

INDONESIA EMERGENCY QUICK RESPONSE TO THE WEST SUMATRA EARTHQUAKE

National Coordinating Agency for Surveys and Mapping (BAKOSURTANAL)



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Epicentrum

*Wednesday September 30, 2009.
Padang city, and the surrounding,
located in West Sumatera province
was devastated by earthquake at
magnitude 7.6 Richter Scale. The
undersea epicenter location was
Lat.: 0.84°S ; Long.: 99.65°E ;
epicenter depth was 80 km, and
 ± 57 Km north-west of Padang city
which have ± 900.000 inhabitants*

EARTHQUAKE AT WEST OF SUMATERA

- ❖ The death toll from the earthquake was more than 800 people. Around 200 people were reported missing and more than 2000 people got injured. This is excluded more than 600 people who were buried by the earthquake-triggered landslides happened in four villages located in the mountainous areas surrounding the city of Padang.



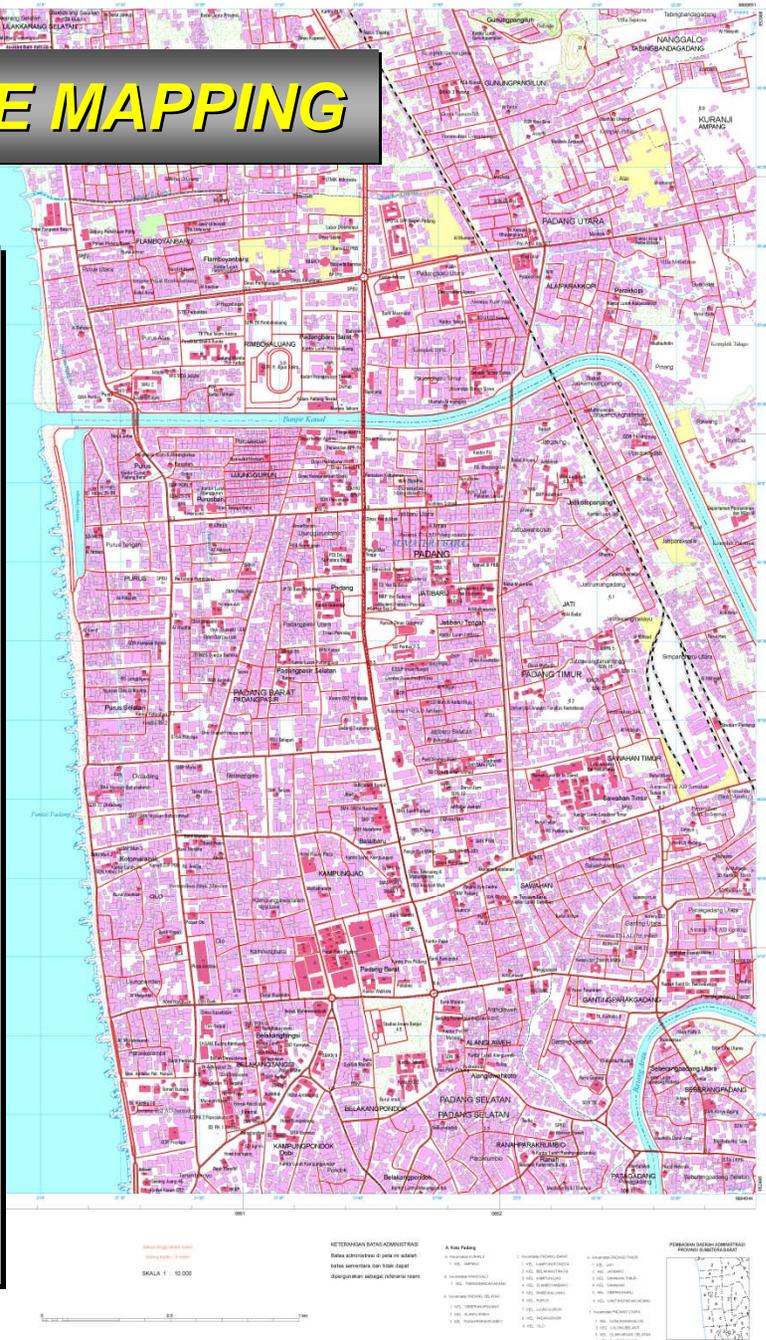
- ❖ More than 133,000 houses, shops, offices were destroyed while over 110,000 others suffered damages. Some large commercial buildings, hospitals, hotels, mosques and churches were even completely destroyed.

- ❖ Many infrastructures such as roads and bridges were fractured and brought down. This isolated people in remote areas, and broke supply lines of food, drinking water and medical to this people.



EMERGENCY QUICK RESPONSE MAPPING

- ❖ The National Coordinating Agency for Surveys and Mapping (BAKOSURTANAL) of Indonesia took a quick response to this disaster.
- ❖ BAKOSURTANAL along with other government agencies and private sectors agreed to supply geo-spatial data and information to be utilized in Padang for disaster management.
- ❖ Three maps needed for this purpose :
 - Disaster Prone Areas Map,
 - Emergency Quick Response Map,
 - Rehabilitation and Reconstruction Map.




 PETA RUPABUMI INDONESIA
 1 : 10.000
 Lembar 0715-3216
PADANG
 Edisi 1 - 2008


 PADANG LEBIRAR 0715-3216

METERAN:
 1:10.000
 1 cm = 100 m

LEGENDA:
 (List of symbols and colors for map features)

PETUNJUK PEMERIKSAAN KECERDASAN LITERASI
 (Instructions for map users)

BAKOSURTANAL
 Badan Koordinasi Survei dan Pemetaan Nasional
 Gedung BAKOSURTANAL, Jl. Pemuda No. 10, Jakarta Pusat 10110
 Telp. (021) 52001000, Faks. (021) 52001001, E-mail: bakosurtanal@bakosurtanal.go.id

EMERGENCY QUICK RESPONSE MAPPING

- ❖ The Disaster Prone Areas Map will be used before the disaster happened, because in the map there is regulation for making or not making human activities in the designated areas.
- ❖ The Emergency Quick Response Map is produced and used just after the disaster to help save the people trapped in the destroyed buildings and to distribute food, water, medical supplies. This map is produced on-site by mapping all damaged objects in the field, location of food supply, drinking water and medical supply.
- ❖ The third map is a map that is used for rehabilitation and reconstruction of the disaster area.



PETA RUPABUMI INDONESIA
1 : 10.000
Lembar 0715-3213
BUKITGADO-GADO
 Edisi I - 2009

BUKITGADO-GADO LEMBAR 0715-3213

KETERANGAN

SEKORANG DAN BAHAN LAINNYA

VEGETASI

RELEF DAN TITIK KONTROL

BATA ADMINISTRASI

PERUBAHAN

KETERANGAN PERUBAH

REKAM DARI PERUBAHAN PERUBAHAN

PETAKULIH PEMBARUKAN KODEBATAK UTMI

Kode	Arti	Titik	Uraian
001	Titik Kontrol	001	Titik Kontrol
002	Titik Kontrol	002	Titik Kontrol
003	Titik Kontrol	003	Titik Kontrol
004	Titik Kontrol	004	Titik Kontrol
005	Titik Kontrol	005	Titik Kontrol
006	Titik Kontrol	006	Titik Kontrol
007	Titik Kontrol	007	Titik Kontrol
008	Titik Kontrol	008	Titik Kontrol
009	Titik Kontrol	009	Titik Kontrol
010	Titik Kontrol	010	Titik Kontrol



**MAP OF NUMBERS OF DAMAGED HOUSES
PADANG EARTHQUAKE - WEST SUMATRA**

Per 11 October 2009

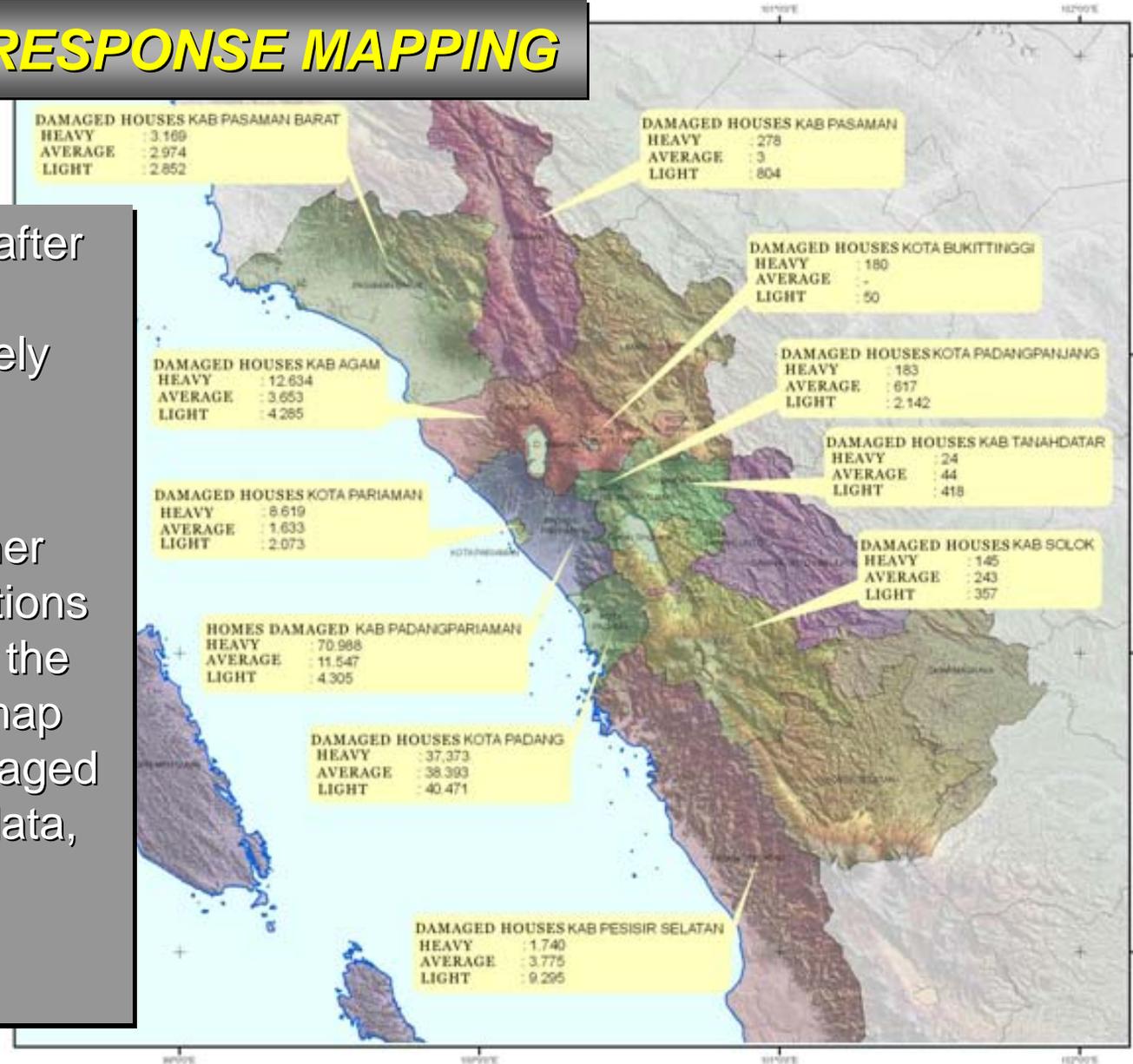
1:1.500.000

Sumber : BAKOSURTANAL
Data Vektor : Sakorlak PB Sumatera Barat
Data Tabular : 11 Oktober 2009, 13.00 WIB
Edisi II : 11 Oktober 2009

EMERGENCY QUICK RESPONSE MAPPING

BAKOSURTANAL few days after the disaster established a mapping team and immediately sent the team to Padang.

The team was designed to perform coordination with other local and international institutions and organization, to produce the emergency quick response map by collecting casualties, damaged buildings and infrastructure data, processing the data and producing into maps and distributing the maps.



- ❖ National Coordinating Agency for Surveys and Mapping (BAKOSURTANAL),
- ❖ National Agency for Mitigating of Disaster (BNPb),
- ❖ Regional development and Planning Board (BAPPEDA),
- ❖ Regional Public Works Office,
- ❖ WANADRI (Mountain and Jungle Explorer Association),
- ❖ WAINDO-RSGIS Forum,
- ❖ Department of Energy and Mineral Resources,
- ❖ National Space and Aeronautics Agency (LAPAN),
- ❖ Bureau of Central Statistics,
- ❖ World Bank,
- ❖ Non-Government Organizations such as MapAction and ArchNova.

ORGANIZATION TO HANDLE THE POST-EARTHQUAKE



POST-EARTHQUAKE FIELD SURVEYS

Field Surveys of geographic location of damages buildings and infrastructures, buried villages, food supply, and medical supply were carried out by WANADRI and BAKOSURTANAL.

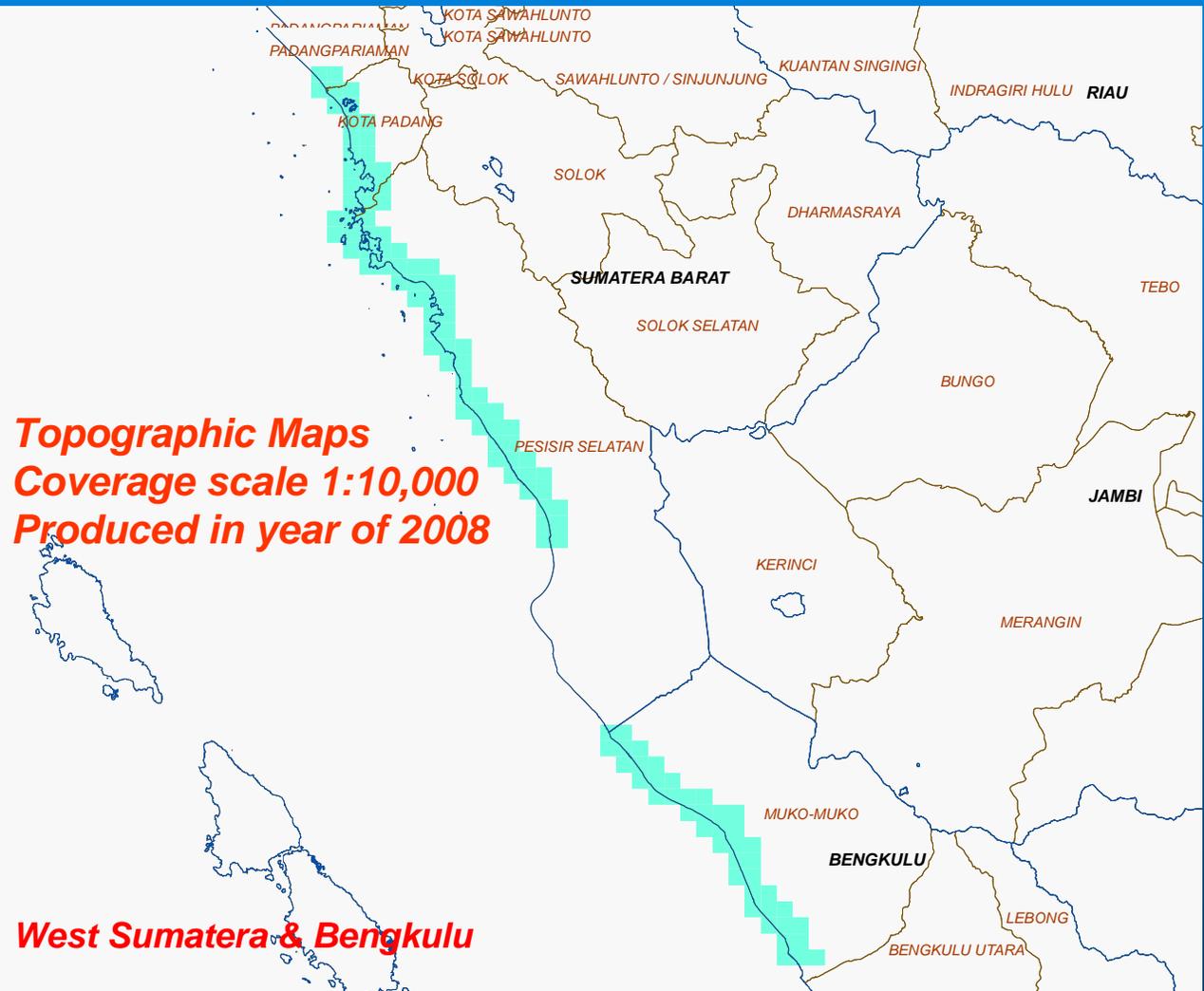
The survey and mapping activities that was carried out in Padang area consisted of :

- ❖ Inventory of number of casualties and damaged areas in cities and villages,
- ❖ GPS surveys of damaged buildings and infrastructures,
- ❖ Coordination meeting,
- ❖ Data processing and map production,
- ❖ Data dissemination,



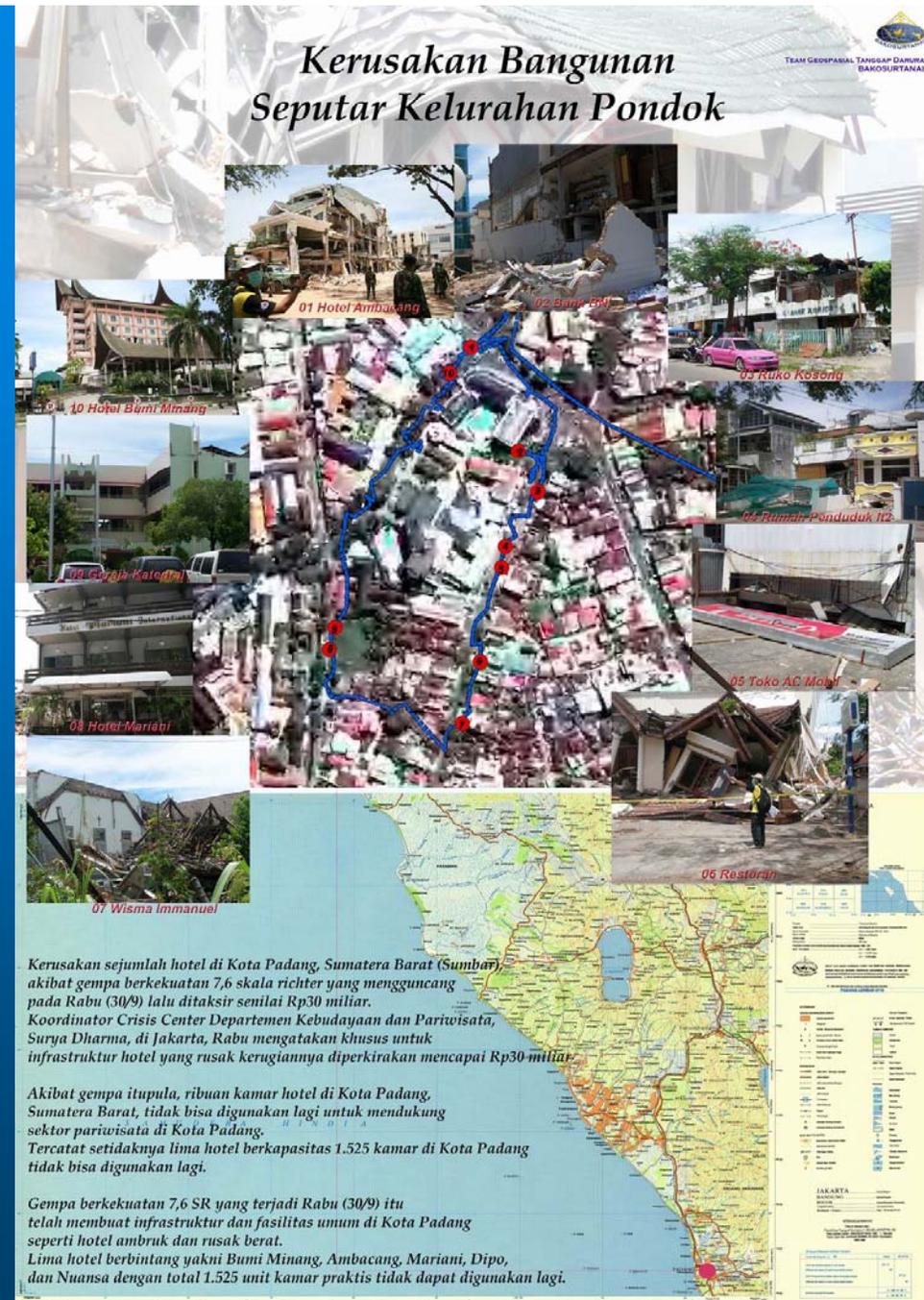
- ❖ Tabular data of damaged infrastructure (roads, bridges) from Regional Public Works Office.
- ❖ Topographic maps of 1:250,000, 1:50,000 1:10,000 scales, from BAKOSURTANAL
- ❖ Atlas maps from BAKOSURTANAL
- ❖ Village admin boundary map and population distribution from BAPPEDA and BPS,
- ❖ Satellite imageries IKONOS of Padang from LAPAN

Data Sources To Produce The Emergency Quick Response Map



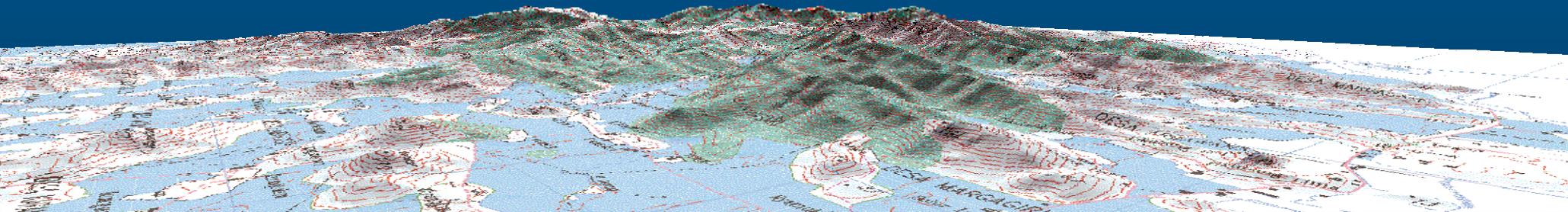
Data Products : *The Emergency Quick Response Map*

1. Village boundary maps of Padang Pariaman and Agam districts.
2. Casualty and physical damaged map Padang Pariaman district.
3. Casualty and physical damaged map of Pariaman city.
4. Aggregate Casualty Map consisting themes:
 - ❖ number of casualty,
 - ❖ number of damaged houses,
 - ❖ number of destroyed health facilities,
 - ❖ number of broken schools,
 - ❖ number of damaged roads, bridges, and irrigation infrastructures.



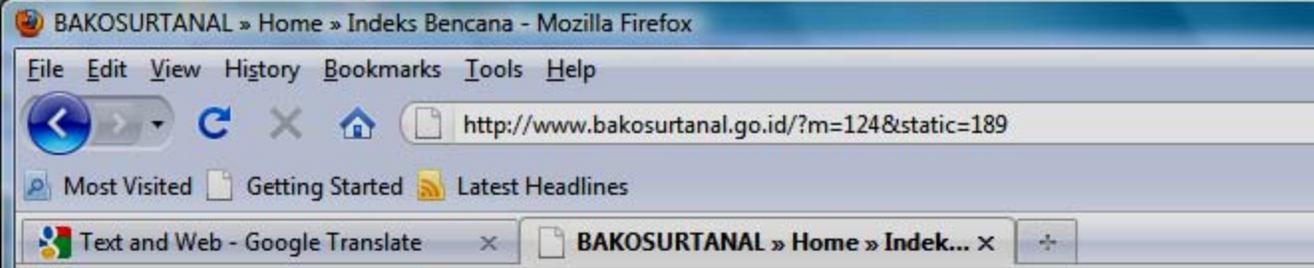
Data Users : *The Emergency Quick Response Map*

- ❖ Foreign and Local Non-Governmental Organization,
- ❖ International and Local Media,
- ❖ National Agency for Mitigating of Disaster,
- ❖ Police, and Regional and local Government.
- ❖ Most of the foreign and local non-governmental organizations are humanitarian aid organization to distribute the aids they received from the community.



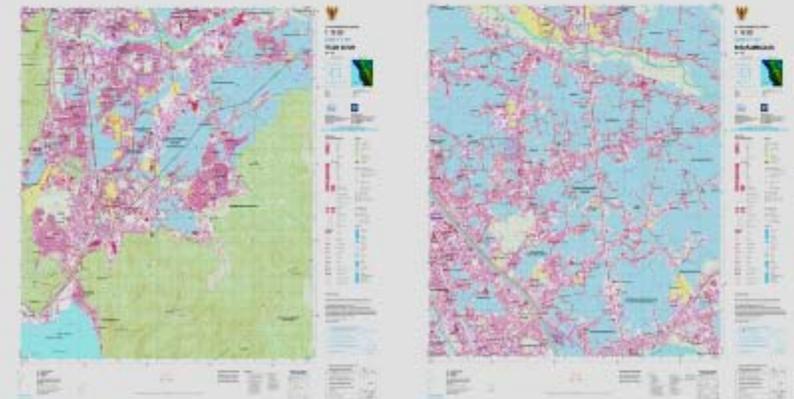
LESSON LEARNED

- ❖ During the first week after the earthquake, the city of Padang had **no electricity that made communication in the area cut off. It was then not possible to see maps stored in computers or browse from internet.** Printed map proved to be a much better solution to use the geospatial information.
- ❖ The number of people understanding of geospatial in the disaster area should be considerably sufficient, because map reading ability of the domestic humanitarian aid organizations is low.
- ❖ Disaster is not a new happening, but the response of the region to the disaster is not sufficient so that the socialization, exercise, training, of managing of disaster need to be implemented regularly and more frequent.



0715-3216 (2,67 MB)

0715-3219 (3,52 MB)



0715-3221 (5,25 MB)

0715-3224 (4,52 MB)

LESSON LEARNED

- ❖ For mapping purposes, since maps is the first thing, people needs to response the disaster, the emergency quick response mapping should be improved, in particular the budget for the mapping should be made available promptly and at sufficient amount.
- ❖ The regional government along the predicted disaster regions should provide disaster maps showing areas prone to disaster, so that there will be no human activities in the areas.

The screenshot shows the BAKOSURTANAL website interface. The browser title is "BAKOSURTANAL » Home » Indeks Bencana - Mozilla Firefox". The address bar shows the URL "http://www.bakosurtanal.go.id/?m=124&static=189". The website header includes the BAKOSURTANAL logo and the text "Badan Koordinasi Survei dan Pemetaan Nasional National Coordinating Agency for Surveys and Mapping". A search bar is located in the top right corner. The main navigation menu includes "Home", "Profil", "Layanan Publik", "Geospasial Nasional", "Link", "Kontak", and "Peta". The page content features a "Gempa Sumatera" section with a map of Sumatra, a "Daftar Pulau-Pulau Kecil Terluar" section with a map of Indonesia, and a "SCOSA" section. A sidebar on the right contains a "Home » Indeks Bencana" link, a "Download peta RBI skala 1:10.000" button, a "kembali ke halaman sebelumnya" link, and a note "(klik pada peta untuk melihat/mengunduh peta dalam ukuran penuh)". Two maps are displayed at the bottom of the page.

