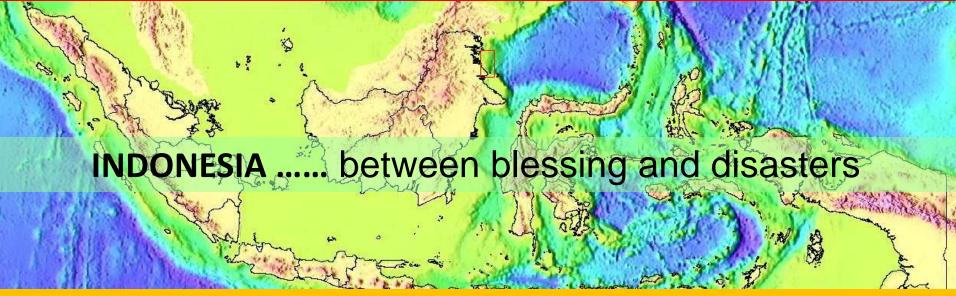
# Indonesia Scenario Assessment For Emergencies (InaSAFE)

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Supported by:

- 17,504 islands (1<sup>st</sup> in the world)
- 81,000 km long coastline (2<sup>nd</sup> in the world)
- 237 million people (4<sup>th</sup> in the world)
- Mega Biodiversity (10% plants, 12% of mammals, 16% of reptiles, 15% fish,17% of bird in the world live in Indonesia) 3<sup>rd</sup> in the world
- 13% or 127 active volcanoes in the world (1<sup>st</sup> in the world)

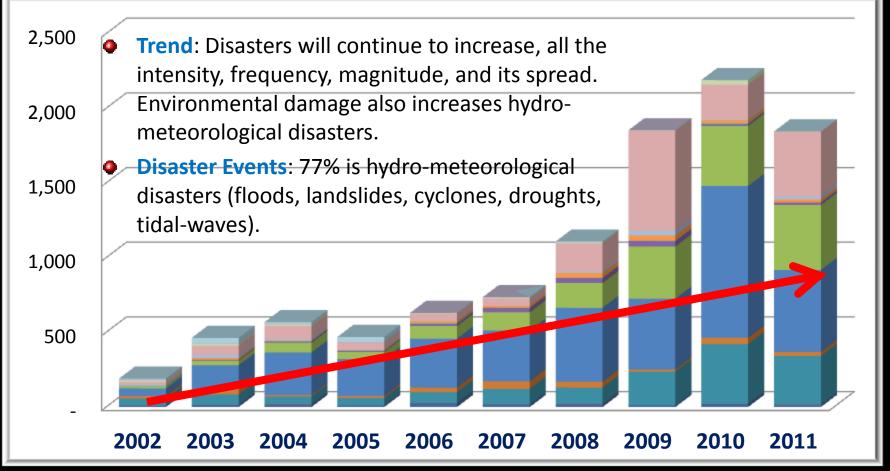


Based on Population Census 2010, number of population exposed to disaster:

- 1. Landslide: 229.6 millions
- 2. Earthquake : 227.4 millions
- 3. Drought : 225.6 millions
- 4. Typhoon : 115.7 millions

- 5. Flood : 60.9 millions
- 6. Forest fire: 50 millions
- 7. Tsunami : 5 millions
- 8. Volcano eruption: 3,8 millions

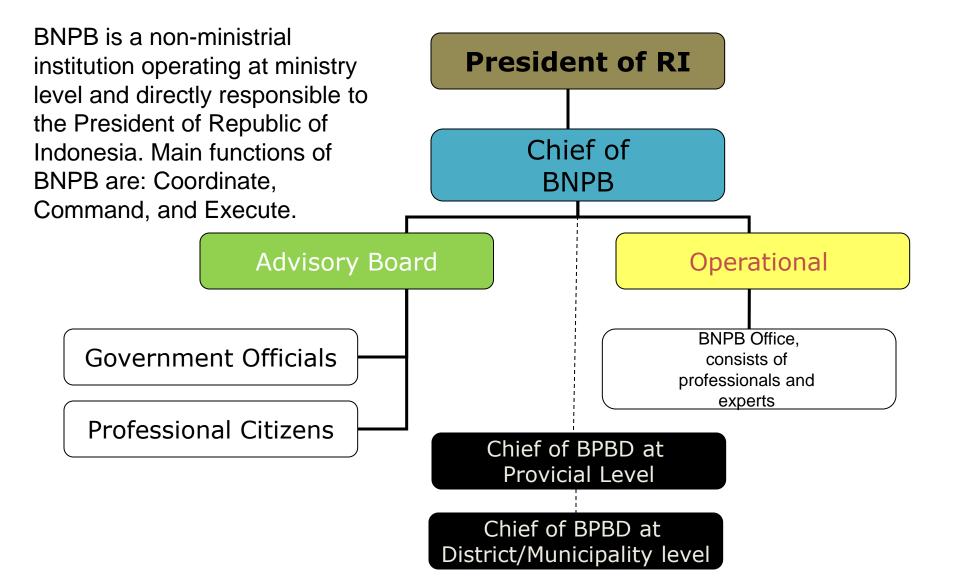
### How about Disasters in Indonesia?



Disaster management has become a national priority in RPJMN 2010-2014. Development targets for 2012 are economic growth by 6.7%; reduce inflation by 5.3%; and reduce unemployment by 6.5%; which are influenced by 5 factors: 1) European economic crisis, 2) the geopolitics in the Middle East, 3) Political and sociology dynamics, and homeland security, 4) the dynamics in Asia Pacific region, and 5) natural disasters

Speech of President of Republic of Indonesia 19-2-2012

### Organization for Implementation of Disaster Management in Indonesia



### GEOSPATIAL INFORMATIAN (www.bnpb.go.id)

"To provide geospatial information quickly and easily, BNPB provide basic maps, disaster maps, geospatial and remote sensing data that can be accessed free of charge by the public. There are over 1000 disaster maps in the BNPB's Geospatial Website"





# 2011 Georgeneen . \$4975



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#### **Base Map:**

Indonesian Topographic map of scale 1: 250,000, and scale 1: 25,000 for disasters

#### **Disaster Map:**

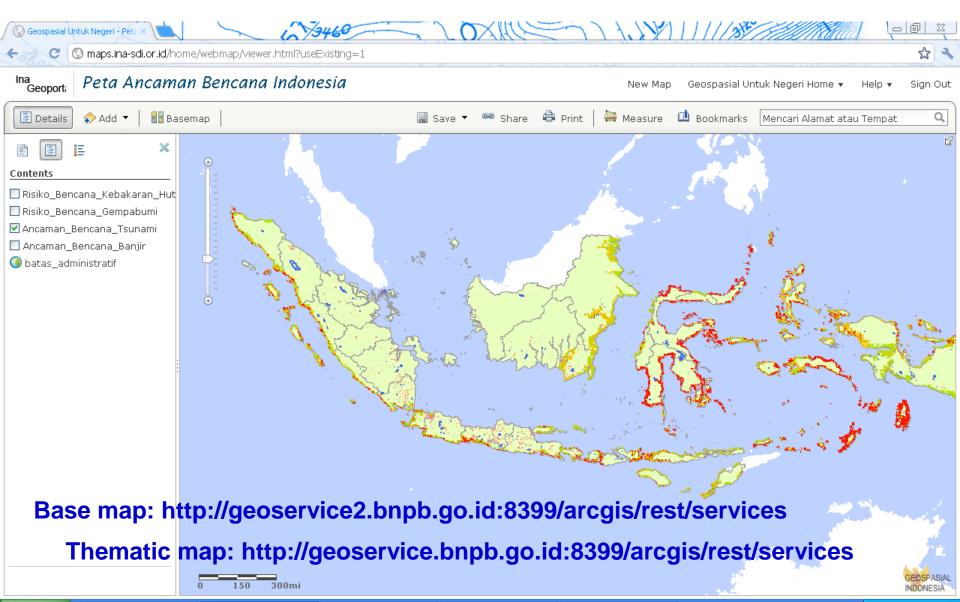
Hazard maps (earthquakes, tsunamis, floods, landslides, vulnerability maps, map capacity, etc.)

#### **Disaster Monitoring:**

The events of recent disasters in Indonesia.

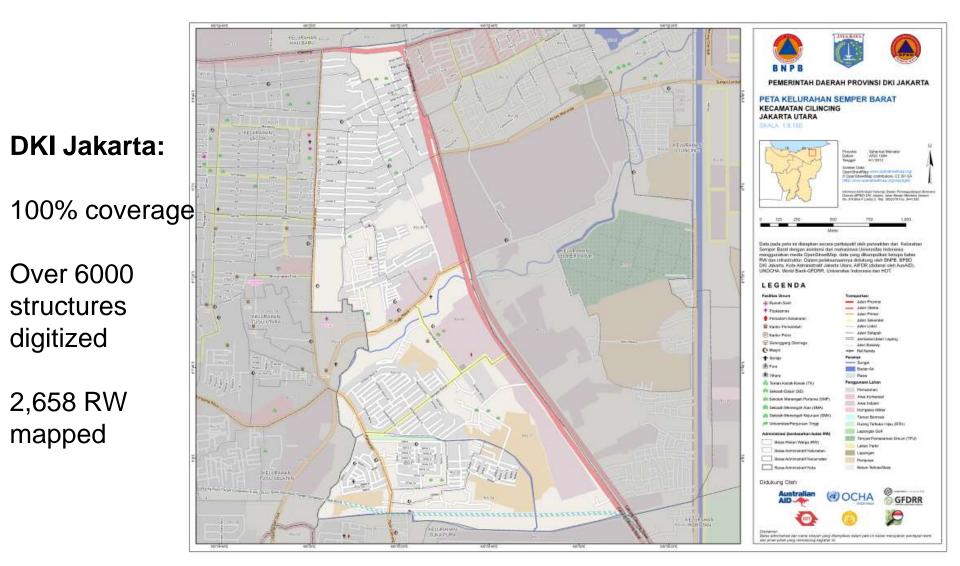
### **BNPB Map Services**

BNPB provides base map and thematic map services for public, this services can be used for map making or analysis using desktop GIS (qGIS/InaSAFE, ArcGIS) or online GIS (arcgis.com).



### Participatory Mapping - OpenStreetMap

Free map entire world. Easy download as shp file. Done by contributor and Validator. Can be used as data source of InaSAFE



# InaSAFE Purpose

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- Get the best available science and data to bear on disaster management decisions.
- Make it easy to generate realistic disaster scenarios for use in contingency planning.
- Provide evidence based and quantitative impact assessments.

# InaSAFE



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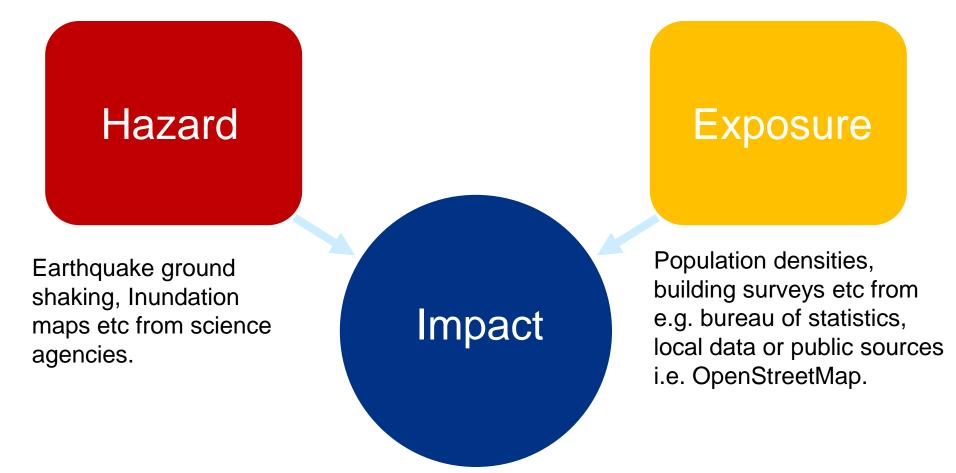
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- Based on QGIS existing mapping framework
- Provides a collection of GIS procedures for impact analysis
- Keyword system identifies input layers and automatically selects the right impact functions
- Easy to use
- System can be extended
- "Free and Open Source"

### InaSAFE – Concept

In the event of **hazard scenario**, how many **exposed elements** might be **impacted**?



# Example 1: Population impact from flood levels and minimum requirements

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In the event of flood in Jakarta like in 2007 how many people might need to be evacuated?



bagi

### Example 2: Buildings in RW's that had floods in 2007

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#### Example 3: Buildings impacted by earthquake

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## InaSAFE – Realtime

It can also do real time analysis, and provide impact analysis within minutes after an earthquake

www.bnpb.go.id



### Perkiraan Dampak Gempa

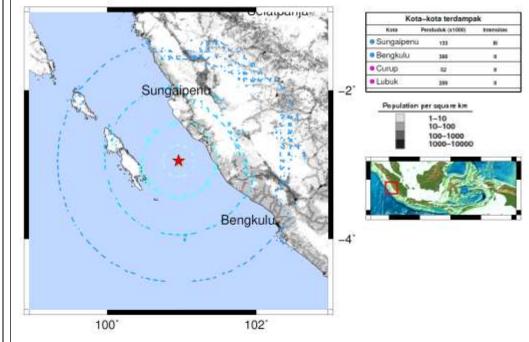
PROTOTIPE

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Perkiraan jumlah penduduk terpapar pada setiap tingkat getaran berbeda

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#### Penduduk Paparan



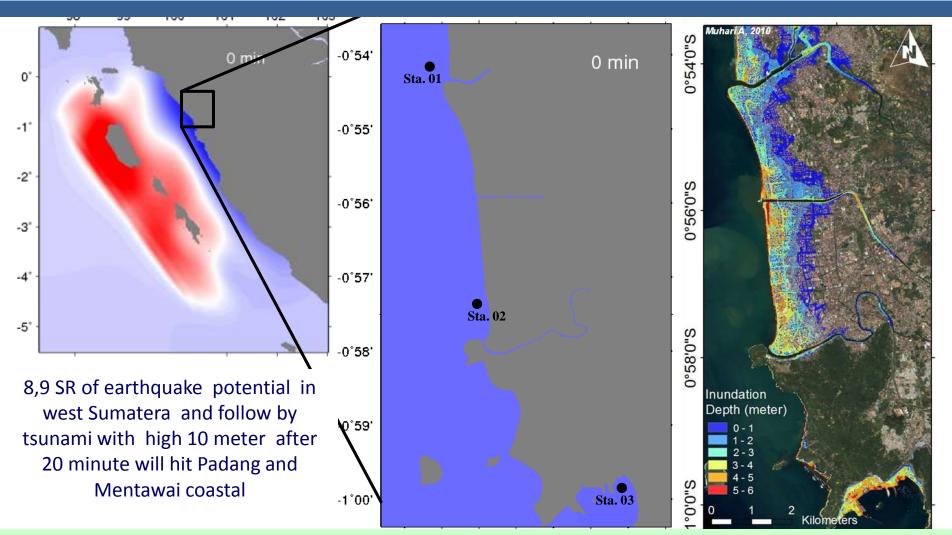
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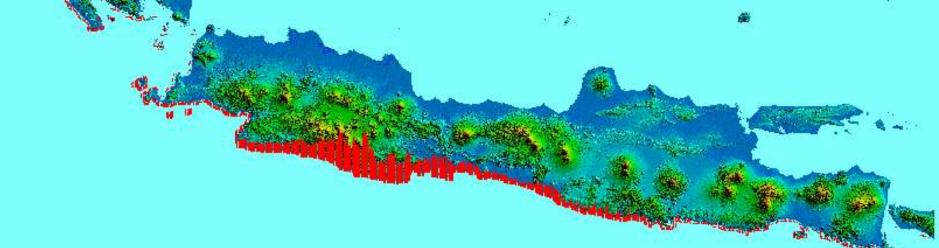
# Challenges

- Hazard and exposure data must exist and be available to disaster managers
- Format, metadata and distribution methods must be standardised
- Initiatives like Open Street Map can help!

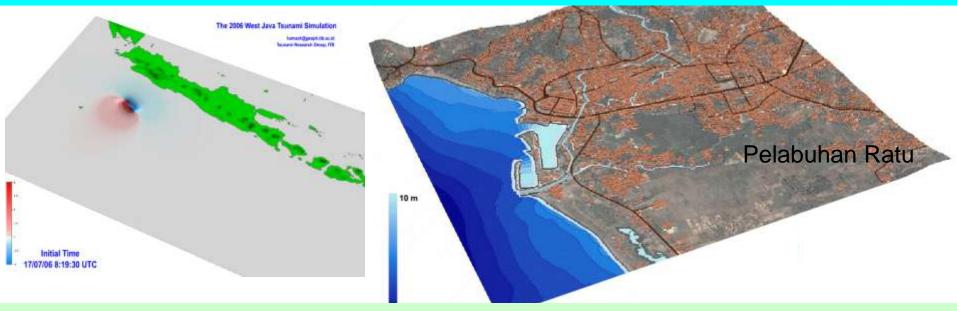
#### National of Priority for Anticipation from Megathrust Mentawai In 2013 - 2014



There are about 1.3 million people live in this area. Worst scenario of geospatial analysis, shows that tsunami will caused **39.321** dead and **52.637** loss. Many infrastructure i.e. Teluk Bayur harbor, Minangkabau Airport, etc. will be damaged.



#### **Modeling Tsunami in Coastal of South Java**



The coastal of South Java have potential hit by tsunami with more 10 meters height trigger from 8,2 SR earthquake. The tsunami will damaged settlements, infrastructures, tourist locations.

#### Shelter and Siren Tsunami will Construct in that Area













# Closing



Indonesia Tangguh

- The extent of the disaster-prone region of Indonesia with 13 types of disasters require geospatial and tools such as InaSAFE to process it in quickly, effectively and efficiently.
- BNPB still require cooperation with various parties to provide and analyze geospatial and remote sensing data / information in quickly, effectively and efficiently.
- End-to-End in disaster response is From-Person-To-Person, that will resulted a resilient disaster communities.

InaSAFE 0.4.0 soft launch today - available for download at: http://tinyurl.com/inasafe-install

# Ngiyabonga Dankie **Thank You**





#### **BADAN NASIONAL PENANGGULANGAN BENCANA**

(National Agency for Disaster Management)

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🔠 YouTube	: BNPBIndonesia