

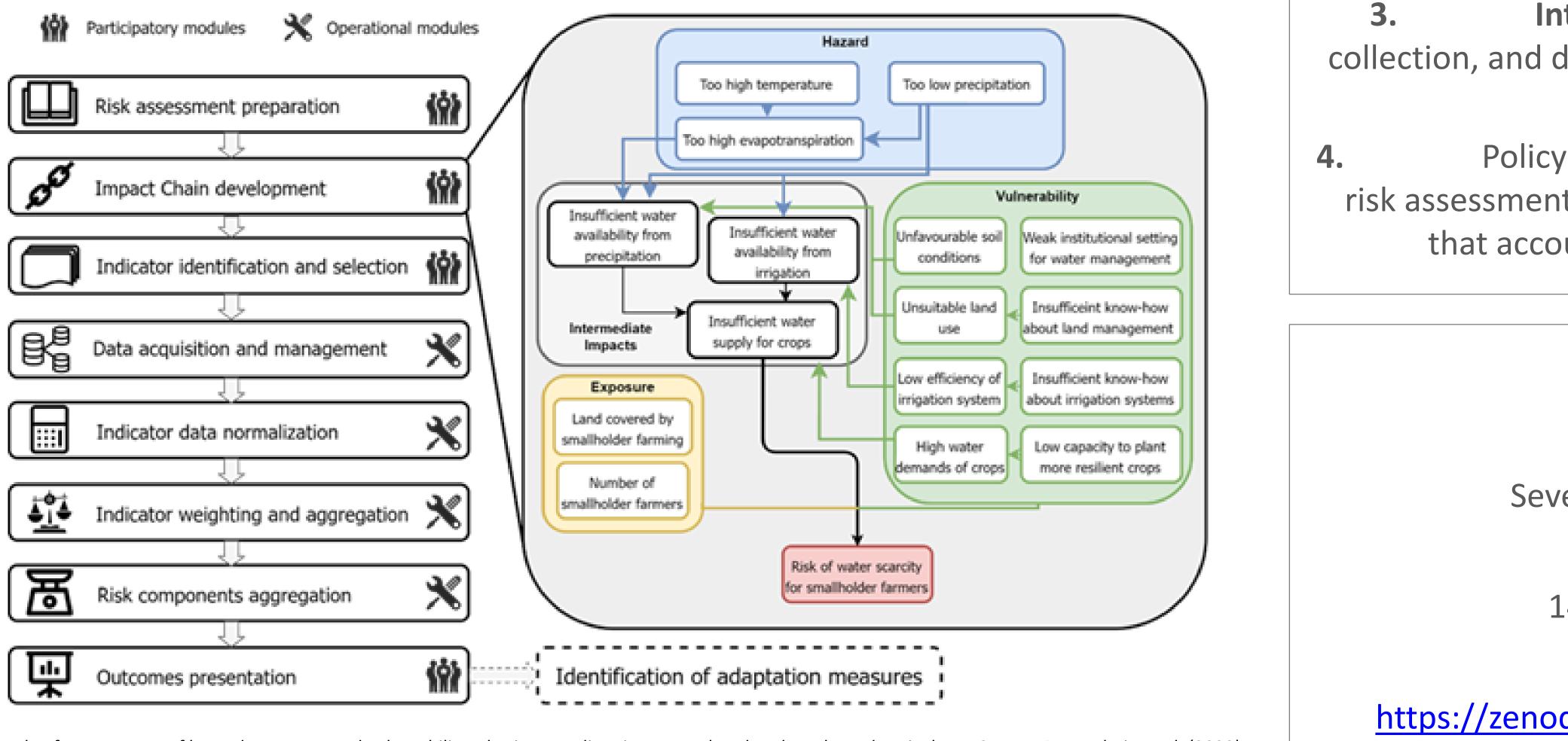
The project UNCHAIN is part of AXIS, an ERA-NET initiated by JPI Climate, and funded by FORMAS (SE), DLR/BMBF (D), AEI (ES) and ANR (FR) with co-funding by the European Union (Grant No. 776608). For more info contact: Carlo Aall, caa@vestforsk.no, www.unchain.no



The UNCHAIN project in brief

The project "Unpacking climate Impact Chains - a new generation of climate change risk assessments" (UNCHAIN) overall objective was to improve climate change risk assessment frameworks aimed at informed decision-making and climate change adaptation action. The research approach was based on the recent concepts of Impact Chain and co-production of knowledge.

IC-based CRVA: Modular structure



Example of components of hazard, exposure and vulnerability, plus intermediate impacts related to drought and agriculture. Source: Petutschnig et al. (2023)

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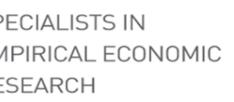
Attoh, E. M. N. A. N., de Bruin, K., Goosen, H., van Veldhoven, F., & Ludwig, F. (2022). Making physical climate risk assessments relevant to the financial sector – Lessons learned from real estate cases in the Netherlands. Climate Risk Management, 37, 100447. doi.org/10.1016/j.crm.2022.100447 Attoh, E. M. N. A. N., Goosen, H., van Selm, M., Boon, E., & Ludwig, F. (2022). Climate services for the railway sector: A synthesis of adaptation information needs in Europe. Frontiers in Climate. doi.org/10.3389/fclim.2022.968298 Attoh, E. M.N.A.N. AKarianne de Bruin, Hasse Goosen, Felix van Veldhoven, Fulco Ludwig (2022): Making physical climate risk assessments relevant to the financial sector – Lessons learned from real estate cases in the Netherlands, Climate Risk Management, Volume 37, 2022, 100447, doi.org/10.1016/j.crm.2022.100447 Englund, M., Vieira Passos, M., André, K., Gerger Swartling, Å., Segnestam, L., & Barquet, K. (2023). Constructing a social vulnerability index for flooding: Insights from a municipality in Sweden. Frontiers in Climate, 5. doi.org/10.3389/fclim.2023.1038883 Gobert, J., & Rudolf, F. (2023). Rhine low water crisis: From individual adaptation possibilities to strategical pathways. *Frontiers in Climate*, 4. doi.org/10.3389/fclim.2022.1045466 Harris, K., Lager, F., Jansen, M. K., & Benzie, M. (2022). Rising to a New Challenge: A Protocol for Case-Study Research on Transboundary Climate Risk. Weather, Climate, and Society, 14(3), 755–768. doi.org/10.1175/WCAS-D-21-0022.1 Lückerath, D., Rome, E., & Milde, K. (2023). Using impact chains for assessing local climate risk—A case study on impacts of extended periods of fluvial low waters and drought on a metropolitan region. Frontiers in Climate, 5. doi.org/10.3389/fclim.2023.1037117 Melo-Aguilar, C., Agulles, M., & Jordà, G. (2022). Introducing uncertainties in composite indicators. The case of the Impact Chain risk assessment framework. Frontiers in Climate, 4. doi.org/10.3389/fclim.2022.1019888 Menk, L., Terzi, S., Zebisch, M., Rome, E., Lückerath, D., Milde, K., Klienberger, S. (2022): Climate Change risk assessments, Weather, Climate, and Society, Volume 14: Issue 2: 619-636, doi.org/10.1175/WCAS-D-21-0014.1 Petutschnig, L., Rome, E., Lückerath, D., Milde, K., Aall, C., Gerger Swartling, Å., Englund, M., André, K., Meyer, M., Reuschel, S., ... Melo-Aguilar, C. (2023). Research advancements for Impact Chain based Climate Risk and Vulnerability Assessments. *Frontiers in Climate*, 5. doi.org/10.3389/fclim.2023.1095631

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Policymakers can make adaptation '**smarter**' by using the **Impact Chain** approach to analyse both conventional **local** and the lesser wellknown **transboundary** climate risks.

Policymakers should embrace **uncertainties** by applying a **reflect**then-act rather than the predict-then-act approach and by including socioeconomic scenarios to account for alternative developments; and by ensuring transparency in communications.

International actors can invest in method innovation, data collection, and decision-support tools to identify and assess transboundary climate risks.

Policymakers should engage stakeholders throughout the climate risk assessment process, to co-develop climate information and solutions that account for social vulnerability and equitable adaptation.

Project outputs

Three scientific reports

Several project notes (a minimum of one per case)

A policy note

14 published and 6 submitted journal articles

www.unchain.no

https://zenodo.org/communities/unchain_project/?page=1&size=20