Thirteenth Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWMS-XIII)

Bali, Indonesia, 28 November–1 December 2022

WG2 Report & Recommendations

Chair: Dr Yuelong Miao (Australia)

Vice-Chair: Mr Patanjali Kumar Chodavarapu (India)

Vice-Chair: Dr Karyono (Indonesia)

Terms of Reference

Liaise with other Working Group(s) and Task Team(s) within the ICG/IOTWMS and with working groups from the other ocean basins through the TOWS-WG to:

1. Coordinate and strengthen the operational implementation of a "System-of-Systems" providing interoperable tsunami threat information products and services for Member States.

2. Monitor the performance of key observational, warning and communication system components.

3. Identify areas of priority for action following assessments, communications tests, exercises and real tsunami events

4. Provide advice to the Indian Ocean Tsunami Information Centre (IOTIC) on educational materials about the warning systems and services

5. Help strengthen the capacity and capability of Member States.

Membership

Chair: Dr Yuelong Miao (Australia)
Vice-Chair: Mr Patanjali Kumar Chodavarapu (India)
Vice-Chair: Dr Karyono (Indonesia)

Members:
Ms Adrienne Moseley (Australia)
Dr Robert Greenwood (Australia)
Mr J Padmanabham (India)
Dr Chai Mui Fatt (Malaysia)
Mr Krishna Bucha (Mauritius)
Mr Jaifar Al-Busaidi (Oman)
Mr Malik Al-Ghafri (Oman)
Mr Ameer Hyder (Pakistan)
Mr Tariq Ibrahim (Pakistan)
ACM Somneuk Swatteuk (Thailand)

1a. Status Update against the WG2 Work Plan 2019 - 2021

1. Maintain the NTWC User Guide and TSP Service Definition Document and assist TSPs to implement the requirements of the TSP Service Definition Document.

   The following updates were made to Version 5 which will seek approval at this ICG/IOTWMS XIII.

   - Added an explicit statement that TSPs can issue a Level 2 bulletin if there is a threat to the Indian Ocean from earthquake outside the Indian Ocean source zone, even if the magnitude is less than M8.0. This addressed a request to WG2 from the ICG/IOTWMS XII.

   - Marked any earthquake magnitude change as "Updated", not "Revised" to minimise chance of mistaking 'revised' as 'arbitrary'. This addressed a request to WG2 from the ICG/IOTWMS XII.

   - Added a requirement to produce a new TSP product to NAVAREA Coordinators for their issuing navigational warnings to ships. Product templates and examples are also added.

   - Updated the KPI reporting threshold from M6.5 to M6.8 in USGS final solution. This is to improve reporting consistency without compromising reporting standards.

   - Defined explicitly those traffic light reporting thresholds of 'on target/near target/missing target' to improve clarity of the performance reporting.

   - Expanded the TSP services (not mandatory but on best effort and voluntary basis) to handle non-seismic and complex tsunami sources to meet increasing demands.

2. Review and harmonise TSP products and websites for NTWC users including NTWC reporting (ongoing)

3. Conduct 6 monthly IOTWMS Communication Tests and prepare reports of each test in conjunction with the Secretariat.

    ✓ Conducted 6 comms tests (Jun 2019, Dec 2019, Jun 2020, Jun 2021, Dec 2021, Jun 2022) with issues captured in each comms test report and followed up (where practically possible).

4. Contribute to the planning and running of SOP Training workshops for Indian Ocean NTWCs, DMOs and Media, IOWave20 Exercise and to the Post IOWave20 Workshop.

    ✓ Supported the International Symposium and IORA Workshop on Lessons Learnt from the 2018 Tsunamis in Palu and Sunda Strait, 26-28 Sep 2019.

    ✓ Contributed to the IO Workshop on Strengthening Tsunami Warning Chain to Critical Infrastructure, 20-22 Nov 2019

    ✓ Supported the IOWave20 throughout the pre/during/post stages.

5. Review and support operationalising the comprehensive system developed by TSP India for archiving and auto generating KPIs for the IOTWMS (in progress).

6. Assist the Secretariat in maintaining the database of seismic and sea-level reporting stations for the IOTWMS (Ongoing).

7. Assist the TSPs in planning for the later introduction of Service Level 3 coastal inundation services, in collaboration with Working Group 1 and the NTWCs

    ✓ TSP India piloting Level 3 coastal inundation services for its national tsunami warning system

8. Assist the TSPs in implementing CAP, mobile applications and social media for effective dissemination of tsunami information

    At the Dec 2020 WG2 meeting, Karyono and Patanjali led the discussion of this topic. The meeting agreed that

    - Limited value for TSPs to use CAP, mobile app and social media to disseminate notification messages.
    - Highly valuable for NTWCs to use CAP, mobile app and social media to disseminate national warnings
    - High interest in this new web-based Warning Receiver System (WRS). It was developed by TSP Indonesia for audio and instant alerting whenever a TSP bulletin is published.
    - ✓ WRS testing has since been added to each comms test with the tool proven reliable and useful to NTWCs.

9. Assist the TSPs for initiating tsunami bulletins for the Maritime community based on formats finalised by the TOWS-WG

    ✓ TSP Australia ready to produce such TSP maritime bulletins, other two TSPs planned to implement.

10. Assist the TSPs on service enhancements for atypical and near-field tsunami sources by utilising new techniques and enhanced observational networks such as GNSS and SMART Cables. (Ongoing, proposed expansion of service in the Service Definition Document V5)

11. Coordinate with WG-NWIO and the Task Teams for strengthening tsunami early warning in the North West Indian Ocean region

    ✓ Contributed and collaborated between the teams, particularly in advising the globally consistent tsunami warning categories.

1b. Other WG2 Updates

- Held 3 WG2 intersessional meetings Sep 2019 (in person), Dec 2020 (online), Nov 2021 (online)
- COVID-19 Impact assessment and evacuation guideline
  - Conducted a survey and completed a report of the current and potential COVID impact to networks and TSP operations
  - Contributed to the guideline of tsunami evacuation while under COVID restriction
- Ocean Decade propelled tsunami advancement
  - Supported the WTAD Indian Ocean Webinar of 10 Oct 2021 by presenting an UN Ocean Decade guided Strategic Pathway for Tsunami Detection, Warning and Dissemination
- Global tsunami coordination
  - Supported the yearly global tsunami coordination meetings of TOWS-WG and its Task Team Tsunami Watch Operations
  - Supported the Ad Hoc Team on Tsunamis Generated by Volcanoes by completing a survey
  - Contributed to the development of the Tsunami Concept Note for the Ocean Decade
  - Contributed to the harmonised global performance framework and questionnaires

2a. Challenges/Gaps in Tsunami Detection Warning and Dissemination

- Challenge to sustain the seismic and sea level networks/observing systems

- Major challenge to enable free and full data sharing of real-time observations

- Challenge to sustain research and development efforts that
  - update or expand the pre-computed scenario database to real-time tsunami modelling capabilities, that
  - develop auto-alerting capability and improve use of real-time observations including new/emerging technologies such as GNSS and SMART cables, and that
  - provide scientific basis for impact-based forecasts and warnings.

- Insufficient inter-agency coordination and cooperation, which reduced wider reach of warnings, and the timely and appropriate emergency response.

- Integrated Multi-hazard approach remains largely a concept rather than reality.

- Major challenge to provide timely and accurate tsunami detection and warning to near-field tsunami, and non-seismic and complex tsunami.

IOC TS-143: Capacity Assessment of Tsunami Preparedness in the Indian Ocean: Status Report, 2018

Recommendations
(Detection, Warning and Dissemination)

- Provide support to increase the capacity for analysing real-time seismic and sea-level data for tsunami threat

  Agreed

- Provide support to increase the capacity for tsunami modelling to support generation of threat forecasts

  Agreed

- Undertake a further study to examine whether there is a need for so many different software tools to be used to analyse data for tsunami threat or tsunami modelling

  Partially Agreed

- Increase the frequency of tabletop or similar tsunami warning exercises to review and test SOPs, and reduce the potential for complacency among countries that have not experienced a recent tsunami event

  Agreed

- Approve the draft V5 Service Definition Document
- Consider revising the WG2 Workplan of 2019-21 for 2022-24 by
  - Adding a task to assist the implementation of the Indian Ocean Tsunami Ready Program
  - Replacing the task to assist TSPs with the task to assist NTWCs with their implementing CAP, mobile applications and social media for effective dissemination of national tsunami warning information
  - Adding a task to develop guideline of best practice to share with NTWCs about how to integrate tsunami into the multi-hazard early warning approach or system for mutual benefits
- Discuss whether TSPs should send the actual bulletins directly to NTWCs (not just the notification messages). WG2 recommends status quo.

Terima Kasih!