Newsletter

No. 03 | July-September ‘07

GTZ-GITEWS | Editorial

Capacity Building in Local Communities

German-Indonesian Cooperation for Tsunami Early Warning System

Editorial

Most of the Indonesian communities in tsunami prone areas are at risk of local tsunamis. Locally generated tsunami waves may reach the coast in very short time.

For that reason local communities should pay special attention to natural warning signs. The first warning communities may receive would be the ground shaking from a strong earthquake. Unfortunately, ground shaking is not a very reliable tsunami indicator as feeling of “strong ground shaking” may be highly subjective. Additionally there is a possibility that the location of the epicenter was on land and consequently no tsunami danger exists. Additional information is needed! That’s exactly where the Tsunami Early Warning System will provide the communities at risk with vital information.

After experiencing a strong ground shaking from an earthquake or receiving a warning from the national warning center, local government will have to decide, what kind of message will be distributed to local institutions and population. Messages given out should include a clear guidance on evacuation procedures or any other action to be taken. Local Government has an important role in assuring that the warning messages and evacuation orders will reach all people in risk areas of their community. Building up these local warning chains requires tailor made procedures and locally adapted technologies. In this edition of the newsletter we would like to share some experiences from several initiatives with you.

Best regards
Harald Spahn, Team Leader GTZ-IS.

3rd Workshop on Vulnerability Assessment and Risk Modeling

End of July in Bandung, the Indonesian and German members of the GITEWS-working group continued their discussion on concepts and implementation of Vulnerability Assessment and Tsunami Risk Modelling. The aim was to develop a joint methodology as the basis for conducting risk assessment in the context of disaster management. This shall enable government institutions at different levels to better manage disasters, and to design appropriate early warning and evacuation structures according to physical and socio-economic settings in potential affected areas.

During the one week long 3rd workshop, both researchers and decision makers were involved and took a significant step forward in establishing a stronger focus on applied research in Vulnerability Assessment and Risk Modelling to tsunami hazards. The workshop was a joint activity of LIPI, DLR, UNU-EHS, and the GITEWS Capacity-Building Unit (CBU, InWent). Altogether fifty scientists and decision makers from national and community level institutions participated in this workshop.

Major outcomes of the workshop were:

- Establishment of an overall strategy of a people-centred early warning and a risk and vulnerability assessment, considering the disaster management cycle and the early warning chain.
- Definition of a methodological framework on how to measure vulnerability and risk to tsunamis in Indonesia.
- Specification and selection of indicators and criteria to measure and assess vulnerability and risk.
- Precise plan for the work in the GITEWS pilot regions (Padang, Cilacap and Kuta)
- Participation of decision makers in the research process to ensure suitability of the approach and application of the results.

Besides the establishment of a methodological framework and guidelines for conducting assessments at local and sub-national level, results supporting the early warning system and results relevant for disaster management will be provided to the respective stakeholders.

The workshop participants supported the establishment of an interactive platform to continue sharing information, documents and ideas after this meeting, and in preparation of the next workshop on risk in vulnerability assessment, which is planned for May/June next year. InWent in cooperation with DLR is currently preparing such a site, modelled on the Global Campus platform. It will be made available on the internet shortly.

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The joint Indonesian – German working group on risk modelling and vulnerability assessment…

…was established in August 2006 and is jointly coordinated by LIPI (Indonesian Institute of Sciences) and DLR (German Aerospace Center). The working group consists of several institutions such as UNU-EHS, LAPAN, BPS, BPPT, BAKOSURTANAL, local authorities and universities from the pilot areas Padang, Cilacap and Kuta / Bali.

The working group aims at developing a methodology for a people-centred risk and vulnerability assessment in the context of disaster management and early warning responses on a regional scale for the entire coastline facing the Sunda trench and a higher spatial resolution in the 3 Pilot Areas.

Evacuation Drill in Padang schools

News from Pilot Areas

Padang

All together now – successful workshop for local tsunami early warning dissemination technologies conducted in Padang

On September 10, 2007 a tsunami workshop took place at the Pangeran Beach Hotel in Padang organized by Padang Local Government and GTZ-IS. The workshop was attended by around 65 people from diverse background. Beside representatives of the city of Padang and its various emergency agencies, members of Padang business community, the media, telecommunications experts, army and air force as well as members of the radio networks ORARI and RAPI were present. The participants represented a good cross section of stakeholders involved directly or indirectly in tsunami early warning related issues in Padang.

The workshop was divided into two parts. The morning was filled with lectures and short discussions about the general set up of INA-TEWS, the Indonesian Tsunami Warning Scheme, set up of BMG, the current state of preparedness of Padang city, sirens and a new triggering mechanism to utilize mosque loudspeakers for early warning purposes.

In the afternoon attendants compiled an overview about the state and utilization of warning dissemination technologies in Padang and discussed shortcomings as well as possible improvements.

A communications task force was formed to implement the new ideas, research further possibilities of tsunami early warning, draft the necessary SOP's and to advance the development of the new mosque speaker triggering mechanism.

In the end all participants signed a memorandum of understanding (MOU) in which they committed themselves to work together to develop and advance tsunami early warning in Padang. The signers also committed themselves to share their technical facilities and resources for tsunami early warning purposes. TELKOMSEL and TV Indosiar for example promised access to their broadcasting towers in order to mount sirens, repeater units etc.

The workshop proved an unusual success since people from various backgrounds were brought together committing themselves to common goals. The atmosphere was proactive and productive – the contributions lively and qualified.

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On his visit to Padang, Mr. Ollig from BMBF together with a German delegation took opportunity to appraise the preparedness for disasters from students of Elementary School, Junior High School, and Senior High School in Padang in order to deal with earthquake and tsunami disaster.

This rapid simulation was also witnessed by the Mayor of Padang – Fauzi Bahar. The German delegation felt very impressed due the achievement of awareness of those students.

Next steps in Padang

Several technical proposals identified during the workshop will be implemented and tested during the upcoming month to increase the capacity of early warning dissemination in Padang. The FM-RDS technology, which was already tested successfully in September, is also ready to be applied.

Bali

Bali is one of the world's icon of tourism, while at the same time it is located in one of Indonesia's natural hazard areas. Implementing Tsunami Early Warning is part of complying with Security and Safety Standards.

A technical interpretation of religion needed

The Province of Bali in co-operation with GTZ IS held a seminar on Hindu Religion, Balinese Custom and Cultural Perspectives on Tsunami Early Warning in Denpasar on 21st September 2007. The seminar was attended by 54 persons representing governmental institution linked to disaster management in Bali, police, armed forces, BMG, NGO, media, university and traditional village leaders.

Resource person were Prof I Made Titib Ph.D from State Institute for Hindu Dharma, MP Sihombing S.Sos as Head of KESBANG and LINMASDA, Drs. Soetrisno, M.Sc from BMG Region III and Mr. Dewa SH from the Office for Law and Human Rights Province Office of Bali. The seminar was moderated by I Gede Sudiartha (PMI) and Catur Yudha Hariani (Center for Environmental Education).

From the Hindu perspective there is general teaching on life and living, how to live friendly and in harmony with the environment. Prof Titib mentioned that there should be also a technical interpretation in the general teaching and integration of early warning in a way that is adapted to the Balinese customs and cultural perspectives. Some cultural village leaders expressed their expectation to link the BMG warning system with the existing local community warning system using kulkul or kentongan.

Tourism sector co-operation with GTZ-IS for tsunami preparedness

Cooperation between The Bali tourism sector and GTZ-IS was recently formalized by cooperation agreements with the Indonesian Hotels and Restaurants Association (IHRA) - Chapter of Bali and Badung and the Bali Hotel Association (BHA). The aim is to increase the preparedness of the association's members by strengthening their capacities to receive early warning and to react in an adequate way.

Security managers from BHA were briefed on "Preparedness for Tsunami" by GTZ-IS Advisors in Bali during Security and Safety Seminars on 12th and 20th September in Seminyak and Nusa Dua. As a next step working groups are foreseen to develop warning dissemination mechanism among BHA members and to discuss preparedness strategies.

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Local NGO getting involved in Tsunami Early Warning

The Center of Environmental Education (PPLH) held a Basic Orientation Seminar on Tsunami Early Warning System for colleagues from local NGO in Bali on 31 August 2007.

During this basic orientation the 15 NGO representatives actively participated in identifying the terminology, causes and signs of tsunamis and risk reduction activities using videos, posters, the TEWS-Checklist and their own experiences as a reference.

This was the first step of a serie of activities to be implemented by PPLH with the support of GTZ-IS to strengthen capacities in selected communities, schools and women groups.

Next steps in Bali

Special attention will be given to the ongoing process of warning chain development and completion of Warning Dissemination SOP. Capacity building activities for NGOs, community workers and women's organization are on the agenda as well.

The Regional Secretary of Bantul, Mr. Gendut Sudarto, opened the 3rd Training in Parangtritis

Java

Since July, the Districts of Bantul, Kebumen and Cilacap have carried out several important activities related to the implementation of tsunami early warning system in the Pilot Project Area of South Java; among others are training, socialization, simulations and improvement of infrastructure.

The Third Training

The District of Bantul hosted the implementation of the 3rd training in Parangtritis on 8-9 August 2007. This training is one of the joint efforts between Local Government and GTZ-IS to strengthen the capacity of local community. The Regional Secretary of Bantul, Mr. Gendut Sudarto, kindly opened the training. He reaffirmed the importance of preparedness and fully supported the implementation of the early warning system. The training itself was facilitatded by the GTZ-IS GITEWS Team (Harald Spahn, Vidiarina and Benny Usdianto).

The agenda included revisiting the assessment of local conditions on tsunami early warning, the mechanism of the Working Groups in each district, the presentation of the Base Maps by each district and the progress on warning chain development.

A strong earthquake during the night after the first workshop day created intense tension in the participants as most of them stayed in a hotel close to the beach and were afraid that a tsunami might have been generated. After some 15 minutes, they finally got information via FM radio about the earthquake magnitude and the location, and that no tsunami was triggered.

The next morning the participants analyzed the nocturnal experiences and discussed the implications for their local warning chains.

Later on the results from a consultancy about the local legal framework regarding tsunami early warning in the three districts were presented.

At the end of the training, follow up plans were agreed on. All participants then visited Parangtritis beach to observe the demonstration of a siren system operated by SAR

Observing the demonstration of the siren system installed in Parangtritis Beach in Bantul

GTZ also facilitated a one-day training on 6th of October for the stakeholders from Bantul, to discuss topics delivered during the second training in Cilacap (2-3 May), where Bantul Working Group was unable to attend.

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Reviews on local development
by KESBANGLINMAS

Cilacap – Several socializations and trainings on earthquake and tsunami disaster management were delivered to different segments of communities in Cilacap district. The activities were facilitated by LIPI and PSBA-UGM. Aside from that, evacuation simulations were also conducted in the villages of Bunton, Widara Payung Wetan and Binangun, involving approximately 4,500 local people and various governmental institutions.

Kebumen – Local Government of Kebumen conducted a Coordination Meeting, discussing about regional preparedness in anticipating potential earthquake and tsunami hazard. The meeting was attended by all the Chiefs of Government Offices, Heads of Sub-districts on the coastal areas and RAPI/ORARI.

Bantul – Local Government of Bantul improved evacuation routes in some villages.

Stakeholders in Kebumen and Cilacap additionally received a five-day training on Contingency Planning by UNOCHA, Bakornas and MPBI.

Next steps in Java
An inter-institutional Team from PSBA-UGM, BMG, LIPI, DKP and GTZ-IS together with the representatives from the Pilot Area will develop Hazard Maps in all the three districts. Additionally the communication network between SARs of Bantul-Kebumen-Cilacap will be extended.

LIPI – translating science into community preparedness

The Indonesian Institute of Sciences (LIPI – *Lembaga Ilmu Pengetahuan Indonesia*) is a non-department Government institution supporting community knowledge empowerment for the sustainable development in Indonesia. At the end of 2006, LIPI was provided the mandate and resources to synergize multi-sciences, particularly social economics, education, earth sciences, ecology / environment, culture and technical infrastructures into a national strategy and programs of public education and community preparedness.

As mandated by the Vice President of Indonesia, LIPI has taken a lead in facilitating a breaking-through process in addressing the issues of integrating multi-sciences to public education and community preparedness actions.

One of the recent initiatives was the International Seminar and National Workshop "**Science-based Community Preparedness and Beyond**" on 5-7 September 2007 in Jakarta.

The Seminar aimed to extract important lessons learnt in science-based community preparedness for natural disasters at international, national and local level and to exchange inputs and knowledge regarding the roles of scientific institutions, disaster management agencies and decision maker in the field of disaster management in Indonesia.

During the workshop, which was attended by numerous stakeholders from international, national and local level three main issues were raised:

1. The role of scientific institutions in disaster risks reduction efforts in order to support local decision maker by providing sufficient knowledge and references.
2. Public education and community preparedness activities implemented on international, national and local level often lack a science basis particularly in the field of hazard knowledge and risk assessment.
3. Communication between public and science to assure that local knowledge is taken into account and the results from science are useful for the communities.

International lesson learnt was presented by representatives from the Philippine Government and GTZ-IS, GITEWS.

During the Seminar LIPI's Reward for "Public Communicator on Disaster Preparedness in Indonesia" has been awarded to several public figures such as NAIF band, Mocca band, La Luna, Goodnight Electric, Franky Sahailatua, Cut Keke, Sogi Indra Dhuaja, PM Toh, White Shoes and the Couples Company, Superman Is Dead, The Hydrant, Navicula, Ed Eddy & Residivis, and Hafiz from Forum Lenteng (Disaster Preparedness National Exhibition concept contributor)

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Preparedness Exhibition in Cilacap District

On 17-18 August, LIPI in cooperation with the local government of Cilacap held an Preparedness Exhibition in the district. The exhibition was also supported by GTZ-IS GITEWS. The radio station of Bercahaya FM assisted in broadcasting the event to the public during the event.

Several competitions around the theme of Early Warning System were held during the event:

Debate contest

Wall Painting contest

Poster contest

Band contest

Palang Merah Indonesia
German Red Cross

PMI & GRC in Indonesia

"Regular trainings and simulations are the key to make people realize their mistakes and learn from it" says Atik Ambarwati, GRC project officer. Besides that, PMI is concentrating on school based disaster awareness and other community preparedness activities. Volunteer trainings, adequate equipment and efficient disaster response mechanisms within PMI are other elements of GRC's support project.

With over 850.000 volunteers and members all over the archipelago PMI is a huge resource for civil society in Indonesia. After 2006 earthquake disaster in Yogyakarta, German Red Cross (GRC) started a project in Yogyakarta and Central Java in order to improve PMI's capacities in Disaster Preparedness and Response.

Community Based-Disaster Preparedness is the concept applied by PMI. It is considered as the most appropriate, because it is the communities in the hazard prone areas where people are at most risk. It is important that those people know how to deal with the hazards. The Balinese community in general has strong traditions and culture, and these constitute the assets of the people's capacity that need to be empowered and optimized. Another consideration is that this concept does not require large amount of funds, but includes different segment of community.

PMI in Bali does not have a particular programme concerning tsunami early warning system, but works to increase the preparedness of the community towards disaster (community awareness), which also incorporates early warning.

What has been conducted by PMI in Bali:

1. Village Disaster Preparedness Teams (SIBAD) in 3 villages which are prone to tsunami: Kelurahan Serangan, Desa Canggu Kuta and Desa Antap Tabanan.
2. Training to improve the skills on emergency response in 3 villages in Sanur area: Sanur Kaja, Sanur Kauh and Kelod, in cooperation with Idep.
3. Together with SATLAK and SATKORLAK, conducted socialization regarding early warning system dissemination to the communities who lives close to the sirens installed by BMG.
4. Printing of KIE material which is distributed to the community.
5. Facilitation of the development of SOP for early warning for SATKORLAK PB at province level in Bali.

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State of the art technology, governments in charge, scientists going into details: that is only one side of the Tsunami Early Warning (TEWS) in Indonesia. But it is not only science or technology that makes a system out of it – first of all it is the people.

In the three districts of the Pilot Area in Java, GTZ-IS and German Red Cross join efforts to improve the capacities of the people involved in Tsunami Early Warning System.

Teaming up with their local governments in Cilacap, Kebumen and Bantul the respective PMI-branches identify their role in preparing for disaster. In September 2007 a planning workshop was facilitated by GRC, where PMI has been planning possible future activities. The involvement of PMI's volunteer-force (SATGANA and SIBAT) needs proper planning and coordination.

German Red Cross focuses on supporting the Indonesian Red Cross (PMI) to contribute and to be part of such a system. The activities on Java are well synchronized with GRC's cooperation on national level in order to learn from the experiences here.

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Earthquake damage in Padang

Shaking experiences

Two strong earthquakes and four tsunami early warnings in only two days- these were tense moments for the people in Sumatra. Two advisors and one consultant of our project had been in Padang during these "moving" days. As these kinds of events are unique opportunities to get a deeper insight in the state of tsunami early warning and local preparedness, we asked them to write down some of their experiences…

All started on the 12th of September at 6:10 pm with a very strong earthquake, which took place some 100 km off the coast of south Sumatra. It could be felt as far as in Jakarta and Singapore. The Tsunami Early Warning System was able to localize the epicenter, magnitude and depth of the earthquake in less then 5 minutes and a tsunami warning was send out immediately.

Wicak 12th September at Agus Salim Stadium:

"After the earthquake stopped, I walked to the PUSDALOPS (Emergency Control Center) to find information and coordinate with other agencies. On my way I saw the traffic was running smoothly and no traffic jam. When I arrived at PUSDALOPS I found the electricity was down and fire fighter cars moving out because there was a fire at Andalas Plaza - a new mall in Padang. Just one question in my mind; was that not a suicide? The Andalas Plaza located only about 500 m from coastline, and the big earthquake could have triggered a tsunami. But the firemen were so brave to go there.

The Radio Internet (RANET) was down, also the communication radio. I found the computer was disconnected from the UPS by the fire brigade personnel because they thought the electronic devices should be turned off during earthquake to prevent fire. The FM-RDS which is using battery and not depends on the power source was also not responding. Later I got information that BMG has not activated the FM-RDS yet.

But from the regular FM Radio, we could hear a speech from Mayor of Padang recommending people to evacuate to higher ground."

Alex Kesper 12th September at Padang Airport:

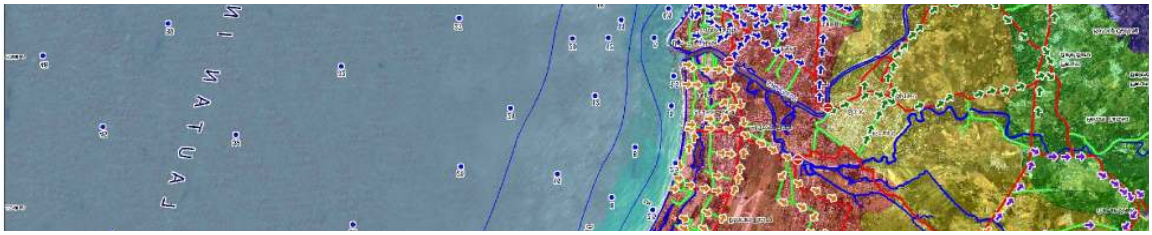
"…all of a sudden, the whole building shook violently horizontally. Panic erupted and people fought to get down the escalators which were much too small to handle the stampede. Some people, including me, rushed down the 'up – escalator' in order to get down. In the departure hall people struggled to get out through the security check area. Because exit was complicated people jumped over fences, tipping over equipment, flower pots and everything else in their way. Some of the big windows broke due to the crush and tumbling objects. The noise was incredible…

…while I was still standing outside I watched an Air Batavia plane getting refueled. Airport traffic didn't seem to be interrupted and people didn't seem to be worried about tsunamis which stunned me. Announcement went on as usual. I thought the whole situation being surreal because tsunami early warning SMS's came rushing in and everybody seemed oblivious. Finally I entered the building. On the TV screen BMG warning messages were running 'High tsunami alert for Sumatra Barat, Selatan and Java Utara'. The warning was interrupted during advertisements. I couldn't believe it. I was waiting for an evacuation order. My personal evaluation of the situation called for an immediate evacuation of the place since to me the airport seemed like the perfect sitting duck…."

Aim Zein 13th September at his home:

"The second big EQ hit Padang exactly at the first day of Ramadan early in the morning while most people were still sleeping, too tired and stressed from the first one. This time the shock was bigger and longer. We could not stand anymore so we have to sit down on the ground. We heard sounds cracking from every corner. I watched my iron antenna tower "dancing" like mad. Again, the electricity was not working for a while, but cellular phone line was still functioning. I heard many people screaming. After around 7 minutes, I received the first message from BMG about the EQ and possibility of Tsunami. We prepared then for the worst and evacuated our self to a "high building" (school) next to our house. I repeated the same procedures which I did yesterday. I forwarded the Tsunami Warning Message to the numbers that I thought need it and as many as possible. Tsunami Warning Cancellation Message came after about an hour later.

FM-Radio played a very important role to inform the people. We could hear a speech from Fauzi Bahar, Mayor of Padang, who recommended people to evacuate to higher ground. After the "All Clear" message from BMG, Fauzi Bahar re-announced it to the people. Later the governor and other leaders were also on air to calm down the people. The second EQ thought us another lesson: it might occur at any time and in any situation and getting more information by radio was really needed"



Padang Symposium

Science meets Politics

During the Padang Symposium (26th - 28th of July) a dialogue between scientist and local decision makers & stakeholder was held to discuss key questions regarding local policies on Tsunami Preparedness in Padang. The dialogue was initiated by GITEWS Project, ANDALAS University, LIPI and CALTECH and facilitated by GTZ-IS.

Background for this initiative:

- Understanding Tsunami Hazard and the possible impacts for Padang are essential for local decision makers and other stakeholder to get better prepared for future tsunami events.
- Official policies and guidance are needed to set the framework for evacuation planning and preparedness activities in Padang City.
- It is a task, where scientific experts and local decision makers should work hand in hand. It should be conducted using all expertise and information available.

During the dialogue Mr. Joern Behrens from GITEWS Project presented first results from models showing possible impacts of tsunamis on land for different scenarios. Mr. Kerry Sieh from CALTECH presented the results and the models developed from his studies.

During the discussion it was made clear that models always should be considered only as an approximation to reality and that other input are needed for a solid hazard assessment. It was also agreed that international cooperation between scientists should be strengthened for that purpose.

Based on the initial presentation the following key questions were raised:

1. What scenarios are expected for Padang?
2. What is the worst case scenario?
3. Should / could we prepare for the worst case?
4. What scenario(s) should be considered for preparedness planning (as reference)?
5. Should Padang have a multi-response approach?
6. How should an "official" Map look like?
7. What are the recommendations to establish tsunami risk zones in Padang?

During the following discussion the audience contributed several important ideas in order to find answers to the questions above. The discussion also confirmed that most of these questions can only be answered, if scientific knowledge is combined with local knowledge and principal political decisions.

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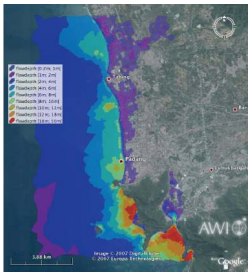
The dialogue concluded with the following recommendations:

(1) Results from Modeling are very important inputs for tsunami hazard assessments and preparedness strategies. But, models are only as good as the available and applied data. Models should be combined with additional information derived from local knowledge and historic experiences ("Never trust a model alone").

(2) Development of a "2nd generation" Tsunami Zoning Map, adjusting the existing zones (red, yellow, green) according to the latest results from the models presented by CALTECH and GITEWS and local analysis ("informed guessing").

(3) Establishment of an international Consultative Group for Padang Local Government to provide the latest scientific knowledge as well as a platform for the discussion of the above mentioned key questions



Dissemination Technologies

Which technologies are available in Indonesia for tsunami early warning on the last mile? What does the national warning scheme look like? What kind of warning messages can be expected in case of an emergency and where do they come from? These are just some of the questions answered in the new GITEWS GTZ IS publication "Tsunami Early Warning Technologies and Methods in Indonesia for local communities" by Alexander Kesper.

An effective local communication system ensures that as many people as possible are warned. Multiple communication channels are necessary to avoid problems in case of failure of any one of the used channels and to reinforce the warning message.

Every community has distinct characteristics and needs regarding warning dissemination. Factors to be considered are size and layout of the area, make up and activities of the population, financial resources of the community and existing communication systems.

The first part of the reader deals with the organisational set-up of tsunami early warning from the national to the local level. It illuminates local conditions and the current flow of information.

Part two introduces methods and technologies of tsunami early warning from outdoor mass notification systems like sirens to telecommunications systems for local communities. Pros and cons of technologies are discussed and rough cost estimates given. A comprehensive chart allows a quick overview of available early warning technologies and their specifics.

A case study introduces the current state of tsunami early warning dissemination in Padang, one of the pilot areas of the GTZ-IS GITEWS project. The case study describes the administrative background in Padang, the introduction of the new FM-RDS technology and many other tsunami related issues.

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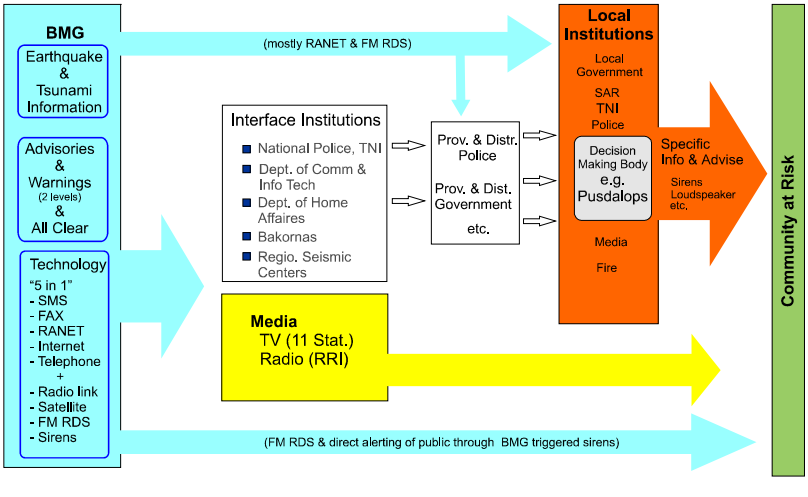

Source: Kesper 2007

The document will be translated into a Guidebook for local decision makers and other stakeholders involved in tsunami early warning in Indonesia later on.

The reader can be obtained from our project office or as download from JTIC website www.jtic.org

Early Warning Experiences

Experiences with Early Warning Systems in Indonesia - a study by Rizaldi Boer and his team on behalf of GTZ-IS gives some interesting insights about the effectiveness of existing systems for flood, forest fire and volcanic eruption.

Several early warning systems for different hazards are already in place in Indonesia. Their effectiveness varies between location and hazard type. **Flood** warning in Jakarta seems not very effective due to limitation of personnel at Kelurahan level and facilities for announcing the warning such as load speaker or siren. Flood warning information given is also limited to flood time arrival and location that will be affected by floods. Information on flood height and duration are not given. This condition to some extend reduces the number of people that respond to the warning. Most of the people who are used to having floods in their area normally assume that "normal" flood level is to be expected. Therefore, climate forecast information should be used more effectively to assess whether the extreme rainfall is likely to occur or not in a coming rainy season as this will tell how severe the flooding will be.

Similar with **Forest Fire** warning. In Central Kalimantan the fire warning is sent directly to the districts by BKSDA in the form of hot spot number and Fire Spread Risk Index Map. The KESBAMGLINMAS (Nation and Community Protection) is the key agency at district level and should be in the front line in managing the fires. However, this office often is not able to play this role primarily due to lack of capacity and knowledge in managing fire, limited human resources, lack of fire extinguisher equipments, and lack of financial resources.

Field action to extinguish fire is normally done by the forest rangers under the District Forest Office and Manggala Agni under the BKSDA. Participation of communities in managing fire is very limited except in areas where community fire brigades exist. Some of the community fire brigades were developed by NGOs and the integration of the NGOs program with the government's program is still lacking. The two programs should be synergized and integrated to ensure their sustainability. The two programs may be designed as part of the integrated forest fire management strategy. The government may need to continue terminated programs initiated by NGOs.

While in Yogyakarta, the Early Warning System for **Volcano Eruption** is quite well developed. Response of community to the warning is good in districts or villages that have experienced such hazard in the past, like Sleman but not in other areas which have never made bad experiences. A systematic program to increase the awareness of community towards the hazard and to educate communities how to effectively respond should be in place.

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An early warning system is considered to be effective if responsible agencies can communicate the correct warnings to the right people in a timely manner and to empower individuals and communities threatened by hazards to act in sufficient time and in an appropriate manner to reduce the possibility of personal injury, loss of life and damage to property and the environment.

The baseline study can be obtained from our project office or as download from JTIC website www.jtic.org

2nd Team Building Workshop for GTZ-IS GITEWS Team 13-16 August 2007

The GTZ-IS GITEWS Team held the 2nd Team Workshop to review the project strategy and outputs as well as the working strategy and processes in the three Pilot Areas. Other topics were roles and responsibilities of team members, project monitoring; knowledge management; communication and administration issues.

The Project Outputs had been intensely discussed and updated during the first two days. Project Outputs are developed based on the experiences made in the three Pilot Areas and consist of tools, guidelines or documents, which shall enable other communities to get better prepared as well for tsunami hazard. The project Outputs are (according to the 4 elements of Early Warning):

Element 1 → Hazard Assessment
Element 3 → Physical Dissemination; Warning Chain, Roles + Responsibilities, SOP
Element 4 → Simulations, Drills; Evacuation Planning; Contingency Planning

Cross Cutting Topics → Preparedness Assessment; Knowledge + Awareness Rising; Local Legal Framework; Local Planning + Budgeting; Stakeholder Coordination;

On the third day the team got an update on the progress in the Pilot Areas and discussed the strategies and processes in each area, including the results from the initial assessment results derived from the Checklist, SWOT Analysis and the Stakeholder analysis.

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Wicak recently joined the GTZ-IS GITEWS Team for the Pilot Area Padang, He has excellent knowledge of the institutional and socio-cultural conditions in Padang. He also has experiences in tsunami disaster preparedness. His professional background is electrical engineering and this goes well along with his fable for computer like programming, graphic design, network and multimedia.

Alexander Kesper
(Alex)
Consultant

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Alex is a geographer with a background in communication, ecology and international management. He consults GITEWS in the fields of tsunami early warning technologies, warning chain analysis and communications. Before coming to Jakarta Alex worked in Bali and in Banda Aceh. In his spare times he likes to hike Indonesia's forests and explore new rendang recipes.

Michael W. Hoppe
(Michael)
Consultant

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Michael, a geographer with 3 years work experience in Indonesia was involved in emergency aid and reconstruction after the tsunami disaster in Aceh and gathered practical experience in community development and capacity building. He is currently supporting the project in the areas of hazard assessment and knowledge as well as local warning chain development.

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