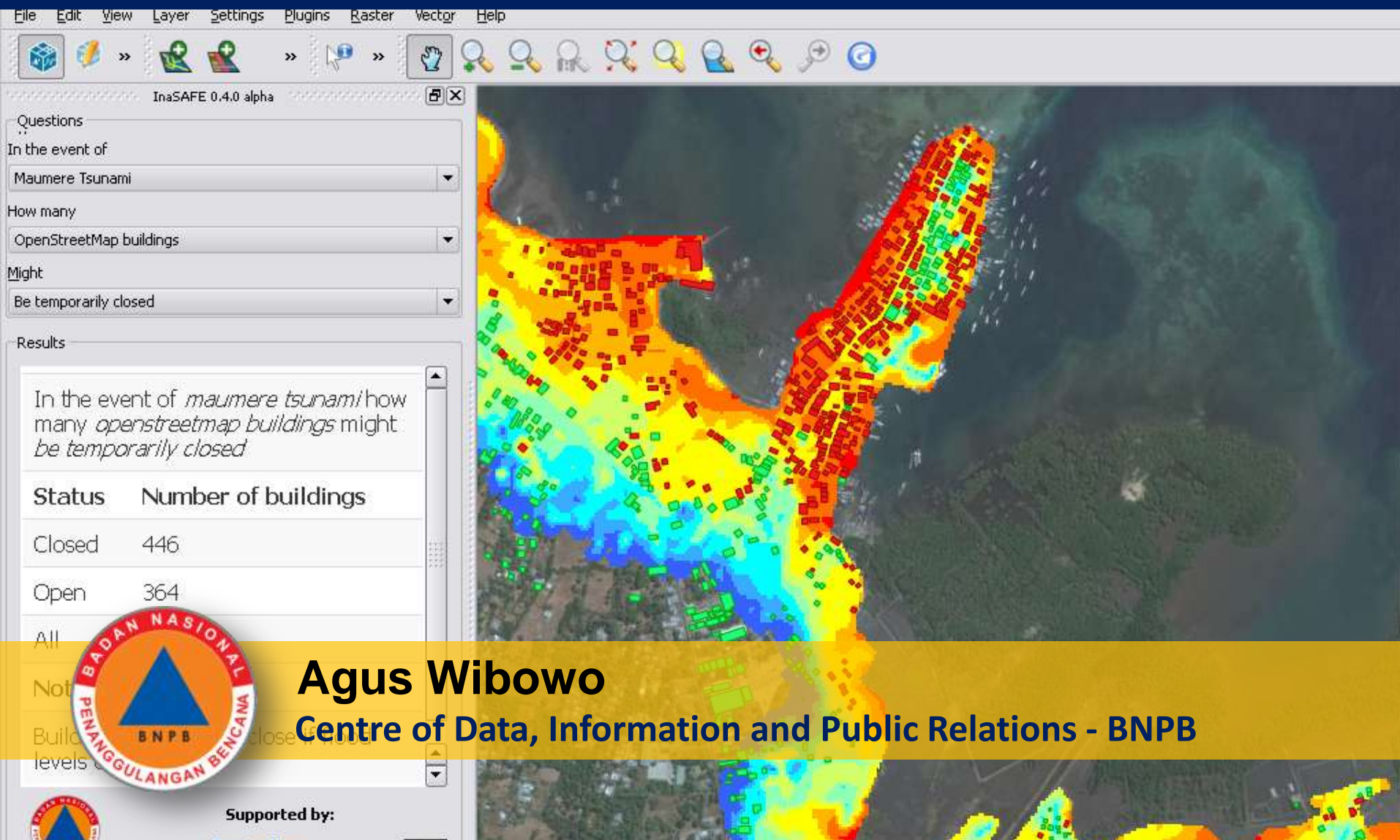


Indonesia Scenario Assessment For Emergencies (InaSAFE)



InaSAFE 0.4.0 alpha

Questions

In the event of
Mauwere Tsunami

How many
OpenStreetMap buildings

Might
Be temporarily closed

Results



In the event of *mauwere tsunami* how many *openstreetmap* buildings might be temporarily closed

Status	Number of buildings
Closed	446
Open	364

All
Not
Build
levels

Agus Wibowo
Centre of Data, Information and Public Relations - BNPB

Supported by:





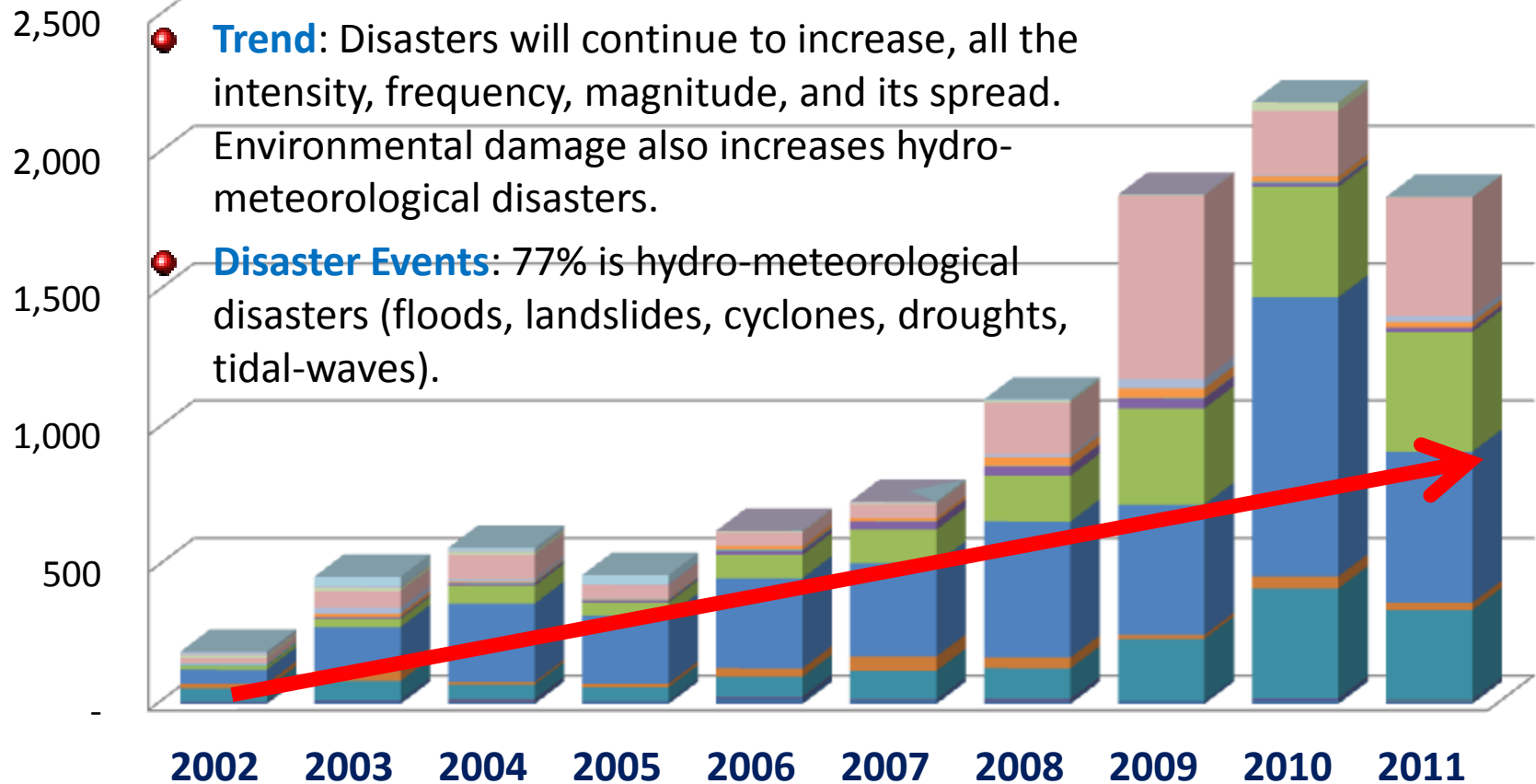
- 17,504 islands (1st in the world)
- 81,000 km long coastline (2nd in the world)
- 237 million people (4th in the world)
- Mega Biodiversity (10% plants, 12% of mammals, 16% of reptiles, 15% fish, 17% of bird in the world live in Indonesia) – 3rd in the world
- 13% or 127 active volcanoes in the world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

INDONESIA between blessing and disasters

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

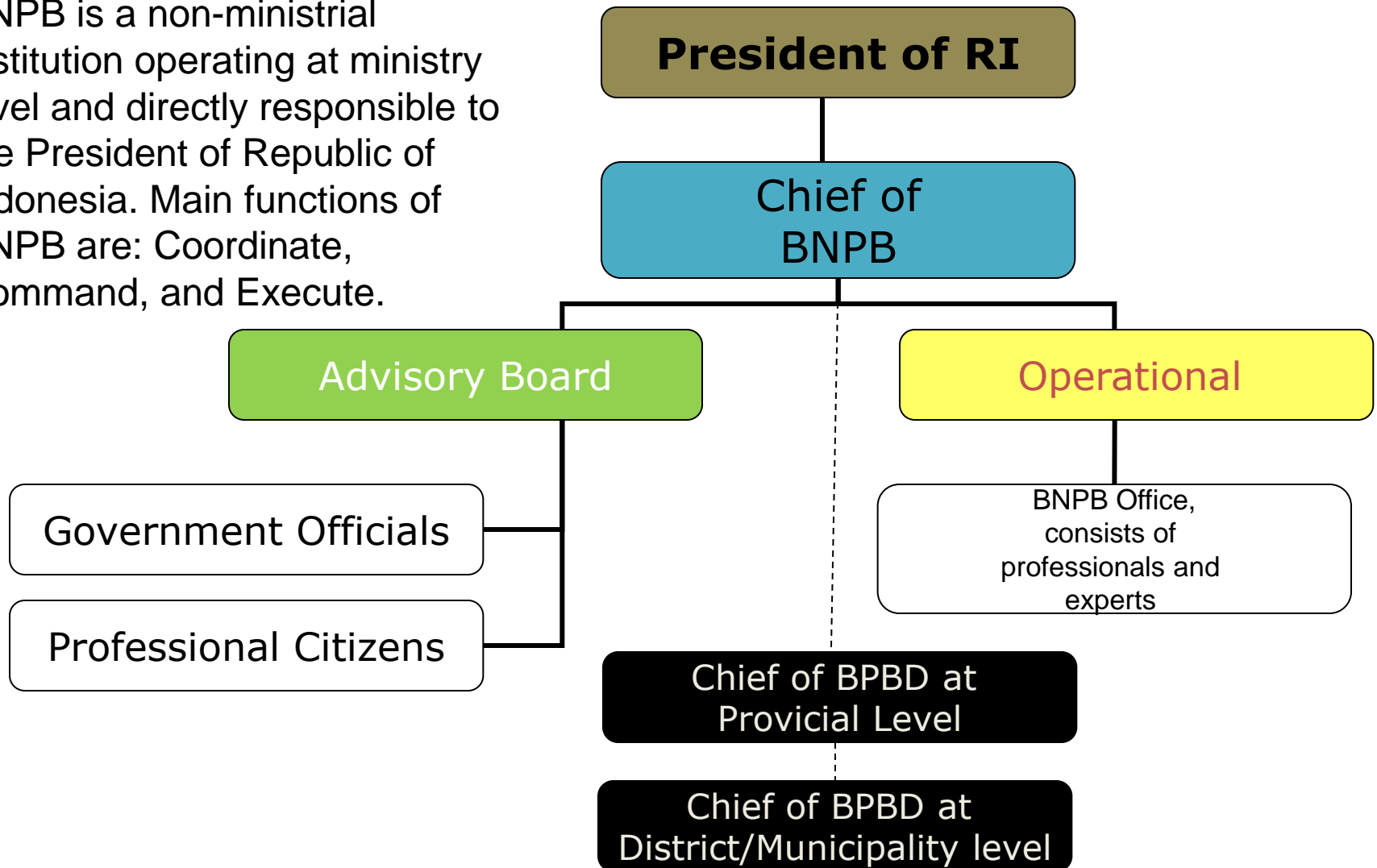
How about Disasters in Indonesia?



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

Organization for Implementation of Disaster Management in Indonesia

BNPB is a non-ministrial institution operating at ministry level and directly responsible to the President of Republic of Indonesia. Main functions of BNPB are: Coordinate, Command, and Execute.



GEOSPATIAL INFORMASI (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”

The screenshot displays the BNPB Geospasial website interface. At the top, there is a navigation menu with options like 'WEB GIS', 'PETA TEMATIK', 'PETA DASAR', 'RENCANA NASIONAL', 'ARISP PETA', and 'LAIN-LAIN'. The main header features the BNPB logo and the text 'GEOSPASIAL BADAN NASIONAL PENANGGULANGAN BENCANA'. The central part of the page shows a large topographic map of Labuha, Maluku Utara, with a red area indicating a disaster impact. Below this, there is a section titled 'PETA TERKINI' (Latest Maps) listing various disaster maps. To the right, there is a smaller map of Indonesia with a red grid overlay, indicating disaster monitoring. The bottom of the page includes a grid of smaller map thumbnails and contact information for BNPB.

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).

The screenshot displays the Ina Geoport web application interface. The browser address bar shows the URL: maps.ina-sdi.or.id/home/webmap/viewer.html?useExisting=1. The page title is "Peta Ancaman Bencana Indonesia". The interface includes a navigation toolbar with options like "Details", "Add", "Basemap", "Save", "Share", "Print", "Measure", and "Bookmarks". A search bar contains the text "Mencari Alamat atau Tempat". The main map area shows a map of Indonesia with various colored overlays representing disaster risks. A 'Contents' panel on the left lists the following layers:

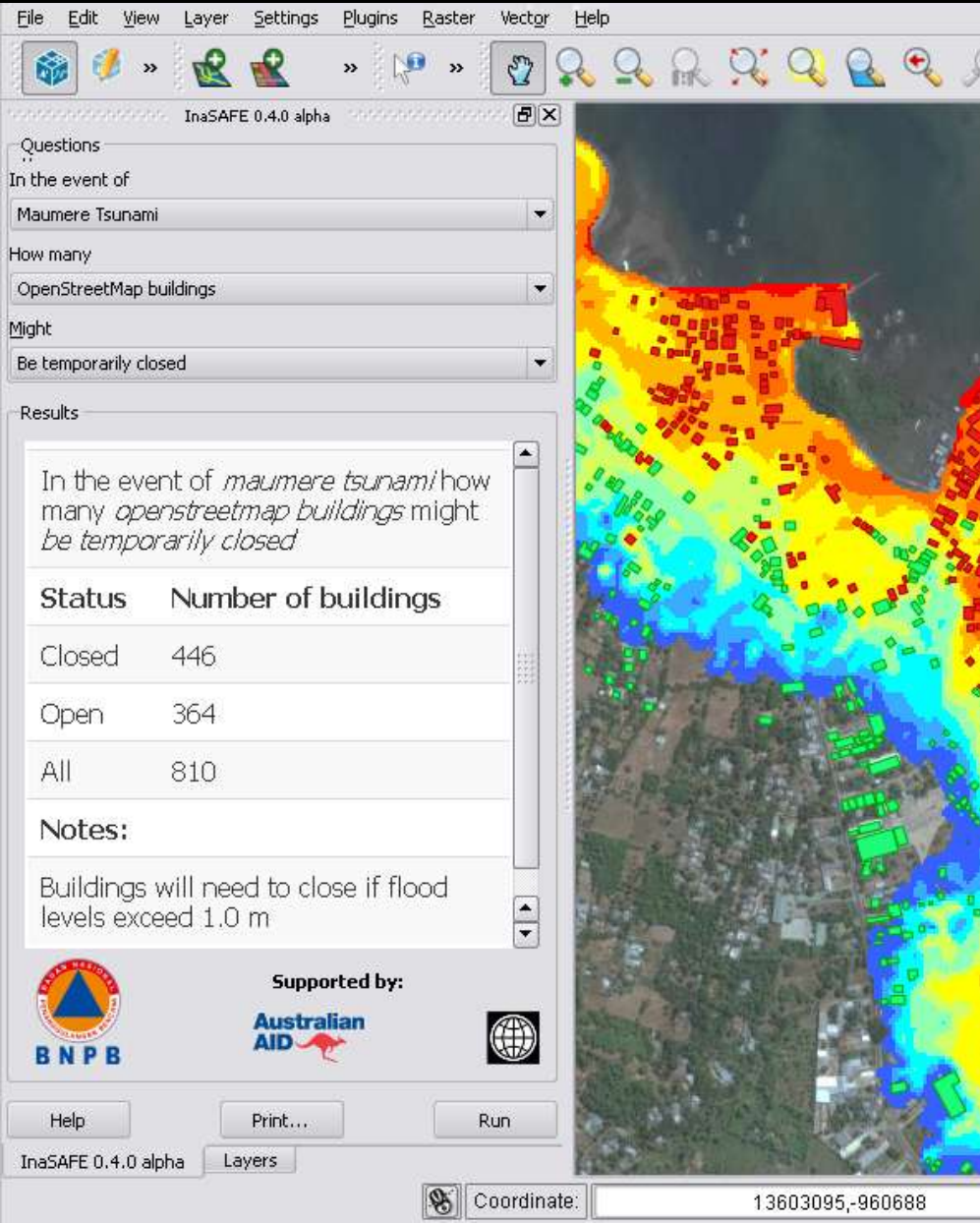
- Risiko_Bencana_Kebakaran_Hut
- Risiko_Bencana_Gempabumi
- Ancaman_Bencana_Tsunami
- Ancaman_Bencana_Banjir
- batas_administratif

At the bottom of the map, there is a scale bar showing 0, 150, and 300 miles. The logo "GOSPASIAL INDONESIA" is visible in the bottom right corner.

Base map: <http://geoservice2.bnpb.go.id:8399/arcgis/rest/services>

Thematic map: <http://geoservice.bnpb.go.id:8399/arcgis/rest/services>

InaSAFE Purpose



InaSAFE 0.4.0 alpha

Questions

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Be temporarily closed

Results

In the event of *maumere tsunami* how many *openstreetmap buildings* might be temporarily closed

Status	Number of buildings
Closed	446
Open	364
All	810

Notes:

Buildings will need to close if flood levels exceed 1.0 m

Supported by:
BNPB
Australian AID

Help Print... Run

Coordinate: 13603095,-960688

- 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



The screenshot shows the InaSAFE 0.4.0 alpha interface. The main map displays a flood impact analysis over a coastal area, with buildings highlighted in red, yellow, and green. The interface includes a menu bar (File, Edit, View, Layer, Settings, Plugins, Raster, Vector, Help), a toolbar, and a sidebar with the following sections:

- Questions:**
 - In the event of: *Maumere Tsunami*
 - How many: *OpenStreetMap buildings*
 - Might: *Be temporarily closed*
- Results:**

In the event of *maumere tsunami* how many *openstreetmap buildings* might be temporarily closed

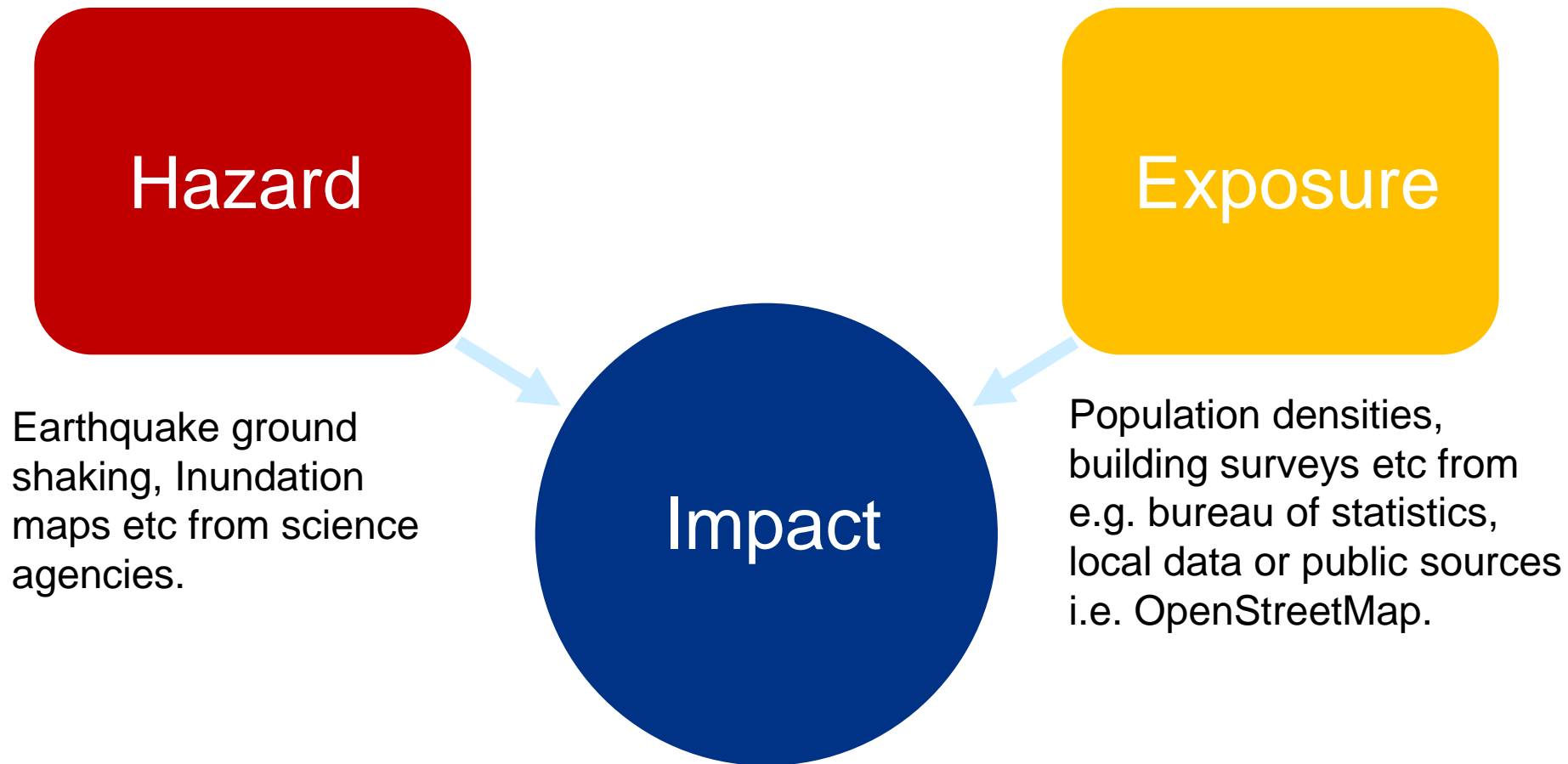
Status	Number of buildings
Closed	446
Open	364
All	810

Notes:
Buildings will need to close if flood levels exceed 1.0 m
- Logos:** BNPB (National Disaster Management Agency of Indonesia) and Australian AID.
- Buttons:** Help, Print..., Run.
- Coordinate:** 13603095,-960688

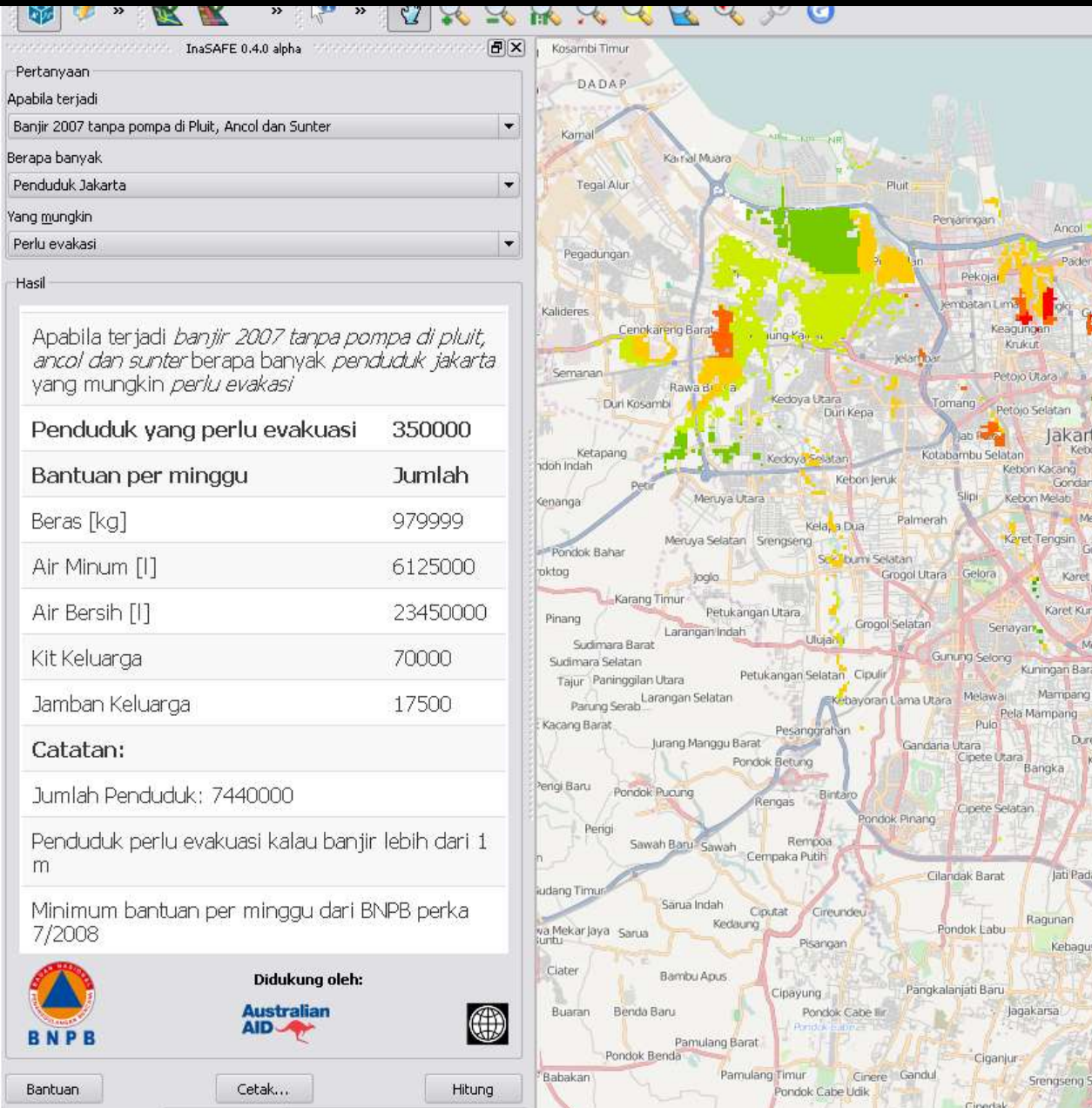
- Based on QGIS – existing mapping framework
- Provides a collection of GIS procedures for impact analysis
- Keyword system identifies input layers and automatically selects the right impact functions
- Easy to use
- System can be extended
- “Free and Open Source”

InaSAFE – Concept

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



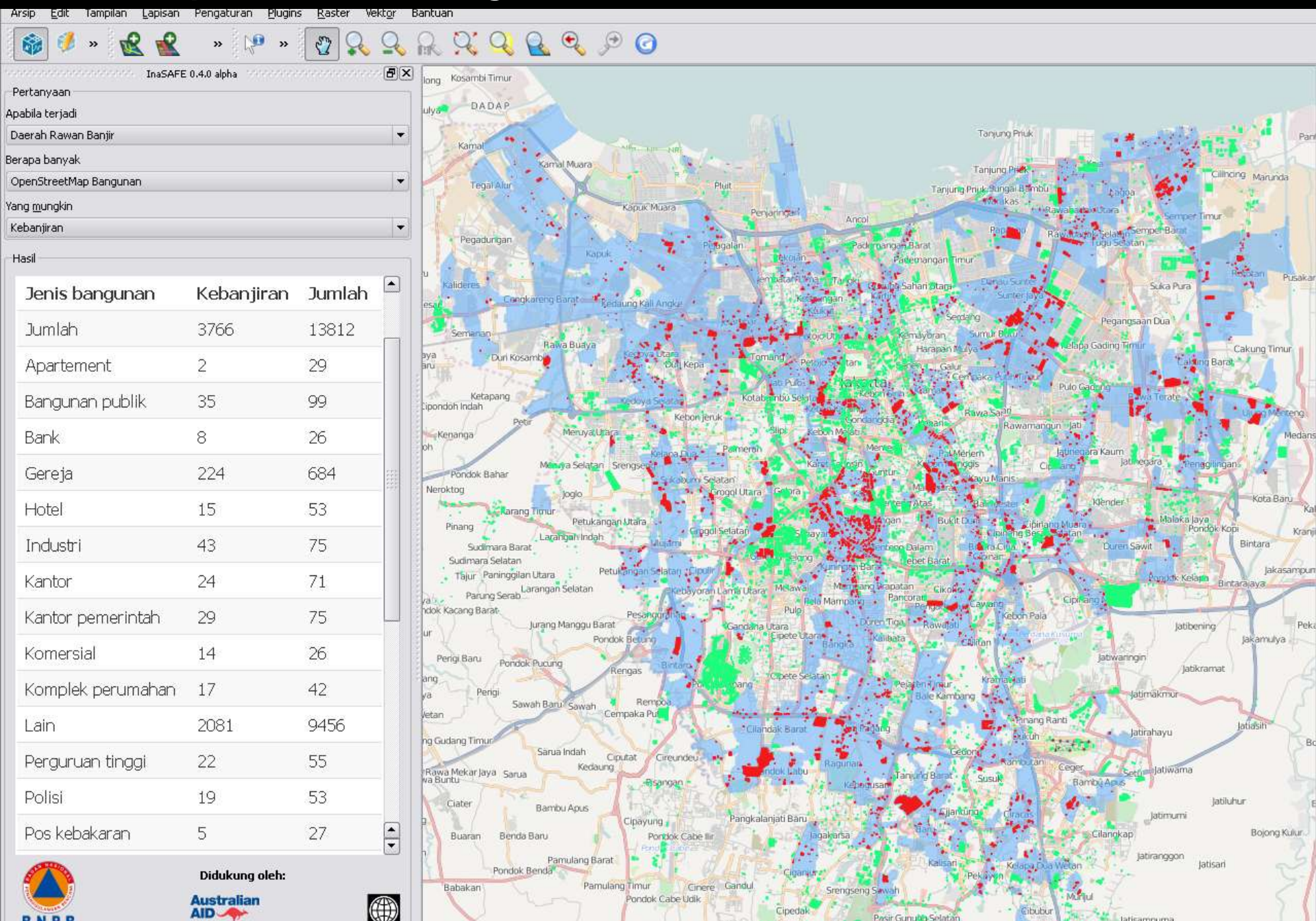
Example 1: Population impact from flood levels and minimum requirements



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



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



Example 3: Buildings impacted by earthquake

File Edit View Layer Settings Plugins Raster Vector Help

InaSAFE 0.4.0 alpha

Questions

In the event of

Sumatran fault magnitude 7.8 scenario

How many

OpenStreetMap Buildings

Might




Be damaged depending on building type

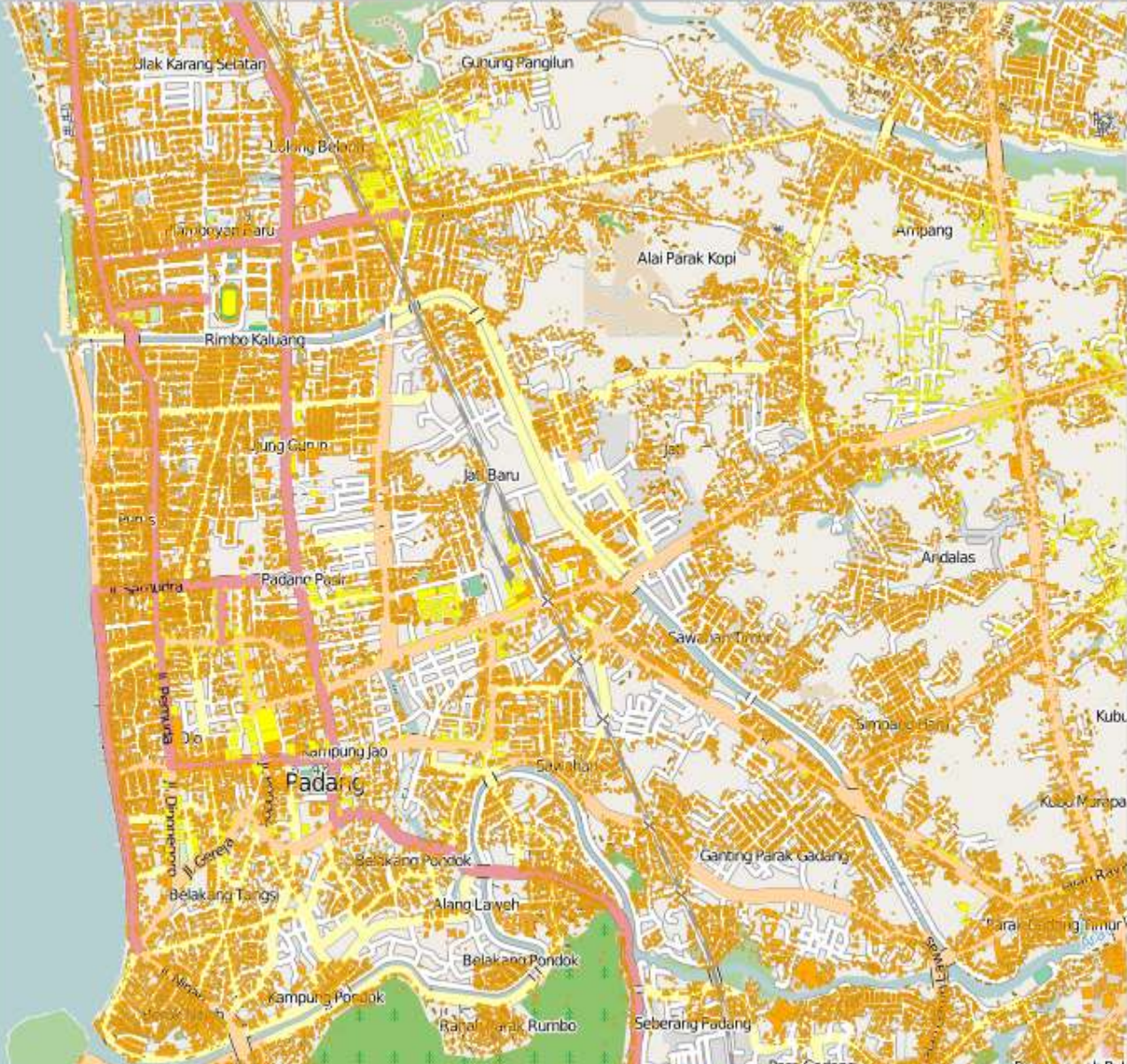
Results

In the event of *sumatran fault magnitude 7.8 scenario* how many *openstreetmap buildings* might be *damaged depending on building type*

Buildings	Total
All	45402
No damage	
Low damage	2021
Medium damage	43381
High damage	

Supported by:

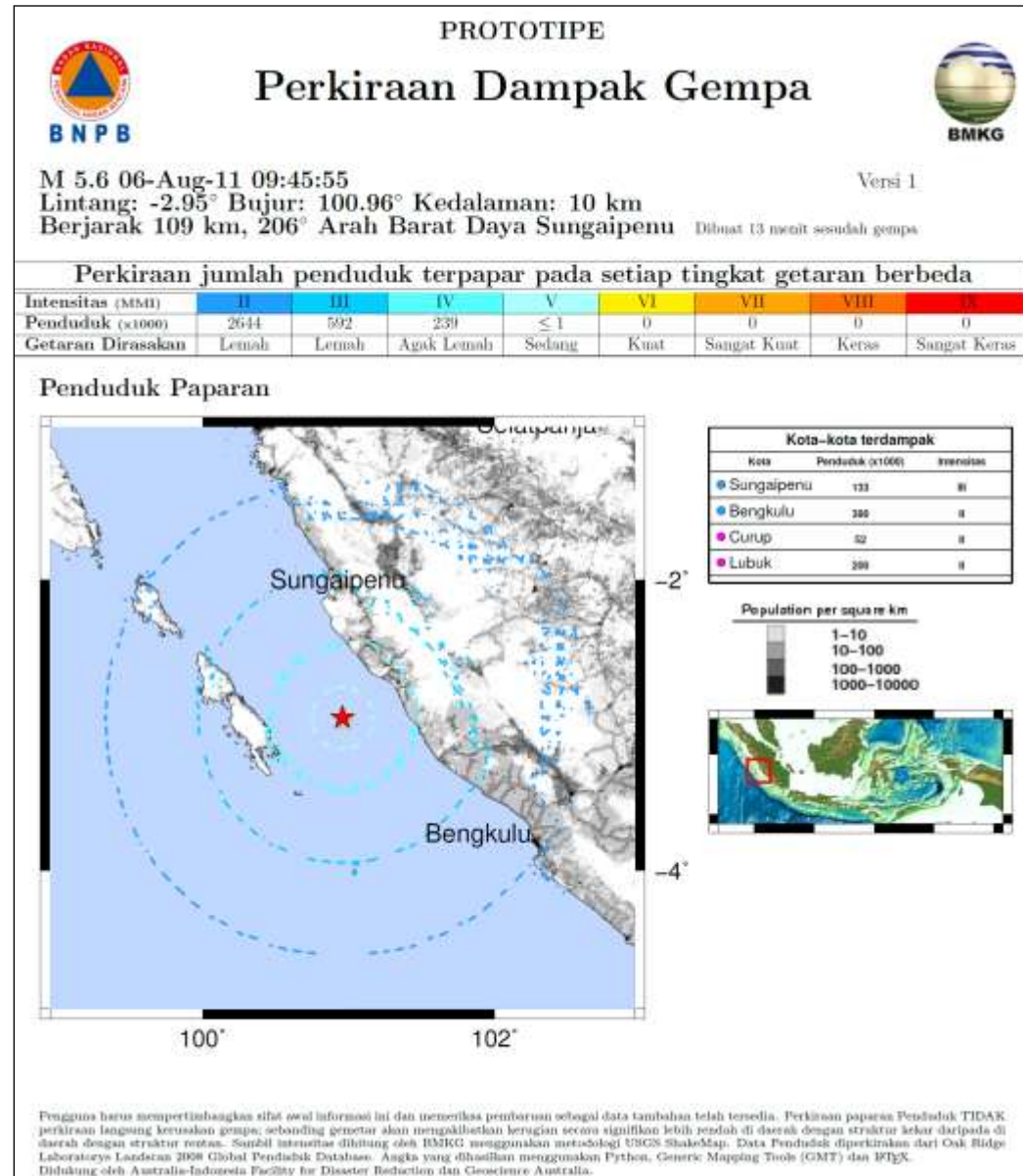


The map displays a city area with buildings colored in shades of orange and yellow, indicating the level of damage. Labels on the map include: Blak Karang Selatan, Gunung Panglun, Luling Belau, Limbongan Baru, Alai Parak Kopi, Ampang, Rimbo Kaluang, Jat Baru, Andaras, Padang, Sawahan Timur, Simanung Sari, Kubu, Kudu Maropa, Sawahan, Belakang Pondok, Ganting Parak Caklang, Alang Laweh, Belakang Pondok, Belakang Tangsi, Kampung Pondok, Raha Parak Rumbo, and Seberang Padang.

InaSAFE – Realtime

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

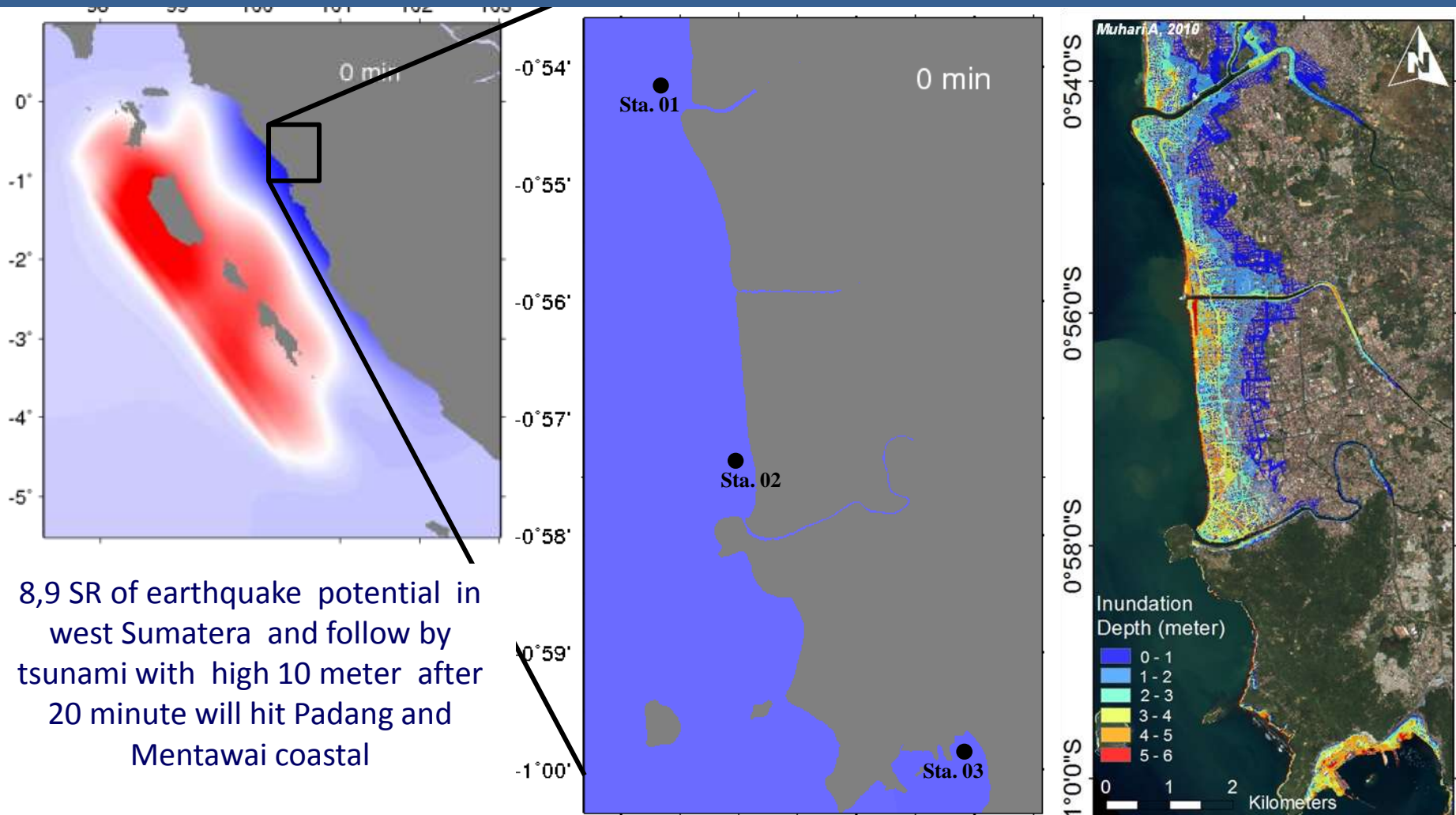
www.bnpb.go.id



Challenges

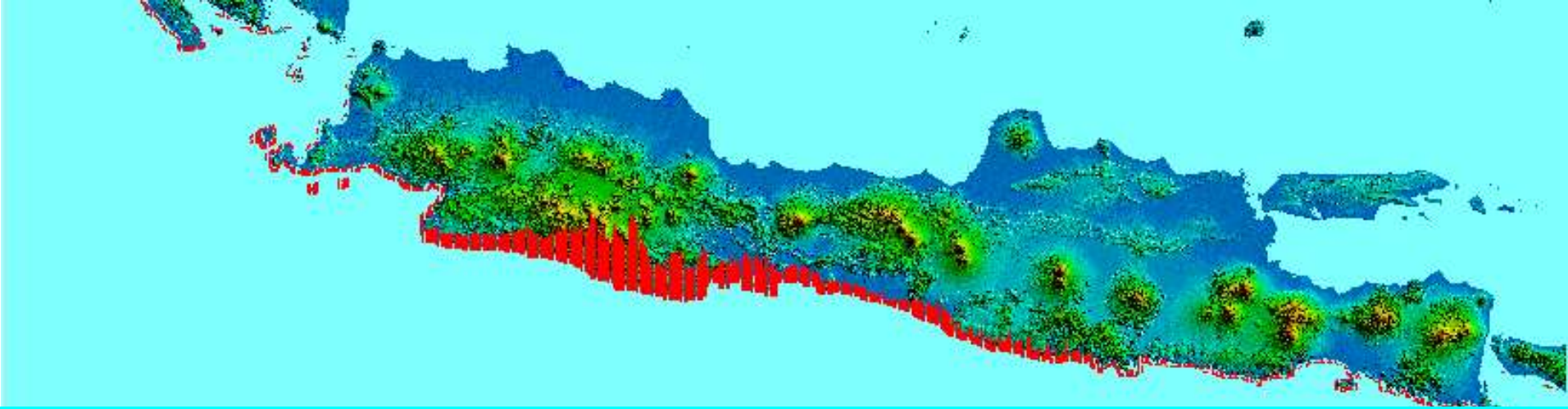
- Hazard and exposure data must exist and be available to disaster managers
- Format, metadata and distribution methods must be standardised
- Initiatives like Open Street Map can help!

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

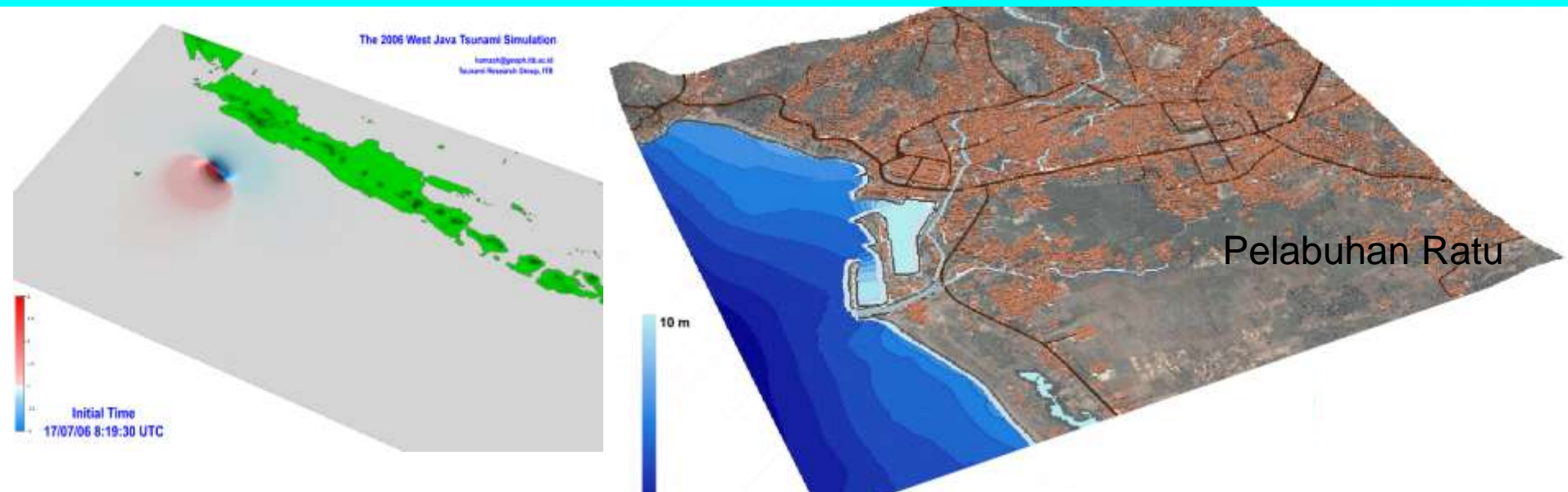


8,9 SR of earthquake potential in west Sumatera and follow by tsunami with high 10 meter after 20 minute will hit Padang and Mentawai coastal

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





BNPB

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