

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

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Deo Raj Gurung and Basanta Shrestha, MENRIS Division

International Centre for Integrated Mountain

Development

Kathmandu, Nepal

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



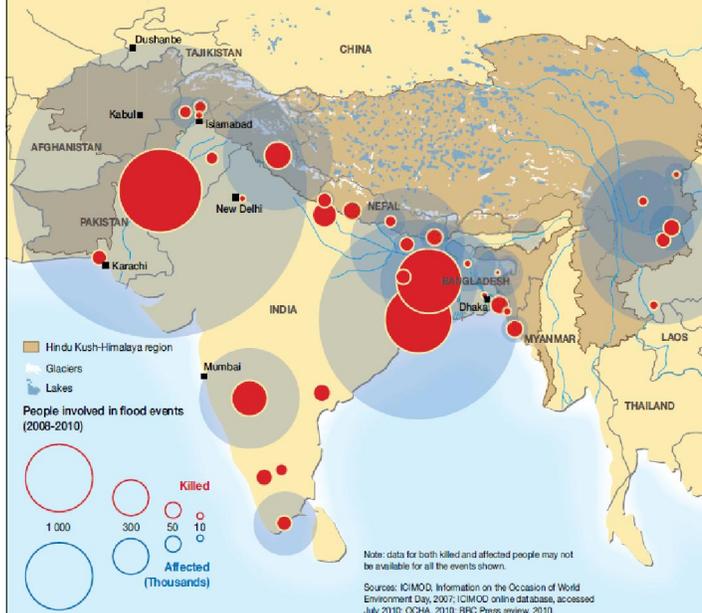
Earthquake



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



Rio+ 20

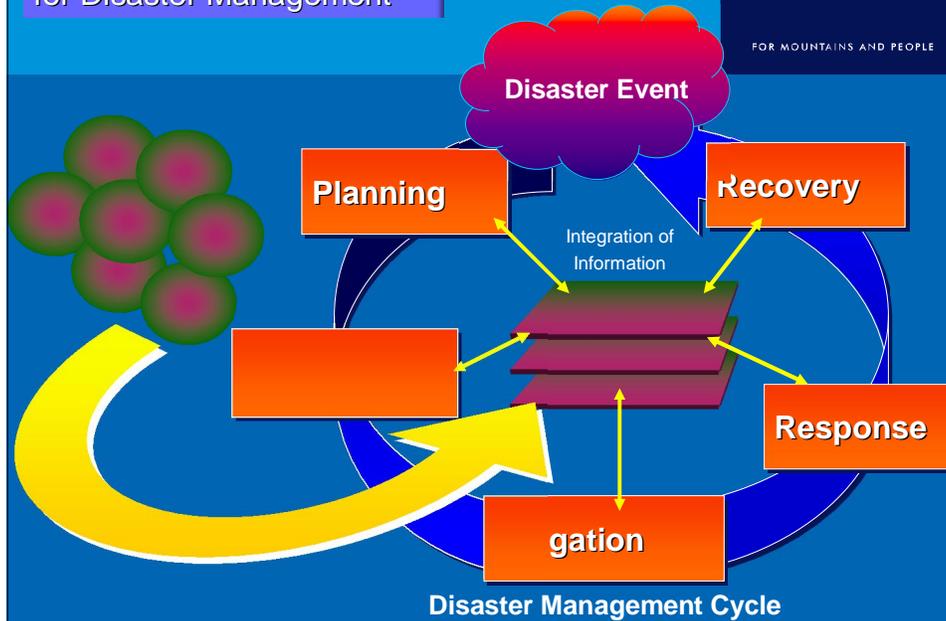
274. We recognize the importance of space-technology-based data, in situ monitoring and reliable geospatial information for sustainable development policymaking, programming and project operations. In this context, we note the relevance of global mapping and recognize the efforts in developing global environmental observing systems, including by the Eye on Earth Network and through the Global Earth Observation System of Systems. We recognize the need to support developing countries in their efforts to collect environmental data.

- 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

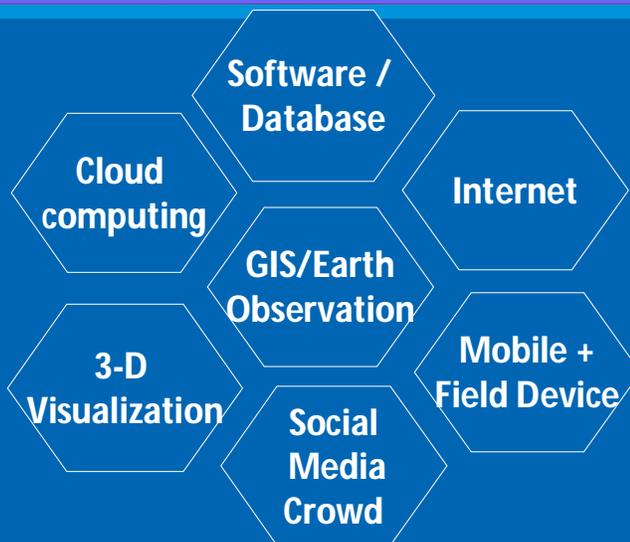
THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS



Convergence of technologies and innovations - Creating new opportunities for collaboration

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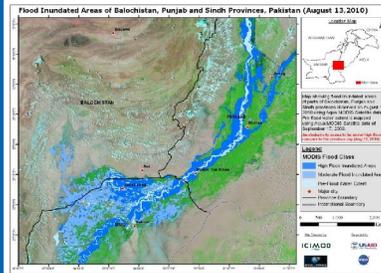
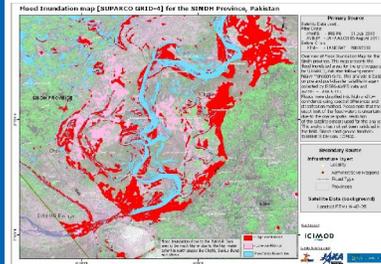
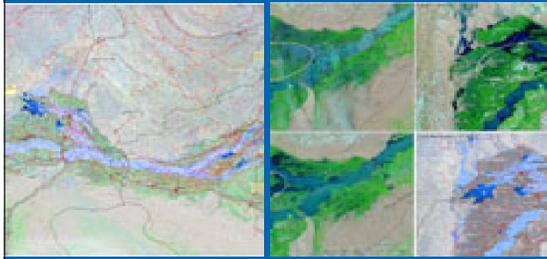


- Redefining our work as to how we work and share information from local to global scales
- Breaking the traditional barriers – organization, professional domain and geographic borders
- Building communities and networks on common issues

Pakistan Floods August 2008



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



Seti Flash Floods May 2012



Damage Assessment of Seti River Flash Flood of 5 May 2012
Between Kot Kase and Upalu Dip of Kaski District, Nepal



Damage Assessment of Seti River Flash Flood of 5 May 2012
Between Jimerbari and Tuse of Kaski District, Nepal



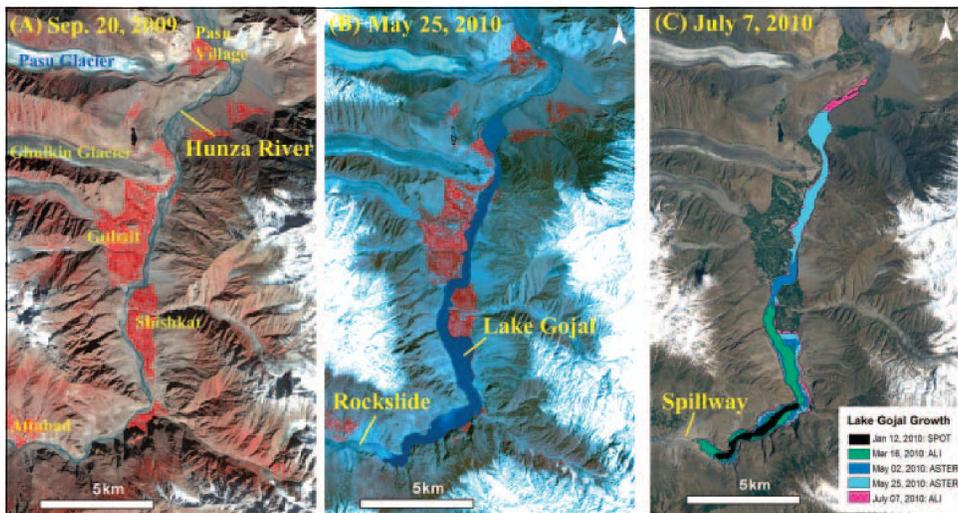
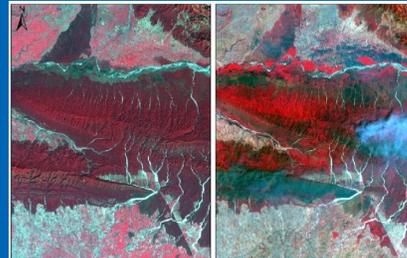
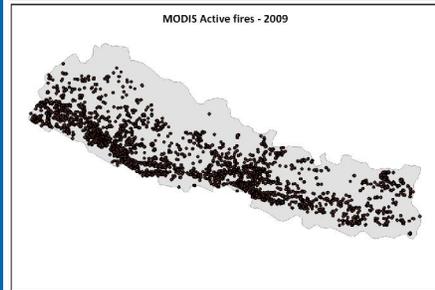
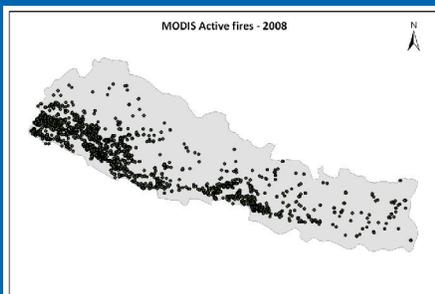


Fig. 1. Lake Gojal. (a) Pre-landslide Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) false-color image mosaic of the Hunza Valley. Red indicates vegetation (mainly agricultural fields) and also includes villages. (b) ASTER false-color image 4 days before the overflow. Note the extensive late spring snowfields and glaciers feeding Lake Gojal. (c) Advanced Land Imager (ALI) near-true color base image, 7 July 2010, showing the growth of Lake Gojal based on Satellite Pour l'Observation de la Terre (SPOT), ALI, and ASTER imagery. The colors used to designate the lake mark the growing extent of the lake in the chronological sequence indicated by the legend.

Forest Fires Detection and Monitoring

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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

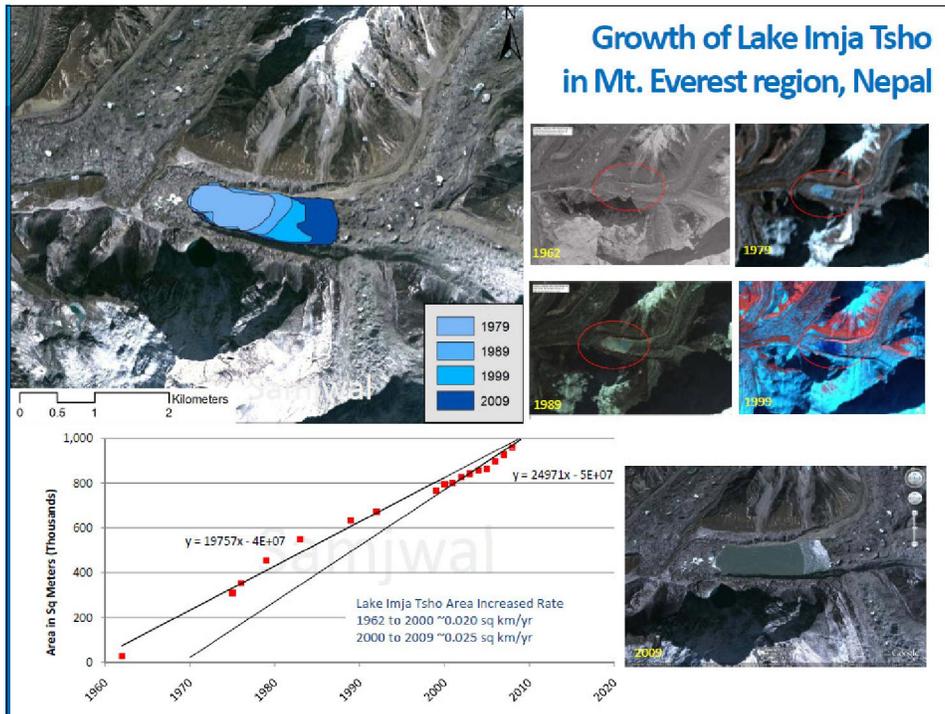


People do not transport logs this way in Pho Chu



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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预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_7507

