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UNDERSTANDING RISK
GLOBAL FORUM 2024

TRADITION • INNOVATION • RESILIENCE

Trapped in mountain valleys: an event analysis of the 2022 monsoon floods in the Swat Valley, Pakistan

Speakers:

Christoph Lehmann, Lehmann Hydrologie - Wasserbau

Muhammad Shafique, University of Peshawar

Naraya Carrasco, GFDRR

Qaisar Imran, NDMA Pakistan

Matthias Bachmann, SDC



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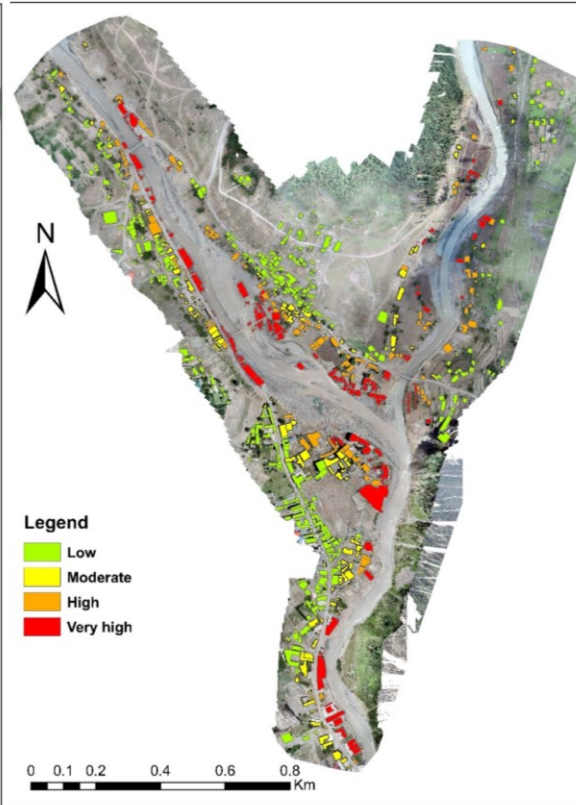
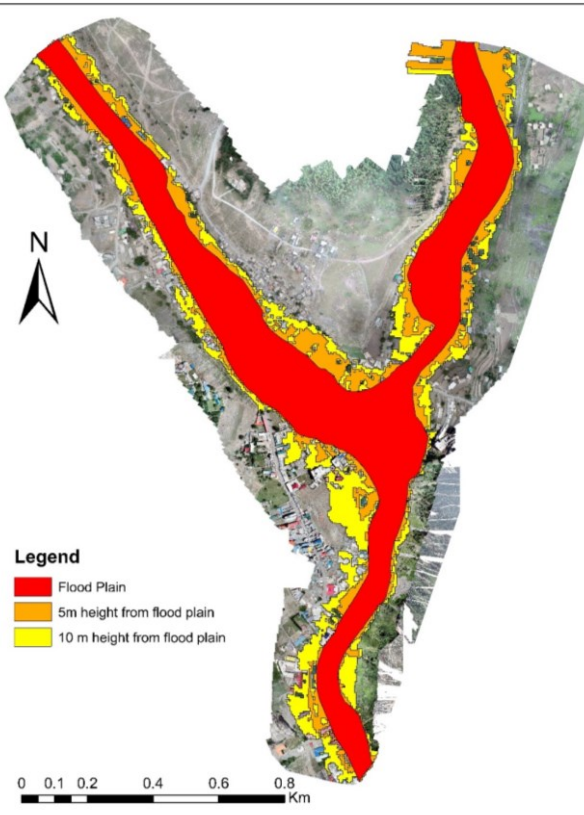
Flood Hazard in Swat, Reasons and Way Forward

- Topographic and climatic settings lead to historic floods in Swat
- Due to climate change, the floods frequency has increased (2024 situation, First winter snow in Feb, unprecedented rainfall in April and heat wave in May and June)
- Changing nature of the hazards from floods to debris flow and landslides
- Considering the climatic projections, landuse change patterns and population increase, the risk is increasing



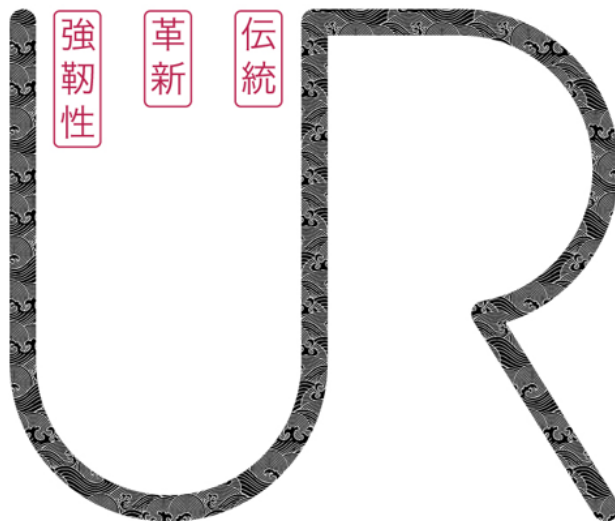
Human Induced vulnerabilities and risk

- Deforestation
- Encroachment into the floodplain
- Poor structure design



Way forward

- **Installations of multi-sensors to facilities for comprehensive floods/debris flow modeling and support early warning**
- **Multi-disciplinary, multi-stakeholder and dynamic Multi-Hazard vulnerability and risk assessment (MHVRA) and policy guidelines for the risk reduction**
- **Nature-based solutions for disaster management and climate resilience**
- **Public awareness and involvement in the disaster management activities**



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Thank you !

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