Coalition for Disaster Resilient Infrastructure

Shaping Resilience in Mountains

The Case for Disaster Resilient Infrastructure

Call for Collective Action on DRI in Mountains

> Mountain communities face disproportionate exposure to climate-related hazards, yet their infrastructure—roads, bridges, energy systems, water networks, and communications—remains fragile, poorly maintained, and underprepared for the cascading and compounding risks of climate change.

The complex terrain, harsh climatic conditions, and remoteness of these areas amplify the consequences of infrastructure failure, making resilience not optional, but a necessity. Infrastructure failure is not just a technical issue—it is a societal crisis.

> Building disaster resilient infrastructure in mountains requires an integrated, coordinated, multi-level approach.

Stakeholders across sectors must collaborate to ensure that the planning, development, operations, and monitoring of infrastructure reflect mountain-specific challenges, account for cascading hazards, and maintain critical services during crises.

Multi-hazard risk-informed assessments capture the interlinked and cascading nature of geophysical and climate-induced hazards. Standards and codes for infrastructure must be updated and mountain-specific to reflect local geographies, environmental conditions, and climate projections. Early warning systems, IoT monitoring, and digital connectivity must be deployed in combination with community-centered response strategies.

> Indigenous and local knowledge combined with ecosystem-based approaches, are vital tools for resilient infrastructure design, implementation, and monitoring.

Integrating these time-tested approaches with engineering and technological solutions not only strengthens physical infrastructure but also reinforces social cohesion, local governance, and community-led adaptation. Communities themselves are indispensable partners in these efforts. Their knowledge is crucial for understanding hazard dynamics, identifying risk-prone areas, informing the design of context-appropriate infrastructure, and ensuring maintenance practices are sustainable and culturally relevant.

> The adaptation finance gap is acute in mountain regions, and delays in allocating resources translate directly into vulnerability and loss.

Infrastructure resilience in mountains requires substantial public and private investment, innovative financing mechanisms, and sustained funding for operations and maintenance. Strategic investments in resilient infrastructure deliver multiple dividends: they protect lives, maintain essential services, preserve ecosystems, and enhance the economic viability of mountain communities. Governments, development partners, investors, and philanthropic organizations must prioritize and coordinate funding to ensure these investments are timely, sustained, and equitable.

> By committing to systemic, multi-hazard risk-informed, and community-centered approaches to disaster resilient infrastructure, we can safeguard lives, livelihoods, and ecosystems — and ensure that mountain communities are not left behind.

Every stakeholder has a role to play, and mountain regions cannot afford inaction. The choices we make today will determine whether mountain infrastructure is a source of vulnerability or a foundation for resilient, thriving communities for generations.