

ICSULA 2024

III. INTERNATIONAL CONFERENCE ON
SUSTAINABLE CITIES AND URBAN LANDSCAPES

DECEMBER 13-14, 2024 / KYRENIA, TRNC



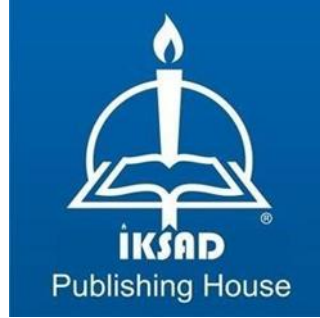
CONFERENCE PROCEEDINGS BOOK

EDITORS

Prof. Dr. Banu ÖZTÜRK

Prof. Dr. M. Selen ABBASOĞLU ERMİYAGİL

**3rd INTERNATIONAL CONFERENCE ON SUSTAINABLE CITIES AND
URBAN LANDSCAPES**



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**3rd INTERNATIONAL CONFERENCE ON SUSTAINABLE CITIES AND
URBAN LANDSCAPES**

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December 13-14, 2024 / Kyrenia, TRNC

PROCEEDINGS BOOK
(Abstracts & Full Texts)

EDITORS

Prof. Dr. Banu ÖZTÜRK
Prof. Dr. Selen ABBASOĞLU ERMİYAGİL

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3rd INTERNATIONAL CONFERENCE ON SUSTAINABLE CITIES AND URBAN LANDSCAPES

EVALUATION PROCESS and POLICIES

All applications have undergone double blind peer review process. In addition, each paper was accepted and the process of publishing in the book was carried out through editorial oversight. The published papers were presented and discussed at the meeting.

Full texts and abstracts published in accordance with the Symposium Policy have been prepared in accordance with ethical rules and APA standards. Authors of all papers are both ethically and legally responsible.

PARTICIPANTS COUNTRIES

Türkiye, Albania, Algeria, Azerbaijan, Bangladesh, Bulgaria, Ethiopia, Georgia, India, Indonesia, Iran, Kazakhstan, Malaysia, Morocco, Nigeria, Pakistan, Philippines, Saudi Arabia, Slovenia, Sri Lanka, Uganda, Ukraine

TOTAL ACCEPTED ARTICLES: 306

The Number of Accepted Papers from Türkiye: 70
The Number of Accepted Full Papers from Other Countries: 81
The Number of Total Papers: 151

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SYMPOSIUM SCHEDULE



SELÇUK ÜNİVERSİTESİ
MİMARLIK VE TASARIM FAKÜLTESİ



ICSULA 2024

3rd INTERNATIONAL CONFERENCE ON SUSTAINABLE CITIES AND URBAN LANDSCAPES

December 13-14, 2024 / Kyrenia, TRNC

Congress Program

Face-to-face and Online

IMPORTANT, PLEASE READ CAREFULLY

- ✓ To be able to attend a meeting online, login via <https://zoom.us/join> site, enter ID “Meeting ID or Personal Link Name” and solidify the session.
- ✓ The Zoom application is free and no need to create an account.
- ✓ The Zoom application can be used without registration.
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- ✓ The participant must be connected to the session 5 minutes before the presentation time.
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- ✓ Moderator is responsible for the presentation and scientific discussion (question-answer) section of the session.

Points to Take into Consideration - TECHNICAL INFORMATION

- ✓ Make sure your computer has a microphone and is working.
- ✓ You should be able to use screen sharing feature in Zoom.
- ✓ Attendance certificates will be sent to you as pdf at the end of the congress.
- ✓ Requests such as change of place and time will not be taken into consideration in the congress program.

OPENING SPEECHES

Date: 14.12.2024

Ankara Time: 10:00-10:30

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Prof. Dr. Banu ÖZTÜRK – *Chair*, Selcuk University Architecture and Design Faculty, Landscape Architecture Department

Prof. Dr. Ruşen KELEŞ – Cappadocia University Architecture, Design and Fine Arts Faculty, City and Regional Planning Department

PANEL SESSION

Date: 14.12.2024

Ankara Time: 10:30-11:50

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Moderator: Prof. Dr. Banu ÖZTÜRK

Panelists:

Prof. Dr. Şengül ÖYMEN GÜR - Randomness: An Important Criterion in Addressing Urban Open Spaces- *Rastlantısallık: Kentsel Açık Alanların Ele Alınmasında Önemli Bir Ölçüt*

Prof. Dr. Öner DEMİREL - Identity, Planning and Design in Cities Under the Urbanization Council (2017) - *Şehircilik Şurası (2017) Kapsamında Kentlerde Kimlik, Planlama ve Tasarım*

Prof. Dr. Atila Gül - Significance of Urban Biodiversity and Management Policies - *Kentsel Biyoçeşitliliğin Önemi ve Yönetim Politikaları*

Prof. Dr. S. Gül GÜNEŞ - Community-based Tourism In The Context Of Social Sustainability - *Sosyal Sürdürülebilirlik Bağlamında Toplum Temelli Turizm*

FACE TO FACE SESSION / 14.12.2024

HALL-1 / SESSION-1

The Olive Tree

Time: 10:45-12:15

HEAD OF SESSION: Attila AYDEMİR

Authors	Affiliation	Presentation title
Irem Tek Dilek Eren Akyuz Fusun Balik Sanli	<i>Yıldız Technical University</i>	Determination Of Nighttime Lights Change: The Case f North Cyprus
Aybike Ayfer Karadağ Demet Demiroğlu	<i>Düzce University</i>	The Effect of Urban Open Green Areas On Carbon Footprint
Demet Demiroğlu Aybike Ayfer Karadağ	<i>Kilis 7 Aralık University</i>	Disaster-Resilient Cities And Open Green Spaces
Attila Aydemir	<i>ODTÜ-NCC, Atılım University</i>	Fault Systems Around Diyadin Area And Their Contribution Into The Geothermal Energy Potential
Erdal Yeşil	<i>Bioart</i>	Biological Ponds
S. Gül Güneş Ayşe Selin Dülger	<i>Cappadocia University</i>	Sustainable Tourism Requires Taking Responsibility: The Case Of 2023 Kahramanmaraş And Hatay Earthquakes

(All speakers required to be connected to the session 10 min before the session starts)

Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

FACE TO FACE SESSION / 14.12.2024

HALL-2 / SESSION-1

The Olive Tree

Time: 13:45-15:15

HEAD OF SESSION: M. Selen Abbasoğlu Ermiyagil

Authors	Affiliation	Presentation title
Fatma Bildir M. Selen Abbasoğlu Ermiyagil	<i>European University of Lefke</i>	Evaluation In The Context Of Resilience In Urban Areas Lefke Case Study
Fuat Erden	<i>Sivas University of Science and Technology</i>	Towards Green Buildings For Sustainable Cities Through The Integration Of Thermoelectric Materials
Hikmet Yazıcı Zekai Kamitoğlu Utku Duran	<i>Zonguldak Bülent Ecevit University</i>	Life Cycle Analysis (Lca) for the Polypragmatic Plant Laurel: Conservation of the Plant in Terms of Biodiversity and Sustainable Production Methods
Mete Ünal Girgen	<i>Uluslararası Fırat University</i>	Accessible Tourism in Northern Cyprus: Challenges and Opportunities
Mustafa Kartal Nihat Doğanalp	<i>Selçuk Üniversitesi</i>	Economic Effects of Earthquakes: Kahramanmaraş Province Example
Soner Özyalçın Mete Ünal Girgen Nafıya Güden	<i>Uluslararası Fırat University</i>	The Role Of Local Products In Gastronomy Tourism And Sustainability In Northern Cyprus
Ayşe Sungurlu	<i>Alanya University</i>	The Effect Of The Pandemic Process On Urban Furniture

(All speakers required to be connected to the session 10 min before the session starts)

Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

ONLINE SESSION / 13.12.2024

HALL-1 / SESSION-1

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 10:00-12:00

HEAD OF SESSION: Ahmet KARAHAN

Authors	Affiliation	Presentation title
Pınar Ögütcan Yalcin Yildirim	Bursa Technical University	Comparing Turkey's National Green Certificate System (Yes-Tr) With Other Green Certificate Systems
Başak Yurtseven Umut Güler	Ankara University	The Role Of Urban Landscape In Creating Resilient Cities: An Evaluation In The Context Of Urban Heat Island Effect
Figen Altiner Türkan Göksal Özbalta	Balıkesir University	Research On Sponge City Model In Urban Areas: The Case Of Balıkesir Public Transport Centre
Ahmet Karahan Figen Balo	Malatya Turgut Ozal University	Investigation Of The Effectiveness Of Optimum Chimney Design On The Energy Performance Of A Coast House In Samsun Province
Ahmet Karahan Figen Balo	Malatya Turgut Ozal University	Evaluation Of The Effect Of Insulation Thickness On The Amount Of Emissions From Coal Boilers By Simulation
Bilgenur Ak Meryem Bihter Bingül Bulut	Kırıkkale University	The Use Of Native Plant Species In Landscape Design In Türkiye: Ecological And Aesthetic Contributions
Mustafa Bulat Gülümser Beyaztaş Özlütürk	Atatürk University	Use Of Ready-Made Objects In Modern Sculpture
Serap Bulat Burcu Toğrul Melahat Teleri	Atatürk University	Evaluation of Ishak Pasha Palace Crown Doors In Terms of Plastic Arts

(All speakers required to be connected to the session 10 min before the session starts)

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ONLINE SESSION / 13.12.2024

HALL-2 / SESSION-1

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 10:00-12:00

HEAD OF SESSION: Melis BEŞOĞUL AYDIN

Authors	Affiliation	Presentation title
Vuslat Salali Saban Inam	<i>Isparta University of Applied Sciences</i>	Strategic Approaches For A Sustainable Future In An Earthquake Zone: A Comparison Between Japan And Türkiye
Melis Beşoğul Aydın Müge Bahçeci	<i>Başkent University</i>	Connecting Historical Heritage With The Public The Importance Of Tabakhane Street In Milas
Mehmet Tunçer	<i>Çankaya University</i>	Beautiful City Principles Old Prague – Old Ankara
Nimet Hacısüleymanoğlu Alçın	<i>Kent, Çevre ve Yerel Yönetimler Uzmanı</i>	Kültürel Ve Doğal Mirasınin Korunması; Mustafapaşa (Sinassos) Köyü
Mehmet Tunçer İrem Yurday	<i>Çankaya University</i>	Ecological Planning With CBS For The Rehabilitation Of Streams of Ankara
Sibel Akten	<i>Isparta University of Applied Sciences</i>	Disaster Risk Management In Places Of Education
Sibel Akten	<i>Isparta University of Applied Sciences</i>	Examining The Current Status Of The Green School Program In Eco-Schools In Isparta City
Duygu Özkır Öner Demirel	<i>Ministry of Environment</i>	Güvenpark; A Natural Protected Area Within The Urban Landscape

(All speakers required to be connected to the session 10 min before the session starts)

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ONLINE SESSION / 13.12.2024

HALL-3 / SESSION-1

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 10:00-12:00

HEAD OF SESSION: Filiz DOĞAN

Authors	Affiliation	Presentation title
Abbas Sert Mert Çakir	Süleyman Demirel University	Comparative Analysis Of Plant Biodiversity In Urban Parks: A Case Study Of Türkoloji And İstasyon Parks In Isparta, Türkiye
Derya Selçuk Fatma Kablan Mert Çakir	Süleyman Demirel University	Assessing Urban Tree Biodiversity: A Case Study Of Basin Park And Atatürk Park In Isparta, Türkiye
Kübra Hanoglu Sultan Sevinc Kurt Konakoglu	Amasya University	A Study On The Impact Of Rural Conservation And Its Effect On Tourism
Gülnur Kardan Sultan Sevinc Kurt Konakoglu	Amasya University	A Study On Examining The Conservation Approaches Of Monumental Trees Located In Amasya Province In The Context Of Cultural Heritage
Hayriye Zehra Canlı Yalçın Kaya	Necmettin Erbakan University	Determination and Suggestions in Terms of Ergonomic and Sustainability in the Reconstruction Process of Provinces Affected by the Earthquake of February 6
Filiz Doğan	İstanbul Atlas University	Biophilic Design In Human-Nature Relationship
Halil Ünal Seher Güzelçoban Mayuk	Gebze Technical University	A Review On Bım Execution Plans
Çağatay Takva Zeynep Yeşim Ilerisoy	Gazi University	The Role Of 3d Printing Technology In The Industry 4.0 Revolution: Development In The Context Of Sustainability
Şeyma Özberber Zeynep Yeşim Ilerisoy	Gazi University	Smart Building Concept In Local Government Structure

(All speakers required to be connected to the session 10 min before the session starts)

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ONLINE SESSION / 13.12.2024

HALL-4 / SESSION-1

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 10:00-12:00

HEAD OF SESSION: Sheetal Sharma

Authors	Affiliation	Presentation title
Junus Ganiev Damira Baigonushova	<i>Kyrgyz-Turkish Manas University</i>	Digitization And The Labor Market: A Bibliometric Analysis Of The Literature
Aadi Rajesh	<i>Ludovika University of Public Service</i>	Indian Metro Systems as a Model for Urban Planning in Africa, A Case Study of Delhi Metro
Aadi Rajesh	<i>Ludovika University of Public Service</i>	Urban Green Spaces: Lessons from Kigali, Rwanda for India's Sustainable Development
Bakhyt Moldir	<i>Al-Farabi Kazakh National University</i>	Cartography Of Agricultural Landscapes Of The Northern Slopes Of The Zhetysu Alatau: Analysis And Sustainable Land Use
Bhabajyoti Saikia	<i>Assam down town University</i>	Building A Sustainable World: Redefining Architecture With Carbon Zero Approaches
Sheetal Sharma	<i>VIT Bhopal University</i>	Evaluating Smart City Policies: A Comparative Study of Bhopal and Global Benchmarks for Sustainable Urban Development
Afroza Parvin Anirban Mostafa Tanha Tabassum Tisha Sourav Ghosh	<i>Khulna University</i>	Exploring The Built Environmental Dynamics Of Sociability In A Planned Residential Area In Khulna, Bangladesh
Nisrine Graoui Youness El Mghoouchi	<i>Moulay Ismail University</i>	BIPV and Beyond: The Evolution of Architectural Design in Buildings with the Integration of Photovoltaic Panels in Morocco.
P. Manoj Kumar	<i>G Pulla Reddy Engineering College</i>	Analysis And Design Of Pre-Engineered Buildings Using Staad Pro Software

(All speakers required to be connected to the session 10 min before the session starts)

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ONLINE SESSION / 13.12.2024

HALL-5 / SESSION-1

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 10:00-12:00

HEAD OF SESSION: Irina-Ana DROBOT

Authors	Affiliation	Presentation title
Japthi Sravani	G Pulla Reddy Engineering College	Study On Mechanical Properties Of Concrete By Replacing Fine Aggregate With Silica Fume And M Sand
Irina-Ana Drobot	Technical University of Civil Engineering Bucharest	Old Buildings: Making A Smart City A Beautiful City
Selminaz Əhmədova	Azərbaycan Dövlət Mədəniyyət və İncəsənət Universiteti	The scientific value of manuscripts of Azerbaijani composers preserved in the State Museum of Music and Culture
Audu Comfort Muhammad Aminu Musa	Ahmadu Bello University	Exploring The Most Effective Vertical Greenery System For Energy Saving In Multistorey Buildings In The Hot-Humid Climate Of Nigeria
Qaddoori Salih Qaddoori	Jamia Millia Islamia	Efficient Construction Management Technologies in High-Rise Residential Projects
Afroza Parvin	Khulna University	Assessing Spontaneous Public Spaces in Khulna City: Implications for Inclusive Urban Design
Sujata Dabolkar	Government college of Arts	Green walls and Sustainable cities: A Review
Ayoub Aitakka Ayoub Gounni Mustapha El Alami	Hassan II University	Simulation of Type III Hydrogen Storage Tank: Optimizing Efficiency and Safety under Varying Flow Rates and Ambient Conditions

(All speakers required to be connected to the session 10 min before the session starts)

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ONLINE SESSION / 13.12.2024

HALL-6 / SESSION-1

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 10:00-12:00

HEAD OF SESSION: Shehla Rafiq

Authors	Affiliation	Presentation title
K. Thamizhmaran	<i>Government College of Engineering</i>	Msbehavior Attack in Wireless Mobile Ad hoc Networkss
Michael Bassey Kingsley Etukudoh Anietie Ekpo Victor David	<i>Akwa Ibom State Polytechnic Ikot Osurua</i>	Comprehensive study on Advances in Sensors Technologies for Mechatronics Systems
Taskeen Fatima Mehran Majeed Mahna Fatima Areeba Arif Raheela Muqadus Mah-Ru-Nisa Atif	<i>The Hajvery University</i>	Correlation Study On Etiological Factors Of Heart Disease In Diabetic Patients In Lahore, Pakistan
Shehla Rafiq Assif Assad	<i>Islamic University of Science and Technology</i>	Predicting Off-Target Activity In Crispr/Cas9 Using Graph Convolution-Based Networks
Mariem Itaimi Dammak Mohamed Ali Smach Amira Zarrouk Jawhar Hafsa Khalifa Limem Hatem Majdoub	<i>University of Monastir</i>	Effects of roasting on peanut meal extracts against hydrogen peroxide induced oxidative stress on 158N oligodendrocyte
Boukita Hassan Elwahab Fathalah El Ammari Mohamed Brhadda Najiba Ziri Rabea	<i>Ibn Tofail University</i>	Weed flora associated with lawns in the green spaces of the city of Rabat, Morocco
Mouna Baklouti Hanan Maamri Maissa Ben Jmaa Zeineb Mallek Jihene Jdidi Imen Sboui Yosra Mejdoub Sourour Yaich	<i>Hédi Chaker University Hospital</i>	Overweight and obesity among School-aged Adolescents: Prevalence and Determinants
Mouna Baklouti Maissa Ben Jmaa Hanan Maamri Zeineb Mallek Jihene Jdidi Imen Sboui Yosra Mejdoub Sourour Yaich	<i>Hédi Chaker University Hospital</i>	Factors associated with blood pressure control among diabetic hypertensive patients

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ONLINE SESSION / 13.12.2024

HALL-1 / SESSION-2

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 12:30-14:30

HEAD OF SESSION: Mahmut Özdemirkol

Authors	Affiliation	Presentation title
Tuna Batuhan Şuheda Altunok	Atatürk University	Resilience In Turkey's 8th-12th Development Plans: A Strategic Capacity Analysis From The Past To Future
Ceyda Akdemir Erkan Avlar"	Yıldız Technical University	Use Of Timber Modular System In Temporary Housing Applications
Tuna Batuhan Şuheda Altunok	Atatürk University	Capacity Status And Improvement Of Disaster And Emergency Assembly Areas In Erzurum: A Disaster Management Perspective
Mustafa Bulat Döndü Tülay Özkul Serap Bulat	Atatürk University	Modern Sculpture Art
Mahmut Özdemirkol	Kafkas Üniversitesi	The Rights Of Future Generations As The Handicap Of Environmental Rights
Merve Birhan Yılmaz Hakan Alphan	Cukurova University	Sustainable Urban Planning And Earthquake Risk Management: An Ahp-Based Approach In Adana
Mustafa Bulat Melahat Teleri Burcu Toğrul	Atatürk University	The Use Of Leather As A Medium Of Expression In Plastic Arts In The Works Of Koray Arış
Mahmut Özdemirkol	Kafkas Üniversitesi	İklim Değişikliği Konusunda Yapay Zekanın Yanıtlarının Değerlendirilmesi
Büşra Sultan Uca Özlem Demirkan	KTO Karatay Üniversitesi	The Effect Of Multi-Sensory Experience And Cognitive Mapping In Space On Design Practice

(All speakers required to be connected to the session 10 min before the session starts)

Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

ONLINE SESSION / 13.12.2024

HALL-2 / SESSION-2

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 12:30-14:30

HEAD OF SESSION: Aysun Altıkat

Authors	Affiliation	Presentation title
Büşra Gül Diker Duygu Gökce	Institute of Science	Contribution Of Urban Agriculture To Food Security And Implications For Urban Planning
Aysun Altıkat	Iğdır University	Environmental And Biological Effects Of Noise Pollution On Ecosystems
Gülsüm Ecem Demirdağ Kemal Mert Çubukçu	Mersin University	The Use Of Spectral Indexes In The Generation Of Land Use Maps Using Landsat 5 And Landsat 8 Images
Aysun Altıkat	Iğdır University	Stray Dogs: Searching For A Balance Between Ecosystem And Human Security
Sena Yılmaz Tüzin Baycan	Graduate School	Using Geographical Indications As A Tool For Regional Economic Development: An Analysis In Türkiye
Demet Ülkü Gülpınar Sekban, Makbule Onur	Karadeniz Technical University,	Evaluation of Urban Parks via Social Media Platform
Ümit Şahbaz Dinçer Kayalı Uygar Çelebi	Burdur Mehmet Akif Ersoy University	SmartLife+: A Smart Mobile Application For Individuals With Hearing Impairments
Demet Ülkü Gülpınar Sekban, Makbule Onur	Karadeniz Technical University,	Landscape Factor in Increasing The Value of The Place

(All speakers required to be connected to the session 10 min before the session starts)

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ONLINE SESSION / 13.12.2024

HALL-3 / SESSION-2

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 12:30-14:30

HEAD OF SESSION: Ferda BAŞGÜN

Authors	Affiliation	Presentation title
Halime Gözlükaya	Süleyman Demirel University	The Transformation Of Public Spaces: An Evaluation From Past To Present
Aysin Aysu Münevver Dağgülü Nazlı Ferah Akıncı	<i>Yıldız Technical University</i>	Evaluation Of Social Sustainability Through The Transformation Of Bağdat Street
Aysin Aysu Münevver Dağgülü Nazlı Ferah Akıncı	<i>Yıldız Technical University</i>	Evaluation Of Settlements Implemented By Toki In The Context Of A Resilient City: The Case Ofadana
Halime Gözlükaya	<i>Süleyman Demirel University</i>	Sculpture And Aesthetics In Urban Spaces: The Case Of Isparta
Ferda Başgün	<i>Fırat University</i>	Contributions Of Graphic Design Discipline To Landscape Architecture Education
Zehra Toksözlü Karaca Serpil Önder	<i>KTO Karatay Üniversitesi</i>	Kültürel Mirasın Sürdürülebilirliği Bağlamında Kültürel Peyzaj -Kırsal Kimlik Etkileşimi: Konya Kilistra Örneği
Yasin Tekin	<i>Isparta Municipality</i>	Repurposing Railway Station Buildings For Tourism Through The National Garden Project: The Case Of Isparta Train Station
Şener Kaya	<i>Gendarmerie and Coast Guard Academy</i>	The Importance Of City Identity In Sustainable Smart Solutions

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ONLINE SESSION / 13.12.2024

HALL-4 / SESSION-2

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 12:30-14:30

HEAD OF SESSION: Süreyya Yiğit

Authors	Affiliation	Presentation title
Iraq Ahmad Reshi Sahil Sholla	<i>Islamic University of Science and Technology</i>	Toward Robust Privacy Mechanisms in Blockchain-Based IoT Systems
Ehsan Rasoulinezhad	<i>University of Tehran</i>	How renewable power generation accelerates the sustainable city index in developing countries
Rajeev Kumar	<i>Manav Rachna International Institute of Research and Studies</i>	Sustainable approach for wastewater treatment
Oyediran Wasiu Oyeleke	<i>Federal Capital City</i>	Combating Land Degradation in the Sahel-Sahara Region
Muhammad Faisal	<i>Allama Iqbal Open University</i>	Revitalizing Karachi Path To Sustainability And Livability A Fruitful Review By Dr Faisal
Ahmad Irshad Muhammad Ikram Ali Haider Anum Shahzadi	<i>Government College University Lahore</i>	Efficient polymers doped zinc selenide nanostructures as a rhodamine B dye removal catalyst
Arti Saxena Vijay Kumar	<i>Manav Rachna International Institute of Research and Studies</i>	Classification Of Vehicle Insurance Consumers Using Machine Learning Techniques
Süreyya Yiğit	<i>New Vision University</i>	Sustainable Cities and Violence

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ONLINE SESSION / 13.12.2024

HALL-5 / SESSION-2

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 12:30-14:30

HEAD OF SESSION: Vijay Kumar

Authors	Affiliation	Presentation title
Ajsel Budlla	<i>La Garenne International School</i>	PulsePal: Enhancing Urban Healthcare Resilience through Iot
S. Kalaiselvan R.S Ghayathree J.M. Jasnane	<i>Rathinam Technical Campus</i>	A Novel Electrochemical Sensor for H ₂ O ₂ Using Shiny Graphite Electrode with Tin oxide Nanoparticles
Ameilia Zuliyanti Siregar Ahdiat Leksi Siregar Indra Rahmad Abdul Hafiz Ab Majid	<i>University of Sumatera Utara</i>	The Use Of Horticulture By Vericulture In Women Farmers' Group (Wfg) In West Kisaran, District Of Asahan, Northern Sumatera
Vijay Kumar	<i>Manav Rachna International University</i>	Selection of House in Sustainable Residential Project Using Tsallis Entropy Measure Under Intuitionistic Fuzzy Environment
Xurriyat Hudoymurodova	<i>Uzbekistan State World Language University</i>	The features of English idioms that entered into the Uzbek language
John Noel S. Nisperos	<i>Don Mariano Marcos Memorial State University-South La Union Campus</i>	Emerging Needs Of Teacher Education Instructors In Today's Rapidly Evolving Educational Landscape
Juljana Laze	<i>University "Aleksandër Moisiu,"</i>	Achieving Sustainability In Cities: A Sociological Perspective
Petro Kosobutskyi Bohdan Vasylyshyn Oksana Oborska	<i>Lviv Polytechnic National University</i>	The Etude Of Jacobsthal Recurrence Numbers In The Conjecture $Q \cdot k \pm 1$

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ONLINE SESSION / 13.12.2024

HALL-6 / SESSION-2

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 12:30-14:30

HEAD OF SESSION: Farhana Naz

Authors	Affiliation	Presentation title
Amira Abdul-Azeez	<i>Ahmadu Bello University</i>	Exploring Evidence Based Design Strategies To Foster Healing In The Design Of A Paediatric Hospital In Rigasa, Kaduna State
Deni Darmawan Jenuri Ayung Candra Padmasari Wirmanto Sutedy	<i>Universitas Pendidikan</i>	Development DCIRV Through AI Framework VCDLN for Mobile Technology Android and iOS
Amel Belayachi-Haddadname Noureddine Benderdouche Benaouda Bestani Cherif Haddad	<i>University of Mostaganem</i>	Computer-Assisted Optimization Process: Wastewater Treatment And Dye Elimination
Saifty Rahma Zahidah Imahda Khoiri Furqon Muhammad Shulthoni	<i>UIN K.H. Abdurrahman Wahid Pekalongan</i>	Crypto-Asset Tax Policy On The Impact Of Taxpayer Compliance And Market Stability
R.Vidhyalakshmi K.Rajaganapathy	<i>Bharath Institute Of Higher Education And Research,Selaiyur</i>	Intersectionality in Feminism: Understanding the Multiple Identities of Women
Farhana Naz Saad Mujahid	<i>Lahore College for Women University</i>	Urban Green Spaces in Lahore: Bridging Health, Community, and Sustainability
K. Pushparaj R. Selva Kumar K.Manikandan R.Srinivasan	<i>Bharath Institute of Higher Education and Research</i>	Formulation And Evaluation Of Herbal Paper Soap
Bamiro, Tolulope Oluwatosin Salako, Oluwaseun Adewale	<i>The Federal Polytechnic</i>	Impact Of Fuel Subsidy Removal On Commercial Transport Business In Nigeria: Challenges And Opportunities

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ONLINE SESSION / 13.12.2024

HALL-1 / SESSION-3

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 15:00-17:00

HEAD OF SESSION: Çiğdem TUĞAÇ

Authors	Affiliation	Presentation title
Yeliz Polat Abdullah Mustafa Baki	<i>Fırat Üniversitesi</i>	Planned Urban Renewal: Elazığ Example
S. Asal Hojjati Faezeh Asadzadeh	<i>Karadeniz Technical University</i>	Integration Of Traditional Iranian Architectural Features Into Contemporary Architecture In The Context Of Sustainability
Mustafa Bulat Mariya Pinar	<i>Atatürk University</i>	On The Importance Of The Interdisciplinary Interaction Of Fashion And Textile Design
Soner Akın	<i>Hatay Mustafa Kemal University</i>	Urban Sustainability through Ecological Planning Approach: Ian McHarg's Nature-Centered Perspective
Çiğdem Tuğaç	<i>Ankara Hacı Bayram Veli University</i>	An Evaluation Of Environmental And Climate Technologies Used In Cities From Social, Economic, And Political Perspective
Soner Akın	<i>Hatay Mustafa Kemal University</i>	Living and Self-Sustaining Cities: Jane Jacobs' Community Solidarity and Disaster-Resilient Urbanism
Soner Akın	<i>Hatay Mustafa Kemal University</i>	Social Fabric and Sustainability: Resilience Strategies of Urban Communities

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ONLINE SESSION / 13.12.2024

HALL-2 / SESSION-3

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 15:00-17:00

HEAD OF SESSION: Arshiya Thapliyal

Authors	Affiliation	Presentation title
Pavel Joseph Karrie K. Srinivasan G. Nixon Samuel Vijayakumar	<i>R.M.K. Engineering College</i>	Impact of Urbanization on Pollinator Health and Ecosystem Services in Urban Biology
Bouthaina Sayad	<i>Institute of Architecture and Urbanism</i>	The Impact Of Urban Green Configurations On Temperature Reduction And Thermal Comfort In Annaba City
Mahros Darsin Roberto Koekoeh Koentjoro Wibowo Danang Yudistiro Dwi Djumhariyanto Hari Arbiantara Basuki	<i>University of Jember</i>	Boosting Agricultural Productivity Through Community Engagement: Organic Composting In Kuwon Village, Magetan
Arshiya Thapliyal	<i>India International University of Legal Education and Research</i>	Artificial Intelligence For A Sustainable Planet: Innovations In Combating Climate Change
Sawaira Moeen Muhammad Ikram	<i>Government College University Lahore</i>	Comparative Study of Sonophotocatalytic, Photocatalytic, and Catalytic Activities of Magnesium and Chitosan-Doped Tin Oxide Quantum Dots
Hena Sadiq Mohammad Zahid	<i>Shibli National College</i>	Social Media : An Overview
Jorge Isaac Torres Manrique	<i>Universidad Católica de Santa María</i>	A Critical Interdisciplinary Perspective On The 2030 Agenda For Sustainable Development And Fundamental Rights
Irwa Zahoor Sajaad Ahmed Lone	<i>Islamic University of Science & Technology</i>	Interactive Design for Child-Centric Learning: Bridging Technology and Education in Learning Environments

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ONLINE SESSION / 13.12.2024

HALL-3 / SESSION-3

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 15:00-17:00

HEAD OF SESSION: Dang Hoang Xuan Huy

Authors	Affiliation	Presentation title
Didi Indrawan	<i>Indonesian Christian University</i>	Analysis Of Slum Residential Area, In Utan Panjang Village, Kemayoran District, Central Jakarta Administrative City
Dhivya C R Arunkumar	<i>Tamil Nadu Agricultural University</i>	Integrating Urban Agriculture for Resilient and Sustainable Urban Landscapes
Madrahimova S.D. Matmurotov B.Y. Matchanov A.D.	<i>Tashkent Medical Academy</i>	Determination Of Macroelements In The Stem Of Cydonia Oblonga Miller By Icp Ms
Subhashish Dey	<i>Gudlavalleru Engineering College</i>	Finite Element Analysis of Robust Spliced Joint Connections in GFRP Short Column
Dang Hoang Xuan Huy	<i>Nha Trang University</i>	Rethinking Urban Coastal Sustainability: Leveraging Non-Financial Disclosure Practices For Resilient Economic Growth In Vietnam's Aquatic Industry
Hiftiroh Fauziah Novalini Jailani	<i>STAI Ki Ageng Pekalongan</i>	Money Market And Capital Market Analysis
Marija Petkovska Vesna Karapetkovska-Hristova Academic, Ivan Pavlovic	<i>University "St. Kliment Ohridski"</i>	Industrial Production Of Bee Patties And Their Impact On Honey Yield: A Case Study From The Pelagonia Region
Mohamed Senhaji Abdellah Ouazzani Tayebi Hassani Hamane Lemziouka Mourad Nachtane El Mehdi Berra	<i>University of Sidi Mohamed Ben Abdellah</i>	Tidal Energy: A Wave Of Innovation For A Sustainable Future

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ONLINE SESSION / 13.12.2024

HALL-4 / SESSION-3

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 15:00-17:00

HEAD OF SESSION: Tavneet Kaur

Authors	Affiliation	Presentation title
Habil. Cristina Raluca Gh. Popescu	<i>University of Bucharest</i>	Turkey's Urban Planning In Disaster Management: Sustainability And Seismic Resilience
Ihor Ponomarenko Dmytro Ponomarenko	<i>State University of Trade and Economics</i>	Use Of Marketing Digital Technologies In The Tourism Sector
Semir Bechir Suheil Gaouar Sidi Mohamed Kalai Mohammed Benyarou Mohammed Sidhoum	<i>University of Tlemcen</i>	The strategic approach to the development of pastoral rangeland rehabilitation in Algeria
Uladzimir Zuyeu	<i>"Nierusz Natura" Foundation</i>	Historical Changes In Water Use In Baranovich (Belarus)
Tavneet Kaur	<i>PUNJAB UNIVERSITY</i>	A Critical Analysis Of International Human Rights In The Wake Of A Digitalised Global World
Oloidi, Akintunde John Okpoko, Patrick Uchenna	<i>University of Nigeria</i>	Evaluation Of Aestheticism Of Traditional Costumes For Sustainable Heritage Tourism Development Among Ekiti People, Nigeria.
Sévérin M. Mehounou Amadou Salami Gilles N'dari	<i>University of Abomey-Calavi</i>	The Problematic Of British Monarchy In The Context Of A Democratic Rule
"Amadou Salami Sévérin M. Mehounou Gilles N'dari"	<i>University of Abomey-Calavi</i>	The Problematic Of Children Rights And Duties In Charles Dickens Olivier Twist

(All speakers required to be connected to the session 10 min before the session starts)

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ONLINE SESSION / 13.12.2024

HALL-5 / SESSION-3

ZOOM ID: 884 2447 8604 / PASSCODE: 030303

Ankara Local Time: 15:00-17:00

HEAD OF SESSION: Khanh Giang Le

Authors	Affiliation	Presentation title
Sabrina Roguai Abdelkader Djelloul	University of Abbes Laghrour Khenchela	Structural, optical, and electrical properties of 4%Co-SnO ₂ Films by USP Method
Telli Abdelmoutia Dekhili Nourelhouda Benlakhdar Amar	Biskra University	Enhancing Urban Sustainability Through Ai-Driven Water Conservation Strategies
Joseph Chinedu Ofobuike	Nnamdi Azikiwe University	Sustainable Cities and Plastic Waste Management in Nigeria: A Critique of the Nigerian Plastic Solutions Activity
Khadija Benamar Saad Ibsouda Koraichi Rachid Lahlali Kawtar Fikri Benbrahim	Sidi Mohamed Ben Abdellah University	Eco-Friendly Strategies For Sustainable Urban Agriculture: Antifungal Potential Of Propolis Against Postharvest Pathogens
Fajar Septian Novalini Jailani	STAI Ki Ageng Pekalongan	Central Bank
Khanh Giang Le	University of Transport	A Bim-Gis Framework For 3d Modeling Of Infrastructure Assets
Sadaf Noshin Hafiz Haseeb Ahmed Abrar Ahmed	The university of Lahore	Development of Eco-Friendly Cement Mortar through Ternary Blending of Cement, Fly Ash, and Silica Fume for Sustainable Urban Infrastructure
Khushi Simrat Kaur	Indian Institute of Psychology and Training Sarita Vihar	The Impact of Social Identity on Employee Motivation and Performance

(All speakers required to be connected to the session 10 min before the session starts)

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**SUSTAINABLE TOURISM REQUIRES TAKING RESPONSIBILITY:
THE CASE OF 2023 KAHRAMANMARAS AND HATAY EARTHQUAKES**

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Abstract

A green economy is one which is low carbon, resource efficient and socially inclusive. Tourism is one of ten economic sectors identified in the United Nations (UN) Green Economy Report, whose greening would increase prosperity, create employment and reduce poverty. According to UN Tourism, international tourist arrivals hit 96% of pre-pandemic levels through July 2024. Regarding international tourism receipts, 47 out of 63 countries with available data had recovered pre-pandemic values in the first six months of 2024, many reporting strong growth (for example Türkiye, +55%) compared to 2019 (in local currencies and current prices). If tourism planned and managed in responsible and sustainable approach there will be positive impact on quality of life of communities and conservation of natural and cultural values in tourist destinations. On the other hand, responsible and sustainable tourism is not a type of tourism, but a management approach that is important for all types of tourism. In the recovery process after natural disasters such as earthquakes, it is even more important that developments in existing and potential tourism destinations are managed with an understanding of responsibility and sustainability. In Turkey, the 2023 Kahramanmaraş and Hatay earthquakes caused deaths, irreparable losses and injuries, as well as devastating impacts on cities with unique natural and cultural resource values. Tourism stands out as an important development tool in the recovery process of these destinations. On the other hand, it is very important that this tourism development process is managed in a responsible and sustainable manner. Based on these points, the paper will focus on tourism within the scope of green economy and the growing importance of responsible and sustainable tourism approaches in the post-pandemic tourism development process. Recommendations will be put forward within the scope of responsible and sustainable tourism management in the recovery process of tourism destinations in the region after the 2023 Kahramanmaraş Hatay earthquakes.

Keywords: Earthquake, green economy, responsible tourism, sustainable tourism, tourism.

INTRODUCTION

In recent years, the global tourism sector has experienced numerous crises and disasters, including terrorist attacks, political instability, economic downturns, biosecurity threats and natural disasters (Ritchie, 2004). Destinations are vulnerable to natural disasters, which can result in damage to infrastructure and built facilities, negative destination images, and a difficult time of recovery (Liu-Lastres, Mariska, Tan, & Ying, 2020). Recovery times after natural disasters can vary significantly, ranging from one to 93 months (WTTC, 2019). This reveals the magnitude and complexity of the impacts of disasters and crises on the tourism system, and from a resilience perspective, crises and disasters are considered as triggering events for the transformation of the tourism system and are considered within the scope of the “disaster-reform hypothesis” (Hall, Prayag, & Fang, 2024). While this situation points to the vulnerability of the tourism sector to natural disasters, it also shows that a well-planned crisis management strategy can be turned into an opportunity for tourism destinations by minimizing the effects of natural disasters (Genç, 2018).

The term green economy was first used by a group of leading environmental economists in a pioneering report entitled *Blueprint for a Green Economy* prepared for the UK Government in 1989 (Markandya, & Barbier, 1989). The aim of the green economy is to promote a just transition towards ecologically sustainable economies and societies, creating decent jobs and improving the living conditions of the most disadvantaged populations (ILO, 2022). The green economy is defined as an economic model that aims to increase human well-being and social equity while reducing environmental risks and ecological scarcities, and the United Nations (UN) Green Economy Report recognizes tourism as a strategic sector that can increase prosperity, create jobs and reduce poverty in the transition to a green economy (UNEP, 2011). According to the UN World Tourism Organization (UNWTO), by July 2024, international tourist arrivals had reached 96% of pre-pandemic levels and international tourism revenues reached pre-pandemic levels in 47 out of 63 countries, with many countries recording strong growth compared to 2019. However, managing this success in a sustainable manner is critical for sectoral development. In the post-crisis recovery, however, a well-organized management approach has the potential to support economic and social development by increasing social support for destinations (Goodwin, 2011).

On February 6, 2023, the earthquakes centered in Kahramanmaraş and Hatay devastatingly affected the north of Syria and 11 provinces of Turkey, killing and injuring thousands of people and causing serious property losses, and the magnitude of the earthquakes reached dimensions that affected the entire Turkish economy (Şengül Güneş, Güneş, & Güneş, 2023: 789). Due to the aftershocks, the Disaster and Emergency Management Presidency (AFAD) recognized Bingöl, Kayseri, Mardin, Tunceli, Niğde and Batman as “Disaster Regions Affecting General Life” (Anadolu Agency, 2023).

The 2023 Kahramanmaraş and Hatay earthquakes caused extensive damage to the region's unique natural and cultural heritage values, as well as profound social and economic impacts on the local population (AFAD, 2023). Tourism stands out as an important development tool in the reconstruction process of the region after the earthquakes. However, this process needs to be handled within the framework of responsible and sustainable tourism approaches.

Responsible and sustainable tourism is a management approach that applies not only to a specific type of tourism but also to all types of tourism.

The aim of this study is to draw attention to the increasing importance of responsible and sustainable management approaches for tourism recovery after natural disasters by considering tourism in the context of green economy. After the Kahramanmaraş-Hatay earthquakes on February 6, 2023, which affected 11 provinces, the research is important in terms of revealing the current situation of tourism destinations in the region and providing suggestions for strategies that can be developed within the scope of responsible and sustainable tourism management in the reconstruction process. In this framework, the role of tourism in recovery processes after crises such as earthquakes is evaluated from the perspectives of resilience and sustainability.

LITERATURE REVIEW

The Effects of Earthquakes on Tourism

While tourism plays a crucial role as both a competitive tool and a driver of regional development, there are events beyond the control of tourism destinations that can jeopardize their attractiveness (Estevão, & Costa, 2020: 1). Natural disasters and other unforeseen risks are decisive factors for the development of the tourism sector, as they deeply affect individuals and society and significantly affect tourism movements (Ertuğral, & Tekeli, 2024). Especially destructive natural disasters such as earthquakes have a wide impact on tourism, and these effects can be evaluated in three dimensions: direct, indirect and secondary (induced) effects (Karadeniz, 2023; Shurland, & Jong, 2008):

- Direct impacts; the impact of the destructive power of the earthquake on tourism supply sources,
- Indirect impacts include earthquake-induced reductions in tourism spending or disruptions in business flows.
- Induced effects refer to the disruption of investment opportunities for tourism.

It is seen that earthquakes have occurred in certain periods in seismically active regions since the existence of the world and as a result, millions of people and their living spaces have been destroyed (Kodal, 2024: 2). Among disasters, which have been one of the important factors affecting the tourism sector throughout history, the most destructive effects have generally been caused by earthquakes (Göktaş, 2023: 624).

The primary natural causes of damage to cultural heritage, which is one of the important attractions of tourism, are earthquakes, floods, tsunamis, hurricanes/ tornadoes, fires and volcano eruptions, while secondary damages caused by natural causes can be classified as mold, dust, abrasion, water damage (Duman, & Güneş, 2023). Human-induced causes include factors such as attacks, wars and barbarism (International Center for the Study of the Preservation and Restoration of Cultural Property [ICCROM], 2018: 57).

Involving local communities in tourism planning not only empowers them, but also promotes a sense of ownership and responsibility for sustainable practices by ensuring that tourism development is aligned with their needs and aspirations (Nian et al., 2019). However, post-

disaster recovery offers significant opportunities for green investments and innovative sustainable tourism practices.

The stages to be followed for post-disaster tourism recovery are generally the same as for disaster recovery (Fatini and Herwangi, 2022: 28):

- Planning
- Coordination
- Damage Assessment
- Funding and Equipment

While carrying out all these stages, it is very important to proceed within the framework of sustainability principles.

The Role of Tourism in Post-Earthquake Recovery

In disaster-affected areas, tourism is emerging as a powerful tool for the recovery of local economies and the restoration of social cohesion. Calgaro and Lloyd (2008) argue that tourism acts as a catalyst for post-crisis recovery, stimulating job creation as well as infrastructure investment. Post-disaster tourism recovery is often implicitly framed in terms of resilience as “the development and implementation of strategies and actions to restore the destination to a normal (pre-event) state or an improved state” (Mair, Ritchie, & Walters., 2016: 2).

An increasing number of destinations have incorporated tourism development into disaster relief efforts and are using tourism as a strategy to improve local livelihoods and community resilience after disasters (Liu-Lastres, Mariska, Tan, & Ying, 2020).

Tourism can help a destination recover after a natural disaster in 4 ways (GSTC, 2023):

- There was a quick time frame for tourism to return to normal levels.
- Destination marketing played a critical role in the post-disaster tourism recovery.
- Partnerships are key to disaster and tourism recovery.
- Disasters are an opportunity to build back better within the tourism industry.

As an important economic driver, it is very important to integrate tourism into disaster risk management approaches and promote it in this context (UNDRR, 2015: 2). In the findings of the research conducted by Zhang et al. (2023), eight main themes emerged as “education and information communication about disasters, tourism facilities for disaster preparedness, tourism resources in emergencies, livelihoods and economic recovery, disaster-related tourism attractions for recovery, destination rebranding and reframing, community revitalization in tourism-driven disaster recovery, and special interest tourism for recovery”. In addition, post-disaster voluntourism activities can be useful in restoring the destination or traditional lifestyles of communities (Wearing, Beirman, & Grabowski-Faulkner, 2020). In all these processes, it is very important to adopt a community-based approach.

In a research conducted by Šegota, Mihalič, and Kuščer (2017: 196), it was found that more knowledgeable residents had more positive tourism perceptions than all other groups, while less

knowledgeable residents had more negative tourism perceptions. In this context, community involvement is crucial at every stage of tourism activities. In addition to government policies and regulations, funding and financial resources, local community involvement and tourist demand have a significant and positive impact on investment intentions in sustainable tourism (Thang and Thanh, 2023). However, there is a significant relationship between community empowerment and CSD initiatives, and high community empowerment enables the community to achieve successful sustainable tourism development through local people's support for tourism (Khalid et al., 2019).

Biran et al. (2014: 2) emphasize that disaster can change the attributes and attractiveness of a destination in terms of tourism recovery after a disaster. In order not to be negatively affected by this change, it is very important to benefit from the traditional knowledge of the local people who know the region best. Understanding how traditional practices and local people's knowledge affect tourism development in post-disaster regions is crucial for building disaster resilience and sustainable tourism (Lin, Kelemen, & Tresidder, 2018: 6). In this context, community-based cultural tourism activities should be prioritized, taking into account that culture can reduce disaster risk and improve community resilience by turning into a source of livelihood (Lin, & Lin, 2020: 17).

Sustainable Tourism in the Green Economy Framework

A green economy is defined as low-carbon, resource efficient and socially inclusive, enabling growth in employment and income, reducing carbon emissions and pollution, increasing energy and resource efficiency, and preventing the loss of biodiversity and ecosystem services (UNEP, 2011). In the early 2000s, the concept of green economy attracted a great deal of international attention both as a tool for the 2008 financial crisis and as one of the two main themes of the 2012 United Nations Conference on Sustainable Development (Rio+20) (Allen and Clouth, 2012: 3). In addition, the green economy is recognized as a “vibrant and ideal model” of sustainable development, especially in terms of economic development (Al-Taai, 2021). Allen and Clouth (2012: 5) emphasize the following 9 basic principles of the green economy:

- The Sustainable Principle: It delivers sustainable development
- The Justice Principle: It delivers equity
- The Dignity Principle: It creates genuine prosperity and wellbeing for all –
- The Earth Integrity, Planetary Boundaries and Precautionary Principle : It improves the natural world
- The Inclusion Principle: It is inclusive and participatory in decision making
- The Governance Principle: It is accountable
- The Resilience Principle: It builds economic, social and environmental resilience
- The Efficiency Principle : It delivers sustainable consumption and production
- The Intergenerational Principle: It invests for the future

Tourism is one of the ten economic sectors identified in the UNEP Green Economy Report that can increase prosperity, create jobs and reduce poverty through green practices (UNWTO, 2013). In 2012, the United Nations World Tourism Organization emphasized the role of sustainable tourism in the transition to a green economy, which is essential for sustainable development and poverty eradication (Widayanto and Nurrahma, 2022: 189). In the following

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period, UNWTO continued to emphasize sustainable development in its 2030 Agenda and set out five key elements that tourism should do to achieve sustainable development (Pan, 2018):

- Inclusive and sustainable economic growth
- Social employment and poverty reduction,
- Resource efficiency, environmental protection and climate change,
- Cultural values, diversity and heritage
- Mutual understanding, peace and security.

Sustainable tourism is an important sector that benefits social and economic development while protecting nature by reducing pollution and gas emissions, and increases employment by providing various job opportunities, especially in developing countries (Widayanto and Nurrahma, 2022: 189). Tourism in the green economy refers to “tourism activities that are sustainable in economic, environmental, social and cultural terms (UNEP, 2011: 416).

In February 2024, the General Assembly decided to declare 2027 as the “International Year of Sustainable and Resilient Tourism” and in this context encouraged all States, the United Nations system and all other actors to support sustainable tourism as a means to promote sustainable development while taking action at all levels (UN, 2024). The world tourism industry has suffered serious losses as a result of several major international events and the magnitude of disaster risks has become an important topic of discussion for sustainable tourism (Ural, 2016: 63).

On February 6, 2023, two devastating earthquakes centered in Kahramanmaraş and Hatay brought life to a standstill in the disaster area and thus negatively affected the tourism sector. The post-earthquake report published by the Presidency of the Republic of Turkey's Strategy and Budget Directorate includes policies planned to be implemented in the short, medium and long term to revitalize the tourism sector in the region (Table 1).

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Table 1. Policy Recommendations

Short Term	Medium Term	Long Term
Complete damage assessments in touristic facilities damaged in the earthquake, mainly in accommodation facilities, and put these facilities in use on a gradual basis	Prepare a master plan for tourism and complete tourism infrastructure (landscaping, parking lot, walking track, service road, pedestrian road, daily service unit etc.) according to the prioritization of the plan	Assess the status to date in the process of rebuilding tourism facilities and facilitate, as necessary, the access of private sector to financing
Make regulations on contributions and tax payments of travel agencies and accommodation facilities in earthquake-affected provinces	Review current tourism routes, redesign routes if <u>necessary</u> depending on the condition of tourist points on these routes	Offer all tourism modalities/types by region to tourists and engage in effective promotion on this initiative
Postpone loan payments due to cancellations in the domestic and foreign market in travel agencies and accommodation facilities	Identify needed tourism facilities, mainly accommodation facilities, and provide guidance to the private sector by doing so	
Repair damaged infrastructure (landscaping, parking lot, walking track, service road, pedestrian road, daily service unit etc.) under a certain order of priority at touristic points on routes or with a high number of tourists	Facilitate access to funding needed for the rebuilding of tourism facilities	
	Update promotional materials, launch promotion work focusing on cultural and gastronomic tourism.	

Source: Presidency of the Republic of Turkey, Presidency of Strategy and Budget, 2023: 111
In the assessment report titled “Turkey Earthquake Recovery and Reconstruction Assessment” published by the Strategy and Budget Directorate of the Presidency of the Republic of Turkey in 2023, short, medium and long-term policy recommendations for the tourism sector are presented in Table 1. These policy recommendations aim both to respond quickly to post-earthquake emergencies and to restructure the tourism sector in a sustainable manner.

The Role of Responsible Tourism in Rebuilding Communities

Responsible tourism plays an important role in rebuilding infrastructure, supporting local communities and restoring cultural and natural sites (Rucińska, & Lechowicz, 2014). Responsible tourism is an understanding that realizes the plans made to protect and develop the destination with the participation of all stakeholders of tourism for the continuity of sustainability with a sense of responsibility for the protection of natural and cultural heritage (İlban, Gümrükçü, & Yıldız, 2023: 202).

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In its simplest definition, Responsible Tourism means taking responsibility for making tourism sustainable and addressing the many specific challenges that people face (Goodwin, 2024). It is often emphasized that responsible and sustainable tourism is not just a type of tourism but a management approach that should be adopted in all tourism activities (Goodwin, 2024). Responsible tourism is defined as “operators, hoteliers, governments, local people and tourists taking responsibility for making tourism more sustainable by creating better places for people to live and better places to visit” (Goodwin, 2024).

The Cape Town Declaration (2002) emphasizes that a responsible tourism approach can take various forms in tourism activities within the framework of the following elements (Goodwin, 2024):

- It minimizes negative economic, environmental and social impacts,
- It generates greater economic benefits for local people and improves working conditions and access to the sector, which increases the well-being of host communities,
- Involving local people in decisions that affect their lives and life changes,
- It contributes positively to protecting natural and cultural heritage and sustaining the world's diversity,
- It provides more enjoyable experiences for tourists by creating more meaningful connections with local people and a better understanding of local cultural, social and environmental issues,
- It provides access for people with disabilities and disadvantaged people,
- Culturally sensitive, building respect and trust between tourists and hosts.

The Global Code of Ethics for Tourism (GCET), an important reference source for responsible and sustainable tourism, is a comprehensive set of principles designed to guide key actors in the realization of tourism activities. Addressing governments, the travel industry, communities and tourists, these principles aim to help maximize the benefits of the sector while minimizing its potential negative impacts on the environment, cultural heritage and communities around the world (UNWTO, 2020). The 10 articles of the Code broadly cover the economic, social, cultural and environmental components of travel and tourism (UNWTO, 2020):

- Tourism's contribution to mutual understanding and respect between peoples and societies
- Tourism as a vehicle for individual and collective fulfilment
- Tourism, a factor of sustainable development
- Tourism, a user of the cultural heritage of mankind and contributor to its enhancement
- Tourism, a beneficial activity for host countries and communities
- Obligations of stakeholders in tourism development
- Right to tourism
- Liberty of tourist movements
- Rights of the workers and entrepreneurs in the tourism industry
- Implementation of the principles of the Global Code of Ethics for Tourism

Therefore, it is very important to act within the framework of the above-mentioned principles in every tourism activity and tourism investment in terms of sustainable and responsible tourism approaches.

CASE STUDY

2023 Impact of Kahramanmaraş and Hatay Earthquakes on Tourism

When the natural disasters in Turkey are analyzed in terms of the number of people affected, earthquakes come first (Altun, 2018: 4). On February 6, 2023, two earthquakes of magnitude Mw7.7 (depth=8.6 km) and Mw7.6 (depth=7 km), with epicenters in Pazarcık and Elbistan districts of Kahramanmaraş, occurred at 04:17 and 13:24 Turkish time, and apart from these two major earthquakes, 18,633 aftershocks with magnitudes between 0.5 and 6.6 occurred in the region until March 28, 2023 (Boğaziçi University Kandilli Observatory and Earthquake Research Institute, 2023). These earthquakes not only killed thousands of people and caused extensive destruction of infrastructure, but also had devastating impacts on tourism and cultural heritage sites (AFAD, 2023). According to a World Bank report (2023), the economic cost of the earthquakes was estimated at over 34 billion dollars, and regions dependent on the tourism sector were disproportionately affected by these losses.

Table 2. Damage Status of Tourism Facilities in Earthquake-Affected Region

Province	Facilities with Tourism License					Plain Accommodation Facilities with Tourism License				
	Collapsed	Severely Damaged	Moderately Damaged	Lightly Damaged	Undamaged	Collapsed	Severely Damaged	Moderately Damaged	Lightly Damaged	Undamaged
Adana	-	-	-	1	42	-	-	-	2	97
Adıyaman	7	-	1	5	4	5	1	-	4	5
Diyarbakır	-	-	-	4	28	-	4	-	13	46
Elazığ	-	-	-	1	25	-	1	-	4	18
Gaziantep	-	-	-	13	26	-	-	-	7	7
Hatay	4	5	8	2	17	13	10	23	25	69
KMaraş	7	-	1	19	15	4	6	-	15	11
Kilis	-	-	-	-	1	-	-	-	1	2
Malatya	3	2	2	7	5	3	8	4	8	3
Osmaniye	-	-	1	4	-	1	-	-	5	1
Şanlıurfa	-	-	-	5	10	-	1	2	9	28
Total Region	21	7	13	61	173	26	31	29	93	287

Source: Presidency of the Republic of Turkey, Presidency of Strategy and Budget, 2023

Table 2 shows the current status of tourism certified facilities in the earthquake-affected regions in two different categories in detail. The damage status of tourism certified facilities in the earthquake-affected regions is categorized as “collapsed”, “heavily damaged”, “moderately damaged”, “slightly damaged” and “undamaged”. As shown in Table 2, 21 facilities were completely collapsed, 7 facilities were heavily damaged, 13 facilities were moderately damaged and 61 facilities were slightly damaged. In addition, 26 of the tourism-certified accommodation facilities collapsed and 31 were heavily damaged. According to this table, it can be concluded that the damage was concentrated in provinces such as Adana, Hatay and Kahramanmaraş and the number of undamaged facilities was very limited.

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Table 3. Accommodation Facilities Affected by Earthquake

Item	Unit	Quantity	Unit Cost (TRY/unit)	Cost (TRY)
1-star Facility (lightly damaged)	Number of beds	40	16,708	668,328
2-star Facility	Number of beds	732	52,681	38,562,826
Collapsed	Number of beds	177	97,578	17,271,306
Severely Damaged	Number of beds	108	97,578	10,538,424
Moderately Damaged	Number of beds	104	39,031	4,059,245
Lightly Damaged	Number of beds	343	19,516	6,693,851
3-star Facility	Number of beds	3,155	108,899	343,577,873
Collapsed	Number of beds	572	232,871	133,202,212
Severely Damaged	Number of beds	354	232,871	82,436,334
Moderately Damaged	Number of beds	518	93,148	48,250,871
Lightly Damaged	Number of beds	1,711	46,574	79,688,456
4-star Facility	Number of beds	3,670	150,730	553,180,855
Collapsed	Number of beds	1,052	314,022	330,351,144
Severely Damaged	Number of beds	74	314,022	23,237,628
Moderately Damaged	Number of beds	634	125,609	79,635,679
Lightly Damaged	Number of beds	1,910	62,804	119,956,404
5-star Facility	Number of beds	3,618	189,355	685,086,607
Collapsed	Number of beds	476	454,422	216,304,872
Severely Damaged	Number of beds	504	454,422	229,028,688
Lightly Damaged	Number of beds	2,638	90,884	239,753,047
Basic Accommodation Facility	Number of beds	8,744	51,112	446,926,756
Collapsed	Number of beds	1,734	97,578	169,200,252
Severely Damaged	Number of beds	1,487	97,578	145,098,486
Moderately Damaged	Number of beds	1,273	39,031	49,686,718
Lightly Damaged	Number of beds	4,250	19,516	82,941,300
Apart Hotel	Number of beds	471	26,145	12,314,344
Collapsed	Number of beds	40	97,578	3,903,120
Lightly Damaged	Number of beds	431	19,516	8,411,224
Special Accommodation Facility	Number of beds	212	217,780	46,169,275
Severely Damaged	Number of beds	50	454,422	22,721,100
Moderately Damaged	Number of beds	96	181,769	17,449,805
Lightly Damaged	Number of beds	66	90,884	5,998,370
Boutique Hotel (collapsed)	Number of beds	66	454,422	29,991,852
Ranch House (lightly damaged)	Number of beds	20	16,715	334,296
Boarding House (lightly damaged)	Number of beds	12	14,764	177,173
Total				2,156,990,185

Source: Presidency of the Republic of Turkiye, Presidency of Strategy and Budget, 2023

According to Table 3, Accommodation Facilities Affected by Earthquake in the report prepared by the Presidency of the Republic of Turkey Strategy and Budget Directorate, all accommodation facilities affected by the earthquake suffered a total economic loss of TRY 2,156,990,187. The table details the post-earthquake damage levels, total number of beds and financial provisions for these losses for different types of facilities. Facilities are classified as “destroyed”, “heavily damaged”, “moderately damaged” and “slightly damaged” according to their damage levels. In line with the information in Table 3, damage conditions according to facility types can be summarized as follows:

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- 1 Star Facilities: Lightly damaged, 40 bed capacity and total financial loss; TL 668,328.
- 2 Star Facilities: A total of 732 bed capacity was affected and the financial loss was TL 38,562,826. Especially the cost of the demolished facilities is 17,271,306 TL.
- 3 Star Facilities: A total of 3,155 bed capacity was affected and the total loss was calculated as 343,577,873 TL. It is one of the facility types most affected by the earthquake, especially with the economic cost of the destroyed facilities.
- 4 Star Facilities: 3,670 bed capacity was affected and the financial loss is 553,180,855 TL.
- 5 Star Facilities: 3,618 bed capacity was affected and the total loss was 685,086,607 TL. The cost of the destroyed facilities is 216,304,872 TL.
- Apart Hotels: 471 bed capacity was affected and the financial loss is 12,314,344 TL.
- Private Accommodation Facilities: 212 bed capacity was affected and the financial loss is TL 46,169,275.
- Boutique Hotels, and Hostels: 66 bed capacity was affected and the financial loss amounted to TL 30,511,321.

Earthquakes change the geological and geomorphic conditions of destinations and affect tourism development in the destination, causing significant damage to the productive capacity of regional tourism (Xu, Zhu, Qu, & Ma, 2023: 7). Many cultural heritage sites were either destroyed or severely damaged during the Kahramanmaraş and Hatay earthquakes, and these losses not only had negative impacts on local identities but also significantly reduced the touristic attractiveness of these regions (Çakmak, & Türker, 2023).

There are approximately 8,500 monuments in the earthquake zone affected by the Kahramanmaraş earthquakes, 84 of which are foundation monuments under the responsibility of the General Directorate of Foundations, and most of them are religious buildings (Presidency of the Republic of Turkey, 2023). The General Directorate of Foundations has 6 service buildings in the region. There are also 28 museums and 22 ruins under the General Directorate of Cultural Heritage and Museums of the Ministry of Culture and Tourism (Presidency of the Republic of Turkey, 2023).

Among the destroyed and damaged buildings, there are 4 works on the UNESCO World Heritage List, 10 works on the UNESCO provisional heritage list, 3,715 protected areas and 7987 registered immovable cultural assets, and apart from these official numbers, many buildings, archaeological, rural and urban texture, cultural landscape areas and intangible cultural assets that are not registered but have the characteristics of cultural assets that need to be protected have also been affected by earthquakes (Güneş, & Duman, 2023: 87).

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Table 4. Historical and Historical Buildings with High Visitor Density that were Destroyed or Damaged in the Region of the Earthquake Cultural Artifacts

City	Damaged	Destroyed
Adana	Anavarza Ancient City, Bazaar Mosque, Mehmet Nuri Sabuncu Mosque	
Adıyaman	Adıyaman Museum, Adıyaman St. Peter's and Mor Paul Church, Balyan Cemevi, Eskisaray Mosque, Kab Mosque, Kahta Castle, Musalla Mosque, Salt Inn, Yenipınar Mosque,	Adıyaman Great Mosque, Bazaar Mosque, Karakus Tumulus
Diyarbakır	Behram Pasha Mosque, Diyarbakır Walls, Four-legged Minaret (Sheikh Mutahhar Mosque), Ehlibeyt Mosque, Hacılar Mosque, Parlı Safa Mosque, St. George Church, Ümit Balcı Mosque	
Elazığ	Hicret Mosque	
Gaziantep	Eyüpoğlu Mosque, Gaziantep Bayazhan, Karagöz Mosque, Karatarla Mosque, Kurtuluş Mosque, Ömeriye Mosque, Şirvani Mosque, Historical Antep Houses	Gaziantep Castle, Tomb of Hz. Ukkāş, Inner Castle Mosque
Hatay	Bab-ı Hadid (Demirkapı), Batıyaz Bridge, Hatay Archeology Museum, Hatay St. Georgios Greek Orthodox Church, Hatay English Protestant School, Hatay Long Bazaar, İskenderun St. Nicholas Greek Orthodox Church, Sarı Selim Mosque, Sarımiye Mosque, Sokollu Complex, Historical Affan Coffee House, Historical Hatay Municipality Building, Historical Governorship Building, İskenderun Cemevi	Antakya Protestant Church, Antakya Synagogue, Ata College, Saints Peter and Paul Greek Orthodox Church, Habib-i Neccar Mosque, Bayezid-i Bestami Tomb, Hatay Great Mosque, Darb-ı Sak Castle, Hatay Parliament Building, Hatay Historical Handicrafts Exhibition and Sales Center, İskenderun Latin Catholic Church, Mar John Greek Orthodox Church, Virgin Mary Church, Historical Antakya Houses, Sheikh Ali Mosque
Kahramanmaraş	Arasa (Çıgıcığ) Mosque, Bektutiye (Çınarlı) Mosque, Çiftaslan Mansion, Divanlı (Ahmet Paşa) Mosque, Elbistan Museum, Kahramanmaraş Dedeoğlu Mansion, Kahramanmaraş Castle, Kahramanmaraş Museum, Ulu Mosque, Şazibey Mosque	Kahramanmaraş Saraçhane Mosque, Sheikh (Şih) Mosque, Historical Maraş Houses
Kilis	Hacı Ekrem Çetin Mosque, Cüneyce Mosque	Akcurun Mosque
Malatya	Arsilantepe Mound, Malatya Archeology Museum, Malatya Silahdar Mustafa Pasha Caravanserai, Malatya Sütlu Minare (Çermik) Mosque, Historical Government Mansion, Üç Horan Church, Ören Cemevi	Battalgazi Great Mosque, Hacı Yusuf Taş Mosque, Malatya Shire Market, Malatya New Mosque
Osmaniye	Cebelibereket Government House, Osmaniye Envar-ül Hamit Mosque	
Şanlıurfa	Cıncıklı Bath, Dabakhane Mosque, Dergâh Mosque, Eyüp Prophet Mosque, Customs Inn, Harran Kümbet Houses, Hızanoğlu Mosque, Hüseyin Pasha Mosque, Hz. Fatima Mosque, Mençek Inn, Nimetullah (Ak) Mosque, Rızvaniye Mosque, Şanlıurfa Great Mosque, Historical Şanlıurfa Houses	Sanlıurfa Siverek Castle

Source: Göktaş, 2023: 629

In Table 4, historical monuments in 11 provinces affected by the 2023 earthquake are classified according to their damaged and destroyed status. The damaged and destroyed historical monuments include mosques, churches, museums and ancient cities. In order to bring these areas back to tourism activities, restoration is required. It is very important that the original values of the buildings are not lost during the restoration process.

CONCLUSIONS AND SUGGESTIONS

This research examined in detail the impact of earthquakes on the tourism sector and the critical role tourism plays in the post-disaster recovery process. It is concluded that earthquakes negatively affect tourism both directly and indirectly. However, it is seen that acting with sustainable and responsible tourism approaches in the reconstruction process of the tourism sector offers opportunities for sustainable development. In this process, the adoption of tourism types such as community-based tourism and voluntourism and the participation of the local community in the process provide both economic and environmental improvement as well as social solidarity and cultural sustainability. Various studies in the literature also emphasize the importance of community-based tourism (Lin, Kelemen, & Tresidder, 2018; Lin & Lin, 2020) and volunteer tourism (Grabowski-Faulkner, Wearing, & Beirman, 2020) activities in the post-disaster recovery process.

The fact that tourism has a direct and indirect impact on the development of all infrastructure and is a socio-economic phenomenon that is effective in the development of travel, transportation, social development and other sub-sectors of the services sector at a high level (Ertuğral & Tekeli, 2024: 4816) is very effective in the recovery process after disasters such as earthquakes. Therefore, adopting sustainable and responsible tourism approaches in the post-disaster process such as earthquakes, utilizing the traditional knowledge of the society and supporting voluntary tourism activities will both contribute to the recovery process and ensure that tourism activities reach pre-disaster levels.

On February 6, 2023, a large number of people lost their lives in two severe earthquakes in and around Kahramanmaraş, affecting 11 provinces (Güneş, 2023: 73). In addition, many historical, religious and cultural buildings and accommodation establishments were completely destroyed or damaged in each city. Consequently, tourism activities in the region were negatively affected. Tourism plays a critical role in the recovery from the devastating effects of the earthquakes in all the affected provinces, especially in Kahramanmaraş and Hatay. However, it is very important to adopt sustainable and responsible tourism approaches to ensure a full economic, environmental and social recovery. In this context, several theoretical and practical recommendations are offered:

- First of all, precautions should be taken in advance against all disasters. In the case of earthquakes, disaster risk management plans should be prepared especially for touristic destinations and the earthquake resistance of each accommodation establishment should be checked. For historical, religious and cultural buildings, various proactive measures should be taken such as warning systems against disasters.
- Tourism types such as community-based and volunteer tourism should be adopted, as utilizing the traditional knowledge of local people living in disaster areas will contribute to the recovery process in the destination.

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- Sustainable and responsible tourism principles should be adopted to contribute to the economic, environmental and social recovery process in disaster areas.
- Since negative perception may occur in visitors towards destinations after disasters, necessary efforts should be made to strengthen the destination image. At this point, green practices should be emphasized.
- More research should be conducted in the field of tourism for the recovery process in disaster areas and recommendations should be developed.

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