

OUR EXPERIENCE

Local Operations Control Centres Key Players in Tsunami Early Warning in Indonesia

BACKGROUND

The National Tsunami Warning Centre (NTWC at BMKG, the National Agency for Meteorology, Climatology and Geophysics) sends out earthquake information or a first tsunami warning and advice to TV and radio stations and to local authorities five minutes after an earthquake occurs. Once this warning has been issued, the baton is with the local authorities. They have the responsibility to call for evacuation. This is where Local Operations Control Centres (*Pusat Pengendalian Operasi*), (PUSDALOPS) come into play.

Local tsunamis strike quickly, but evacuation takes time. Local authorities need to respond quickly and decisively. The public needs clear guidance within minutes after the earthquake. Local authorities need immediate access to the information from BMKG, solid Standard Operating Procedures (SOPs) for quick decision-making and public dissemination of instructions on what to do. PUSDALOPS can take over this warning service on behalf of the local authorities if certain requirements are fulfilled.

EXPERIENCE FROM JAVA, PADANG AND BALI

GTZ IS engaged in the support for local PUSDALOPS since 2007. The project and the partners in the pilot areas assessed the requirements for Tsunami Early Warning (TEW) in general and PUSDALOPS in particular. The project supported the centres with communication equipment. SOPs were developed based on the warning scheme of InaTEWS.

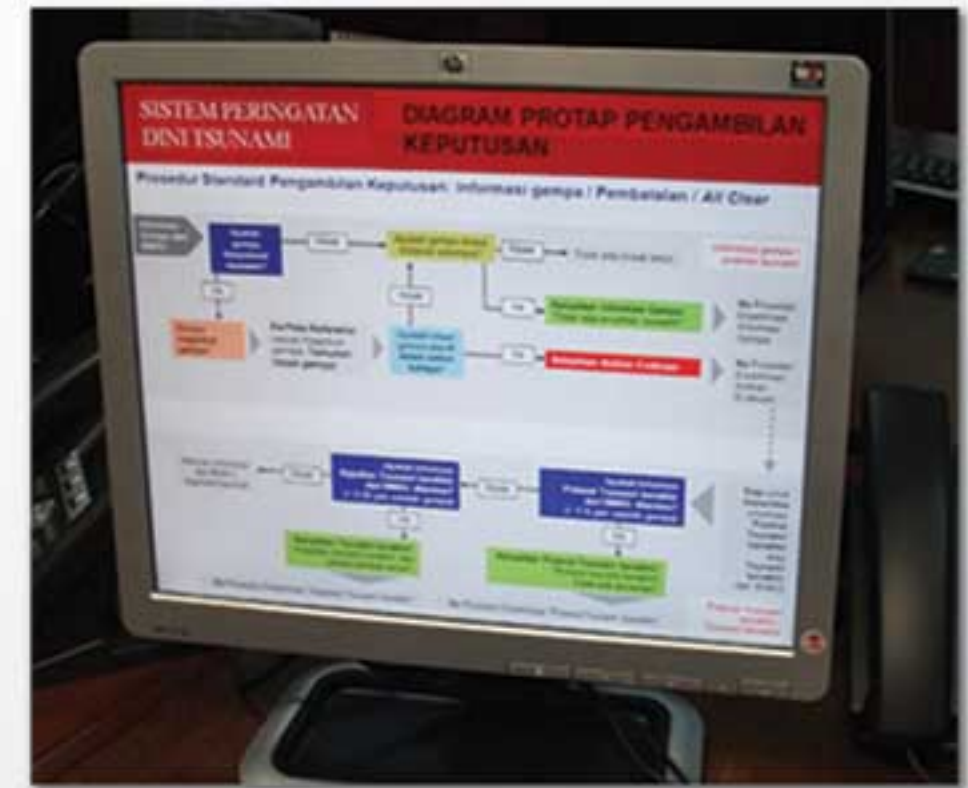
The district of Bantul in Java tested their PUSDALOPS, including SOPs, dissemination, evacuation plans, and peoples' response capability in a drill in 2008, involving several institutions and around 5,000 residents. The drill's evaluation led to an intense discussion with national stakeholders about the command chain and whether an official call for evacuation requires approval by the district head prior to dissemination by PUSDALOPS. In fact, authorities in Bantul had mandated PUSDALOPS to make a decision on whether to call for evacuation and to directly issue guidance to the public. This follows the logic of decision-making SOPs that translate standardised warnings from the NTWC into standard responses at the local level. Agreed and approved by local authorities, these procedures save time and bring the information to the people as quickly and directly as possible.

The earthquake of September 30, 2009 in West Sumatra fortunately did not cause a destructive tsunami, nor did the NTWC issue a warning. The intensity of the event, however, caused panic and immediate evacuation. It also triggered a response in the city's PUSDALOPS. Approximately 5 minutes after the quake, the centre, a unit of the city's Local Disaster Management Agency (BPBD) since early 2009, disseminated information from BMKG via VHF radio that there was no tsunami. However, this information did not reach the public. About 20 minutes later, the Mayor announced the information on *Radio Republik Indonesia* – after he had finally received the information from BMKG via a text message. Due to power and phone network failure there was no contact between PUSDALOPS and the Mayor. PUSDALOPS did not have the means – nor the mandate – for public information dissemination.



The lessons from this event led to a review of mandates, SOPs and the information dissemination system. A mayor's decree, signed in April 2010, now regulates the mandate of PUSDALOPS as public provider of warnings and guidance.

The development of TEW in Bali accelerated with the construction of the province's PUSDALOPS in 2009. The Governor of Bali made the centre a priority. Personnel received training on communication technology and procedures. A governor's decree now determines mandates and responsibilities with regards to TEW. The authorities delegate the warning service to the province's operations centre. This means that the province authorities disseminate a call for evacuation directly to the public. This model might not be in line with the usual mandate of a provincial government, but it simplifies the warning chain significantly and benefits those exposed to the tsunami threat.



Operations Manual for TEW in local PUSDALOPS

CONCLUSIONS

Full support from local authorities is essential in the operation of a PUSDALOPS. The establishment of a PUSDALOPS requires commitment to preparedness, solid institutional structures and a clear mandate, an earthquake-resistant building, skilled personnel, approved SOPs, sufficient communication equipment, and a reliable local dissemination system. Local legislation, planning and budgeting must reflect on these requirements.

Tsunami prone regions in Indonesia need to commit and provide resource support to operate a PUSDALOPS. In the pilot areas, the centres required intensive external input to get started (some have not yet been established). TEW service is only feasible in a multi hazard approach. Models of cooperation between several areas and provincial authorities to run a joint PUSDALOPS need to be explored.

PUSDALOPS' role in TEW is critical. However, it would be wrong to rely on PUSDALOPS as the only source of warnings because it can create a deadly bottleneck if the institution fails to perform. Several local entities need to be directly linked to the NTC. Local radio stations play an important role in getting the warning from BMKG to the people. This will support the redundancy of the system.

Eventually, TEW requires community preparedness. The moment the ground shakes is the moment to leave the coast. Guidance from a PUSDALOPS will reinforce or rescind this response.



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