



Disaster RISK Management : Bhutanese Scenario

*Expert Group Meeting (EGM) on Geo-referenced
Information Systems for Disaster Risk
Management (Geo-DRM) and sustaining the
Community of Practice (COP), Bangkok, Thailand*

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Presentation Outline

- 1. Country Profile : Bhutan*
- 2. Background on Disaster Management Institution in Bhutan*
- 3. Disaster Risks in Bhutan*
- 4. GIS for Disaster Risk Management*
- 5. DRM Challenges in Bhutan*
- 6. Support role of ESCAP*
- 7. Conclusion*



- Small, mountainous, landlocked country in South Asia
- located in the eastern Himalayas, bordered by India and China
- **Government:** Constitutional Monarch
- **Development Philosophy:** Gross National Happiness
- **Size:** about 46,000 Sq. Km with 70% forest cover
- **Population:** about 0.7 Million
- **Capital City:** Thimphu
- **Altitude :** Varies from 150m to 7570m above MSL
- **National Language :** Dzongkha
- **Climate:** Four seasons (Spring, summer, Autumn & Winter)

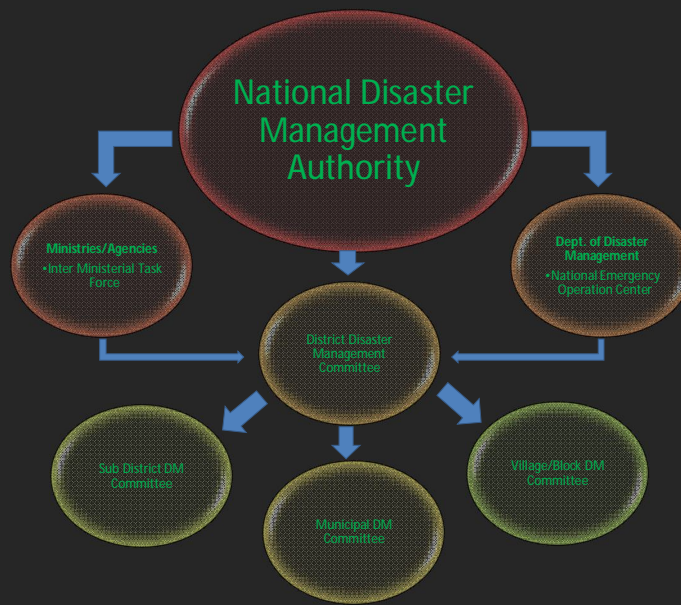
2. Background on Disaster Management Institution

- 2005 – establishment of DM Division, MoHCA
- 2006 – National Disaster Risk Management Framework adopted ; guiding policy for DM
- 2007 – Drafting of DM Bill
- 2008 – Dept. of Disaster Management, MoHCA
- 2013 (February) – DM Act enacted

Guiding Philosophy of DM Act, 2013

- Pre-planned vs Adhoc reactive approach
- Multi-Agencies vs Single Agency approach
- Decentralized vs Centralized approach

2.1 Disaster Management Institution organogram (DM Act, 2013)



3. Disaster Risks in Bhutan

Earthquake

September 21, 2009 Earthquake (M=6.1)

Impacts:

- Affected 6 eastern districts out of 20 in Bhutan
- 12 lives lost



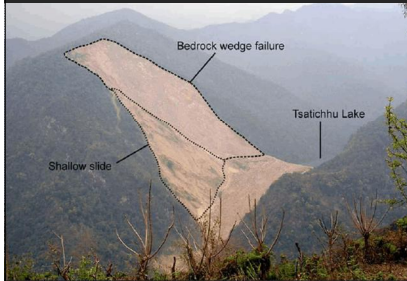
- Over 7000 people left without adequate shelter
- Estimated loss of over US\$54 Million: UNDP/World Bank Assessment Report

Glacial Lake Outburst Flood (GLOF) & Monsoon floods



- GLOFs: the most serious natural hazard with 25 lakes, few potentially dangerous.
- Hazards due to GLOF & monsoon floods are likely to increase in intensity with the impacts of climate change.
- Settlements downstream are most vulnerable
- Trans boundary issues

Natural/artificial Dam formation & dam burst



- Land slides

- Too many HPP : at least one or more HPP in main rivers

Landslide

- Occurs in summer triggered by heavy monsoon rain
- Road maintenance being one of the largest expenditure to Govt.



Fire

- Over 20,000 acres of forest were destroyed this winter



- Wangdi *Dzong* gutted by fire



Windstorm/hail storm

- private houses & schools in five districts were destroyed



- Crops & other vegetation



Epidemics, Pests, Diseases

- Army worm attack in 2012



- Frequent bird flu outbreak

Road Accidents

- Reckless & drink driving
- Poor road & weather conditions
- Human error & Mechanical failure



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_5489

