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US INDIAN OCEAN TSUNAMI WARNING SYSTEM (IOTWS)
PROGRAM

**WORKSHOP PROCEEDINGS
DEVELOPING A TSUNAMI EARLY WARNING
SYSTEM (TEWS) AND STANDARD OPERATING
PROCEDURES (SOPS) FOR BANTEN PROVINCE,
INDONESIA**

JULY 2007

July 2007 Version 1.0

Prepared for the United States Agency for International Development
by the IRG-Tetra Tech Joint Venture



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Developing a Tsunami Early Warning System (TEWS) and Standard Operating Procedures (SOPs) for Banten Province, Indonesia

July 11-13, 2007

La Dian Hotel, Serang, Banten, Indonesia

Implementing Agency:

Meteorological and Geophysical Agency (BMG), Indonesia

Facilitating Institutions:

United States Department of Agriculture, Forest Service (USDA/FS)
and

National Oceanic and Atmospheric Administration (NOAA)
through the

U.S. Indian Ocean Tsunami Warning System (IOTWS) Program

Supported by:

United States Agency for International Development Regional Development Mission
for Asia (USAID RDM/A)





**Workshop Participants at the L-TEWS Workshop, Banten, Indonesia
July 11-13, 2007**

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I. Background

The US Indian Ocean Tsunami Warning System (IOTWS) Program is a two-year initiative of the U.S. Agency for International Development (USAID) through which scientists and experts are sharing technical expertise and helping to build early warning system capacity within the Indian Ocean region.

The Tsunami Alert Rapid Notification System (TARNS) for early warning is one component of the US IOTWS Program. The USDA Forest Service (USDA/FS) and National Oceanic and Atmospheric Administration (NOAA) are providing technical expertise for TARNS in Indonesia and Thailand, which ensures that tsunami advisories or warnings are sent to all relevant national and local officials. Those officials are then able to send information to the public quickly and accurately. To strengthen the local level early warning capacity, a workshop was conducted in Banten Province, Indonesia, on July 11-13, 2007. The workshop provided opportunities for U.S. and regional experts to share lessons learned on provincial and local level tsunami warning dissemination systems.

The event drew together more than 40 disaster Indonesian disaster management specialists, and aimed to strengthen links between provincial and local government officials, as well as with relevant stakeholders, to deliver warning messages effectively to the public at risk. During the workshop, officials at the Meteorological and Geophysical Agency (BMG) of Indonesia mapped the pathways in which warning messages are conveyed from the central office to regional BMG offices. Participants discovered an important communications gap during the group exercise. BMG then convened a meeting later in July in Jakarta to address this gap so that warning messages are delivered seamlessly down the command chain from the national to the regional level. The list of participants is attached in Annex I.

2. Workshop Objectives

The specific objectives of the workshop were to:

- Share Indonesian and U.S. experiences and lessons learned on provincial and local level tsunami warning dissemination systems
- Present and discuss appropriate tools for EWS, including:
 - Principles
 - Communications mapping
 - Sample SOPs
 - Templates and checklists
 - Warning technology
 - Warning simulation exercises
- Develop objectives and goals for Banten's first EWS Plan and Framework for Action

3. Inaugural Session

- **Mr. Apon**, representative for the Vice Governor of Banten Province, welcomed all participants and resource persons. He mentioned that the first tsunami in Banten occurred in 1883, which had a 31-meter run-up and killed 36,417 people. He stressed the importance of being prepared for the next tsunami.
- **Dr. Mohammad Rasyid**, Ministry of Research and Technology, opened the workshop and mentioned that the provincial government is planning a tsunami warning system. He remarked that the workshop was a great opportunity for Banten to explore and gain knowledge to enhance its local level tsunami warning system.
- **Ms. Deanne Shulman**, Senior Emergency Management Specialist, US Forest Service, welcomed participants and asked everyone to discuss common issues and problems they have faced in local level early warning dissemination, and to share possible interventions.
- **Dr. Prih Harjadi**, Director, Meteorological and Geophysical Agency (BMG), provided a keynote speech on the role of the national government, specifically that of BMG in warning formulation and dissemination.

4. Summary of Workshop Presentations

- Mr. Revanche Jefrizal, Padang; Mr. Gede Sudiartha, PMI and SATKORLAK of Bali; Mr. Rusdi, Aceh Besar; and Ms Irina Rafliana, LIPI, presented their experiences on Indonesia's local TEWS and lessons learned.
- Mr. David McKinnie, U.S. National Oceanic and Atmospheric Administration, introduced the principles of tsunami warning systems.
- Mr. Scott Simmons, State of Alaska Hazard Mitigation Officer, presented on his experiences with U.S. local government regarding the TEWS in the state of Alaska.
- Dr. Utun Sutrisna, Anyer Merak Puloampel Cilegon Chemical Manufacturer's Association, presented on chemical emergency preparedness efforts for Cilegon–Serang.
- Mr. Bryan J. Fisher, State of Alaska Manager for Information Management Alert and Warning System, presented on the state-to-local level tsunami warning communications technology and protocols.
- Mr. S.H.M. Fakhrudin, ADPC Technical Specialist, discussed the strengths and weaknesses of various warning communication systems.
- Ms. Deanne Shulman, Senior Emergency Management Specialist, US Forest Service, introduced the principles of simulation exercises.

During the workshop, participants divided into small groups to identify the status and inventory of the required elements needed for development of local level early warning systems using the ISDR Checklist and other materials. District level participants formed teams, reviewed their existing resources, and discussed those needed for an early warning system. Based on the needs and resources available, the groups mapped warning dissemination chains and communication pathways of messages travelling from provincial agencies to end-users (i.e. provincial/district/local warning distributors). The photo below illustrates the process working group members used to identify communication pathways for local level warning disseminations.



Mapping exercises to identify communication pathways for local level warning dissemination

5. Closing Session

Ms. Deanne Shulman, USFS, and Dr. Mohammad Rasyid, Ministry of Research and Technology, closed the workshop. The organizers thanked all participants for attending the three-day workshop for developing the local level tsunami early warning system and SOPs.

Annex I: List of Participants

No	AGENCY	Name	Position
1.	US IOTWS/US Forest Service	Deanne Shulman	US IOTWS/USFS
2.	US IOTWS/NOAA	David McKinnie	US IOTWS/NOAA
3.	US IOTWS/State of Alaska	Scott Simmons	Alaska Division of Homeland Security Emergency Management
4.	US IOTWS/State of Alaska	Bryan J. Fisher	State of Alaska - Alaska Statework Emergency Communications
5.	US IOTWS/ADPC-Bangkok	Bapon Fakruddin	US IOTWS/ADPC
6.	US IOTWS-Indonesia	Stacey Tighe	Country Coordinator
7.	BMG National	Dr. Prih Harjadi	BMG
8.	BMG National	Dr. Andi Sakya	BMG
9.	BMG Banten	Eddy Kelana	BMG
10.	BMG National	Suhardjono, Dipl Seis	BMG
11.	BMG Tangerang	Sungkowo	BMG
12.	BMG Ciputat	Amir Harsono	BMG
13.	RISTEK	Moh. Rasyid	RISTEK
14.	LIPI	Irina Rafliana	LIPI
15.	Ministry of Home Affairs	Firdaus HT	MOHA
16.	NAD: Aceh Besar:	Rusdi	Case Study/Kesbanglitmas Aceh Besar
17.	W. Sumatra: Padang	Revanche Revel	Case Study
18.	Bali: Gede Sudiartha	I Gede Sudhiarta	Case Study/PMI Bali
19.	NATL: PMI/Indo Red Cross	Irawan Kharie	Partner/PMI national
20.	CARE Indonesia/Jakarta	Adjie Fachruzzi	NGO

No	AGENCY	Name	Position
21.	Actions Contre La Faim	Eka Rianta Sitepu	NGO
22.	SECRETARIAT: US IOTWS	Astri Suryandari	N/A
23.	SECRETARIAT: BMG	Weniza	N/A
24.	SECRETARAIT: Interpreter	Renata	N/A
25.	SECRETARAIT: Interpreter	Michelle Lestari	N/A
26.	BMG Notetaker	Iwan	
27.	LIPI	Triyono	LIPI
28.	LIPI	Titik	LIPI
29.	Banten: Province: Governor's Office	T. Kusmadadi	Public Relation Banten Province
30.	Banten: Province: Governor's Office	Enang Nurcahyati	Public Relation Banten Province
31.	Banten: Province: Governor's Office	Babar Suharso	BAPEDA Staff
32.	Banten: Province: Governor's Office	Syahfuddin	Police Banten Provincial/POLISI
33.	Banten: Province: Governor's Office	Eko Trio Budhinar	Police Banten Provincial-- Director Sanapta Polda Banten/POLISI
34.	Banten: Province: Governor's Office	Drs. Burhanuddin	Kesbanlitmas
35.	Banten: Province: Governor's Office	DRs. H. Pudji Sudiro, Msi	Kesbanlitmas
36.	Banten: Province: Governor's Office	Roedy Widodo	TNI of West Coast Maritime/TNI Banten Area/Korem 064
37.	Banten: Province: Governor's Office	Lufki S, SH	Sub Biro Health Sectorin Provincial level/Din Kes Prov
38.	Banten: Province: Governor's Office	Asep Misbach	Sub Biro Health Sectorin Provincial level/Din Kes Prov

No	AGENCY	Name	Position
39.	Banten: Province: Governor's Office	T.B. Ubaidillah	Sub Biro Social and Labour Sector Provincial level/Din Kes Prov
40.	Banten: Province: Governor's Office	Achmas Achmad	Sub Biro Social and Labour Sector Provincial level/Din Kes Prov
41.	Banten: Province: Governor's Office	Ir. Tata Henda	Distamben Prov
42.	Banten: Province: Governor's Office	Sutarman	DPU Prov Banten
43.	Banten: Province: Governor's Office	Marifatullah	DPU Prov Banten
44.	Banten: Province: Governor's Office	Suparso	Sub biro security/Transtrib
45.	Banten: Kabupaten: Serang	Mauta Sasi	Transtib Serang
46.	Banten: Kabupaten: Serang	Ida Nuraida	BAPPEDA Serang
47.	Banten: Kabupaten: Serang	Drg. Rfausy Baygas, MM	Dinko Kab. Serang
48.	Banten: Kabupaten: Serang	H.A. Maman	DPU Kab. Serang
49.	Banten: Kabupaten: Serang: Kecamatan Anyer	Moch Iskak	Subdistrict Anyer -Serang District
50.	Banten: Kabupaten: Serang: Kecamatan Anyer	Dianto S.	Subdistrict Anyer -Serang District
51.	Banten: Kabupaten: Serang	Eddy Supriyadi	DPLH Serang
52.	Banten: Kabupaten: Serang NGO rekonstruksi Bumi	N.P. Rahadian	Head of NGO Rekonvansi bumi -District Serang
53.	Banten: Kabupaten: Lebak	Sachra	
54.	Banten: Kabupaten Pandeglang	Mahfud	DinSos Pandeglang
55.	Banten: Kabupaten Pandeglang	H. Didi Suhandi, Skm, M.Si	Dankes Kab. Padeglang
56.	Banten: Kabupaten Pandeglang	Ir. H. Tata Nanza Riyadi, MM	Kesbangpol Pandeglang
57.	Banten: City: Cilegon	Dr. Sri Rustiati	Din Kes Cilegon
58.	Banten: City: Cilegon	Sabri Wahyudin	Bappeda Cilegon
59.	Banten: City: Cilegon	Lilit Basuki	Kesbanglistmas Clegon

No	AGENCY	Name	Position
60.	Banten: City: Cilegon: Police	Agus Suhermen	Police Cilegon Subdistrict/POLISI
61.	Banten: City: Cilegon	Rasmi Widayani	DCHPE Cilegon
62.	Banten: Private Sector	Alitoro	Krakatau stell
63.	Banten: Private Sector	Ir. Utun Sutrisna	Head of Assosiation of Chemical Industries in Anyer, Merak, Bojonegoro, and Cilegon
64.	Banten: Private Sector	Ashok Kumar	Head of Hotel Assosiation in Banten
65.	BANTEN: PMI Chapter	M. Saleh	PMI/Red Cross
66.	BANTEN: PMI Chapter	H. Irman Ediana	PMI/Red Cross
67.	BANTEN: RAPI or ORARI	Chaerobi	NGO
68.	Banten: Consultant	Dadang S. Thiar	Consultant

Annex 2: Agenda

TRAVEL DAY: Tuesday, 10 July 2007

- 14:00 Bus departs from Jakarta Office for Banten Province workshop venue
- 14:00 – 17:00 Travel to Workshop venue
- 19:00 – 21:00 Reception Dinner

DAY I PROGRAM: Wednesday, 11 July 2007

Expected Outcome for Day I:

Indonesian and U.S. participants gain social and cultural context and knowledge on provincial level tsunami warning systems through sharing of experiences and lessons learned

08:30 – 09:00 Registration

09:00 – 10:30 Opening Session

- Welcoming Address: Government of Banten
- Opening Remarks
 - RISTEK: *Mohammad Rasyid*
 - Government of the United States: *Deanne Shulman*
- Keynote Presentation: Status of Tsunami Early Warning System of Indonesia and the Mandate for Local Government
 - *Dr. Prih Harjadi, BMG (30-40min)*

10.30 – 10.45 Coffee Break

10:45 – 11:00 Workshop Introduction and Overview (Facilitator)

- Meeting Logistics
- Overview of workshop agenda, process and outcomes
- Introductions of workshop participants, and their agency role in Banten Province's Early Warning System

11:00 – 12:00 PRESENTATION

Indonesian Local TEWS Experiences: Lessons Learned PART 1

- Ministry of Home Affairs: CHAIR: *Mr. Firdaus*
 - Padang: *Revanche Jefrizal (25 min)*
 - Bali Gede Sudiarta, PMI & SATKORLAK (25 min)
 - Questions and Answers

12:00 – 13:00 Lunch

13:00 – 14:00 PRESENTATIONS

Indonesian Local TEWS Experiences: Lessons Learned PART 2

- Ministry of Home Affairs: CHAIR: *Mr. Firdaus*
 - Aceh Besar: *Mr. Rusdi, SATKORLAK (25 min)*
 - LIPI: *Ms Irina Rafliana (25 min)*

- Questions and Answers

14:00 – 15:00 Panel Discussion/Open Dialog on Indonesian Local TEWS with Representatives from Padang, Aceh, Bali Provinces, and LIPI
 • MODERATOR: *Ms. Irina Rafliana*

15:00 -15:30 Coffee Break

15:30-16:45 PRESENTATIONS

Principles of Tsunami Warning Systems

- *Mr. David McKinnie*, U.S. National Oceanic and Atmospheric Administration

U.S. Local Government Experience in TEWS-Alaska

- *Mr. Scott Simmons*, State of Alaska Hazard Mitigation Officer

Questions and Answers

16:45 - 17:00 Wrap-up session for Day 1 – Facilitator

DAY 2 PROGRAM: Thursday, 12 July 2007

Expected Outcome for Day 2:

Continue to learn tools and approaches for L-TEWS from USA. Develop preliminary Communication Chain and Gap analysis for a L-TEWS Plan for Banten.

08:30 - 08:45 Review of Day 2 Process and Expected Outcomes – Facilitator

08:45 – 10:00 PRESENTATIONS

Chemical Emergency Preparedness Effort For Cilegon -Serang

- *Utun Sutrisna*, Anyer Merak Puloampel Cilegon Chemical Manufacturer's Association

State to Local level Tsunami Warning Communications Technology and Protocols

- *Mr. Bryan J. Fisher*, State of Alaska Manager for Information Management Alert and Warning System

Questions & Answers

10:00 – 10:30 Coffee Break

10:30-12:00 WORKING GROUPS (by City/District)

Status/Inventory of Required Elements Needed for EWS

Using the ISDR Checklist and other materials, District Teams review their existing resources to those needed for an Early Warning System

12:00 – 13:00 Lunch

13:00 – 13:30 Small Group Presentations and Discussion

- 13:30– 14:00 PRESENTATION:**
Strengths and Weaknesses of Various Warning Systems –
- *Mr. S.H.M. Fakhruddin, ADPC Technical Specialist*
- 14:00 – 15:30 WORKING GROUPS: (by City/District)**
Identify Warning Chain/Communication Pathways
- Identify Proposed Map of Communication Pathways for Tsunami Warning from Province to End-Users (Provincial/District/Local Warning Distributors)
 - (If time) Identify needed SOPs and resources needed to implement the Communications Pathway Map
- 14:30 – 14:45 Coffee Break (Taken During Working Group Session)**
- 15:30 – 16:45 Small group report out with discussion**
- 16:45 – 17:00 Wrap-up Day 2 - Facilitator**

DAY 3 PROGRAM: Friday, 13 July 2007

Expected Outcome for Day 3:

Participants gain knowledge on principles and the practice of tsunami warning simulation exercise development. Practice and assess “tabletop” tsunami warning simulation exercise.

- 08:00 - 08:15 Review of Day 3 Process and Expected Outcomes – Facilitator**
- 08:15 – 09:00 PRESENTATION**
Principles of Simulation Exercises
- *Deanne Shulman, USDA Forest Service*
- 09:00 – 09:15 Coffee Break**
- 09:15 – 11:00 Table-Top Exercise and Evaluation**
- 11:00 – 11:30 Closing Ceremony**
- 11:30 – 13:00 Lunch**
- 13:00 – 16:00 Field Trip: Volcano Observatory or Factories Emergency Response Tour**
- 16:00 – 19:00 Travel to Jakarta (Box Dinner Provided)**