

Attachment II

From ICG/PTWS-SC-III/3 report, 20 September 2012



**Intergovernmental Oceanographic Commission (of UNESCO)  
Intergovernmental Coordination Group for the Pacific Ocean Tsunami Warning and  
Mitigation System (ICG/PTWS)  
Meeting of the Steering Committee, Honolulu, United States of America 24–25 May 2012**

**MEETING REPORT**  
*(excerpt)*

**PACWAVE11 Report**

The co-chairs of the WG2 Task Team on PACWAVE11, Ms Jo Guard and Dr Laura Kong, reported back to the Steering Committee on the assessment of the exercise.

The overall assessment of the exercise was that it had been well organized and that the planning, conduct and style at all levels had been satisfactory. External relationships had been enhanced, and the experimental products were understood and useful. The exercise documentation had been found to be appropriate and easy to use. Areas that require improvement include: notification was received by most NTWCs within 15-20 minutes, which may not be quick enough in a local tsunami; the majority of NTWCs received messages by fax and email, which may be subject to failure in a local earthquake.

Over half of the agencies reported not having evacuation signage and requested assistance in scheduling exercises. Further assistance in developing SOPs is also required.

The evaluation form had been found easy to use but there were too many questions. The time period between the exercise and the return of the evaluation forms was too long and "Survey Monkey" may need to be upgraded to better manipulate the data. A contractor will be employed to process the data and prepare the final report.

The feedback received on the experimental products was that they were useful but that a User Guide is required. The most useful features were: the threat level map, the inclusion of wave heights, travel and arrival times, and forecast amplitudes.

Many suggestions for improvement of the PTWC experimental products were received and these would be passed on to PTWC and WG2 for review and assessment of feasibility.

The chair thanked the Task Team co-chairs for their report and enquired if an exercise was being planned for 2013. If so, it would be necessary to decide on the level of exercise. The purpose would be to validate the new products, not the entire system. Mr Coetzee recommended keeping the exercise as simple as possible and suggested setting a deadline for feedback.

Dr McCreery commented that it would be reasonable to target early 2013 for the publishing of a User Guide for the products developed and in use before the exercise, which should be held before the next session of the ICG

Dr Kong presented a proposal and a timeline for implementation of products:

- Start Experimental Products: Feb 1, 2013
- Conduct PacWave13: April 2013

- Evaluation forms returned: 30 April
- Evaluate PacWave13, validate PTWC new products and procedures by 31 May
- Review/approved by Steering Committee just prior to ICG

**The Steering Committee requested the WG2 PacWave11 Task Team to continue until the 25<sup>th</sup> Session of the ICG/PTWS, to plan and conduct a PacWave Exercise in 2013 under its existing Terms of Reference, noting that the exercise will not be end-to-end and will focus on validation of the enhanced products.**

The Task Team will decide on the number and format of exercise scenarios and recommend to the chair of WG2.

Potential new members of the Task Team are: Lt Willington Renteria Agurto (Ecuador), Dr Dominique Reymond (French Polynesia) and a member from Malaysia.

### **Task Team on Enhancing Products Report**

Dr Chip McCreery, chair of the WG2 Task Team on Enhancing Products, provided a summary of the discussions that had taken place in the preceding Task Team meeting. He emphasized the key purposes of the proposed new PTWC products based on numerical forecast modelling that include: 1) improved advice regarding local tsunami threats, 2) reduced over-warning, 3) information to help distinguish between a marine threat, land inundation threat, and major inundation threat, and 4) threat information at a finer geographic scale.

The following points were discussed and taken into consideration:

- Past Recommendations of this Task Team
- TOWS Task Team Harmonized Product Recommendations
- Lessons learned from the recent Samoa, Chile, and Japan tsunamis
- PacWave11 feedback on the experimental products
- Scientific and technical capabilities and limitations of the :
  1. seismic data and analysis
  2. sea level data and analysis
  3. numerical tsunami forecast models

The following changes to the new products were agreed:

- Inclusion of latitude and longitude lines on maps for reference
- Inclusion of additional geographic features on plots for reference
- Geographical division of PTWC & JMA responsibilities in sea between Japan and Asian continent
- Scaled Green's Law approximation for small islands
- Harmonization of color palettes used for wave amplitudes in maps
- Levels of amplitude (0-0.3m, 0.3-1m, 1-3m,  $\geq 3$ m) with upper bound included in ranges.
- Add earliest arrival times in table of forecast zones
- Creation of Users Manual for new products
- Limit forecast in first product to domain of a few hours tsunami travel time
- Upgrade forecast based on earthquake mechanism
- Upgrade forecast based on sea level observations used as constraints
- The new products will only be distributed by email to the TWFPs during the experimental phase

The following suggested changes will stay under consideration for later versions of the products:

- Zoomed in maps for all regions (some zoomed-in maps necessary now though, e.g., SCS)
- Addition of historical data in maps
- Estimated arrival times other than first wave
- Add seismic focal mechanism, finite fault

- Inclusion energy diagram as CISN and/or Google Earth layer files

The following suggested changes will not be implemented at this time:

- Forecast of inundation
- Special identification of tsunami prone areas (except through specific forecast points)
- Error bounds on forecasts (can give general guidance in Users Guide)
- Forecast number of waves
- Forecast time of maximum wave arrival
- Forecast time of last wave above threat threshold
- Use of local time in messages

The following issues are as yet unresolved:

- Review of coastal zone naming convention
- Involvement of Australia in discussions about enhanced warning products
- Which of the new products will be public and which will be restricted to the TWFPs/NTWCs.

The Task Team made the following **recommendation** to the Steering Committee:

**The PTWC should continue with the development of its new products taking into consideration the information presented, discussions, issues raised, and advice of the Task Team during this meeting. PTWC should finalize procedures and software for an initial version of the products, including a Users Guide, and begin issuing the new products in an experimental mode in parallel with current products by February 1, 2013. Unresolved or new issues regarding the products during this development period can be addressed remotely by the Task Team and/or PTWS Steering Committee before the experimental period begins. In addition, the Task Team agreed that before full implementation there will need to be a comprehensive training program on the new products for PTWS Member States to ensure that the products are understood and that Member State SOPs are modified accordingly.**

The Steering Committee noted the progress made by the Task Team and **endorsed** its recommendation. It also considered that training was of the utmost importance as many countries will have to revise their SOPs to deal with the new products.

In addition to the existing Task Team members already nominated, the following potential new Task Team members were identified: Dr Dominique Reymond (French Polynesia), Lt Wellington Renteria Agurto (Ecuador), Samoa (Filomena Nelson *pro tem*), Patricio Carrasco (Chile), Malaysia. The chair requested these candidates to obtain formal nomination from their TNCs and forward to the Secretariat as soon as possible.

## **10.2 DECISIONS, RECOMMENDATIONS AND ACTIONS ARISING FROM STEERING COMMITTEE MEETING**

### **Action: Full review before the next ICG**

#### Task Team on PacWave Exercises

- The Steering Committee requested the PacWave11 Task Team to continue until the 25<sup>th</sup> Session of the ICG/PTWS to plan and conduct a PacWave Exercise in 2013 under its existing Terms of Reference, noting that the exercise will not be end-to-end and will focus on validation of the enhanced products.

#### Task Team on Enhancing Products

- The Steering Committee noted the progress reported by the Task Team and requested that PTWC should continue with the development of its new products taking into consideration the information presented, discussions, issues raised, and advice of the Task Team during this meeting. PTWC should finalize procedures and software for an initial version of the

products, including a Users Guide, and begin issuing the new products in an experimental mode in parallel with current products by February 1, 2013. Unresolved or new issues regarding the products during this development period can be addressed remotely by the Task Team and/or PTWS Steering Committee before the experimental period begins. In addition, the Task Team agreed that before full implementation there will need to be a comprehensive training program on the new products for PTWS Member States to ensure that the products are understood and that Member State SOPs are modified accordingly.

#### Timetable for Implementation of PTWC Enhanced Products

- Announcement of PacWave13: Oct. 1, 2012
- Start trial of Enhanced Products: Feb. 1, 2013
- Conduct PacWave13: April 2013
- Evaluation forms back: by 30 April
- Evaluate PacWave13, validate PTWC new products and procedures: 31 May
- VC/teleconf for TT: as required
- Review/approved by SC just prior to ICG

#### Training on Enhanced Products

- The Steering Committee requested the Secretariat to work with ITIC and the Working Group chairs to document the record of training conducted and planned, leading up to and beyond the implementation date of the enhanced products.