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An international perspective on comprehensive climate risk management: experiences from Peru, India and Austria

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Climate-related sudden-onset events (e.g., floods, cyclones) and slow-onset processes (e.g., sea level rise and heat waves) pose a major risk to communities all over the world. With intensifying climate change in combination with unequal socioeconomic development, climate-related risks are expected to escalate in the future, potentially leading to critical losses and damages. This calls for efficient and achievable risk management strategies. Climate Risk Management (CRM) is a leading approach to identify, assess and reduce risks, through an integration of Disaster Risk Reduction, Climate Change Adaptation, and sustainable development. CRM aims at comprehensively managing risks and increasing resilience and adaptive capacity. To date, several conceptual CRM frameworks have been developed, which have, however, rarely been applied to real-world cases.

Based on this conceptual literature, we further develop a comprehensive CRM framework, comprising both the risk assessment as well as the implementation and monitoring domains of CRM, and test it on three real-world risk cases in Peru, India and Austria. The cases have distinct spatial scales, from local level in Peru, to district level in India, to nationwide in Austria. The risks covered in these cases are linked to different hazards, ranging from glacier lake outburst floods (Peru), sea level rise, salinization and cyclones (India), to riverine flooding and agricultural droughts (Austria).

The aim of this complementary case study approach is to validate the overall structure and individual steps of the CRM framework against actual risk management practices in the three case studies. Based on the specific results and common insights from the three cases, we are able to (1) evaluate the applicability of the proposed conceptual CRM framework in real world circumstances, (2) present evidence on the extent to which comprehensive management of climate-related risks has been achieved in the three cases, and (3) synthesize policy recommendations towards an achievable comprehensive CRM in practice, acknowledging specific local contexts and characteristics.

