



# **Establishing Disaster Loss Databases**

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# Disaster Information Management

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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?

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

# Disasters: Past and future

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“realized risk”



past losses

“unrealized risk”



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)

*“Realized risk”  
(Historical losses)*

*“Unrealized risk”  
(Probable future losses)*



# **UNDP Approach to Establishing Disaster Loss Databases**

# UNDP Approach to DLD

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Guided by national capacity development approach within DRR framework in the overall context of sustainable development



# UNDP Approach to DLD

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- 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

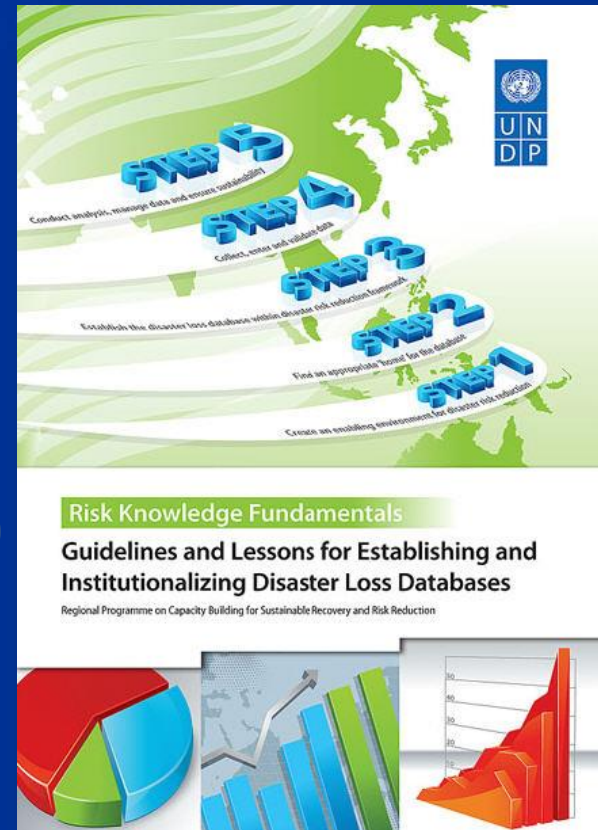
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- Guided by the needs and priorities of the country and the analysis to provide inputs to policy and decision-making processes in the country
- Encouraging hosting of DLD in public domain to share the data with public to improve understanding of risks 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

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- 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)

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- 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**

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**Step 1: Create an enabling environment for DRR**

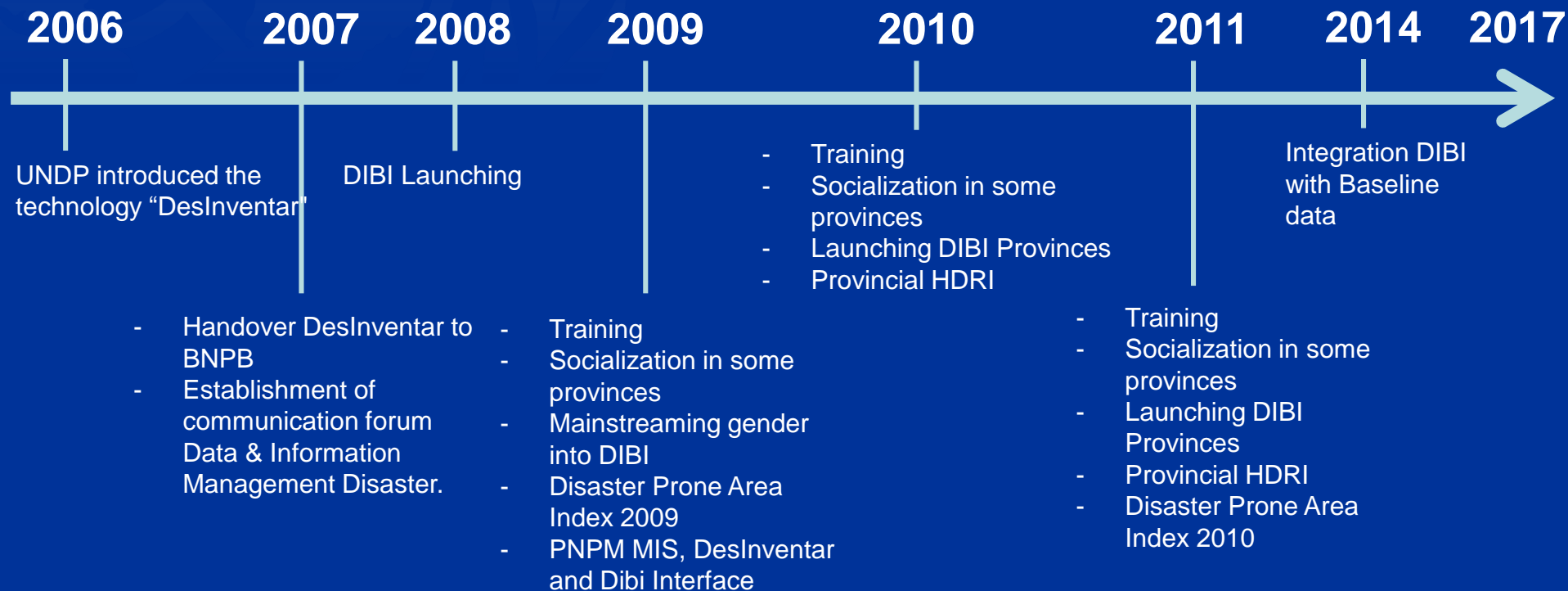
**Step 2: Find an appropriate 'home' for the database**

**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





- ▶ Name of Database : Disaster Data and Information of Indonesia (DIBI)
- ▶ URL of Database: <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





# Application Programming Interface (API)

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

- Get all the disaster data: [dibi.bnpb.go.id/api/get-all-data](http://dibi.bnpb.go.id/api/get-all-data)
- Obtain provincial data: [dibi.bnpb.go.id/api/get-province](http://dibi.bnpb.go.id/api/get-province)
- Obtain district data: [dibi.bnpb.go.id/api/get-district](http://dibi.bnpb.go.id/api/get-district)
- Getting data on disaster type: [dibi.bnpb.go.id/api/get-type-disaster](http://dibi.bnpb.go.id/api/get-type-disaster)

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# *Baseline data - Application Programming Interface (API)*

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1. to get list of population census data indicator:  
[dibi.bnpb.go.id/api/get-indikator-sp](http://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](http://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](http://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](http://dibi.bnpb.go.id/api/get-data-podes/wilayah=11,12|field=R401A,R401B)



dibi.bn...go.id/api/get-indikator-sp

```
[{"kode":"1_1","keterangan":"Jenis Kelamin : Laki-laki"}, {"kode":"1_2","keterangan":"Jenis Kel  
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dibi.bn...go.id/api/get-indikator-podes

```
[{"nama_field":"R302B","keterangan":"Lokasi Kantor Kepala Desa","kategori_nilai":"1,2,3","  
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Kelurahan","kategori_nilai":"1,2,3,4","keterangan_nilai":"Hampan#Lembah#Lereng#Puncak"},  
Lahan","kategori_nilai":"1,2,3","keterangan_nilai":"Curam (lebih dari 25 derajat)#Landai (  
{ "nama field":"R305D","keterangan":"Ada Wilayah Desa / Kelurahan yang berbatasan langsung
```

dibi.bn...go.id/api/get-data-podes/wilayah=11,12|field=R401A,R401B

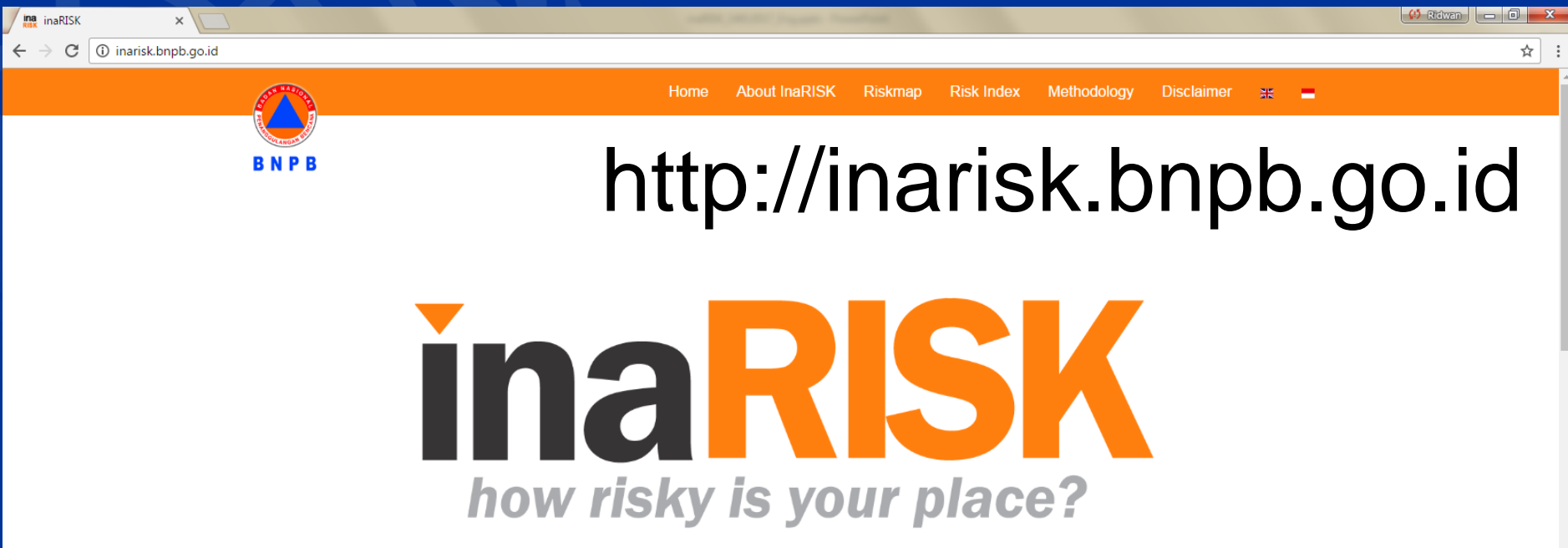
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```

The logo for INA RISK features the word 'ina' in a dark grey, lowercase, sans-serif font, followed by 'RISK' in a large, bold, orange, uppercase, sans-serif font. A small orange triangle is positioned above the 'i' in 'ina'.

**inaRISK**

*how risky is your place?*

<http://inarisk.bnpb.go.id>

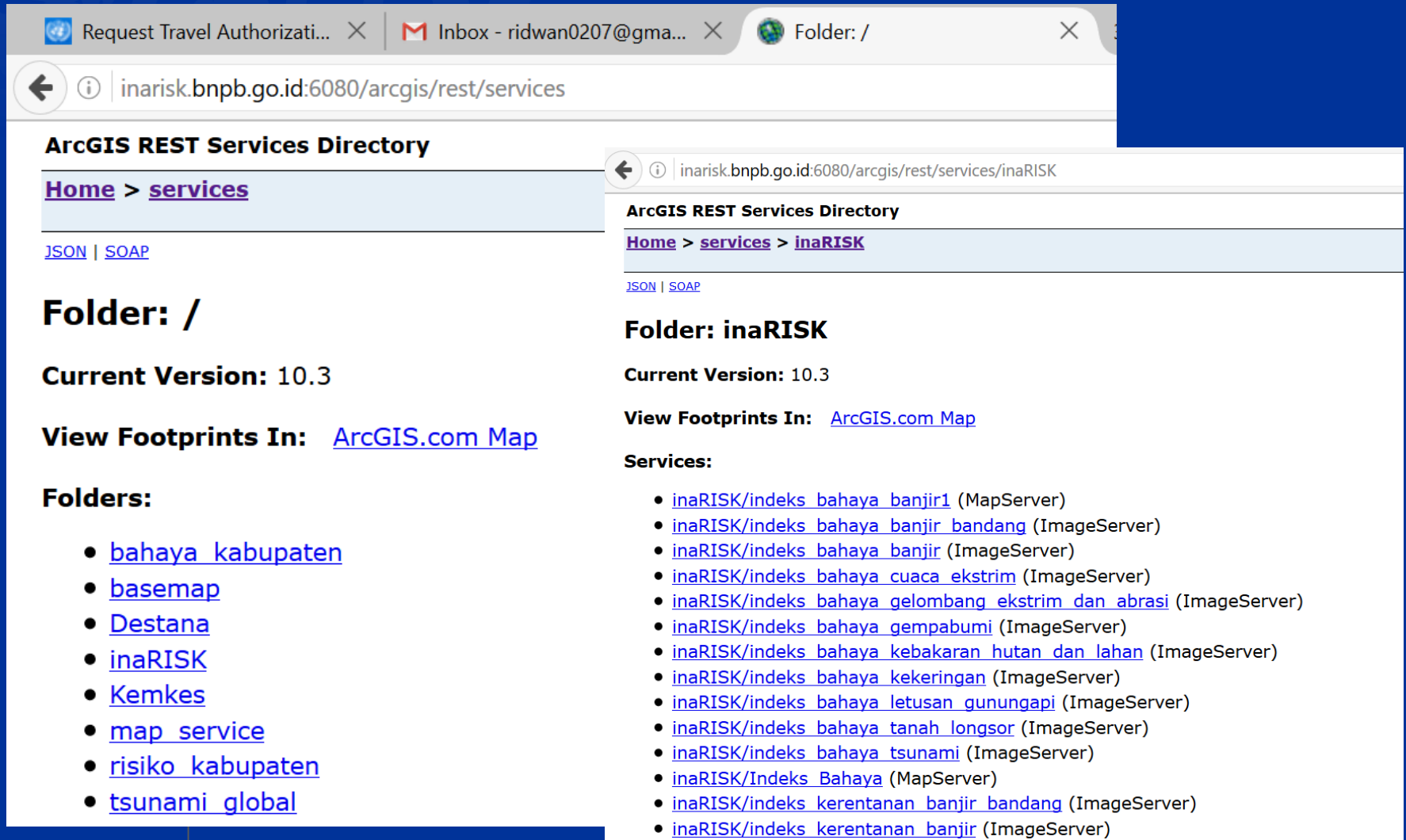


InaRISK is the results of risk assessment portal that uses ArcGIS server as the data services that illustrate the coverage area of disaster threats, the affected population, the potential loss of physical (Rupiah), potential economic losses (Rupiah) and potential environmental damage (hectare) and is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



# GIS data services can be accessed through :

<http://inarisk.bnppb.go.id:6080/arcgis/rest/services>



The screenshot shows a web browser window with the URL <http://inarisk.bnppb.go.id:6080/arcgis/rest/services>. The page title is "ArcGIS REST Services Directory". The breadcrumb navigation is "Home > services". There are links for "JSON" and "SOAP". The "Folder: /" section shows the "Current Version: 10.3" and "View Footprints In: [ArcGIS.com Map](#)". The "Folders:" section lists several folders: [bahaya kabupaten](#), [basemap](#), [Destana](#), [inaRISK](#), [Kemkes](#), [map\\_service](#), [risiko kabupaten](#), and [tsunami global](#).

The second part of the screenshot shows the "Folder: inaRISK" section, also with "Current Version: 10.3" and "View Footprints In: [ArcGIS.com Map](#)". The "Services:" section lists the following services:

- [inaRISK/indeks\\_bahaya\\_banjir1](#) (MapServer)
- [inaRISK/indeks\\_bahaya\\_banjir\\_bandang](#) (ImageServer)
- [inaRISK/indeks\\_bahaya\\_banjir](#) (ImageServer)
- [inaRISK/indeks\\_bahaya\\_cuaca\\_ekstrim](#) (ImageServer)
- [inaRISK/indeks\\_bahaya\\_gelombang\\_ekstrim\\_dan\\_abrasi](#) (ImageServer)
- [inaRISK/indeks\\_bahaya\\_gempabumi](#) (ImageServer)
- [inaRISK/indeks\\_bahaya\\_kebakaran\\_hutan\\_dan\\_lahan](#) (ImageServer)
- [inaRISK/indeks\\_bahaya\\_kekeringan](#) (ImageServer)
- [inaRISK/indeks\\_bahaya\\_letusan\\_gunungapi](#) (ImageServer)
- [inaRISK/indeks\\_bahaya\\_tanah\\_longsor](#) (ImageServer)
- [inaRISK/indeks\\_bahaya\\_tsunami](#) (ImageServer)
- [inaRISK/Indeks\\_Bahaya](#) (MapServer)
- [inaRISK/indeks\\_kerentanan\\_banjir\\_bandang](#) (ImageServer)
- [inaRISK/indeks\\_kerentanan\\_banjir](#) (ImageServer)



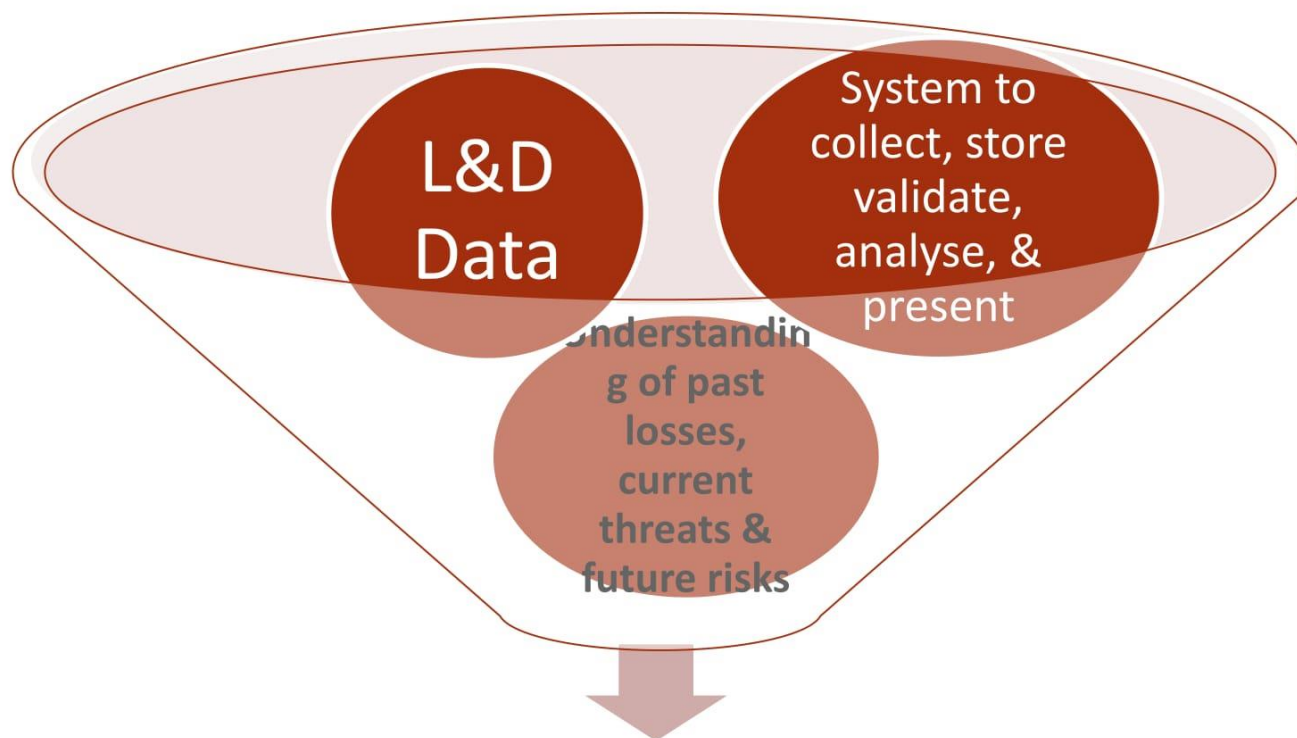
# **Support Establishing Disaster Loss Databases**

# 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



**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.





DesConsultar on-line Th: X

www.desinventar.net/DesInventar/thematic\_OL.jsp

desinventar  
Disaster Information Management System

POWERED BY  
UNISDR  
UN  
DIP

Profile Query View data View map Charts Statistics Reports Thematic Crosstab English Data

Region: Laos - [lao] Thematic Map Generator

Back to thematic definition... Google Map Virtual Earth KML SVG Background: ON OFF

Variable: Transportation

- 0/No Data
- <= 1
- 1 <= 10
- 10 <= 100
- 100 <= 1000
- 1000 <= 10000
- > 10000

Layers

- Events aprox. location
- District
- Province

Refresh

Activate Windows  
Go to Settings to activate Windows.

I'm Cortana. Ask me anything.

14:11 11/7/2016

www.mdld-rrd.gov.mm/DesInventar/profiletab.jsp

Myanmar  
Disaster Loss and Damage Database (MDLD)

Profile

Region: Myanmar - [mmr]

Select what profile you want:

Disaster type: Multi-hazard profile State and Region: ALL

Myanmar

Profile:

This Country Profile shows a set of typical results known as "Preliminary Analysis" coming from the disaster database. Charts, Maps and tables below will provide you with a basic understanding of the effects of many types of natural disasters occurred in the region. [Click here for more info](#) [PDF version](#)

Composition of Disasters

Deaths

DataCards

Activate Windows  
Go to Settings to activate Windows.

www.mdld-rrd.gov.mm/DesInventar/index.jsp

Search the web and Windows

0:11 9/15/2016



Region **Timor Leste** - [1] **Query Definition** Keyword search (slow)

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

Disaster type	District	Sub-District	Suco	Cause
<input type="checkbox"/> STRONG WIND <input type="checkbox"/> FIRE <input type="checkbox"/> FLOOD <input type="checkbox"/> LANDSLIDE <input type="checkbox"/> CONFLICT <input type="checkbox"/> SPATE <input type="checkbox"/> ACCIDENT <input type="checkbox"/> RAINS <input type="checkbox"/> DROUGHT <input type="checkbox"/> SURGE	<input type="checkbox"/> AILEU <input type="checkbox"/> AINARO <input type="checkbox"/> BAUCAU <input type="checkbox"/> BOBONARO <input type="checkbox"/> COVALIMA <input type="checkbox"/> DILI <input type="checkbox"/> ERMERA <input type="checkbox"/> LAUTEM <input type="checkbox"/> LIQUICA <input type="checkbox"/> MANATUTO			<input type="checkbox"/> Strong wind <input type="checkbox"/> Behaviour <input type="checkbox"/> Drought <input type="checkbox"/> Contamination <input type="checkbox"/> Deforestation <input type="checkbox"/> Deterioration <input type="checkbox"/> Earthquake <input type="checkbox"/> El Niño <input type="checkbox"/> Human Error <input type="checkbox"/> Erosion

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: <input type="checkbox"/> Deaths <input type="checkbox"/> Houses Destroyed <input type="checkbox"/> Victims <input type="checkbox"/> Evacuated <input type="checkbox"/> Hospitals <input type="checkbox"/> Damages in roads Mts <input type="checkbox"/> Lost Cattle	<input type="checkbox"/> Injured <input type="checkbox"/> Houses Damaged <input type="checkbox"/> Affected <input type="checkbox"/> Relocated <input type="checkbox"/> Missing <input type="checkbox"/> Damages in crops Ha. <input type="checkbox"/> Education centers	Select events that affected: <input type="checkbox"/> Water supply <input type="checkbox"/> Health sector <input type="checkbox"/> Industries <input type="checkbox"/> Communications <input type="checkbox"/> Relief <input type="checkbox"/> Other sectors	Logic <input type="radio"/> OR <input checked="" type="radio"/> AND
Date range: (YYYY MM DD) From: <input type="text"/> <input type="text"/> <input type="text"/> To: <input type="text"/> <input type="text"/> <input type="text"/> GLIDENumber: <input type="text"/>			<input type="button" value="View data"/> <input type="button" value="New Query"/> <input type="button" value="Save Query"/> <input type="button" value="Load Query"/>
Expert Selection <input type="text"/> <input type="button" value="Expert"/> <input type="button" value="Clear"/>			



**Thank you**