

# ENGAGING STAKEHOLDERS IN CO-CREATING KNOWLEDGE FOR MULTI-RISK ADAPTATION STRATEGIES



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## BACKGROUND

### CHALLENGES IN DEALING WITH MULTI-RISKS IN MOUNTAIN AREAS

Mountain communities are facing:

- Single-hazards (e.g. floods, debris flow, slide, rockfall),
- Multi-hazards, incl. cascading event (e.g. heavy precipitation triggering debris flows that cause river blockage followed by outburst floods), or “all hazards at a place”<sup>1</sup>,
- Changing levels of exposure and vulnerability<sup>2</sup>,
- Uncertainty in climate change<sup>3</sup>.

To foster resilient mountain communities equipped with adaptive capacities and comprehensive knowledge on hazard and risks, a robust **transdisciplinary approach** is essential<sup>4,5,6</sup>:

- to bridge the gap between natural and social sciences,
- to strengthen partnerships among stakeholders and academia,
- to co-create new knowledge,
- to ensure effective disaster and climate risk management.

## METHODS



Fig. 1: One of the Rich Picture drawings, titled “Protecting our living space – shaping the future”, Kaunertal Workshop. Photo: Annemarie Polderman

### CAUTION PROJECT – TRANSDISCIPLINARY APPROACH

- Focus on **interactions** between landslide hazards, climate change and societal dimensions.
- **Interdisciplinary project** team including geology, climatology, exposure & vulnerability studies, and DRR.
- Study areas in **Kaunertal** and **Sellrain valleys** (Tyrol, AT).
- Involvement of diverse regional and local **stakeholders**.
- **Co-design** a local **future vision** of climate change and landslide adaptation and **co-develop** practice-oriented risk governance frameworks.
- So far two **workshops** with 35 stakeholders using “Rich Picture” and “Problem Tree” methods (see Fig. 1).
- Planned co-created results: options for **context-sensitive** and **place-based** solutions<sup>7,8</sup>.

## RESULTS

### OPPORTUNITIES AND CHALLENGES – FIRST LESSONS LEARNED

Transdisciplinary approach:

- Allows addressing **complex real-life situations**.
- Suitable for collecting different types of knowledges.
- Requires **flexibility** regarding project goals and thus a flexible project team due to e.g. competing interests.
- Requires setting **realistic expectations** of what can be achieved during and after project.

### CO-CREATING KNOWLEDGE: TOWARDS MULTI-RISK ADAPTATION STRATEGIES

- Stakeholders interested in multi-risk management that ensures **future livability** of their alpine living environments.
- Preliminary ideas for multi-risk adaptation strategies:
  - Awareness raising at all levels
  - Foster exchange between academia and practice
  - Access to useable data for communities
  - Hazard monitoring and early warning system
  - Strengthen capacity of small municipalities to act
  - Improve governance to address challenges

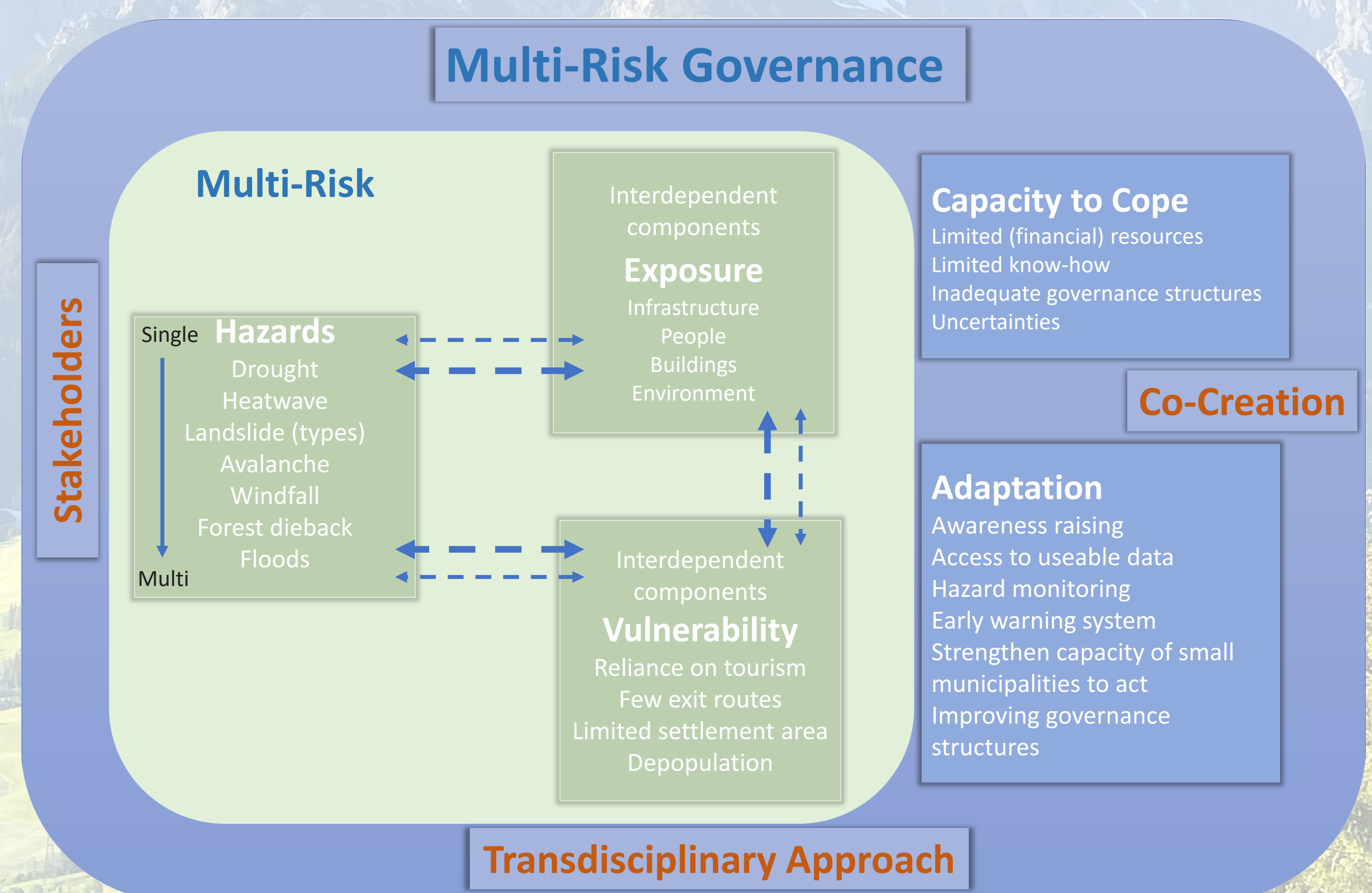


Fig. 2: Preliminary Multi-Risk Governance Framework based on Results Stakeholder Workshops

## OUTCOMES AND NEXT STEPS

- **Communities are aware** of interrelationships between (multi-) hazards and changing vulnerability and exposure, exacerbated by uncertain conditions of climate change.
- Communities **unsure of their options for action**.
- Current **governance structure insufficient** to address current and future challenges.
- Next, **co-develop** concepts / tools for multi-risk adaptation.
- **Expand and improve** multi-risk governance framework.

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