieve strategic and sustainable marketing operations. Geographic Information Systems (GIS) provide spatial intelligence to the marketing operations by its ability to represent spatial relationships, identify distributions and purchasing activities as well as to analyse the demographic characteristics. Network-based techniques such as new route, closest facility, service area, vehicle routing problem, origindestination cost matrix, and location-allocation support spatial intelligence, enabling effective analysis in wide application areas. This study presents a case study of an e-commerce warehouse site selection in Pendik and Tuzla districts of Istanbul for economic sustainability. Many criteria defined in the categories of socio-demographic, economic and accessibility were analysed with GIS based approaches. According to the analysed criteria, e-commerce warehouse demands were calculated based on hexagonal unit areas. Calculated demands and currently serving e-commerce warehouse locations can be analysed with network-based heuristic Location-Allocation algorithms. In this context, both the service areas of the current e-commerce warehouses were determined and new e-commerce warehouses were proposed to provide sustainable and fast service in the study area.

Keywords: Economic Sustainability, Geographic Information Systems (Gis), Warehouse Site Suitability, Facility Location Optimization





DIALECTICS OF SUSTAINABILITY: CONTRASTING MAINSTREAM NEOLIBERAL AND CRITICAL ECOSOCIALIST PERSPECTIVES ON SUSTAINABLE DEVELOPMENT

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Abstract:

The concept of "Anthropocene" defines the current geological period by qualitatively new manifestations of negative planetary human impact and resulting global environmental catastrophe and crisis. Finally, it is acknowledged as crucial to contain the self-destructive tendencies of capitalism and preserve conditions for future life on earth. Yet, there is little agreement as to how this transition towards sustainability can be realized. Addressing this issue, this narrative review integrates literature on sustainability propositions. Based on the meta-theoretical distinction between sociology of regulation and radical change (incremental vs. fundamental, realist vs. utopian, reformist vs. revolutionary, etc.), dialectic analysis contrasts a mainstream functional-normative "neoliberal" with a critical structuralist-antagonistic "ecosocialist" perspective. Reference point is the United Nations Agenda 2030 for sustainable development. From a critical perspective, this milestone in sustainability policy has been deconstructed as a neoliberal ideological project of capitalist expansion and legitimization, debunking claims of green growth, environmental decoupling, and marketsolutions to corporate sustainability. Alternative paradigms of critical sustainability advocate more direct and drastic measures of economic degrowth and redistribution, de-carbonization, decommodification, and democratization, challenging the exploitative growth logic of the capitalist systems itself. On the organizational level, structural pathologies of corporate social responsibility are contrasted with proposition of democratization and socialization. Attention is called to current sustainability discourses in organizational science, demanding paradigm shifts from managerialist to critical ontologies, realist to relational epistemologies, discipline-focused to interdisciplinary, and objectivity and value-neutrality to engaged scholarship and academic activism. Deconstructing the sustainability discourse from a critical-theoretical perspective is presented as an opportunity to re-appropriate ecological ideas against their degeneration into economistic ideology, counterproductive to the goal of saving the planet from profitable destruction. Evident seriousness and urgency of the situation are discussed as factors providing momentum for social transformation. Sustainable development goals are reassessed as vehicles for more radical social and ecological critique.

Keywords: Anthropocene, Sustainability Transformation, Ecosocialism, Radical Environmentalism, Dialectics, Ideological Critique





EFFECT OF TREE LOCATIONS IN A SQUARE DURING HOT SUMMER PERIOD

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Abstract:

Location of trees in urban areas have large influence to mitigate overheating of horizontal surfaces. Most used urban areas for rest and enjoyment in the city during the summer period are squares, and it is necessary to create comfortable conditions for their usage. The aim of this paper is changing location of trees by using parametric approach to determine optimal position of the trees in order to decrease insolation in a square horizontal surface. The research is conducted on Liberty square design in the City of Novi Sad (Serbia). A temporal analysis is performed for the summer period using appropriate climate data in the Ladybug software. The results of the analysis showed number of hours of direct sunlight. Also, the results indicate that different trees locations can mitigate overheating of the horizontal surface up to several percent. The parametric approach used in this paper can contribute to developing urban guidelines for comfortable squares during summer period.

Keywords: Square, Trees, Insolation, Parametric, Ladybug





QUALITY OF THE LINE REPRODUCTION ON ENVIRONMENTALLY FRIENDLY PRESSURE SENSITIVE LABELS FACESTOCK

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Abstract:

Pressure Sensitive Labels (PSLs) can be found on the wide range of products, from food items and beverages to perfumes and other household products. Given their prevalence, there is a clear initiative to reduce the proportion of synthetic polymer facestock in favor of biodegradable materials. The design of PSL is becoming more and more attractive, so it is necessary to examine the quality of the printed line on biodegradable facestock materials, and to investigate whether an equal amount of applied ink gives a satisfactory result as on synthetic polymers which are commonly used. Yellow ink lines of various widths and orientations were printed on six different commercially available PSLs, three of which are fiber based with high content of recycled paper and agro-industrial by products. Study showed that the lines printed on environmentally friendly PSLs can compete in quality (width, raggedness, blurriness, contrast, fill and darkness) with those printed on polyethylene.

Keywords: Pressure Sensitive Labels, Line Quality, Sustainable Printing





POSSIBILITY OF RECYCLING TEXTILE RESIDUES INTO PAPER-BASED PRODUCTS

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Abstract:

Despite the growing social trend of sustainability in the textile and modern industry worldwide, there is an urgent need to reduce the amount of waste generated by the global fashion industry. Numerous initiatives are being taken in Europe to address the sustainability of the fashion industry. And the textile industry is defined as a priority sector in which the EU can open the way for a carbon - neutral, circular economy. These key challenges could be addressed by making cellulose fibers from natural materials derived from textile waste. These fibers are biodegradable and therefore they are considered more environmentally sustainable than synthetic fibers. Also, textiles and clothing made from these fibers can be used as raw materials in recycling processes at the end of their life cycle, thus contributing to the development of the circular economy. New approaches to textile waste recycling are constantly evolving. Textile waste in the form of cotton fabrics proves to be a sustainable source of cellulose for paper production or as a material for adsorption of toxic compounds. The aim of this paper is to explore the possibility of using textile waste as a raw material in the paper and packaging industry in order to support the circular economy. The production of cellulose fibres from textile waste was conducted in alkali solution. The viscose, denim, felpa, and render textile were used. The produce paper was tested for its mechanical properties while the produced fibres compositin was evaluated by the FTIR spectroscopy.

Keywords: Circular Economy, Textile Waste, Recycling, Cellulose Fibers, Paper





ASTROTOURISM: SUSTAINABILITY FRAMEWORK FOR A NICHE TOURISM MARKET

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Abstract:

Cyprus boasts some of the darkest night skies in Europe, excellent weather conditions, clear skies for most of the year, and an optimal geographic location, making it ideal for astronomical observations and thus the development of relevant tourism activities. To date, very little has been done on the island to develop this niche tourism market, despite its potential to significantly diversify Cyprus's tourism offering, which is largely based on the 'sun and sea' model, and to minimise the strong unsustainable seasonality that the island's tourism industry is facing. Observing this gap, organisations in Cyprus in the fields of education, research, technology, astronomy, tourism, and sustainability came together to develop a new tourism product, Astrotourism. The objective was to develop attractive Astrotourism products in a sustainable manner. To do this, the team focused on researching and evaluating best practices and existing international Astrotourism products, assessing their advantages and disadvantages, and adapting them to the local situation so that they could be implemented in a way that would produce environmental, economic, social, as well as cultural benefits for Cyprus. This resulted in the development of a sustainability framework for the implementation of three Astrotourism activities: Astrocamps, Astroparks, and Astrovillages. The framework takes a holistic view of the activities ranging from their location to their set-up and equipment, and to resource consumption and waste management. This sustainability framework was applied and tested during the first pilot implementation of the newly developed products in March and April 2022, through evaluations undertaken by the participants and observations done by the research team. The results indicate that the sustainability framework is effective as it increased the sustainability of the Astrotourism activities, improved the experience of the participants, and raised awareness about sustainability.

Keywords: Island Tourism, Niche Tourism, Tourism Seasonality, Sustainable Tourism, Astronomy, Astrotourism





THE GENDER GAP IN ENTREPRENEURSHIP IN TRANSITION COUNTRIES AND MENA REGION

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Abstract:

Many scientists have connected entrepreneurship with creation of new jobs, innovation and growth. However, for achieving sustainable development in employment and economic growth the participation of both men and women in entrepreneurship is fundamental. Even though the participation of women in the labor force is a basic human right, their engagement in entrepreneurship is lower than men. Gender stereotypes, lack of knowledge, lack of skills and experience are usually the factors that influence the low engagement of women in entrepreneurship. This paper aims to investigate the influence of entrepreneurship in men and women unemployment rate in transition countries and Middle East and North Africa (MENA) region in the period 2008-2016. An econometric analysis of panel data is established in Stata 12 for 33 countries, to examine if entrepreneurship can be used as a strategy to decrease unemployment in men and women. There is no universal method to measure entrepreneurship, so data collected from different countries can bring incorrect and misleading results. To avoid misleading results, we use TEA (total-early-stage entrepreneurial activity) and EBO (established business ownerships) for measuring entrepreneurship, from GEM (Global Entrepreneurship Monitor), since GEM uses the same methodology in every country. The obtained results prove that TEA has no statistical significance in men unemployment rate while EBO is statistically significant at 10%. On the other hand, data also prove that both TEA and EBO are statistically insignificant in women unemployment rate. This study proves that entrepreneurship decreases unemployment rate in men, but only when it is an established business, however it does not influence the decrease of women unemployment rate.

Keywords: TEA, EBO, Men Unemployment, Women Unemployment





THE EFFECT OF HUMIC ACID APPLICATIONS IN DIFFERENT DOSES ON THE YIELD AND CLUSTER WEIGHT OF TABLE GRAPE CULTIVAR, RED GLOBE

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Abstract:

The feeding of the world's population, which has reached approximately 8 billion, is getting harder day by day. For this reason, the necessity of increasing the product taken from the unit area causes intensive agricultural activities with using of more chemical fertilizers. As a result, the natural balance is disturbed, negatively, affecting the environment, food and human health. Sustainable agricultural activities are required for soils to feed future generations. Therefore, it is important to use organic products, soil conditioners and their wastes in agricultural production. Soil conditioners (improvers) are humic acid, leonardite, zeolite, seaweed, agricultural lime, aluminum silicate, liquid fulvic acid, amino acid mixtures, and soil conditioners with enriched structure. Humic acids are the most used soil conditioners in agriculture in recent years. Humic acids have positive effects on the physical, chemical and biological properties of soils. They increase productivity by increasing the cation exchange capacity of soils. Because of their chelating properties, they turn plant nutrients into an absorbable form and reduce the toxic effects of chemical fertilizers. In addition, they eliminate the negative effects of stress factors such as drought, salinity and toxic elements (heavy metals).

Viticulture has an important place in Turkey's agriculture due to suitable ecological conditions and soil properties. In the Aegean Region, Manisa Alasehir region has a large vineyard area; It meets an important part of table and dried grape production.

In this study, the effect of different doses of humic acid applications from soil and foliar applications on the yield and cluster weight of Red Globe cultivar in Manisa Celal Bayar University Alasehir Vocational School trial vineyard in Manisa-Alasehir region was investigated. It was found that humic acid had a statistically significant effect on the yield and cluster weight of the vine at different doses and methods.

Keywords: Humic Acid, Foliar And Soil Application, Vineyard, Red Globe, Yield, Cluster Weight

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