

Mountain Research and Development (MRD): Call for Papers, MRD 42.2

Addressing challenges of hazards, risks, and disaster management in mountain regions

Deadline: Submission of full papers by **1 September 2021**

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HAZARDS and RISKS: Mountain ecosystems are among the most sensitive to global warming, increasing climate variability, related hazardous processes, and resulting impacts and future risks. Already visible effects include extensive glacier melting across mountain regions worldwide—intrinsically interconnected with increasing risks of glacial lake outburst floods (GLOFs)—as well as changes in precipitation patterns and hydrologic cycling, which in turn entail changes in ice, snow, and vegetation cover. These changes may eventually lead to events with disastrous consequences, such as flash floods, landslides, or wildfires. The scope of natural hazards in mountains ranges from local-scale events, including avalanches, debris flows, or rockfalls, to large-scale events such as earthquakes, volcanic eruptions, cyclones, and droughts. Most recent examples are the disastrous Chamoli district mass movement event that struck a prominent Himalayan valley in the northern Indian State of Uttarakhand on Sunday, 7 February 2021, or the extended and persisting drought in the East African Mountains that is causing a complex humanitarian emergency. A strong commitment to disaster risk reduction and its integration into sustainable development and climate change adaptation strategies are pivotal to reducing mountain communities' vulnerability and exposure to these hazards. This is all the more significant in light of the projections made by the United Nations Intergovernmental Panel on Climate Change in its Special Report on the Ocean and Cryosphere in a Changing Climate¹, which indicate an overall increase in risks of hazards such as unstable slopes, landslides, avalanches, and floods, along with growing social inequality and marginalization that may further exacerbate these risks. The report concluded, with high confidence, that these anticipated changes in mountain hazards under the influence of climate change will adversely affect the exposure and vulnerability of individuals, communities, and mountain infrastructure. It is therefore important to further analyze the reciprocal interlinkages between disaster risks and sustainable development in mountains, including their implications for coping strategies and disaster risk management in the context of climate change and socioeconomic inequalities.

DISASTER MANAGEMENT: Relief operations in remote mountain environments are often severely hampered by destroyed infrastructures and by shortcomings concerning key elements of emergency response, such as logistics, communication, first response activities, and humanitarian aid to support dispersed and often isolated communities. Adaptation strategies need to adopt an integrative continuum approach that spans the entire disaster risk cycle from prevention to recovery and includes appropriate reconstruction and rehabilitation processes. Possible entry points for factoring climate change into disaster risk reduction (DRR) and risk management include hazard and vulnerability analysis and spatial planning coupled with risk monitoring and improved people-centered early warning systems. All these activities should be in line with implementation of the 2030 Agenda for Sustainable Development², the Sendai Framework for Disaster Risk Reduction³, the Paris Climate Agreement⁴, and the Agenda for Humanity⁵, finally leading to more appropriately tailored solutions to reduce disaster risks in mountain areas.

FUTURE CHALLENGES: COVID-19 has made it even more evident that systemic and multihazard perspectives must be part of any DRR effort. This is particularly relevant in mountain areas, where hazard events often cause severe loss and damage, and where inaccessibility of the terrain, difficulties in communication, and complex power and governance structures make it more difficult than in the surrounding lowlands to develop appropriate and sustainable coping strategies. The need for a systemic and mountain-specific perspective also pertains to emergency preparedness and response, cascading risks, early warning, early action approaches, and transboundary disaster risk governance. Interactions between hazards, vulnerability, and exposure configure emerging risks and pose significant challenges for policymaking in mountains. At the same time, the rapid strengthening of national ownership, enhanced regional capacities, and a strong movement towards decentralization and localization across the humanitarian–development divide will shape the future of international assistance and development aid, requiring the international community to adapt.

MAIN GOALS OF THIS FOCUS ISSUE OF MRD:

- Contribute to a better understanding of the dynamic and complex interconnections between hazards, underlying vulnerabilities, disaster management, and resulting impacts and risks in mountains.
- Present insights on how to improve disaster management across the entire cycle from prevention to recovery.

We consider relevant both urban and rural settings, as well as the interlinkages of disaster management with diverse dimensions of development, adaptation, and global change. With this integrative approach, we aim to help bridge the persistent gaps between the climate change, disaster risk, emergency response, and sustainable development communities of practice. MRD invites inter- and transdisciplinary contributions by scientists and development experts for its 3 peer-reviewed sections:

MountainDevelopment (transformation knowledge): Papers should present and systematically evaluate practical experiences of addressing the multiple interactions between natural and human-induced hazards, improving DRR, and developing and implementing effective disaster management strategies in mountain regions that promote transformational resilience in mountain social–ecological systems and benefit rural and urban communities. These experiences may concern the implementation of one or several innovative policies, development approaches and interventions, or community-led innovations.

MountainResearch (systems knowledge): Papers should present original research with empirical findings on hazards, DRR, and effective emergency preparedness and response in mountain regions, also including highland–lowland interactions. Contributions should discuss well-substantiated implications of observed and expected changes for sustainable mountain development.

MountainAgenda (target knowledge): Papers should provide well-referenced, up-to-date, and systematic reviews of the state of the art on hazards, risks, and disaster management and response in mountains, with reference to the topics covered above. Papers should conclude with agendas for future research, development interventions, or policy. We welcome comparative studies of policies addressing systemic risks and disaster management with a high impact on these sensitive social–ecological systems, and of the implications these policies have for rural development in mountains. Reviews of work on the integration of transformational resilience building in mountains into national or regional policies and strategies are also highly welcome.

Submission details

- **Submit your full paper by 1 September 2021** using MRD's online submission platform.
- A short **notice of intent** may be submitted to mrd-journal@cde.unibe.ch: we will provide advice if needed or requested.
- The issue is scheduled for publication in **May 2022**.
- Guidelines for authors are available at <https://www.mrd-journal.org/for-authors/>. See **NEW guidelines** for MountainDevelopment papers: <https://www.mrd-journal.org/for-authors/mountaindevelopment>.
- For more information about the journal, see <http://www.mrd-journal.org>.
- As a not-for-profit open access journal, MRD charges authors a publication fee to offset part of its production costs: <https://www.mrd-journal.org/about/publication-fee-policy/>.

Joerg Szarzynski, Marcus Nüsser, Stefan Schneiderbauer, and Irasema Alcántara-Ayala, guest editors, in collaboration with MRD's Editorial Office, March 2021

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- ¹ **IPCC [Intergovernmental Panel on Climate Change]**. 2019. *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate*. Edited by H-O Pörtner, DC Roberts, V Masson-Delmotte, P Zhai, M Tignor, E Poloczanska, K Mintenbeck, A Alegría, M Nicolai, A Okem, J Petzold, B Rama, NM Weyer. In press. <https://www.ipcc.ch/srocc/>.
- ² **UN [United Nations]**. 2015. *Transforming Our World: The 2030 Agenda for Sustainable Development*. A/RES/70/1. [https://sustainabledevelopment.un.org/content/documents/21252030 Agenda for Sustainable Development web.pdf](https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf).
- ³ **UNISDR [United Nations Office for Disaster Risk Reduction]**. 2015. *Sendai Framework for Disaster Risk Reduction 2015-2030*. Geneva, Switzerland: http://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf.
- ⁴ **UN [United Nations]**. 2015. Paris Agreement. https://unfccc.int/sites/default/files/english_paris_agreement.pdf.
- ⁵ **UN [United Nations]**. 2016. *Agenda for Humanity: Annex to the Report of the Secretary-General for the World Humanitarian Summit*. <https://agendaforhumanity.org/sites/default/files/AgendaforHumanity.pdf>.