Climate Change & Environmental Sustainability (CCES) - 5th Edition 2025

A Book of Abstracts

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Climate Change and Environmental Sustainability (CCES) 5th Edition

A Book of Abstracts submitted to the 5th edition of the international conference on **Climate Change and Environmental Sustainability (CCES) 5th Edition** 05 - 07 October 2025

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Acknowledgements

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Foreword

The international conference on the “Climate Change and Environmental Sustainability (CCES)" in its fifth edition brings attention to the wider topic of climate change enriched by the exploration of climatic and environmental sciences, impact assessment, mitigation and adaptation solutions, and policy formulation.

Climate change is an indisputable fact, causing significantly environmental, economic, and social consequences. Moreover, excessive deaths and diseases caused by climate change and environmental sustainability have been wildly documented. Climate change and its impacts have been widely challenged all 17 sustainable developments goals (SDGs). Addressing climate change and improving environmental sustainability are the main themes of the 21st century.

What’s worse, the average warming globally has exceeded the critical threshold of 1.5 °C, and many cities, islands and regions have already been threatened by irreversible climate impacts. It is urgent to accelerate the efforts and actions for climate change mitigation, mitigation, and adaptation. Cities, the main settlement of human beings, must explore tangible solutions and release implementable policies, at different scales and among different groups, to actually conduct practices for change.

With the leadership of Chongqing University (China) and IEREK, with the support of experts from University of Queensland (Australia), Liège University (Belgium), and Delft University of Technology (Netherlands), the 5th CCES is dedicated to fostering conversations that lead to meaningful change—bringing together experts, institutions, and organizations to share knowledge, exchange ideas, and build strategies for a sustainable future. By addressing pressing themes such as climate adaptation, clean energy transitions, and ecological preservation, CCES aims to equip participants with insights that translate into impactful initiatives. The conference is not just a forum for discussion but a space for innovation, fostering interdisciplinary collaborations that shape the trajectory of environmental sustainability.

This book is a collection of excellent abstracts, mainly covering four aspects including 1) Understanding climate change: causes, consequences, and adaptation, 2) Urban sustainability and climate-resilient cities, 3) Nexus of environment, health, and ecosystems, and 4) Climate change, energy, and sustainable development. It is clear to demonstrate that the 5th CCES has fulfilled its commitment to advancing the knowledge of climate science, sustainability strategies, and environmental policy, as well as fostering dialogue on how to address climate-related challenges.

Moreover, this conference is a great and vibrant platform to bring together researchers, professionals, and policymakers from different countries and regions worldwide. The demonstration of latest results and outcomes, as well as subsequent discussion and communication, with no doubt, will enhance mutual understanding and promote international collaborations among climate change mitigation, adaptation, and governance. The knowledge advancement is also conducive to elevating climate resilience and accelerating SDG progress.

With the start of CCES Conference in 2021, we are also proud to persist in holding the conferences to promote climate change mitigation, adaptation, and governance advocacy and actions, in alignment with global initiatives such as the United Nations Sustainable Development Goals, the Paris Agreement, and Carbon Neutrality. We will make efforts to magnify the CCES conference and its contributions from diverse perspectives and take steps toward more resilient, liveable, and sustainable urban environments worldwide.

Word from the Chairman of the Board of IEREK

It is my honor to be launching this conference on Climate Change and Environmental Sustainability, a truly successful and rich event. Organizing an event in this topic, year after year, we hope, continues to bring substantial benefits to the research community and the related disciplines. This conference brings together experts, scholars, and practitioners from all backgrounds to share ideas, insights, and solutions for the urgent challenges in Climate Change and Environmental Sustainability. By bridging the worlds of academia and practical experience, it offers a rare opportunity to tackle the pressing challenges shaping climate resilience and energy sustainability in a changing climate. Through collaborative discussions, participants can track trends, assess the impact of interventions, and improve strategies for lasting resilience. The event also sparks interdisciplinary cooperation because climate and resource management demand expertise across multiple disciplines. Here, environmental scientists, engineers, economists, and social scientists join forces to build a more connected, comprehensive approach to sustainability, making real progress toward securing climate change for future generations. IEREK-International Experts for Research Enrichment and Knowledge Exchange - is an institution that began pursuing its goal of reaching excellence in disseminating research and knowledge across countries in 2013, and since then has been connecting the world's scholars and providing them with a platform that would advance all their endeavors. Building international relationships with prestigious universities and institutes worldwide is one of IEREK's main goals, spreading knowledge and enhancing research around the world, along the way, through collaborating with trustworthy partners who share its same vision. With that said, IEREK hopes to present the world with a conference that positively contributes to its relative field and makes way for scholars to combine their ideas for the greater goal of discovering new and innovative solutions to the issue at hand, with the aid of our scientific committee comprised of distinguished professors and researchers from a variety of international, established universities. Finally, I hope that the conference succeeds in delivering its message to the world of professionals in the various concerned disciplines in order for their work to be put into motion. I would like to extend a warm welcome to individuals spanning from undergraduate to postgraduate levels, as well as anyone poised to gain the most from this event. I eagerly anticipate the opportunity to meet and engage with all of you during this fruitful experience.

Mourad S. Amer, PhD
IEREK CEO & Founder
COEUS CEO & Founder
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WORD BY THE CONFERENCE CHAIRPERSON

The “Climate Change and Environmental Sustainability (CCES)" conference is a great platform to connect experts and practitioners in the field of climate science, sustainability strategies, and environmental policy to explore implementable solutions to improve urban climate resilience and foster sustainable cities and communities. The Centre for Climate-Resilient and Low-Carbon Cities (CCRLCC) at Chongqing University welcomes all participants and appreciates their significant contributions to climate change mitigation, adaptation, and governance. As the founding chair of the CCES conference and the leader of CCRLCC, I am humbled to express my gratitude to co-chairs, keynote speakers, moderators, authors, and reviewers for their long-lasting kind-hearted support. Through this conference, I expect the conference participants to enjoy this diverse and vibrant platform to enhance international and regional collaborations. I expect to this conference can advance their knowledge and understanding of climate resilience and environmental sustainability.

Prof. Baojie He

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Part IV: Climate Change, Energy, and Sustainable Development

Sustainable University Campuses And The City - A Case Study

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Abstract:

The importance of sustainable university campuses extends nowadays beyond the boundaries of the university to the urban surroundings. By adopting sustainable practices these spaces can contribute to the quality of life in cities. There is nowadays a search for integration between campuses and cities, exploring new models for their joint growth, which requires a deep understanding of their relationship. This study aimed to understand what is behind the adoption of outdoor spaces on campuses by common citizens. The research methodology was based on a case study by means of a qualitative analysis method with data collection through observation and interviews. The case study is the Santa Apolónia Campus of the Polytechnic Institute of Bragança in Portugal. Housed on a former farm, the campus is in the heart of the city and includes extensive green areas accessible to the urban community. The results revealed that citizens make use of the campus in different ways. They cross it as part of their daily urban mobility and use it both as a recreational area and as a ground for farming due to the existence of community gardens. The results suggest also that the campus is considered indistinctly from other public spaces which is strongly connected with the search for certain conditions of well-being, particularly regarding outdoor thermal comfort, nature connection, and urban leisure. This search seems to be the engine that connects ordinary citizens to outdoor spaces on campus. The results also reinforce the significant role that the location of campuses in the city center and their sustainable spatial design and configuration can play in the campus-city connection. Of relevance in this case were the spaces that enable people to meet and socialize, such as the vegetable gardens, which seem to have a distinct influence on reinforcing citizens' sense of belonging to the campus.

Keywords:

Sustainable campus, Campus-city relationship, Outdoor spaces, Urban planning, Urban well-being

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This book showcases a collection of abstracts submitted to, and presented in, the 5th Edition of International Conference on the Climate Change and Environmental Sustainability (CCES): that is held at the Chongqing University, China, from October 5th to 7th, 2025.

This year the CCES conference, along with sharing and demonstrating a solid collection of research, case studies and best practices about Climate Resilience and Environmental Sustainability, aims to advance the knowledge of climate change mitigation, adaptation, and governance and tangible solutions to close the gaps in the transformation from science to implementation. This conference clearly shows its central strength in understanding the causes, consequences and adaptation solutions of climate change in a warming world. Moreover, this conference focuses on offering implementable solutions to ensure climate resilience, energy efficiency, health and safety, ecosystem security, and urban sustainability by shifting innovative planning, design, and management paradigms. Relevant studies have also enhanced artificial intelligence to empower cities, communities, and buildings to better achieve targets on climate resilience and environmental sustainability.

Furthermore, this book shows case studies and best practices from different countries and cities, at different scales and levels, and in different dimensions and aspects of climate change and environmental deterioration, which is diverse and vibrant to share unique experience, enhance mutual understandings, and promote international collaborations.