Establishing Disaster Loss Databases

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Existing Situation –

• No systematic method for collecting information about hazard events and their impacts
• At the most, scattered information with various agencies without any coherence and coordination
• As a result, no meaningful analysis to understand the trends, spatial and temporal impacts and hence poor understanding of potential risks and their impacts
• Finally, no integration with development programming since no evidence exists
Impacts of natural disasters

Direct Impacts: Loss of human life, injuries, damage/destruction of buildings (houses, schools, hospitals, industries) & infrastructure (telecommunication, electricity, roads, railways), agriculture

Indirect impacts: Economic losses, long-term impacts, employment, informal sector,...

Disaster loss database captures direct losses
Why study the past?

- Historical disaster losses are proxy indicators of risk
- Past disaster losses show us the cumulative impacts of disasters on development
Disasters: Past and future

“realized risk”

past losses

“unrealized risk”

future losses
“Realized risk”
(Historical losses)

“Unrealized risk”
(Probable future losses)

Historical loss data used to assess loss levels, patterns, trends and cumulative impacts on development

Historical loss data used to evaluate risks of future losses

- Hazard data
- Elements at risk
  - People
  - Assets
  - Economic activities
- Vulnerabilities
  (Static/dynamic)
UNDP Approach to Establishing Disaster Loss Databases
UNDP Approach to DLD

Guided by national capacity development approach within DRR framework in the overall context of sustainable development
UNDP Approach to DLD

- Establishing DLD guided by the overall institutional and legal context of DRR in the country
- Establishing and sustaining nationally led processes to create ownership of the database and increase its usefulness and relevance to national and sub-national contexts
UNDP Approach to DLD

• Guided by the needs and priorities of the country and the analysis to provide inputs to policy and decision-making processes in the country

• Encouraging hosting of DLD in public domain to share the data with public to improve understanding of risks and to warrant actions from all stakeholders
Documentation and Guidelines

Risk Knowledge Fundamentals: Guidelines and Lessons for Establishing and Institutionalizing Disaster Loss Databases

(http://www.snap-undp.org/elibrary/Publications/DLDGuidelines.pdf)
Key Findings from the Implementation

- DLD is vital to identifying and understanding patterns of risk and for implementing effective and efficient DRR programmes, policies and planning
- Enabling environment for DRR to be in place to ensure sustainability of the DLD
- Establishment of database in conjunction with other DRR related capacity building activities to ensure ownership and management of data
Key Findings from the Implementation ... (2)

- Customization (such as language) of the system vital to ownership and sustainability
- Government to be fully involved in collection and validation of data from acceptable and reliable sources
- Produce analysis to assist in planning and decision-making for risk reduction, preparedness, mitigation and recovery
- Provision of technical support available even after the establishment of DLD
Key Steps to Implement Disaster Loss Databases

Step 1: Create an enabling environment for DRR

Step 2: Find an appropriate ‘home’ for the database

Step 3: Establish the DLD within DRR framework

Step 4: Collect, enter and validate data

Step 5: Analyzing, managing data and sustainability
Implementation of Disaster Loss Database in Indonesia

2006
- UNDP introduced the technology “DesInventar”

2007
- Handover DesInventar to BNPB
- Establishment of communication forum Data & Information Management Disaster.

2008
- DIBI Launching

2009
- Training
- Socialization in some provinces
- Launching DIBI Provinces
- Provincial HDRI
- Mainstreaming gender into DIBI
- Disaster Prone Area Index 2009
- PNPM MIS, DesInventar and Dibi Interface

2010
- Training
- Socialization in some provinces
- Launching DIBI Provinces
- Provincial HDRI
- Disaster Prone Area Index 2010

2011

2014
- Integration DIBI with Baseline data

2017
Name of Database: Disaster Data and Information of Indonesia (DIBI)

URL of Database: [http://dibi.bnpb.go.id](http://dibi.bnpb.go.id)

Sources of Data: Government of Indonesia

Period of Data: 1815 – 2017

Host agency: National Agency for Disaster Management (BNPB)

Staff: 1 of Head of Data Information & PR Centre and 23 staffs

Data collection: Using paper-based data collection format from government validated data
1. Regulation from chief of BNPB for guideline implementing historical disaster database.
2. Establishment of DIBI Forum of National and Sub National.
3. Historical disaster data used for renewal disaster-prone area index.

**Development DIBI provincial level:**
1. Bali
2. Yogyakarta
3. Central Java
4. East Java
5. Aceh
6. West Sumatra
7. Bengkulu
8. East Nusa Tenggara
9. North Sulawesi
10. Maluku
11. Southeast Sumatra
Application Programming Interface (API)

API as service layer data in DIBI application can be accessed via url: dibi.bnpb.go.id/api/

- Get all the disaster data: dibi.bnpb.go.id/api/get-all-data
- Obtain provincial data: dibi.bnpb.go.id/api/get-province
- Obtain district data: dibi.bnpb.go.id/api/get-district
- Getting data on disaster type: dibi.bnpb.go.id/api/get-type-disaster
Baseline data - Application Programming Interface (API)

1. to get list of population census data indicator:
   dibi.bnpb.go.id/api/get-indikator-sp

2. to obtain a list of potential village data indicators:
   dibi.bnpb.go.id/api/get-indikator-podes

3. to obtain population census data:
   dibi.bnpb.go.id/api/get-data-sp/wilayah=11,12|field=1_1,1_2,2_1

4. to get potential village data:
   dibi.bnpb.go.id/api/get-data-podes/wilayah=11,12|field=R401A,R401B
inaRISK
how risky is your place?

http://inarisk.bnpb.go.id
InaRISK is the results of risk assessment portal that uses ArcGIS server as the data services that illustrate the coverage area of disaster threats, the affected population, the potential loss of physical (Rupiah), potential economic losses (Rupiah) and potential environmental damage (hectare) and is integrated with the realization disaster risk reduction activities as a monitoring tool for disaster risk reduction index.

http://inarisk.bnpb.go.id
GIS data services can be accessed through:

http://inarisk.bnpb.go.id:6080/arcgis/rest/services
Support Establishing Disaster Loss Databases
Why a Regional Loss Database

- Need for usable and reliable data on damage and loss as disasters increase in frequency and intensity
- Need for a standardised and harmonised disaster data and a system that is compatible with other systems
- Need for a cost-effective tool useful for a variety of stakeholders for a variety of purposes
- Need to share data to boost the multi-stakeholder and multi-sectoral understanding of risk and promote regional cooperation
From Data to Action

L&D Data

System to collect, store validate, analyse, & present

Understanding of past losses, current threats & future risks

Tool for evidence-based decision and policy making, risk assessment, preparedness planning,
Component 1: Regional D&L Impacts Database

- Build on existing national databases.
- Aggregate all the national databases into one comprehensive database system using regionally agreed standards.
- Use the DesInventar system and adapt it to our own requirements.
### Query Definition

Select events and geographic units, and set the options that specify the disasters you want to query:

<table>
<thead>
<tr>
<th>Disaster type</th>
<th>District</th>
<th>Sub-District</th>
<th>Suco</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRONG WIND</td>
<td>AILEU</td>
<td></td>
<td></td>
<td>Strong wind</td>
</tr>
<tr>
<td>FIRE</td>
<td>AINARO</td>
<td></td>
<td></td>
<td>Behaviour</td>
</tr>
<tr>
<td>FLOOD</td>
<td>BAUCAU</td>
<td></td>
<td></td>
<td>Drought</td>
</tr>
<tr>
<td>LANDSLIDE</td>
<td>BOBONARO</td>
<td></td>
<td></td>
<td>Contamination</td>
</tr>
<tr>
<td>CONFLICT</td>
<td>COVALMA</td>
<td></td>
<td></td>
<td>Deforestation</td>
</tr>
<tr>
<td>SPATE</td>
<td>DILI</td>
<td></td>
<td></td>
<td>Deterioration</td>
</tr>
<tr>
<td>ACCIDENT</td>
<td>ERMERA</td>
<td></td>
<td></td>
<td>Earthquake</td>
</tr>
<tr>
<td>RAINS</td>
<td>LAUTEM</td>
<td></td>
<td></td>
<td>El Niño</td>
</tr>
<tr>
<td>DROUGHT</td>
<td>LIQUICA</td>
<td></td>
<td></td>
<td>Human Error</td>
</tr>
<tr>
<td>SURGE</td>
<td>MANATU</td>
<td></td>
<td></td>
<td>Erosion</td>
</tr>
</tbody>
</table>

Use Ctrl-Click and/or Shift-Click to deselect or for multiple selections. If no selections are made, all items will be selected.

NOTE: Selections of Sub-District have precedence over selections of District.

Select only events with:
- Deaths
- Houses Destroyed
- Victims
- Evacuated
- Hospitals
- Damages in roads kits
- Lost Cattle
- Injured
- Houses Damaged
- Affected
- Relocated
- Missing
- Damages in crops Ha.
- Education centers

Select events that affected:
- Water supply
- Health sector
- Industries
- Communications
- Relief
- Other sectors
- Sewerage
- Education
- Transportation
- Power and Energy
- Agriculture

Date range (YYYY-MM-DD)

View data
New Query
Save Query
Lost Query

Expert Selection

Clear

View data
New Query
Save Query
Lost Query

Logic

OR

AND
Thank you