

WP2 Abstract for CRiSDA for Klimatag 2024

FULL LIST TBD

Alberto Fresolone¹, Thomas Schinko¹, Thomas Thaler¹

¹ International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria

* Correspondence: Fresolone, A.; fresolone@iiasa.ac.at

Title

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

Wissenschaftsdisziplinen

Climate Risk Service; Drought Risk; Disaster Risk Management; Climate Change Adaptation; Co-creation Methodology; Stakeholder Engagement; Risk Communication; Climate Services

Themenstellung

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).

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.

Methode

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 level (n=13). Subsequently, a workshop including core- and extended stakeholders was held on 31 May 2023 in Linz. Here, scientists and project staff exchanged with mostly core-stakeholders on a horizontal level on the CRiSDA project and its progress. Items discussed included presenting preliminary results, aiming at sharpening potential user requirement profiles for a Climate Risk Service in Austria. Information gathered therein supported the development of a survey conducted for extended stakeholders in July and August 2023, aiming at further validating our findings (fully completed responses n=79; total records n=221). 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.

Ergebnisse

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, preliminary results show clear user-requirements and preferences for its development at various policy scales and levels. Demands and requirements for risk communication strategies are being identified on a macro-level, whereas concrete/detailed requirements (e.g., temporal scale, spatial scale, data preparation...) are being identified on a micro-level through an analysis in NVIVO. First identified requirement profiles show that potential users may be on a regional government level (for setting short & long-term measures). The subsequent implementation of recommendations & measures would then occur on a municipal/individual level, meaning that farms and firms could represent beneficiary-groups. Also, significant contributions will be made to improved risk communication strategies and recommendations for climate risk services in general will be provided. 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.

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