

Geo-information and Disaster Risk Reduction in the Hindu Kush-Himalayan region

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The International Centre for Integrated Mountain Development (ICIMOD)

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- A regional mountain knowledge, learning and enabling centre devoted to sustainable mountain development
- **Information and Knowledge** are chief Commodities of the Centre

- www.icimod.org
- <http://geoportal.icimod.org>

The Hindu Kush-Himalayan Region

Extends over 3500 km from Afghanistan to Myanmar And Home to 200 million People



An intergovernmental and independent organisation with eight member states

Increased frequency and magnitude of natural disasters

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Floods



Flash Floods/GLOFS



Landslides



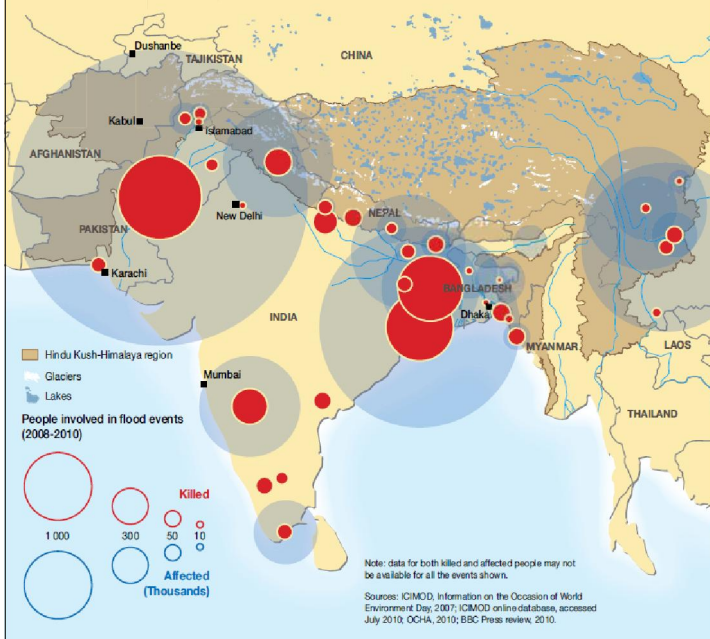
Earthquake



Recent flood events in the Hindu Kush-Himalaya region

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Increasing emphasis on geo-information

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Joint Board of Geospatial Information Societies United Nations Office for Outer Space Affairs

Geoinformation for Disaster and Risk Management Examples and Best Practices

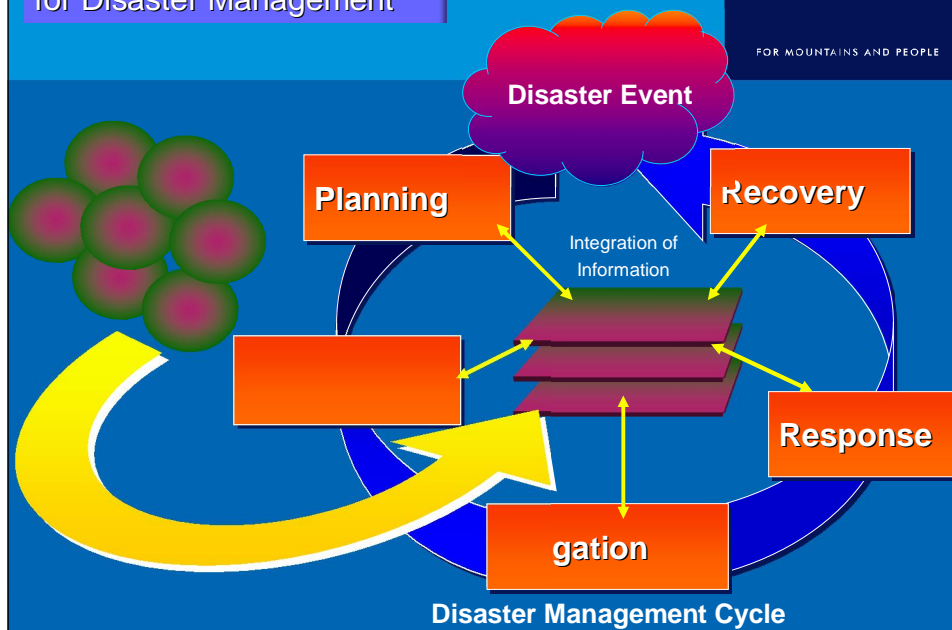


- Risk mapping and modeling
- Vulnerability analysis
- Early warning system
- Damage assessment
- Spatial analysis and planning
- Emergency response mapping

Space based Information for Disaster Management

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From Observation to societal benefits

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Near real time

Satellite



Tracking

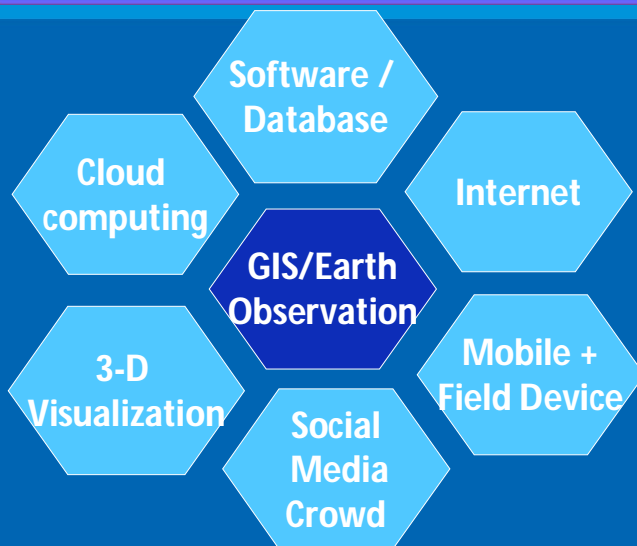
THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS



Convergence of technologies and innovations - Creating new opportunities for collaboration for DRR

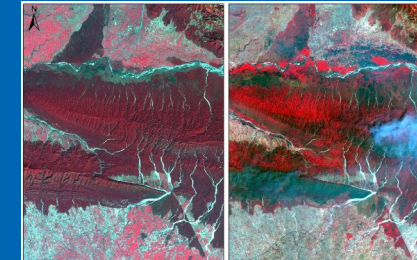
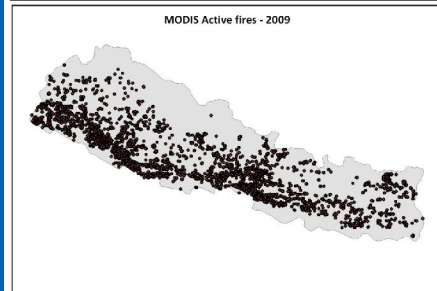
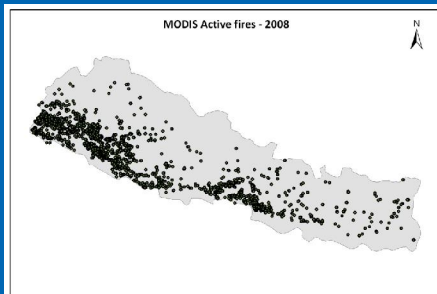
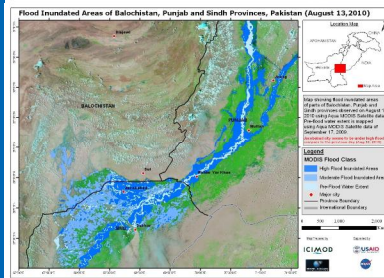
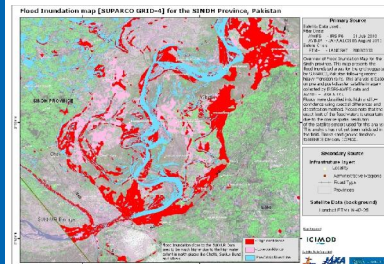
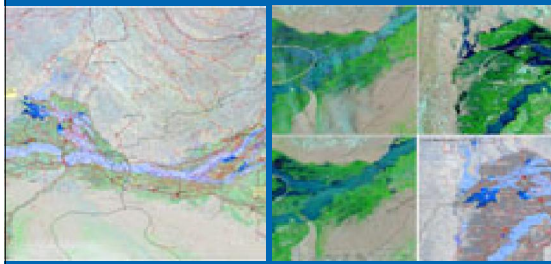
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- Redefining our work as to how we work and share information from local to global scales
- Breaking the traditional barriers – organization, professional domain and geographic borders
- Building communities and networks on DRR

- Rapid response Mapping efforts
- 39 flood maps and geodatabases were generated and supported to disaster networks in Pakistan and International organizations

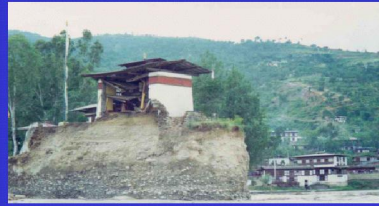


Glacial Lake Outburst Floods (GLOFs)

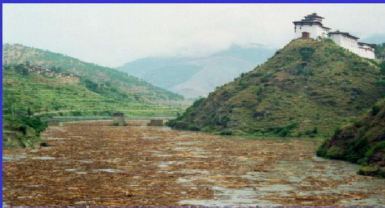
Impact of 1994 GLOF event from Luggye Tsho in Bhutan



Punakha Dzong was not built on island



This sacred temple was not built on island

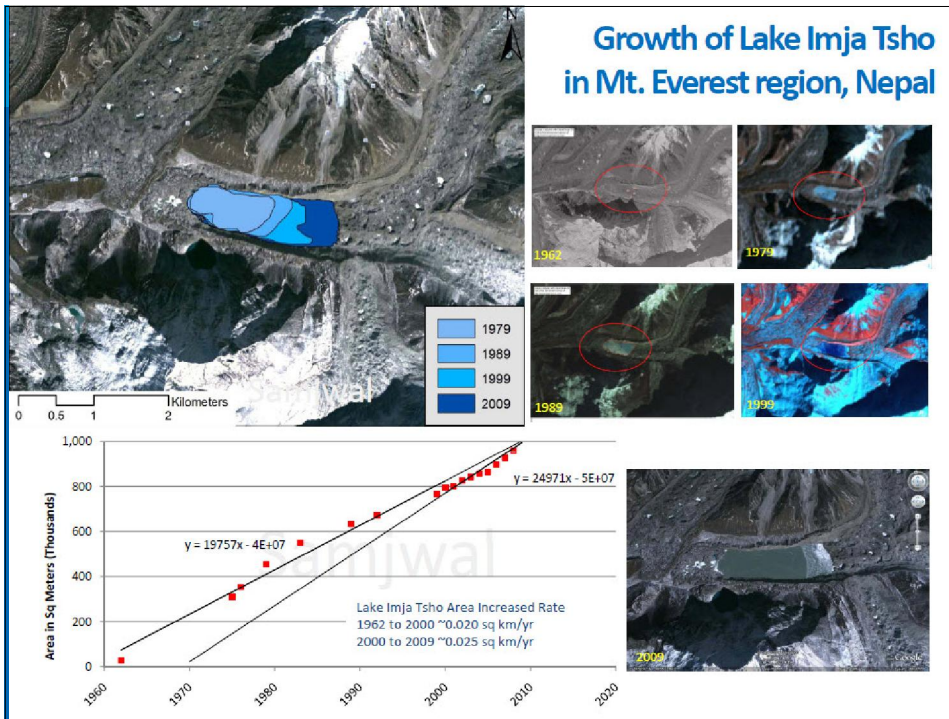


People do not transport logs this way in Pho Chu



Forest does not grow well in such river bed

Log often have trans-boundary implications



Monitoring of Imja Glacial lake

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nWi-Fi Mesh-network

nWeb Server

- ü Measurement
- ü Device Control

nSensors (up to 24ch)

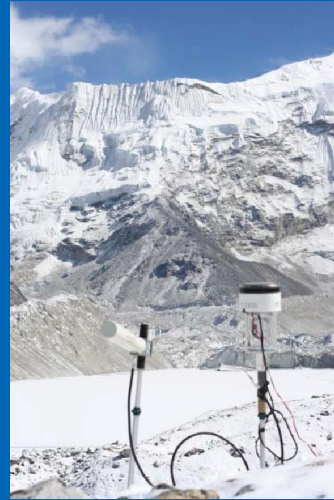
- ü Air temp.
- ü Humidity
- ü Solar Radiation, UV
- ü CO₂ concentration
- ü ••••

tolerate the cold weather

nCamera (0.3-8M Pixels)

nSolar-cell

nLED Lighting

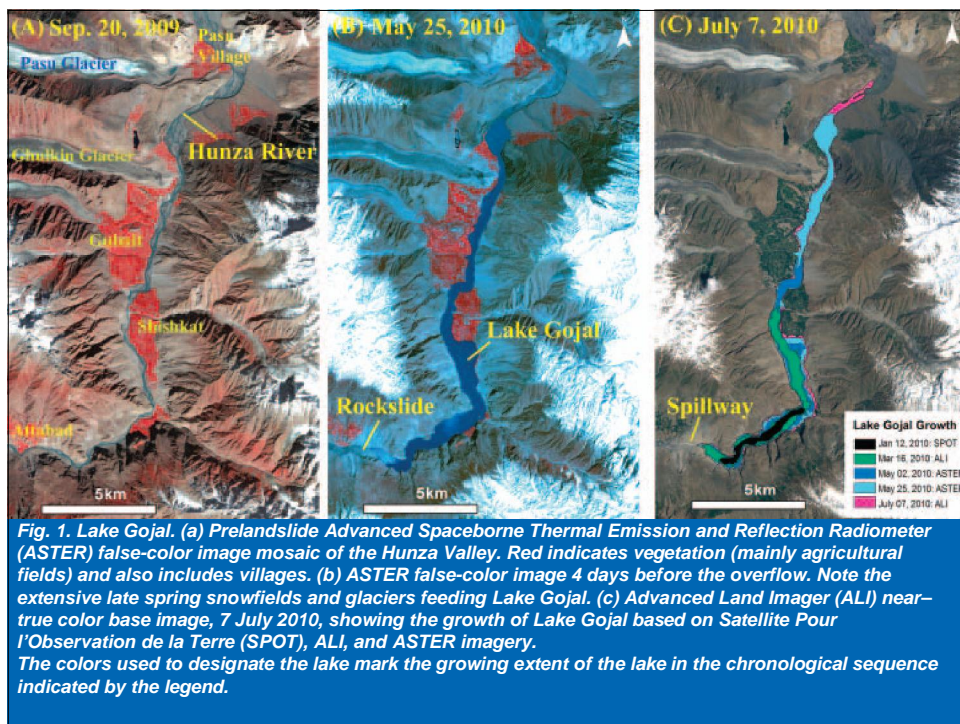


Simulation of Imja GLOF

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Satellite based Emergency Response System

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Extreme Crisis or disaster

- triggering process
- situation briefing

1 Mobilization

Collaboration and Coordination is a must!

Workflow for satellite based emergency mapping

- satellite tasking
- archive search
- auxiliary data

2 Data acquisition

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/云报告?reportId=5_7765



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