

Using Evidence for Building Resilience to Disasters and Climate Change



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Resilient nations.*

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Increasing Extreme Weather Events



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- Rising temperatures and sea level rise causing extreme weather events
- Intensity and frequency of typhoons and floods increasing causing unprecedented losses (Haiyan, Chennai, Sri Lanka)
- Significant threats to development in a region already known to be the most disaster prone
- Livelihoods of more than 60% population depends on climate-sensitive sectors (agriculture, forestry, fishing)



UNDP supporting recording of impacts of disasters



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- Data captured at high resolution – *sub-district level*
- Information about occurrences and impacts are captured over a long period of time (20-30 years)
- Direct impacts of an event
 - Event details (*date, location, intensity*)
 - Population affected – gender disaggr. (*death, injured, affected, ...*)
 - Damages and losses to sectors (*education, road, health, etc.*)
- Analysis undertaken at provincial, district and sub-district levels to derive emerging trends and patterns of events and impacts to feed into national and sub-national planning



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UNDP's work on disaster loss and damage databases to support 'Risk-Informed Development'

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220,000 records

First event in 1815 AD

15 countries

Applications at global and national levels



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- Global Assessment Reports (GAR) on DRR - 2009, 2011, 2013, 2015
- Extensive intensive risk analysis
- Disaster risk and poverty analysis
- Poverty monitoring
- Allocation of funds based of levels of risks
- Local disaster management plans
- InaRisk (Indonesia)
- Monitoring of indicators of SFDRR and SDGs



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Few applications from Indonesia

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GEOSPATIAL



DATA DISASTER INFORMATION INDONESIA



GEOGRAPHIC INFORMATION SYSTEMS



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

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

DIBI Road Map



2006
UNDP introduced the technology "DesInventar"

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

2007
DIBI Launching

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

- Training
- Socialization in some provinces
- Launching DIBI Provinces
- Provincial HDRI

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

2014
Integration DIBI with Baseline data





- ▶ Name of Database : Disaster Data and Information of Indonesia (DIBI)
- ▶ URL of Database: <http://dibi.bnppb.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

DIBI – dibi.bnnpb.go.id (2017)



BNPB

19,627/5,932

BENCANA / BANJIR

Kejadian Bencana

7,304/1,467 ^{Jiwa}

KORBAN GEMPA BUMI

Jumlah Korban

3,849,187/2,417,668 ^{Jiwa}

MENGUNSI BANJIR

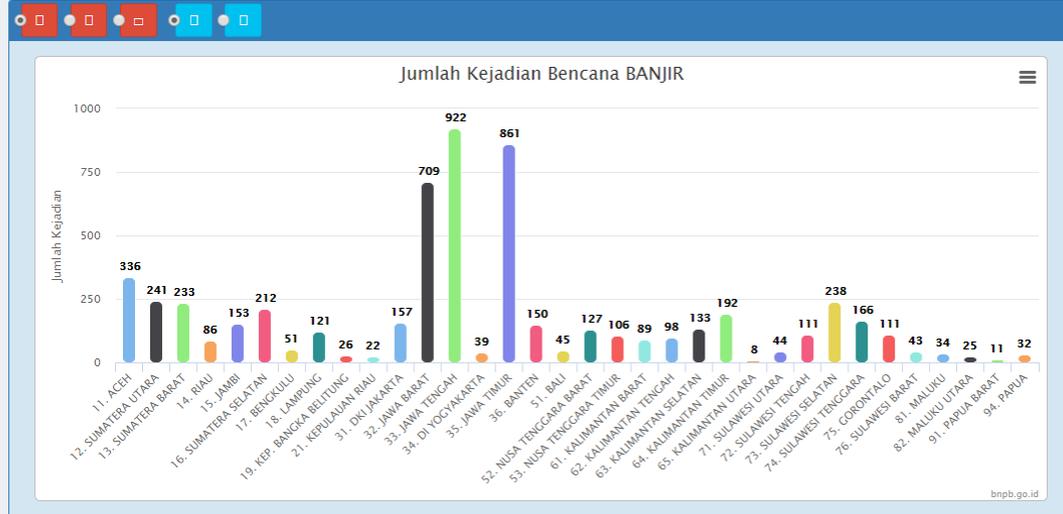
Mengungsi

7,304/1,467/1,467

RINGAN / SEDANG / BERAT

Rumah Rusak

BANJIR (5932) Kejadian



Application and Use of the Dibi



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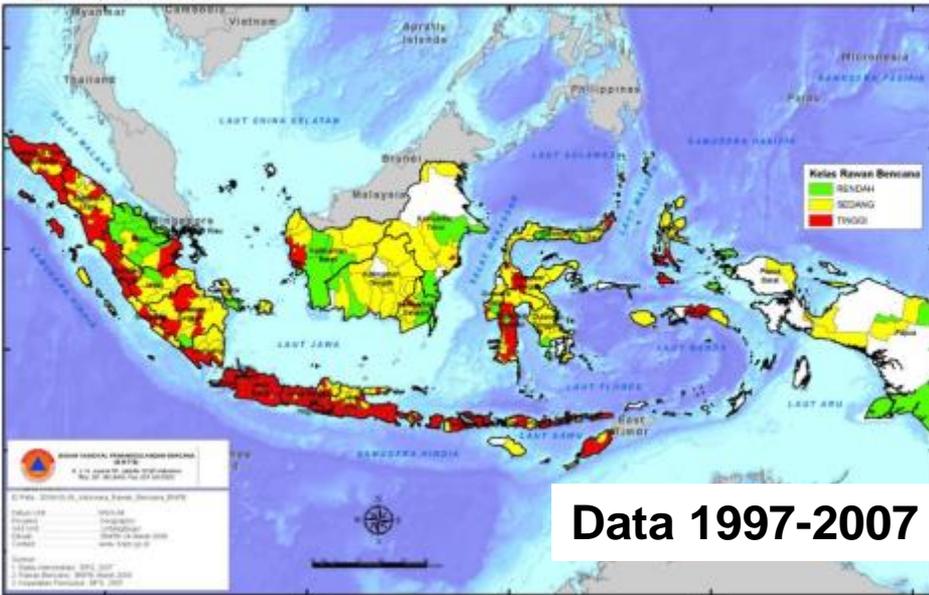
- ▶ Indonesia historical database was officially used to create disaster-prone area index for the determination of district who should be have BPBD.
- ▶ Used as a proxy indicator of risk map.
- ▶ Disaster prone area index used by the Ministry of Finance to allocated Special Allocation Fund for Disaster Management in District/City level.
- ▶ Support the National Disaster Management Plan.
- ▶ Support the National Action Plan for Disaster Risk Reduction.
- ▶ Support for national programme policies and development plans to reduce the vulnerability of people living in highly-disaster prone areas in many ministry/agency : the *National Rural Community Empowerment Programme (PNPM Mandiri)*; *School and Hospital Safer Programme*; the *Rice for the Poor Programme*; and *Social Security for Vulnerable Senior Citizens Programme*
- ▶ Provincial and District Disaster Profile
- ▶ Risk Assessment
- ▶ Used by University for research, etc.

Improve of Disaster Prone Area Index in Indonesia



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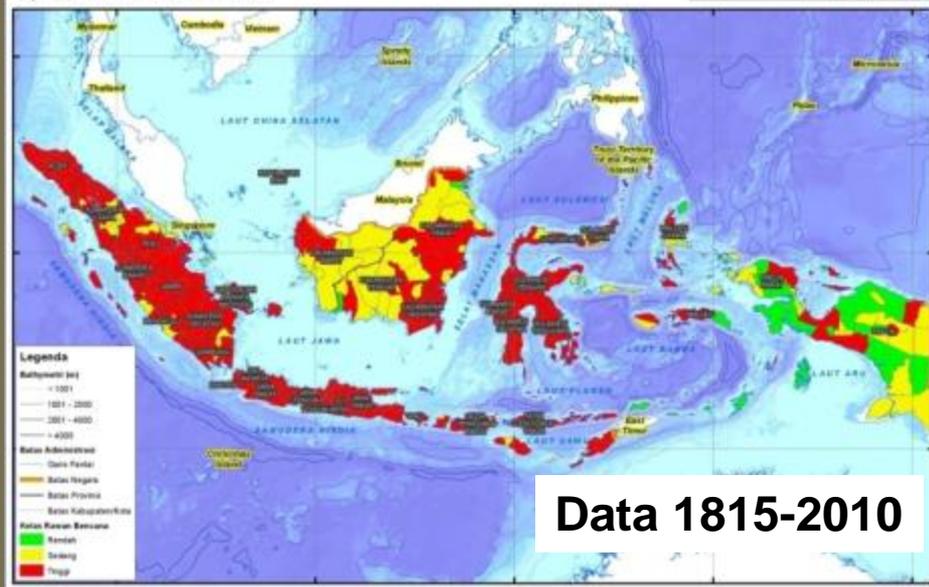
PETA INDEKS RAWAN BENCANA DI INDONESIA
Tingkat Kabupaten



Data 1997-2007

PETA INDEKS RAWAN BENCANA DI INDONESIA

Update Periode : tahun 2010 - 2011



Data 1815-2010

DIBI is an example of such technology, which has been adapted for local data and indicators, and has been used in risk mapping and risk indexing. In addition to the above, the project has also supported to link PNPM Mandiri to DIBI, hence enabling cross-referencing between DRR and poverty.

Risk Assessment Output in Indonesia



1. Indonesia Risk Map

- Risk distribution in spatial view
- Number of potential exposure
 - Population
 - Economic
 - Environment



Recommendation actions on specific location

2. Indonesia Risk Index



Indonesia Risk Map



Small scale : 250 K/50 K/25K

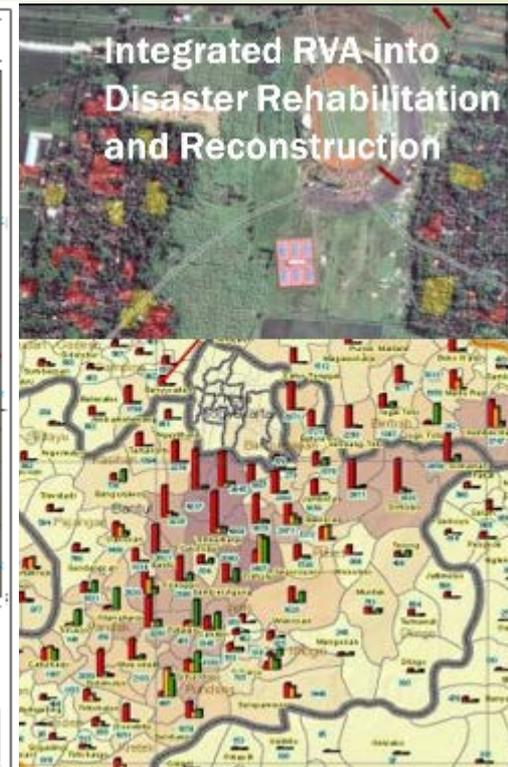
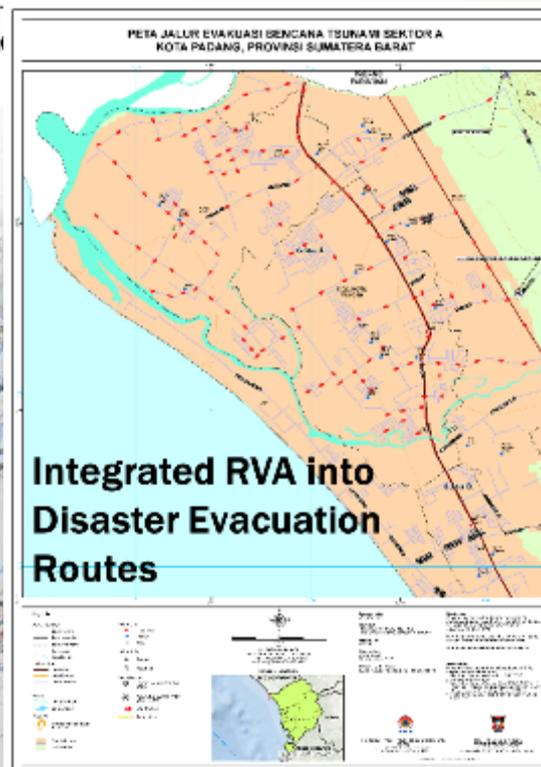
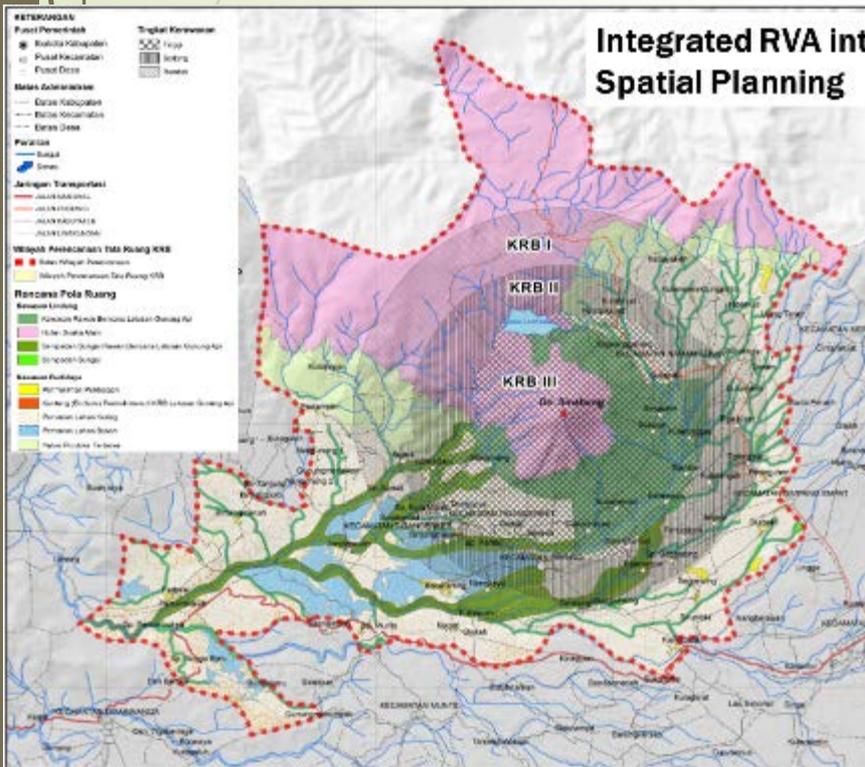
- Spatial Planning
- Planning Disaster Management Plan
- Disaster Risk Index



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Large scale : 10 K/5 K

- Evacuation plans
- Rehabilitation and reconstruction

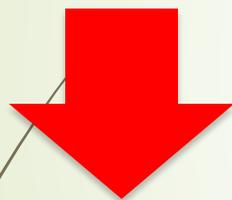
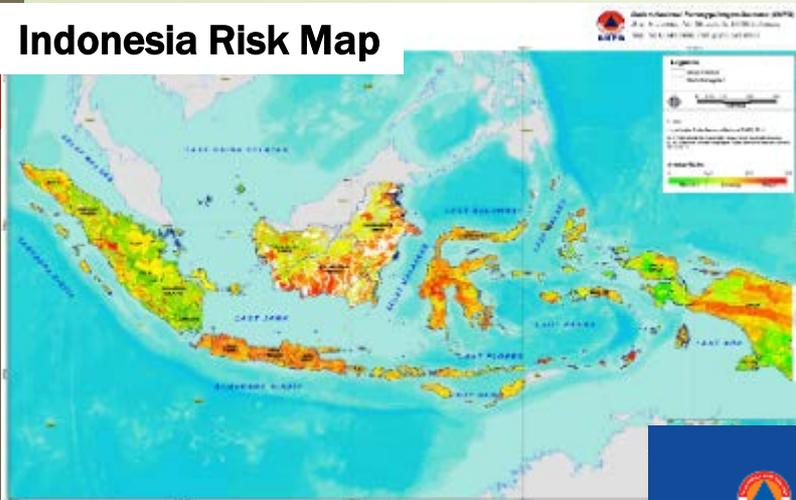


...based on the request of the Ministry of Finance, as the basis for determining the priority of the Special Allocation Fund for Disaster Management, BNPB produced Indonesia disaster risk index (IRBI 2013) for nine types of threats (multi-hazard).

IRBI 2013 is also used as a target in the National Medium Term Development Plan 2015-2019

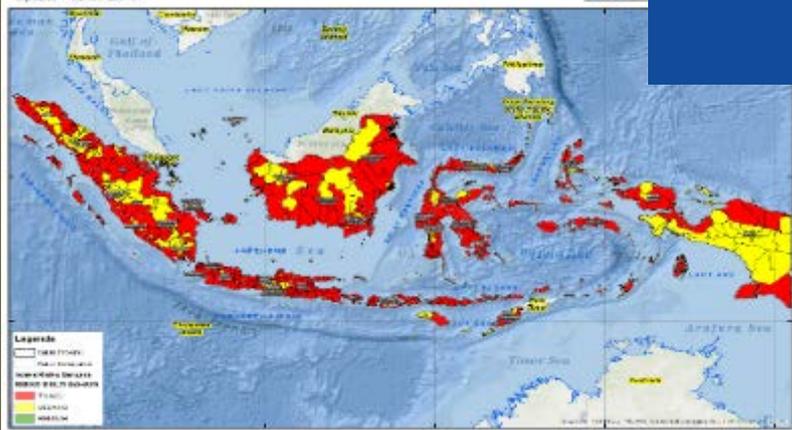
Goal:
Lowering the Disaster Risk Index in the centers of economic growth at high risk

Indonesia Risk Map



PETA INDEKS RISIKO BENCANA INDONESIA

Update Tahun 2013



Dibi Application Programming Interface (API)



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- ▶ API as service layer data in DIBI application can be accessed via url: dibi.bnnpb.go.id/api/
- ▶ Get all the disaster data:
dibi.bnnpb.go.id/api/get-all-data
- ▶ Obtain provincial data:
dibi.bnnpb.go.id/api/get-province
- ▶ Obtain district data: dibi.bnnpb.go.id/api/get-district
- ▶ Getting data on disaster type:
dibi.bnnpb.go.id/api/get-type-disaster

Moving Forward



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- Continued support to SFDRR and SDGs
- Building urban resilience
- Enhance integration with CCA
- Support Risk-Informed Development
- Global Centre for Disaster Statistics (GCDS)
- Pilot countries in Asia
 - Indonesia, Cambodia, Philippines, Myanmar, Sri Lanka, Maldives, Nepal



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Questions/ Comments?

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