PRELIMINARY REPORT OF
TECHNICAL WORKING GROUP 3
DISASTER MANAGEMENT, PREPAREDNESS AND RISK REDUCTION

DAVID COETZEE
WORKING GROUP CHAIR
PTWS WORKING GROUP 3: DISASTER MANAGEMENT, PREPAREDNESS AND RISK REDUCTION

PRELIMINARY REPORT TO ICG/PTWS-XXVII, 28-31 MARCH 2017

Note: This Report covers the period since ICG/PTWS-XXVI that was held in April 2015 in Honolulu. Earlier activities are covered in the Working Group’s report to that meeting. It will be finalized after the sessional meeting of the Working Group during ICG/PTWS-XVII.

1. BACKGROUND

Under Recommendation ICG/PTWS-XXVI.1 ICG/PTWS Working Group 3 (the WG) was reconstituted under the name of Disaster Management, Preparedness and Risk Reduction, with revised Terms-of-Reference as follows:

1. Facilitate in collaboration with TOWS Task Team on Disaster Management and Preparedness and organizations such as UNISDR, the exchange of experiences and information on risk reduction and preparedness actions, and matters related to disaster management.

2. Promote preparedness in coastal communities through education and awareness products and campaigns.

3. Facilitate SOP training across regions to strengthen emergency response capabilities of Member States and their Disaster Management Offices.

4. Develop and promote best practice preparedness material, programmes and assessment tools.

5. Develop and promote best practice tsunami risk reduction material, programmes and assessment tools.

6. Support the ITIC of the ICG;

The WG will be composed of members nominated by Member States, a representative of ITIC with a Chair and a Vice-Chair to be elected.

At ICG/PTWS-XXVI Mr David Coetzee (New Zealand) was elected as Chair and Ms Julie Leonard (USA) as Vice Chair. Member State nominations to the WG were:

- China
- China (Hong Kong)
- Cook Islands
- Japan
- New Zealand (Chair)
- Philippines
- Russia
- Solomon Islands
- USA (Vice Chair)

- The Director of the ITIC is co-opted as a member of the WG.
Note: The WG announces with sadness the passing away of the Vice Chair, Ms Julie Leonard, during the intersessional period. Ms Leonard will be remembered for her significant contribution to disaster risk management in especially Central and South America; her contribution will be sorely missed.

At its meeting in June 2016, the Steering Committee subsequently appointed Dr. Laura Kong, (USA and Director of ITIC) to the role of Vice Chair of WG3.

2. ACTIVITIES

2.1 Meetings of the Working Group

A meeting of the Working Group was held in Honolulu on 28 June 2016 prior to a meeting of the Steering Committee. The meeting was attended by the nominated representatives of three of the above countries as well as the Director of the ITIC. The discussions during that meeting are covered in this report.

2.2 Across ICG meetings

CARIBE-EWS

The PTWS worked with the CARIBE-EWS to deliver the Tsunami Evacuation Mapping and Planning pilot programme through the PTWS Tsunami Evacuation Maps, Plans, and Procedures (TEMPP) pilot project, leading to the adoption of Tsunami Ready in Honduras. The recognition was the first for the Pacific.

The Working Group also introduced the Tsunami Ready Guidelines developed in the CARIBE-EWS to the Steering Committee of ICG-PTWS, who subsequently encouraged member states to pilot the programme in order to identify and evaluate the Caribbean guideline’s applicability for the Pacific. See the next paragraph (c) below with regards to Tsunami Ready.

Participation in and direction from the TOWS Inter-ICG Task Team on Disaster Management and Preparedness, and status with the PTWS:

The Chair of WG 3 still chairs the TOWS Inter-ICG Task Team on Disaster Management and Preparedness (TTDMP). This Task Team met in February 2016 and February 2017 in Paris, immediately prior to the TOWS-WG-IX meeting. The meetings were attended by the Chair in his capacity as chair of the TOWS TTDMP as well as in his capacity as the chair of ICG/PTWS-WG 3. The Regional Tsunami Information Centers (TICs) are also represented on the TTDMP; accordingly, for the PTWS the Director of the ITIC also attended both meetings. The presence of the PTWS officials contributed to prominent advocacy by the ICG/PTWS in the TOWS environment and its direction.

This report summarizes the outcomes from both the 2016 and 2017 meetings:

a) SOP Manual

The Task Team finalized the SOP Manual for National Tsunami Warning Centres and Tsunami Emergency Response, taking the comments received from the TOWS Task
Teams on board. The final draft was provided to the Secretariat in February 2017 for translation and publication.

b) Evacuation Mapping
The PTWS-led Tsunami Evacuation Maps, Plans & Procedures (TEMPP) project was completed in Honduras early in 2017 (see 2.7 below). WG3 reported back to the TTDMP in this regard. (This project is covered in more detail further down in this report). Besides establishing and piloting methodology and practice, the project also identified existing best practice with regards to evacuation mapping, and will reference these in its documentation. A guideline will be concluded in 2017 and provided to the IOC publication.

c) Promotion of Tsunami Ready Recognition Programmes
The Task Team considered the history of, and development of the Tsunami Ready Programme developed by the United States (as TsunamiReady®) and its adaption by the CARIBE EWS as Tsunami Ready.

Tsunami Ready is a community based recognition programme consisting of the following ten elements:

Mitigation:
   i. Define Tsunami Hazard Zone
   ii. Public Display of Tsunami Information

Readiness:
   iii. Tsunami Evacuation Map
   iv. Public Education & Outreach Materials
   v. Education Outreach Activities
   vi. Annual community based exercise

Response:
   vii. Tsunami response plan
   viii. EOC Operations
   ix. Multiple Methods to Receive Tsunami Products
   x. Multiple methods to disseminate alerts to Public

Guidelines on the above ten elements have been developed by the CARIBE EWS and adapted for the Pacific in English, Spanish, French. The CARIBE EWS continues with implementation, while the Task Team noted the intent of the Indian Ocean (IOTWS) to implement Tsunami Ready through a project that has been proposed for funding, and that the PTWS agreed to investigate initiating a pilot in the South West Pacific.

In view of the strong support across ICGs for the Tsunami Ready Programme, the Task Team recommended to the TOWS-WG that the Assembly instructs ICGs to consider piloting the CARIBE EWS Tsunami Ready guidelines and report back to the TOWS-WGXI meeting with a view to develop consistent global guidelines.

Note: At its meeting in June 2016 the PTWS Steering Committee acknowledged the potential of such programmes in the PTWS, and requested WG3 to investigate the extent to which the Caribbean guidance requires adaptation for the PTWS, taking into
account feedback form pilots to be conducted in Ecuador, Honduras, Samoa, Tonga, and Vanuatu and make the changes and report back to the ICG/PTWS-XXVII in this regard.

d) **Guidance to Maritime and Ports**
The TT noted the Maritime Planning & Preparedness Guidelines for harbours and ports developed by the US National Tsunami Hazard Mitigation Programme (in draft). The methodology applied is a useful reference for other countries; the draft was made available here: http://www.ioc-tsunami.org/index.php?option=com_oe&task=viewDocumentRecord&docID=18495

The Task Team also noted modelling conducted in the Ports of Honolulu and Charlotte Amalie (Saint Thomas- US Virgin Islands). For Honolulu, port evacuation procedures use numerical modelling results providing maximum elevation, drawdown, currents, and vorticity from credible tsunami scenarios around the Pacific. These are available through the ITIC and the CARIBE EWS TIC.

e) **Development of KPIs for ICGs**
Following a discussion by the TTDMP at its 2016 meeting about the development of consistent key Performance Indicators (KPIs), the Task Team was requested by TOWS-WG IX to consider development of Key Performance Indicators in line with the Sendai Framework and to facilitate reporting by ICGs to the IOC Governing Bodies in line with IOC Assembly decision XXVIII Dec 8.2.

A joint discussion with the Task Team on Tsunami Watch Operations (TTTWO) was held in this regard in February 2017 and it was subsequently recommended to the TOWS-WG that the ICG/PTWS continue its work on KPIs to cover all aspects of tsunami warning and mitigation systems, aligning as closely as possible with the Sendai Framework, and share it to the other ICGs for consideration by the member states, and report back to TOWS-WGXI with a view on establishing global KPIs.

**Note:** At its meeting in June 2016 the PTWS Steering Committee requested WG3 to factor the *Tsunami Ready* conditions into the development of KPIs for Disaster Management, Preparedness and Reduction.

f) **Business Continuity Planning (BCP)**
The Task Team acknowledged that BCP is part of the normal arrangements of critical infrastructure and is also very specific to the particular service and its vulnerability. Guidance on BCP is well established and developed, both in a generic sense and more specifically for the respective industries. Therefore the Task Team agreed that rather than focusing on specific BCP guidelines, critical infrastructure and industry must be included in wider Disaster Risk Management and Resilience planning resilience planning in countries, with a specific focus on economic recovery. To support this approach, the Task Team recommended that critical infrastructure must also be included in tsunami exercises.

g) **Tsunami Source Data**
The Task Team noted that countries do not always have access to, or are aware of the existence of tsunami seismic source data that can support reduction and evacuation
response planning. The TOWS-WG was therefore be requested to encourage regions to share tsunami source scenario data, building towards a database of source scenarios.

h) Adaptation of UNESCO/IOC awareness materials
The Task Team considered that while on-going customisation of UNESCO/IOC material is highly valued by countries, there is a need to ensure quality and consistency with the original documents. Noting the TICs terms of reference include awareness education as well as current capacity issues with CARIBE EWS TIC and NEAMSTIC, the ITIC and IOTIC to take the lead in ensuring consistency.

i) World Tsunami Awareness Day
A joint discussion was held with the TTTWO and a representative of the UNISDR on enhancing the focus on World Tsunami Awareness Day (WTAD). The UNISDR representative suggested aligning WTAD activities with International Day for Disaster Reduction (13 October). The meeting was informed that the focus in 2017 will be on Target (B) of the Sendai Framework (*Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 between 2020-2030 compared to 2005-2015*). The UNISDR has a suite of tools and material available for use by countries. #tsunamiday2017. Countries were also encouraged to share material with the UNISDR.

2.3 Supporting PTWS Regional Working Groups
Representatives of the WG attended the meeting of the South West Pacific Working Group of the PTWS (SWP WG) in August 2016 in Honiara, Solomon Islands. A Tsunami Ready Task Team was established at this meeting with the support of the WG 3 representatives, with Samoa taking the lead. Tonga also took the lead in a Task Team that was established to enhance response with regards to local source tsunami events. The SWP WG working group also agreed that all countries in the region should have tsunami evacuation maps, and it encouraged focus on public alerting options.

2.4 Exercise Pacific Wave
The WG continued to provide support to the Exercise Pacific Wave task Team. (The Task Team will report separately, hence only the short report below):

PacWave 2016
Exercise Pacific Wave 2016 was the sixth drill of the regular schedule of Pacific wide exercise, and was conducted in the NW Pacific in February 2016. The exercise evaluated the new enhanced tsunami products of the NWPTAC. Twelve countries participated. The exercise report on Exercise Pacific Wave 2016 is being finalised and will be available on the meeting website. The Report will be submitted to the ICG/PTWS XVII.

PacWave 2017
Exercise Pacific Wave 17 (PacWave17) was held in February 2017; evaluations are underway. The South China Sea Tsunami Advisory Center also introduced its products to SCSTAC member countries as part of PacWave17.
2.5 Building structural design provisions

At its meeting in June 2016, the WG received a presentation on the completion and availability of the USA ASCE 7-16 structural design provisions for tsunami. The draft provisions are available via the ITIC and will be referenced in the International Building Code in 2018.

The PTWS Steering Committee (at its meeting in June 2016) subsequently encouraged member states to note the availability of the new provisions and to consider its application in national structural building codes.

2.6 Training

Operational Tsunami Warning and Emergency Response Standard Operating Procedures Training was held in Vanuatu in April 2016 on the new PTWC products and community response. The training was attended by 30 operational staff and community representatives.

The ITIC Tsunami Training Programme (ITP) was held in Hawaii in September 2016 and attended by five countries. The training focused on standard operating procedures for warning and emergency response, and exercises.

At the SWP WG meeting in August 2016 Fiji, Niue, Papua New Guinea and Samoa requested further training in the PTWS enhanced products, however funding will have to be found. In 2015, ITIC and IOC had met the training requests of Tonga, Solomon Islands, Peru, Cook Islands, and Colombia, and Vanuatu in 2016. It was noted that the World Bank is sponsoring Tsunami Resilience projects in Samoa and Tonga.

In discussing training and capacity building, the WG noted at its meeting in 28 June 2016 that there is a need to centralise, standardise and formalise training that supports competency certification within the PTWS.

2.7 Pilot Tsunami Evacuation Maps, Plans, and Procedures (TEMPP) Project

The PTWS Steering Committee agreed in 2014 that ITIC would lead the development of a standardized process and training course to enable the production of reliable and practical community-level tsunami evacuation maps. Accordingly the Tsunami Evacuation Maps, Plans, and Procedures (TEMPP) Project was established with resources from the USA NOAA Tsunami Program and USAID/OFDA/LAC, IOC, and New Zealand.

A PTWS Task Team on Evacuation Mapping and Planning, chaired by the ITIC Director was established to deliver the project. Besides many on-line and telephone meetings, the Task Team met in person in June 2015, and in February and June 2016.

The Project was successfully completed in February 2017 through a pilot of the Programme over two years in Honduras. The training involved the following six modules:

- **TEMPP 1: Tsunami Inundation Modelling**: ComMIT/MOST tool Inundation modelling training using ComMIT tool and MOST model.

- **TEMP 2: Seismic Tsunami Sources for [country]**: Identification of credible worst-case tsunami scenarios to use for inundation mapping
• TEMP 3: Inundation Mapping for Evacuation – process: Create Inundation map for a given community as an ensemble of inundation scenarios. Output results in GIS formats

• TEMP 4: Evacuation Mapping – process, Tsunami Ready: Create Evacuation Map from Inundation Map using GIS and community process; Implement national TR program

• TEMP 5: Response Plans and SOPs, Socialization, Community Exercises: Create Response Plan (warning / evacuation SOPs); Develop Exercise Plan, Create essential awareness materials (signage, map, flyer, card)

• TEMP 6: Official Adoption Ceremony, Functional Exercise: Official Adoption of Maps, Functional Exercise, including evacuation, TR Board approval and recognition, Pilot Wrap-up

The ITIC and the UNESCO-IOC Tsunami Programme built experience with regards to implementation of the TEMPP and are ready to provide guidance to countries that want to implement similar programmes. The WG will now finalise programme documentation.

2.8 Guidelines

Evacuation maps
To support the TEMPP training course, the ITIC translated the Japan Fire & Disaster Management Agency Guideline for Municipalities to Make Tsunami Evacuation Maps and Community Evacuation Planning into English. The Japan Guideline was published in 2013 and takes into the account lessons learned from the 2011 Japan Tsunami.

New Zealand has updated its Tsunami Evacuation Zone guidelines (Tsunami Evacuation Zones, DGL 08/16). The purpose of this guideline is to provide for a nationally consistent approach to developing tsunami evacuation zones, maps, and public information for CDEM Groups and local authorities. The revised version represents better guidance on evacuation mapping and includes information on land use planning and vertical evacuation.

Building structural design
At is meeting on 28 June 2016, the Working Group received a presentation on the completion and availability of the USA ASCE 7-16 structural design provisions for tsunami. The draft provisions are available and will be referenced in the International Building Code in 2018.

Hotels
The Working Group considered that material developed for hotels by the ITIC and NEAMTWS is sufficient for countries to use in the development of their own guidelines for hotels, if they have an interest in developing such guidelines.

Maritime and Ports
See 2.2 (d) above

Tsunami Glossary
The WG note that the ITIC, working with the IOC, has completed the Tsunami Glossary in English. The Glossary is now translated into Spanish by UNESCO, while the French and Arabic translations are underway.
2.9 SOP Manual
The draft Standard Operating Procedures (SOP) Manual has been completed and is now with the Secretariat for translation and publication.

3. PLANNED ACTIVITIES
To be finalized after the sessional meeting of the Working Group during ICG/PTWS-XVII.

4. Recommendations:
The Working Group puts the following recommendations to the ICG/PTWS-XVII:

To be finalized after the sessional meeting of the Working Group during ICG/PTWS-XVII.

David Coetzee
Chair Working Group 3, ICG/PTWS