

Early Warning Experiences in Padang, Sumatra: The Bengkulu Earthquake of 12 September 2007

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On September 12 and 13, 2007, a series of large earthquakes originating from the Sunda Trench off the West coast of Sumatra struck Padang, the capital of West Sumatra Province. The first earthquake, at 18:10:23 (WIB, Western Indonesian Time), was recorded at a magnitude of M 7.9 (BMKG). Shortly after the ground shaking (4 min 41 sec) a tsunami warning was issued by BMKG Jakarta, the National Meteorological, Climatological and Geophysical Agency, via SMS and other channels and received by decision makers in Padang. As stated by several sources, key informant interviews were conducted with representatives of different government and non-government institutions in Padang, the information varied largely. In conclusion, it seems that the mayor actually did call for evacuation. The precise wording of the evacuation message, however, could not be clarified. The mayor of Padang announced guidance for evacuation to Padang citizens around 15 minutes after the earthquake via FM radio in response to the tsunami warning.

Around one and a half months later, from 29 October to 2 November 2007, GTZ IS-GITEWS in cooperation with the Padang Working Group conducted an explorative survey in Padang in order to shed some light on the experiences with the first earthquake and the subsequent tsunami warning. The survey used a standardized questionnaire to conduct interviews with 200 randomly selected citizens of Padang City who live in the "red zone" (elevation zone: 0-5 m in accordance to the First Generation Elevation Zone and Evacuation Map of Padang City) and/or were within that area at the time of the first earthquake.

The survey does not claim to provide representative results for all Padang City but is considered explorative. It aims to approach the question of tsunami preparedness by providing answers to the following key aspects:

Respondents' actions after the earthquake had ended

- What percentage of respondents evacuated?
- How long after the first earthquake did those who evacuated actually start to do so?

- What did those respondents do who did not evacuate?

Information about tsunami potential

- What percentage of respondents received the information about a potential tsunami? What were their source and channel of information? How long after the earthquake did they receive the information and how did they perceive its content?

The two crucial issues for tsunami early warning are timely dissemination of comprehensible information about a potential threat (i.e. warning and guidance) and appropriate reaction by communities at risk. The survey recorded both: it documented a sequence of actions after the earthquake for each respondent and recorded source and channel of information on tsunami potential as well as timing of reception and perceived content. One section summarizes the respondents' actions performed after the earthquake had ended in two groups of those who performed some kind of evacuation action and those who did not, irrespective of what triggered these actions. The other section examines the information respondents received regarding a potential tsunami threat and relates it to the respondents' actions.