



Advancing Climate Resilience: Insights from a European Survey on Regional Climate Risk Assessment

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The European landscape for climate risk assessment (CRA) is characterized by significant heterogeneity, reflecting diverse methodologies, datasets, and community practices across regions. This complexity highlights the need for harmonised yet adaptable frameworks capable of accommodating local and regional contexts, integrating diverse knowledge systems, and fostering cross-sectoral collaboration to promote climate-resilient development through interdisciplinary and transdisciplinary approaches.

As part of the Horizon 2021 CLIMAAX project, a comprehensive survey was conducted to capture the state of regional CRA practices across Europe. The survey covered four different key dimensions: (i) guiding principles, (ii) technical approaches, (iii) participatory practices, and (iv) bottlenecks and best practices in CRA implementation. As of December 2024, responses were collected from 53 experts and practitioners spanning 23 European countries. The findings revealed that 31% of respondents incorporate both current and future climate scenarios into their CRA for various hazards, while 25% rely solely on current conditions. Among climate scenarios, RCP4.5 emerged as the most used for mid-century assessments (2050s), while RCP8.5 was favoured for end-of-century projections.

The survey also examined stakeholder engagement across different stages of CRA, including co-design, collaboration, consultation, and information-sharing. In this regard, research institutions emerged as the most frequently-engaged stakeholders, with nearly half of respondents reporting active collaboration. In contrast, citizens, local authorities, and vulnerable groups were less involved, particularly in the active phases of the co-creation, underscoring some challenges of integrating participatory processes at local levels.

Some of these key insights from the CLIMAAX CRA survey were used to inform the development of an open-source CRA framework and a toolbox. These resources are designed not only to conduct CRA at a local level but also to bridge the gap between science, policy, and society. Adaptable to regional contexts, they promote integration across sectors and knowledge systems, addressing

both technical and social dimensions of climate-resilient development.

The survey findings underscore the importance of integrating diverse methods, co-creation practices, and open data to develop equitable and context-specific climate solutions across Europe. By adopting more inclusive participation, leveraging open-source tools, and building capacity in climate scenario integration, European regions can advance more equitable and effective CRA practices, fostering resilience across diverse hazard and vulnerability contexts.