

Disclaimer

This report was compiled by an ADRC visiting researcher (VR) from ADRC member countries.

The views expressed in the report do not necessarily reflect the views of the ADRC. The boundaries and names shown and the designations used on the maps in the report also do not imply official endorsement or acceptance by the ADRC.



Department of Disaster Management
Ministry of Home & Cultural Affairs
Royal Government of Bhutan

<http://www.mohca.gov.bt>

<http://www.ddm.gov.bt>

Country Report: Disaster Management System Bhutan

Visiting Researchers Program (VR FY2013B)
Asian Disaster Reduction Center (ADRC)
Kobe, Japan
27th January, 2014

Pema Thinley



Visiting Researchers Program, FY2013B



Department of Disaster Management
Ministry of Home & Cultural Affairs
Royal Government of Bhutan

<http://www.mohca.gov.bt>

<http://www.ddm.gov.bt>

Ku-Zu Zangpo-la



Visiting Researchers Program, FY2013B

Presentation Outline

1. Brief Introduction of Bhutan
2. Department of Disaster Management at a glance
3. Hazards in Bhutan
4. General Overview of Disaster Management System in Bhutan
5. Issues and challenges faced in the field of Disaster Management
6. Way Forward for Department of Disaster Management
7. Brief Research Plan



Visiting Researchers Program, FY2013B

King and the Queen of Bhutan



Visiting Researchers Program, FY2013B

Paro Taktshang, Bhutan



Visiting Researchers Program, FY2013B

Flora of Bhutan



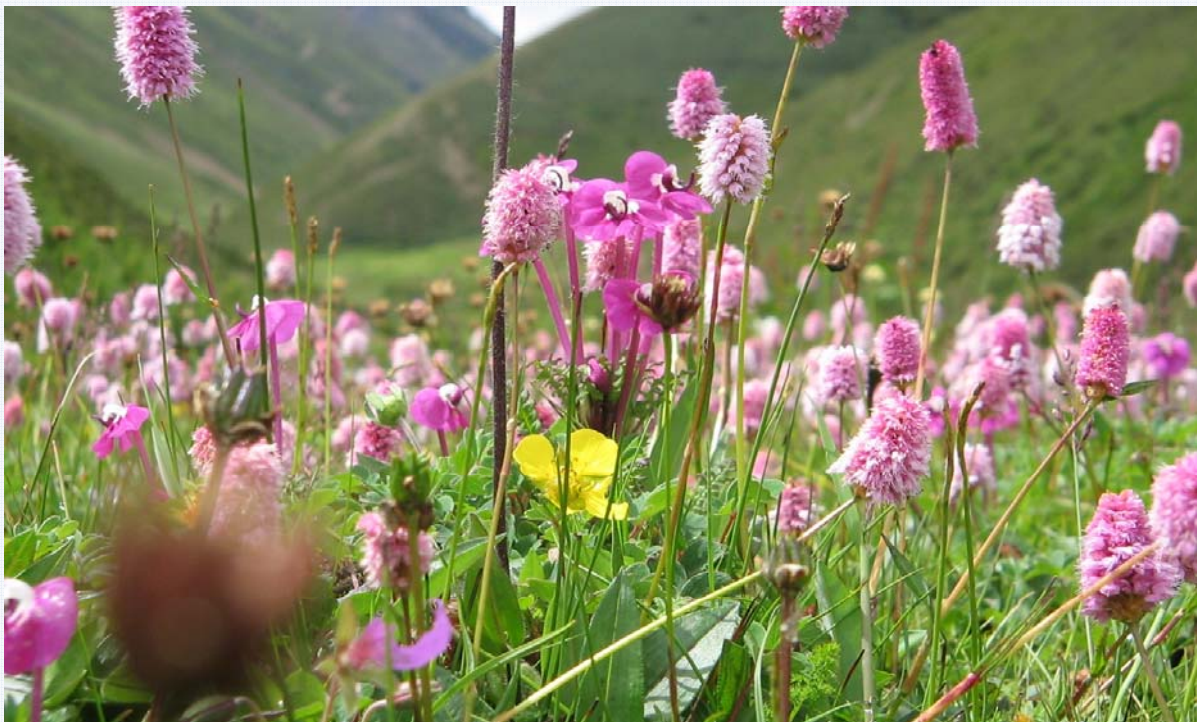
Visiting Researchers Program, FY2013B

Dochula Pass, Bhutan



Visiting Researchers Program, FY2013B

Flowers of Bhutan



Visiting Researchers Program, FY2013B

Festivals in Bhutan



Visiting Researchers Program, FY2013B

Traffic System in Bhutan



Visiting Researchers Program, FY2013B

About Bhutan

- Area of Bhutan: 38,394 sq km.
- Altitude: Varying from 590.55ft to 24,770.34ft above sea level.
- Population: 733,004 (projected 2013).
- Capital: Thimphu.
- Climate: Varies tropical in southern plains, cool winters and hot summers in central valleys, severe winters and cool summers in Himalayas.
- Local Time: Six hrs ahead of GMT and 30 minutes ahead of Indian Standard Time.
- Forest Cover: 72% (approximately).
- Currency: Ngultrum.
- Major Export: Hydro-electricity
- Protected areas: 51.44% of total land.

Symbols of Bhutan:

- The Royal Emblem,
- National Flag,
- Cypress, the national tree,
- Raven, the national bird,
- Blue Boppy, the national flower,
- Takin, the national animal.



Visiting Researchers Program, FY2013B

Department of Disaster Management

Vision

Department of Disaster Management being a premier organization strives to promote a Safe and Happy Bhutan through Disaster Risk Reduction Initiatives in line with the RGoB's policy of Gross National Happiness.

Mission

- Create awareness on disaster risks and their mitigation/prevention at all the levels.
- Facilitate pro-active & decentralized disaster management at all levels.
- Enhance and strengthen capacities of disaster management authorities/committees at all levels.

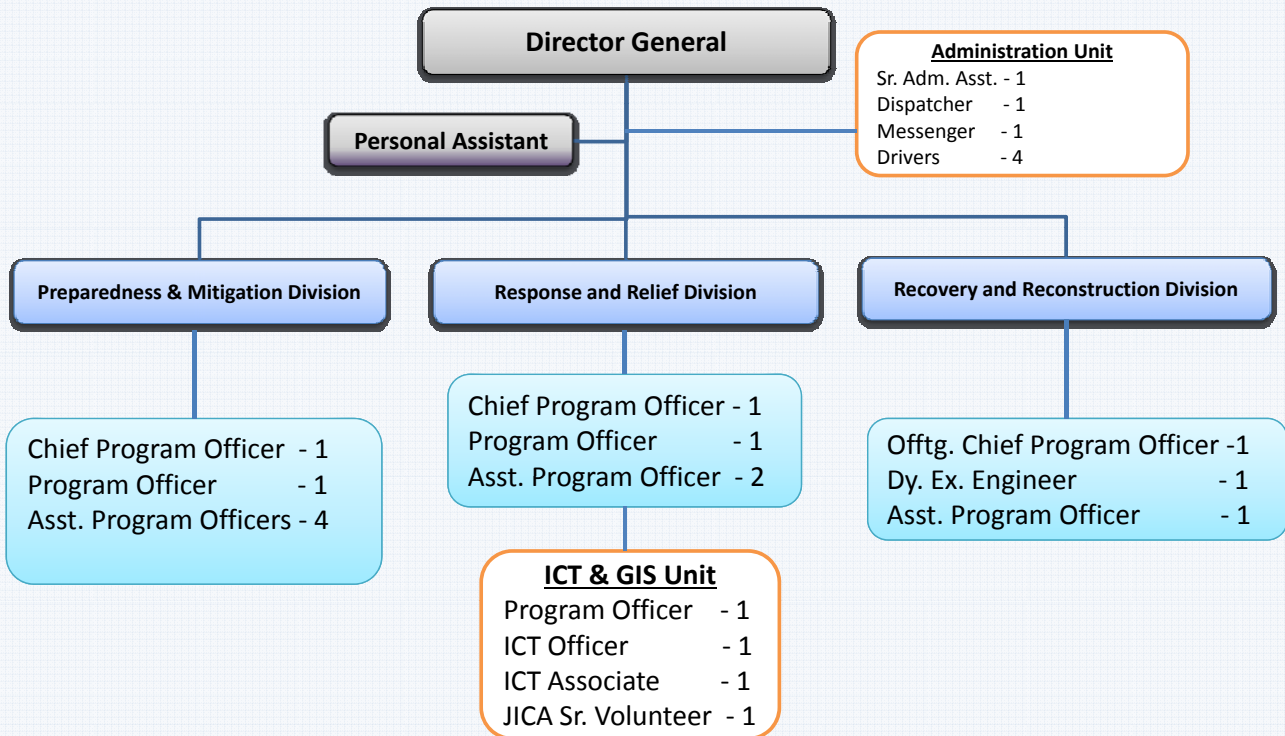
Motto

“Reducing Disaster Risk for a Safe and Happy Bhutan”



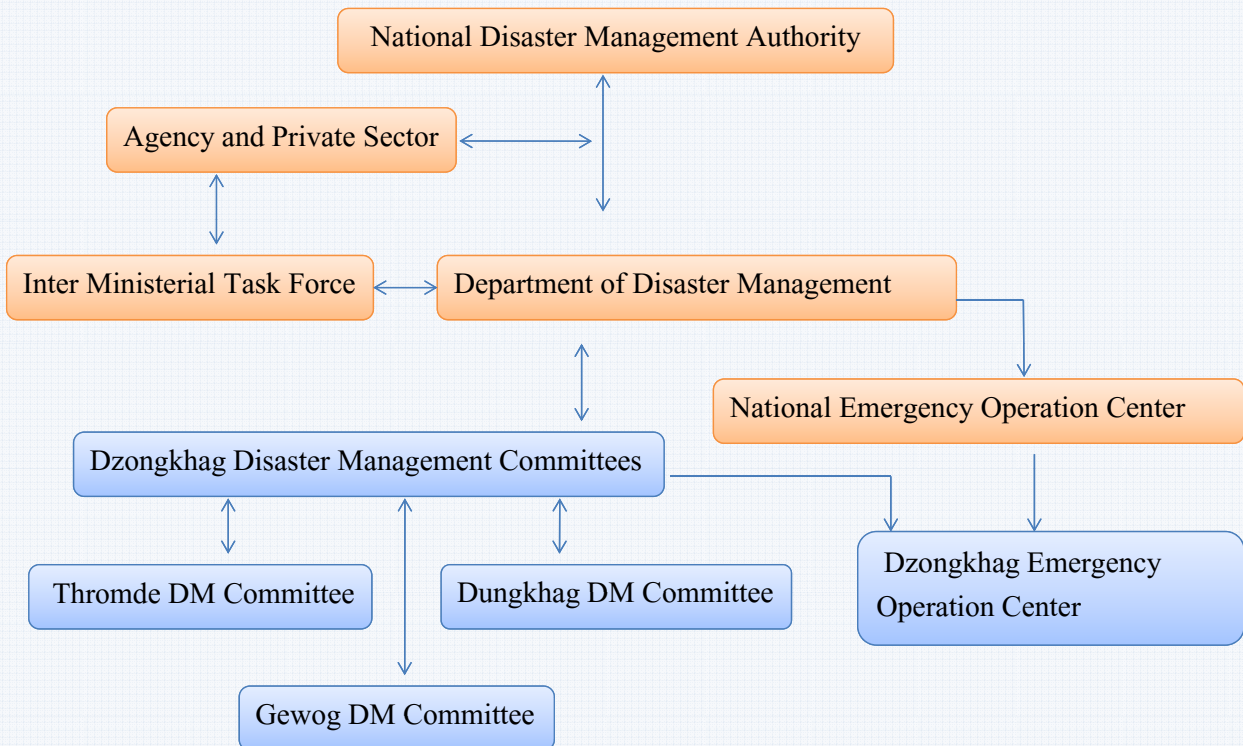
Visiting Researchers Program, FY2013B

Department of Disaster Management



Visiting Researchers Program, FY2013B

DM Institutions as per DM Act, 2013



Visiting Researchers Program, FY2013B

Hazards in Bhutan

1. Earthquakes
2. Glacial Lake Outburst Floods (GLOF)
3. Floods/Flash floods
4. Landslides
5. Forest fires/Structural fires
6. Windstorms
7. Others



Visiting Researchers Program, FY2013B

Earthquake

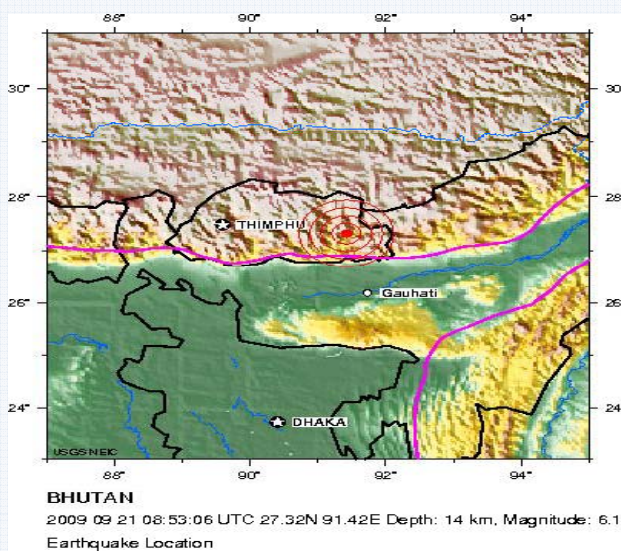
21st September, 2009 Mongar Earthquake

Magnitude: 6.1 (10 km)

Time: 2:53 p.m. BST

Repeated after-shocks

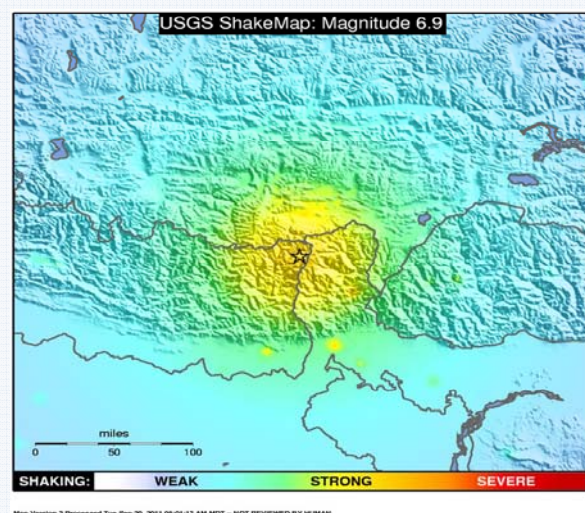
12 People killed



18th September, 2011 (Sikkim Earthquake)

Magnitude : 6.9 (19.7 km)

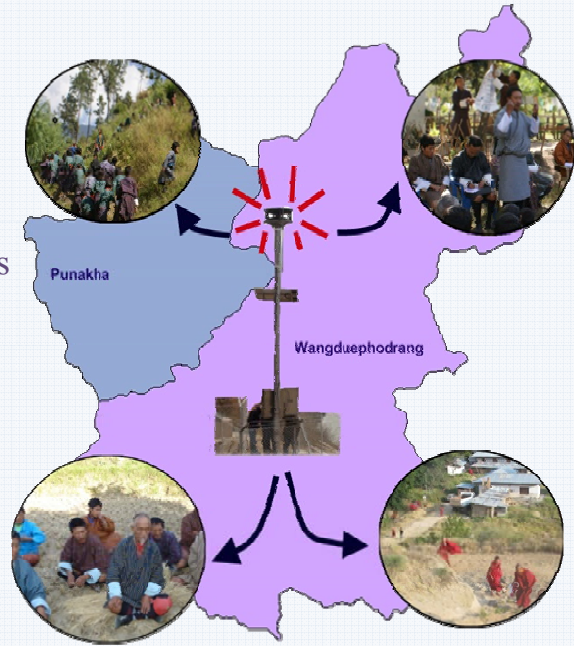
Time: 6:41 PM BST



Visiting Researchers Program, FY2013B

Glacial Lake Outburst Flood

- 677 glaciers and 2,794 glacier
- 25 glacier lakes potentially dangerous
- 21 outburst cases in Bhutan
(SATREPS Project, 2012)
- 17 events between 19th century and the 1970s
- 4 cases of outburst in the last 40 years



Visiting Researchers Program, FY2013B

Reducing Risks and Vulnerabilities from GLOF



Climate Change risk advocacy and awareness: Department of Disaster Management, MoHCA



Installation of GLOF early warning system: Department of Hydro-Met Services, MoEA



Artificial lowering of Thorthormi Lake: Department of Geology and Mines, MoEA



Visiting Researchers Program, FY2013B

Floods

- Recurrent Event
- Eastern & Southern Region most vulnerable

Past events

- Phuentsholing & Pasakha – Year 2000
- Eastern Bhutan – Year 2004
- Cyclone Aila – Year 2009 flood



Visiting Researchers Program, FY2013B

Fires on Forest and Human Settlement

Forest fires

- Annual event
- 99.9 % manmade

Fires on Human Settlement

- Unsafe habits – electrical wiring, temporary housing
- Use of wood

Other Hazards

1. Windstorms/ Thunderstorms/
Snowstorms/ Hailstorms
2. Epidemics, pests and diseases



Visiting Researchers Program, FY2013B

Underlying Vulnerabilities in Bhutan

1. Unsafe Construction Practices
2. Rapid Urbanization
3. Lack of Enforcement
4. Socio-Economic Factors
5. Lack of Awareness
6. Lack of Preparedness Planning
7. Technical Expertise
8. Culture of Insurance
9. Disaster Management Mainstreaming



Visiting Researchers Program, FY2013B

Preparedness Arrangement

1. Institutional, Legislative & Policy Frameworks
 - Sensitization of Disaster Management Act of Bhutan, 2013
 - Formulation of rules and regulation
2. Hazard, Vulnerability and Risk Assessment
 - GLOF Hazard Zonation Mapping
 - Vulnerability Checklist and Assessment
3. Early Warning Systems
 - GLOF EWS for Punatsangchu along Punakha-Wangdue basin
 - Community based EWS
4. Disaster Preparedness Plans (DM Plans & Contingency Plans)
 - Disaster Management (DM) Planning Guidelines (National, Dzongkhag, School)
 - Community Based Disaster Management Planning Process.
 - Contingency Planning Guidelines under process



Visiting Researchers Program, FY2013B

Preparedness Arrangement

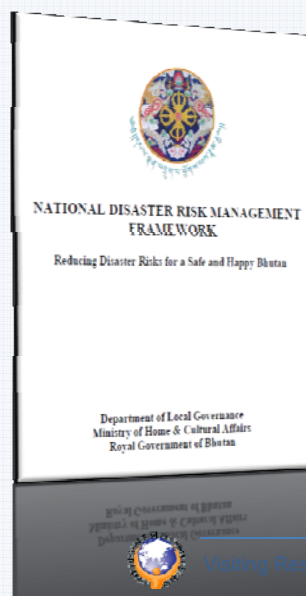
5. Safe School Initiatives for the Education
6. Mainstreaming of DRR into the day-to-day Developmental Planning Processes
6. Public Awareness /Education
 - Extensive Public Education: Advocacy and campaigns on - hazards/risks /vulnerabilities.
 - Earthquake risks : Do's and Don'ts campaign
 - Emergency Medical & First Aid training
7. Capacity Development (Preparedness/Planning/ Response)
 - First Responder Trainings
 - Mock drills in Schools/First Aid Trainings
 - Search & Rescue (SAR) Trainings at the District/Thromde level
 - Preparedness planning/CBDRM ToT for District and some Geog Level Officials (DM and Contingency Plans)



Visiting Researchers Program, FY2013B

Regulation and Policy Strategies

1. Disaster Management Act of Bhutan 2013
2. Disaster Management & Contingency Planning Guideline
3. School Disaster Management Planning Guideline
4. National Disaster Management Strategy



Visiting Researchers Program, FY2013B

Issues and Challenges

1. Non-enactment of Disaster Management Bill of the Kingdom of Bhutan (until early 2013).
2. DDM, MoHCA as the National Coordinating/Nodal Agency needs to build its managerial and technical capacity.
3. Understaffing in the Department hampers effective and efficient functioning.
4. Disaster management is a new discipline and therefore there is a need to create adequate awareness and advocacy on disaster management issues at all levels.
5. Inadequate capacity at Community/Dzongkhag/Sectoral/Ministerial levels for planning and implementing DM activities.
6. Lack of disaster information/data, multi-hazard zonation and vulnerability maps which are pre-requisite for planning DRR activities.
7. Funding/Resources constraints to carry out DM activities.



Visiting Researchers Program, FY2013B

Way Forward

1. Formulation of Bye-Laws, Rules and Regulations, SOPs, minimum Standards, Guidelines as per the DM Act 2013.
2. Approval of National Disaster Risk Management Strategy document (draft).
3. Approval for the Emergency Communication Network Master Plan and setting up of the NEOC.
4. Strengthening and expanding the existing National Search & Rescue Team (NaSART).
5. Formation of SAR teams at local levels; training and equipping them.
6. Procurement of advanced SAR equipment.
7. Setting up of SAR Training Institute or tie up with the existing RBP/RBA training institutes.
8. Proposal for delinking and upgrading Fire Service Division, RBP.
9. Involvement of CSO/NGO/Religious Institutions in DM.
10. Inclusion of DM module into School and College curriculum/syllabus
11. Recruitment of 20 District Disaster Management Officers .



Visiting Researchers Program, FY2013B

Research Plan: VR FY2014B

“Best practices of Japan in the use of Geographic Information System (GIS), Remote Sensing and Information & Communication Technology for Disaster Risk Reduction (Disaster Information Management System and Emergency Response Systems)”

Main Focus:

1. Overall Disaster Management System in Japan: Best Practices
2. Disaster Information Management System (Tracking Resources for Response).
3. Disaster Inventory (Using past disaster data for risk analysis and decision making: mainstreaming in planning processes).
4. Functioning of Emergency Communication System and Emergency Operation System at different levels.
5. Early Warning Systems (Dissemination of early warning messages using ICT)
6. Emergency Response Systems (using GIS & Remote Sensing)



Visiting Researchers Program, FY2013B



Department of Disaster Management
Ministry of Home & Cultural Affairs
Royal Government of Bhutan

<http://www.mohca.gov.bt>

<http://www.ddm.gov.bt>



བཀའ་རྒྱ་ཆེ་ལགས།།

Thank You



Visiting Researchers Program, FY2013B