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ནང་སྲིད་དང་སྲོལ་འཛིན་ལྷན་ཁག།

Department of Disaster Management

Ministry of Home & Cultural Affairs

P.O Box: 1493, Thimphu-11001

"Safe, Resilient and Happy Bhutan"



TOWARDS ESTABLISHING DISASTER STATISTICS

DEPARTMENT OF DISASTER MANAGEMENT

Ministry of Home and Cultural Affairs

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Need for Disaster Statistics

Disasters have potentially devastating effects in terms of human lives lost, economic livelihoods destroyed, and losses in sectoral productivity.

- Bhutan's economy is driven by public sector hydropower contributing 30% of GDP
- The private sector is weak given its mountainous terrain, small domestic market, sparse population, high transportation costs, skill shortages, and other factors.
- Bhutan is situated in one of the world's most seismically active zones.
- Four giant earthquakes exceeding 8 Richter scale in 1897, 1905, 1934 and 1950
- The 2015 Gorkha earthquake in Nepal is a reminder of Bhutan's vulnerability
- Bhutan is also prone to GLOF, floods, landslides and forest fires

Issue: Lack evidence-basis for development policy and programmes, and disaster risk management to mitigate the impact of natural disasters and consequences of climate change



What is already available

1. Disaster Management Information System DMIS at DDM

- DDM developed Disaster Management Information System (DMIS) and trained all Dzongkhag focal persons
- DDM has access to NSB data including administrative boundaries and databases on population with resolution down to the Gewog level but not to household level yet (as of 2017).
- DDM collects data from other agencies as necessary.

2. Statistics at NSB

- NSB has 2007 geo-referenced key infrastructure including religious , schools, admin buildings, and health facilities. NLCS would have more updated geo location on structures with the purpose they are used for from the latest cadastral survey.
- Reportedly Up to 80 % of urbanised housing is georeferenced.
- NSB does not maintain disaster specific data
- Geo referenced settlement data from 2005 Population and housing census of Bhutan
- Details of household flooring, roofing and wall materials at the Gewog level from the 2017 Population and housing census of Bhutan
- Estimated poverty rate at the gewog level

Policy Environment: need for unifying policy regulations

2013 Disaster Management Act

Stipulates the need of hazard zone mapping, vulnerability maps and risk assessment

The Department of Disaster Management (MOHCA)

Responsible to facilitate the formulation of hazard zonation and vulnerability maps, ideally, by relevant agencies.

12th Five-year Plan 2018–23

Has Disaster and Climate Resilience as part of National Key Result Areas

National Strategy for the Development of Statistics 2019-23

Has its National Key Result Areas (NKRAs) containing the carbon-neutral, climate and disaster resilient development

Geo – Information Policy 2018 (The National Land Commission Secretariat)

Provide the institutional and legal framework to enhance data discovery, accessibility and sharing mechanism; and to promote sustainable and optimal use of geo-information and technologies.

Issue: there are gaps in data and information: no centralised disaster-related database, mapping of hazard zoning, capacity constraints, lack of data lacking vulnerability assessments (2016 DM Performance Audit)

Statistical Issues: needs a policy to coordinate stakeholders

Executive order issued 2006 (updated in 2015 – there was no update in the executive order. The statistical Bill has been drafted but is yet to be endorsed it is yet to be endorsed)
proposes the Statistics Bill of Bhutan

Provides the overall legal framework that governs the statistical system, i.e. collection, processing, compilation, analysis, publication and dissemination of statistical data

National Statistics Bureau is “**the central authority**” for collection and release of official data, and their custodian, and to give approval on statistical matters to all ministries, departments, and agencies

Absence of geo coordinate of households in the 2017 Population and Housing census

CGIS coordinates all aspects covering geo-information.

In practice: National level surveys require clearance from NSB while small scale surveys and administrative data collection are being collected by respective agencies.

Issue: *Data availability is not really an issue. The problem lays in the data not being centralized, differing presentation and communication of data that lead to inconsistencies.*

Data collection: need better coordination of may agencies that collect their own disaster data

1. DDM 's **Bhutan Disaster Assessment** (based on the 2004 DevInfo emergency module) is to implement the “72 Hours Rapid Assessment Approach, which is standardised, covering eight sectors that are associated with the humanitarian coordination clusters.
2. **Flood Engineering Management (FEMD)** of the Department of Geology and Mines / Ministry of Economic Affairs carries out flood risk analysis in all 20 Dzongkhags.
3. **The GLOF Research** quantifies potential triggers and numerical modelling of hazards posed by 2,674 glacial lakes to the downstream population and infrastructure
4. **Earthquake Impact Assessment Modelling** (completed in March 2020) presented quantifiable potential earthquake impacts in terms of fatalities, injuries and displaced persons in the different districts based on different scenarios.

Issue: No specific agency to coordinate the compilation of disaster risk maps, with a clear-cut mechanism among technical agencies

Data Sharing: need for an improved disaster data marketplace

The Centre for Geo-Information (CGI) coordinates, develop, promulgate and enforce bylaws, regulations and standards covering all aspects of geo-information for planning and decision-making process

NSB

All censuses and survey micro data (anonymized) shared by NSB

National Land Commission Secretariat (NLCS) provides

- Share maps and information on need basis
- Base map and aerial photo for geoscientific studies
- Demarcation of land to be carried out by surveyors

Issue: users are usually unaware of the existence of the data, if they do, data sharing is limited to point-to-point contacts with limited formal mechanism; need policies to reduce redundancy of data and to reduce duplication of efforts and resources

Data Utilisation: need improving disaster data flow to decision making. planning, and programming

- **The NSB has its own dissemination system.**
- **Other producers have their own range and type of data with varying consistency and reliability.**
- **Data for public domain is regulated by the CGISC security features**
- **Main data users:**
 - GNHC for development planning
 - RMA for economic and finance strategies
 - Centre for Bhutan Studies/ CBS(a quasi government think tank) for development and policy strategic studies
 - Department of Human Settlement (DHS) for developing master plans

Issue: Dispersed data points increase the risks of fragmentation, inconsistencies, and reliability gaps or even data conflicts

Wayforward

- 1. Identity relevant datasets: disaster risks, disaster occurrences, disaster impacts, and disaster expenditure**
- 1. Develop policies and agreement between NSB, DDM,CGIS and other disaster data producing agencies on data sharing or linking systems**
- 2. Advocate on the collection of geo location of households in the next round of Population and housing census of Bhutan**
- 3. Develop a system that renders presents seamless customized statistics**

What we need

- 1. Technical support to develop DRSF framework**
- 2. Technical support develop policy if necessary**
- 3. Access to good practices of DRSF**
- 4. Support in advocating the policy makers or politicians**

Thank you