

# OUR EXPERIENCE

## Tsunami Preparedness and Early Warning

A Multi-Stakeholder Affair that Requires Mutual Cooperation

### BACKGROUND

The forecasting of tsunamis is based on seismic and ocean observation data from an ocean wide network and, therefore requires international cooperation between government and scientific institutions. The data from this network enables National Tsunami Warning Centers (NTWC) to issue warnings in case of a tsunami threat. Early warning is a public service and local governments are in charge of calling for evacuation, as well as providing the necessary policy and legal frameworks. The communities at risk are not just the recipients of the warnings, but are important actors within the system as they are the ones who convert the warning into action.

Only if all these stakeholders work closely together and assume their roles and responsibilities will an “end to end” warning system like InaTEWS work.

### OUR APPROACH

The project supported dialogue and exchange processes between the different stakeholders and levels to help clarify roles and responsibilities, develop a consistent warning chain and, thereby, contribute to building a common understanding of the system.

On the local level, advocacy by NGOs and the private sector often accelerate the development of tsunami preparedness. Local media is expected not only to disseminate warnings, but also to strengthen public knowledge about tsunami preparedness. Community representatives must include consideration of the people’s needs in the preparedness planning.

To bring the various local actors together and to work out locally adapted solutions multi-stakeholder working groups in the 3 pilot areas were established. Joint workshops and exchange visits between national stakeholders and representatives from the pilot areas played a crucial role in sharing local experiences with the national level and in adjusting the overall system to the needs of the end users.

### EXPERIENCE FROM THE PILOT AREAS

One of the first steps taken in all of the pilot areas was a “Stakeholder Analysis” to identify local institutions and actors who needed to be involved to make the system work. As each stakeholder had to assume specific functions, the clarification of the respective roles and responsibilities was an important step.



End to End Concept



ICG Meeting Aceh 2010



### Tool for Stakeholder Analysis

In the **Pilot Area Java**, the strength of the tsunami preparedness planning process was the continuous work of multi-stakeholder working groups in each of the three districts involving public institutions and the civil society. Appointed by local

authorities, they became advocates for tsunami preparedness and early warning. A series of workshops facilitated by the project, led to the development of tsunami hazard maps and evacuation plans, as well as decision-making and technical dissemination arrangements. The three original districts established cooperation with the neighbouring districts of Ciamis (West Java) and Purworejo (Central Java) to share experiences, and together they proposed the idea of a “forum tsunami” to make use of synergies along the southern coast of Java (e.g., in terms of warning services). This initiative received attention both locally and nationally, and inter-district and inter-province cooperation is perceived as a promising model to promote early warning across administrative boundaries of tsunami prone regions.

In the **Pilot Area Bali**, the project engaged in cooperation with multi-stakeholder working groups at the district and province levels. The provincial government established a 24/7 service for the entire island, so coordination between district and province levels became essential. As the island is a main tourist destination, the involvement of the private sector played a crucial role. The establishment of specific warning services for a major hotel association and a private-public initiative for evacuation planning in Tanjung Benoa are highlights of multi-stakeholder engagements in this field. The process in Bali was accelerated by the engagement of civil society actors (Indonesian Red Cross, IDEP Foundation), which engaged with communities once the institutional framework for early warning became clearer.

The **Pilot Area Padang** is a good example how a civil society initiative can make a difference. After the Aceh tsunami, a small group of volunteers in Padang, with the support of respected citizens, formed the NGO KOGAMI, and advocated for tsunami preparedness. In the absence of institutional structures for disaster management and public warning services in Padang, KOGAMI built a response system based on natural warning signs. Over time, solid cooperation was established with local government institutions that resulted in the development of a local strategy plan for disaster management and the establishment of a local disaster management agency, an emergency operation centre and local regulations for tsunami early warning. Currently, a team of individuals from both government and non-government institutions forms the backbone for preparedness planning and the development of early warning.

Stakeholder cooperation has enabled dialogues between science and local politics to discuss local preparedness strategies and to agree on official tsunami hazard maps in Padang, Bali and Cilacap.

Finally, it can be concluded, that accommodating the different perspectives and interests of the various stakeholders requires a continuous and transparent process that looks at the facts, builds partnerships and mutual trust. Considering the constraints faced by the working groups – i.e., the absence of solid institutional structures and the lack of funds – much has been achieved through cooperation.



Stakeholder in Bali



Working Group Bali



Working Group Padang

**Author:**

Michael Hoppe  
michael.hoppe@gtz.de  
Harald Spahn  
harald.spahn@gtz.de  
Willy Wicaksono  
willy.wicaksono@gtz.de

**Published by:**

Deutsche  
Gesellschaft für  
Technische  
Zusammenarbeit  
(GTZ) GmbH

**Photos:**

© GTZ IS-GITEWS

GTZ Office Jakarta  
Menara BCA 46th Floor  
Jl. M.H. Thamrin No.1  
Jakarta 10310

T: +62-21-2358 7111  
F: +62-21-2358 7110  
E: gtz-indonesien@gtz.de  
I: www.gtz.de/indonesia

**Further information:**

www.gitews.org/tsunami-kit  
BPBD Padang: bpbd.padang@gmail.com  
Kembangpollinmas, Bantul:  
daryanto\_dwi@yahoo.co.id  
Kembanglinmassos, Kebumen:  
abu\_zaidan@yahoo.co.id  
BPBD, Cilacap: oyosartoyo@yahoo.co.id  
KESBANGLINMAS Province Bali: +62 361 245395  
GITEWS: www.gitews.org