

Abstract for CRiSDA for IDRiM2023

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Title

Co-designing a climate risk service for drought risk management in Austria

Introduction

In the CRiSDA (Identifying tools and methods to co-create a climate risk service for managing drought risk in Austria) project, we aim to develop a comprehensive climate risk service for droughts, focusing on the intersection of Disaster Risk Management (DRM) and Climate Change Adaptation (CCA). By employing a climate risk perspective, considering all three components of risk, namely hazard, vulnerability and exposure, we aim to bridge the gaps between CCA and DRM and contribute to the effective management of drought risks in an IPCC-conform manner (Field et al. 2014).

Objectives

Our research has four main objectives. Firstly, we identify the current state of climate risk services in Austria as well as internationally, including stakeholder mapping and identifying demands and barriers for climate (risk) services, specifically for drought risk. Secondly, we will develop a co-creation methodology in collaboration with end-users at different policy scales in Austria to identify the requirements of potential end-users of a drought climate risk service. Thirdly, climate risk service components for drought risk will be developed and integrated, incorporating information on hazard, exposure, and vulnerability. Lastly, a guidance for co-designing Climate Risk Services as inclusive processes involving stakeholders and experts will be developed, as managing climate-related risks is considered a 'wicked problem' whose solution should account for different world views (Verweij 2011). Our guidance should then serve as a framework for being able to develop similar projects in different country settings.

Methodology

A mixed-methods approach was used, comprising a review of existing literature, policy and legal documents as well as semi-structured interviews and a quantitative survey. Initially, stakeholder/governance structures were mapped, followed by an analysis of existing climate services, legal frameworks, data needs, and practical guidelines. This provided a foundation for understanding demands, barriers, and enablers for climate risk services. Subsequently, a co-creation methodology is being developed and applied, engaging users from federal, provincial, and municipal levels to identify the requirements of a drought climate risk service (already at project proposal stage!). The semi-structured interviews with experts were conducted at national and international level (n=14). Also, a survey was developed for extended stakeholders for further validating our findings (ongoing, n≈90).

Building on these requirements, drought climate risk service components will be enhanced, developed, and integrated, with a focus on effective risk communication. Lessons learned throughout the project will be synthesized, leading to the final version of the co-creation methodology and recommendations for climate risk services to support comprehensive risk management.

Findings

Valuable insights into the current state of climate risk services in Austria will be provided, including stakeholder analysis and identification of demands and barriers for drought risk services. Through the co-creation methodology (semi-structured interviews, co-creation workshops, survey), user requirements for a drought climate risk service were identified, allowing for the development and integration of relevant components. Preliminary results show a lack of explicit governance structures for a Climate Risk Service in Austria, as well as a need for adapting norms and standards. Furthermore, clear user-requirements and preferences for its development emerged at various policy scales and levels. Also, significant contributions will be made to improved risk communication strategies and recommendations for climate risk services in general will be provided.

Significance of the work for policy and practice

Our research addresses the need to bridge the gap between DRM and CCA by developing a comprehensive climate risk service for droughts (see Schinko et al. 2017, Leitner et al. 2020, Räsänen et al. 2017). We support evidence-based decision-making, enabling policymakers, stakeholders, and end-users to effectively manage drought risks. The co-creation methodology developed in this research can serve as a model for inclusive processes in the development of climate risk services. The findings and recommendations will contribute to the advancement of climate risk management practices in Austria and beyond, fostering a bottom-up and polycentric approach to climate knowledge production and implementation.

Overall, this research aims to provide a valuable framework for the development of climate risk services, specifically targeting drought risks, and offers a pathway for integrating climate change adaptation and disaster risk management strategies.

References (selected)

Field, C.B., Barros, V.R., Dokken, D.J., Mach, K.J., Mastrandrea, M.D., Bilir, T.E., Chatterjee, M., Ebi, K.L., Estrada, Y.O., Genova, R.C., others, 2014. IPCC 2014: Summary for policymakers in Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Contrib. Work. Gr. II to Fifth Assess. Rep. Intergov. Panel Clim. Chang, 1–32.

Leitner, M., Babicky, P., Schinko, T., Glas, N., 2020. The status of climate risk management in Austria. Assessing the governance landscape and proposing ways forward for comprehensively managing flood and drought risk. *Climate Risk Management* 30, 100246.

Räsänen, A., Jurgilevich, A., Haanpää, S., Heikkinen, M., Groundstroem, F., Juhola, S., 2017. The need for non-climate services – Empirical evidence from Finnish municipalities. *Climate Risk Management* 16, 29–42.

Schinko, T., Mechler, R., Hochrainer-Stigler, S., 2017. A methodological framework to operationalize climate risk management: managing sovereign climate-related extreme event risk in Austria. *Mitig Adapt Strateg Glob Change* 22, 1063–1086.

Verweij, M., 2011. *Clumsy solutions for a wicked world: How to improve global governance* / Marco Verweij. Palgrave Macmillan, Basingstoke.

WMO, 2011: *Climate knowledge for action: a global framework for climate services - empowering the most vulnerable* vol WMO-No. 1065. World Meteorological Organization, Geneva, Switzerland