

# OUR EXPERIENCE

## Learning from Earthquake Experiences

### Lessons for Tsunami Preparedness in Padang

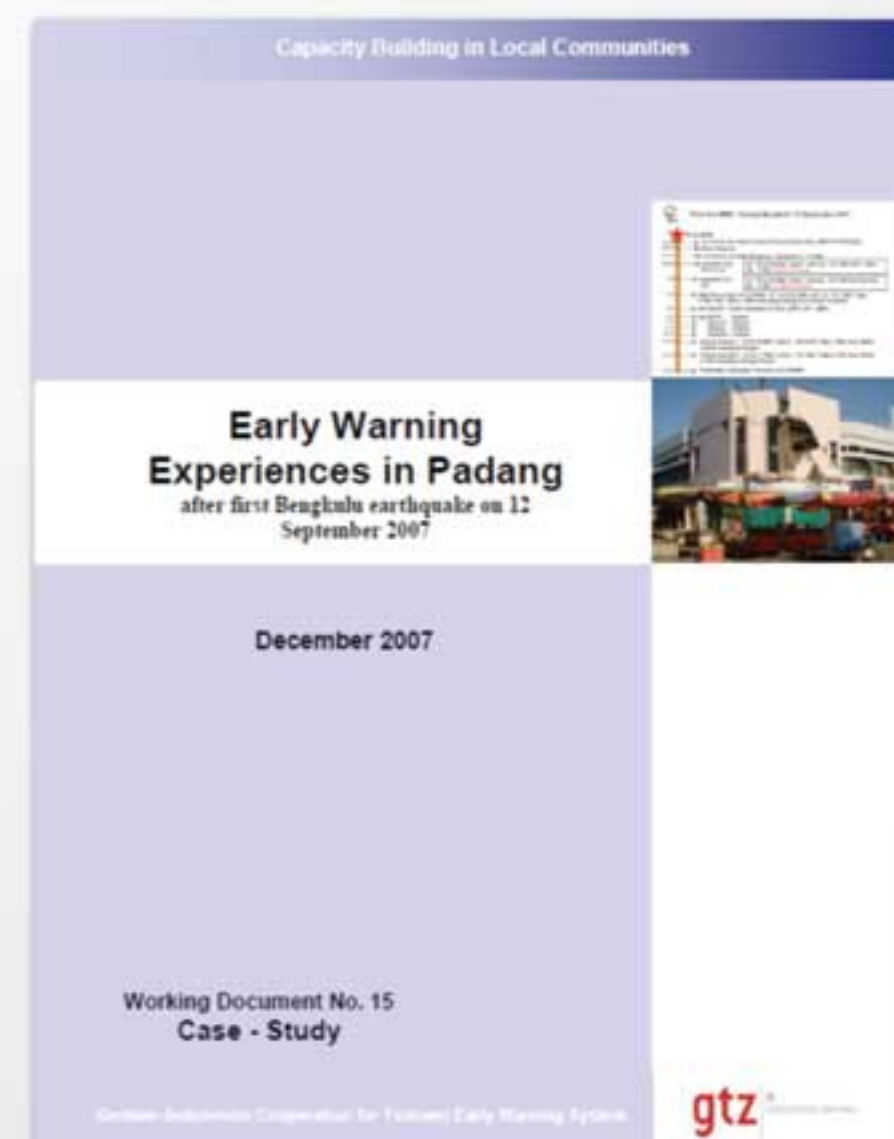
#### INTRODUCTION

Disasters raise awareness for the importance of preparedness and can help to put emphasis on the need to take precautions for the future. The catastrophic earthquake and tsunami of 26 December 2004 led to the development of tsunami early warning systems around the Indian Ocean and in Indonesia. Recent earthquakes and tsunami warnings in Indonesia provide us with an opportunity to assess local response capacity for tsunamis and the effectiveness of InaTEWS to date.

In the last three years, several strong earthquakes occurred in West Sumatra, a region that is amongst the most earthquake-prone in Indonesia and at high risk from a major tsunami. GTZ IS-GITEWS, together with its partners in the pilot area of Padang, i.e. Tsunami Alert Community (KOGAMI) and the Municipal Disaster Management Agency (BPBD), twice took the opportunity to assess experiences with earthquakes and early warning by looking at community, as well as institutional, responses. In both case studies, 200 citizens were surveyed and informal interviews were conducted with key institutional actors. Neither of the earthquakes studied caused a destructive tsunami, but both events provided important information on the state of preparedness and on how to increase local response capacity.

#### THE SEPTEMBER EARTHQUAKES IN PADANG – WHAT CAN WE LEARN?

On September 12 and 13, 2007, a series of heavy submarine earthquakes struck West Sumatra and its capital city, Padang. The first earthquake in the early evening of the 12th measured at a magnitude of 7.9 on the Richter Scale. The National Agency for Meteorology, Climatology and Geophysics (BMKG) sent out a warning of a potential tsunami. Authorities in Padang received this information via short message. The mayor announced it on public radio shortly after. While very few people evacuated on their own initiative directly after the earthquake, the public announcement apparently did not provide sufficient guidance to the local population on what to do. Most people simply stayed on alert and waited for a confirmation of a tsunami. Most of those who decided to evacuate (only 22% of the 200 interviewed) took more than 20 minutes to start leaving the hazard area.



Case Study Padang: 12 September 2007

*"A lot of people here went directly to the beach to see the sea. They said the seawater was not retreating. So maybe it was safe and there would not be a tsunami. But, whatever, I was already so afraid. Better I ran rather than something happens. We did not know whether a tsunami would come or not, did we?! The most important thing was that my husband and I were safe."*

*"About 10 minutes after the earthquake my wife and me were already on our way. We had to be that quick actually, the tsunami comes quickly, doesn't it?! The tsunami could come very quickly, it could take only 30 minutes. We were racing against time. Instead of dying like a fool, sitting and waiting at home, it is better to run."*

Quotes from Interviews with Padang Citizens after 2009 Earthquake



Case Study "Tsunami Early Warning in Padang after the First Bengkulu Earthquake on 12 September 2007"

The 7.6 magnitude earthquake on September 30, 2009 in West Sumatra killed more than 1,000 people and injured many more. BMKG issued only earthquake information, but no tsunami warning. Due to its depth and location, the quake did not have any potential to cause a tsunami. However, the strong tremor caused fear of a tsunami among the people of Padang. Half of the 200 people interviewed evacuated low-lying coastal areas almost immediately after the earthquake. But, in the absence of other (official) information, many of those who decided not to evacuate



actually went to the beach to see whether the seawater was retreating. The information from BMKG had reached Padang's authorities within five minutes of the earthquake. The information, however, was made available to the public only 30 minutes after the earthquake occurred, when the mayor announced it on the local station of Radio Republik Indonesia. If a tsunami had been generated, this would have been too late.

Both case studies produced very useful information and thereby vital input for discussion on the various issues of tsunami preparedness and early warning.

Amongst others, the results emphasised the need for a clear and widely communicated community response strategy that combines both the reaction to ground shaking and official

warnings – but excludes dangerous behaviour, such as checking on the condition of the sea after an earthquake. It underlined the importance of instructive and timely guidance by local authorities in case of an emergency to ensure consistent community and institutional reactions. The case studies again highlighted the need for clear institutional arrangements and mandates for early warning that allow for quick decision-making and dissemination. A seminar at the end of January 2010, hosted by Padang's Disaster Management Agency and supported by GTZ IS-GITEWS discussed the findings of the 2009 study and addressed its recommendations to high-level representatives of the city government. The results were integrated into the Mayor's Decree on Tsunami Early Warning in Padang that was issued in April 2010.

## CONCLUSIONS

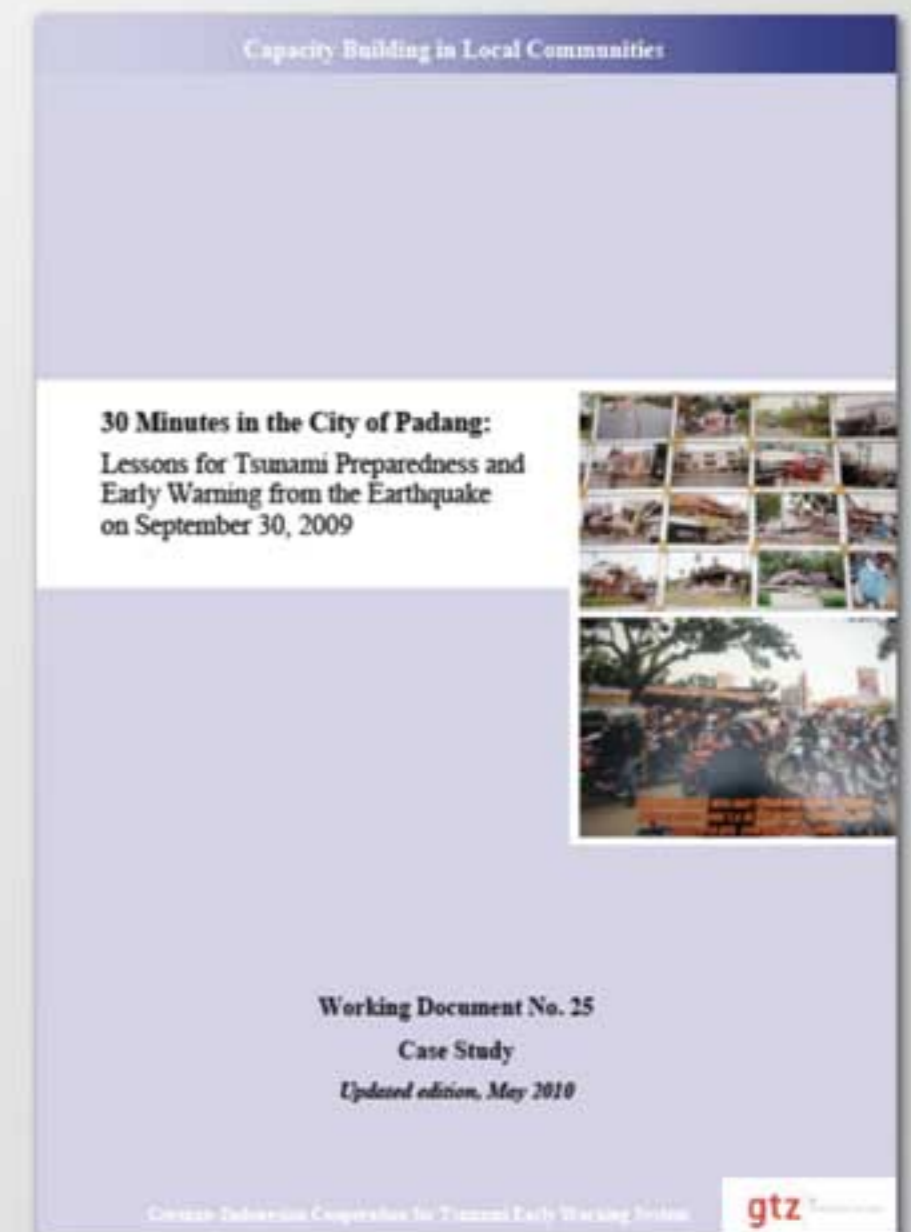
If well-assessed, conducted not long after the event, well-presented, and accompanied by practical, down-to-earth recommendations, case studies on the response capacity of coastal communities provide the means to effectively use the momentum created by an earthquake and a tsunami warning to increase tsunami preparedness planning and support the development of early warning. They create the rare opportunity for a direct dialogue with local policy and decision makers and other stakeholders who now feel the need for action. Government institutions, NGOs, universities, and other actors in tsunami prone communities in Indonesia should use this opportunity to advocate for preparedness, create awareness and prepare their communities for potential future earthquakes and tsunamis.



People Evacuating in Padang on 30 September 2009



Case Study "30 Minutes in the City of Padang: Lessons from the Earthquake on 30 September 2009"



Case Study Padang: 30 September 2009



Tools for the assessment of local tsunami response capacity



Building Damage by Earthquake in 2009

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