

Capacity Building in Local Communities

German-Indonesian Cooperation for a Tsunami Early Warning System

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Editorial

The recent earthquake in Padang was shocking news for all of us. Even so, it didn't come as a surprise. It received wide media coverage and the extent of damage and loss of life is known to us all. We would like to express our deep sympathy to the people of Padang and Pariaman. Fortunately, all our project partners in Padang survived, and they are now engaged in emergency and recovery operations.

Padang was the last and most severe incident in a series of strong earthquakes in and around our pilot areas in the last two months. Our team witnessed a 6.9 earthquake on our arrival at Sikuai Island just offshore Padang where we held our biannual team meeting mid-August. On 2 September, a tsunami warning for western Java followed the 7.3 SR earthquake near Tasikmalaya and resulted in a real case for the Java Pilot Area. The Bali Pilot Area experienced a 6.4 earthquake just south of Nusa Dua on 19 September. Thousands of kilometres further to the east, a tsunami hit Samoa, killing more than 100 people.

Each one of these incidents caused suffering and damage. But they also provide valuable lessons for all involved in the development of tsunami preparedness strategies and early warning. We will strive to make the best use of the lessons learnt.

Best regards
Harald Spahn, Team Leader GTZ IS-GITEWS



Team and partners at the workshops in Sikuai and Padang

The GITEWS Pilot Project for Local Communities will soon be in its final stage. Thanks to a co-financing from AusAID, the project has been able to increase its activities in awareness raising, community outreach and partnership initiatives. A compilation of all relevant outputs generated during the project is also on our current agenda, to ensure that the valuable experience can be used to link more and more communities to InaTEWS.

Information & Exchange

A proposal for a National Workshop

Within the nearly four years of the capacity building project (2006-2010), GTZ and partners have collected a number of interesting experiences and best practices from downstream initiatives as well as national guidelines on TEW, which will contribute to the development of capacities in local communities.

Taking up an idea from **Ministry of Home Affairs**, GTZ plans to support partners **RISTEK** as current coordinator of the development of InaTEWS, **BNPB** as future coordinator, **BMKG** as host of the Tsunami Warning Centre, and the Ministry of Home Affairs in disseminating national guideline through the organization of workshops and information events on TEWS.

The objective of the workshops is to provide local stakeholders from tsunami prone districts and provinces, and national stakeholders room for discussion and sharing of best practices and experiences, as well as to extend local partnerships and strengthen exchange.

Expected participants are representatives from local governments, particularly policymakers and technical operators (BPBD and or Emergency Operation Centres *Pusdalops*), representatives from national institution involved in InaTEWS, and media representatives.

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AusAID co-financing for GITEWS

The “Capacity Building in Local Communities” work package of the German - Indonesian Tsunami Early Warning System (GITEWS) project has been awarded co-financing from AusAID totaling 550,000 Australian Dollars, to complement planned project activities. The objective is to extend the scope and coverage of the project’s intervention.

The co-financing allows for a broader impact at community and local government level, as well as intensified support for national agencies. The implementation period will be between June 2009 and March 2010. The AusAID contribution to GITEWS project activities allows for additional outcomes in the following areas of intervention:

1. Community Awareness and Outreach
2. Building Capacities and Providing References for Warning Services
3. Extending Local Partnership and Strengthening Exchange
4. Testing the System

Project Team Meeting

Sikuai & Padang, 17–21 August 09

The meeting was held to share progress and processes within and around the project. The meeting also produced an updated working plan for the core processes up until March 2010.

The first session on Monday morning was on the theme “Linking Local & National”, providing a holistic view of the project and the topics we are working on.

During the second session on Tuesday and Wednesday, we revised all project outputs and took a final decision as to how to document them in the **Tsunami Kit**. The Tsunami Kit will be a compilation of all relevant tools, manuals and experiences developed during the project lifetime, and will provide links to related initiatives and resources.

The third session on Thursday was dedicated to the **Pilot Areas**. The local adviser provided an updated working plan and the team collected ideas for activities to be implemented in the frame of the **Exchange Program**, (i.e. exchange of experiences between Pilot Areas, neighbouring districts, visits to the National Warning Centre, and inter-district cooperation

Following a presentation by partner from Padang on local progress, the project team and invited consultants dedicated the last session on Friday to defining the activities to be executed in the frame of the **Exchange Program** work plan and setting priorities for the TOF module moderation.

Before departure, we shared an evening with **partners from the Padang Pilot Area** in a nice seafood restaurant.



The team was “welcomed” to Sikuai Island just offshore Padang by a 6.9 SR earthquake near Siberut / Mentawai and experienced several aftershocks in the following days.



Tanjung Bena Evacuation Map / Signing of MoU in Tanjung Bena / Briefing of Governor in the Emergency Operation Centre / TEWS coordination meeting

News from the Pilot Areas

Bali

With the official inauguration of the Emergency Operation Centre (*Pusdalops*) in Denpasar, Bali has made another step forward to provision of a 24/7 service for tsunami early warning and guidance in Bali. As the Centre will be operated by the authorities at the provincial level, good coordination with the districts in Bali will be required.

Soft Launching of the Bali Emergency Operation Centre

On August 29, 2009 a ceremony to inaugurate the new Bali Emergency Operation Centre was held in Denpasar.

The building, constructed with the support of the French Red Cross, was handed over to the Governor by BNPB. Representatives from the national institutions RISTEK, DEPdagri, LIPI and BMKG also attended the event.

The Governor of Bali said that he expected the Centre to be fully operational in the near future.



Centre staff explained the different functions of the emergency operation centre and performed a table top exercise to demonstrate how tsunami early warning procedures will work in Bali.

Next month, the offices will be equipped with IT and communication technology. In parallel, the new staff will receive further training to get prepared to handle emergency situation.

TEW Coordination Meeting

The inauguration of the Bali Emergency Operation Centre was followed up by a coordination meeting between representatives of Bali's provincial and district governments to discuss division of roles and coordination of tsunami early warning between the emergency operation centre and the tsunami prone districts. The meeting, facilitated by GTZ IS, was also attended by representatives from RISTEK, BNPB, DEPdagri, BMKG and LIPI.

After clarification of the current set-up of the tsunami early warning chain in Indonesia and Bali, several open questions were discussed and the following conclusions were drawn:

1. Confirmation of the Bali Emergency Operation Centre as the official provider of tsunami warning and guidance service for Bali. This implies that the Centre has the mandate of calling for evacuation in the event of a tsunami threat.
2. Agreement that institutional arrangements between both levels need to be addressed.
3. Agreement that during a next meeting related questions need to be clarified: how the warning will be delivered to the districts and to whom, and what procedures will be followed at the district level when warnings or guidance are received from the provincial Emergency Operation Centre.

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MoU signed in Tanjung Bena:

Hotels to provide shelter to local community during tsunami emergency

The initiative supported by BHA and GITEWS culminated in the official handover of the evacuation map and the signing of an MoU between representatives from the community and neighboring hotels, in an interesting example of cooperation in disaster risk reduction between the private and public sectors.

The jointly developed emergency plan considers:

- Designation of evacuation space in hotels
- Establishment of evacuation procedures
- Designation of specific hotel employees and community representatives with communication and coordination roles
- Education for nominated people on their assigned tasks and authority
- Dissemination to community members

Through the initiative, shelter for more than 2000 people from six *banjar* (local wards) has been opened in the nine participating hotels.

Procedures and maps have been published in leaflets. The process has also been documented in a fact sheet to serve as an example for other tourist areas.

Next steps

The project will assist the follow up process for the coordination between the province and districts on early warning procedures. Further support will be dedicated to the evacuation planning processes in Kuta and Sanur. Several activities within the Exchange Program are on the agenda as well.

Info Gempa
 Mag:7.3 SR,
 02-Sep-09 14:55:00 WIB,
 Lok: 8.24LS-107.32BT
 (142Km barat daya
 TASIKMALAYA).
 Kedlmn: 30Km.
 Potensi TSUNAMI
 utk dtrskn pd msyrkt::



Java: Reaction of Community in Bantul to the Tasikmalaya Earthquake on 2 September 2009

The earthquake occurred in the southern part of West Java was felt strongly in the pilot area of Java. It was a real test for the community, particularly in Bantul, where a modest emergency operation centre (Pusdalops) is currently operating 24/7. Modified multi functional speakers/sirens are in place along the beaches and in some villages which are connected to information centre and reach several communities. These people have basic knowledge of tsunami hazards and response planning. The communication technologies and procedures were tested in a tsunami drill carried out in late 2008.

Following the earthquake on the 2 September, electricity, phone and email connection, and infrastructure in general, in Bantul were not affected. So, how did the existing warning and preparedness mechanisms work during the earthquake? Below is a summary of interviews with some stakeholders in Bantul that illustrate the reactions of personnel from the formal institutions and from the community groups.

	Reactions by Public Institutions	Reactions by Communities	Points for Learning
	<ul style="list-style-type: none"> - Two stand-by officers at the emergency operation centre were stunned to feel the ground shaking. - Soon, communication began between the centre and SAR teams via handy-talkies (HTs), and <i>Kesbangpollinmas</i> and Regional Secretary via mobile phone - A BMKG <i>INFO GEMPA</i> (earthquake info) message appeared on the television at the emergency operation centre. Centre personnel cross-checked the information with the tsunami reference map and the response procedure in the manual - A COMMUNICATION NETWORK comprising the SAR teams, Regional BMKG, Indonesian Red Cross, the Navy and the Bantul and Kebumen emergency operation centres was initiated via HTs. - ADVISORY guidance was issued and disseminated by the emergency operation centres to the local community via speakers on the beach and at mosques. NO SIREN was activated. - KESBANGPOLLINMAS received EQ info from GTZ IS staff, which then was forwarded to the assistant and deputy governor and the regional secretary. - ALL CLEAR message was observed on the TV at the operation centres. Personnel once again disseminated the message to the community via speakers, and to the SAR Communication Network via HTs. 	<ul style="list-style-type: none"> - About 80% of people in the coastal area went out of their homes, but many on the beach did not move. Some people proactively sought information about the EQ from the four SAR posts on the beach. - The four SAR posts began to communicate via HTs on 162.55MHz, and some personnel observed the beach for any natural signs of elevation. - Members of working groups, local facilitators and SAR teams forwarded the EQ info received to their neighbours and relatives. - The ADVISORY warning was heard by many people through speakers on the beaches and at the mosques, but many others did not hear the warning due to noise distortion or malfunctioning of the equipment. Individual users of HTs were able to listen to the communication between the emergency operation centres and the SAR teams. - People listened to the ALL CLEAR message announced by the emergency operation centres through speakers in their vicinity. Others heard the message on HTs communication. They returned to their normal daily activities. - SAR in Bantul confirmed that no natural signs were observed on the beach. 	<ul style="list-style-type: none"> - Info flow from BMKG to the Bantul emergency operation centre was hindered by the lack of a dedicated mobile phone and a malfunctioning internet connection. - The '24/7' emergency operation centre allowed for quick decision making and dissemination to the community. Reference maps and manuals were consulted. Local authorities were kept updated and consulted. - The SAR Communication Network and Bantul and Kebumen emergency operation centres linked well. - Two messages (Info Gempa and All Clear) were issued by BMKG via public media. - Not all speakers installed in the community worked properly - some malfunctioned. - While most people went out of their homes, others remained on the beaches. Local facilitators, working groups and SAR members played roles in further dissemination of warning and messages to their neighbours. <p style="text-align: right;"> <i>Benny Usdianto</i> benny.usdianto@gtz.de </p>



Inauguration of PUSDALOPS / Roundtable meeting



Padang

This article was written before the earthquake hit Padang on 30 September. You can find an update on the current situation on the next page.

Key issues during the last quarter have been institutional issues for implementing tsunami early warning in Padang, including the division of roles between provincial and municipal government and the creation of the local legal basis to implement InaTEWS.

Inauguration of the Padang Emergency Operation Centre

On 13 August 2009, the government of Padang represented by Deputy Mayor Mr. Mahyeldi inaugurated the new Padang Disaster Management Office (BPBD) and Emergency Operation Centre (Pusdalops PB). The inauguration was also attended by the local policy making board (Muspida) and disaster preparedness institutions in Padang who wanted to get first hand information about the new facilities and their equipment.

In his speech, the deputy mayor said that the government of Padang was entrusting the disaster management office a high degree of responsibility, and expected other related institutions to coordinate and cooperate with the disaster management office.

Simulating an earthquake scenario, the emergency operation centre demonstrated how it performs its function as an early warning provider for the people of Padang. The draft version of the TEW SOPs was presented to the Padang municipal policy making board. The SOPs includes delegation of authority from the mayor to the emergency operation centre to call for evacuation of communities.

The deputy mayor gave a positive response to the draft TEW SOPs, and instructed the disaster management office to immediately present the draft to the mayor. It should then be finalized and legalized in form of a mayoral decree.

Roundtable Meeting

A round table meeting initiated by BGR-GITEWS and facilitated by West Sumatra provincial government on 29 July 2009 in Pangeran Hotel, Padang provided answers to several key issues related to the roles and responsibilities of the provincial and municipal governments.

The policy makers for disaster management discussed and clarified the institutional coordination for the warning chain by considering experiences and perspectives from other areas.



A key output of this meeting was that the participants agreed on the need for holistic and integrated SOPs for Tsunami Early Warning, which should be implemented by provincial and municipal/district governments.

It was agreed that all municipalities and districts that are able to implement the TEWS on a 24/7 basis are authorized to call for evacuation. For cities / districts that are not able yet to implement TEWS, the authority to call for an evacuation lies with the provincial government.

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Update on draft version of Mayoral Decree on Tsunami Early Warning

The draft version of the Mayoral Decree on Tsunami Early Warning is undergoing its fifth revision. Some important changes are being made to the structure of the decree and it is awaiting input from the national level regarding the new warning scheme.

Some important revisions to the decree include:

(1) delegation of authority from the mayor to the emergency operation centre to provide TEW services to the community.

(2) how related institutions can support TEW, including obligations and mechanisms for broadcasters or media on spreading information and tsunami early warning to communities.

The TEW SOPs will be documented as an attachment to the decree, so that any revisions to the SOPs can be made without having to revise the legal basis again.

Next Activities in Padang

The previously planned activities are now under revision and will be modified or adapted in line with developments in the situation in Padang following the earthquake.



The city suffered heavy damage / The Emergency Operation Centre and RRI Radio played an important role in informing the public that there was no tsunami threat

After the earthquake: Update on Pilot Area Padang

Padang, 30 September – a report from GTZ advisor Willy Wicaksono

“A 7.6 earthquake shook West Sumatra on 30 September, at 17:16 hours. The epicentre was close to Padang – one of the GITEWS Pilot Areas for InaTEWS. The tremor was felt very strong and fast. Many people could not stand or even get out from buildings.

After the ground stopped shaking, we saw a lot of people running out from buildings in panic. Lots of buildings collapsed, fire broke out at several areas in Padang. The power was off and cellular networks, including GSM, were also down. Many people evacuated on their own initiative, heading to the bypass in vehicles and causing an inevitable traffic jam.

The newly inaugurated Padang Emergency Operation Centre was badly damaged but was able to continue operating using backup power from UPS and generators. The landline telephone was still operating and able to provide internet connection to receive information from BMKG.

BMKG information was received by the emergency operation centre about 10 minutes after the earthquake, via internet connection. This information indicated that there was no threat of a tsunami following the earthquake. The emergency operation centre used two-way radio (VHF) to inform communities and agencies that there was no tsunami threat and that people could stop evacuating. Other communication equipment such sirens was not used as there was no tsunami threat.

Despite the announcement by the emergency operation centre that there was no tsunami threat, people continued to evacuate. About an hour after the earthquake, the Mayor of Padang, based on the report from the emergency operation centre,

announced to the community via RRI Radio that there was no tsunami threat and asked people to remain calm.

Traffic jams were cleared by about 21:00 and tents were deployed in the dark night and light rain. SAR teams are working with very minimum equipment to rescue people from the debris.”

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Padang, 30 September – first conclusions regarding InaTEWS

Apparently, the Padang SOPs did work: people started self-evacuation after the strong tremors, trying to leave the coastal areas. The emergency operation centre received the BMKG EQ information and passed this information to the local decision maker. The public was informed that there was no tsunami threat and that no evacuation was necessary.

What happened in Padang confirmed previous assumptions: as expected, power and cellular networks were down immediately. Text messages could not be sent and communication to the public was not possible during the first hour. The experience also confirmed the reliability of VHF radio networks and the importance of FM radio in keeping the public informed.

The experience in Padang once again reaffirms the importance of “negative” warnings. The “no tsunami threat” announcements were vital in this situation. The emergency operation centre seems to have proved that this redundant communication technology, with a robust back up system in place and trained staff the reception and dissemination of early warning is feasible even in extreme conditions.

What's next?

Padang has a big task ahead: recovery and reconstruction efforts will require a lot of time and resources.

Unfortunately, it has to be assumed that the threat of another big earthquake and tsunami remains. Scientist deduced from analysis of the earthquake parameters that it did not reduce accumulated stress in the subduction zone. Therefore, our partners in Padang urged to continue with community awareness and preparedness activities. Another task is to relocate the emergency operation centre and to strengthen it for further operation.

Reconstruction should be carried out from the perspective of building back better. For Padang, this is a chance to rebuild with earthquake and tsunami resistant buildings, which in tsunami prone areas can function as vertical evacuation shelters. Evacuation routes need to be improved as well.

For solid planning, an official tsunami hazard map is required. The ingredients are all there – it is now up to the science community to provide a solid proposal.

The experiences from 30 September will provide us with many more important lessons to improve tsunami early warning in Padang. We will identify these and take a deeper look into what actually happened in the “Red Zone”, how people reacted, what worked and what didn't.

We will keep you informed.

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Ms. Sri Woro (Head of BMKG) opening the workshop / Visit to BNPB Crisis Centre / Group pictures of participants

Updates on IOWave 09 and Warning Chain Guideline

Together with national and local partner institutions, the project is participating in the Indian Ocean Wave 2009 Exercise, and the drafting of the National Tsunami Warning Chain Guideline. Following up on our initial report in the last edition of the newsletter, here is an update on the situation.

Update on IOWave09

Most of the activities related to preparation of IOWave09 have been completed.

Development of local SOPs for Aceh took place from 13 to 16 July 2009, resulting in solid draft local Tsunami Warning and Emergency Response SOPs for Aceh Province. The draft was validated on 18-19 August 2009 in Banda Aceh. A one-day dissemination activity followed in Banda Aceh. The objectives of the validation were:

- To validate the integrated SOPs on early warning and response in line with the BMKG warning scheme
- To decide on the radio frequency to be used in disaster management communication
- To legitimate the standard text and siren sound
- To further develop the IOWave action plan

To engage the media in the exercise, a meeting of editors-in-chief was held on 31 July 2009 at BMKG. The high-level media representatives attending the meeting received information about IOWave09. BMKG in particular, and other institutions of InaTEWS in general, were encouraged to visit and engage in direct dialogue with staff in media editorial rooms, as they are people who decide what goes on air and what does not.

On 10-14 August 2009, four workshops (RTT Meeting, SOP Workshop, WG6 Workshop, and Media Workshop) were held parallel at the Hotel Le Meridien, Jakarta. While some of the workshops were specifically for national participants, others invited participants from other Indian Ocean countries. The workshops included a visit to the BMKG Warning Centre and the BNPB Crisis Centre. On the last day, a tabletop exercise for international and national participants was held. The media group simulation was particularly exciting, as they made everybody feel the ticking of the clock in a warning event. They also offered valuable suggestions on how to improve the media link to the public in case of a tsunami threat.

On 14 September 2009, a tabletop exercise was conducted by BMKG, BNPB and the Aceh Emergency Operation Centre. Warning dissemination and the decision-making were tested during the event. The international IOWave09 exercise will take place on 14 October.

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Update on the National Tsunami Warning Chain Guideline

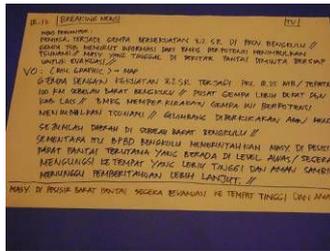
Discussion of the National Tsunami Warning Guideline during the 4th National Roundtable of INA-TEWS stakeholders stressed the need for a national reference document that clarifies roles, responsibilities and mandates of the actors involved in the tsunami warning chain and InaTEWS. It explains the warning messages and levels that are issued by BMKG and their sequence during a tsunami threat. During the event, the participants agreed on the need to proceed with the drafting of a national guideline that will strengthen local authorities' and communities' capacity to link themselves to InaTEWS and provide a reference to all other stakeholders, including the media and institutions at all levels.

As a result of the roundtable, a team was formed to draft the National Tsunami Warning Chain Guideline, consisting of representatives from BNPB, LIPI, DKP and BMKG. GTZ provides input from its piloting experience and supports facilitation with a consultant who compiles input and facilitates meetings. Four informal meetings of the team resulted in an outline for the warning chain guideline and a first (rough) draft, which includes important updates by BMKG on the warning scheme and messages.

However, the team concluded that a formal umbrella is needed to provide the team a clear mandate. While some content has already been elaborated and key questions have been discussed, the team is currently awaiting a formal decision (*Surat Keputusan* or Decree) from BNPB, as the future lead agency of the downstream component of InaTEWS that will eventually publish the guideline. This decree will form the basis for a more in depth discussion among the members of the team, joined by GTZ. Valuable lessons from the IOWave09 exercise will also be incorporated.

Once a first complete draft of the guideline is available, the writing team will present and discuss its results in the forum of InaTEWS stakeholders.

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Discussion led by Mr. Fidel (LIPI) during a workshop with the media / "Tsunami Breaking News" during the table top simulation of IOWave09 in the Hotel Le Meridien

The Media as a Key Actor in Tsunami Warning Dissemination

The media plays a role not only in reporting disasters, but also in helping to mitigate the consequences for people in risk areas. TV and radio stations are able to inform the public about a tsunami threat in a very short time. The media receives warnings from BMKG. To send these messages directly to community, clear SOPs are needed, along with a clear content of the message.

The media (television, radio, and print media) work hard to report on disasters. After every major disaster in Indonesia, the news is full of reports about victims and background information on how and why the disaster happened. There is no doubt as to the importance of the role of the media in reporting natural (and man-made) disasters.

In fact, the role of the media is not limited to reporting disasters. In the tsunami warning system, TV and radio stations hold an important position as one of the interface institutions disseminating warning from BMKG to the public – and thereby to communities along the coast threatened by a tsunami. TV and radio stations open a direct link between the BMKG National Tsunami Warning Centre and the general public.

The warning system connects 11 TV stations and one radio station to BMKG. It enables them to receive a tsunami warning message directly from BMKG. Regulation 20/2006 of the Minister of Communication and Information states that television and radio station are obliged to interrupt their programmes and broadcast a tsunami warning. The interruption involves a 30-second, high-pitched alarm designed to draw the attention of viewers and listeners. At the same time, the warning message is displayed.

Supported by LIPI, UNESCO, InWent, and GTZ, a workshop with media representatives to discuss the role of media in warning dissemination took place at the Le Meridien Hotel on 12-14 August.

The workshop, held as the part of the IOWave09 exercise, gave the opportunity for actors to discuss the content of the message that is disseminated by media. The three-day workshop also found that each media has its own SOPs for disseminating warnings. Some media can air a warning within five minutes of receiving a warning, while others require more than 10 minutes.



The discussion of the role of the media will be continued: knowledge transfer to media personnel about the overall warning system (the equipment and actors, and the warning scheme) is needed to allow the media to fulfill its role in InaTEWS. SOPs need to be modified, and the format and content of the message from BMKG to the media needs to be adjusted to the needs of the public. From the perspective of the media, the message needs to answer the basic questions: Where? What? Why? Who? When? And how? (5 Ws and 1 H).

Media Expectations

For taking up its role in warning dissemination, the media expects some back up. They expect a more 'understandable' message format and a BMKG contact person/resource person who is available for interview. 'Understandable' here means a message that is immediately understandable and instructive to the public, because there is no time for interpretation by the media. They will simply announce or display the message from BMKG. Therefore, the message is expected to be as clear as possible. The media also expects that BMKG appoint a standby resource person/contact person who can be contacted when a message is issued to re-check and clarify information, as needed. This will also reduce the possibility of mis-information.

The media, in turn is expected to play more of a role in preparedness and public education. Preparedness in terms of knowing what to do long before a tsunami happens, and public education especially with regards to the cancellation message and why it is issued. Communities need to understand that uncertainty is an inherent part of the tsunami warning system. There has to be a compromise between the need for a timely warning dissemination and certainty. As the main objective is to save communities from a tsunami threat, the media can play a part in educating communities about how to cope with tsunamis.

List of TV Stations and Radio connected to BMKG

- | | | |
|--------------|-------------|-------------|
| 1. ANTV | 5. Metro TV | 9. Trans7 |
| 2. Global TV | 6. RCTI | 10. TVRI |
| 3. Indosiar | 7. SCTV | 11. TRansTV |
| 4. TVOne | 8. TPI | 12. RRI |

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Workshop and training participants in Padang and Bali



Workshops and Technical Training on Tsunami Risk Assessment in GITEWS Padang and Bali Pilot Areas

From 21. – 31. July 2009, the joint Indonesian - German working group on risk modeling and vulnerability assessment, led by LIPI and DLR under the umbrella of RISTEK and BMBF, continued their discussion on implementation of Tsunami Risk Assessment products during two workshops in the Padang and Bali Pilot Areas. Following the workshops was technical training to enable technical staff to understand and conduct tsunami risk assessments.

The workshops on tsunami risk assessment in Bali and Padang represented a joint activity by LIPI, DKP, GTZ-IS, InWent, UNU-EHS and DLR together with local partners, bringing together relevant decision makers and scientists in the field of disaster management.

The main purpose of the workshops was to provide an overview of risk assessment results to inform local decision makers and to plan next steps related to possible implementation and application of the risk assessment results to support local planning activities.



Central themes presented and discussed were:

- Results and implications for local level (pilot area) tsunami risk assessment
- Institutional implementation of the risk products
- Legalization process (draft guidelines)
- Use and interpretation of risk assessment results for disaster risk reduction

The risk assessment products for the pilot areas provide sound information for local authorities to develop specific preparedness plans for the community. Developed methodologies and tools were

translated into draft guidelines to strengthen implementation in the pilot areas and to establish risk assessment products for disaster risk reduction.

Technical training was conducted in Padang and Bali by DKP and DLR in response to common skepticism of “high tech” early warning solutions and to link risk assessment products with community needs. The training revealed the products' benefits and enabled technical staff of local authorities to use, interpret and update risk assessment results.

The content of the training was based on the experiences of the first training on evacuation modeling, run in Denpasar in June.



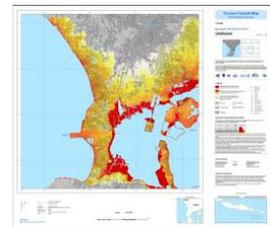
The main outputs of the trainings were:

- Methodology behind the map products was understood and accepted
- Participants were enabled to reproduce selected risk assessment products.

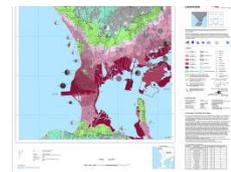
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Main tsunami risk assessment products presented and discussed

Detailed risk information to improve preparedness and to support local-specific planning needs (e.g. evacuation, contingency planning) was provided to the Bali and Padang Pilot Areas (see also the article from UNU in this edition).



Tsunami Hazard map



Evacuation Time map



Tsunami Evacuation Building Planning map

Application of the risk products in the context of local disaster management was discussed intensively during the workshops and the importance of such risk information was emphasised by the participants and the relevant national and local authorities.

Next steps in risk modeling and vulnerability assessment

- A workshop & technical training on tsunami risk assessment for Cilacap is planned for November 2009
- Continued support for implementation of tsunami risk assessment products
- Contribution to BNPB guideline for development of tsunami risk products and assessment methodology developed by the joint working group



Discussion of vulnerability assessment results and implications for risk management with local and national authorities and representatives from NGOs (PMI, Kogami)

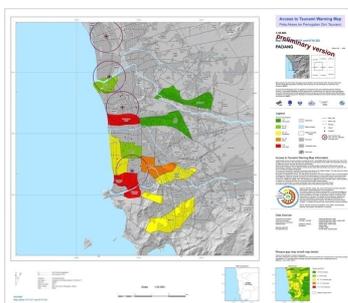
Local vulnerability and risk assessment as an important tool for effective end-to-end warning governance

The efficiency of tsunami early warning systems very much depends on the capabilities of the population at risk to find a safe place in due time. Considering an Estimated Time of Tsunami Arrival (ETA) within 30 minutes after the occurrence of a tsunami-genic earthquake and taking into account at least up to 10 minutes of Institutional Decision and Notification Time, the population at risk has not much time left to save their lives. Thus, the focus of the vulnerability assessment (conducted by DLR/UNU-EHS and LIPI) is based on those factors that endanger timely evacuation: Inappropriate access to warnings, inappropriate awareness and preparedness to evacuate (LIPI/UNU-EHS), and insufficient capability to conduct evacuation in due time.

Access to tsunami warning:

Inappropriate access to early warning contributes to the delay in warning dissemination and can lead to the loss of life during a tsunami event. The map below shows the spatial pattern of households' access to warnings disseminated through the devices mentioned below. With this information at hand, local stakeholders can design people centered and efficient early warning dissemination strategies. Three different warning access media types for households are being distinguished:

- Access of households to warnings via private media devices (TV, Mobile, Radio).
- Access of households to sirens, e.g. those currently installed in Padang city.
- Access of households to mosque loudspeaker (small map bottom right).

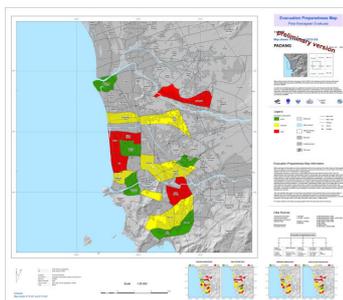


The results show for the case of the city of Padang, that still a lot needs to be done to make warnings timely efficient. Especially, higher densities of siren coverage are needed. The gap identified requires the quick expansion of community based solutions.

Evacuation Preparedness:

When warnings reach people at risk not everybody reacts to the warning in the same manner. Inappropriate reactions to warning are a vulnerability factor that can lead to the loss of life. Thus, for the population to be prepared to evacuate timely (development of household level SOPs), policymakers need to continuously raise awareness amongst its citizens.

In order to design awareness and socialization programs, it is important to understand the underlying factors that shape the behavior of individuals during and after warnings are issued. The factors identified in the city of Padang are: Knowledge of tsunami ETA, subjective judgment on own exposure, trust in the warning, efficacy of managing evacuation, knowledge of evacuation routes and age.

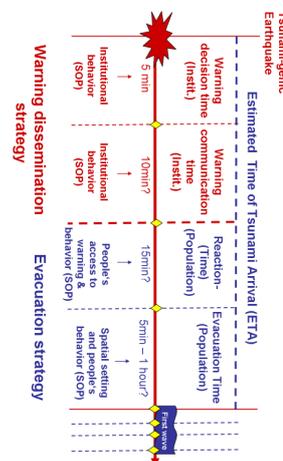


The mapping of the factors and its values for different geographic entities can support the design of community specific strategies of sensitization and open up a general debate on the importance of people centered awareness activities for effective early warning.

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Rationale of the Research

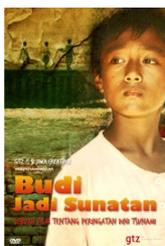
"Risk and vulnerability assessment is an important tool for risk communication, and developing timely efficient tsunami warning and response mechanisms (people centred risk management in the early warning context)"



The research has been conducted in Padang, Cilacap and Bali within the GITEWS-WP 4200: Risk and Vulnerability Assessment under the general leadership of DLR and LIPI and the collaboration of the GITEWS Working Group on Risk and Vulnerability Assessment

For further information on the research process, methodology or results please contact the author and / or:

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Scenes from the film "Budi jadi sunatan" / People living in coastal areas are the direct target group

To raise awareness, provide relevant information, and motivate people living in tsunami prone areas in Indonesia to develop and improve their preparedness strategies for the local tsunami threat, GTZ-IS GITEWS with contribution from AusAID has developed a video film for community outreach and an information pack for local decision makers.

'Budi Jadi Sunatan'
a film on Tsunami Early Warning

MBAH AANG, (charismatically), "Seven days from now, houses will be flattened by waves. Boats will have vanished"
... Fear takes hold... Crowds start to panic ... The situation is getting out of control.
... Budi, Tiyo and Daru walk along listlessly, with gloomy faces.
DARU, "If a tsunami does come, then what?". **BUDI** shrugged his shoulders, miserably shaking his head. **TIYO** (in despair), "The movie might be cancelled then,...". **BUDI**, "No Way! **TIYO**", "What do you mean? Of course it will be. Hey, aren't you going to be circumcised this week?"
... **Budi's** looks even more miserable. Suddenly he jerks up, "Oh no! Mr. Bejo!" **DARU**, "What?". **BUDI**, "The circumcision specialist. What if he's evacuated, too?... Let's go and find him!"
Budi and Daru hurry off...

A prediction of a tsunami by a local fortune-teller is the starting point of this 30 minutes film, designed to raise awareness, provide basic information, and motivate people living in tsunami prone areas to develop and improve their tsunami preparedness strategies.

The target group is the communities at risk: individuals and local organizations at village level in the tsunami prone areas of Sumatra, Java, Bali.

The film is a mixture of education and entertainment ("edutainment"). Together with JIWA production house, the project developed the concept and creative idea by translating a rather complex technical topic into an easy-to-understand form, by simplifying the language and presenting the ideas in a simple short story about Budi and his village

'Information Package' for Local Decision Maker

When there is a lot to tell but time is short, a special approach is needed to get the attention of decision makers and get the message across.

A comprehensive information pack that includes a five-minute video clip for local decision makers is currently being developed to strengthen local decision makers' understanding of the tsunami hazard and the early warning system.



The package contains a short video and a brochure that provide basic information about the tsunami hazard and the early warning system, to raise awareness about the role of local governments in InaTEWS.

Target groups are decision makers in local government, high-level executive staff, and local parliamentarians, as they are the people who make the decisions about including tsunami preparedness will in local regulations and budgets.

Henny Dwi Vidiarina
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The Video Trailer

"Imagine... an earthquake happens in your area... What do you do? How do you react? ... What if the earthquake happened under the sea? ... Could there be a tsunami? ... As we speak, tsunami waves could already be heading towards the coast ... Do the people in your community know what to do, are they prepared for the worst ...?"

"The clock is ticking! Are your people aware that a tsunami could be approaching ...?"

"Time's up! Now is the moment to make a decision ...are you ready?"

This is an extract from the script of the five-minute "wake-up call" video targeting elected local policy- and decision-makers. The film addresses the need for tsunami early warning and preparedness to protect their communities, and motivates them to take a lead in promoting a spirit of tsunami preparedness and planning ahead for future tsunami events and make decisions about evacuation when an earthquake happens and a warning from BMKG comes in. It also looks at who else is in charge of preparing and protecting their people.



Time's up! Now is the moment to make a decision ...are you ready?...

Supporting us

Exchange and Dialogue Program August 2009 - February 2010



Kharisma Nugroho kharisma_nugroho@yahoo.com.sg has more than 14 years' experience in M&E system design and implementation. Former head of the M&E Unit of *Aksi Stop AIDS* (USAID), Kharisma gained his skills from the Basic Education Program (AusAID). He was a representative for Cordaid Netherlands Emergency and Rehabilitation Sector in Indonesia, where managing and developing DRR was his main task. Kharisma likes writing and playing dominoes.



Retno Winahyu Satyarini rwinahyu@gmail.com graduated as an urban planner. She has worked in various development projects, in areas such as poverty reduction, agroforestry, community development, and disaster management. Formerly a researcher for UGM and ICRAF (International Centre for Agroforestry Research) and programme coordinator for OXFAM, Retno has more recently worked for UNDP as team leader and consultant. For the past six years she has been actively involved in DRR and post disaster recovery.

Community Outreach Program August 2009 – February 2010



Novalinda (Linda) novalinda@gfiagendi.com has an educational and professional background. In addition to assignments with GTZ, she is also a consultant for Institutional Development for Community-based Clean Water Provision and the Strategic Environment Assessment Project. Interacting with children is a favourite with Linda. Under **PREMANet Indonesia**, she is now supporting GTZ-IS GITEWS together with Handa (below).



Handayani Abdullah (Handa) handa.premanetindo@gmail.com was a coordinator consultant for GTZ Program Lingkungan Hidup (ProLH). Her strong competence is in participatory education. She has delivered more than 750 hours teaching in community-based water supply provision, energy efficiency, and other types of facilitation work. Handa is always excited to experience new challenges.



Jenik Andreas (Jenik) ds.jenik@gtz.de started her career in the GITEWS project as Project Assistant in the Java Pilot Area. She is now Advisor for the Community Outreach Program, supporting the overall working strategy and process and ensuring that technical concepts and content relevant to tsunami early warning and disaster management are incorporated into the training modules.

Information Package & Tsunami Kit design and development



Adriani S Soemantri (Ani), kalbu_jernih@yahoo.com, Experienced as independent consultant, facilitator, researcher and writer for 30 years, her vision is to inspire people for better life and conscience. Social issues are her concern among many others. Her talent and her sense of art are simply understood by her as an ability to think 'out of the box' or 'out of the crowd'. Her company, **MAKATA**, supports GTZ-IS GITEWS to develop the Tsunami Kit.

Project Assistant for GITEWS Pilot Area Java



Johanes Juliasman (Joel), johanes.juliasman@gtz.de worked with JRS in Tapaktuan, Aceh Selatan (2008), as mapping facilitator for drought-prone villages in Yogyakarta with Public Works and Atma Jaya University (2009). His area of interest and competence is information technology.

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