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U.S. INDIAN OCEAN TSUNAMI WARNING SYSTEM (US IOTWS)
PROGRAM

PROCEEDINGS OF TSUNAMI ALERT RAPID NOTIFICATION SYSTEM (TARNS)

**SECOND WORKSHOP: LAUNCHING THE FRAMEWORK
AND COMMUNICATION TECHNOLOGY AND
METHODOLOGY**

JULY 2006

July 2006 Version 1.0

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



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US IOTWS Program Document No. II-IOTWS-06

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Tsunami Alert Rapid Notification System (TARNS) (Interagency Coordination in Response to Emergency Warning)

Second Workshop: Launching the Framework and Communication Technology and Methodology

Proceedings

26-28 July 2006
Majestic Beach Resort, Hua Hin, Thailand

Implementing Agency:
National Disaster Warning Center, Thailand (NDWC)

Facilitating Institution:
United States Department of Agriculture, Forest Service (USFS)
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 (USAID)

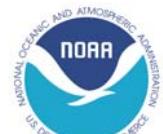


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Background

The Tsunami Alert Rapid Notification System (TARNS) is a set of common protocols and procedures used to ensure that tsunami advisories or warnings are sent from a national focal point to all relevant national and local officials so that the public receives the information quickly and accurately. The Thai National Disaster Warning Center (NDWC) adopted TARNS to enhance and refine Thailand's national early warning system. The TARNS program is supported by the U.S. Indian Ocean Tsunami Warning System (US IOTWS) Program with experts from the U.S. Department of Agriculture's Forest Service (USFS) and the National Oceanic and Atmospheric Administration (NOAA).

The National Disaster Warning Center of Thailand signed a Memorandum of Agreement with USAID's Regional Development Mission for Asia (RDM/A) in March 2006 to enhance interagency coordination on TARNS in response to emergency warning in Thailand. In May 2006 during the first TARNS workshop, participants formed an Interagency Workgroup, chaired by the Vice Minister to the Office of the Prime Minister, to facilitate interagency coordination for early warning and to develop a comprehensive integrated plan for an effective disaster warning dissemination system.

During 26-28 July 2006, the US IOTWS Program and NDWC held the second workshop in Hua Hin, Thailand, to finalize the TARNS Action Plan, develop recommendations to improve communication technologies, and explore how to work with the media to disseminate warning messages to the community level. Approximately one hundred participants attended, including a wide array of Thai government officials from all levels down to the community level. Also, representatives from the media, private sector, schools, universities, and experts from international agencies attended the workshop. The list of participants is attached in Annex 4.

Workshop Objectives

The specific objectives of the workshop were to:

- Share experiences and lessons learned on communications systems for warning dissemination in both Thailand and the U.S.
- Expedite understanding on communication of warning messages to communities
- Create a forum to develop cooperation with the media and national disaster management organizations (NDMOs) for effective warning dissemination
- Develop recommendations for inputs to the TARNS Action Plan and a media tool kit

Inaugural Session

Introduction

H.E. Dr. Smith Dharmasaroja, Vice Minister to the Office of the Prime Minister, opened the meeting with Mr. Domporn Kojhiran, Deputy Governor of Prajuabkirikhan Province. Mr. Orestes Anastasia, US IOTWS Program Manager, USAID Regional Development Mission/Asia (RDM/A) gave welcome remarks on behalf of the U.S. government.

Summary of the Speeches

Summary of the speech by H.E. Dr. Smith Dharmasaroja, Vice Minister to the Office of the Prime Minister

Dr. Smith welcomed the participants and resource persons attending the second TARNS workshop. Dr. Smith mentioned that NDWC achieved significant progress after the first TARNS workshop. Four committees were formed for the tsunami early warning dissemination system. With support from the United Nations Development Program (UNDP), the Asian Disaster Preparedness Center (ADPC), and the Intergovernmental Oceanographic Commission (IOC), adaptive learning for effective early warning at the provincial, district, sub-district, and village levels was introduced. Finally he hoped NDWC could launch their framework during this workshop and would be able to provide knowledge to the media. In addition, understanding the media's needs would help NDWC to implement an effective early warning system to save lives and property.

Summary of the speech by Mr. Orestes Anastasia, US IOTWS Program Manager, USAID Regional Development Mission/Asia (RDM/A)

Mr. Anastasia expressed his gratitude to NDWC and other partner agencies at the national and local levels for the excellent progress in the establishment of TARNS in Thailand and in making it a benchmark for the Indian Ocean region. He mentioned that the US IOTWS Program also works in Indonesia, Sri Lanka, India, and Maldives, and that is heartening to see the tremendous efforts being exerted in Thailand to address the need to develop an effective warning system for the country. The development of TARNS in Thailand has many challenges. On the one hand, the system must ensure that appropriate technologies, coordination mechanisms, and partnerships are used to rapidly deliver messages so people in danger can get to safety on time. On the other hand, officials must also be able to inform the public when there is no danger. Both types of warnings are critical for the warning system to be effective, and to help build trust that the system is reliable over time. Finally, he congratulated the NDWC, its staff, and all of its partners' efforts to get the TARNS program up and running. It is a remarkable undertaking and represents one of only a few similar programs for rapid warning notification in the world. He believes the system in Thailand will serve as a model that will contribute to the development of early warning systems that are a part of the US IOTWS Program in other countries. USAID and the U.S. Government as a whole are very pleased to be able to continue the long-standing cooperation between the two countries.

Summary of the Workshop Presentations

- Dr. Smith gave the keynote presentation on the progress being made on TARNS in Thailand and expressed his concern on global warming and climate change.
- Mr. Anastasia presented progress of the US IOTWS Program in the region and other activities under Program.
- Ms. Deanne Shulman, Senior Emergency Management Specialist, US Forest Service, presented background information on the U.S. perspective on the TARNS partnership program in Thailand and discussed the beginning of the program, lessons learned, and how to make the program a success.
- Mr. Waiyapot Worakanok, Assistant Executive Director (Technical and Research), NDWC, presented a review of the first workshop's achievements and related initiatives that help make TARNS a success.
- Mr. Chairat Sukban, Deputy Mayor of Patong Municipality, Phuket Province, presented on local level warning dissemination and methods of communication for early warning.
- Mr. Phatandit Kulphaichitra, Executive Vice President, Radio Amateur Society of Thailand under the Royal Patronage of H.M. the King, presented the telecommunication networks for tsunami warning system requirements in Thailand.
- Mr. Brian Yanagi, a representative from the UNESCO Intergovernmental Oceanographic Commission specializing in tsunami warning delivery, discussed the Tsunami Teacher concept—a guiding principle for delivering tsunami warning messages to local communities.
- Mr. Chris Hill, retired Meteorologist-in-Charge of the National Weather Service Forecast Office in Seattle, presented the basic communications systems used in the U.S. TARNS.
- Ms. Nezette Rydell, Coordination Meteorologist, NOAA, discussed the role of the media as critical partners for warning dissemination.
- Mr. S.H.M Fakhruddin, US IOTWS Technical Specialist, shared experiences from other countries for improving communication systems for disaster management.

Workshop participants divided into small groups for animated discussions on their views on tsunami warning messages. A variety of topics regarding warning messages were covered, such as their professional roles; their roles as community members; whom they could trust as sources of information; the existing communication technologies and strategies in Thailand, and their strengths and shortcomings; and how to improve system connectivity. The issues and concerns on warning dissemination are summarized in Annex 1. Recommendations on the communication plan are summarized in Annex 2.

Media experts participated on a panel discussion on “Media and Information During a Disaster: How to work together more effectively.” A summary of the discussion is in Annex 3.

Finally, NDWC presented their communication plan and preliminary concept framework for the Thai TARNS and discussed the TARNS Action Plan, which was appreciated and supported by the participants.

Workshop Evaluation

Working organizers provided an evaluation questionnaire to participants to solicit their feedback on what they had learned and areas for further improvement for future TARNS workshops. In the evaluations, participants agreed that warning systems and communication technologies already exist, but linkages among stakeholders (i.e. communities, agencies, media, etc.) are missing. Procedures and plans are required to develop relationships, which should be presented in the next workshop. Participants found the panel discussion with the media very useful. The roles and responsibilities of NDWC, the dissemination system, and media support in warning dissemination were clearly understood by the other agencies during the workshop. Participants agreed that the TARNS workshop will help them to build confidence in Thailand's warning system, develop team work, and save lives and property. Participants provided suggestions and comments to improve future TARNS workshops, which are described below.

Technical

- Clear discussion topics are needed regarding the roles and responsibilities of each organization so that each agency understands the warning message dissemination process, thereby increasing their capacity to reach communities rapidly and with timely information.
- The agenda should be better organized; for example, the progress and functions of NDWC need to be presented in the beginning. This would enable better understanding by the audience and more informed group discussions.
- Clear information about the scope of work, authority, roles, and responsibilities of NDWC should be provided to the other agencies. NDWC should come up with a document to distribute to workshop participants, since many of those in the workshop did not know about NDWC's activities.
- The workshop should cover rescue and preparation planning at the local level, including city plans and building structures in risky areas.
- The workshop seems to be a brainstorming forum, but there was no collection of ideas, or concrete outputs, e.g. plans. There should be issues prepared for each session that will build toward strategies and action plans.
- Retain the same group of participants for continuity of the discussions of the workshop.
- There should be a session devoted to NDWC and media all over the country. The topic of discussion should be carefully set. Both sides should be open to supporting each other.
- More experts from domestic agencies and overseas need to be included in warning dissemination plans.
- Include practical exercises (decision making processes and dissemination of warning) for provincial/district level people, if possible.

- Some issues should be researched more thoroughly, such as those that may affect interactions. There should be clear outcomes from exercises and panel discussions, clear instructions for timing participants' presentations, and clear questions for exercises.
- A strategy needs to be developed for making public relations plans, including how to create a network with media groups involved in warning dissemination and developing an operations toolkit for warning information.
- Detailed discussion is needed on problems in receiving and sending warning messages and on finding solutions.
- Include discussion on the perceptions of society and their behavior regarding warnings. Why do they evacuate or not? What are their personal plans for responding to warnings?
- Allow local communities to present evacuation and warning plans.
- Guidelines for disaster preparedness at the provincial level should be presented and discussed.
- Warning communications are centrally controlled. They should reach communities in risk areas. There should be more local involvement for warning dissemination.

Administrative

- There should be close coordination with media in advance, and organizers should inform them about the goals and objectives of the workshop. Media representatives should be invited as participants, not only for coverage.
- Representatives of Channel 7 should be invited in the next workshop.
- All presentations should need to put on the NDWC website.
- Representatives from the Tambol Administration Offices in the six tsunami-affected provinces need to participate as participants or observers.
- A workshop should be conducted in one of the six affected provinces.
- NDWC should invite media and train them so that they understand the work of NDWC and other natural hazards.
- Make sure that all activities in the workshop will lead to outputs and engage good facilitators who are able to maintain and handle the overall activities.
- Include local aspects in the workshop and provide opportunities for local participation.
- Include more participants from several organizations.
- The Executive Director needs to present in the workshop to give answers on problems/constraints of NDWC.

Logistics

- The projection screen should be larger, as audience members in the back of the room are not able to see anything.

- Food was not delicious, which should be considered next time.
- The hotel should not be far from the main road.
- A better workshop venue should be selected next time.

Timing

- At least five days should be allocated for this kind of workshop since people come from far away.
- Workshop duration should be more than this or one week.
- Some time needs to be allocated for ice-breaking activities so that people know each other during the workshop.

Simulation Exercise

As the next phase of the workshop will mainly focus on two simulation exercises, participants were asked to provide their ideas for improving the exercise scenarios. Some of the suggestions made are as follows:

- As the simulation involves many people, it is really crucial to have a good safety plan. Thus, organizers need to prepare a contingency plan for dealing with different types of people according to their behavior, languages, and communication interpretation.
- Inform the media widely about the simulation and its location so that people are aware of the exercise. It should also be broadcasted live from the venue so that it is known by all.
- Coordinate with related agencies and other agencies that may be impacted by the simulation.
- It should be as close to reality as possible by using equipment, people, media, and the full format of a warning dissemination in order to identify gaps and solutions.
- The objective of the simulation should be clear, and the location should be a tsunami-affected area.
- People involved in the drills may sometimes feel bored as because there have been many exercises since the 2004 tsunami. This should be considered in the future.
- Identify the right timing for simulation exercises.
- People need to be informed in advance to avoid unnecessary traffic accidents.
- There should be an assessment or evaluation after the simulation exercise.
- It should be conducted in full form starting from warning to rescue.
- Define the exercise objectives carefully and explain the objectives (what should or should not be done).
- Highlight community behavior and whether the rest of the system helps their lives or whether they died or were injured. The number of casualties can act as an indicator of the effectiveness. Include a variety of civil society actors.

- The simulation exercise should cover all of Thailand, especially the Andaman coast.
- Educate people before the simulation exercise and arrange for a meeting prior to the exercise.
- Make sure there is a clear drill plan and the roles of actors, processes, and participation by villagers (for villagers) is defined.

Closing Session

The workshop was closed with remarks from H.E. Dr. Smith Dharmasaroja, Vice Minister to the Office of the Prime Minister, and Ms. Deanne Shulman, Senior Emergency Management Specialist, US Forest Service. Dr. Smith mentioned that TARNS is very important at critical moments, and NDWC will start initiatives for incorporating communities' knowledge into the alert system through the adaptive learning process. He thanked media representatives for participating in the meeting and providing their thoughts for improving the warning system. He concluded by thanking USAID for its generous contribution and providing support for implementing the TARNS program in Thailand. Ms. Deanne Shulman thanked participants for provide constructive comments that will help to develop a concrete follow-up plan for early warning in Thailand. She also thanked the media for being partners in the workshop and providing their opinions. She hoped the enthusiasm shown for warning system development will help NDWC to develop an integrated plan for TARNS. Certificates of attendance were given to all participants.

Annex I: Issues and Concerns on Roles and Responsibilities

In the small group discussion, participants were asked to identify their organization and personal roles and responsibilities for warning dissemination and what are the most reliable sources for warning information. Some of the group outcomes are as follows:

Reliable source of Information

- The reliable source of information should be from the government and the ministries giving a press conference on TV. Short messages are not trustworthy all the time, and details will be more useful.
- As NDWC has the mandate, people need to trust their messages. Warning towers can play a good role. Sometime the Executive Director of NDWC giving announcements on TV may trustworthy.
- The Department of Disaster Mitigation and Prevention is also very reliable as they have local offices at the provincial level and provide awareness among the communities.
- The Department of Meteorology is an old agency and is trusted by all.
- Royal Irrigation Department
- TV Pool
- Radio
- Some people trust themselves based on indigenous knowledge.
- Checking the information from one or more other sources may be more reliable. The call center 1860 is a good way to check information. As 1860 can receive 60 calls per minute, the line becomes jammed if there are too many calls at a time.
- Community leaders are also trusted by the villagers.

Responsibilities of warning dissemination

- Each organization has its own ready plan which is normally followed. If the information is accurate, the organization knows what to do, although the plan needs to be integrated and everyone trained about their roles and responsibilities.
- The Thai Red Cross Society informs local people with their local radio network. They have transportation to evacuate people to a safe area (e.g. temples). Also they check the news from others and wait for information to notify people.
- Personally people check the information first with others and try to inform friends and family, and then plan the evacuation route or identify the safe places. They spread out the news with whatever equipment is available (e.g. bamboo sticks, microphones) and try to help and inform disabled people.
- If any disaster information received, it was reported to the head of the agency in any organization and get together for decision making for what to do

- The media groups try to make sure that the information is correct and reliable to make the news for circulation. Check the information from the network of NDWC and follow their procedure.

Annex 2: Recommendations for a Communications Plan

Small groups discussed effective communications system and recommendations on how to improve them. Some of the groups' recommendations are described here.

Some participants noted that the TAO of Lamkan has a good telecommunications system. Districts in Phang Nga received information from NDWC by telephone and siren towers, and then the sub-district levels and TAO covering six villages received the information by CB technology. The villages have a good CB network system that is linked with district offices for regular communication. Each village can form a disaster warning committee, with one committee member for every ten villagers. The villagers can access information regularly from TV, radio, and newspapers. There should be two main stations (responsible groups) from the village's level to communicate with the boats in the sea. The village committee will take charge to disseminate warnings within their community. The information needs to reach people rapidly. If the electricity is cut off, the security unit (1:10) volunteers will look after village members to reach the safe place. Green lights can be lit to warn people. Figure 1 shows the communications plan from the NDWC down to the village committee.

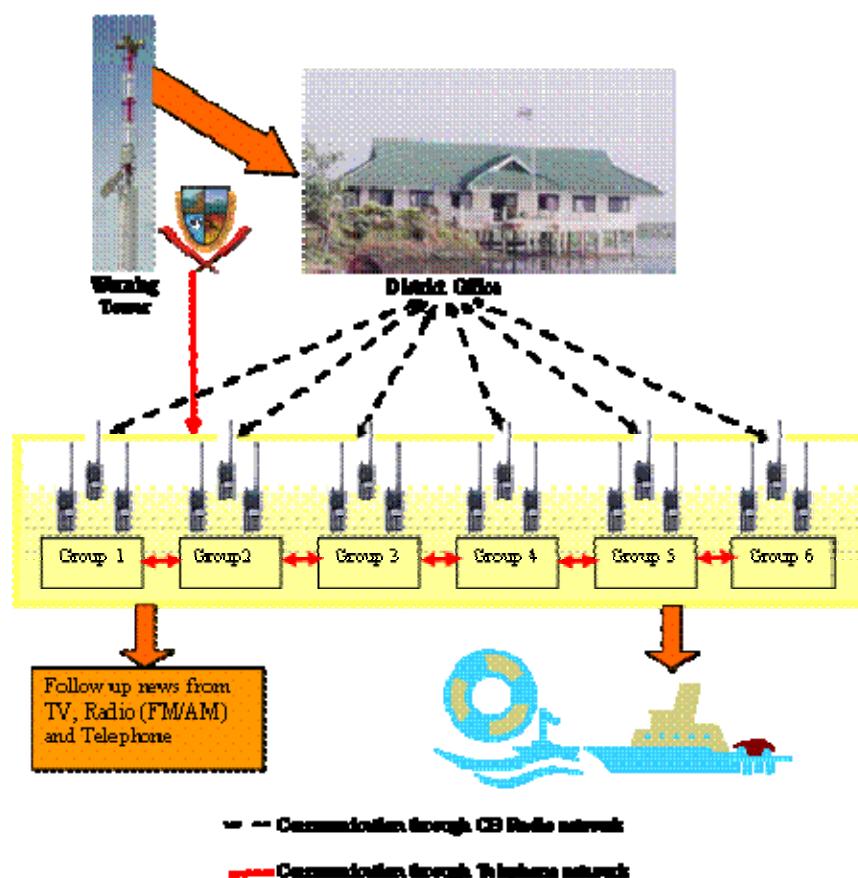


Figure 1: Communications Plan at the Village Level

Each group should know their responsibility and timing to warn people, including those on fishing boats. The sub-district level can be assigned with the radio network system. The sub-district office has the main antenna to get information. Village headmen also have their walkie-talkies with them for regular communication, as well as the antenna

made from bamboo. This network can be used for communication among village people. Some villages have funds to get more effective equipment. When the fishing boats do not have radio networks, they sometimes fire guns into the air. That can also be a good coding for warning.

The village people may have radio devices but they are not prepared or have the knowledge to get information. Village headmen can request the telecommunication network office to provide training. That office can provide training to the villagers. The national level evacuation drills should be arranged twice a year. NDWC needs to produce more public communication materials (e.g. video, pamphlet, etc.) to raise community awareness and make sure that the information reaches the people accurately. People also need to know what the evacuation route is and how to react with the disaster. Preparedness measures should be in place.

Another group suggested that if gunfire is used for warning, it may scare people rather than warn them, and there is the risk they will not go out from house. It is very essential to understand the community first and apply the system accordingly. The existing and indigenous methods can also be applied to disseminate warnings to villagers. Bamboo knocking, which can be heard from one kilometer away can be a good method to disseminate warnings. Beating drums and bells from the temples and mosques may also disseminate warnings. The village headmen, school teachers, health care centers, and heads of mosques can play a significant role to warn people in risk areas.

Effective equipment for information communications include:

- NDWC (Siren towers, SMS, fax, etc.)
- TV pool (for public and local TV)
- Radio pool (to local radio stations)
- Emergency alerts via warning towers
- Radio from the Public Relations Department (FM, AM) (80% population listens to local radio)
- CB radio
- Knocking bamboo stalks
- Light signals
- Beating drums
- Mosque/temple bells
- Interpersonal communications
- Others

Other stakeholders want NDWC to be a main independent organization to warn people, as they have the ability. However, NDWC needs to ensure accurate information and fast, rapid alert system, in addition to providing training to the villagers about knowledge on warning procedures and evacuation processes.

The media mentioned that NDWC needs some clear plan on how to disseminate news from the center. The clear plan and diagram of networking from the center and local areas in emergency situations should be communicated to other agencies as well. They must have some procedure and protocols (best practices) for warning dissemination. On the other hand, the media wants to be trained about the scientific background of disasters. NDWC needs to increase awareness about their activities and incorporate traditional knowledge into their system.

Annex 3: Media and Information: How to work together more effectively

Media experts participated on a panel discussion regarding information required by the media during disasters and how to work together for effective warning dissemination. Different media experts explained how they have received information during times of disaster and what they do afterwards. During the discussion, many issues and concerns were raised by the media experts. A summary of the discussion is as follows:

- A representative from a TV channel mentioned that when they receive any information, they try to cross-check it with other agencies, as well as with the affected community before announcing the news.
- In most cases, the media calls NDWC through its call center number, but they sometimes are unable to get through. This causes a lot of confusion during discussions with other professionals at NDWC.
- As NDWC has been established only one year, the media does not fully trust their information. Most of the time, the media relies on information from the Thai Meteorological Department.
- Whenever NDWC sends a fax to the media, they double check with other news outlets for accurate information as NDWC and the media do not have strong relationships yet. Some expressed that NDWC's reliability is increasing.
- Some media said they do not know what NDWC's role is, where they are located, or what the call center number is. For example, during the last Indonesian tsunami, they called Dr. Smith and got some information, but they were unable to contact any NDWC staff.
- Channel 5 has a secure and close relationship with NDWC. On behalf of Channel 5, a representative proposed that the media should develop good partnerships with NDWC.
- Under Thailand's Tenth Social and Economic Development Plan, the media has some specific roles, such as:
 - Listen to people's opinions and participation, have a conscience and be responsible in reporting news and information.
 - Build public awareness on economic and social changes, natural resources, and the local environment to reach an international level in natural diversity, valuing cultures and traditions. Create morality, a lovely family, a sufficient life, and admire good people who are good models for society.
 - Produce policies and strategic systems from the government to the public in each level in a spontaneous way. Be truthful and use simple messages so there will not be any distortion.
 - Produce creative media to create natural resources and preserve the environment.
 - Awaken the moral conscience, create good value and behavior, and support a way of life based on good traditions and culture for Thai youth and children.

- Create a media that builds a shield for children and families by encouraging them to be a part of creative media production, such as how to look after natural resources and the environment, public watch, and knowledge dissemination.
- Allocate every type of media in campaigning on social benefits and admire good models of the public continuously.
- Produce media that promotes economic investment, social funds, and fund for natural resource and environment.
- Create good value by not having a luxurious life and promote and preserve Thai culture.
- Develop investigative journalism skills by cross-checking information from different sources.

The media usually tries to follow the rules as per government order. In most cases staff are working in the media center 24/7. In case of emergency news, warnings will take two minutes to go on air. Channel 5 is the main channel to report the news for any emergency. Channel 5 is also engaged in building capacity for local people.

- Dr. Smith mentioned that NDWC works as a messenger and only disseminates information. Also, the law making NDWC a legal entity has not yet passed the cabinet. Thus it will take some time to meet others' requirements. Other organizations cannot send the message since they do not have equipment. The media should not expect too much from NDWC as it cannot do everything.
- NDWC should cooperate with the media and have press conferences immediately for any kind of incident.

Annex 4: Participants List

1. H.E. Smith Dharmasaroja, Chairman, Early Warning Committee
2. Lieutenant General Dr. Amnat Barlee, Thai Red Cross Society
3. Mr. Waiyapot Worakanok, NDWC
4. Mr. Sanchai Sujaritwongsanon, NDWC
5. Mr. Prasertsak Daipi, NDWC
6. Mr. Pichai Kittinon, Public Relations Department
7. Dr. Wattana Kanbua, Marine Meteorological Center
8. Captain Song Ekmahachai, Royal Thai Navy
9. Mr. Rangsit Nittayapooti, CAT Telecom
10. Mr. Shatchai Nuchanon, Thai National Telecommunications Commission
11. Mr. Phatanadit Kulphaichitra, Radio Amateur Society of Thailand
12. Col. Narong Sabaiporn, TV Pool of Thailand
13. Mr. Saksri Saensuk, Payainsee Volunteer Organization
14. Pol. Col. Teeraphol Thipjaroen, Phuket Police
15. Mr. Chaiwat Sukban, Patong Municipality
16. Mr. Thongchai Simking
Geo-Informatics and Space Technology Development Agency
17. Ms. Preeyada Wannasirot, Tablamu School, Phang Nga
18. Dr. Tavida Kamolvej, Thammasart University
19. Mr. Sutat Worasri, Ban Kalim School, Phuket
20. Mr. Ronaphan Katinasathein, Tourism Authority of Thailand
21. Mr. Parinya Khumtrakul, Ministry of Public Health
22. Mr. Prasobthong Buathong, Ministry of Public Health
23. Mr. Amnat Phonmart, Department of Disaster Prevention and Mitigation (DDPM)
24. Mr. Sanyaruck Yurak, Phuket DDPM
25. Mr. Pichai Intaraksa, Phang Nga DDPM
26. Mr. Jare Kocharat, Department of Provincial Administration
27. Sub Lieutenant Narongchai Chindaphan, Department of Provincial Administration
28. Mr. Amnat Rattakul, Patong Municipality
29. Mr. Seksun Srinark, Phuket Coastal Fisheries Radio Station
30. Mr. Chaiwit Kamwiset, Lamkaen LAO, Phang Nga
31. Mr. Ruangsak Konsap, Lamkaen Village, Phang Nga
32. Mr. Wisit Methasuntornpot, Patong Municipality
33. Mr. Amorn Bumrua, Patong Municipality
34. Admiral Taweesak Daengchai, NDWC
35. AVM Pakdiwat Vajirapanlop, NDWC
36. AVM Sanoh Waritswad, NDWC
37. Col. Wanchai Singthong, NDWC
38. Mr. Raywat Pongsawan, NDWC
39. Dr. Cherdjak Virapat, NDWC
40. Mr. Tinnakon Tatong, NDWC
41. Ms. Rachanan Wannopas, NDWC
42. Mr. Kunjapong Anuratpanich, NDWC
43. Mr. Thiti Tinnakorn Na Ayudhaya, NDWC
44. Ms. Tamonwan Wunphan, NDWC
45. Ms. Usa Kerd Siri, NDWC
46. Ms. Petchwalai Saranrom, NDWC
47. Ms. Suntaree Pornsuntaranun, NDWC
48. Ms. Sophya Nuanak, NDWC
49. Mrs. Kanyakorn Chaiyasorn, NDWC
50. Ms. Apinya Chaila, NDWC

51. Ms. Ononong Chotrasee, NDWC
52. Ms. Pattawan Saelee, NDWC
53. Ms. Tipsakorn Aiadmusik, NDWC
54. Ms. Jumleang Chutab, NDWC
55. Mr. Kanisorn Yongcharoen, NDWC
56. Mr. Suparat Wisadsak, NDWC
57. Mr. Supamit Jantakham, NDWC
58. Mr. Nattapong Piromphak, NDWC
59. Mr. Bancha Singsa, NDWC
60. Mr. Jumpon Petchtavee, NDWC
61. Mr. Sopon Sandee, NDWC
62. Mr. Suvit Kaewhinkong, NDWC
63. Mr. Jaturong Pinkasorn, NDWC
64. Mr. Dejrit Meemuan, NDWC
65. Mr. Anurak Srengkang, NDWC
66. Ms. Pimkarn Subprung, PDC
67. Mr. Stanley Goosby, PDC
68. Mr. Orestes Anastasia, USAID
69. Dr. Piyachatr Pradubraj, USAID
70. Ms. Parichatt Krongkant, US IOTWS
71. Mr. S.H.M. Fakhruddin, US IOTWS
72. Ms. Jennifer Lewis, NOAA
73. Mr. Brian Yanagi, International Tsunami Information Centre of UNESCO
74. Ms. Nezette Rydell, NOAA
75. Mr. Chris Hill, NOAA
76. Ms. Deanne Shulman, USFS
77. Mr. Tablo Torreaba, UNDP
78. Ms. Sheila Reed, UNDP
79. Dr. Alan White, US IOTWS
80. Dr. Curt Barrett, NOAA
81. Dr. Theerachai Haitook, Ranong
82. Mr. Ekarat Cheungyang, Ranong
83. Mr. Udom Fongmanee, Ranong
84. Ms. Piyapatre Vongdowang, Tourism Authority of Thailand
85. Mrs. Tasanewan Intachat, Thai Red Cross Society
86. Mr. Theeraphol Tanadtanusilp, Public Relations Department
87. Ms. Puntip Lertpradit, Media
88. Mr. Fareedali Kanji, Media
89. Mr. Ronnaruj Ruenkaow, UBC TV
90. Mr. Chusak Pongsiri, UBC TV
91. Mr. Nappadol Newmnil, TV 5
92. Mr. Taweesak Koompai, TV 5
93. Ms. Yossapak Wejsawan, TV 5
94. Ms. Patcharin Impitak, Thansettakij Newspaper
95. Ms. Anocha U-suwan, TV 11
96. Mr. Kajit Taristri-soraya, TV 11
97. Mr. Toungsak Chausintuwong, Matichol Newspaper
98. Ms. Monapa Sirisomboon, Thai News
99. Mr. Somyoth Ploywan, Thai News
100. Mr. Pisit Songpray, Thai News
101. Mrs. Araya Phoja, Public Relations Department
102. Ms. Wimol Thabkong, Kom Chad Luk Newspaper
103. Ms. Ratirose Supaporn, US IOTWS

Annex 5: Agenda

WORKSHOP OBJECTIVES

- Thailand and the U.S. share experiences and lessons learned on communications systems for warning dissemination
- Gain understanding how warning messages are communicated to communities
- Learn how best to cooperate with the media for effective warning dissemination
- Develop recommendations for inputs to Thai Action Plan and a Media Tool Kit

TRAVEL DAY: TUESDAY, 25 JULY

14.30 – 17:30	Travel to Majestic Beach Resort in Hua Hin
17:30 – 18:00	Check into the Hotel
18:30 – 20:00	Dinner

DAY I PROGRAM: WEDNESDAY, 26 JULY

Expected Outcome for Day I:

Participants familiarize with TARNS concepts and examine existing system and gaps.

08:30 – 09:00	Registration
09:00 – 10:30	Opening Session <ul style="list-style-type: none">• Welcome Address by Governor of Prachuabkirikhan Province• Introduction by Col. Wanchai Singthong, Chief of Training and Public Relations, NDWC• Opening Addresses<ul style="list-style-type: none">❖ Government of Thailand – Vice Minister to the Office of Prime Minister Dr. Smith Dharmasaroja❖ Government of the United States – Mr. Orestes Anastasia, USAID IOTWS Program Manager❖ Keynote Presentation: Tsunami Early Warning System of Thailand – Update on recent developments and successes by the Chairman of A Committee on National Disaster Warning Administration (VM Dr. Smith Dharmasaroja)• Presentation: Update on the progress of U.S. Government Support to the Indian Ocean Tsunami Warning System – Mr. Orestes Anastasia, US IOTWS Program Manager, USAID• Presentation: Update on US Perspective on TARNS Partnership Program in Thailand – Ms. Deanne Shulman, Senior Emergency Management Specialist, US Forest Service
10.30 – 10.45	Coffee Break
10:45 – 11:30	Workshop Introduction and Overview <ul style="list-style-type: none">• Meetings and business arrangements – Dr. Tavida Kamolvej, Workshop Facilitator and Disaster Management Communications Expert• Introductions of workshop participants and agency role in TARNS – Facilitator

	<ul style="list-style-type: none"> • Overview of workshop process and outcomes – Facilitator • Review of workshop agenda – Facilitator
11:30 – 12:00	Presentation: Recap of First TARNS Workshop Outcomes and Update on recent activities – NDWC by Mr. Waiyapot Worakanok, Assistant Executive Director (Technical and Research) and Staff
12:00 - 13:00	Lunch
13:00 – 13:45	Presentation: Tsunami Teacher – A Guiding Principle for Delivering Tsunami Warning Messages to Local People – Mr. Brian Yanagi, IOC – International Tsunami Information Center
13:45 – 14:15	Presentation: Local Level Warning Dissemination – Mr. Chairat Sukban, Deputy Mayor of the Patong Municipality
14:15-15:30	Small Group Discussion: Compare and contrast the presentation information with what is available to you to deliver tsunami warning messages in your professional role and in your community? Who do you trust as a source for tsunami warning messages? (Each group contains participants from all levels of organizations)
15:30 – 15:45	Coffee Break
15:45- 16:45	Report out on the most important outcomes of the small group discussions
16:45 – 17:00	Highlights of themes from group discussions report out – Facilitator
18:30 – 20:00	Dinner

DAY 2 PROGRAM: THURSDAY, 27 JULY

Expected Outcome for Day 2:

Develop recommendations for plan to improve technologies communication and feedback in TARNS

09:00-9:05	Review of Day 2 Process and Expected Outcomes – Facilitator
9:05 – 10:15	Presentation Followed by Q&A: Overview of the Basic Communications Systems used in the US TARNS – Mr. Chris Hill, NOAA
10:15 – 10:30	Coffee Break
10:30-12:00	Presentation: Telecommunication Networks for Tsunami Warning System Requirements in Thailand – Mr. Phatandit Kulphaichitra, Executive Vice President, Radio Amateur Society of Thailand under the Royal Patronage of H.M. the King Followed by Q & A: Overview of the basic communications systems used in the Thai TARNS
12:00 - 13:00	Lunch

13:00 – 13:15	Presentation: Sharing Experiences from Other Countries for Improving Communication System for Disaster Management: Mr. S.H.M Fakhruddin, US IOTWS USAID Technical Specialist
13:15 – 14:15	Small group discussion: Describe existing communications technologies strategies in Thailand including their strengths and shortcomings. Identify means to improve system connectivity. (Each group contains participants from all levels of organizations)
14:15 – 15:15	Small Groups Report-out – Facilitator
15:15 – 15:30	Coffee Break
15:30 – 16:30	Open discussion to develop recommendations for plan to improve technologies communication and feedback in TARNS – Facilitator and Technical Experts
18:30 – 20:00	Dinner

DAY 3 PROGRAM: FRIDAY, 28 JULY

Expected Outcome for Day 3:

Explore how to work with the media to disseminate tsunami warning messages to the community level and develop foundation for a Thai Media “Tool Kit”. Finalize Action Plan.

08:30 - 08:45	Review of Day 3 Process and Expected Outcomes – Facilitator
08:45 –09:45	Role of the Media as critical partners for warning dissemination - Ms. Nezette Rydell, Warning Coordination Meteorologist, NOAA
09:45-10:00	Coffee Break
10:00 – 11:00	Panel Discussion of Media Experts: “Media and Information During a disaster: How to work together more effectively”
11:00 – 12:00	Facilitated Open Discussion with Media Expert Ms. Nezette Rydell to develop the foundation for a Thai Media Tool Kit
12:00-13:00	Lunch
13:00 – 14:30	Panel Discussion of Preliminary Concept Framework for the Thai TARNS – Thai Experts and Open Discussion of the TARNS Action Plan
14:30 – 14:45	Coffee Break
14:45 – 15:00	Certificates presentation – Dr. Smith, Chairman of the National Disaster Warning Committee
15:00 – 15:15	Mapping the way forward – closing remarks by USAID and NDWC
15:15 – 15:30	Formal Workshop Close: NDWC
16:00	Depart for Bangkok

Annex 6: Planned TARNS Collaborative Activity Plan

An Interagency Workgroup has formed chaired by His Excellency Dr. Smith Dharmasaroja, Vice Minister to the Office of the Prime Minister. The Interagency Workgroup will aim to enhance the interagency coordination for early warning and work to develop a comprehensive integrated plan for effective disaster warning dissemination. The NDWC will serve as the lead coordinating agency for the Thai government, and work in partnership with the U.S. Government team to help replicate the TARNS approach in other countries across the Indian Ocean Region.

The TARNS program will be implemented in four workshops and two simulation exercises:

- Workshop 1: TARNS System Design and Plan (*Completed, 24-26 May 2006*)
- Workshop 2: Enhance Communication, Technology and Relationship with Media (*Completed 26-28 July 2006*)
- Workshop 3: Development of Framework Plan for TARNS
- Workshop 4: Regional Model of Tsunami Alert Rapid Notification System
- Simulation Exercise 1: Field visit at provincial, district and TAO level to enhance TARNS
- Simulation Exercise 2: Full scale exercise on alert rapid notification system

A planned program of specific future collaborative activities with a timeline is shown in the table below. It is important to note that due to funding parameters of the U.S. government, all activities under the US IOTWS Program must be completed by 30 September 2007.

Timeframe	Activity
24-26 May 2006 (Completed)	First TARNS workshop to develop system design and plan for interagency coordination to deliver early warnings to people
26-28 July 2006 (Completed)	Second TARNS workshop to develop communication system, technology and media training
24 October 2006	Planning Meeting of TARNS 3 rd Workshop
August-January 2006-2007	Field visits at the provincial, district, TAO and community level to develop robust TARNS
February 2007	Third TARNS workshop to develop plan for the TARNS
February-March 2007	Full-scale tabletop exercise
April 2007	Regional Model showcase of TARNS