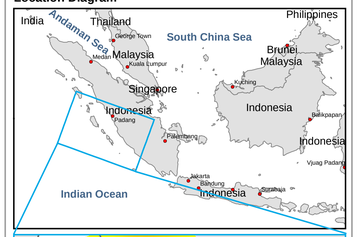
Map Reference ID: **Series A:** Water depth - Tile #4

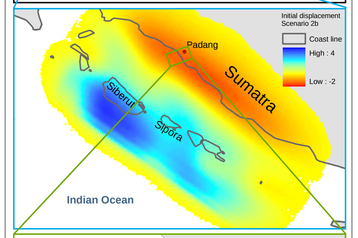
Padang - Indonesia

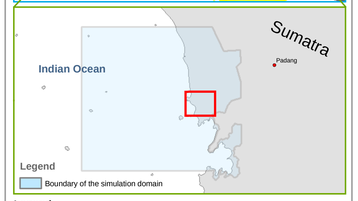
Scale 1:5000

Hazard and Inundation mapping - "Last-Mile - Evacuation project"

Location Diagram







Legend

Ikonos / Aerial Images

Scenario 2b, tide, DSM

- 0,10 m - 01,00 m
- 01,01 m - 02,00 m
- 02,01 m - 03,00 m
- 03,01 m - 04,00 m
- 04,01 m - 05,00 m
- 05,01 m - 06,00 m
- 06,01 m - 07,00 m
- 07,01 m - 08,00 m
- 08,01 m - 09,00 m

Backdrop image RGB band

- Red: Band_1
- Green: Band_2
- Blue: Band_3

Infrastructure

- Streets
- Footprints of buildings

Hydro-numerical simulation

- Boundary of the simulation domain

Points of interest

- Church
- Hospital
- Hotel
- Market places
- Mosques
- Post office
- School / Univ

Map information and interpretation

The city of Padang is located at the western coast of Sumatra that is threatened severely by potential tsunami triggered by earthquakes along the Sunda arch. To date, inundation and hazard information is limited to coarse data basis. New modeling results are mapped here. Along with enhanced datasets of elevation and bathymetry (RSS GmbH, Franzius-Institute and German Aerospace Center DLR), a possible future rupture scenario has been applied and calculated by means of hydro-numerical modeling tools.
In result, a refined hazard map is proposed. It bases on the following assumptions: The initial seafloor displacement is exaggerated by a safety factor of 0.50. The initial water level at the Padang coast is fixed at an estimated high water level of 0.80m above MSL. Subsidence due to the rupture is approximately -1.38m at Padang. Earthquake related information is provided in collaboration with Agency for the assessment and application of technology (BPPT), Indonesian Institute of Science (LIPI) and Earth Observatory of Singapore (EOS). The topography includes surfaces of houses derived from an up-to-date aerial survey, where vegetation effects have been removed thoroughly. Displayed hazard is either quantified by means of the hydro-dynamical quantity of water depth or specific energy head (Map series A: water depth, Map Series B: Specific energy head). Numerical model used: ANUGA/TUNAMI.
Further reference and citations therein:

Borrero, J. C., K. Sieh, M. Chlieh, and C. E. Synolakis (2006): Tsunami inundation modeling for western Sumatra, PNAS, 103(52), doi:10 1073 PNAS 0604069103
Sieh, K., et al. (2008): Earthquake supercycle inferred from sea-level changes recorded in the corals of West Sumatra, Science, 322, 1674-1678
Taubenbock, H.; Goseberg, N.; Setiadi, N.; Lämmel, G.; Moder, F.; Oczipka, M.; Klüpfel, H.; Wahl, R.; Schlurmann, T.; Strunz, G.; Birkmann, J.; Nagel, K.; Siegert, F.; Lehmann, F.; Dech, S.; Gress, A.; Klein, R.: Last-Mile preparation to a potential disaster - Interdisciplinary approach towards tsunami early warning and an evacuation information system for the coastal city of Padang, Indonesia. In: NHESS 9 (2009), Aug., No. 4, 1509–1528

0 100 200 400 600 m

N

Projection & Grid Information

	Reference Grid	Geographic Grid
Projection:	UTM Zone 47 South	Geographic (DMS)
Spheroid:	WGS84	WGS84
Datum:	WGS84	WGS84

Satellite Information and Aerial Image

Satellite:	Ikonos	Company:	RSS GmbH, DLR
Pixel Size:	1m	Pixel Size:	0.25m
Acquisition Date:	April 12, 2005	Acquisition Date:	September, 2007
Georeferencing:	Orthorectification	Georeferencing:	GPS
Accuracy:	+/- 5 m RMSE	Accuracy:	+/-0.30m

Credits & Copyright

- Aerial Image Padang © RSS GmbH 2008
- Aerial Image Bungus © Google Earth 2008
- IKONOS © GeoEye 2005
- Vector Data © DLR 2009, RSS GmbH 2008
- Bathymetry / Hydronumerical data © Franzius-Institute, LUH 2010

Date:	2010-04-02
Edition:	1.1
Print dimension at 1:5,000	ISO A0 size (1189 x 841 mm)

Map generation

FRANZIUS-INSTITUT for Hydraulic, Waterways and Coastal Engineering

Acknowledgement

GITEWS

GEOTECHNOLOGIEN

Data provision

LAST-MILE - EVACUATION

BPPT

LIPI

Federal Ministry of Education and Research