



# Geographic Perspectives on Climate Change Mitigation in Urban and Rural Environments - 1<sup>st</sup> Edition 2024

A Book of Abstracts



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# Geographic Perspectives on Climate Change Mitigation in Urban and Rural Environments (GCUE)– 1<sup>st</sup> Edition

A Book of Abstracts submitted to the Geographic Perspectives on Climate Change Mitigation in Urban and Rural Environments (GCUE)– 1<sup>st</sup> Edition, 2024.



UNIVERSITÀ  
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n|w

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## Preface

Climate change has now become an irreversible process, also because it is clear that humanity, which has been its cause, is completely unable, even with the knowledge and technologies at its disposal today, to stop it, much less to bring about a reversal of the trend in the years to come. However, if in a prospective vision we must continue to invest in the development of new technologies that allow us to achieve this objective, in the present we are called upon to reduce our ecological footprint, at least to slow down climate change and contain its negative effects on our lives and on those of other living beings on which our species depends and to which our very existence is inextricably linked. Human health, like that of all living beings, depends on the health of the environment and this is why the concept of One Health must become the main objective that humanity sets itself. We must change our lifestyles, our consumption behaviors, but we must also rethink our production models and, more generally, the way we inhabit the world. We must redesign our settlements in order to reduce land consumption, make them less energy intensive, and we must limit mobility. It is not a question of acting only on the design of buildings (shapes, construction materials, etc.), but on the urban morphology itself, on connective infrastructures and public services. The objective must be, on the one hand, to increase the level of sustainability of cities and, on the other, to contain the negative effects that climate change can have on them, trying to make them increasingly resilient. The planner's attention must not focus only on urban areas but must necessarily concern – albeit with different methodologies and objectives – also rural areas and not only because they are even more exposed to climate change, but also because they play a fundamental role in the sustenance of humanity. At a global level, the urban population has long since surpassed the rural population and the depopulation of the latter continues at an increasing rate. In addition to the risks deriving from the concentration of the population in increasingly larger and unsustainable cities, there are other risks deriving from the devaluation of rural areas which become increasingly exposed both to climate change due to the lack of land maintenance interventions and to a speculative agriculture with a functional use only to satisfy the food needs of urban populations. In many rural areas, ecosystem balances, like biodiversity itself, are linked to traditional agriculture which risks disappearing completely due to the depopulation of these areas. Supporting rural populations in countering the negative effects of climate change therefore becomes fundamental to avoid the total depopulation of these areas and a new ecological and food disaster. This last consideration leads us to reflect on the economic and social imbalances that will be exacerbated by climate change. Some populations will be more exposed to climate change both due to the geographical region in which they are located – temperatures and rainfall will not vary homogeneously all over the earth's surface – and due to their level of economic development and the ability of local governments to cope with the effects of climate change. These imbalances, threatening the survival of entire populations, will determine internal and above all international migratory flows which will be difficult to manage, and which could have negative repercussions on political balances from the national to the global scale. If we do not want the planet to be shocked by new and more bitter conflicts, every country must be put in a position to deal with climate change, regardless of its economic possibilities. Over twenty years ago, the then Secretary General of the United Nations warned the international community about water risks, predicting that access to water resources, in the absence of solidarity management of these resources, could become the cause of bitter conflicts. That future has arrived and the international community must provide a support plan for all those countries that are not in the economic, technological and infrastructural conditions to face climate change. Global governance of water resources is also needed. Geography, which has in its epistemological status the analysis of the relationships between human beings and the environment, is among the disciplines that can best contribute to contextualising the policies for mitigating the environmental, economic and social risks linked to climate change. On the one hand, Geography can analyse these changes at different territorial scales and assess the consequent risks for human beings and for the environmental context; on the other, it can identify the most appropriate risk mitigation policies in consideration of the characteristics and conditions of the area of intervention. This conference therefore becomes an opportunity to reflect both on the contribution of

this discipline in the study of climate change and on its effects on man and the environment – from the global to the local scale – and on the policies that can be adopted at different geographical scales for the mitigation of risks linked to climate change. A reflection that can only take place through an international comparison, using a holistic approach that is specific to geography. The objective of this conference, in line with geographical epistemology, is therefore not to limit itself to a description and interpretation of climate change and risk mitigation policies, but to orient these policies by providing prescriptive indications that can make them more effective and pervasive. A Geography for the future of humanity.

## Introduzione

Il cambiamento climatico è divenuto ormai un processo irreversibile, anche perché è evidente che l'umanità, che pure ne è stata la causa, non è assolutamente in grado, con le conoscenze e le tecnologie di cui può oggi disporre, di arrestarlo, né tantomeno di determinare negli anni a venire un'inversione di tendenza. Tuttavia, se in un'ottica prospettica dobbiamo continuare ad investire nello sviluppo di nuove tecnologie che ci consentano di raggiungere quest'obiettivo, nel presente siamo chiamati a ridurre la nostra impronta ecologica, quantomeno per rallentare il cambiamento climatico e contenerne gli effetti negativi sulle nostre vite e su quelle degli altri esseri viventi da cui la nostra specie dipende e a cui è indissolubilmente legata la nostra stessa esistenza. La salute dell'uomo, come quella di tutti gli esseri viventi dipende dalla salute dell'ambiente ed è per questo che il concetto del One Health deve divenire l'obiettivo principale che l'umanità deve porsi. Dobbiamo modificare i nostri stili di vita, i nostri comportamenti di consumo, ma dobbiamo anche ripensare i nostri modelli di produzione e, più in generale, il modo di abitare il mondo. Dobbiamo riprogettare i nostri insediamenti al fine di ridurre il consumo di suolo, renderli meno energivori, contenere la mobilità. Non si tratta di agire solo sulla progettazione degli edifici (forme, materiali da costruzione etc.), ma sulla stessa morfologia urbana, sulle infrastrutture connettive e i servizi pubblici. L'obiettivo deve essere, da un lato, quello di aumentarne il livello di sostenibilità delle città e, dall'altro, quello di contenere gli effetti negativi che il cambiamento climatico può avere su di esse, cercando di renderle sempre più resilienti. L'attenzione del pianificatore non deve concentrarsi sulle sole aree urbane, ma deve necessariamente interessare, sia pure con metodologie ed obiettivi diversi, anche le aree rurali e non solo perché sono ancor più esposte al cambiamento climatico, ma anche perché svolgono un ruolo fondamentale per il sostentamento dell'umanità. A livello mondiale la popolazione urbana ha da tempo superato quella rurale e lo spopolamento di queste ultime continua a ritmi crescenti. Oltre ai rischi derivanti dalla concentrazione della popolazione in città sempre più grandi e insostenibili, vi sono altri rischi derivanti dalla dequalificazione delle aree rurali che diverrebbero sempre più esposte sia al cambiamento climatico per effetto della mancanza di interventi di manutenzione del territorio, sia ad un'agricoltura speculativa con un uso funzionale solo al soddisfacimento del fabbisogno alimentare delle popolazioni urbane. In molte aree rurali gli equilibri ecosistemici, come la stessa biodiversità, sono legati ad un'agricoltura tradizionale che rischia di scomparire del tutto per effetto dello spopolamento di queste aree. Sostenere le popolazioni rurali nel contrastare gli effetti negativi del cambiamento climatico diventa dunque essenziale per evitare in prospettiva il totale spopolamento di queste aree e un nuovo disastro ecologico ed alimentare.

Quest'ultima considerazione ci porta a riflettere sugli squilibri economici e sociali che saranno acuiti dal cambiamento climatico. Alcune popolazioni saranno maggiormente esposte al mutamento del clima sia in ragione della regione geografica in cui sono stanziate – temperature e precipitazioni non varieranno in maniera omogenea – , sia in ragione del loro livello di sviluppo economico e della capacità dei governi locali di fronteggiare gli effetti del cambiamento climatico. Questi squilibri, minacciando la sopravvivenza di intere popolazioni, determineranno flussi migratori interni e soprattutto internazionali che sarà difficile gestire e che potranno avere ripercussioni negative sugli equilibri politici dalla scala nazionale a quella globale. Occorre che ogni Paese sia messo nelle condizioni di fronteggiare i cambiamenti climatici, indipendentemente dalle proprie possibilità economiche, se non vogliamo che il pianeta sia sconvolto da nuovi e più aspri conflitti. Oltre vent'anni fa l'allora Segretario Generale delle Nazioni Unite ammoniva la comunità internazionale sul rischio idrico, preconizzando che l'accesso alle risorse idriche in assenza di una gestione solidale di queste risorse sarebbe potuto diventare causa di aspri conflitti. Quel futuro è arrivato e la comunità internazionale deve prevedere un piano di sostegno per tutti quei Paesi che non sono nelle condizioni economiche, tecnologiche ed infrastrutturali per affrontare i cambiamenti climatici. Occorre altresì una governance globale delle risorse idriche. La Geografia che ha nel suo statuto epistemologico l'analisi dei rapporti tra l'essere umano e l'ambiente, è tra le discipline che meglio possono contribuire a contestualizzare le politiche di mitigazione dei rischi ambientali, economici e sociali legati ai cambiamenti climatici. Da una parte, la Geografia può

analizzare questi cambiamenti alle diverse scale territoriali e i rischi conseguenti per l'essere umano e per il contest ambientale, dall'altro, può individuare le più opportune politiche di mitigazione dei rischi in considerazione delle caratteristiche e delle condizioni dell'area d'intervento. Il convegno diviene dunque l'occasione per riflettere tanto sul contributo di questa disciplina nello studio dei cambiamenti climatici e dei loro effetti sull'uomo e sull'ambiente, dalla scala globale a quella locale, quanto sulle politiche che possono essere adottate alle diverse scale geografiche per una mitigazione dei rischi collegati ai cambiamenti climatici. Una riflessione che può avvenire solo attraverso un confronto di livello internazionale, utilizzando un approccio olistico che è proprio della geografia. Obiettivo del convegno, in linea con l'epistemologia geografica, è dunque quello di non limitarsi ad una descrizione ed interpretazione dei cambiamenti climatici e delle politiche di mitigazione dei rischi, ma orientare queste politiche fornendo indicazioni di natura prescrittiva che possano renderle più efficaci e pervasive. Una Geografia per il futuro dell'umanità.

## **Acknowledgments**

IEREK would like to express its appreciation to all members of the staff and scientific committee for their tremendous efforts and contribution to the growth of this institution and for making our conference Geographic Perspectives on Climate Change Mitigation in Urban and Rural Environments a success. IEREK would like to thank the conference chairperson, Professor Fabio Pollice, Geographer, and Rector of the University of Salento, who had a hand in making this conference what it is today by providing scientific and logistical support. IEREK takes pride in being an institution that amasses a highly qualified and competent team who restlessly worked for months to make this conference what it is today in hopes of creating a well-rounded society. Last but not least, we cannot neglect the prominent role undertaken by our Editors who made it their duty to help this institution in spreading knowledge to the masses.



## Word by the Conference Chairperson

Dear Colleagues, dear All,

Welcome to the conference “Geographic Perspectives on Climate Change Mitigation in Urban and Rural Environments” which stems from a cooperation between IEREK, The University of Applied Science (FHNW, Switzerland) and the University of Salento (Lecce, Italy), which will host you during these three days.

This conference will allow us to explore the vital role of geography in understanding and addressing climate change. As we commence this conference, I am honoured by the expertise assembled here today, and I am grateful for your commitment to enriching our discourse on this critical issue. Let me also thank the team of researchers and professionals from IEREK and the University of Salento, who worked restlessly for almost two years, and the scientific committee, whose interdisciplinary view allowed us to set the right framework for a stimulating debate.

The study of geography offers unique perspectives on climate change, blending the analysis of natural systems with human dimensions. This dual focus is essential as we confront a challenge that is both environmental and socio-economic. Geographers, through their varied lenses, assess impacts, model future scenarios, and propose solutions that are sensitive to local contexts yet resonate on a global scale.

During this conference, our discussions will pivot around several key themes.

We will delve into how physical geography helps us understand the systemic changes in our environment, from shifting weather patterns to altered landscapes.

We will also explore how human responses to climate change can be shaped by geographical analysis, emphasizing sustainable development and equitable resource management.

Another relevant topic is how Technological Innovations are spreading in Geographic Research, highlighting cutting-edge tools like GIS and remote sensing, which have revolutionized our ability to gather data and predict climate-related phenomena with unprecedented accuracy.

We will address the uneven impacts of climate change, focusing on vulnerable populations and the role of geography in advocating for fairness and equity in environmental actions.

Last but not least, we intend to discuss the crucial role geographers play in crafting policies that are informed by a comprehensive understanding of both the territories and their communities.

Our goal is not only to share knowledge but to foster collaborations that transcend the boundaries of nations and disciplines. The urgency of climate change demands that we innovate, adapt, and unite with a shared vision for our planet's future.

Thank you for bringing your expertise, your ideas, and your passion to this conference. Together, let's map out a future that embraces the complexities of our changing world, armed with the tools of geography to guide our way.



Professor Fabio Pollice

Conference Chair, Rector, and Full Professor of Economic and Political Geography, University of Salento, Lecce, Italy.

## Word from the Chairman of the Board of IEREK

In this book of abstracts, we are reminded of the urgent need to address the critical challenges facing our cities and the environment. I am deeply grateful for the opportunity to bring together some of the world's brightest minds to explore solutions that can make a meaningful difference at the 1st edition of the Geographic Perspectives on Climate Change Mitigation in Urban and Rural Environments (GCUE) conference. It has been an absolute honor to arrange this event and host the brilliant minds and passionate experts who have come together to tackle some of the most pressing issues facing our world today.

When I first launched IEREK – International Experts for Research Enrichment and Knowledge Exchange - in 2013,

I had ambitions of establishing an institution that pursues excellence in the field of research, and connects the world's scholars, providing them with platforms that advance their academic endeavors. To see my ambition come to life is quite an honor indeed. Ever since its conception, IEREK has remained committed to its goal of scientific dissemination by building international relationships with prestigious universities and academic institutions around the world. Our journey has been one of great privilege, for we do not walk it alone. The contribution that we attain from our partners is invaluable to us, whether it be the book editors, publishers, hosting universities, conference chairs, keynote speakers, authors, or attendees, I would like to personally thank you for contributing to the furtherance of knowledge and research.

Like with every conference that we organize here at IEREK, we hope that everyone involved in the 1st edition of the *GCUE* conference has gleaned something valuable from the experience, and walked away with a positive and memorable experience. We hope that the conference left a good impression on the scholars, who aim to deliberate upon challenges and opportunities for the issues at hand. I am confident that the message conveyed at this conference will aid in leading the world toward becoming a more sustainable, and livable place.



**Mourad S. Amer**

IEREK CEO & Founder  
COEUS CEO & Founder  
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# Navigating Complexity: Italy's Environmental (Im)mobility in the Precautionary Dilemma

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## Abstract:

This contribution delves into the intricacies of decision-making amidst uncertainty and discerns between 'danger' and 'risk' within the context of climate degradation, particularly focusing on its impact on population mobility, especially in rural regions. In Italy, the political dimension of decision-making intertwines with economic imperatives, notably evident in civil protection strategies for responding to emergencies. By scrutinizing evacuation plans and emergency decrees issued by the Department of Civil Protection in Italy, this paper explores displacement and resettlement from a philosophical-geographical standpoint. Critically examining the reductionistic approach of the precautionary principle, the study underscores its oversight of social costs and the imperative to prepare for multi-hazards. It sheds light on the socio-environmental vulnerability of exposed populations, contextualizing it within the European Union's adoption of the precautionary principle. Furthermore, by assessing both slow-onset degradation and sudden catastrophes, the paper underscores determinants such as vulnerability and social capital. It extends its analysis to seismic and volcanic disasters, interrogating the role of mobility and civil protection models as preventive or post-disaster measures. While refraining from delving into individual agency and labor force dynamics, the paper focuses on contradictions within the preventive and post-event measures mandated by Civil Protection in Italy. Through the 'mobility paradigm', it unravels the complexities in decision-making, acknowledging that displacement may not always culminate in the relocation of affected individuals.

## Keywords:

*Population mobility, Prevention, Mobility paradigm, Relocation, Displacement*

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