7. Uluslararası Sürdürülebilir Kalkınma ve Uzay Araştırmaları Kongresi Özet Metinleri

Abstracts Book of 7th International Congress on Sustainable Development and Space

كتاب الملخصات للمؤتمر الدولي السابع للتنمية المستدامة والمجال

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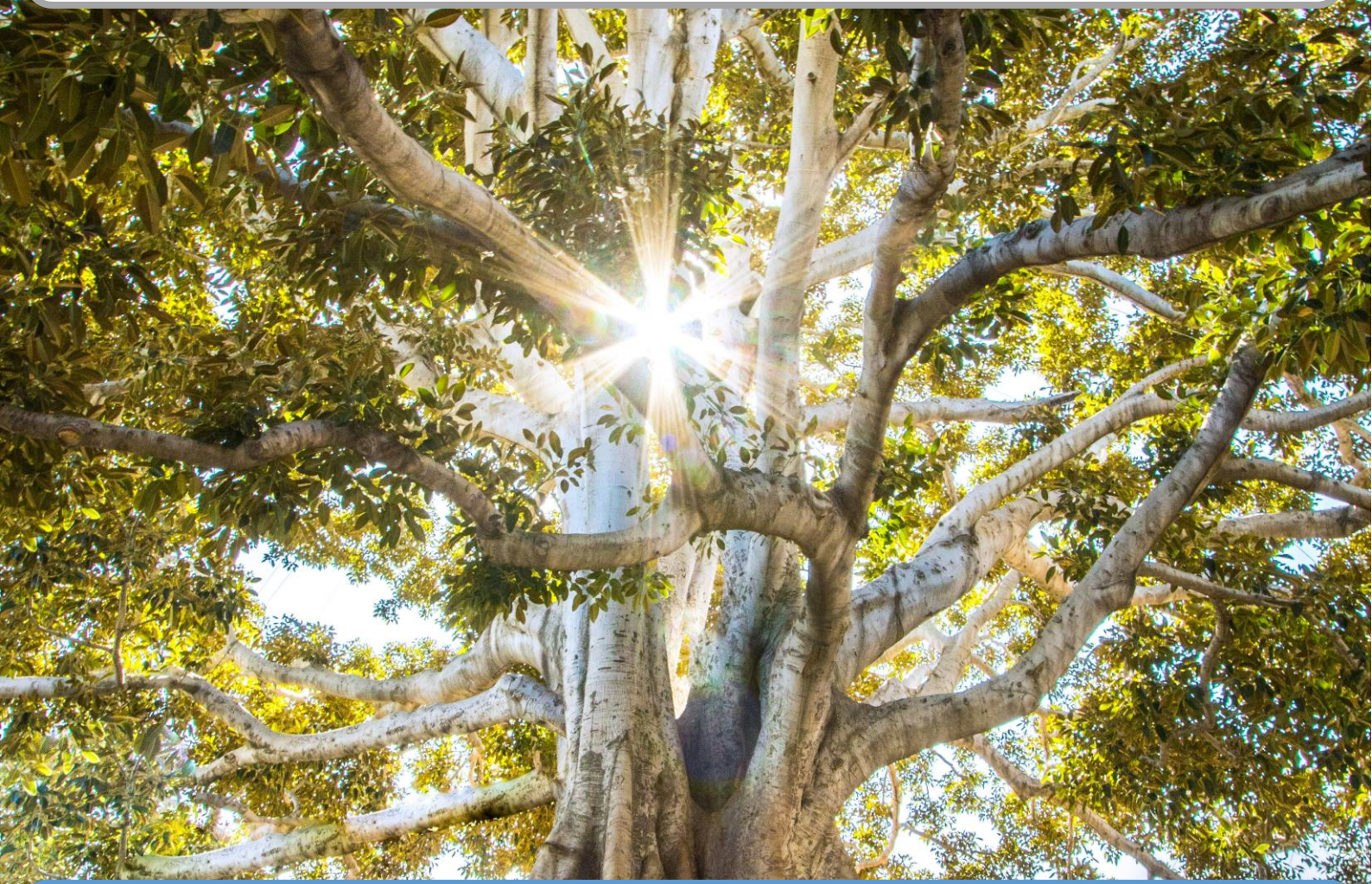
Sami Baskın, Sid Ahmed Soufiane, Najem Dhaher



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ÖN SÖZ

4–8 Kasım 2025 tarihlerinde Türkiye'nin Antalya kentinde gerçekleştirilen **7. Uluslararası Sürdürülebilir Kalkınma ve Uzay Araştırmaları Kongresi**; sürdürülebilirlik, tarım, enerji, teknoloji gibi araştırmalarının paylaşıldığı çok disiplinli bir akademik ortam oluşturmuştur. Bu yıl kongreye yapılan başvurular arasından Türkiye'den **10**, Türkiye dışından ise **10 farklı ülkeden 93** bildiri (Birleşik Arap Emirlikleri, Birleşik Krallık, Cezayir, Çin Halk Cumhuriyeti, Fas, Libya, Mısır, Suriye, Tunus ve Umman) olmak üzere toplam 103 çalışma çift kör hakemlik süreci sonucunda sunuma uygun bulunmuş ve programa dahil edilmiştir.

Bildiri toplama süreci boyunca dünyanın farklı bölgelerinden araştırmacıların yoğun ilgisi kongre sekreterliği tarafından titizle takip edilmiş ve bildiriler akademik hassasiyetler dikkate alınarak toplamış ve hakem sürecine alınmıştır. Kabul edilen bildiriler, tematik alanlara göre sınıflandırmış ve programa dahil edilmiştir. Değerlendirme kurulu, her bir bildiriyi özgünlük, bilimsel katkı, yöntemsel tutarlılık ve sürdürülebilir kalkınma hedefleriyle uyum bakımından incelemiş; yalnızca akademik standartları karşılayan çalışmalara onay vermiştir.

Kongre sürecinde gerek davetli konuşmacılar gerekse farklı ülkelerden katılım sağlayan bilim insanları, sürdürülebilir kalkınmanın çevresel, ekonomik, toplumsal ve teknolojik boyutlarını tartışmış; uzay araştırmalarının insanlığın geleceği açısından oynadığı kritik role dikkat çekmiştir. Sunumlar, özellikle yenilenebilir enerji, çevre politikaları, yapay zekâ temelli sürdürülebilirlik çözümleri, iklim değişikliğine uyum stratejileri ve uzay bilimlerinin uluslararası iş birliği çerçevesinde nasıl daha etkin kullanılabileceği üzerine önemli açılımlar sağlamıştır.

Bu kitabın hazırlanmasında temel amaç, kongre sırasında sunulan çalışmaların kısa bir bilimsel envanterini oluşturarak araştırmacılara referans niteliğinde bir kaynak sağlamaktır. Sürdürülebilir kalkınma üzerine çalışan bilim insanları; disiplinler arası iş birliğini artırmaları, araştırma sonuçlarını politika yapıcılarla paylaşmaları, yenilikçi teknolojileri insanlığın ortak yararı için sorumlu bir şekilde geliştirmeleri ve özellikle genç araştırmacıları bu alana yönlendirmelidir. Çünkü bilimin rehberliğinde geliştirilen her adım, sürdürülebilir ve yaşanabilir bir dünya için son derece değerlidir.

Bu önemli organizasyona katkı sağlayan tüm akademisyenlere, hakemlere, bilim kurulu üyelerine, davetli konuşmacılara ve emeği geçen tüm paydaşlara teşekkür eder; kongrenin bilim dünyasına ve geleceğe yönelik sürdürülebilirlik çabalarına anlamlı katkılar sunmasını dileğiyle…

Kongre Düzenleme Kurulu Adına

Prof. Dr. Sid Ahmed Soufiane

University of Annaba – Algeria

PREFACE

The *7th International Congress on Sustainable Development and Space*, held in Antalya, Türkiye, on 4–8 November 2025, provided a multidisciplinary academic platform where studies on sustainability, agriculture, energy, technology, and related fields were shared. Among the submissions received this year, 10 papers from Türkiye and 93 papers from 10 different countries (United Arab Emirates, United Kingdom, Algeria, People's Republic of China, Morocco, Libya, Egypt, Syria, Tunisia, and Oman), a total of 103 studies were accepted for presentation following a rigorous double-blind peer-review process.

Throughout the submission period, the strong interest from researchers across various regions of the world was meticulously followed by the congress secretariat. All submissions were collected with academic precision and processed through the peer-review system. Accepted papers were classified according to thematic fields and included in the scientific program. The evaluation committee examined each submission in terms of originality, scientific contribution, methodological coherence, and alignment with sustainable development goals, approving only those that met academic standards.

During the congress, both invited speakers and participating scholars from different countries discussed the environmental, economic, social, and technological dimensions of sustainable development, highlighting the critical role of space research for the future of humanity. The presentations provided significant insights, particularly on renewable energy, environmental policies, AI-based sustainability solutions, climate change adaptation strategies, and the effective use of space sciences within an international cooperation framework.

The primary aim of preparing this book is to present a concise scientific inventory of the studies delivered at the congress and to offer a valuable reference source for researchers. Scholars working in the field of sustainable development are encouraged to enhance interdisciplinary collaboration, share research outcomes with policymakers, develop innovative technologies responsibly for the collective benefit of humanity, and guide young researchers toward this crucial field. Every step taken under the guidance of science is invaluable for a sustainable and liveable world.

We extend our sincere gratitude to all academics, reviewers, scientific committee members, invited speakers, and all contributors who supported this important organization. We hope that this congress will continue to provide meaningful contributions to the scientific community and future sustainability efforts.

Prof. Dr. Sid Ahmed Soufiane
University of Annaba – Algeria
Chair of The Organizing Committee

المقدمة

لقد شكّل المؤتمر الدولي السابع للتنمية المستدامة والمجال، الذي عُقد في مدينة أنطاليا – تركيا خلال الفترة من 4 إلى 8 نوفمبر 2025، منصةً أكاديمية متعددة التخصصات جرى فيها عرض ومناقشة دراسات تتناول الاستدامة والزراعة والطاقة والتكنولوجيا وغيرها من المجالات ذات الصلة. وقد تمّ اختيار 103 أعمال علمية للعرض في البرنامج، من بينها 10 أبحاث من تركيا و93 من 10 دول مختلفة (الإمارات العربية المتحدة، المملكة المتحدة، الجزائر، جمهورية الصين الشعبية، المغرب، ليبيا، مصر، سوريا، تونس، وعُمان)، وذلك بعد خضوعها لعملية تحكيم علمي مزدوجة ومعتمدة بدقّة.

وخلال فترة استقبال الملخصات، تابعت أمانة المؤتمر باهتمامٍ كبير الإقبال اللافت من الباحثين حول العالم، حيث جُمعت الأعمال وفق أعلى درجات الدقّة الأكاديمية، ثم أُدرجت في نظام التحكيم. وقد جرى تصنيف الأعمال المقبولة بحسب المجالات الموضوعية واعتمادها ضمن برنامج المؤتمر. كما قامت لجنة التقييم بفحص كل ورقة من حيث الأصالة، والإسهام العلمي، والاتساق المنهجي، ومدى توافقها مع أهداف التنمية المستدامة، ولم تُقبل إلا الأعمال التي استوفت المعايير العلمية المطلوبة.

شهد المؤتمر نقاشات مهمة شارك فيها متحدثون مدعوون وعلماء من دول مختلفة، حول الأبعاد البيئية والاقتصادية والاجتماعية والتكنولوجية للتنمية المستدامة، مع التأكيد على الدور المحوري الذي تلعبه أبحاث الفضاء في مستقبل الإنسانية. وقد قدّمت العروض العلمية رؤى جديدة خصوصاً في مجالات الطاقة المتجددة، والسياسات البيئية، والحلول المعتمدة على الذكاء الاصطناعي، واستراتيجيات التكيف مع تغيّر المناخ، وكيفية توظيف علوم الفضاء بفاعلية في إطار التعاون الدولي.

ويهدف هذا الكتاب إلى توفير جردٍ علمي مختصر للأعمال التي قُدمت في المؤتمر، ليكون مرجعاً قيّماً للباحثين. ونوصي العلماء العاملين في مجال التنمية المستدامة بتعزيز التعاون متعدد التخصصات، ومشاركة نتائج أبحاثهم مع صناع القرار، وتطوير التكنولوجيا المبتكرة بصورة مسؤولة لصالح الإنسانية، وتوجيه الباحثين الشباب نحو هذا المجال الحيوي. فكل خطوة تُتخذ تحت مظلة العلم تُعد ركيزة أساسية لبناء عالم مستدام وقابل للعيش.

وختاماً، نتقدم بالشكر الجزيل لجميع الأكاديميين والمحكمين وأعضاء اللجان العلمية والمتحدثين المدعوين وكل من أسهم في إنجاح هذا الحدث العلمي المتميز، راجين أن يسهم المؤتمر في إثراء الجهود العلمية نحو مستقبل أكثر استدامة.

الأستاذ الدكتور سيد أحمد صوفيان

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Tarımda Girdi Maliyetlerinin Tüketici Fiyatlarına Yansıması: Girdi-Fiyat Zinciri Dinamikleri Üzerine Ekonometrik Bir Analiz

Dr. Öğr. Üyesi Kemalettin Ağızan

Aydın Adnan Menderes Üniversitesi, Aydın, Türkiye

Öğr. Gör. Süheyla Ağızan

Selçuk Üniversitesi, Konya, Türkiye

Özet

Bu çalışma, Türkiye'de tarımsal üretimde kullanılan temel girdilerin (gübre, dizel yakıt, tohum, sulama vb.) maliyetlerinin zaman içinde nihai tüketici fiyatlarına yansımasını analiz etmeyi amaçlamaktadır. Tarımsal girdilerdeki fiyat artışları genellikle çiftçileri doğrudan etkilerken, bu etkinin tüketicilere ne ölçüde, nasıl ve ne kadar sürede yansıdığı tam olarak modellenmemiştir. Bu bağlamda, bu çalışmanın temel amacı, dinamik ekonometrik modeller kullanarak üreticiler ve tüketiciler arasındaki fiyat aktarım süreçlerini ortaya koymaktır. Bu çalışmada, Türkiye İstatistik Kurumu (TÜİK) Üretici Fiyat Endeksi (ÜFE) ile Tüketici Fiyat Endeksi (TÜFE) arasındaki ilişki analiz edilecektir. Ayrıca, Tarım Kredi Kooperatifleri gibi kaynaklardan elde edilen girdi fiyatları (aylık) modele entegre edilecektir. Analiz yöntemi olarak ARDL (Oto-regresif Dağıtılmış Gecikme) modeli kullanılacaktır. Bu model, kısa ve uzun vadeli fiyat aktarımının incelenmesini kolaylaştıracaktır. Ayrıca, Granger nedensellik testi, tüketici fiyatlarını tahmin etmede hangi girdilerin daha etkili olduğunu belirlemek için kullanılacaktır. Bu çalışma hem tarım hem de tüketici ekonomisi perspektifinden iki yönlü bir etki zincirinin veriye dayalı bir açıklamasını sunması bakımından ayırt edicidir. Bu çalışma, girdi maliyetlerinin erken uyarı göstergesi olarak işlev görebileceğini ve enflasyon politikalarında önleyici bir rol oynayabileceğini gösterecektir. Ayrıca, model daha hedefli ve zamana duyarlı fiyat destek politikalarının geliştirilmesini kolaylaştıracaktır. Buna ek olarak, bu çalışmada toplanan verilerin gıda enflasyonuyla mücadelede yapısal bir araç sunması ve böylece yaygın bir etki yaratma potansiyeline sahip olması beklenmektedir.

Anahtar Kelimeler: Girdi Maliyetleri, Tüketici Fiyatları, Girdi-Fiyat Zinciri

The Pass-Through of Input Costs in Agriculture to Consumer Prices: An Econometric Analysis of Input-Price Chain Dynamics

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Lecturer Süheyla Ağızan

Selcuk University, Konya,

Abstract

The present study aims to analyze the pass-through of the costs of basic inputs (fertilizer, diesel fuel, seeds, irrigation, etc.) used in agricultural production in Türkiye to final consumer prices over time. While price increases in agricultural inputs generally affect farmers directly, the extent to which this impact is passed on to consumers, how it is passed on, and over what time frame has not been fully modelled. In this context, the primary objective of this study is to reveal the price pass-through processes between producers and consumers using dynamic econometric models. In this study, the relationship between the Producer Price Index (PPI) and the Consumer Price Index (CPI) of the Turkish Statistical Institute (TÜİK) will be analyzed. Furthermore, input prices (monthly) obtained from sources such as Agricultural Credit Cooperatives will be integrated into the model. The ARDL (Autoregressive Distributed Lag) model will be utilized as the method of analysis. This model will facilitate the examination of short- and long-term price pass-through. Furthermore, the Granger causality test will be utilized to ascertain which of the inputs is more effective in predicting consumer prices. The present study is distinctive insofar as it provides a data-driven explanation of a two-way impact chain from both the agricultural and consumer economy perspectives. The demonstration will illustrate that input costs can function as an early warning indicator and play a preventative role in inflation policies. Furthermore, the model will facilitate the development of more targeted and time-sensitive price support policies. In addition, it is expected that the data collected in this study will offer a structural instrument in the struggle against food inflation, thus possessing considerable potential for widespread impact.

Keywords Input Costs, Consumer Prices, Input-Price Chain

Avrupa Yeşil Mutabakatı ile Uyum Bağlamında Türkiye'deki Organik Tarım Politikalarının Politika Dönüşüm Analizi

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Özet

Bu çalışma, Türkiye'de uygulanan organik tarım politikalarının, Avrupa Yeşil Mutabakat kapsamında Avrupa Birliği'nin Tarladan Sofraya stratejisiyle ne ölçüde uyumlu olduğunu değerlendirmektedir. Yeşil Mutabakatının çevresel sürdürülebilirlik, gıda güvenliği ve tarımsal üretimin karbon ayak izinin azaltılması hedeflerine uygun olarak, çalışma Türkiye'nin mevcut politika çerçevesi içindeki pratik engelleri ve sorunları sistematik olarak incelemektedir. Çalışma, ilk kez Çiftlikten Sofraya kriterlerinden türetilen ve çevresel, yasal ve ekonomik göstergeleri entegre eden bir "Politika Uyum Endeksi" oluşturacaktır. Bu endeks, Türkiye'nin organik tarım politikalarının AB düzenlemeleri ve stratejileriyle nicel bir karşılaştırmasını mümkün kılmaktadır. Metodoloji, Tarım ve Orman Bakanlığı'nın mevzuat ve strateji belgelerinin, Avrupa Komisyonu raporlarının ve FAO ve IFOAM yayınlarının tematik kodlamasına dayanan niteliksel içerik analizini içermektedir; uyum düzeyleri, uygulama araçları (teşvikler, sertifikasyon, izlenebilirlik, dijitalleşme) ve sonuç göstergeleri puanlanmıştır. Endeks ağırlıkları, AB strateji belgelerinden elde edilen kriterlerin, hakemli literatürde önerilen göstergelerle birleştirilmesi ve uzman görüşleriyle harmanlanmasıyla belirlenmiştir; bunlar duyarlılık ve sağlamlık analizleri ile test edilmiştir. Ayrıca, mevzuatı uygulama kapasitesi (kurumsal hazırlık, bütçeleme ve insan kaynakları), çiftçi düzeyinde benimseme dinamikleri ve pazar yönetişimi (sertifikalı girdi tedariki, pazara erişim, izlenebilirlik/dijital altyapı) için ayrı alt endeksler oluşturulmuştur. Bulgular, politika boşluklarını ve iyileştirme alanlarını belirlemek için SWOT ve GAP analizleriyle desteklenmektedir. Sonuçlar, AB standartlarına uyum, kurumlar arası koordinasyon ve veriye dayalı izleme ve değerlendirme mekanizmaları sürecinde kısa ve orta vadeli önceliklendirme için somut öneriler sunmakta, organik tarımın dönüşüm kapasitesini vurgulamakta ve literatüre karşılaştırmalı ve ölçülebilir bir çerçeve sağlamaktadır.

Anahtar Kelimeler: Yeşil Mutabakat, Tarladan Sofraya, Organik Tarım, Politika Uyum Endeksi

Policy Transformation Analysis of Organic Farming Policies in Türkiye in The Context Of Alignment with the European Green Deal

Lecturer Süheyla Ağızan

Selcuk University, Konya,

Assist. Prof. Dr. Kemalettin Ağızan

Aydın Adnan Menderes University, Aydın, Türkiye

Abstract

This study assesses the extent to which organic farming policies implemented in Türkiye are aligned with the European Union's Farm to Fork strategy under the European Green Deal. In line with the Green Deal's objectives of environmental sustainability, food security, and reducing the carbon footprint of agricultural production, the study systematically examines the practical obstacles and problems within Türkiye's current policy framework. The study will establish a 'Policy Compliance Index' derived from Farm to Fork criteria for the first time, integrating environmental, legal, and economic indicators. This index enables a quantitative comparison of Türkiye's organic farming policies with EU regulations and strategies. The methodology involved a qualitative content analysis based on thematic coding of the Ministry of Agriculture and Forestry's legislation and strategy documents, European Commission reports, and FAO and IFOAM publications; compliance levels, implementation tools (incentives, certification, traceability, digitalization) and outcome indicators were scored. Index weights were determined by combining criteria derived from EU strategy documents with indicators recommended in peer-reviewed literature, blended with expert opinions; they were tested through sensitivity and robustness analyses. Additionally, separate sub-indices were created for the capacity to implement legislation (institutional readiness, budgeting, and human resources), adoption dynamics at the farmer level, and market governance (certified input supply, market access, traceability/digital infrastructure). The findings are supported by SWOT and GAP analyses to identify policy gaps and areas for improvement. The results provide concrete recommendations for short- to medium-term prioritization in the process of aligning with EU standards, inter-institutional coordination, and data-driven monitoring and evaluation mechanisms, emphasizing the transformation capacity of organic farming and providing the literature with a comparative and measurable framework.

Keywords Green Deal, Farm to Fork, Organic Farming, Policy Alignment Index

Sürdürülebilir Kalkınmanın Geleceğine Bir Bakış (Çevresel Sürdürülebilirliğe Dair Bir Yorum)

Doç. Dr. Başak Gül Akar

Çukurova Üniversitesi, Adana, Türkiye

Özet

Gezegenimizi korumak ve 2030 yılına kadar herkesin barış ve refah içinde yaşamasını sağlamak için küresel bir eylem çağrısı olarak 2015 yılında kabul edilen Sürdürülebilir Kalkınma Hedefleri (SKH'ler) göz önüne alındığında birbirine bağlı ve sonuçların başka alanları da etkileyeceği bu amaçlar, kalkınmanın sosyal, ekonomik ve çevresel sürdürülebilirlik arasında bir dengeyle gerçekleşmesi gereğini vurgulamaktadır. Bu anlamda mevcut çalışma, uygun fiyatlı ve temiz enerji ile iklim eylemi birlikte ele alınarak SKH 7 ve SKH 13 çerçevesinden Gelecek-11 ülkelerinin mevcut durumunu ortaya koyma amacı taşımaktadır.

Gelecek-11 ülkelerinin yüksek nüfuslu olmaları ve nüfus artmaya devam ettikçe ucuz enerjiye olan talebin artma olasılığı, bunun da yenilenemez enerji kaynaklarına yönelimi artırarak SKH'lerden uzak bir ekonomi yönetimi ile iklimde yol açabileceği değişiklik dikkate alınmak zorundadır. Bangladeş, Filipinler, Endonezya, Güney Kore, İran, Meksika, Mısır, Nijerya, Pakistan, Türkiye ve Vietnam olmak üzere on bir ülke, dünyanın en büyük ekonomilerinden biri olma potansiyeline sahip oldukları için seçilmişlerdir, ancak, mevcut kaynakları, enerji ihtiyaçları ve tüketimleri göz önüne alındığında, Gelecek-11 ülke grubu, uygun politikalar benimsemeleri halinde sürdürülebilir kalkınmaya katkıda bulunabileceklerini gösteren bir profil sergilemektedirler. Bu nedenle, bu kritik küresel sorunu ele alırken, bu ülkelerin enerji konusundaki görüş ve uygulamalarını yakından takip etmek hayati önem taşımaktadır.

Bu çalışma, Gelecek-11 ülkelerinin çevresel sürdürülebilirliğe ulaşmadaki rolünü araştırmayı ve sürdürülebilir kalkınma hedeflerine ışık tutmayı amaçlamaktadır. Bu doğrultuda, politika yapıcılara, enerji sektörünü yönlendirenlere ve bu alandaki mevcut veya potansiyel yatırımcılara bir yol haritası sunarak literatüre katkıda bulunulması beklenmektedir.

Anahtar Kelimeler: Sürdürülebilir kalkınma, Gelecek-11, Çevresel sürdürülebilirlik

A Glance at the Future of Sustainable Development (A Interpretation on Environmental Sustainability)

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Abstract

Considering the Sustainable Development Goals (SDGs), adopted in 2015 as a global call to action to protect our planet and ensure peace and prosperity for all by 2030, these interconnected goals—whose outcomes will influence other areas—highlight the need for development to balance social, economic, and environmental sustainability. In this context, the current study aims to present the status of the Future-11 countries within the framework of SDGs 7 and 13, focusing on affordable and clean energy, as well as climate action. The high population density of these countries, the likelihood of increased demand for cheap energy as their populations grow, and the potential for climate change resulting from economic management that diverges from the SDGs—leading to greater reliance on non-renewable energy sources—must all be considered. The eleven countries—Bangladesh, the Philippines, Indonesia, South Korea, Iran, Mexico, Egypt, Nigeria, Pakistan, Turkey, and Vietnam—were selected because of their potential to become some of the world's largest economies. However, given their current resources, energy needs, and consumption patterns, the Next 11 countries exhibit a profile indicating they can promote sustainable development if they implement appropriate policies. Therefore, it is essential to closely monitor their energy strategies and practices as they confront this vital global challenge.

This study aims to investigate the role of the Next 11 countries in achieving environmental sustainability and to illuminate the Sustainable Development Goals. In this regard, it is intended to contribute to the literature by offering a roadmap for policymakers, energy sector stakeholders, and existing or prospective investors in this field.

Keywords: Sustainable development, Next-11, Environmental sustainability

Effect of Urban Morphology on Thermal Comfort: A Study of the Sabbats in the Medina of Tunis

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Abstract

In a context marked by climate change and increasing urbanization, vernacular architectural solutions provide valuable insights for designing resilient urban spaces. The medina of Tunis represents a privileged case study due to its unique character, shaped by its morphological variations, distinctive construction techniques, specific social practices, and singular architectural language. This combination of characteristics gives the medina a remarkable and unparalleled identity.

Within this framework, the study focuses particularly on the sabbat, an emblematic element of the medina of Tunis, chosen as the main subject of analysis. Sabbats, traditional covered passageways, are studied here as passive thermal regulation devices in the context of climate change and urban densification. These vernacular structures illustrate a local and sustainable architectural response to contemporary climate challenges.

While outdoor thermal comfort is a relatively recent area of research, most scientific studies to date have primarily focused on indoor spaces. The complexity of studying outdoor thermal comfort lies in the multiplicity of factors involved and their interactions, which are generally grouped into three main categories:

1. Physical parameters: air temperature, mean radiant temperature, air velocity, relative humidity, etc.
2. Individual parameters: user-specific characteristics.
3. Internal thermal gain parameters: lighting, electrical devices, computer stations, etc.

Numerous studies have explored outdoor thermal comfort, highlighting different aspects. Achour and Kharrat [1] analyzed the impact of urban canyon geometry on thermal comfort in a Mediterranean subtropical climate. They studied parameters such as height-to-width ratios (H/W), sky view factor (SVF), and street orientation, comparing three urban fabrics (traditional, colonial, and regulated) through ENVI-met simulations. Furthermore, Charfi [2] demonstrated, using simulations conducted

with SketchUp and the formula by Grundström et al. [3], that urban morphology—particularly street orientation, width, and building height—significantly influences local temperatures. Additionally, Grundström et al. [3] compared climatic conditions between a traditional neighborhood and a modern neighborhood, analyzing air temperature, humidity, wind speed, orientation, as well as H/W and SVF parameters.

The primary objective of this research is to analyze the influence of factors such as orientation, construction materials, and roof configurations on the thermal performance of sabbats. Numerical simulations conducted with Revit and its solar simulation plug-in considered various parameters: sunlight exposure, natural ventilation, thermal inertia of materials, and the dimensions of sabbats.

The results reveal that the morphology of sabbats plays a crucial role in mitigating extreme temperatures through passive regulation of solar radiation. A southwest/northeast orientation, combined with materials with high thermal inertia (such as stone or solid bricks), optimizes solar gains in winter while limiting summer overheating. Moreover, roof configuration is a determining factor: sabbats with double roofing exhibit better thermal performance than those with single roofing, thanks to enhanced insulation and reduced rapid temperature fluctuations.

تنفيذ أهداف التنمية المستدامة:المعوقات واستراتيجيات التغلب عليها

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ملخص:

تستهدف هذه الورقة تحليل العقبات التي تعترض تنفيذ أهداف التنمية المستدامة (SDGs) التي اعتمدتها الأمم المتحدة في عام 2015، مع اقتراح استراتيجيات للتغلب على هذه التحديات. وتشمل المنهجيات المستخدمة مراجعة الأدبيات الحالية حول أهداف التنمية المستدامة، ودراسات الحالة التوضيحية، بالإضافة إلى تحليلات للسياسات والممارسات الحالية في مختلف البلدان. ويتيح هذا المنهج تحديد العوائق السياسية والاقتصادية والاجتماعية والتكنولوجية والثقافية والمؤسسية التي تعوق تحقيق أهداف التنمية المستدامة.

وتكشف النتائج أن العقبات الرئيسية التي تعترض تنفيذ أهداف التنمية المستدامة تشمل نقص التمويل الكافي، وعدم اتساق السياسات الحكومية، والثغرات في البيانات والمؤشرات، فضلاً عن التحديات الثقافية والاجتماعية. علاوة على ذلك، فإن مشاركة أصحاب المصلحة، بما في ذلك الحكومات والقطاع الخاص والمجتمع المدني والأوساط الأكاديمية، أمر بالغ الأهمية للتغلب على هذه العقبات.

وتشمل الاستراتيجيات المقترحة لتحسين تنفيذ أهداف التنمية المستدامة تعزيز القدرات المؤسسية، ومشاركة المجتمعات المحلية، والتعاون الدولي، والابتكار في التمويل. وختامًا، فإن اتباع نهج تعاوني ومتكامل أمر ضروري لضمان تحقيق أهداف التنمية المستدامة، مما يتيح تحقيق تنمية مستدامة وشاملة على الصعيد العالمي.

الكلمات المفتاحية : التنمية المستدامة، أهداف التنمية المستدامة، استراتيجيات تنفيذ اهداف التنمية المستدامة ، العوائق

Implementing Sustainable Development Goals: Obstacles and Strategies for Overcoming Them

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Abstract

The main objective of this study is to analyse the obstacles to the implementation of the Sustainable Development Goals (SDGs) adopted by the United Nations in 2015, while proposing strategies to overcome these challenges. The methodologies used include a review of existing literature on the SDGs, illustrative case studies, and analyses of current policies and practices in various countries. This approach identifies the political, economic, social, technological, cultural, and institutional barriers that hinder the achievement of the SDGs.

The results reveal that the main obstacles to SDG implementation include a lack of adequate funding, inconsistencies in government policies, gaps in data and indicators, and cultural and social challenges. In addition, the engagement of stakeholders, including governments, the private sector, civil society and academia, is crucial to overcoming these obstacles.

Proposed strategies to improve SDG implementation include institutional capacity building, community engagement, international cooperation, and innovation in financing. In conclusion, a collaborative and integrated approach is essential to ensure that the SDGs are achieved, thereby enabling sustainable and inclusive development on a global scale

Keywords: sustainable development, sustainable development goals, strategies for implementing sustainable development goals, obstacles

Contribution Of Geostatistics to The Estimation of Iron Resources in Small Deposits and Iron Indices of Northeastern Algeria

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Abstract

Geological and geostatistical studies were carried out on three small iron deposits in northeastern Algeria. However, only the Anini and Châabet El Ballout deposits were subject to resource estimations.

Traditionally, these evaluations were conducted using conventional methods. Since the 1970s, with the rise of mining geostatistics, kriging techniques have become essential. They were applied in this study to the two aforementioned deposits.

The Anini deposit, located north of Sétif in the northeastern Alpine chain, was explored by the ORGM between 2009 and 2011. It consists of karstic and lenticular mineralized bodies oriented N135°. The resources initially estimated by the block method were re-evaluated using ordinary kriging.

The Châabet El Ballout deposit, northeast of Souk Ahras, belongs to the Sellaoua thrust sheets zone. Explored in 1992 through core drilling (EREM), it exhibits a duplex structure confirmed by geological studies. The resources, initially estimated by vertical sections, were re-evaluated by ordinary kriging while incorporating this structure.

Comparison between conventional and geostatistical estimates shows a significant discrepancy, related to the discontinuity of mineralization: regular and horizontal at Anini, resulting in hole effects; vertically discontinuous at Châabet El Ballout, resulting from the duplex structure. In both cases, a mineralization coefficient was used to correct the estimations.

Thus, optimizing the resource estimation of karstic and brecciated-type deposits requires integrating the effects of anisotropy and discontinuity, corrected by an appropriate coefficient.

Keywords: Iron, karst, duplex, geostatistical estimation, appropriate coefficient.

Towards Reliable Seismic Hazard Assessment: A Dual-Task Framework for Severity Classification and Epicenter Prediction

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Abstract

It proposes a data-driven dual-task framework for seismic event analysis which combines both machine learning and deep learning approaches for classifying the severity level of earthquakes and predicting their epicenter coordinates. The dataset drawn from the Seismological Observatory in Jordan contained geophysical, geographical, as well as temporal features and went through preprocessing involving cleansing of data, normalization, as well as augmentation with synthetic Gaussian noise. These operations expanded the dataset up to 10,000 records and made it more representative. Furthermore, earthquake magnitudes were categorized into low, medium, and high severity levels Ensemble models—XGBoost, LightGBM, CatBoost, and Gradient Boosting—all were trained, and model performances were validated based on precision, recall, F1 measure, and ROC analysis. Models were found to perform with high accuracy such that Gradient Boosting had the best performance at 99.67%. In Addition, regression step considered a stacking ensemble consisting of Multilayer Perceptron, Random Forest, and XGBoost were used for predicting epicenter coordinates. The model demonstrated significant predictive capability for latitude (R^2 = 0.96, MSE = 0.70), while it indicated consistent albeit moderately lower accuracy for longitude (R^2 = 0.90, MSE = 4.39). Reliability and practical applicability of results were also confirmed by visualizations with residual plots as well as interactive maps. Overall, it is shown in this proposed framework how ensemble learning is effective in dealing with complicated seismic classification and geospatial prediction problems.

It provides a groundwork for further improvement in early warning mechanisms in addition to seismic hazard assessment in seismically active regions such as Jordan based on its capability for attaining extremely high severity class determination in addition to epicenter approximation.

Keywords: Earthquake severity classification, Seismic event analysis, Seismic hazard assessment, Ensemble learning, Epicenter prediction, Machine learning.

Tarım Sektöründe Karbon Yakalama, Kullanma ve Depolama Teknolojilerinin Sürdürülebilirlik Perspektifinden Değerlendirilmesi: Bibliyografik Bir İnceleme

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Özet

Küresel sera gazı emisyonlarının başlıca kaynaklarından biri olan tarım sektörü, iklim değişikliğiyle mücadelede potansiyel bir çözüm alanı olarak da stratejik önem taşımaktadır. Artan dünya nüfusu, gıda güvenliği gereksinimleri ve sürdürülebilir üretim hedefleri ise tarımsal faaliyetlerde emisyon azaltıcı teknolojilerin geliştirilmesini ve uygulanmasını giderek daha kritik hale getirmiştir.

Bu kapsamda çalışma, karbon yakalama, kullanma ve depolama (KYKD) teknolojilerinin tarım sektörü bağlamındaki uygulanabilirliğini ve sürdürülebilir kalkınmaya katkı potansiyelini bibliyografik bir yaklaşımla ele almaktadır. Literatürde öne çıkan teknolojik uygulamalar arasında biyokömür üretimi, toprakta karbon sekestrasyonu yöntemleri, biyogaz ve biyometan sistemleri ile fotosenteze dayalı yenilikçi çözümler yer almaktadır. Söz konusu teknolojilerin yalnızca karbon nötrlüğüne katkı sağlamakla kalmayıp, aynı zamanda toprak sağlığının iyileştirilmesi, tarımsal verimliliğin artırılması, yenilenebilir enerji üretimi ve kırsal kalkınmanın desteklenmesi gibi çok boyutlu faydalar sunduğu görülmektedir. Bununla birlikte, mevcut akademik çalışmaların sosyo-ekonomik etkiler, maliyet-etkinlik analizleri, çiftçi davranışları ve politika destek mekanizmaları gibi kritik boyutlarda sınırlı kaldığı dikkat çekmektedir. Bu durum, KYKD teknolojilerinin tarım sektöründe yaygınlaştırılabilmesi için yalnızca teknik fizibilitenin değil, aynı zamanda ekonomik sürdürülebilirlik ve toplumsal kabul edilebilirlik gibi unsurların da kapsamlı biçimde araştırılması gerektiğini ortaya koymaktadır. Bu bibliyografik inceleme, mevcut literatürü sistematik biçimde derleyerek hem araştırmacılar hem de politika yapıcılar için tarımda KYKD teknolojilerine ilişkin bütüncül ve ileriye dönük bir değerlendirme çerçevesi sunmaktadır.

Anahtar Kelimeler: Sürdürülebilir Tarım, Karbon Yakalama, Kullanma ve Depolama (KYKD) Teknolojileri, Bibliyografik Literatür İncelemesi.

Evaluating Carbon Capture, Utilization, and Storage Technologies in the Agricultural Sector from a Sustainability Perspective: A Bibliographic Review

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Abstract

As one of the primary contributors to global greenhouse gas emissions, the agricultural sector also holds strategic significance as a potential domain for climate change mitigation. The growing global population, increasing demands for food security, and the imperative for sustainable production have rendered the development and implementation of emission-reducing technologies in agriculture increasingly critical.

Within this context, the present study adopts a bibliographic approach to examine the applicability of carbon capture, utilization, and storage (CCUS) technologies in agriculture and their potential contributions to sustainable development. Prominent technological practices identified in the literature include biochar production, soil carbon sequestration methods, biogas and biomethane systems, and photosynthesis-based innovative solutions. These technologies not only contribute to carbon neutrality but also offer multifaceted benefits such as improved soil health, enhanced agricultural productivity, renewable energy generation, and support for rural development. However, existing academic studies appear limited in addressing key dimensions such as socio-economic impacts, cost-effectiveness analyses, farmer adoption behavior, and policy support mechanisms. This highlights the necessity of investigating not only the technical feasibility of CCUS technologies in agriculture but also their economic viability and social acceptability in a comprehensive manner. By systematically synthesizing the current body of literature, this bibliographic review aims to provide researchers and policymakers with a holistic and forward-looking framework for assessing CCUS technologies in the agricultural context.

Keywords: Sustainable Agriculture, Carbon Capture, Utilization, and Storage (CCUS) Technologies, Bibliographic Literature Review.

Tarımda Karbon Emisyonları ile Makroekonomik Göstergeler Arasındaki Karşılıklı Bağlantılar: Gelişmiş ve Gelişmekte Olan Ülkeler Üzerine Panel Veri Analizi

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Özet

Tarım sektörü, hem ekonomik kalkınmanın temel unsurlarından biri hem de küresel karbon emisyonlarının önemli bir kaynağı olarak sürdürülebilirlik tartışmalarının merkezinde yer almaktadır. Bu çalışma, tarım sektöründeki karbon emisyonları ile temel makroekonomik göstergeler arasındaki karşılıklı ilişkileri analiz etmeyi amaçlamaktadır. Çalışmada özellikle tarımsal üretim verimliliği, enerji tüketimi, gayrisafi yurtiçi hasıla (GSYİH), dış ticaret hacmi ve yeşil büyüme göstergelerinin emisyon dinamikleri üzerindeki etkileri incelenerek gelişmiş ve gelişmekte olan ülkeleri kapsayan panel veri analizleri uygulanacaktır. Analiz kapsamında enerji tüketiminin tarım kaynaklı karbon emisyonlarını artıracağı; emisyonlardaki artışın ise üretim kapasitesi ve GSYİH üzerinde genişleme etkisi yaratacağı öngörülmektedir. Bununla birlikte dış ticaretin ve yeşil büyüme göstergelerinin emisyonlar üzerindeki rolünün ülkelerin gelişmişlik düzeyine göre farklılaşması beklenmektedir. Bu yönüyle çalışma, emisyonların yalnızca çevresel bir sorun olmadığını, aynı zamanda ekonomik büyüme, üretim ve ticaretle doğrudan ilişkili çok boyutlu bir olgu olduğunu göstermeyi hedeflemektedir. Elde edilecek sonuçların, sürdürülebilir tarım politikalarının ve düşük karbonlu kalkınma stratejilerinin tasarlanmasına katkı sağlaması da öngörülmektedir. Böylelikle çalışma, tarımda karbon emisyonlarının ekonomik göstergelerle birlikte değerlendirilmesinin, iklim değişikliğiyle mücadele politikalarının etkinliği açısından ne denli kritik olduğunu vurgulayacaktır.

Anahtar Kelimeler: Tarımsal Karbon Emisyonları, Makroekonomik Göstergeler, Panel Veri Analizi.

Interlinkages Between Agricultural Carbon Emissions and Macroeconomic Indicators: A Panel Data Analysis on Developed and Developing Countries

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Abstract

The agricultural sector stands at the intersection of economic development and environmental sustainability, serving both as a fundamental driver of national economies and a significant source of global carbon emissions. This study aims to analyze the reciprocal relationships between agricultural carbon emissions and key macroeconomic indicators. Specifically, it investigates the effects of agricultural productivity, energy consumption, gross domestic product (GDP), trade volume, and green growth metrics on emission dynamics through panel data analyses encompassing both developed and developing countries. The analysis anticipates that increased energy consumption will lead to higher agriculture-related carbon emissions, while rising emissions may, in turn, stimulate production capacity and GDP growth. Moreover, the influence of trade and green growth indicators on emissions is expected to vary depending on a country's level of economic development. By highlighting the multifaceted nature of emissions—beyond their environmental implications—this study underscores their direct connections to economic growth, production, and trade. The findings are expected to contribute to the design of sustainable agricultural policies and low-carbon development strategies. Ultimately, the study emphasizes the critical importance of evaluating agricultural carbon emissions in conjunction with macroeconomic indicators to enhance the effectiveness of climate change mitigation policies.

Keywords: Agricultural Carbon Emissions, Macroeconomic Indicators, Panel Data Analysis.

The Pass-Through of Input Costs in Agriculture to Consumer Prices: An Econometric Analysis of Input-Price Chain Dynamics

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Abstract

The present study aims to analyze the pass-through of the costs of basic inputs (fertilizer, diesel fuel, seeds, irrigation, etc.) used in agricultural production in Turkey to final consumer prices over time. While price increases in agricultural inputs generally affect farmers directly, the extent to which this impact is passed on to consumers, how it is passed on, and over what time frame has not been fully modelled. In this context, the primary objective of this study is to reveal the price pass-through processes between producers and consumers using dynamic econometric models. In this study, the relationship between the Producer Price Index (PPI) and the Consumer Price Index (CPI) of the Turkish Statistical Institute (TÜİK) will be analyzed. Furthermore, input prices (monthly) obtained from sources such as Agricultural Credit Cooperatives will be integrated into the model. The ARDL (Autoregressive Distributed Lag) model will be utilized as the method of analysis. This model will facilitate the examination of short- and long-term price pass-through. Furthermore, the Granger causality test will be utilized to ascertain which of the inputs is more effective in predicting consumer prices. The present study is distinctive insofar as it provides a data-driven explanation of a two-way impact chain from both the agricultural and consumer economy perspectives. The demonstration will illustrate that input costs can function as an early warning indicator and play a preventative role in inflation policies. Furthermore, the model will facilitate the development of more targeted and time-sensitive price support policies. In addition, it is expected that the data collected in this study will offer a structural instrument in the struggle against food inflation, thus possessing considerable potential for widespread impact.

Keywords: Input Costs, Consumer Prices, Input-Price Chain

Organic Contaminants and Their Impact on Water Quality in the Effluents of the Annaba Wastewater Treatment Plant-Algeria

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Abstract

The Annaba wastewater treatment plant, commissioned in 2011 with a nominal capacity of 580,700 PE, currently functions at only 49% of its design capacity. Although the treatment process achieves a marked reduction in suspended solids (from 250 to 10 mg/l) and nitrites (0.005–0.01 mg/l), parameters such as conductivity, BOD_5, ammonium, and phosphates (4.6 mg/l) still exceed national and international standards. Climatic analysis highlights a Mediterranean regime characterized by a significant water deficit (347.87 mm), mainly driven by high actual evapotranspiration. Based on the IPO and IHE indices, the effluents exhibit moderate to very high levels of organic pollution, underscoring that, despite treatment, the discharged waters remain of unsatisfactory quality. The continuous release of insufficiently treated effluents into the Oued Seybouse contributes to the deterioration of water quality, disrupting the ecological balance of the wadi. This situation further raises potential risks for downstream uses, particularly in agriculture, domestic supply, and aquatic biodiversity.

Keywords: BOD5; wastewater treatment plant; water quality; potential risks; biodiversity.

Contamination Géogénique des Eaux de la Zone Minière de Kherraza, Annaba (Nord-Est de l'Algérie)

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Résumé

La zone d'étude se situe dans un bassin versant secondaire, délimité au sud par le massif de Kherraza, dans la région d'Annaba, au nord-est de l'Algérie. Ce bassin est caractérisé par une lithologie cristallophyllienne dominée par des gneiss, traversés par des formations basiques (amphibolites/pyroxénites) et carbonatées (cipolins magnésiens et skarns). Il abrite des eaux de surface, des sources permanentes ainsi que des eaux souterraines exploitées par plusieurs puits.

Les analyses géochimiques des faciès lithologiques et des eaux ont permis d'identifier l'origine des fortes concentrations en certains éléments chimiques (Mg, Fe, Al, etc.). Si le fer provient principalement d'une contamination anthropique due aux rejets miniers et aux haldes riches en oxydes de fer, les autres éléments en excès sont d'origine géogénique.

Les eaux souterraines sont majoritairement bicarbonatées-sulfatées-chlorurées calciques et fortement magnésiennes, sans cation ou anion dominant, à l'exception d'un échantillon. Elles sont enrichies en Mg (lessivage des amphiboles et biotite), Ca (dissolution des carbonates des skarns), ainsi qu'en Na et K (lessivage des feldspaths, micas et minéraux argileux). En revanche, les eaux de surface, de type

bicarbonaté-chloruré-sulfaté calcique et faiblement magnésien, sont plus riches en Al (lessivage des sols argileux) et en Fe (provenant des haldes).

L'étude de la stabilité des phases minérales montre que les eaux évoluent dans le domaine de la kaolinite (Kln), avec une sursaturation par rapport au quartz et une sous-saturation vis-à-vis de la silice amorphe. Les eaux souterraines sont proches du domaine de stabilité de la montmorillonite magnésienne (Mnt-Mg), ce qui témoigne d'une forte altération des roches et de la formation de minéraux argileux. Comparées aux eaux naturelles non polluées, les eaux étudiées sont considérées comme contaminées, avec une origine à la fois géogénique et anthropique.

Mots clés : Qualités Eaux, Kherraza, pollution, géogénique.

Policy Transformation Analysis of Organic Farming Policies in Turkey in The Context of Alignment with The European Green Deal

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Abstract

This study assesses the extent to which organic farming policies implemented in Turkey are aligned with the European Union's Farm to Fork strategy under the European Green Deal. In line with the Green Deal's objectives of environmental sustainability, food security, and reducing the carbon footprint of agricultural production, the study systematically examines the practical obstacles and problems within Turkey's current policy framework. The study will establish a 'Policy Compliance Index' derived from Farm to Fork criteria for the first time, integrating environmental, legal, and economic indicators. This index enables a quantitative comparison of Turkey's organic farming policies with EU regulations and strategies. The methodology involved a qualitative content analysis based on thematic coding of the Ministry of Agriculture and Forestry's legislation and strategy documents, European Commission reports, and FAO and IFOAM publications; compliance levels, implementation tools (incentives, certification, traceability, digitalization) and outcome indicators were scored. Index weights were determined by combining criteria derived from EU strategy documents with indicators recommended in peer-reviewed literature, blended with expert opinions; they were tested through sensitivity and robustness analyses. Additionally, separate sub-indices were created for the capacity to implement legislation (institutional readiness, budgeting, and human resources), adoption dynamics at the farmer level, and market governance (certified input supply, market access, traceability/digital infrastructure). The findings are supported by SWOT and GAP analyses to identify policy gaps and areas for improvement. The results provide concrete recommendations for short- to medium-term prioritization in the process of aligning with EU standards, inter-institutional coordination, and data-driven monitoring and evaluation mechanisms, emphasizing the transformation capacity of organic farming and providing the literature with a comparative and measurable framework.

Keywords: Green Deal, Farm to Fork, Organic Farming, Policy Alignment Index

Tarımda Karbon Emisyonları ile Makroekonomik Göstergeler Arasındaki Karşılıklı Bağlantılar: Gelişmiş ve Gelişmekte Olan Ülkeler Üzerine Panel Veri Analizi

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Özet

Tarım sektörü, hem ekonomik kalkınmanın temel unsurlarından biri hem de küresel karbon emisyonlarının önemli bir kaynağı olarak sürdürülebilirlik tartışmalarının merkezinde yer almaktadır. Bu çalışma, tarım sektöründeki karbon emisyonları ile temel makroekonomik göstergeler arasındaki karşılıklı ilişkileri analiz etmeyi amaçlamaktadır. Çalışmada özellikle tarımsal üretim verimliliği, enerji tüketimi, gayrisafi yurtiçi hasıla (GSYİH), dış ticaret hacmi ve yeşil büyüme göstergelerinin emisyon dinamikleri üzerindeki etkileri incelenerek gelişmiş ve gelişmekte olan ülkeleri kapsayan panel veri analizleri uygulanacaktır. Analiz kapsamında enerji tüketiminin tarım kaynaklı karbon emisyonlarını artıracağı; emisyonlardaki artışın ise üretim kapasitesi ve GSYİH üzerinde genişleme etkisi yaratacağı öngörülmektedir. Bununla birlikte dış ticaretin ve yeşil büyüme göstergelerinin emisyonlar üzerindeki rolünün ülkelerin gelişmişlik düzeyine göre farklılaşması beklenmektedir. Bu yönüyle çalışma, emisyonların yalnızca çevresel bir sorun olmadığını, aynı zamanda ekonomik büyüme, üretim ve ticaretle doğrudan ilişkili çok boyutlu bir olgu olduğunu göstermeyi hedeflemektedir. Elde edilecek sonuçların, sürdürülebilir tarım politikalarının ve düşük karbonlu kalkınma stratejilerinin tasarlanmasına katkı sağlaması da öngörülmektedir. Böylelikle çalışma, tarımda karbon emisyonlarının ekonomik göstergelerle birlikte değerlendirilmesinin, iklim değişikliğiyle mücadele politikalarının etkinliği açısından ne denli kritik olduğunu vurgulayacaktır.

Anahtar Kelimeler: Tarımsal Karbon Emisyonları, Makroekonomik Göstergeler, Panel Veri Analizi.

Interlinkages Between Agricultural Carbon Emissions and Macroeconomic Indicators: A Panel Data Analysis on Developed and Developing Countries

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Abstract

The agricultural sector stands at the intersection of economic development and environmental sustainability, serving both as a fundamental driver of national economies and a significant source of global carbon emissions. This study aims to analyze the reciprocal relationships between agricultural carbon emissions and key macroeconomic indicators. Specifically, it investigates the effects of agricultural productivity, energy consumption, gross domestic product (GDP), trade volume, and green growth metrics on emission dynamics through panel data analyses encompassing both developed and developing countries. The analysis anticipates that increased energy consumption will lead to higher agriculture-related carbon emissions, while rising emissions may, in turn, stimulate production capacity and GDP growth. Moreover, the influence of trade and green growth indicators on emissions is expected to vary depending on a country's level of economic development. By highlighting the multifaceted nature of emissions—beyond their environmental implications—this study underscores their direct connections to economic growth, production, and trade. The findings are expected to contribute to the design of sustainable agricultural policies and low-carbon development strategies. Ultimately, the study emphasizes the critical importance of evaluating agricultural carbon emissions in conjunction with macroeconomic indicators to enhance the effectiveness of climate change mitigation policies.

Keywords: Agricultural Carbon Emissions, Macroeconomic Indicators, Panel Data Analysis.

استدامة التنمية السياحية في الحفاظ على التراث العمراني بلدة برقين نموذجا – محافظة جنين

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الملخص:

يهدف هذا البحث إلى رصد واقع إمكانات السياحة التراثية في بلدة برقين – محافظة جنين (فلسطين) ودورها في الحفاظ على التراث العمراني بها حيث تحتوي على معالم تراثية عمرانية فريدة ومتميزة، تتمثل في كنيسة برقين وقصر الخوخة (قصر آل جرار) والمقامات التي أشهرها مقام الشيخ سبع، لذلك أظهرت الدراسة أن بلدة برقين تمتلك مؤهلات (مقومات) وإمكانيات سياحية هامة جداً، كما بينت الدراسة أن هناك زيادة ملحوظة على أعداد السياح القادمين إلى بلدة برقين وخاصة بعد ترميم المواقع التراثية التي تمت دراستها وتمّ أيضاً من خلال تقنية نظم المعلومات الجغرافية على تحديد الموقع الأفضل لإنشاء الخدمات السياحية في البلدة وكذلك حدد نوع الخدمات السياحية التي يجب إنشائها حالياً ومستقبلاً في برقين، وبذلك تمّ اقتراح توصيات هامة للنهوض بالسياحة في برقين وخاصة السياحة التراثية من أجل إحداث التنمية المستدامة للسياحة في برقين وتعزيز الصمود والتمكين للسكان في البلدة

الكلمات المفتاحية: الاستدامة، التنمية السياحية، التراث العمراني، الكنيسة، برقين.

Sustainable Tourism Development in the Preservation of Architectural Heritage: The Case of Burqin – Jenin Governorate

Abstract:

This research aims to examine the current potential of heritage tourism in the town of Burqin, located in the Jenin Governorate of Palestine, and its role in preserving the town's architectural heritage. Burqin is home to unique and distinguished heritage landmarks, most notably the Church of Burqin, Al-Khoukha Palace (Palace of the Al-Jarrar family), and several shrines, the most prominent of which is the Shrine of Sheikh Saba'. The study reveals that Burqin possesses significant tourism assets and capabilities. It also highlights a noticeable increase in the number of tourists visiting the town, particularly following the restoration of its key heritage sites.

Using Geographic Information Systems (GIS), the study identified the most suitable locations for establishing tourism services in the town and determined the types of services that should be developed both now and in the future. Accordingly, the study proposed important recommendations to promote tourism in Burqin—especially heritage tourism—as a means to achieve sustainable tourism development and to enhance the resilience and empowerment of the local population.

Keywords: Sustainability, Tourism Development, Architectural Heritage, Church, Burqin

Wildfire Dynamics and Urban Resilience in Tunisia (2000-2021): Insights from MODIS Data for Sustainable Planning

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Abstract

Wildfires pose an escalating threat to urban and peri-urban areas globally, exacerbated by climate change and land-use transformations. This study examines wildfire patterns in Tunisia from 2000 to 2021, using MODIS satellite data (M-C61) to assess their spatial-temporal distribution and implications for urban studies. With a dataset comprising over 214,000 fire events, we employ advanced geospatial techniques including K-Means clustering, kernel density estimation, and 3D contour mapping to identify fire hotspots, intensity trends, and their proximity to urban settlements. Results reveal a significant increase in fire radiative power (FRP) and frequency near urban peripheries, particularly in northern governorates like Tunis and Bizerte, where urban expansion intersects with flammable vegetation. Seasonal peaks in summer months correlate with urban heat island effects and drought, amplifying risks to infrastructure and public health. Integrating these findings with Tunisia's urban development policies, we propose a framework for fire-resilient urban planning, emphasizing green belts, early warning systems, and land-use zoning informed by fire risk maps. Visualizations, including a novel 3D contour overlay on Tunisia's map, highlight the spatial convergence of fire intensity and urban growth, offering actionable insights for policymakers. This research bridges environmental science and urban studies, contributing to sustainable urban resilience in arid Mediterranean contexts. By linking wildfire dynamics to urban systems, we underscore the urgency of adaptive strategies in the face of climate-driven hazards, providing a replicable methodology for other urbanizing regions.

Keywords: Wildfires, Urban Studies, Tunisia, MODIS, Spatial Analysis, Fire Radiative Power, Urban Planning, Climate Resilience, Geovisualization

استدامة التّراث الثّقافي المتحفي في ضَوء التّصميم الرّقمي الذّكي: المتحف الوطني ببَاردو نَموذجًا

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ملخص:

تهدف هذه الدّراسة إلى تسليط الضّوء على مشروع إحياء التّراث الثّقافي المتحفي في تونس في ضوء التّصميم الرّقمي الذّكي عبر استعراض التّجربة الغامرة التي شهدها "المتحف الوطني بباردو" والتي تعدّ بادرة أولى من نوعها نحو تعزيز ورقمنة التراث الوطني في ظل التحولات الرقمية وتطبيقات الذكاء الاصطناعي وذلك عملاً على استدامته بوسائل العرض الحديثة تحت رعاية وكالة إحياء التّراث والتّنمية الثّقافية. وفي هذا الصّدد تم الاعتماد على المنهج الوصفي التّحليلي لإبراز المفاهيم المتعلقة باستدامة هذا الإرث الفنّي وتقنيات "حفظه" و"عرضه" و"ترميمه" رقميا عبر تحويل الواقع المتحفي المادّي إلى واقع افتراضي ومنتج رقمي ثلاثي الأبعاد لإعادة اكتشاف تاريخ قرطاج بطريقة تفاعلية مع تسليط الضّوء على مسألة التّعاون الفعّال بين المختصين من "علماء آثار" و"فنّانين" و"فوتوغرافيين" و"مؤرّخين" إلى غير ذلك من مختصّين في علوم المعلومات للوصول إلى تحقيق أفضل النّتائج لحفظه خاصة أمام تصاعد التّهديدات بسرقته وتزايد النّزاعات الإيديولوجية التي تهدّده بالتّدمير والتّقويض. وتوصّلنا إلى أن هذا المتحف قد أصبح اليوم نموذجًا وبرهانًا على التزام تونس بعرض تراثها الثّقافي وحفظه وإتاحته رقميا ليكون في متناول الجميع عبر استخدام العرض التّفاعلي وتقنيات "الواقع الافتراضي" و"الواقع المعزّز" لخلق بيئة متحفية مستدامة عبر فضاءات عرض غامرة، خلافا إلى المساهمة الفعالة في تحقيق التّنمية الاقتصادية من خلال دعم السّياحة الافتراضية عبر الانفتاح على جمهور أكبر وأوسع.

كلمات مفاتيح: استدامة التّراث الثّقافي، متحف باردو بتونس، العرض التّفاعلي، التّصميم الرّقمي، الواقع الافتراضي، الواقع المعزّز، السّياحة الافتراضية، الذّكاء الاصطناعي.

Sustainability of Museum Cultural Heritage in the Light of Intelligent Digital Design: The National Museum of Bardo as a Model

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Abstract

This study aims to shed light on the project of revitalizing museum cultural heritage in Tunisia through smart digital design, by reviewing the immersive experience at the **"**National Museum of Bardo**"** this initiative is considered the first of its kind, aimed at enhancing and digitizing national heritage in the context of digital transformations and artificial intelligence applications, while working to ensure its sustainability through modern exhibition methods, under the patronage of the Heritage Revival and Cultural Development Agency.In this regard, the descriptive-analytical approach was relied upon to highlight the concepts related to the sustainability of this artistic heritage and the techniques of **"**preserving, **" "**displaying, **"** and **"**digitally restoring**"** it by transforming the physical museum reality into a virtual reality and a 3D digital product to rediscover the history of Carthage in an interactive manner. The focus was also placed on the issue of effective collaboration between specialists such as **"**archaeologists, **" "**artists, **" "**photographers,**" "**historians,**"** and other experts in information sciences, in order to achieve the best results in preserving this heritage, especially in light of the growing threats of theft and the increasing ideological conflicts that threaten it with destruction and undermining. We have concluded that this museum has become, today, a model and evidence of Tunisia's commitment to displaying, preserving, and digitally making its cultural heritage accessible to all, using interactive displays and **"**virtual reality**"** and **"**augmented reality**"** techniques to create a sustainable museum environment through immersive exhibition spaces. Additionally, it actively contributes to achieving economic development by supporting virtual tourism through reaching a larger and wider audience.

Keywords: Cultural Heritage Sustainability, Bardo National Museum, Tunisia, Interactive Displays, Digital Design, Virtual Reality, Augmented Reality, Virtual Tourism, Artificial Intelligence.

إعلام الأقليات: إعلام الهويات العابرة للأوطان

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الملخص

نظريا تنتعش في مدونة علوم الإعلام والاتصال إشكالية افقية تشق مختل ف مباحث علاقة الميديا بالمجتمع إنها إشكالية ثنائية الوحدة والتنوع أي هل على الإعلام أن يساهم في تماسك المجتمع ووحدته أم هل عليه أن يعكس التعدد الموجود فيه؟ نظريا وقع التعامل مع هذه الإشكالية بشكل يرمز إلى حضور منسوب كبير من التجاذب الفكري والإيديولوجي. عند البعض فإن وسائل الإعلام هي عبارة عن جهاز فتنة وتفرقة بين مكونات المجتمع الواحد وهو ما يستدعي ضرورة مراقبة مضامينها وتوجيهها وعند آخرين فإن الإعلام يجب أن يكون تعدديا بحكم أن التعدد قانون طبيعي، ويقصد بالتعدد هنا تعدد الأفكار والأذواق والميولات وأيضا المرجعيات الإثنية واللغوية والهووية وتتماهي هذه المقاربة الليبرالية مع ترجمتها الاقتصادية مجسدة في الرأسمالية التي تتعامل مع الظاهرة الإعلامية مع المجتمع بوصفه جمهورا من المستهلكين لمخرجات وسائله وعلى الجمهور -نفس الجمهور- أن يشاهد نفس الرسالة وهو ما سيؤدي حتما وعبر التراكم إلى تقليص كل أشكال التمايز الديني أو اللغوي أو العرقي في المجتمع. هكذا سيتحول الاستهلاك باعتباره عصب الاقتصاد الرأسمالي إلى عنصر وحدة المجتمع وهي مقاربة ليبرالية فائقة الحضور مثلا في النموذج الأمريكي.

بالعودة إلى كل هذا التجاذب النظري في علوم الإعلام والاتصال تتنزل إشكالية بحثنا عن إعلام الأقليات ومدونة علوم الإعلام والاتصال: الإعلام العابر للهويات. ضمن سياق تداخل فكري هو بين تصور وظيفي يرى في الإعلام بمثابة الإسمنت الاجتماعي الجديد في تشكل المجتمعات الحديثة فيتعامل مع الجمهور بوصفه حشد من المستهلكين وبين مقاربة نقدية ترى في الإعلام عامل تسطيح فكري ونفي لكل أشكال التنوع والتعدد. وستكون منهجية هذا البحث تحليلية استقرائية لمسار تاريخي وآخر فكري لظاهرة إعلام الأقليات ضمن مقاربة تأطيرية لهذا البراديغم. إن تداخل الفاعلين في تحديد مشهد إعلام الأقليات يعتبر عائقا أبستمولوجيا وذلك لبناء مقاربة تأخذ من مبحث علوم الإعلام والاتصال مرجعا. وسيكون تفكيك هذه الإشكالية في بعض المحاور مجسدة في عدد من المحاور لعل أهمها ما يلي:

- الإعلام والأقليات بين الدلالة والمصطلح.
- الإعلام والأقليات: الوصل والفصل.
- الأقليات والميديا أية علاقة.
- الإنترنت والأقليات: جدلية الافتراضي والواقعي.
- الأقليات في الفضاء الرقمي: الهويات العابرة للأوطان.
- ميديا الأقليات في العالم العربي: فتور بحثي لظاهرة مركبة
- إعلام الأقليات والتعديل: ضد التنميط والوصم.

الكلمات المفتاحية: إعلام، أقليات، هوية، شبكات تواصل اجتماعي، الهجرة.

Minority Media: Media of Transnational Identities

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Abstract

In media and communication studies, a theoretical horizontal dilemma arises across various fields that explore the relationship between media and society. This is the dual dilemma of unity versus diversity: Should the media contribute to social cohesion and unity, or should it reflect the diversity present within society?

Theoretically, this dilemma has been addressed in ways that reveal significant intellectual and ideological tensions. Some view the media as a tool of discord and division within society, necessitating content control and guidance. Others argue that media must be pluralistic because diversity is a natural law. Here, diversity refers to differences in ideas, tastes, inclinations, as well as ethnic, linguistic, and identity-based backgrounds.

This liberal approach aligns with its economic interpretation represented by capitalism, which sees media audiences as consumers of media products. The same audience is expected to consume the same message, which — through accumulation — will inevitably reduce all forms of religious, linguistic, or ethnic differentiation in society. Thus, consumption, as the backbone of the capitalist economy, becomes a unifying element of society — a highly present liberal approach, especially in the American model.

Returning to this theoretical tension in media and communication sciences, our research addresses the issue of minority media within the discipline: Media of Transnational Identities. It lies within a context of intellectual intersection — between a functional view that sees media as the new social cement of modern society, treating audiences as a mass of consumers, and a critical perspective that sees media as an agent of intellectual flattening and a denier of all forms of diversity.

This research adopts an analytical and inductive methodology that traces both the historical and intellectual trajectories of the minority media phenomenon, framed within this paradigm. The overlapping roles of actors in shaping the minority media landscape present an epistemological obstacle to developing an approach rooted in media and communication sciences.

The deconstruction of this issue will be structured around several key axes, including:

- Media and Minorities: Definitions and Terminology
- Media and Minorities: Connection and Separation
- Minorities and Media: What Kind of Relationship?
- Internet and Minorities: The Dialectic of the Virtual and the Real
- Minorities in Digital Space: Transnational Identities

- Minority Media in the Arab World: Research Apathy Toward a Complex Phenomenon
- Minority Media and Regulation: Against Stereotyping and Stigmatization

Keywords: Media, Minorities, Identity, Social Media Networks, Migration.

Vers Un Urbanisme De Santé : Stratégies Et Outils Pour Une Planification Territoriale Durable

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Résumé

Dans un contexte d'urbanisation rapide et de transformation des territoires, la manière dont les villes sont conçues et aménagées a un impact direct sur la qualité de vie des populations. L'environnement urbain influence en effet de manière significative l'accès aux services essentiels, la mobilité, les conditions de logement, et plus largement la santé publique. Dans un monde de plus en plus urbanisé, les conséquences d'une mauvaise planification se traduisent par une aggravation des inégalités et des problèmes sanitaires. Face à la montée des défis sanitaires, sociaux et environnementaux, il devient impératif d'intégrer la santé comme dimension transversale de la planification territoriale, en particulier à l'échelle des grandes métropoles et des zones urbaines sensibles.

Ce travail s'inscrit dans une approche intersectorielle et systémique, visant à outiller les acteurs de l'urbanisme pour mieux prendre en compte les déterminants de la santé dans les politiques d'aménagement. Il s'appuie sur les orientations de l'Organisation mondiale de la santé en matière de santé urbaine, et s'inscrit dans le cadre plus large des Objectifs de Développement Durable, notamment l'ODD 11, qui appelle à construire des villes inclusives, sûres, résilientes et durables.

À travers l'étude de la banlieue sud de Tunis, ce travail mobilise la matrice SWOT comme outil de diagnostic territorial et d'aide à la décision. L'objectif est de proposer des recommandations concrètes en matière d'aménagement urbain et de gouvernance, en plaçant la santé et le bien-être au cœur des dynamiques territoriales. Il s'agit ainsi de développer des stratégies qui peuvent contribuer à renforcer la cohérence entre urbanisme, santé publique et développement durable. Cela suppose une gouvernance ouverte, des indicateurs de santé intégrés dans les décisions d'aménagement, et une attention constante à la santé publique.

Mots-clés : planification urbaine, développement durable, santé, urbanisme de santé.

Effect of Urban Morphology on Thermal Comfort: A Study of the Sabbats in the Medina of Tunis

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Abstract

In a context marked by climate change and increasing urbanization, vernacular architectural solutions provide valuable insights for designing resilient urban spaces. The medina of Tunis represents a privileged case study due to its unique character, shaped by its morphological variations, distinctive construction techniques, specific social practices, and singular architectural language. This combination of characteristics gives the medina a remarkable and unparalleled identity.

Within this framework, the study focuses particularly on the sabbat, an emblematic element of the medina of Tunis, chosen as the main subject of analysis. Sabbats, traditional covered passageways, are studied here as passive thermal regulation devices in the context of climate change and urban densification. These vernacular structures illustrate a local and sustainable architectural response to contemporary climate challenges.

While outdoor thermal comfort is a relatively recent area of research, most scientific studies to date have primarily focused on indoor spaces. The complexity of studying outdoor thermal comfort lies in the multiplicity of factors involved and their interactions, which are generally grouped into three main categories:

Physical parameters: air temperature, mean radiant temperature, air velocity, relative humidity, etc.

Individual parameters: user-specific characteristics.

Internal thermal gain parameters: lighting, electrical devices, computer stations, etc.

Numerous studies have explored outdoor thermal comfort, highlighting different aspects. Achour and Kharrat [1] analyzed the impact of urban canyon geometry on thermal comfort in a Mediterranean subtropical climate. They studied parameters such as height-to-width ratios (H/W), sky view factor

(SVF), and street orientation, comparing three urban fabrics (traditional, colonial, and regulated) through ENVI-met simulations. Furthermore, Charfi [2] demonstrated, using simulations conducted with SketchUp and the formula by Grundström et al. [3], that urban morphology—particularly street orientation, width, and building height—significantly influences local temperatures. Additionally, Grundström et al. [3] compared climatic conditions between a traditional neighborhood and a modern neighborhood, analyzing air temperature, humidity, wind speed, orientation, as well as H/W and SVF parameters.

The primary objective of this research is to analyze the influence of factors such as orientation, construction materials, and roof configurations on the thermal performance of sabbats. Numerical simulations conducted with Revit and its solar simulation plug-in considered various parameters: sunlight exposure, natural ventilation, thermal inertia of materials, and the dimensions of sabbats.

The results reveal that the morphology of sabbats plays a crucial role in mitigating extreme temperatures through passive regulation of solar radiation. A southwest/northeast orientation, combined with materials with high thermal inertia (such as stone or solid bricks), optimizes solar gains in winter while limiting summer overheating. Moreover, roof configuration is a determining factor: sabbats with double roofing exhibit better thermal performance than those with single roofing, thanks to enhanced insulation and reduced rapid temperature fluctuations.

IA et géomatique au service des territoires méditerranéens : innovations interdisciplinaires pour la résilience et le développement durable

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Résumé

L'intégration de l'intelligence artificielle (IA) à la géomatique transforme l'acquisition, l'analyse et la modélisation des données spatiales, offrant de nouvelles opportunités pour les territoires méditerranéens. En Tunisie, caractérisée par une diversité environnementale et socio-économique marquée, cette convergence permet d'anticiper les risques climatiques, d'optimiser la planification urbaine et de renforcer la gestion durable des ressources naturelles. Grâce à l'apprentissage automatique, à la vision par ordinateur et à la modélisation prédictive, il devient possible de générer des cartes intelligentes et des scénarios d'aide à la décision à forte valeur ajoutée. Cette communication adopte une perspective interdisciplinaire, croisant les sciences géographiques, l'ingénierie, l'écologie et les sciences sociales, afin de proposer des solutions innovantes aux défis contemporains. Elle analyse également les enjeux éthiques, les contraintes techniques et les perspectives offertes par la coopération scientifique régionale dans l'espace euro-méditerranéen.

Mots-clés : Intelligence artificielle ; Géomatique ; Méditerranée ; Tunisie ; Résilience territoriale ; Développement durable ; Modélisation spatiale ; Analyse interdisciplinaire.

AI and Geomatics for Mediterranean Territories: Interdisciplinary Innovations for Resilience and Sustainable Development

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Abstract

The integration of Artificial Intelligence (AI) into geomatics is reshaping spatial data acquisition, analysis, and modeling, offering new opportunities for Mediterranean territories. In Tunisia, marked by significant environmental and socio-economic diversity, this convergence enables climate risk anticipation, urban planning optimization, and sustainable resource management. By leveraging machine learning, computer vision, and predictive modeling, it becomes possible to produce intelligent maps and high-value decision-making scenarios. This presentation adopts an interdisciplinary perspective, bridging geographical sciences, engineering, ecology, and social sciences to deliver innovative solutions to contemporary challenges. It also addresses ethical concerns, technical limitations, and the prospects for enhanced regional scientific cooperation within the Euro-Mediterranean space.

Keywords: Artificial Intelligence; Geomatics; Mediterranean; Tunisia; Territorial Resilience; Sustainable Development; Spatial Modeling; Interdisciplinary Analysis

Performances technico-économiques et durabilité des exploitations agricoles en zones arides tunisiennes

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Résumé

Le déficit de l'information et de suivi de la situation du secteur agricole dans les zones arides tunisiennes affaiblit la capacité des acteurs de développement à formuler des stratégies efficaces et durables d'interventions et de conseil agricole, permettant de pallier à la sévérité des conditions climatiques, la rareté des ressources naturelles, la croissance démographique et l'augmentation des besoins de la population.

Le présent travail a comme objectif d'évaluer les performances technico-économiques et la durabilité des exploitations agricoles dans la Délégation de Sidi Makhlouf (Gouvernorat de Médenine). Les méthodes de diagnostic d'exploitation à base d'indicateurs ont été utilisées pour cette évaluation, après un travail de typologie des exploitations agricoles à l'aide du logiciel TANAGRA. Les données ont été collectées via des enquêtes auprès des chefs des ménages de 40 fermes de référence représentatives des quatre principaux groupes identifiés (polyculture pluviale, irrigants, éleveurs et pêcheurs). Le calcul des indicateurs de performance et de durabilité a été effectué en utilisant une plateforme de suivi des exploitations agricoles et le logiciel Olympe.

Les résultats des analyses montrent que de point de vue performance technico-économique, le groupe polyculture pluviale est le plus performant en termes d'efficience du travail, suivi par le groupe des

éleveurs et des pêcheurs. Le groupe des irrigants est le plus performant en termes d'excédent brut d'exploitation (EBE) et d'accès aux marchés, alors qu'il est le moins performant en termes d'efficacité économique. Le groupe de polyculture pluviale est caractérisé quant à lui par l'efficacité économique la plus élevée. De point de vue durabilité, le groupe de polyculture pluviale est le plus efficient en termes de processus productifs, le contraire pour les éleveurs qui sont les moins efficients. Ces derniers sont les moins sensibles vis-à-vis des scénarios d'augmentation des prix des intrants et de diminution des prix des produits vendus, grâce à leur faible dépendance aux intrants. Les irrigants enregistrent le taux d'accès le plus élevé aux marchés, mais ils présentent la plus grande dépendance aux intrants et à l'eau d'irrigation.

Ces résultats peuvent être utiles aux décideurs. Elles permettent à ces derniers de savoir sur quels leviers ils pourront agir pour améliorer la performance du secteur agricole dans ces zones arides, sachant les informations, les indicateurs de diagnostics et la grille d'analyse qui permettent de caractériser précisément les particularités des fermes de référence.

Mots clés : Performance, durabilité, exploitations agricoles, aide à la décision, zones arides tunisiennes.

Les infrastructures vertes en milieu urbain : quelles perspectives pour un urbanisme résilient?

Fida Zribi

Resume

Ce travail explore le rôle stratégique des infrastructures vertes dans la ville de Carthage, en mettant l'accent sur leur potentiel à renforcer la résilience urbaine face aux pressions environnementales, sociales et patrimoniales. L'objectif principal est de comprendre comment ces infrastructures, bien que présentes, sont sous-exploitées, et comment leur valorisation peut améliorer la qualité de vie tout en préservant l'identité historique de la ville.

La méthodologie adoptée repose sur une double approche : une analyse spatiale à partir d'images satellitaires (notamment Landsat 8) traitées avec des outils SIG comme ArcGIS, et une enquête qualitative menée à travers des entretiens semi-directifs avec divers experts. Plusieurs cartes thématiques ont été produites (LST, NDVI, CI Green) afin de dresser un diagnostic précis de la végétation et des continuités végétales à Carthage.

Les résultats révèlent des inégalités marquées entre les quartiers. Certains, comme Mohamed Ali, manquent cruellement de végétation, aggravant les îlots de chaleur et la pollution. D'autres, comme Byrsa ou le cimetière américain, illustrent une gestion verte efficace. Cette recherche montre que les IV, si elles sont mieux planifiées et connectées, peuvent devenir des leviers essentiels de durabilité. Elle propose également des perspectives d'extension à l'échelle métropolitaine et appelle à une planification plus participative, intégrée et équitable.

تهدف هذه الدراسة إلى فهم دور البُنى التحتية الخضراء في تعزيز مرونة مدينة قرطاج في مواجهة التحديات المناخية والاجتماعية تم اختيار قرطاج نظراً لطابعها الفريد، الذي يجمع بين التراث الثقافي والطبيعة والعمران

تم الاعتماد على منهجية مزدوجة تجمع بين التحليل المكاني من خلال صور الأقمار الصناعية والخرائط الموضوعية، بالإضافة إلى .مقابلات نصف موجهة مع عدد من الخبراء المحليين في مجالات متعددة، كالعمارة، التخطيط الحضري، التراث، والبيئة

أظهرت نتائج الدراسة أن قرطاج تتمتع بإمكانات بيئية هامة، لا سيما في المناطق الساحلية والمواقع الأثرية، غير أن توزيع المساحات الخضراء غير متوازن، مما يؤثر سلباً على فعالية هذه البنى. كما كشفت التحليلات أن بعض الفضاءات الخضراء تعاني من .نقص في التهيئة وضعف في الوصول إليها

توصي الدراسة بتبني تخطيط شامل ومندمج للبُنى الخضراء، يأخذ بعين الاعتبار التنوع البيئي والاجتماعي والثقافي للمدينة، مع إشراك السكان في عمليات التهيئة وإدماج الحلول المستدامة. يُمكن لهذا النهج أن يجعل من قرطاج نموذجاً حضرياً يحتذى به في التكيّف مع التغيرات المناخية، من خلال حماية التراث وتعزيز جودة الحياة

This research focuses on the strategic role of green infrastructure in the city of Carthage, emphasizing its potential to enhance urban resilience against environmental, social, and heritage-related pressures. The main objective is to highlight how these infrastructures, though existing, remain underutilized, and how their improvement can benefit both urban quality of life and historical preservation.

The methodology combines a spatial analysis using satellite imagery processed with GIS tools like ArcGIS, and a qualitative survey through semi-structured interviews with a range of experts. Several thematic maps were produced; such as LST, NDVI, CI Green to explore the GI potential in Carthage.

The results show major contrasts across the city. Some areas, like the Mohamed Ali neighborhood, have very little vegetation and suffer from heat buildup and poor environmental quality. Others, like Byrsa or the American Cemetery, benefit from better green coverage and ecological continuity. The research concludes that green infrastructure, when strategically planned and interconnected, can become a key driver for sustainable development. It also opens perspectives for broader metropolitan integration and calls for more participatory and inclusive urban planning.

La santé environnementale au prisme de l'urbanisme informel : le cas de Cité Ettadhamen

Raja jnayeh

Résumé

Le sujet de la santé environnementale fait rarement l'occupation des décideurs ; la santé est à la fois absente et omniprésente. Dans le discours des aménageurs la santé s'inscrit dans deux perspectives distinctes. En effet, soit elle est envisagée sous couvert d'une approche essentiellement environnementaliste ; les politiques locales soutenues par les instances étatiques et les communautés reposent sur les concepts actuellement prédominants : la promotion de la ville durable. Soit, elle est associée aux domaines des soins médicaux et de la gestion médicale. Toutefois la mise en œuvre des procédures est parfois difficile ; d'une part du fait que le Grand Tunis est caractérisé par une zone fragile souffrant de plusieurs problèmes territoriaux. Citons notamment l'étalement urbain incontrôlé, l'absence d'une planification des infrastructures, l'urbanisation informelle et non réglementée à l'égard de la cité Ettadhamen.

Cette traduction sur le terrain exige une compréhension approfondie des spécificités locales de la zone d'étude, ses ressources humaines, les besoins de sa population ainsi que fixer les objectifs à venir en matière de la santé. Devant une telle réalité, il est essentiel de mener des stratégies précises pour la santé de la population, ainsi qu'une réflexion globale sur l'organisation territoriale de la zone, pour une correspondance entre les besoins et l'offre de soins. Les expériences urbaines à la cité Ettadhamen semblent rencontrer des obstacles et des difficultés.

Dans cette optique, la planification urbaine résiliente est considérée aujourd'hui comme une urgence exigeant une grande sensibilisation des acteurs politiques, aménageurs, urbanistes et en explorant des nouvelles technologies dans l'aménagement.

Les décisions liées à la santé, aux épidémies, à l'environnement, peuvent avoir un impact significatif sur la santé urbaine des habitants. Elles doivent être repensées pour prendre en compte les enjeux d'un urbanisme durable, respectueux et pour permettre une gestion efficace du territoire en cas de crises sanitaires futures.

Immigration et développement durable quel lien dans le sud est tunisien Par

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Résumé

Depuis les années 80, la renaissance de l'intérêt accordé aux problèmes environnementaux, dans un contexte de dynamique socio-économique et démographique très vive, a suscité l'émergence de nouvelles interrogations tout autant doctrinales, conceptuelles, méthodologiques que décisionnelles (Sandron et Sghaier, 2000, 8). Aujourd'hui «*Chaque pays a besoin de régions compétitives et dynamiques pour atteindre ses objectifs économiques et sociaux. Le développement régional est un complément indispensable aux politiques macroéconomiques*», c'est ce que déclare l'organisation de coopération et de développement économique (OCDE) pour faire apparaître l'importance d'un développement intégré et global. En Tunisie, **le déséquilibre régional entre les gouvernorats et la disparité territoriale entre les délégations** ont été parmi les grandes révélations de la révolution de Janvier 2011. En effet, le soulèvement populaire est parti des villes tunisiennes défavorisées, d'abord celles du Sud entre 2008 et 2010 (région du bassin minier de Sud-ouest Gafsa) puis villes frontalières du Sud-est (Ben Guerdane). L'une des causes de la révolution de 2011 est le chômage des jeunes, cette situation a résulté l'apparition de l'immigration clandestine vers l'Italie et ensuite vers les autres pays européens. La question migratoire connaît un regain d'intérêt traduit par des nouvelles préoccupations internationales. Des travaux socioéconomiques récents sur l'émigration internationale et ses conséquences sur le développement sont développés. La littérature théorique suggère que l'impact socio-économique de l'émigration sur le pays d'origine soit positif. Par contre le bilan des études empiriques est très contrasté et dépend en grande partie du type d'émigration et de ses modalités (Gubert, 2003, 3). Généralement, le contexte fondamental de l'émigration dépend de plusieurs variables socioéconomiques et politiques. L'objet de ce travail est de contribuer à l'analyse du phénomène migratoire et son impact sur la région de départ en termes de changements économiques et sociaux. Ainsi, nous analyserons rapidement la situation de phénomène migratoire et ses causes dans le sud-est de la Tunisie et sa relation avec le niveau de développement de cette zone et ce moyennant les données statistiques disponibles.

Mots clés : durabilité, immigration, aide à la décision, FoPIA, zones arides tunisiennes.

تأثير فراغ المضافة في السكن القديم على تشكيل التراث العمراني في هضبة حوران جنوبي سورية

أ.د. غسان برجس عبود

استاذ في كلية الهندسة المعمارية بجامعة دمشق

عميد كلية الهندسة المعمارية بجامعة الرشيد الدولية الخاصة للعلوم التكنولوجيا

التراث العمراني هو مرآة حضارات الشعوب، تعكس من خلالها تاريخ وهوية أصحاب هذه الحضارات وآلية معيشتهم. وهضبة حوران واحدة من المواقع الكثيرة التي تزخر فيها سورية، فهي تحظى بتنوع كبير لتراث العمراني، الذي يحتوي بشكل أساسي على نماذج سكنية متعددة تعود لعدة عصور، والبعض منها مازال قائم ومسكون الى الان منذ اكثر من 1500عام.

تمتد هضبة حوران (*السهل* والجبل) على جنوب سوريا وشمالي الأردن، وتتميز بموقع جغرافي حيوي هو الربط بين الجزيرة العربية ودول البحر الأبيض المتوسط من جهة وبين سورية وآسيا الوسطى من جهة أخرى. هذا ما جعل المنطقة على الدوام ميدان للصراع بين الحضارات القديمة (المصرية والحثية والاشورية ....) وأهل المنطقة من أجل السيطرة على طرق التجارة. فعاش على ارض حوران الاراميون والعرب الانباط ومن ثم العرب الغساسنة، وتعرضت المنطقة للاحتلال الاغريقي والروماني حتى جاء الفتح الإسلامي، وعلى ارض هضبة حوران جرت معركة اليرموك الشهيرة التي قادت للفتح الاسلامي لبلاد الشام. وجاء مع الفتح العديد من القبائل العربية استوطن بعضها في المنطقة.

اشـتهر العرب على مر العصـور بالعديد من الصـفات المشرـفة الى جانب صـفتي الكرم وإغاثة الملهوف والتي هي جزء لا يتجزأ من حياتهم اليومية، ولممارسـة هذه الصـفات كان يجب العمل على تامين فراغ خاص في مسـاكنهم، يسـتطيعون فيه القيام باسـتقبال الضيوف، سمي بالمضافة. فكانت المضافة تشكل العنصر الاساسي والمسيطر في تصميم المسكن وأحيانا منفصل عنه يفتح مباشرة على الطريق او على سـاحة. كان يتبع لفراغ المضـافة عدة فراغات خاصـة بحيوانات الضـيوف وعلفها. فعمارة الأبنية السـكنية في هضـبة حوران وتطورها عبر العصـور، هي جزء مهم من التراث العمراني للمنطقة، والمضـافة التي أصـبحت فراغ أسـاسي من ضـمن فراغات المنزل، مازالت موجودة الى الان، يمارس فيها جميع الأنشطة الثقافية والاجتماعية.

يهدف البحث الى دراسة تأثير مبنى المضافة على شكل النسيج العمراني في التجمعات السكنية القديمة في المنطقة الجنوبية من سورية وخاصة في منطقة جبل العرب من هضبة حوران. للوصول الى هدف البحث سيتم اعتماد كل من المنهج الوصفي والمنهج الاستقرائي لدراسة:

- العوامل الاجتماعية والسياسية والاقتصادية المؤثرة على تشكيل النسيج العمراني القديم.
- تأثير فراغ المضافة وعناصره واشكاله على النسيج العمراني.
- تأثير مادة البناء الحجر البازلتي على حجم المضافة وعلى تشكيل النسيج العمراني.

The Impact of the 'Madafa' Space in Old Housing on the Formation of Urban Heritage In the Hauran Plateau, Southern Syria

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Abstract

Urban heritage is a mirror of people's civilizations, reflecting the history, identity, and livelihood of their inhabitants. The Hauran Plateau is one of Syria's many sites, boasting a rich diversity of urban heritage, primarily encompassing diverse residential models dating back to several eras, some of which have remained standing and inhabited for more than 1,500 years

The Hauran Plateau (plain and mountain) extends across southern Syria and northern Jordan. It is distinguished by its vital geographical location, linking the Arabian Peninsula and the Mediterranean countries on one side and Syria and Central Asia on the other. This has always made the region an arena of conflict between ancient civilizations (Egyptian, Hittite, Assyrian...) and the people of the region for control of trade routes. The Arameans and the Arab Nabataeans lived on the land of Hauran, and then the Arab Ghassanids. The region was subjected to Greek and Roman occupation until the Islamic conquest. The famous Battle of Yarmouk took place on the land of the Hauran Plateau, which led to the Islamic conquest of the Levant. With the conquest came many Arab tribes, some of which settled in the region.

Arabs have been known throughout the ages for many honorable qualities, in addition to the qualities of generosity and helping the needy, which are an integral part of their daily lives. To practice these qualities, it was necessary to work on securing a special space in their homes, in which they could receive guests, called the guest house 'Madafa', was the basic and dominant element in the design of the dwelling, and sometimes separate from it, opening directly onto the road or the courtyard. The' madafa' space was subordinate to several spaces designated for storing and feeding the guests' animals. The architecture of residential buildings in Jabal al-Arab in the Hauran Plateau and its development over the ages is an important part of the region's urban heritage. The 'madfa', which has become an essential space within the home, still exists today, where all cultural and social activities take place.

The research aims to study the impact of the guest house building 'madfa' on the urban fabric of old residential communities in the southern region of Syria, particularly in the Jabal al-Arab region of the Hauran Plateau. To achieve this goal, both the descriptive and inductive approaches will be adopted to study:

- Social, political, and economic factors influencing the formation of the ancient urban fabric.

- The impact of the guesthouse building ‘madfa’, its components, and its forms on the urban fabric.

- The impact of the basalt stone building material on the size of the guesthouse ‘madfa’ and on the formation of the urban fabric.

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Özet

Uçan arabalar olarak bilinen ve günümüzde yeni teknolojiler olarak sınıflandırılan Kentsel Hava Taşımacılığı (KHT) araçları hem karada hem de havada hareket edebilen ya da dikey iniş-kalkış yapabilen hava araçları olup özellikle büyük şehirlerde yaşanan trafik yoğunluğuna alternatif bir ulaşım çözümü sunmaktadır. Bu çalışma, kamuoyunda "uçan arabalar" olarak bilinen Kentsel Hava Taşımacılığı (KHT) teknolojilerinin serbest zaman, rekreasyon ve turizm sektörlerinde potansiyel kullanım alanlarını ve bu teknolojilerin gelecekte yaratabileceği etkileri kapsamlı biçimde incelemeyi amaçlamaktadır. Özellikle hızla gelişen ulaşım teknolojilerinin turizm deneyimini nasıl dönüştürebileceği, destinasyonlara erişimi nasıl kolaylaştırabileceği ve bireylerin serbest zaman algılarını nasıl şekillendirebileceği bu araştırmanın temel çıkış noktalarını oluşturmaktadır. Çalışma kapsamında, katılımcıların gelecekte uçan araçlara yönelik beklentileri, bu araçların sağlayabileceği olası avantajlar, çevresel sürdürülebilirlik konusundaki farkındalıkları ve ulaşım kolaylığına ilişkin algıları derinlemesine ele alınmıştır. Araştırma, nitel araştırma yöntemlerinden biri olan yarı yapılandırılmış derinlemesine görüşme tekniği kullanılarak yürütülmüş ve toplam 10 katılımcı ile gerçekleştirilmiştir. Katılımcılar, farklı ekstrem spor dallarıyla ilgilenen, yenilikçi ulaşım teknolojilerine aşina olan ve uçan araçların kullanımını gözlemlemiş ya da bu konuda bilgi sahibi bireyler arasından seçilmiştir. Elde edilen verilerin analizi sonucunda dört ana tema ortaya çıkmıştır: (1) Gelecekteki deneyim algısı, (2) Ulaşım kolaylığı ve erişilebilirlik, (3) Çevresel farkındalık, (4) Avantajlar ve riskler. Katılımcılar, uçan araçların turizm deneyimini daha heyecan verici ve özgün hale getireceğini, özellikle zor ulaşılan destinasyonlara erişimi kolaylaştıracağını ve serbest zaman etkinliklerinde çeşitliliği artıracağını ifade etmişlerdir. Bununla birlikte, güvenlik standartları, yüksek maliyetler ve çevresel etkiler gibi konularda önemli kaygılar da dile getirilmiştir. Sonuç olarak bu çalışma, KHT teknolojilerinin serbest zaman, rekreasyon ve turizm bağlamındaki gelecekteki potansiyelini anlamak, çevresel sürdürülebilirlik boyutunu değerlendirmek ve ulaşım kolaylığının deneyimlere katkısını ortaya koymak açısından önemli bulgular sunmaktadır. Elde edilen sonuçların, turizm planlaması, rekreasyon yönetimi ve teknolojik inovasyon politikalarının geliştirilmesine yol gösterici nitelikte olduğu düşünülmektedir.

Anahtar kelimeler: Uçan arabalar, serbest zaman, rekreasyon, turizm

The Future of Urban Air Mobility in Leisure, Recreation, and Tourism

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Abstract

Urban Air Mobility (UAM) vehicles, known as flying cars and classified as new technologies today, are aircraft that can move both on land and in the air or perform vertical takeoffs and landings, offering an alternative transportation solution to traffic congestion, especially in large cities. This study aims to comprehensively examine the potential applications of Urban Air Mobility (UAM) technologies, known to the public as "flying cars," in the leisure, recreation, and tourism sectors, as well as the potential impacts these technologies may have in the future. The main starting points of this research are how rapidly developing transportation technologies can transform the tourism experience, how they can facilitate access to destinations, and how they can shape individuals' perceptions of free time. The study delves into participants' expectations regarding flying vehicles in the future, the potential advantages these vehicles could offer, their awareness of environmental sustainability, and their perceptions of transportation convenience. The research was conducted using the semi-structured in-depth interview technique, one of the qualitative research methods, and involved a total of 10 participants. Participants were selected from among individuals who are interested in various extreme sports, familiar with innovative transportation technologies, and have observed the use of flying vehicles or have knowledge about them. Analysis of the data yielded four main themes: (1) Perception of future experiences, (2) Transportation convenience and accessibility, (3) Environmental awareness, (4) Advantages and risks. Participants stated that flying vehicles would make the tourism experience more exciting and unique, particularly by facilitating access to hard-to-reach destinations and increasing the variety of leisure activities. However, significant concerns were also raised regarding issues such as safety standards, high costs, and environmental impacts. In conclusion, this study presents important findings for understanding the future potential of UAV technologies in the context of leisure, recreation, and tourism, assessing the environmental sustainability dimension, and revealing the contribution of ease of transportation to experiences. The results obtained are considered to be indicative for the development of tourism planning, recreation management, and technological innovation policies.

Keywords: Flying cars, leisure, recreation, tourism