Newsletter

No. 07 | July-September ‘08

GTZ-GITEWS | Editorial

Capacity Building in Local Communities

German-Indonesian Cooperation for Tsunami Early Warning System

Editorial

As a pilot project working on community level we are quite often confronted with scepticism regarding “high tech” early warning solutions, as some people argue that this kind of system is conflicting or opposing community based approaches, which are getting more popular now in Indonesia. Reason enough for the project team to discuss and explore more in depth how a “high tech” Tsunami Early Warning System goes along with community based disaster risk management (CBDRM). We include two features in this edition of the newsletter to address this challenging issue.

We are getting close now to the official inauguration of the Indonesian Tsunami Early Warning System, which is certainly a big moment for everyone who has contributed during the implementation process so far. Nevertheless it is important to realize that the” job isn’t done” yet – there is still a need to complete, adjust and fine-tune the system. And when it comes to capacity building, everybody admits that we are just at the beginning. Experiences from different initiatives (national drills, LIPI’s community programs, GITEWS Pilot Areas) need to be revised and systematized and a strategy for mainstreaming should follow to assure that more and more communities can link to the system.

Best regards
Harald Spahn, Team Leader GTZ-IS

Indonesian-German Working Group on Risk Modeling and Vulnerability Assessment

Altogether 76 participants from various Indonesian, German and international organizations met for a 5 day workshop to present and discuss results and products from risk assessment relevant for disaster management and tsunami early warning.

The joint Indonesian-German working group, coordinated and led by DLR and LIPI, met during a 5 day workshop this August in Bandung. It was the 4th meeting bringing together relevant scientists and decision makers in the fields of risk assessment and disaster management. The workshop was a joint activity of LIPI, DLR and the GITEWS Capacity-Building Unit (CBU, InWent).
Main goals and topics of the workshop were to present and discuss:

1) results of sub-national and local level (Pilot Areas) assessment

2) common guidelines for tsunami risk assessment

3) results relevant for early warning and disaster management

According to the **joint framework and methodology** worked out and agreed on during the last workshop different results and derived products were presented and discussed.
The **risk assessment products** deliver specific information reflecting the different phases within the disaster management cycle. Hence the applicability for disaster management in the fields of disaster risk reduction and disaster response is ensured.
That means that the presented results are **delivering sound information** to contribute in the fields of:

- Preparedness and awareness creation
- Early warning and immediate response
- Emergency relief planning
- Recovery (reconstruction and rehabilitation)

Another central issue was the **role of risk assessment products for the warning chain** and local response strategies ("last-mile" aspects).
Here a central theme was the link of tsunami risk information provided by the Tsunami Early Warning Center and the tsunami risk knowledge and information available at the local level.
The establishment of **national and local level guidelines** in the field of tsunami risk assessment is thereby playing a **crucial role**.

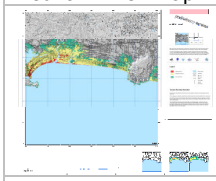
Furthermore different strategies in formulating tsunami risk assessment guidelines were discussed. In this respect the presented risk assessment strategy and products have been recognized as an important contribution in establishing national standards and as a contribution to the UNESCO-IOC ICG WG3 strategy in establishing **tsunami risk assessment guidelines for the Indian Ocean**. During the workshop it was recognized and stated that the presented risk assessment products deliver an **important source of information** contributing to disaster management needs at the national and local level.

Herryal Z. Anwar & Joachim Post
herranw@yahoo.co.id;
Joachim.Post@dlr.de

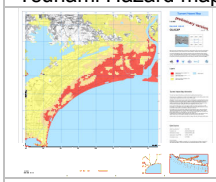
Main tsunami risk assessment products presented and discussed

The **risk assessment strategy addresses two main users and levels of detail**: **First** the sub-national level addresses tsunami risk information mainly for early warning and response properties. Here, **tsunami risk information is available for the entire coast** of Sumatra, Java and Bali facing the Sunda trench.

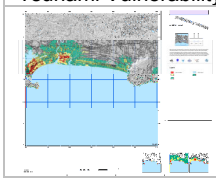
Tsunami Risk map



Tsunami Hazard map



Tsunami Vulnerability map



Second, more detailed tsunami risk information is available at the community level (GITEWS Pilot areas). Here detailed risk information for supporting different local planning needs (e.g. evacuation, emergency relief and recovery) and preparedness rising in the frame of disaster management are provided.

Next steps in risk modeling and vulnerability assessment

- Integration of presented products and methodologies into national strategies and establishing national guidelines in tsunami risk assessment
- Integration of sub-national level risk products into national TEWS and Decision Support System and linking them to local level risk information in GITEWS Pilot areas
- Improvement of detailed risk assessment products in GITEWS Pilot areas by including analysis of recently undertaken surveys in the fields of households, critical infrastructure and buildings stability properties

Warning Center in BMG / National Drill in Bali 2006 / ICTW Poster

State Ministry of Research and Technology, Republic of Indonesia

Indonesian Tsunami Early Warning System: 3 important events until end of 2008

Inauguration of Indonesian Tsunami Warning System (INA-TEWS)

It will be a significant moment in Indonesia when the Indonesian Tsunami Early Warning System will be officially launched in the National Warning Center at BMG in Jakarta on the 11th of November 2008.

INA-TEWS will be officially inaugurated by the Indonesian President Susilo Bambang Yudhoyono. The ceremony will be also attended by representatives from UNESCO and Donor Countries.

Germany contributed substantially to INA-TEWS. The seismic software SeisComP3 and the Decision Support System are core elements of the new system. Other fields of cooperation are installation of sensor systems, simulations, risk mapping and capacity building.

The German Delegation will be led by the Parliamentary State Secretary Thomas Rachel. He will be accompanied by the Scientific Director of GFZ Professor Reinhard Huettl, the Head of the German Marine Research Consortium Professor Gerold Wefer and other representatives of the GITEWS consortium.

International Conference on Tsunami Warning (ICTW)

Following the inauguration in Jakarta, RISTEK is hosting an International Conference on Tsunami Warning (ICTW). With the theme „Towards Safer Coastal Communities, this conference forms part of a series of activities linked to the launching of Ina-TEWS. The conference aims to bring together committed people and to consolidate collaboration and networks on early warning development in the region.

Additionally on the 14th and 15th of November a Inter-Sessional Meeting of ICG/IOTWS Working Group 6 "Mitigation, Preparedness and Response" will take place in the Grand Hyatt Hotel in Bali.

RISTEK and BNPB are also preparing a *National Exhibition of Disaster Management Technology*. The exhibition will take place during the ICTW in the same venue. The exhibition will be a platform to present newly developed technologies made by national experts for the purpose of disaster management.

National Tsunami Drill 2008

On the 26th of December 2008 will be the next National Drill. Focal city for the tsunami drill this time will be Gorontalo; meanwhile other regions simultaneously will implement similar activities.

Manado, Bengkulu, and NAD are also preparing for tsunami drills supported by National Institutions, i.e evacuation map development by LAPAN.

Bantul is among the tsunami prone districts who are also preparing a tsunami drill using local resources and knowledge, under the acknowledgement of national level.

RISTEK in cooperation with Ministry of Home Affair will invite 138 districts to participate in a two-day training for tsunami drill implementation on 27-28 October 2008 in Jakarta. During the training, RISTEK will distribute a guideline on how to conduct tsunami drills.

Please Check http://pirba.ristek.go.id/ictw for further updates and

Please write to pirba@ristek.go.id for further information

Dwinanta Utama
dwinanta@ristek.go.id

Vidiarina
Henny.vidiarina@gtz.de

2nd International Disaster Symposium / Progress Meeting with Local Partners

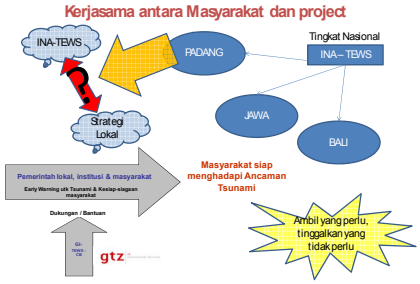
News from Pilot Areas

Padang
"Padang as one of the pilot areas to implement INA-TEWS is getting more advanced by developing BPBD Kota Padang, a new-official hazard map by input from national & international scientists, and integrating local disaster preparedness strategy with the framework of INA-TEWS"

Padang Working Plan

Concerning about the changes of the structure and strategy proposed by GTZ-IS to support the implemention of INA-TEWS in Padang, several meetings were conducted with a small team led by Mr. Indra Catri as coordinator of the Working Group in Padang. This small team consist of; BAPPEDA, DKS-PB2, KOGAMI, and GTZ-IS.

A joint working plan until end of 2008 was drafted to support the process of implementing TEW in Padang. The plan is synchronized with the working plan of other stakeholders and includes contributions from each partner. The government of Padang will follow up this proposal into their local budget (APBD).



With this approach it is intended to strenghten the ownership and involvement of local partners in the working process.

2nd International Disaster Symposium

In order to define an official tsunami hazard map for Padang city, several activities had been conducted such as the International Disaster Symposium; Problem & Solution which initiated by Andalas University on July 2007, the Padang Consultative Group supported by GTZ-IS in January 2008 to answer several key questions regarding scenarios to be used and what kind of hazard map is needed in Padang. The 2nd International Disaster Symposium held by Andalas University together with JSCE in August 2008 led to a consortium between scientists and institutions involved in the development of tsunami hazard mapping to share data.

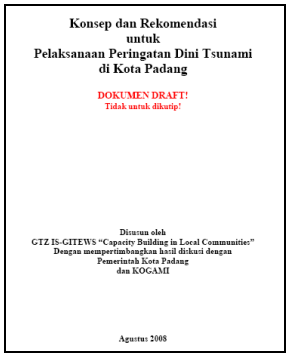
Scientists from Caltech & LIPI will provide updated data from their research while German scientists will provide an update for the base map. All involved institutions will cooperate to develop a new hazard map and are expected to meet again in January 2009 together with stakeholders in Padang to choose which map will be used as an official tsunami hazard map for Padang.

Willy Wicaksono
willy.wicaksono@gmail.com

Hendri Agung:
hendriagung@yahoo.com

EW Strategy for Padang

As agreed with Pemko Padang, GTZ-IS developed an integrated concept to implement INA-TEWS in Padang, The draft concept document will be discussed with the local partners. The concept will be synchronized with the local strategy for disaster preparedness (Padang Strategic Plan for Disaster Preparedness).


Konsep dan Rekomendasi
untuk
Pelaksanaan Peringatan Dini Tsunami
di Kota Padang

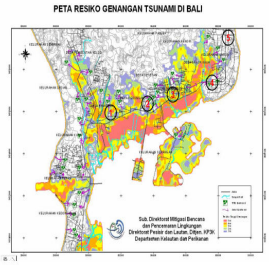
DOKUMEN DRAFT!
Tidak untuk dikutip!

Disusun oleh
GTZ IS-GITEWS "Capacity Building in Local Communities"
Dengan mempertimbangkan hasil diskusi dengan
Pemerintah Kota Padang
dan KOGAMI

Agustus 2008

PEMKO is now activating a temporary operation center for tsunami early warning purposes (PUSDALOPS) located at the Padang Fire Brigade. GTZ-IS is providing some support for the technical equipment and training of the new 24/7 post.

Next steps in Padang
Implemetation of the joint working plan which includes an review workshop to assess the progress of TEW implementation in Padang, activation of PUSDALOPS and training for PUSDALOPS staff on decision making for TEW.



Comparison Chart on Modeling approaches / Bali Map from Drill 2006 / Participants of workshop

Bali
The development of tsunami preparedness strategies for a Bali is not an easy task. First of all it requires a good understanding of the hazard. Several scientists and institutions are currently working on numerical modeling and hazard assessments. A Consultation Workshop for tsunami hazard mapping in Bali had been conducted on 7 – 8 July 2008 and brought together representatives form local government and science community.

The **objectives** of the workshop hosted by the Bali Province Government, were:

- to achieve a better understanding Tsunami Hazard and the possible impacts for Bali in order to enable local decision makers and other stakeholder to get better prepared for future tsunami events.
- to agree on reference scenario(s) and criteria for tsunami hazard zoning in order to develop a zoned Tsunami Hazard Map as a planning tool for further preparedness activities
- to develop recommendations for official policies and guidance, which are needed to set the framework for tsunami early warning, evacuation planning and preparedness activities in southern Bali.

Special attention was given during this workshop to the southern part of Bali, focusing on the coastal areas of Badung District and Denpasar.

The **results** of the discussions and agreements of the workshop were documented in form of:

- a comparison chart on existing modeling approaches and their specifications
- a document compiling all existing tsunami hazard maps for Bali
- a brief summary with statements regarding the key questions discussed

An **overview of the geo-tectonic situation** of Bali was presented by Agus Riyanto (BMG-Bali), Asdani Suhaemi (CGS) and Igan Sutawidjaja (CVGHM). According to them the earthquake sources in Bali are located on land and in the sea. Bali experienced several strong earthquakes (M ≥ 6) in historical times (1976, 1979, 1984 and 2004). Four sources for tsunami were identified: Sunda Trench, Back Arc, submarine landslides and volcanic activities. Important historical tsunami records are related to Sumba (1977) and Banyuwangi (1994) events. The existence of a "seimic gap" should be considered for hazard assessments

Regarding the question what **scenarios** are expected for southern Bali it was concluded that a vast variety of scenarios are possible from all 4 sources for tsunamis. Currently all research is focusing on the Sunda Trench and possible impact on southern Bali. For the other three sources no solid data was available – therefore for the moment no conclusions could be given. Current knowledge does not allow to identify one specific scenario as the most credible one.

The science group recommended to develop a **multi-scenario approach** including all current calculated scenarios by the different institutions.

Gede Sudiartha
gede_sudiartha@yahoo.com

Harald Spahn
harald.spahn@gtz.de

Next steps

A working group with representatives from Balinese Institutions (KESBANGLINMAS, BMG, BAPPEDA, PUBLIC WORKS, dll.) was established to follow up the mapping issue.

Review of results from workshop by Bali Working Group for Tsunami Hazard Mapping with support from GTZ.

GITEWS group (DLR, AWI, GKSS, DHI) will integrate existing scenarios from Indonesian partner institutions into multi-scenario Tsunami Hazard Map for southern Bali. An updated version will be available by end of 2008

Meeting of Bali Working Group with GITEWS Group during ICTW in November 2008 in Bali.

Seismotectonic map of Bali

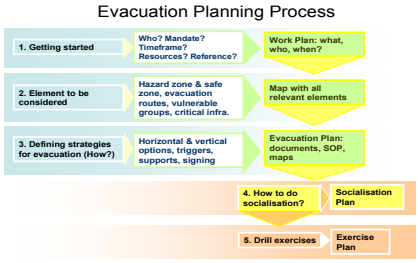
Next steps in Bali
Support the implementation of 24/7 temporary service for tsunami early warning at province level. Training of personnel from the Province Government and PMI to operate warning services and provision of additional equipment. Training of facilitators for community awareness campaigns.

The Working Group members participating in the Wokshop X. / Mr. Joko Waluyo from the Office of Kesbang dan Linmas Kebumen opened the Workshop.

Java
The Working Groups from the Districts of Bantul, Kebumen and Cilacap are preparing activities for community, aiming to create models. Development of evacuation plans, facilitation of awareness raising campaign, and implementation of local warning services become priority.

Workshop X in Java

The Local Government of Kebumen hosted the Workshop X on the 15th and 16th of July 08.



The Working Groups of Bantul, Kebumen and Cilacap are currently developing evacuation strategies and evacuation maps at district level. The results will serve as the master plans for the respective districts. Later, it is envisaged that the products shall be referred to when developing evacuation plans at village level.

Awareness raising is another focus in the next months. Community representatives from the local areas are currently being selected to participate in the training of facilitators. After the training, these local facilitators will meet communities for awareness raising campaigns. The training is done by the GTZ team in cooperation with the University of Veteran (PSMB-UPN).

Both evacuation planning and awareness raising activities will be carried out in selected communities in the districts for models.

Local Tsunami Warning Services

The Working Groups with support from GTZ are preparing operational centres which will function as the '24/7' in the three districts. The '24/7' will serve as the local warning centre to receive warning from BMG, to analyse it and make decision, and to disseminate warning / guidance to communities in time of earthquake or tsunami events. The set-up with communication tools and other supporting equipment has already been agreed upon.

Working Groups discussing evacuation planning.

Complementary, two warning receivers for community will be set up in each of the district, as models for possible future replication. Aside from installing new receivers, modification of the existing public facilities, including mosques, are also considered for the same purpose.

Benny Usdianto
benny.usdianto@gtz.de

Tsunami Drill planned in Bantul

The current implementation of the activities for community is part of the preparation for Bantul to participate in the tsunami drill, which is planned to take place on the 26th Dec'08. The drill will involve some selected communities in the Sub-districts of Sanden and Srandakan.

BPBD Office of Cilacap under construction

BPBD for Cilacap

Cilacap is preparing BPBD (the regional body for disaster management). BPBD was established along with the issuance of Perda (regional regulation) on the 15th August. The organisational structure has been determined; the building is being finalised. BPBD Office is expected to be operational early 2009.

Next steps in Java
The members of the Working Groups plan to facilitate the development of evacuation plan at village level. The selected community representatives are to participate in the training of facilitators; they will then carry out awareness raising activities in the communities. Communication equipment will be installed at the local warning centers and the public facilities. Bantul is preparing to conduct a tsunami drill in December 2008.





"*Kentongan*" or "*Kul-Kul*" & Community Preparedness as opposed to Sirens and Government Decision Making?

Community Based Disaster Risk Management & Tsunami Early Warning

"*I hardly believe that INA-TEWS will do good to communities as long as it is managed by the authorities and requires expensive technology*", said a friend who used to work in a local NGO. "*Well, INATEWS is a good concept, however, we must rather promote local early warning"*, suggested a local stakeholder when drafting a work plan for TEW implementation. INA-TEWS is still under development. Actors involved in tsunami preparedness discuss – and sometimes question – its effectiveness. Natural warning signs (ground shaking) are often considered more trustworthy and some people believe that information from the national warning system might come late. Is it really the case that community based approaches relying on people's awareness regarding natural warning signs do not go together with a "high-tech" tsunami early warning?

During our work we often hear these kinds of concerns. Finding the right answer is not always easy, but taking a deeper look into the issues behind, might help to clarify the questions raised.

Bottom Up versus Top Down?

Many actors in disaster management are promoting "bottom up" community based approaches (CBDRM) which are often perceived as contradictory to "top down" governmental interventions related to TEW. In this context people often mention the need for "local early warning systems". If "local" is referred to as the understanding of natural warning signs (ground shaking, withdrawal of the sea), there is no doubt about the importance of these signs as a trigger for reaction – they are essential. Comprehensive early warning, however, relies on cooperation between and contributions from different actors and levels in order to make it work.

High Tech versus Low Tech?

For the prediction of tsunamis a "high tech" monitoring system and skilled experts are required to analyze and interpret data, and to decide whether a warning needs to be issued. Providing an official call for evacuation on the other hand is the mandate of local authorities. Locally adapted "low tech" devices definitely play an important role when it comes to dissemination of warnings within the communities at risk in a reliable and effective way.

Preparedness is the clue to cope with tsunamis

Tsunami hazard in Indonesia is characterized by very short warning times – a big challenge for the communities. The first warning sign people will most possibly get is the ground shaking from an earthquake. Everybody should know in this case what to do and not wait for announcements from who ever. Then, however, it will be crucial that people get information from the early warning system that gives them further guidance and information whether to exercise full scale evacuation or whether there is no tsunami threat at all because they might have experienced a non tsunamigenic earthquake.

To be effective, early warning systems must be embedded in, understandable by and relevant to the communities they serve. That's why the international disaster management community is promoting "**people centered early warning systems**", emphasizing the role of local communities in the development and implementation of these systems. Regarding INA-TEWS it means that the warnings provided by BMG need to be timely and have to meet the needs of the communities, that local governments are able to provide legitimate guidance and that the people in the risk areas know how to access early warning and how to react appropriately.

Preparedness requires a good understanding of the risk.

Although tsunamis happen quite frequently in Indonesia, most people living in the risk areas never experienced a tsunami during their lifetime. To improve preparedness, risk maps and evacuation plans are needed. The production of these references cannot be delegated entirely to the communities as the necessary knowledge might not be available locally. Support from experienced experts is required. Eventually, any official risk and/or evacuation map needs to be approved by local authorities – and then again it is the community at risk which has to be aware of these references and develop their specific preparedness plans.

Dealing with tsunamis in Indonesia means dealing with uncertainty and short warning times. Our **lessons learnt** from the work in the Pilot Areas is that we need to combine "bottom up" and "top down", natural warning signs and warnings from the INA-TEWS, and we have to strengthen community awareness and early warning procedures of local governments at the same time. So, perhaps, instead of arguing what is the "right" system or approach, we should use all the available options and combine them in a way that contributes to the overall goal: the safety of the people. After all, this is what it is all about.

Henny Dwi Vidiarina
henny.vidiarina@gtz.de
Harald Spahn
harald.spahn@gtz.de

CBDRM - EWS - People Centered Early Warning

In the feature "CBDRM and Tsunami Early Warning"(page 7) the authors referred to several international adopted concepts. The following section provides some basic insights about the ideas behind those terms.

CBDRM

Concept

CBDRM = Community Based Disaster Risk Management

" A process of disaster risk management in which communities at risk are actively engaged in the identification, analysis, treatment, monitoring and evaluation of disaster risks in order to reduce their vulnerabilities and enhance their capacities. This means that the people are at the heart of decision making and implementation of disaster risk management activities. The involvement of the most vulnerable is paramount and the support of the least vulnerable is necessary. In CBDRM, local and national governments are involved and supportive." (ADPC 2003).

The expected outcome of CBDRM is enhanced public safety, community resilience to disaster, livelihood security, equitable and sustainable community development.

CBDRM contributes to the transformation process by identifying root causes of vulnerabilities and doing something about it in order to meet basic human rights: „*Living in safer communities, where the community is the main actor, their knowledge, culture & customs are recognized & respected*".

EWS

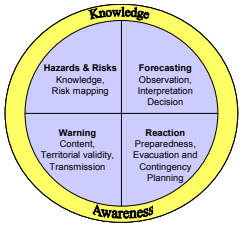
4 Key Elements

EWS = Early Warning System

"Early Warning is the provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for effective response" (ISDR, 2001)

A complete and effective early warning system comprises four elements, namely:

1. Understanding and mapping the risk;
2. Monitoring and forecasting impending events;
3. Processing and disseminating understandable warnings to political authorities and the population,
4. Undertaking appropriate and timely actions in response to the warnings.



Overarching issues to be taken into account when designing and maintaining effective early warning systems:

- Effective governance and institutional arrangements
- A multi-hazard approach
- Involvement of local communities
- Consideration of gender perspectives and cultural diversity

People Centered Early Warning

The core messages

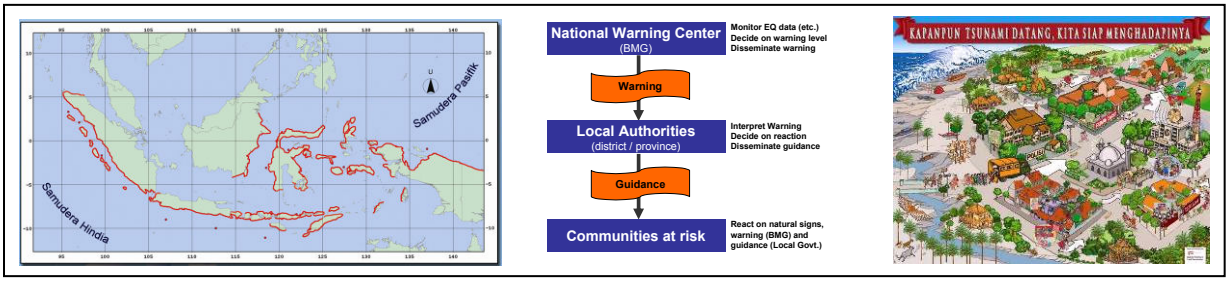
„To be effective, early warning systems must be embedded in, understandable by and relevant to the communities which they serve." (Kobe Report 2005)

Therefore, systems must be developed which ensure that they are functioning when needed and that warnings are timely, understood, and viewed as legitimate and ultimately acted upon by the diverse array of individuals at risk in any emergency.

The following core components of people centered early warning systems were defined:

- Incorporation of a combination of 'Bottom-up' and 'Top-down' elements
- Involvement of local communities in the early warning process
- Multi-hazard approach
- Building awareness into the structure of communities

Henny Dwi Vidiarina
Henny.vidiarina@gtz.de



Tsunami prone coastlines of Indonesia – Division of responsibilities within INA-TEWS – Outreach poster for tsunami preparedness

Local Capacity Building within INA-TEWS – the way ahead

Capacity building is a long-term, continuing process that supports the creation of an enabling environment with appropriate policy and legal frameworks, institutional development, including community participation. Huge achievements have been made following the commitment to develop an End-to-End TEWS for Indonesia. INA-TEWS will be inaugurated in November 2008. However, it is not realistic to expect that the task of linking all tsunami prone areas effectively with the system will be accomplished as soon as the technical components are in place. Continuous capacity building within INA-TEWS is needed in order to support local governments as well as communities in anticipating future tsunamis, getting linked effectively to the system and preparing institutions and people for the moment when appropriate reaction will safe life.

Continuous dialogue between local and national level

The development and implementation of INA-TEWS is still ongoing. INA-TEWS is designed as an End-to-End System and therefore involves a considerable number of stakeholders at international, national and local level. Developing a sufficient warning chain and warning services that meet the requirements of the communities at risk involves a continuous dialogue between local and national level. A lead agency is needed to facilitate this dialogue with a clear mechanism.

Linking takes time and input…

Linking all tsunami prone areas and its communities to INA-TEWS is among the most challenging tasks of the End-to-End System. This job will not be done by November 2008. The technical input for this process comes from experiences of different initiatives, e.g. national drills, LIPI's preparedness activities, the results from the GITEWS Pilot Areas (etc.), that need to be reviewed and evaluated. Best practices and sound strategies should be provided to other communities in Indonesia to enable them to link themselves to the system. A national institution with clear mandate could support coordination of this effort.

Linking requires guidance …

INA-TEWS is designed with clear division of responsibilities between national (provision of warnings) and local level (provision of guidance to communities after a warning). Many local governments are still not aware of their role within INA-TEWS as well as implications for institutions and budget. Guideline documents concerning the implementation of TEW at local level need to be provided by national authorities.

Existing, preliminary documents (by RISTEK, Depdagri and BMG) require refinement on the basis of experiences in the regions in order to adjust their content to the practical needs of local authorities.

Multi-hazard approach, inter-district co-operation and the role of provinces

In order to fulfill the responsibility of providing guidance to the community at risk, local authorities need to establish 24/7 warning and guidance services. Experiences in the three GITEWS Pilot Areas show that the establishment of local 24/7 tsunami warning services is only feasible in the framework of a multi-hazard approach. Especillay the integration of TEW into the new BPBD needs to be promoted. It is questionable whether smaller and economically weaker district have the financial and human resources to implement and operate 24/7 services. For those areas – but also for others, exploring alternative strategies, i.e. cooperation between neighbouring districts and/or service provision by provincial authorities is crucial.

Promotion of a "standard reaction scheme" for local authorities and communities

As the type of information (e.g. warning levels) received from BMG's National Warning Center in case of warning will be standardized, it is key to promote a standardized reaction scheme for each warning level also at local level. This would enable local authorities to establish their own decision making procedures which result in clear guidance to their communities. An agreed and generally known scheme would also enable people who only receive BMG warnings (e.g. via TV) but no guidance from local authorities to act appropriately.

What else?

Education and outreach activities

Knowledge and understanding of tsunami hazard and Early Warning is key to minimize loss in case of a tsunami event. In order to build tsunami aware generations current efforts to integrate tsunami knowledge into the school curricula should be intensified. Further outreach activities targeted to local authorities and decision makers, opinion leaders as well as civil society groups and communities help strengthening public awareness.

Hazard mapping standards as a pre-condition for effective preparedness planning

The lack of official tsunami hazard maps is one of the persistent bottle necks for tsunami preparedness activities by local authorities and communities. Local stakeholders still face considerable difficulties in developing maps without technical advisory from third parties. In some areas (e.g. Bali, Padang) several maps from different institutions exist, using different scenarios and zoning criteria. It is recommended to develop a coordinated approach and guideline for local governments that covers procedures, information sources and technical specifications for the development of local tsunami hazard maps.

Michael W. Hoppe
mw.hoppe@yahoo.co

Bali and its cultural particularities

Building Tsunami Preparedness and Capacities for Tsunami Early Warning: Recent Experiences from Bali

Until recently, tsunami preparedness and early warning has not been the priority of authorities and people in Bali. Outreach campaigns have still to be conducted, the engagement of government institutions, however, is increasing. This is due to commitment for disaster management at national level as well as increased understanding of the need for consistent preparedness at local level. An open approach is required to build institutional capacity and increase people's awareness by incorporating different perspectives and attitudes towards tsunami hazard and early warning.

Perspectives on Disaster

For many people in Bali the tsunami threat seems distant. Local experience with a tsunami disaster usually leads to an increase in preparedness efforts and supports awareness. Fortunately for Balinese communities, there is no record of a devastating tsunami event in recent Balinese history.

This might be one reason why only some time ago, tsunami preparedness and management efforts have been intensified by local authorities. Certainly, another reason is the new Disaster Management Law, enacted in 2007, which creates Disaster Management institutions at province and district level.

Many Balinese communities, until today, are deeply rooted in customs based on traditional beliefs and the Hindu religion. These beliefs express an own perspective on the causes of natural diasters, passed on over time, that differs from scientic explanations. On the other hand, tsunami early warning (TEW) implemented by the government is based on scientific conclusions regarding tsunami hazard.

Balinese people are subject to influence from tradtional beliefs as well as government acitivities, the latter being based on a scientific approach towards tsunami hazard. For many Balinese government officials too, tsunami preparedness is an untouched topic. In order to develop early warning and support preparedness, institutional capacities have to be build within the government, and, different perspectives have to be taken into account when it comes to explaning the logic of early warning to communities.

The institutional approach

Since the beginning of 2008 the close cooperation with local government has again been intensified. The focuses on hazard assessment, local warning chain development as well as support for insitutional development.

The staff of local warning centres in Badung District and at province level as well as personnel of the Balinese branch of the Indonesian Red Cross received training on tsunami hazard, early warning and operating procedures. Also, Balinese institutions (government and non-government) will soon start outreach activities in some pilot communities.

Kesbanglinmaspol, under the province government, created a clear institutional structure and appointed personnel for TEW in a Control and Operations Centre. Better management, planning, and increasing spirit due to clearer roles supports the process of capacity building and contributes to an increase of external relationships and exchange.

Approaching the traditional structures

Balinese people are proud of their traditional community, known as *Struktur Desa Adat*. Besides the official government structure, Balinese people are highly influenced by this system. GTZ IS together with its partners began to increase efforts in linking TEW with the traditional system. Recent meetings and a workshop with traditional leaders provided an opportunity to discuss perspectives on tsunami hazard and TEW, provide information and improve the understanding about suitable methods and content for future outreach activities. Eventually, these encounters helped to collect ideas on who are potential actors within the *Struktur Desa Adat* for warning dissemination in case of emergency.

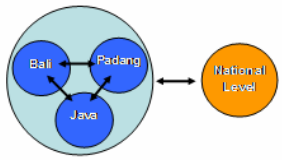
Recommendations from meetings with traditional leaders

Representatives of the traditional structures recommended that GTZ IS together with its partners should soon start outreach activities in order to provide information and raise awareness. They also hope that in order to be effective and attractive to common people the outreach campaign should include traditional performances, i.e. puppet performances, instead of merely formal lectures that attract less people. Information should not use technical terms which might be difficult to understand. Basic knowledge on EQ and tsunami hazard and how to survive both disasters are all that is necessary.

The Tourism Sector: Cooperation with the Bali Hotel Association (BHA)

Bali was selected as a GITEWS Pilot Area also for the presence of the tourism sector and it's importance for the local economy. The cooperation with the private scetor is channeld via the Balinese Tourism Board (BTB) and hotel associations (PHRI and BHA). The main concerns of the hotels are related to reliable warning sources and risk maps as a basis for own preparedness planning.

Gede Sudiartha
gede_sudiartha@yahoo.com



Link between National and Local Level / Knowledge & Awareness Raising / Project Documents

Project Summary Report

Having operated for almost 2 years, the project has recently published a Project Summary Report providing a comprehensive overview about elaborated baseline and case studies, tools, manuals, experiences in the Pilot Areas and recommendations from the local point of view for the further development of the tsunami early warning system in Indonesia.

Right from the beginning the project has published a series of baseline studies in order to provide basic information to the team and its partners on the status quo of INA-TEWS as well as on existing experiences with tsunami disasters and early warning in Indonesia.

Activities of the project run simultaneously on national and local level. The experiences from the Pilot Areas are documented and translated into guidelines or tools (Project Outputs) which shall enable other communities in Indonesia to link themselves to INA-TEWS and get better prepared. The issues addressed by the project comprise (1) tsunami hazard knowledge & mapping, (2) warning dissemination procedures and technologies and (3) evacuation and contingency planning. The cross cutting issues are knowledge and awareness raising, legal framework, stakeholder coordination as well as drills and simulations.

Several educational materials have been produced in order to strengthen awareness especially in schools (training module, poster and comics). A checklist supports local stakeholder in the assessment, planning and monitoring of the implementation and maintenance of tsunami early warning at community level.

Recommendations

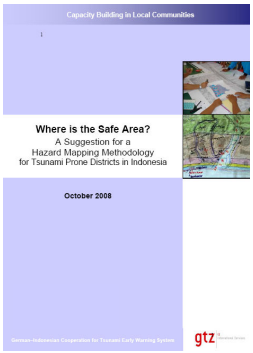
Drawing from the experiences of nearly two years of practical work in the Pilot Areas the project is presenting a series of recommendations to its partners at national level concerning the further development of tsunami early warning at community level. The project aims to draw special attention to the question on how to integrate more communities into the warning system (mainstreaming). Issues related to the interpretation of warning messages by local authorities and communities as well as their translation into guidance by local 24/7 services also need to be addressed. Time constraints – posed by the threat of local tsunamis – require keeping the warning chain as short as possible. Therefore a more direct link between BMG and the community at risk is recommended. Project experiences confirm that the lack of officially recognized local tsunami hazard maps constitutes a major bottleneck for preparedness planning at community level.

Henny Dwi Vidiarina
henny.vidiarina@gtz.de

Erma Maghfiroh
erma_maghfiroh@yahoo.co.id

Tsunami Hazard Mapping

As no official tsunami hazard maps were available in the Pilot Areas, the project promoted and supported several initiatives to establish dialogues between representatives from the science community and local decision makers in Padang and Bali (Padang Symposium in 07/2007, Padang Consultative Meeting in 01/2008, Bali Consultation Workshop in 07/2008).



For the particpating districts in the Pilot Area in Java (Cilacap, Kebumen, Bantul) a simple, particpatory tsunami hazard mapping methodology was developed and applied in cooperation with BMG Yogyakarta, DKP and UGM. The process is summarized in a best practice paper and the methodological approach is documented in a methodological guideline.

Progress of the Short Video

After several preview session with experts from BMG, RISTEK, MPBI and ITB, the Video production is now in the final editing process. The first video on "Earthquake and Tsunami" will be presented during the the 4th National Exhibition held by LIPI on Taman Pintar Jogjakarta, 24th - 26th October 2008.

WP 6300
National Partners & Team Meeting
27 – 28 August 2008

The second team meeting this year was held in Jakarta with focus on cooperation on the national level. The first day of the meeting was dedicated to exchange updates regarding capacity building between national partner institutions (RISTEK, BMG and Home Affairs), German partners (BGR, InWent, Good Local Governance Program by GTZ), UNESCO and the GTZ-IS team.

After an update on project implementation and a short presentation of the draft version of the "Project Summary Report" document, each of the partners presented their update on the implementation process of the Indonesian Tsunami Early Warning System (INA TEWS).

RISTEK explained about the preparation of the upcoming national tsunami drill in Gorontalo. Eleven evacuation sites have been identified and tsunami modelling scenario is in the development process. LIPI presented their ideas about community preparedness currently and in the future. LIPI recommended shifting paradigm of disaster management from mitigation into preparedness and emphasised the need to synergize and coordinate all institutions working in disaster management. BMG updated on warning dissemination procedures and explained the new siren protocol.

During the afternoon session the participants split up into two groups to discuss more in depth about future challenges regarding capacity building as well as the link between tsunami early warning and community based approaches for disaster management (CBDRM).

The second day was dedicated to internal discussions on project management, administration and monitoring issues as well as upcoming activities in the Pilot Areas.

Henny Dwi Vidiarina
henny.vidiarina@gtz.de

German development organizations now under one roof:

The new address of the GTZ-IS office:

Menara BCA 46th Floor
Jl. M.H Thamrin No.1
Jakarta 10310 – Indonesia

T +62 21 2358 7571
F +62 21 2358 7570

www.gtz.de; www.gitews.de

Supporting Us

Ernawati Siwi **(Erna)**
ernawati_siwi@yahoo.com

Erna joins the project since early October as an Assistant for the Java Pilot Area. She specifically deals with the implementation of local subsidy for the partners in the three districts. Erna has gained many experiences from other GTZ projects in Jogja and other international organisations.

Erna wishes that her involvement in this project helps for both, an effective administration and finance management and a strengthening of the Partners in the same area.

Contact:

GTZ - International Services
Menara BCA, 46th floor
Jl. Thamrin No. 1
Jakarta 10310 - Indonesia

Tel : +62 21 2358 7571
Fax : +62 21 2358 7570
harald.spahn@gtz.de
www.gitews.de
www.gtz.de