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GTZ-GITEWS | Editorial

Capacity Building in Local Communities

German-Indonesian Cooperation for a Tsunami Early Warning System

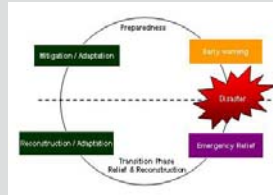
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Editorial

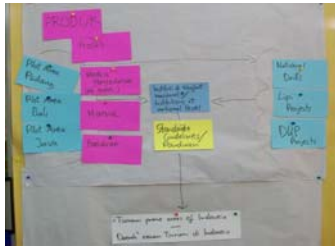
Our project "Capacity Building in Local Communities" has entered its 2nd phase. In the first weeks of 2009, the project conducted several events and activities to review the lessons learnt from the first phase, discuss objectives and cooperation mechanism with our partners and prepare working plans for the upcoming and remaining 15 months. The time frame seems fairly challenging to finalize all project outputs, feed them into the discussion with national partners and potential guidelines – and simultaneously incorporate the upcoming updates within InaTEWS, primarily with regards to the Decision Support System and the warning scheme.

After the official launching of InaTEWS in November last year, the system is now undergoing a two-year period of testing and optimization. During this phase, the sensor network will be completed and fully integrated into the Decision Support System. As a part of this process, a new warning scheme will be introduced. The new warning scheme will provide additional information to local decision maker and communities at risk by introducing three warning levels and detailed information on possibly affected areas. This will change decision making procedures at local level and increase the possibilities of local communities for differentiated action.

Let us take up this challenging task in a joint effort in order to further strengthen the communities' capacity to deal with tsunamis! We are looking forward to continuing the cooperation with all of you.

Best regards
Harald Spahn, Team Leader GTZ IS-GITEWS





Discussing experiences with national and local partners in Yogyakarta / Participants of GTZ IS-GITEWS Project Review and Planning Workshop in Bali

Getting started for the 2nd phase

In the first weeks of 2009, the project conducted several events and activities to review lessons learnt from the first phase, discuss objectives and cooperation mechanism with its partners and prepare working plans for the upcoming and remaining 15 months.

Learning from Bantul experiences

On 30 January, the project invited to a discussion forum in Yogyakarta to exchange practical experiences between the TEW working group in Bantul and representatives from national institutions (RISTEK, LIPI, BMKG, DEPAGRI and DKP) on how to develop and implement mechanism and procedures for Tsunami Early Warning at community level. The working group explained about the procedures for decision making and warning dissemination as well as the applied dissemination technology.



The Bupati of Bantul during the tsunami drill (12/2008)

The fact that the Bupati in Bantul decided to delegate decision making to the local PUSDALOPS led to an intense discussion about TEW procedures at local level. It was recognized that due to the short time frame a delegation based on an officially recognized SOP seems to be a practicable way to assure quick decision making.

Also, the forum discussed the importance of transferring experiences from pilot projects executed by various organizations to other regions of Indonesia and a mechanism to do so. It was agreed that the discussion should be followed up during the Project Review and Planning Workshop of WP 6300 in early February in Bali.

Evaluation & Planning

From 26 January to 4 February an external evaluation team visited project partners in Jakarta and the Pilot Areas of Java and Bali with the objective to identify lessons learnt from the first project phase and to provide inputs for the planning of the upcoming second phase.

Their findings were presented during the 1st day of the Project Review and Planning Workshop held in Sanur between 5 and 6 February. The lessons show significant progress. On the other side, there is still a need for further clarification of institutional settings as well as roles and responsibilities especially between local and national level. A clear dialogue between local and national actors is considered essential to support clarification.

Recommendations for the 2nd phase included a focus on the revision and finalization of the products and an intensification of the cooperation with national partners in order to assure that experiences from the Pilot Areas are fed into discussion at national level and integrated into potential guidelines.



National partner discussion during the workshop

During the workshop a meetings between national partners led to a clarification of the role of BNPB as a new strategic partner of the project.

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Team Retreat

The results from the project evaluation and the project Review and Planning Workshop provided the team with all the input needed to start with the development of realistic and achievable working plans for all three Pilot Areas and the cooperation at national level.

The team then opted to retreat for a couple of days in an informal and tranquil environment to discuss intensively the next steps, revise technical concepts and strengthen team work – which always is a challenge for a team that is spread across four different regions and does not have the opportunity to meet very often.



Personal as well as team spirit was challenged during several outbound activities in the pleasant surroundings of Salatiga, Central Java.

Some of these activities and exercises did not only boost team spirit but were injecting some additional adrenalin into the participants' bodies...





Muchlis, Wijayanto & Horst in Papua to identify a location for a seismic station / BMKG Warning Center / Michael & Bayu Imbanglaksono adjusting a VSAT antenna

CIM support at BMKG

In order support InaTEWS with scientific and technical expertise, two German GITEWS experts have been assigned to Badan Meteorologi, Klimatologi dan Geofisika (BMKG). Horst Letz, a seismologists with many years of practical experience in applied seismology, digital networks and data collection / analysis started at BMKG in November 2006. Michael Guenther, IT expert, joined in October 2007.

Both *Integrated Experts* have been delegated by the Center for International Migration and Development (CIM). CIM supports partners in the public service, private enterprises or in civil society in countries that have been selected by the Federal Ministry for Economic Cooperation and Development (BMZ) to jointly achieve agreed development goals. Under the circumstances where it is not possible for the partner country to cover the need for qualified experts or senior management specialists, Integrated Experts assigned by CIM take over a vital role to promote sustainable development.

Both CIM experts are expected to deliver technical advice in order to advance the installation of the Tsunami Early Warning System and to support the integration of German and Indonesian partner institutions involved.

This includes the consultation regarding operational planning which is done in close cooperation with the senior management of BMKG with the objective to coordinate and synchronize the planned and executed steps with all parties involved. In addition, both experts take over a leading role to support the working groups when preparing the setup of monitoring equipment (seismic network, GPS or tide gauge stations) and assure that all necessary logistical and local support for their onsite visits is in place.

During day-to-day business they actively support their Indonesian colleagues by giving practical advice and joint problem solving. Their mission follows clearly defined tasks and 'training on the job' is a premier goal of their assistance whenever technical solutions need to be developed.

These can be related to the automatic earthquake location program (Seis-Comp3), the internal computer network, server, router and the VSAT communication link or even to a particular case when a tide gauge, GPS or seismic stations does not respond or no data transmissions are being received.

Systematic problem solving has to be exercised. This is the key to self-help, which, on the long run will consequently lead to success. This requires not only consulting combined with practical experience, but it is necessary that 'own experiences' are made.

The workload requires a high degree of flexibility. Both are prepared to tackle special problems and requests also after official working hours. Following a request from BMKG they make sure that one of them is always available in Jakarta. Accordingly, commitments involving duty travel outside the capital are always synchronized.

The cooperation with the Indonesian colleagues works flawlessly as everybody proactively supports the idea that they are working as a 'team'. The team spirit and the commitment is also highlighted as both Integrated Experts decided to wear the BMKG uniform like everybody else which certainly has a stunning effect – for BMKG, the public as well as for CIM. In doing so, they clearly identify themselves with their objectives but more importantly with their employer, the BMKG, and this has a positive impact on the working environment.

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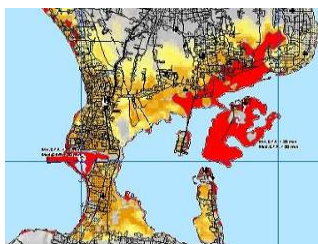
The ultimate goal

Experience shows, that with the end of the GITEWS Project on 31 March 2010, further guidance and practical support will be in demand. Once the technical part of the network installation is complete, the response of the warning system has to be monitored to ensure that individual network components are adequately matched and work without any glitches. Where needed, and this is quite common in technical projects of this magnitude, the components have to be adjusted and fine-tuned in order to optimise functionality and output. To achieve this, a prolonged service support of BMKG would be desirable.



A stable running operation will prompt the next step: BMKG, encouraged by reliable results the system delivers, accepts the responsibility to become the Regional Tsunami Watch Provider. By achieving this they would have reached their ultimate goal.





Outreach activities at village level / Hazard map for southern Bali / Coastal strip of Tanjung Benoa

News from Pilot Areas

Pilot Area Bali

The results of two main working processes related to tsunami preparedness in the Pilot Area Bali have been summarized and documented in the last weeks. The documentations on tsunami hazard mapping and the set up of the early warning system provide local decision makers with a comprehensive concept and important references for further implementation of InaTEWS in Bali.

A Concept Paper on Tsunami Early Warning in Bali

Wrapping up the experiences of the project and ongoing discussions regarding the implementation of tsunami early warning in Bali, a comprehensive concept paper has been written. It provides background information, technical advice and recommendations to local decision makers on how to implement Tsunami Early Warning in Bali, establish framework, links and procedures as well as on how to further strengthen Bali's capacities so that the government and other stakeholders can fulfil their role in tsunami preparedness.

Technical Document: Tsunami Hazard Map for Southern Bali

A technical document developed by DLR and GTZ IS in cooperation with the Balinese Working Group for Tsunami Hazard Mapping provides decision makers with background information regarding the hazard and the mapping approach of the multi scenario tsunami hazard map for southern Bali. The map is a product of a multi-institutional effort including Institutions from Balinese Government, Indonesian Scientific Institutions and Partners from the GITEWS Project.

Both documents will be presented and handed over to Balinese authorities in early April.

Evacuation Procedures for Tanjung Benoa

Tanjung Benoa, a small village located at the northern tip of the Nusa Dua Peninsula is setting an example by establishing procedures for tsunami evacuation in cooperation with neighbouring hotels.

The community will have to rely on hotel buildings for vertical evacuation as alternative higher ground is not reachable in time and access to the peninsula is limited to only one small road.



During a meeting on 5 March in the Ramada Hotel, representatives from the community and the hotels agreed on a series of simple procedures to facilitate temporary evacuation of residents of Tanjung Benoa during tsunami warnings and tsunami events in southern Bali. It was agreed that the procedures will be visualized in a map and communicated with the communities and within the hotel sector. The initiative is supported by PMI, BHA and GTZ.

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Evacuation Planning In Kelurahan Kuta

A working group from public institutions, private sector and NGOs from Badung District is taking up the development of a tsunami evacuation plan for Kuta. The group will make use of references and inputs provided by different initiatives and institutions. The evacuation map will be based on the recently developed tsunami hazard map for southern Bali. BAPPEDA and Uyardana University will support with digital base maps, GIS expertise and mapping services. This initiative is also supported by DLR and UNU.

Spreading tsunami knowledge in Balinese villages

An outreach campaign, spreading basic knowledge on tsunami hazard and tsunami early warning in villages along the southern coast of Bali, is moving on. Target groups are representatives from traditional structures (Desa Adat), youth organizations, woman organizations (PKK) and other important organizations in the villages. Usually around 30 to 40 people attend the meetings. In Kerobokan Kelod, a village meeting with a performance of the famous Balinese singer Widi Widi-ana provided an excellent opportunity to address more than 1000 people.

Next steps in Bali

The project plans to further support the establishment of 24/7 tsunami early warning services. These activities, however, depend on the official recognition of mechanisms and procedures for decision making and warning dissemination as well as the implementation of a 24/7 PUSDALOPS at province level. Ongoing evacuation planning processes in the District of Badung will be supported further.



The scenery of Logending beach in Kebumen seen from a hill: the beach located on the border of Kebumen and Cilacap, attracts local tourists from both districts.

Java

The three districts in the Pilot Area of Java spent the first quarter of 2009 to complete their tasks that begun in late 2008. Bantul and Kebumen in particular, had the chance to review their achievement to date. The results informed the three districts to suggest realistically planned activities for the phase 2 of the project.

Installation of equipment and signs **Project review and plans for 2009**

From January to March 2009, Cilacap and Kebumen have installed warning dissemination devices (sirens) at community level and evacuation signs in the locations identified last year.

In Cilacap, a set of sirens is erected in the vicinity of Kelurahan Tegal Kamulyan (Cilacap Tengah Sub-district) and another set is attached at the THR tourist area of Teluk Penyu in Cilacap (Cilacap Sub-district). Basic communication equipment has also been set up in a room in the new BPBD Office (Local Disaster Management Agency). All the installed equipment is claimed to have been tested and to be running. Additionally, evacuation signs were installed in these two villages, and in two other villages: Jetis in Nusawungu Sub-district and Bunton in Adipala Sub-district.

In Kebumen, the same siren units are being set up in the mosque of Al Amin in Karang Gadung Village (Petanahan Sub-district) and in the tourist area of Logending in Ayah Village (Ayah Sub-district). Communication equipment that will serve the future PUSDALOPS is being assembled and to be temporarily installed at the Official House of the Bupati. A repeater to link PUSDALOPS and the community warning receivers (sirens) has been installed at a tower on Argopeni Hill. The testing of the installed equipment is planned for the 2nd quarter (2009). Evacuation signs have been placed in the targeted locations in these two villages.

A team of external evaluators (Babette Wehrmann and Retno Winahyu) visited some project locations and had discussions with the members of the working group, local facilitators and representatives of communities in Kebumen and Bantul in late January 2008. The mission pointed out both interesting progress during the 1st phase of the project and recommended actions for the future.

The recommendations were received by the representatives of the working groups from the three districts, and GTZ IS, during a meeting in February to draft a work plan for the 2nd Phase of the Java Pilot Area. The drafted work plan will be detailed together with all partners for realistic tasking and implementation in each of the districts.



Technicians are setting up a repeater unit on Argopeni Hill in Kebumen

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New Spirits in Phase 2

The significant progress in the three districts in Java during the past two years have mostly been contributed by the committed individual members of the working groups. Their formal assignment was due at the end of 2008.

Each of the districts is presently looking forwards to repeat the same achievement with either the same composition or new members of working group.

Reaching a common vision to collectively address potential tsunami hazard by different districts and in collaboration with the province becomes an interesting and, at the same time, challenging question for the three pilot areas in this on-going Phase 2.



One of the evacuation signs installed on a street in Karang Gadung Village. The signs are expected to introduce directions to safe areas, and also promote awareness of the people about potential tsunami hazard in their areas.

Next steps in Java

The postponed Workshop XII is rescheduled to be held in April. The structures of working groups to execute the project activities of the 2nd phase are to be defined. Each district will monitor their progress to date. Kebumen intends to test the newly set up communication equipment.



Technical discussion / Tsunami drill of Indonesian Red Cross Community Based Disaster Preparedness Teams (SIBAT PMI) / Regional seminar

Padang

As the starting point for the 2nd phase of the GTZ IS cooperation in Padang the partners compiled a working plan that contains the key processes to make tsunami early warning operational by the end of this year. Finalizing and completing the warning chain, introducing SOPs for decision making and the reaction scheme that combines natural warning signs and information from INA-TEWS are the main activities. Once the reaction scheme and SOPs have been officially recognized they need to be socialized to the communities at risk. In order to test the system in Padang, the partners plan to conduct a drill in a pilot neighborhood of Padang City.

Technical meeting amongst TPS-PB to discuss the strategy for further TEW implementation

To develop a system of Disaster Management in Padang, the Government had formed a team called Disaster Management System Development Team (TPS-PB) which consists of representatives from the government: the Regional Planning and Development Agency – BAPPEDA (as coordinator), the Disaster Management Body – BPBD, the Department of Education – DIKNAS; as well as other institutions, i.e. Tsunami Alert Communities – KOGAMI, the Indonesian Red Cross in Padang – PMI, Global Rescue Network – GRN, and GTZ IS (as supporting agency).

In general, the task of TPS-PB is to design and review concepts, follow up and monitor implementation of Disaster Management in Padang.



GTZ IS supports TPS-PB with regards to the implementation of INA-TEWS in Padang. In a technical meeting on 12-14 February 2009, involving also representatives from a community and a journalist network, TPS-PB and its partners agreed on a reaction scheme and SOPs for TEW. Other issues were: strategic plan and framework for Disaster Management and institutional development of BPBD and PUSDALOPS.

Lessons Learnt from Tsunami Drill in SIBAT Pilot Areas

Community Based Disaster Preparedness (SIBAT) has been conducted by PMI-Padang in three pilot villages: Air Tawar Barat, Lubuk Buaya, and Purus. On 22 February 2009 a pilot tsunami drill was conducted. During the simulation, the Tsunami Early Warning System was practiced and tested. Authorities received a warning from BMKG and disseminated it to the community using two-way communication radio at the *Pos Siaga* ("alert posts") in each pilot village.

The advantage of the SIBAT groups is that the community is trained to independently develop and implement plans for reducing disaster risk within their communities. Community members have been trained to become trainers and facilitators in order to facilitate, "socialize", conduct risk mapping, and develop early warning – all that in a participatory way.



The next steps by PMI regarding the SIBAT Program are to conduct SIBAT not only for communities in tsunami prone areas but also for communities in the safe areas to develop plans on how to provide support for evacuated people.

Regional Seminar

"Building Models for Disaster Preparedness"

On 17-19 March 2009, KOGAMI, supported by UNESCO-ISDR, conducted the regional seminar "Building Models for Disaster Preparedness". The objective was to share information and experiences regarding disaster preparedness with actors from the Indian Ocean Region as well as local and national institutions from Indonesia.

The seminar participants discussed how Padang has implemented their disaster preparedness activities since 2005 until present in the form of institutionalization, guidelines, community preparedness, early warning, and also how the city has learned about experiences from other countries affected by the December 2004 tsunami.

The first day of the seminar provided space for presentation of experiences and achievements, while the second day was used for a field trip. After the field trip, participants could provide direct input and feedback regarding disaster risk reduction activities in Padang. Representatives from communities and schools gave contributions and shared input on "how community preparedness activities can influence their lives".

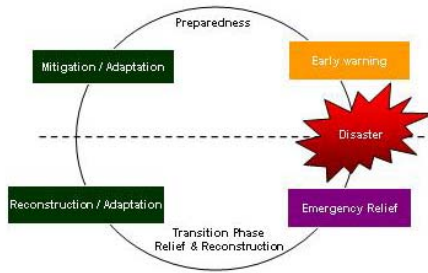


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Next steps in Padang

Based on the results from the technical meeting there is a need for follow up in different fields:

- (1) Official Hazard Map, (2) Vulnerability Assessment, (3) Institutionalization of Warning Chain, Reaction Scheme & SOP (4) Development & Training for PUSDALOPS, (5) Evacuation Planning & Community Awareness, and (6) Simulations & Drills



Disaster Management Cycle / Tsunami devastation in Sumatra 2004 / Logo of BNPB

BNPB – The National Disaster Management Agency: Taking up its Role in INA-TEWS

With the new Law No. 24/2007 on Disaster Management came the shift from response orientation to Disaster Risk Reduction and Preparedness in Indonesia. It transformed the previous (ad-hoc) National Coordinating Body for Disaster Management (BAKORNAS PB – *Badan Koordinasi Nasional Penanggulangan Bencana*) that focused entirely on disaster response into a new and permanent institution named BNPB – *Badan Nasional Penanggulangan Bencana* (or National Disaster Management Agency). The official shift in paradigm creates the need for building human and institutional capacities in the field of Risk Reduction. One future arena for BNPB will be INA-TEWS – as a crucial means of tsunami risk reduction and preparedness.

Introduction

BNPB, formally established in January 2008, is a government (non-departmental) agency that reports directly to the president. BNPB has two main functions: firstly, to formulate and issue policies on disaster management. Secondly, to coordinate the implementation of disaster management activities in a planned, integrated and comprehensive manner. This function includes BNPB's role with regards to INA-TEWS.

Main roles of BNPB for INATEWS

BNPB will take up two main responsibilities regarding INA-TEWS. Previously, BAKORNAS PB had been one of the main actors in the development of the downstream components of INA-TEWS (together with the Indonesian Institute of Science – LIPI, Department of Home Affairs – DEPAGRI, and others). BNPB will take up its role as a successor of BAKORNAS PB and strengthen the downstream. Secondly, since RISTEK (Indonesian Ministry for Research and Technology) is gradually handing over its responsibility as INA-TEWS' coordinator to BNPB, the new agency – in accordance to its mandate – has entered this transition process in 2009.

BNPB's recognition of the INATEWS Grand Scenario

BNPB is going to coordinate INA-TEWS in the future. Having said that, it is important to mention that the system's completion and maintenance requires a continuous and intensive supervision by (national and international) experts. Thus, until the Grand Scenario has been completed, BNPB will keep the current composition of institutions within INA-TEWS and the working process remains the same.

BNPB consider INA-TEWS as the most comprehensive Early Warning System (EWS) and closest to the ISDR concept on people-centered EWS. Therefore, BNPB is considering adopting components of INA-TEWS (where possible) into EWS for other hazards, where upstream and downstream components are inseparable.

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BNPB and Early Warning

The priority task of the sub-directorate for Early Warning Systems in BNPB is to develop an integrated EWS in Indonesia. This means to develop a warning system, which allows for a multi-hazard approach, gathering data from different sources about different hazards. Such an integrated warning centre would be placed at the National EOC (Emergency Operation Center) at the BNPB Office, Jakarta.

Surely, a careful analysis of each hazard and its implications for an effective warning system (e.g. short warning time with regards to local tsunamis) will be required. For some hazards more responsibility could be given to the national level, which would reduce part of the burden of the local level related to warning tasks.

Eventually, according to BNPB, the complexity of an EWS requires an official agreement (issued via decree from BNPB) to assure linkages, coordination and exchange among actors in each of the four component of an EWS: Hazard & Risk Knowledge, Monitoring & Forecasting, Warning Dissemination, and Response to Warning.

BAKORNAS	BNPB
1. Coordination but no Implementation BAKORNAS was an ad-hoc coordination body consisting of all relevant national institutions that conducted inter-sector coordination after a disaster had happened.	1. Coordination and Implementation Aside from conducting inter-sector coordination, BNPB's task is to implement an integrated Disaster Management approach looking at the whole disaster management cycle: pre, during and post disaster.
2. No command function The call for emergency response had to be executed by related government institutions.	2. Command function BNPB can directly execute a command that triggers the mobilization of human resources, equipment, logistic, and relevant institutions, i.e. the Military, the Police.
3. Functional character Disaster Management had to rely on personnel from different government institutions. No legal basis to ensure effectiveness and sustainability of work performance. Operational Chief of BAKORNAS was below the level of a Minister. No operational budget, only on call budget for emergency response.	3. Structural character The implementation bodies (BNPB and BPBD) handle Disaster Management with their own permanent personnel. Law enables monitoring of optimal and effective work performance. Head of BNPB is at the level of a Minister. Annual budget allocation that covers operational costs as well as equipment for emergencies, contingency budget for community training, and on call budget for emergency response.
No professional experts assigned unless paid for by related government institutions.	Professional experts as part of the institution.



Bali EOC almost fully constructed / Governor of Bali, Mr I Made Mangku Pastika lays the cornerstone of the Bali EOC/ Governor of DI Yogyakarta, Mr Hamengkubuwono X at the cornerstone ceremony of the DI Yogyakarta EOC

French Red Cross (FRC)

For its Disaster Management Capacity-Building Programme in Indonesia, the French Red Cross (FRC) is working closely with the Indonesian Red Cross (PMI) and the National Agency for Disaster Management (BNPB) towards the development of the Emergency Operation Centre (EOC) in the three provinces of Bali, Yogyakarta and Jambi. The programme involves building construction and equipment, formulation of operational procedures as well as training.

Why developing Emergency Operation Centres (EOC)?

The enactment of the Law No. 24 of 2007 marked a shift of paradigm on disaster management in Indonesia. Of particular interest is that the law stipulates that disaster management involves comprehensive efforts in disaster preparedness and risk reduction.

Developing Emergency Operations Centres serves the aim of fostering a better capacity of institutions (and especially future BPBD to be created in the provinces) concerning their preparedness to response. The challenge addressed here is the need to have a single command and coordination mechanism (going along with common standardized procedures) among all stakeholders to be able to handle disaster recovery operations in a more efficient, need-based and accountable way.

As a comprehensive management tool that can provide appropriate support to the work of BPBDs, the EOC will be responsible to maintain effective information sharing and updates for relevant institutions during the pre-disaster period. At the time of disaster, the role of EOC will be crucial in ensuring effective line of command in emergency operations as it will assume the function as disaster command post.



EOC Guideline working session in Bali

The Progress of EOC development in Bali, DI Yogyakarta and Jambi

As of 2008, four EOCs in BNPB and the provinces of Nanggroe Aceh Darussalam, West Sumatra and DKI Jakarta have been established with the support from the French Government. Under close collaboration with BNPB, FRC is now in the process of developing EOC in Jambi, DI Yogyakarta and Bali.

With FRC's support, Bali was the first province to start the construction of the EOC building that was inaugurated by a cornerstone ceremony on 12 November 2008. Likewise, a cornerstone ceremony for the construction of EOC was held by the Provincial Government of DI Yogyakarta on 22 January 2009.

The completion of the construction of the buildings is scheduled for April in Bali and May in Yogyakarta, while works in Jambi will start in March 2009. Installation of equipment should then start in July in the three provinces so that all the procurement part of the programme is planned to be finalized between October and November 2009.

Since November 2008, discussions are also being held with local authorities to prepare guidelines and procedures at provincial level, as a first step before the implementation of necessary trainings for the future manager and operators of the centres. In this respect, the institutionalization of the EOC (as a technical unit under future BPBD) will be a crucial step before staff can be appointed and trained.

Cooperation with GTZ IS and other Partners

FRC's first partner in the country is of course the Indonesia Red Cross (PMI), who also signed the programme MOU. PMI is involved at all stages of the programme and also implements activities at community-level in the same areas where EOCs are developed (6 provinces in total).

At national level, FRC has been involving many national institutions in order to draft a National EOC Guideline, which is now being finalized. In the provinces, FRC works closely with relevant partners towards establishing the EOC Guideline and related SOPs.

In Bali, FRC is working together with GTZ IS (with regards to tsunami early warning) and the IDEP Foundation to support the Kesbangpol and Linmas Office in developing procedures and human resources while the EOC is under construction. Same collaborative efforts are now underway in Yogyakarta with the GTZ IS team there.

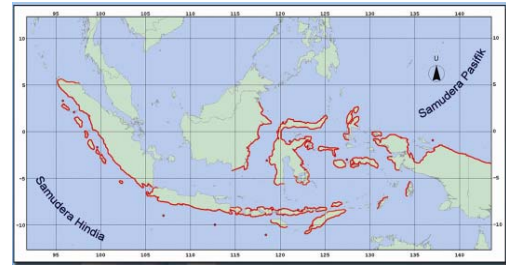
As an information and communication hub, it is expected that the EOC under development will play an important role in the dissemination of warnings to the local institutions and ultimately to the communities at risk. The handling of tsunami early warning will require specific procedures due to the short warning times and the big number of actors involved.

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Destruction by Pangandaran Tsunami / Sharing lessons learnt / Tsunami prone areas in Indonesia



Utilizing the Results of the GITEWS Pilot Project for other Tsunami Prone Areas in Indonesia

Based on the experiences in three Pilot Areas, the project develops preparedness and tsunami warning mechanisms and tools as a contribution to the national strategy for capacity building within INA-TEWS. The project's outputs are currently being documented in the form of best practices and lessons learnt - other GITEWS partners, including Indonesian partners, are joining this process. The Project Review and Planning Workshop (5-6 February 2009) provided the opportunity to discuss and clarify how the project's outputs can be utilized to strengthen INA-TEWS and the National Disaster Management Agency (BNPB), as the future coordinator of the system as well as to support other communities in Indonesia to get prepared.

The transition from RISTEK to BNPB

As stated by national partners during the Project Review and Planning Workshop, in principle, all documented lessons and best practices from the GITEWS Pilot Areas are appreciated and acknowledged. In order to assure a smooth transfer of these experiences, an appropriate strategy has been discussed – considering the current shift of responsibilities with regards to INA-TEWS.

RISTEK (Indonesian Ministry for Research and Technology) is the coordinator for the development of INA-TEWS. The National Disaster Management Agency (BNPB) will be the main player in the future: coordinating, maintaining and further developing the system and its components. The overall responsibility for INA-TEWS will be gradually shifted to the new agency (see feature on BNPB).

It was agreed that BNPB will be the main addressee for GITEWS output related to the downstream components of INA-TEWS. Output related to warning and preparedness tools will be discussed directly with BNPB, involving both RISTEK and DEPAGRI (Department of Home Affairs) during the transition phase.

Transferring experiences, lessons learnt and best practices to BNPB

A working mechanism for transferring existing experience and output of GITEWS (see preliminary list on the left) and other national actors in various fields of tsunami preparedness is currently being discussed. Initial talks highlighted the fact that BNPB is still in the stage of establishing its technical expertise. Therefore all stakeholders involved acknowledge the need to strongly support BNPB in order to strengthen the agency's capacity as the (future) coordinating institution for INA-TEWS.

The transfer of knowledge requires technical discussions with BNPB and needs to involve all relevant national institutions as well as GITEWS partners. Within this process existing approaches that have been developed will be reviewed from a technical perspective. The latest Round Table Meeting on tsunami warning chain issues was a promising start of this process (see feature on Roundtable "Warning Chain").

Generally, it has been agreed that the result of these technical discussions on various aspects will feed directly into national guidelines and manuals that will then be published by BNPB.

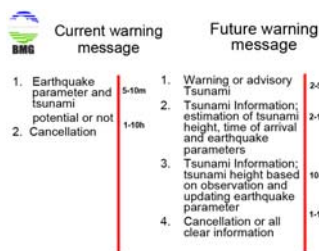
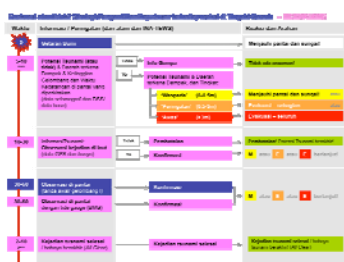
GITEWS project products that can be offered...

GITEWS will provide input regarding the following components of the Indonesian end-to-end Tsunami Early Warning System to the National Disaster Management Agency (BNPB):

- The *Tsunami Warning Chain* from BMKG to communities at risk, including Standard Reaction Scheme, SOPs and Operation Manuals for local 24/7 services (discussed during the Roundtable on Warning Chain)
- *Risk Assessment* products (maps) and methodology (DLR/UNU/LIPI)
- *Evacuation Planning* at district and city level (input from GTZ, DLR, DKP to be discussed)
- *Simulations and Drills* (lessons learnt from the national drills implemented by RISTEK and other experiences)
- *Training Modules and Awareness Material*
- *Contingency Planning*

The above list represents a preliminary compilation of the main input that can be offered to BNPB.

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Standard Reaction Scheme / Current and Future Warning Scheme / Participants of Round Table Meeting

Results from the 4th National Stakeholder Roundtable: Developing a Guideline on how to build and maintain an effective Tsunami Warning Chain

The objective of the INA-TEWS national stakeholder roundtables – organized by BGR – is to facilitate the design of high-level policies and an institutional framework that guarantee effective warnings to people at risk. The 4th Roundtable addressed unsolved issues with regards to the tsunami early warning chain – from the National Warning Centre at BMKG to communities at risk in Indonesia. In conclusion, the participants agreed on the need to proceed with the drafting of a national guideline that will strengthen local authorities' and communities' capacity to effectively link themselves to INA-TEWS.

Discussion on unsolved issues

As an input for the roundtable, GTZ IS provided a discussion paper that analyzes current constraints and offers suggestions for improvement of the warning chain. It puts special emphasize on the roles within INA-TEWS and the system's requirements for the local tsunami threat that only allows for very short warning times.

Based on the paper, the starting point for the discussion was the absence of guidance by the National Warning Center, which (in line with its mandate) at present only provides warnings but does not give recommendations for reaction to communities at risk (which is the responsibility of local authorities). This leads to a number of implications:

- It has to be assumed that not all people at risk will receive a guidance message from local governments. Therefore they will have to rely on the warning from BMKG (if received) and decide based on their own assessment how to react. Warning without clear guidance, however, does not trigger consistent reaction.
- Local authorities will have to establish a 24/7 warning service. This requires skilled personnel and significant resources for operations and maintenance – a very challenging and highly questionable undertaking for many tsunami prone districts in Indonesia.

The discussion about the overall mandate for guidance (and the call for evacuation) led to the conclusion that a review of the current mandate and authority of BMKG might be necessary.

In order to overcome the obstacles – with the current mandates within INA-TEWS – the participants agreed on the discussion paper's suggestion for the promotion of a standard reaction scheme at local level. This scheme will provide the means for standard interpretation of BMKG warnings and hereby enable quick response to warnings by communities.

The participants acknowledged and generally appreciated such a scheme, which will be applicable once the future BMKG warning scheme (based on the Decision Support System, DSS) is operational.

The discussion also touched upon the question whether provinces or districts/ cities are in charge of decision making after warning from BMKG. It was agreed that (by law) the responsibility for an evacuation call is with districts/cities. Exceptions to the rule, however, are thinkable if local agreements are made between different government levels. Bali was mentioned as an example, where giving the mandate to the province would reduce the number of local warning centers from eight (in districts/city) to one (at province level).

The forum acknowledged the need for a general discussion about the level of government in charge of early warning (and a potential call for evacuation) before a tsunami strikes that might affect more than one district or province. Making the tsunami warning chain as short as possible is the prerequisite for saving time and lives. Therefore this discussion might also take up a dialogue about extending BMKG's mandate within INA-TEWS and the content of future warning messages

It was agreed that the utilization of Standard Operating Procedures (SOP) for decision making and warning dissemination at local level will help local governments to deal with uncertainty and to react on time. Additionally, all participants consented that the existing recommendation for a standard siren protocol needs to be formalized.

Conclusions and follow up

BGR will provide the documentation of the roundtable, distribute it to all stakeholders and follow up with BNPB. Relevant stakeholders have been appointed to a working group that will continue the technical discussion, review the suggested outline and draft a guideline in close cooperation with BNPB and under coordination of RISTEK.

Suggested outline of a national guideline on the development of the tsunami early warning chain

The below outline is an initial suggestion that will be further discussed with partner institutions (amongst others LIPI and DKP) at national level – under coordination by RISTEK (Ministry of Research and Technology) and in close cooperation with the National Disaster Management Agency (BNPB):

- Overall concept of INA-TEWS
- General framework of the tsunami early warning chain
- Roles and responsibilities of actors at different levels (national / province / district / city)
- Institutional integration of tsunami early warning at local level
- Standard reaction scheme
- Standard Operation Procedures for decision making and dissemination by local 24/7 units
- Operations Control Centers
- Siren protocol: standards for siren sound and operation
- Examples of standard messages to provide guidance to the community at risk
- References for further information

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From the Pangandaran Tsunami in July 2006 to the inauguration of InaTEWS in November 2008: milestones in the implementation of the 1st phase of the project

GTZ IS - Capacity Building in Local Communities (GITEWS WP 6300): Milestones of the 1st Phase

Nature again was quicker: even before the project had the opportunity to define a working strategy, another tsunami hit Indonesia on 17 July 2006. The Pangandaran Tsunami taught a tough lesson to all of us: without community preparedness and without a functioning “end to end” warning chain all efforts to build up a Tsunami Early Warning System will be in vain. Since this 17 July the “last mile” has received much more attention, which also helped the project to play its role and contribute to the establishment of mechanisms and procedures for early warning at local level. Herewith we would like to share some stages of the phase 1 (06/2006-12/2008) of our project “Capacity Building in Local Communities”.



Getting started: during the first planning workshop in Jakarta in August 2006 the project strategy was defined



Pilot Area Bali: a Consultation Workshop for tsunami hazard mapping set the basis for the development of an official tsunami hazard map for southern Bali.



SOP Workshop Series, a joint effort between Indonesian and international partners in 2006 / 2007 discussed procedures and links between communities and the early warning system.



Pilot Area Java: putting concepts and procedures into practice. The community of Bantul District exercised an end to end drill in December 2008 with the participation of several thousand villagers.



A **Tsunami Awareness Poster** was developed in 2006 to promote community awareness and provide basic knowledge about the early warning system



National level: On 11 November 2008, representatives from different countries supporting INA-TEWS witnessed its official inauguration by Susilo Bambang Yudhoyono, President of the Republic of Indonesia, in Jakarta. Thomas Rachel, State Secretary in the Federal Ministry of Education and Research (BMBF) represented the German Government and its contribution to the system (GITEWS).

Starting Phase 2: Kick-off activities in January and February

Right at the beginning of the second phase (01/2009-03/2010) of the project, GTZ IS-GITEWS conducted a marathon of review and planning activities from 25 January to 7 February 2009. An external consultancy team reviewed the achievements and challenges of phase 1 and supported strategy development for phase 2. The project also conducted a number of consultative meeting with GITEWS-Partners as well as Indonesian partners from national level and Pilot Areas.

26 January: meeting with WP 6000 (GITEWS Capacity Building) colleagues and German Embassy representatives.

27 January: consultative meeting with national partners from RISTEK, BMG, LIPI, DEPDAGRI, BNPB, UNESCO-JKT to further clarify the capacity building concept for INA-TEWS, cooperation and partnership.

28-31 January: visit to Pilot Area Java and Padang. Two groups separately visited the two Pilot Areas. The Java visit assessed the possibility of inter-district cooperation, reviewed achievements of the local PUSDALOPS, SOPs, and the standard reaction scheme. In Padang, the team discussed the TEWS concept, reviewing the coordination among German actors and projects (DLR/UNU, GTZ, GITEWS Project and Last Mile Project) and Indonesian partners, the link between Padang City and the Province of West Sumatra, and roles and responsibilities of the main actors in Padang.

2-3 February: visit to Pilot Area Bali. The review team visited Bali, held a meeting with community representatives in Tanjung Bena and interviewed partners from the Province Government and the District of Badung. The focus of the visit was to clarify issues related to Hazard Mapping, PUSDALOPS, cooperation with the Indonesian Red Cross (PMI) in Bali, the tourism sector.

5-6 February: Project Review and Planning Workshop. The results of the review and evaluation mission were presented in the Project Review and Planning Workshop. At this occasion the project partners from local, national and international level discussed about the strategy and cooperation mechanism for the 2nd phase.

February: in a series of follow up meetings with national partners (RISTEK, DEPDAGRI, BNPB) the GITEWS-Capacity Building Organizations, i.e. BGR, InWEnt and GTZ IS, discussed details for cooperation.

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Welcome



Jenik Andreas (ds.jenik@gtz.de) has previously worked for GTZ Good Local Governance (GLG) and is now working as Project Assistant to the Local Adviser of the Pilot Area Java, Benny Usdianto. As a spatial planning expert, she has gained her experiences in disaster management through her involvement in rehabilitation and reconstruction programs after the tsunami in Aceh (2005) and after the earthquake in Yogya (2006). With the GTZ IS-GITEWS team she is looking forward to gathering enriching experience and encouragement both for herself and those in need of support and assistance.

Team Retreat

23-27 February 2009

Following the Project Review and Planning Workshop, the project developed a concrete strategy for the remaining year. In order to strengthen the team, deepen the team members' understanding of technical concepts and products developed by the project, and to review the workplan at local as well as national level, the team conducted a five-day retreat consisting of two days out-bound and three days team meeting.



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