

# UIBN-Group 5.

## Hazards and risks:

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# UIB HAZARDS AGENDA (2014)

- Identification of hotspots, risk mapping, land use
- Early warning system and monitoring systems combining scientific and community knowledge
- Structural measures to control erosion and sedimentation

# Types of Hazards UIB

## Geological Hazards

- Earthquakes
- Slope instability

## Hydro Meteorological Hazards

- Snow storms
- Flash and River Floods
- Debris and Mud Flow
- Avalanches
- GLOFS
- Droughts
- Glacial retreat/advance

## Hybrid

- Landslides
- Landslide Dam Outburst Floods (LDOFs)
- River Bank erosion

# Stake Holders

## Research Groups

### Landslides & Debris Flows

- Foreign Research Groups (Ken Hewitt-Canada; Jack Shroder-Lewis Owen-USA)
- Geological Survey of Pakistan (on their own but also with the German Geological Survey).
- EvK2CNR with/without collaboration with KIU.
- Universities in Pakistan (NCEG-Peshawar; KIU; COMSAT)
- FOCUS Humanitarian Assistance Pakistan

### Floods/GLOF

- Met Office, WAPDA

### Disaster Management

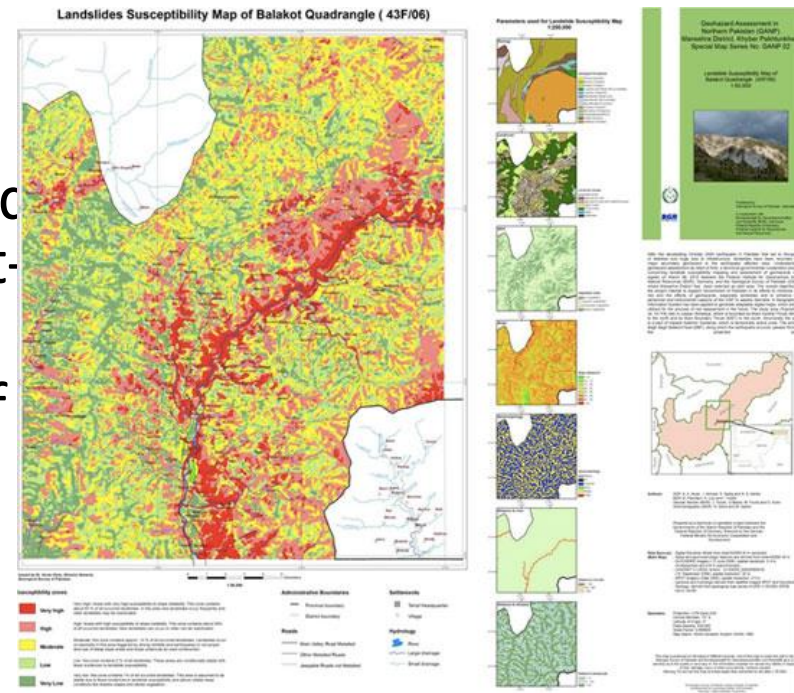
- GB Government- disaster management aspects
- FOCUS, AKRSP and other NGOs- Awareness, Community Preparedness
- Local Village Organizations-Preparedness and other disaster management aspects.
- KIU-Volunteers Program in rescue and relief.

# Current Projects

- **KIU-NCEG** landslide hazard assessment for Bagrot and Nagar valleys
- **UNDP-Ministry of Climate Change:** Reducing Risks and Vulnerabilities from Glacial Lake Outburst Floods in Northern Areas (Bagrot-GB; Bindo Gol-Chitral) May 2011-2015 ( 2 AWS)
- **EvK2CNR** landslide susceptibility mapping in Bagrot and Shigar valleys.

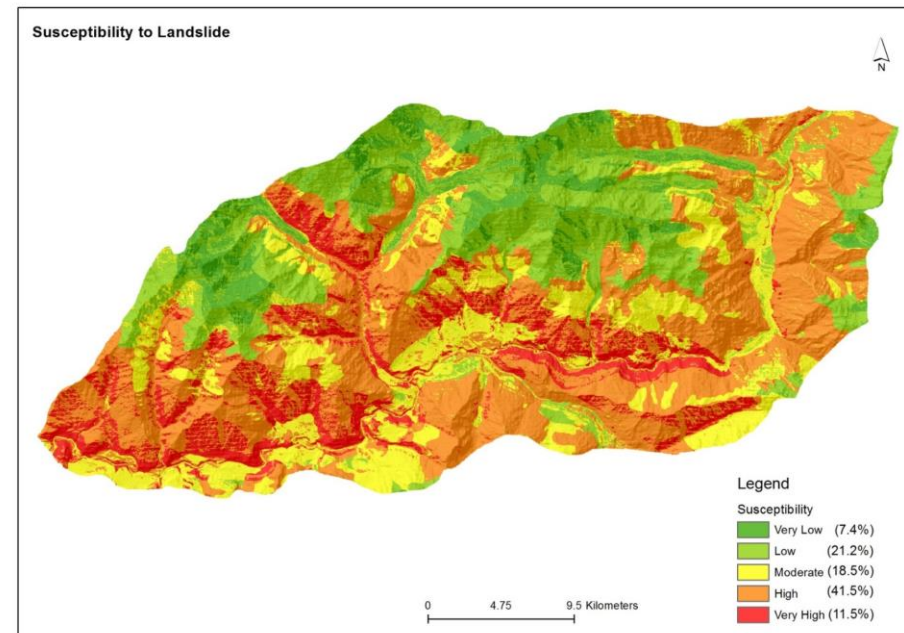
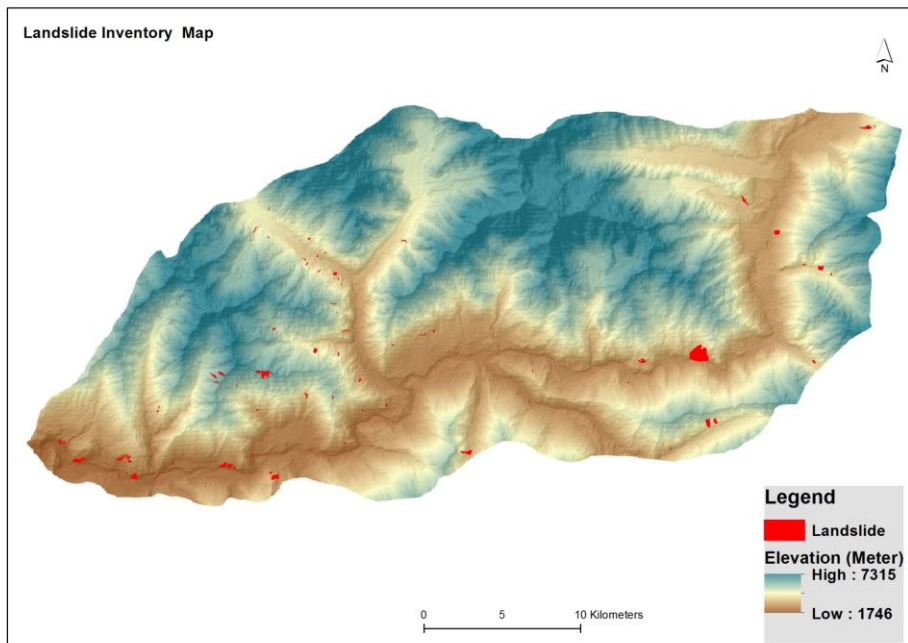
# Geological Survey, Pakistan

- Study Of Hazardous Areas of Hunza-Nagar District Gilgit Baltistan
- Causative Mechanisms of Terrain Movement In Hunza Valley Gilgit Baltistan
- Geological upheavels In Kharmong Valley District Skardu, Gilgit-Baltistan
- Post disaster threats In Attabad and adjacent areas, Hunza Valley, Gilgit-Baltistan
- Geotechnical Causes For Failure Of Karli Dam, Hattian-Bala, Muzaffarabad, Azad Jammu And Kashmir



# National Centre of Excellence in Geology, Peshawar

- Landslide susceptibility modeling using geospatial technology, a case study from Hunza-Nagar, Gilgit Baltistan





# NCEG-Peshawar & FOCUS Humanitarian Assistance

- GPS, GPR, Total Station, Geotechnical studies
  1. Herath Landslide, Chitral
  2. Mayun landslide, Hunza





# FOCUS-ICIMOD

- Focus and ICIMOD has initiated a community based hazard monitoring of Gulkhin glacier, Hunza.



# Framework

- Macro-level hazard assessment using satellite images and GIS technologies.
- Ground verification for identification of hot spots.
- Multihazard approach.
- Linking hazard, vulnerabilities and calculating risk.
- Providing a scientific base for disaster management.

# TARGETS

- Systematic mapping of catchments/basins and derivation of morphometric data (GIS/RS)
- Aspect ratio maps delineating areas prone to slope instability and hence landslides, avalanches (GIS/RS)
- Assessment of tributary streams for flood vs debris floods and debris flow hazard potential.
- Inventories for existing glacial lakes, landslide dams, landslides, debris flows, floods, avalanches and collection of historical data
- Flood Hazard Zoning and mitigation measures.
- Landslide susceptibility mapping.
- Multi-scale, multi-hazard risk mapping for the UIB.

# Role of UIB Network

- Guidelines how to materialize networking between all stake holders and achieving clearly laid out objective.
- Capacity building in hazard assessment & DRR.
- Incentives through research grants encouraging cross-institution collaboration.
- Translation of science into action involving local governance and communities.