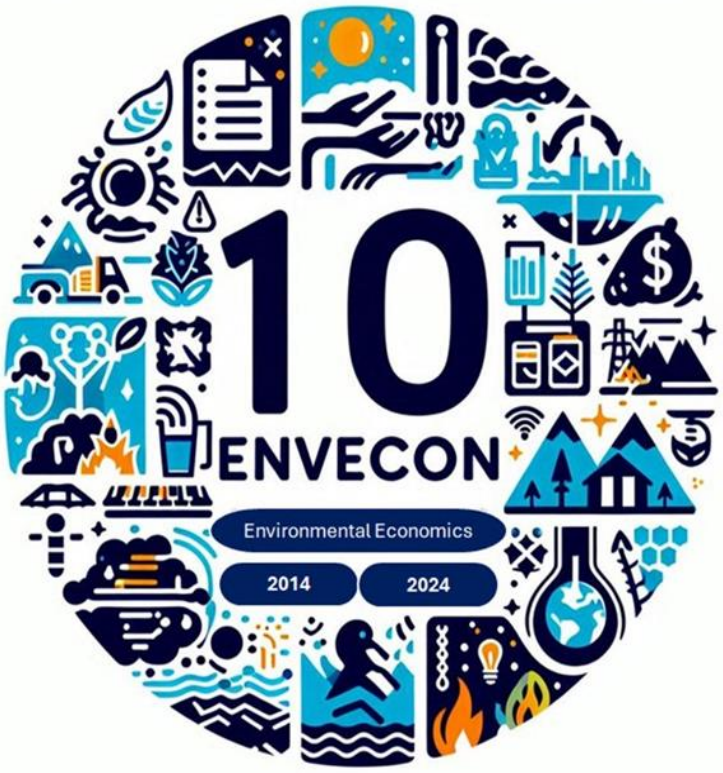
#ENVECON10



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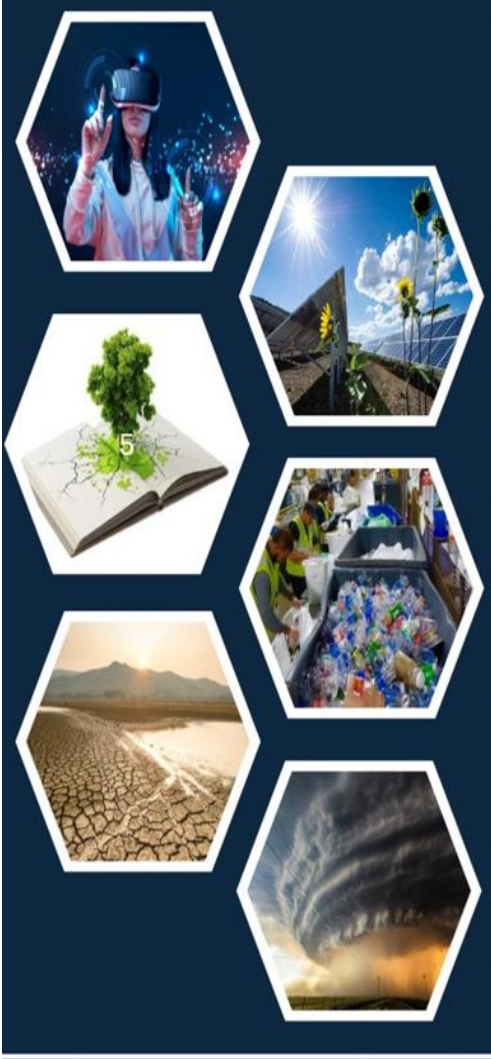

SCOPE

Main issues that concern the Economics of Natural Resources and the Environment with emphasis on the various environmental problems and their management and solution policies.

AIM

Highlight the interdisciplinary nature of environmental research through the exchange of views and experiences of researchers from different scientific fields and the finding of common components of research approaches.

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Investigating How Extreme Events Trigger Nexus Effects and Developing a Nexus Methodological Framework to Increase Resilience

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Abstract

Climate change is already increasing the frequency and intensity of extreme events, significantly impacting human societies wellbeing and resilience. This is particularly exacerbated by trends in population growth, urbanization, and land use changes, which often increase the vulnerability and exposure of human systems. In addition, the complexity of modern human systems, such as the interconnectedness of critical entities that support them, makes urban settings especially susceptible to domino effects triggered by a single initial shock. The aim of this study is to understand and assess the Nexus effects of extreme events related to climate and other natural hazards, such as earthquakes, volcanoes, and tsunamis. An extended Water-Energy-Food Nexus schema is considered, incorporating Ecosystems, Climate, Soil, Transportation, Land Use, Health, and Information and Communication Technologies. The analysis synthesizes practical case studies of actual extreme events that have occurred over the last few decades, primarily in Europe. It considers the implications across three timescales: short-term, mid-term, and long-term. This study employs a modified Nexus-oriented literature review approach, examining nine different types of extreme events, i.e. droughts, earthquakes, floods, heatwaves, landslides, tornadoes, tsunamis, volcanoes, and wildfires. A minimum of three case studies is analyzed for each type of extreme event. For each case study, the Nexus tree approach is applied. The synthesis of the Nexus trees for each extreme event will create the Nexus signature of that specific event. Based on these signatures, an inventory of recommendations for decoupling the nexus interlinkages will be developed. These recommendations will be categorized into operational, tactical, and strategic levels, corresponding to the three impact horizons. Special focus will be given to the implementation of Nature-based Solutions. The ultimate ambition of the NEXUSNET taskforce is to provide tangible tools and capacity to improve urban resilience against climate change-induced and other extreme events.

Keywords: *climate change, wellbeing, resilience, extreme events, urbanization*

JEL Codes: Q4; Q25; Q54.

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