**Intergovernmental Oceanographic Commission**

*Reports of Governing and Major Subsidiary Bodies*

**Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazard Warning System for the Caribbean and Adjacent Regions   
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**Seventeenth Session**

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**UNESCO**

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**Table of Contents**

[1. WELCOME AND OPENING 3](#_heading=h.1t3h5sf)

[2. ORGANIZATION OF THE SESSION 5](#_heading=h.4d34og8)

[3. REPORT ON INTERSESSIONAL ACTIVITIES 9](#_heading=h.2s8eyo1)

[4. WORKING GROUP PROGRESS REPORTS 38](#_heading=h.3rdcrjn)

[5. POLICY MATTERS 42](#_heading=h.26in1rg)

[6. PROGRAMME AND BUDGET FOR 2024–2025 47](#_heading=h.lnxbz9)

[7.](#_heading=h.35nkun2) INTRASESSIONAL WORKING GROUPS MEETINGS 48

[8.](#_heading=h.1ksv4uv) INTRASESSIONAL WORKING GROUPS REPORTS 64

[9. NEXT SESSIONS 67](#_heading=h.44sinio)

[10. ADOPTION OF DECISIONS AND RECOMMENDATIONS 68](#_heading=h.2jxsxqh)

[11. ICG/CARIBE EWS WORKING GROUPS AND TASK TEAM MEMBERS LIST 69](#_heading=h.z337ya)

[12. ANY OTHER BUSINESS 69](#_heading=h.3j2qqm3)

[13. CLOSE OF THE SESSION 69](#_heading=h.1y810tw)

[END OF ICG/CARIBE-EWS XVII 69](#_heading=h.2xcytpi)

# **Executive summary**

1. The Seventeenth Session of the UNESCO-IOC Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS-XVII) took place on 6–9 May 2024 in Managua, Nicaragua in a hybrid format. Eighty-three (83), of which 28 in-person and 55 virtual participants from 15 Member States and Territories and three observer organizations—the Puerto Rico Seismic Network (PRSN), the World Meteorological Organization (WMO) and UNDRR-Regional Office Regional Office for the Americas & the Caribbean attended the session. Representatives emphasized the significant value of conducting the work of the ICG face-to-face, especially noting the various upcoming 20th anniversaries of the ICG/CARIBE-EWS. Noting UNESCO’s aim to reduce its carbon footprint to meet its set target of reducing its emissions by 31 per cent by 2030, in line with the goals of the 2015 ‘Paris Agreement’, the session decided, however, to consider conducting its future sessions from 2026 onwards in-person only every second year, and online every other. The daily interaction of experts and the building of relations between Member States plays a key role in the success in the results achieved.
2. **The ICG noted** the cross-cutting elements of the ICG/CARIBE-EWS work programme closely connected with the UN Secretary-General’s Early Warnings for All (EW4All) and guided by strategic elements such as the UN Ocean Decade Tsunami Programme (ODTP) and the UNESCO-IOC Tsunami Ready Recognition Programme (TRRP).
3. **The ICG** **recognized** the value of having a Steering Committee, similar to other ICGs, as an efficient instrument of results-based management, especially in providing an oversight in the execution of its decisions and recommendations.
4. **The ICG further recognized** that the establishment of an ICG/CARIBE-EWS Steering Committee will mark another step towards harmonization of global ICG governance structures and **decided** to establish an ICG/CARIBE-EWS Steering Committee to, among others:
5. maintain the ICG/CARIBE-EWS Organizational Structure and Governance,
6. monitor, maintain and update the CARIBE-EWS Implementation Plan,
7. oversee the execution of the Decisions and Recommendations of the ICG,
8. develop a Strategy for funding CARIBE-EWS activities,
9. monitor performance and examine continuing compliance of Tsunami Service Providers (TSPs) with the adopted operational and organizational function and requirements,
10. guide the work and direction of the CARIBE-EWS to help deliver the goals of the UN Ocean Decade Tsunami Programme (ODTP) in support of its 10-year Scientific Research Implementation and Development Plan (RDIP),
11. report to ICG/CARIBE-EWS progress against the ODTP-RDIP Key Performance Indicators,
12. develop a strategy for effective coordination with the IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE), UNDRR, WMO, and other regional stakeholders,
13. revamp the Group of Experts (GoE) work and implementation plan to enhance the warning system by including other coastal hazards during the intersessional period in coordination with of the IOCARIBE Secretariat considering WMO and UNDRR EW4ALL,
14. provide oversight and strategic guidance to the Caribbean Tsunami Information Centre (CTIC) on its implementation of tsunami awareness and capacity building activities,
15. organize events and other actions and activities associated with the occasion of the 20th anniversaries of the ICG/CARIBE-EWS.
16. **The ICG congratulated** the Member States and communities that have been recognized as Tsunami Ready in the Intersessional Period: Saint George (Saint Vincent and the Grenadines); Christ Church West (Barbados); and Deshaies (Guadeloupe, France).
17. **The ICG noted** the need to further focus on the identification and employing corresponding strategies in the Caribbean and Adjacent Regions to reach the second objective of the ODTP that 100 percent of communities at risk to be prepared and resilient to tsunamis by 2030 through efforts like the UNESCO-IOC Tsunami Ready Recognition Programme (TRRP).
18. **The ICG acknowledged** the funding from United States Agency for International Development Bureau of Humanitarian Assistance (USAID/BHA), Australia, Norway, and European Commission Humanitarian Aid Department's Disaster Preparedness Programme (DIPECHO) for the implementation of the Tsunami Ready programme.
19. **The ICG invited** all Member States to implement or to support the implementation of Tsunami Ready in their communities or that of another Member State.
20. **The ICG decided** to establish a Tsunami Ready Task Team.
21. **The ICG appreciated** the offer of International Tsunami Information Center Caribbean Office (ITIC-CAR) to provide an intern for 10 weeks to support the implementation of the Tsunami Ready survey in the ICG/CARIBE-EWS, and **noted** request of the Working Group on Tsunamis and Other Hazards related to Sea-Level Warning and Mitigation Systems (TOWS-WG) that “(xiii) TT-DMP consider the introduction of a Tsunami Ready Evaluation Form in the other ICGs than ICG/CARIBE EWS, its translation to Spanish and French and its administration by the IOC Tsunami Resilience Section”.
22. **The ICG recommended** its Steering Committee and the Secretariat to evaluate the implementation process in ICG/CARIBE-EWS and inform the ICG/CARIBE-EWS in the implementation of this effort in other ICGs in accordance with the TOWS-WG-XVII recommendation.
23. **The ICG further noted** the progress made in the implementation of the UN Ocean Decade endorsed SMART Cable initiative in the Pacific and Atlantic.
24. **The ICG** decided the formation of a sub-group under Working Group 2 to specifically address the implementation of such technology in the CARIBE-EWS.
25. **The ICG requested** the Steering Committee to revamp the initiative on the Group of Experts (GoE) on work and implementation plan to enhance the warning system by including other coastal hazards during the intersessional period in the coordination with of the IOCARIBE Secretariat and the regional offices of WMO and UNDRR, supported by the ICG/CARIBE-EWS Steering Committee and Technical Secretary.
26. **The ICG** **acknowledged** the conduct of the Workshop on Tsunami Evacuation held in Costa Rica in April 2024 with the participation of 7 ICG/CARIBE-EWS Member States—Dominican Republic; Mexico; Guatemala; Nicaragua; Costa Rica; Panama; Colombia; and USA (Puerto Rico)—**and** **appreciated** the leadership by the Extreme Events Institute of the Florida International University, the funding provided by United States Agency for International Development Bureau of Humanitarian Assistance (USAID-BHA) and ICG/CARIBE-EWS Secretariat, and the support of SINAMOT Program of the National University Costa Rica, ITIC-CAR and Puerto Rico Seismic Network (PRSN) to organize this workshop.
27. **The ICG acknowledged** the success of the Tides Training Course in Spanish on 13–17 November in 2023, Costa Rica, jointly organized and funded by the International Hydrographic Organization (IHO), the International Maritime Organization (IMO), the Intergovernmental Oceanographic Commission of UNESCO (UNESCO-IOC) and NOAA (USA).
28. **The ICG encouraged** the Secretariat, with Working Group 2, to organize sea level training courses in English and Spanish languages in alternating years with the support of NOAA and the Secretariat, and in close collaboration with the International Hydrographic Organization (IHO) and the International Maritime Organization (IMO).
29. **The ICG acknowledged** that a Joint Expert Meeting on Seismic Sources in the Northwest Caribbean and on Non-Seismic Sources of Tsunamis for the Caribbean and Adjacent Regions has been scheduled for 2–5 December 2024 in Heredia, Costa Rica.
30. **The ICG** **noted** that evacuation times are necessary to determine the feasibility of tsunami evacuation maps and plans and **recommended** the Secretariat with Working Group 4 to seek funding and organize a workshop on estimation of evacuation modelling.
31. **The ICG also noted** that in the intersessional period the Spanish version of the IOC Manual and Guides, [86](https://unesdoc.unesco.org/ark:/48223/pf0000380540_spa.locale=en) on Multi-Annual Community Tsunami Exercise Programme Guidelines for the ICG/CARIBE-EWS was finalized and published.
32. **The ICG further noted** the possibility that this workshop be held in Antigua and Barbuda with partial funding from United States Agency for International Development Bureau of Humanitarian Affairs (USAID/BHA) as part of Tsunami Ready projects and **recommended** CTIC and ITIC-CAR in coordination with Working Group 4 and CARIBE WAVE Task Team to organize a joint training on Manuals and Guides 86 and CARIBE WAVE Task Team meeting in Antigua and Barbuda during the following intersessional period.
33. **The ICG noted** the inventory of tsunami warning dissemination and communication methods for the Caribbean and adjacent regions, prepared by Working Group 3.
34. **The ICG appreciated** the support provided by the International Tsunami Information Center Caribbean Office (ITIC-CAR) in the preparation of this document, as well as the contributions of other stakeholders.
35. **The ICG recommended** Working Group 3 to finalize and submit the Inventory document including the results of the CARIBE WAVE 24 exercise and **also recommended** the UNESCO-IOC Tsunami Resilience Section to promote and make available the final document to ICG/CARIBE-EWS Member States and other stakeholders.
36. **The ICG appreciated** the NOAA ITIC-CAR and Pacific Tsunami Warning Center (PTWC) for improving the automated processing and continued reporting on the status of seismic and sea level stations.
37. **The ICG noted** that a high percentage of the stations in the CARIBE-EWS sea level network and seismic network are currently non-operational and therefore can delay the proper assessment of tsunami events and the issuance of timely and accurate tsunami alerts.
38. **The ICG urged** Member States and operators of seismic and sea-level stations contributing to CARIBE-EWS to maintain their stations in an operational status and regularly review and update the status of its stations, in the IOC Sea Level Monitoring Facility and in PTWC monthly maps posted on the ITIC website and inform ITIC-CAR and Secretariat on plans for repair.
39. **The ICG** **urged** Member States to have up-to-date Tsunami Response Plans and SOPs, including addressing local tsunamis, as well as designated and trained warning authorities.
40. **The ICG requested** Working Group 3 to review and revise Technical, Logistical and Administrative Requirements of a Regional Tsunami Service Provider for CARIBE-EWS and present at its 18th session at the latest.
41. **The ICG noted** the progress made by Central America Tsunami Advisory Centre (CATAC) on Earthquake Early Warning (EEW) and potential applications for tsunami warning and communication and **recommended** that CATAC study the integration of EEW applications for disseminating its tsunami services and products to its TWFP and NTWCs on this subject at the eighteenth session of the ICG/CARIBE-EWS.
42. **The ICG also noted** the renewal of the memorandum of understanding between the Government of Barbados and UNESCO-IOC regarding CTIC which has been strengthened by the extension of the duration from 3 to 5 years.
43. **The ICG further noted** **with appreciation** the close cooperation between CTIC, ITIC-CAR, Working Group 4, CARIBE WAVE Task Team and UNDRR in advancing preparedness, readiness and resilience to mitigate the impacts of tsunamis and other coastal hazards in the CARIBE-EWS region, in particular with regard to the implementation of the Tsunami Ready programme, the dissemination and development of educational and outreach resources, support to the United Nations Decade of Ocean Science for Sustainable Development including the work of the Tropical Americas and Caribbean Decade Safe Ocean Working Group.
44. **The ICG welcomed** the expansion of the CTIC mandate since its establishment due to the alignment with strategic policy frameworks and programmes such as the UN Sustainable Development Goals, the Sendai Framework for Disaster Risk Reduction, the UN Ocean Decade, UN EW4ALL Initiative, CDEMA-led Comprehensive Disaster Management Strategy & Framework, and the UNESCO-IOC Tsunami Ready Programme, resulting in an increased workload and opportunities to integrate the full role and functions of CTIC (including other coastal hazards) regionally and globally and **further appreciated** the emerging policy matters such as the need to integrate social science, behaviour change, disabled and vulnerable (youth, women, indigenous groups, poor).
45. **The ICG recommended** a strategic review by the CARIBE-EWS Steering Committee of the staffing resources needed to ensure adequate capacity at the CTIC to effectively execute and implement the programmatic and project activities to support the ICG/CARIBE-EWS and EW4All frameworks.
46. **The ICG** **recalled** that World Tsunami Awareness Day (WTAD) is observed annually on 5 November and **noted** the 2024 theme for the WTAD is “Empowering Children and Youth, ensuring the next generation is tsunami prepared”, which complemented CARIBE WAVE 2024 efforts.
47. **The ICG** **acknowledged** the leadership of CTIC in organizing activities leading to increased participation and visibility of WTAD in 2021, 2022 and 2023 and **encouraged** Member States to observe WTAD and to share their activities with CTIC.
48. **The ICG noted** the successful conduct of the CARIBE WAVE 24 Exercise with the participation of 100 percent of the Member States and over 475,000 people registered and **urged** Member States to complete CARIBE WAVE 24 survey evaluations in a timely manner.
49. **The ICG decided** that the CARIBE WAVE 25 exercise will take place on Thursday, March 20, 2025, commencing at 15:00 UTC with one dummy message for the communication test from PTWC and CATAC to the TWFPs and NTWCs, and **reconfirmed** that CARIBE WAVE 25 will use the two CARIBE WAVE 20 scenarios: 1) 1692 Jamaica scenario; and 2) the 1755 Lisbon scenario.
50. **The ICG also requested** that Member States consider conducting all or part of their exercise response activities during non-working hours, particularly at night, to be better prepared for tsunami events that are more likely to occur during non-working hours and additionally **reminded** Member States to consider including their selected CARIBE WAVE 25 scenario within a multi-hazard framework wherever possible.
51. **The ICG suggested** that Task Team CARIBE WAVE explores opportunities to further involve tourists and tourism organizations such as the Caribbean Tourism Organisation (CTO), in CARIBE WAVE exercises, with the aim to develop multi-lingual guidelines/resources for the involvement of tourists in CARIBE WAVE Exercises, and **further** suggested that Task Team CARIBE WAVE explores opportunities to further involve national and regional maritime and port authorities so they may exercise their plans and procedures.
52. **The ICG appreciated** the report and the progress made by CATAC during the intersessional period as well as CATAC’s continued efforts to further improve its seismological system and to be able to identify the source and send timely and actionable tsunami products in the event of slow earthquakes (tsunami earthquakes), which occur in Central America, and to enhance the capacity of its users, and inform them of these possible events.
53. **The ICG recommended** that CATAC continue to implement EEW methods to accelerate and improve tsunami warning for Central America and **noted** that CATAC had presented and discussed at the Congress “Cities on Volcanoes” in Antigua, Guatemala, on 11–17 February 2024, a concept for a tsunami warning system for volcanic events in the large lakes of Nicaragua.
54. **The ICG noted** the challenges of CATAC during CARIBE WAVE 24 and **further** **noted** that CATAC will provide the updated users guide by March 2025 for the consideration of ICG/CARIBE EWS at its eighteenth session.
55. **The ICG recommended** that CATAC continues full functionality in an interim manner to be able to support the National Tsunami Warning Centres (NTWCs), Tsunami Warning Focal Points (TWFPs), and emergency management authorities of Central America in addressing those challenges, and **further** **recommended** the consideration of CATAC as a TSP at its eighteenth session in 2025 to enable the IOC Assembly to consider the final admission of CATAC as TSP in June 2025.
56. **The ICG acknowledged** UNESCO recommendation reported by the Secretariat to hold statutory meetings and recurring conferences in-person only every second time, and online every other, in order to reduce UNESCO’s carbon footprint to meet its set target of reducing its emissions by 31 percent by 2030, in line with the goals of the Paris Agreement.
57. **The ICG noted** the various 20th anniversaries of the ICG/CARIBE-EWS, namely the 20th anniversary of the establishment of the ICG/CARIBE-EWS (2025), the 20th anniversary of the first ICG/CARIBE-EWS session (2026) and the 20th Session of the ICG/CARIBE-EWS (2027).
58. **The ICG further noted** that these anniversaries had already been noted as an important opportunity for raising awareness on the achievements and remaining challenges in ensuring tsunami resilience in the Caribbean and its Adjacent regions within the broader context of Multi-Hazard Early Warning Systems (MHEWS) framework and UNSG’s EW4All initiative and the post-pandemic resumption of tsunami preparedness activities.
59. **The ICG especially noted** the importance of in-person meetings providing opportunities for informal exchange outside of formal meeting sessions to address issues that facilitate the work of the ICG.
60. **The ICG decided** to hold the ICG/CARIBE-EWS-XVIII in-person in the week of 5 May 2025 and to consider organizing a back-to-back Tsunami Ready Summit to review the benefits and lessons learned and to establish a road map towards 100 percent communities prepared for and resilient to tsunamis through efforts like Tsunami Ready.
61. **The ICG noted with appreciation** the considerations expressed by France (Martinique) or Panama to host ICG/CARIBE-EWS-XVIII.
62. **The ICG decided** to conduct ICG/CARIBE-EWS-XVIII virtually if no official communication from neither France (Martinique), Panama or any other Member State interested in hosting ICG/CARIBE-EWS-XVIII is officially communicated to the Secretariat by 9 August 2024.
63. **The ICG recommended** conducting the ICG/CARIBE-EWS-XIX in-person tentatively in the week of 20 April 2026.
64. **The ICG also noted with appreciation** the possibility of Barbados to host the ICG/CARIBE-EWS-XIX.
65. **The ICG decided** to consider conducting its future sessions from 2026 onwards in-person only every second year, and online every other.

# **Résumé exécutif**

1. La dix-septièmesession du Groupe intergouvernemental de coordination du système d’alerte aux tsunamis et autres risques côtiers dans la mer des Caraïbes et les régions adjacentes de l’UNESCO-COI (GIC/CARIBE-EWS-XVII) s’est tenue du 6 au 9 mai 2024 à Managua (Nicaragua), selon des modalités hybrides. Quatre-vingt-trois (83) participants, dont 28 présents en personne et 55 présents en ligne, représentant 15 États et territoires membres et trois organisations observatrices – à savoir le Réseau sismique de Porto Rico, l’Organisation météorologique mondiale (OMM) et le Bureau régional pour les Amériques et les Caraïbes du Bureau des Nations Unies pour la prévention des catastrophes (UNDRR) – ont assisté à la session. Les représentants ont souligné tout l’intérêt que présentait la tenue en face-à-face des sessions du GIC/CARIBE-EWS, en particulier dans le contexte des différentes manifestations liées au 20e anniversaire du GIC. Toutefois, compte tenu de la cible que s’est fixée l’UNESCO pour réduire son empreinte carbone (à savoir de faire baisser ses émissions de 31 % d’ici à 2030), conformément aux objectifs de l’Accord de Paris de 2015, les représentants ont décidé qu’à partir de 2026, ils pourraient envisager d’organiser les futures sessions du GIC en présentiel une année sur deux, et en ligne une année sur deux. Les interactions quotidiennes entre les experts et la création de liens entre les États membres jouent un rôle essentiel pour le succès des travaux et l’obtention des résultats souhaités.

2. **Le GIC a pris note** des éléments transversaux du programme de travail du GIC/CARIBE-EWS, définis en lien étroit avec l’initiative « Alertes précoces pour tous » du Secrétaire général de l’ONU et suivant les orientations de cadres stratégiques tels que le Programme relatif aux tsunamis de la Décennie des Nations Unies pour les sciences océaniques et le programme de certification Tsunami Ready de l’UNESCO/COI.

3. **Le GIC a reconnu** l’intérêt d’être doté, comme les autres GIC, d’un comité directeur, qui constitue un instrument efficace de gestion axée sur les résultats lui permettant notamment d’assurer le suivi de l’exécution de ses décisions et recommandations.

4. **Le GIC a également reconnu** que la création du Comité directeur du GIC/CARIBE-EWS marquerait une nouvelle étape de l’harmonisation des structures mondiales de gouvernance des GIC. Il a donc **décidé** de créer un Comité de pilotage GIC/CARIBE-EWS chargé, entre autres, des tâches suivantes :

(i) assurer la cohésion de la structure organisationnelle et de la structure de gouvernance du GIC/CARIBE-EWS ;

(ii) assurer le suivi, la cohésion et l’actualisation du Plan de mise en œuvre du CARIBE-EWS ;

(iii) superviser l’exécution des décisions et des recommandations du GIC ;

(iv) élaborer une stratégie de financement des activités du CARIBE-EWS ;

(v) suivre les performances et vérifier que les prestataires de services relatifs aux tsunamis (TSP) respectent systématiquement les fonctions et exigences opérationnelles et organisationnelles adoptées ;

(vi) donner son impulsion aux travaux et à l’orientation du CARIBE-EWS en vue de contribuer à la réalisation des objectifs du Programme relatif aux tsunamis de la Décennie de l’Océan, à l’appui du plan décennal de recherche, de développement et de mise en œuvre de celui-ci ;

(vii) rendre compte au GIC/CARIBE-EWS des progrès réalisés vis-à-vis des indicateurs de performance clés du Programme relatif aux tsunamis de la Décennie de l’Océan ;

(viii) élaborer une stratégie afin d’assurer une coordination efficace avec la Sous-Commission de la COI pour la mer des Caraïbes et les régions adjacentes (IOCARIBE), l’UNDRR, l’OMM et les autres parties prenantes régionales ;

(ix) réorganiser, pendant la période intersessions et en coordination avec le Secrétariat de l’IOCARIBE, compte tenu de l’initiative « Alertes précoces pour tous » co-dirigée par l’OMM et l’UNDRR, le plan de travail et de mise en œuvre du groupe d’experts, en vue d’améliorer le système d’alerte en incluant d’autres risques côtiers ;

(x) fournir une supervision et des conseils stratégiques au Centre d’information sur les tsunamis dans les Caraïbes (CTIC) concernant la mise en œuvre d’activités de sensibilisation aux tsunamis et de renforcement des capacités ;

(xi) organiser des manifestations et d’autres actions et activités associées à la célébration des différentes composantes du 20e anniversaire du GIC/CARIBE-EWS.

5. **Le GIC a félicité** les communautés et les États membres qui ont été certifiés Tsunami Ready pendant la période intersessions : Saint George (Saint-Vincent-et-les Grenadines) ; Christ Church West (Barbade) ; et Deshaies (Guadeloupe, France).

6. **Le GIC a pris note** de la nécessité de mettre davantage l’accent sur l’identification et la mise en œuvre de stratégies adaptées dans les Caraïbes et les régions adjacentes, en vue d’atteindre le deuxième objectif du Programme relatif aux tsunamis de la Décennie de l’Océan, à savoir « que 100 % des communautés exposées aux tsunamis soient préparées et résilientes face à ce risque d’ici à 2030, grâce à la mise en œuvre du programme Tsunami Ready de l’UNESCO/COI et d’autres initiatives ».

7. **Le GIC a remercié** le Bureau de l’aide humanitaire de l’Agence des États-Unis pour le développement international, l’Australie, la Norvège et le Programme de préparation aux catastrophes du Service d’aide humanitaire de la Commission européenne (DIPECHO) pour le financement de la mise en œuvre du programme Tsunami Ready.

8. **Le GIC a invité** tous les États membres à mettre en œuvre ou à soutenir la mise en œuvre du programme Tsunami Ready dans leurs communautés ou dans celles d’un autre État membre.

9. **Le GIC a décidé** de créer une équipe spéciale « Tsunami Ready ».

10. **Le GIC** **s’est félicité** de l’offre du Bureau des Caraïbes du Centre international d’information sur les tsunamis de mettre un stagiaire à la disposition du GIC/CARIBE-EWS pendant 10 semaines à l’appui de la mise en œuvre de l’enquête Tsunami Ready, et **a pris note** de ce que le Groupe de travail sur les systèmes d’alerte aux tsunamis et autres aléas liés au niveau de la mer, et de mitigation (TOWS-WG) a demandé « (xiii) d’envisager l’introduction d’un formulaire d’évaluation de l’état de préparation aux tsunamis dans les autres GIC que le GIC/CARIBE-EWS, ainsi que sa traduction en espagnol et en français et sa gestion par la Section de la résilience aux tsunamis de la COI ».

11. **Le GIC a recommandé** à son Comité directeur et au Secrétariat d’évaluer le processus de mise en œuvre au sein du GIC/CARIBE-EWS et d’informer celui-ci de l’état d’avancement de cette évaluation dans d’autres GIC, conformément à la recommandation du TOWS-WG-XVII.

12. **Le GIC a par ailleurs pris note** des progrès réalisés dans la mise en œuvre dans le Pacifique et l’Atlantique de l’initiative SMART portant sur les câbles, approuvée par la Décennie de l’Océan.

13. **Le GIC a décidé** de constituer un sous-groupe rattaché au Groupe de travail 2 pour traiter spécifiquement de la mise en œuvre de cette technologie au sein du CARIBE-EWS.

14. **Le GIC a demandé** au Comité directeur de réorganiser, avec le soutien du Comité directeur et du Secrétaire technique du GIC/CARIBE-EWS, pendant la période intersessions et en coordination avec le Secrétariat de l’IOCARIBE et les bureaux régionaux de l’OMM et de l’UNDRR, l’initiative portant sur le groupe d’experts chargé du plan de travail et de la mise en œuvre, en vue d’améliorer le système d’alerte en incluant d’autres risques côtiers.

15. **Le GIC a pris acte** de la tenue de l’atelier sur l’évacuation des tsunamis organisé au Costa Rica en avril 2024, avec la participation de sept États membres du GIC/CARIBE-EWS, à savoir la République dominicaine, le Mexique, le Guatemala, le Nicaragua, le Costa Rica, le Panama, la Colombie et les États-Unis (Porto Rico), **et s’est félicité** du rôle de chef de file joué par l’Institut des phénomènes extrêmes de l’Université internationale de Floride, du financement fourni par le Bureau de l’aide humanitaire de l’Agence des États-Unis pour le développement international et le Secrétariat du GIC/CARIBE-EWS, ainsi que du soutien apporté par le programme SINAMOT de l’Université nationale du Costa Rica, le Bureau des Caraïbes du Centre international d’information sur les tsunamis et le Réseau sismique de Porto Rico dans l’organisation de l’atelier.

16. **Le GIC a pris note** du succès du stage de formation sur les marées, dispensé en espagnol du 13 au 17 novembre 2023 au Costa Rica, conjointement organisé et financé par l’Organisation hydrographique internationale (OHI), l’Organisation maritime internationale (OMI), la Commission océanographique intergouvernementale (COI) de l’UNESCO et l’Administration américaine pour les océans et l’atmosphère (NOAA, États-Unis).

17. **Le GIC a encouragé** le Secrétariat à organiser, avec le Groupe de travail 2, des cours de formation sur le niveau de la mer, alternativement en anglais et en espagnol (une année sur deux), avec le soutien de la NOAA et du Secrétariat, et en étroite coopération avec l’Organisation hydrographique internationale (OHI) et l’Organisation maritime internationale (OMI).

18. **Le GIC a pris acte** du fait qu’une réunion conjointe d’experts sur les sources sismiques (dans le Nord-Ouest des Caraïbes) et non sismiques de tsunamis dans les Caraïbes et les régions adjacentes a été programmée du 2 au 5 décembre 2024 à Heredia (Costa Rica) .

19. **Le GIC a noté** que des délais d’évacuation sont nécessaires pour déterminer la faisabilité des cartes et plans d’évacuation en cas de tsunamis et **a recommandé** au Secrétariat, en coopération avec le Groupe de travail 4, de rechercher un financement et d’organiser un atelier sur les estimations dans le cadre de la modélisation de l’évacuation.

20. **Le GIC a également noté** qu’au cours de la période intersessions, la version espagnole du numéro [86](https://unesdoc.unesco.org/ark:/48223/pf0000380540_spa.locale=en) de la série de Manuels et guides de la COI, intitulé « Programme pluriannuel d’exercices de préparation des communautés aux tsunamis: lignes directrices du Système d’alerte aux tsunamis et autres risques côtiers dans la mer des Caraïbes et les régions adjacentes », a été finalisée et publiée.

21. **Le GIC a en outre noté** la possibilité qu’un atelier se tienne à Antigua-et-Barbuda avec un financement partiel du Bureau de l’aide humanitaire de l’Agence des États-Unis pour le développement international, dans le cadre des projets Tsunami Ready, et **a recommandé** au Centre d’information sur les tsunamis dans les Caraïbes (CTIC) et au Bureau des Caraïbes du Centre international d’information sur les tsunamis (CIIT), en coordination avec le Groupe de travail 4 et l’Équipe spéciale chargée de l’exercice CARIBE WAVE, d’organiser à Antigua-et-Barbuda, au cours de la prochaine période intersessions, une formation conjointe sur le numéro 86 de la série de Manuels et guides de la COI, ainsi que la réunion de l’Équipe spéciale chargée de l’exercice CARIBE WAVE.

22. **Le GIC a pris note** de l’inventaire des méthodes de diffusion et de communication des alertes aux tsunamis dans les Caraïbes et les régions adjacentes établi par le Groupe de travail 3.

23. **Le GIC a remercié** le Bureau des Caraïbes du CIIT pour l’aide qu’il a apportée dans l’élaboration du document de présentation de cet inventaire, ainsi que les autres parties prenantes pour leurs contributions à ce document.

24. **Le GIC a recommandé** au Groupe de travail 3 de finaliser et de soumettre ce document, y compris les résultats de l’exercice CARIBE WAVE 24, et **a également recommandé** à la Section de la résilience aux tsunamis de la COI (IOC/TSR) de promouvoir le document final, et de le mettre à la disposition des États membres du GIC/CARIBE-EWS ainsi que des autres parties prenantes.

25. **Le GIC a remercié** le Bureau des Caraïbes du CIIT de la NOAA ainsi que le Centre d’alerte aux tsunamis dans le Pacifique d’avoir amélioré le traitement automatisé et la transmission continue des informations sur l’état des stations sismiques et marégraphiques.

26. **Le GIC a noté** qu’un fort pourcentage de stations sismiques et marégraphiques des réseaux du CARIBE-EWS n’était actuellement pas opérationnel, ce qui est susceptible de retarder la bonne évaluation des tsunamis et l’émission en temps voulu d’alertes aux tsunamis précises.

27. **Le GIC a exhorté** les États membres, ainsi que les opérateurs de stations sismiques et marégraphiques contribuant au CARIBE-EWS, à maintenir leurs stations en état opérationnel, et à vérifier et mettre à jour régulièrement leur état dans le dispositif de surveillance du niveau de la mer de la COI, ainsi que sur les cartes mensuelles du Centre d’alerte aux tsunamis dans le Pacifique publiées sur le site Web du CIIT, et à tenir le Bureau des Caraïbes du CIIT et le Secrétariat informés des projets de réparation.

28. **Le GIC a exhorté** les États membres à se doter de plans d’intervention en cas de tsunami et de procédures opérationnelles normalisées à jour, notamment en ce qui concerne les tsunamis locaux, ainsi que d’autorités d’alerte désignées et formées à cet effet.

29. **Le GIC a demandé** au Groupe de travail 3 d’examiner et de réviser les critères techniques, logistiques et administratifs s’appliquant au Prestataire régional de services relatifs aux tsunamis (RTSP) pour le CARIBE-EWS et de les lui présenter au plus tard à sa dix-huitième session.

30. **Le GIC a pris note** des progrès réalisés par le Centre consultatif sur les tsunamis en Amérique centrale (CATAC) en matière d’alerte rapide aux séismes et d’applications potentielles pour l’alerte aux tsunamis et la communication, et **a recommandé** que le CATAC étudie l’intégration d’applications d’alerte rapide aux séismes en vue d’assurer la diffusion de ses services et de ses produits relatifs aux tsunamis auprès des points focaux pour l’alerte aux tsunamis (TWFP) et des centres nationaux d’alerte aux tsunamis (NTWC) chargés de cette thématique à la dix-huitième session du GIC/CARIBE-EWS.

31. **Le GIC a également** **pris note** du renouvellement du protocole d’accord entre le Gouvernement de la Barbade et l’UNESCO-COI relatif au Centre d’information sur les tsunamis dans les Caraïbes (CTIC), renforcé par une prolongation de durée, la portant de 3 à 5 ans.

32. **Le GIC a en outre pris note** avec satisfaction de l’étroite coopération entre le CTIC, le Bureau des Caraïbes du CIIT, le Groupe de travail 4, l’Équipe spéciale chargée de l’exercice CARIBE WAVE et l’UNDRR visant à faire progresser la préparation, la disponibilité opérationnelle et la résilience afin d’atténuer l’impact des tsunamis et autres risques côtiers dans le CARIBE-EWS, en particulier sur le plan de la mise en œuvre du programme Tsunami Ready, de la diffusion et de l’élaboration de ressources de sensibilisation et d’éducation, du soutien à la Décennie des Nations Unies pour les sciences océaniques au service du développement durable, notamment aux travaux du Groupe de travail de la Décennie sur la sécurité des océans pour l’Amérique tropicale et les Caraïbes.

33. **Le GIC s’est félicité** de l’élargissement du mandat du CTIC depuis sa création en raison de l’harmonisation avec les cadres politiques et les programmes stratégiques, tels que les objectifs de développement durable (ODD), le Cadre de Sendai pour la réduction des risques de catastrophe, la Décennie des Nations Unies pour les sciences océaniques (Décennie de l’Océan), l’initiative « Alertes précoces pour tous » du système des Nations Unies, la stratégie et cadre de gestion globale des catastrophes piloté par l’Agence caraïbe pour les secours d’urgence en cas de catastrophe naturelle (CDEMA), et le programme Tsunami Ready de la COI, qui a entraîné une augmentation de la charge de travail et créé des possibilités d’intégrer l’ensemble du rôle et des fonctions du CTIC (en incluant d’autres risques côtiers) aux niveaux régional et mondial, et **a par ailleurs pris acte** des questions politiques émergentes, et notamment de la nécessité de prendre en compte les sciences sociales, les changements de comportement, et les personnes handicapées et vulnérables (à savoir les jeunes, les femmes, les groupes autochtones et les pauvres).

34. **Le GIC a recommandé** que le Comité directeur du CARIBE-EWS procède à un examen stratégique des ressources en personnel nécessaires afin que le CTIC dispose de capacités suffisantes pour exécuter et mettre en œuvre efficacement les activités programmatiques et les activités de projet prévues à l’appui des cadres du GIC/CARIBE-EWS et de l’initiative « Alertes précoces pour tous ».

35. **Le GIC a rappelé** que la Journée mondiale de sensibilisation aux tsunamis était célébrée chaque année le 5 novembre et **a noté** que le thème de la Journée mondiale 2024 était « Empowering Children and Youth, ensuring the next generation is tsunami prepared » (autonomiser les enfants et les jeunes afin de faire en sorte que la prochaine génération soit préparée aux tsunamis), ce qui s’inscrit dans le prolongement des efforts de CARIBE WAVE 2024.

36. **Le GIC a reconnu** le rôle de chef de file joué en 2021, 2022 et 2023 par le CTIC s’agissant d’organiser des activités visant à accroître la participation à la Journée mondiale de sensibilisation aux tsunamis, et la visibilité de celle-ci, et **a encouragé** les États membres à observer cette Journée mondiale et à communiquer leurs activités connexes au CTIC.

37. **Le GIC a pris note** de ce que l’exercice CARIBE WAVE 24 s’était déroulé avec succès, avec la participation de 100 % des États membres et de plus de 475 000 inscrits, et **a exhorté** les États membres à remplir rapidement les questionnaires d’évaluation de l’exercice.

38. **Le GIC a décidé** que l’exercice CARIBE WAVE 25 aurait lieu le jeudi 20 mars 2025, à partir de 15 heures UTC, et qu’il démarrerait par la transmission d’un message fictif pour effectuer l’essai de communication entre les Centre d’alerte aux tsunamis dans le Pacifique et Centre consultatif sur les tsunamis en Amérique centrale (CATAC) et les points focaux pour l’alerte aux tsunamis et centres nationaux d’alerte aux tsunamis (NTWC), et **a reconfirmé** que l’exercice CARIBE WAVE 25 utiliserait les deux scénarios de l’exercice CARIBE WAVE 20 : (1) le scénario de 1692 en Jamaïque ; et (2) le scénario de 1755 à Lisbonne.

39. **Le GIC a par ailleurs demandé** aux États membres d’envisager de mener tout ou partie des activités qu’ils mènent dans le cadre des exercices en dehors des heures de travail, en particulier la nuit, afin d’être mieux préparés aux tsunamis, qui sont plus susceptibles de se produire en dehors des heures de travail, et **a rappelé** aux États membres d’envisager chaque fois que c’est possible d’inscrire le scénario de l’exercice CARIBE WAVE 25 qu’ils auront choisi dans le cadre d’un dispositif multi-aléas.

40. **Le GIC a suggéré** que l’Équipe spéciale chargée de l’exercice CARIBE WAVE étudie les possibilités de faire davantage participer les touristes et les organisations de tourisme, telles que l’Organisation du tourisme des Caraïbes, aux exercices CARIBE WAVE, dans la perspective d’élaborer des lignes directrices/ressources multilingues relatives à la participation des touristes aux exercices CARIBE WAVE, et **a suggéré également** que l’Équipe spéciale chargée de l’exercice CARIBE WAVE étudie les possibilités de faire davantage participer les autorités maritimes et portuaires nationales et régionales, afin qu’elles puissent mettre en œuvre leurs plans et procédures.

41. **Le GIC s’est félicité** du rapport du CATAC ainsi que des progrès réalisés par celui-ci pendant l’intersession, et des efforts que le CATAC a déployé sans relâche en vue d’une part d’améliorer encore son système sismologique, afin d’être en mesure d’identifier la source d’un séisme et de transmettre en temps opportun des produits relatifs aux tsunamis susceptibles de déclencher une intervention en cas de séismes lents (tsunamigènes) survenant en Amérique centrale, et d’autre part de renforcer les capacités de ses utilisateurs, et d’informer ceux-ci de ces phénomènes potentiels.

42. **Le GIC a recommandé** que le CATAC continue de mettre en œuvre des méthodes d’alerte rapide aux séismes afin d’accélérer et d’améliorer l’alerte aux tsunamis en Amérique centrale et **a pris note** de ce que le CATAC a présenté et soumis aux débats, lors du congrès consacré aux villes volcaniques qui s’est tenu à Antigua (Guatemala) du 11 au 17 février 2024, un concept de système d’alerte aux tsunamis en cas de phénomènes volcaniques dans les grands lacs du Nicaragua.

43. **Le GIC a pris note** des difficultés rencontrées par le CATAC au cours de l’exercice CARIBE WAVE 24 et **a pris note** **également** de ce que le CATAC fournira d’ici mars 2025 au GIC/CARIBE EWS, pour examen à sa dix-huitième session, la version actualisée du guide des utilisateurs.

44. **Le GIC a recommandé** qu’à titre provisoire, le CATAC maintienne toutes ses fonctionnalités afin de pouvoir aider les centres nationaux d’alerte aux tsunamis (NTWC), les points focaux pour l’alerte aux tsunamis et les autorités chargées de la gestion des situations d’urgence en Amérique centrale à surmonter ces difficultés, et **a recommandé** **également** d’envisager, à sa dix-huitième session en 2025, d’octroyer au CATAC le statut de prestataire de services relatifs aux tsunamis (TSP), dans la perspective de soumettre l’admission définitive du CATAC à ce statut à l’examen de l’Assemblée de la COI en juin 2025.

45. **Le GIC a pris acte** de la recommandation de l’UNESCO, relayée par le Secrétariat, préconisant d’organiser les réunions statutaires et les conférences récurrentes une fois sur deux en présentiel, et une fois sur deux en ligne, afin de réduire l’empreinte carbone de l’UNESCO et d’atteindre la cible qu’elle s’est fixée de faire baisser ses émissions de 31 % d’ici à 2030, conformément aux objectifs de l’Accord de Paris.

46. **Le GIC a pris note** des différentes composantes du 20e anniversaire du GIC/CARIBE-EWS, à savoir le 20e anniversaire de la création du GIC/CARIBE-EWS (2025), le 20e anniversaire de la première session du GIC/CARIBE-EWS (2026) et la 20e session du GIC/CARIBE-EWS (2027).

47. **Le GIC a pris note également** de ce que ces anniversaires avaient déjà été envisagés comme une occasion importante de sensibiliser les acteurs concernés à tout ce qui a déjà été accompli, et aux difficultés qu’il reste à surmonter, en vue d’assurer la résilience face aux tsunamis dans les Caraïbes et les régions adjacentes dans le contexte plus large des systèmes d’alerte précoce multidangers (MHEWS) et de l’initiative « Alertes précoces pour tous » du Secrétaire général de l’ONU, ainsi que de la reprise postpandémie des activités de préparation aux tsunamis.

48. **Le GIC a tout particulièrement pris note** de l’importance des réunions en présentiel, qui offrent en dehors des séances formelles des possibilités d’échanges informels permettant d’aborder diverses questions susceptibles de faciliter le travail du GIC.

49. **Le GIC a décidé** d’organiser la dix-huitième session du GIC/CARIBE-EWS (GIC/CARIBE-EWS-XVIII) en présentiel durant la semaine du 5 mai 2025, et d’envisager l’organisation d’un sommet « Tsunami Ready » afin de faire le bilan des bénéfices et enseignements tirés de l’expérience et d’établir une feuille de route pour des communautés préparées et résilientes à 100 % face aux tsunamis au moyen d’initiatives telles que le programme Tsunami Ready.

50. **Le GIC a pris note avec satisfaction** de l’intérêt exprimé par la France (Martinique) et le Panama s’agissant d’accueillir la GIC/CARIBE-EWS-XVIII.

51. **Le GIC a décidé** de conduire les travaux de la GIC/CARIBE-EWS-XVIII selon des modalités virtuelles si aucune communication officielle n’est parvenue au Secrétariat, de la part de la France (Martinique), du Panama ou de tout autre État membre souhaitant accueillir la GIC/CARIBE-EWS-XVIII, au plus tard le 9 août 2024.

52. **Le GIC a recommandé** que la dix-neuvième session du GIC/CARIBE-EWS (GIC/CARIBE-EWS-XIX) se tienne aussi en présentiel, en principe la semaine du 20 avril 2026.

53. **Le GIC a pris note avec satisfaction** de la possibilité pour la Barbade d’accueillir la GIC/CARIBE-EWS-XIX.

54. **Le GIC a décidé** d’envisager, à partir de 2026, de tenir ses futures sessions en présentiel seulement une année sur deux, et en ligne une année sur deux.

# **Resumen dispositivo**

1. La 17ª reunión del Grupo Intergubernamental de Coordinación del Sistema de Alerta contra los Tsunamis y otras Amenazas Costeras en el Caribe y Regiones Adyacentes (ICG/CARIBE-EWS-XVII) de la UNESCO-COI tuvo lugar del 6 al 9 de mayo de 2024 en Managua (Nicaragua) con un formato híbrido. A ella asistieron 83 participantes —28 de forma presencial y 55 de forma virtual— procedentes de 15 Estados Miembros y territorios y de tres organizaciones observadoras, a saber, la Red Sísmica de Puerto Rico (PRSN), la Organización Meteorológica Mundial (OMM) y la oficina regional para las Américas y el Caribe de la Oficina de las Naciones Unidas para la Reducción del Riesgo de Desastres (UNDRR). Los representantes subrayaron el importante valor de llevar a cabo el trabajo del ICG de forma presencial, especialmente teniendo en cuenta los próximos vigésimos aniversarios del ICG/CARIBE-EWS. No obstante, habida cuenta del objetivo de la UNESCO de reducir su huella de carbono para alcanzar la meta de disminuir sus emisiones en un 31 % de aquí a 2030, en consonancia con los objetivos del Acuerdo de París de 2015, en la reunión se decidió considerar la posibilidad, a partir de 2026, de celebrar las reuniones futuras de forma presencial solo cada dos años, y las demás de forma virtual. La interacción diaria de los expertos y el establecimiento de relaciones entre los Estados Miembros son fundamentales para el éxito de los resultados obtenidos.
2. **El ICG tomó nota** de los componentes transversales del programa de trabajo del ICG/CARIBE-EWS, estrechamente vinculados con la iniciativa del Secretario General de las Naciones Unidas Alertas Tempranas para Todos y guiados por elementos estratégicos como el Programa de Tsunamis del Decenio del Océano de las Naciones Unidas y el Programa de Reconocimiento Tsunami Ready de la UNESCO/COI.
3. **El ICG reconoció** la ventaja de contar con un comité de dirección, similar al de otros ICG, como instrumento eficaz de gestión basada en los resultados, sobre todo para supervisar la aplicación de sus decisiones y recomendaciones.
4. **El ICG también reconoció** que la creación de un comité de dirección del ICG/CARIBE-EWS supondría un paso más hacia la armonización de las estructuras de gobernanza del ICG, independientemente de la región, y **decidió** crear un comité de dirección del ICG/CARIBE-EWS que se encargaría, especialmente, de lo siguiente:
5. mantener la estructura organizativa y la gobernanza del ICG/CARIBE-EWS;
6. supervisar, mantener y actualizar el Plan de Ejecución del CARIBE-EWS;
7. supervisar la aplicación de las decisiones y recomendaciones del ICG;
8. formular una estrategia para financiar las actividades del CARIBE-EWS;
9. hacer un seguimiento de los resultados y velar por el cumplimiento permanente por parte de los proveedores de servicios sobre tsunamis (TSP) de las funciones y los requisitos operacionales y organizativos aprobados;
10. orientar el trabajo del CARIBE-EWS para ayudar a alcanzar los objetivos del Programa de Tsunamis del Decenio del Océano de las Naciones Unidas y, de esa forma, respaldar el Plan de Investigación, Desarrollo y Ejecución decenal de dicho Programa;
11. informar al ICG/CARIBE-EWS de los progresos realizados en relación con los indicadores clave del desempeño del Plan de Investigación, Desarrollo y Ejecución del Programa de Tsunamis del Decenio del Océano de las Naciones Unidas;
12. formular una estrategia para una coordinación eficaz con la Subcomisión de la COI para el Caribe y Regiones Adyacentes (IOCARIBE), la UNDRR, la OMM y otras partes interesadas regionales;
13. reformar la iniciativa del grupo de expertos sobre el plan de trabajo y de ejecución para mejorar el sistema de alerta mediante la inclusión de otros peligros costeros, durante el periodo entre reuniones, en coordinación con la Secretaría de IOCARIBE y teniendo en cuenta la iniciativa Alertas Tempranas para Todos de la OMM y la UNDRR;
14. supervisar el Centro de Información sobre los Tsunamis en el Caribe (CTIC) y ofrecerle orientación estratégica en lo que se refiere a la ejecución de sus actividades de sensibilización y desarrollo de capacidades en materia de tsunamis;
15. organizar eventos y otras iniciativas y actividades en relación con los vigésimos aniversarios del ICG/CARIBE-EWS.
16. **El ICG felicitó** a los Estados Miembros y comunidades que habían recibido la acreditación Tsunami Ready en el periodo entre reuniones, a saber, Saint George (San Vicente y las Granadinas), Christ Church West (Barbados) y Deshaies (Guadalupe, Francia).
17. **El ICG tomó nota** dela necesidad de centrarse más en encontrar y emplear estrategias adecuadas en el Caribe y las regiones adyacentes para alcanzar el segundo objetivo del Programa de Tsunamis del Decenio del Océano de lograr que la totalidad de las comunidades en situación de riesgo estén preparadas y sean resilientes a los tsunamis de aquí a 2030, gracias a iniciativas como el Programa de Reconocimiento Tsunami Ready de la UNESCO/COI.
18. **El ICG agradeció** la financiación de la Oficina de Asistencia Humanitaria de la Agencia de los Estados Unidos para el Desarrollo Internacional (USAID/BHA), Australia, Noruega y el Programa de Preparación ante Desastres del Departamento de Ayuda Humanitaria de la Comisión Europea (DIPECHO) para ejecutar el programa Tsunami Ready.
19. **El ICG invitó** a todos los Estados Miembros a poner en marcha o apoyar la puesta en marcha de Tsunami Ready en sus comunidades o en las de otro Estado Miembro.
20. **El ICG decidió** crear un equipo de trabajo sobre Tsunami Ready.
21. **El ICG agradeció** el ofrecimiento de la Oficina del Caribe del Centro Internacional de Información sobre los Tsunamis (ITIC-CAR) de poner a disposición a un pasante durante 10 semanas para ayudar a realizar la encuesta de Tsunami Ready en el ICG/CARIBE-EWS, y **tomó nota** de la solicitud del Grupo de Trabajo sobre los Sistemas de Alerta contra los Tsunamis y Otros Peligros relacionados con el Nivel del Mar y Atenuación de sus Efectos (TOWS-WG) de “xiii) que el TT-DMP considere la posibilidad de introducir un formulario de evaluación de Tsunami Ready en los demás grupos intergubernamentales de coordinación además del ICG/CARIBE-EWS, traducirlo al español y al francés, y distribuirlo por medio de la Sección de Resiliencia frente a los Tsunamis de la COI”.
22. **El ICG recomendó** a su Comité de Dirección y a la Secretaría que evaluaran el proceso de ejecución en el ICG/CARIBE-EWS e informaran al ICG/CARIBE-EWS sobre la puesta en marcha de esta iniciativa en otros ICG, de conformidad con la recomendación de la TOWS-WG-XVII.
23. **El ICG tomó nota además** de los progresos realizados en la aplicación de la iniciativa sobre cables SMART en el Pacífico y el Atlántico, respaldada por el Decenio del Océano de las Naciones Unidas.
24. **El ICG decidió** crear un subgrupo dentro del grupo de trabajo 2 para que se ocupe específicamente de la aplicación de dicha tecnología en el CARIBE-EWS.
25. **El ICG pidió** al Comité de Dirección que reformara la iniciativa del grupo de expertos sobre el plan de trabajo y de ejecución para mejorar el sistema de alerta mediante la inclusión de otros peligros costeros, durante el periodo entre reuniones, en coordinación con la Secretaría de IOCARIBE y las oficinas regionales de la OMM y la UNDRR, con el apoyo del Comité de Dirección y el Secretario Técnico del ICG/CARIBE-EWS.
26. **El ICG tomó nota** de la realización del taller sobre evacuación en caso de tsunamis celebrado en Costa Rica en abril de 2024, en el que participaron siete Estados Miembros del ICG/CARIBE-EWS —República Dominicana, México, Guatemala, Nicaragua, Costa Rica, Panamá, Colombia y los Estados Unidos de América (Puerto Rico)— **y agradeció** el liderazgo del Instituto de Eventos Extremos de la Universidad Internacional de Florida, la financiación proporcionada por la USAID/BHA y la Secretaría del ICG/CARIBE-EWS, y el apoyo del Programa SINAMOT de la Universidad Nacional de Costa Rica, la ITIC-CAR y la PRSN para organizar el taller.
27. **El ICG reconoció** el éxito del curso de formación sobre mareas, que se había impartido en español del 13 al 17 de noviembre de 2023 en Costa Rica, organizado y financiado conjuntamente por la Organización Hidrográfica Internacional (OHI), la Organización Marítima Internacional (OMI), la Comisión Oceanográfica Intergubernamental de la UNESCO (UNESCO-COI) y la Oficina Nacional de Administración Oceánica y Atmosférica (NOAA, Estados Unidos de América).
28. **El ICG alentó** a la Secretaría a que organizara, con el grupo de trabajo 2, cursos de formación sobre el nivel del mar en español e inglés en años alternos, con el apoyo de la NOAA y la Secretaría, y en estrecha colaboración con la OHI y la OMI.
29. **El ICG observó** que se había programado una reunión conjunta de expertos sobre fuentes sísmicas en el Caribe Noroccidental y sobre fuentes no sísmicas de tsunamis para el Caribe y regiones adyacentes, que se celebraría del 2 al 5 de diciembre de 2024 en Heredia (Costa Rica) .
30. **El ICG tomó nota** de que los tiempos de evacuación eran necesarios para determinar la viabilidad de los mapas y planes de evacuación en caso de tsunami y **recomendó** a la Secretaría que, junto con el grupo de trabajo 4, buscara financiación para organizar un taller destinado a evaluar la modelización de la evacuación.
31. **El ICG tomó nota también** de que en el periodo entre reuniones se había finalizado y publicado la versión en español de Manuales y Guías [86](https://unesdoc.unesco.org/ark:/48223/pf0000380540_spa.locale=en) de la COI, “Programa plurianual de ejercicios comunitarios de simulación de tsunamis: Directrices para el Sistema de Alerta contra los Tsunamis y otras Amenazas Costeras en el Caribe y Regiones Adyacentes”.
32. **El ICG tomó nota además** de la posibilidad de que se celebrara un taller de este tipo en Antigua y Barbuda con financiación parcial de la USAID/BHA, en el marco de Tsunami Ready, y **recomendó** al CTIC y a la ITIC-CAR que, en coordinación con el grupo de trabajo 4 y el Equipo de Trabajo sobre CARIBE WAVE, organizaran una formación conjunta sobre Manuales y Guías 86 y una reunión del Equipo de Trabajo sobre CARIBE WAVE en Antigua y Barbuda durante el siguiente periodo entre reuniones.
33. **El ICG tomó nota** del inventario de métodos de difusión y comunicación de alertas de tsunami para el Caribe y regiones adyacentes, preparado por el grupo de trabajo 3.
34. **El ICG agradeció** el apoyo prestado por la ITIC-CAR para preparar este documento, así como las contribuciones de otras partes interesadas.
35. **El ICG recomendó** al grupo de trabajo 3 que finalizara y presentara el documento de inventario, comprendidos los resultados del ejercicio CARIBE WAVE 24, y **recomendó asimismo** a la Sección de Resiliencia frente a los Tsunamis de la UNESCO-COI que promoviera el documento final y lo pusiera a disposición de los Estados Miembros del ICG/CARIBE-EWS y otras partes interesadas.
36. **El ICG agradeció** a la ITIC-CAR de la NOAA y al Centro de Alerta contra los Sunamis en el Pacífico (PTWC) la mejora del tratamiento automatizado de información sobre el estado de las estaciones sísmicas y de nivel del mar, y su presentación continua.
37. **El ICG observó** que un alto porcentaje de las estaciones de la red de medición del nivel del mar y de la red sísmica del CARIBE-EWS no estaban funcionando en ese momento y, por lo tanto, podían retrasar la evaluación adecuada de los eventos de tsunami y la emisión de alertas de tsunami a tiempo y precisas.
38. **El ICG instó** a los Estados Miembros y a los operadores de estaciones sísmicas y de medición del nivel del mar que contribuyen al CARIBE-EWS a mantener sus estaciones operativas y a examinar y actualizar periódicamente el estado de sus estaciones en el servicio de observación del nivel del mar de la COI y en los mapas mensuales del PTWC publicados en el sitio web del ITIC, así como a informar a la ITIC-CAR y a la Secretaría sobre los planes de reparación.
39. **El ICG instó** a los Estados Miembros a contar con planes de respuesta en caso de tsunami y procedimientos operativos estándar actualizados, que abarquen los tsunamis locales, así como con organismos a cargo de las alertas designados y formados.
40. **El ICG pidió** al grupo de trabajo 3 que examinara y revisara los requisitos técnicos, logísticos y administrativos de un proveedor regional de servicios sobre tsunamis del CARIBE-EWS, y los presentara a más tardar en su 18ª reunión.
41. **El ICG tomó nota** de los progresos realizados por el Centro de Asesoramiento de Tsunami para América Central (CATAC) en materia de alerta temprana contra terremotos y las posibles aplicaciones para la alerta contra tsunamis y la comunicación, y **recomendó** al CATAC que estudiara la integración de las aplicaciones de alerta temprana contra terremotos en la difusión de sus servicios y productos de tsunamis a sus puntos de contacto de alerta contra los tsunamis (TWFP) y centros nacionales de alerta contra los tsunamis (NTWC) y que informara al respecto en la 18ª reunión del ICG/CARIBE-EWS.
42. **El ICG también tomó nota** de la renovación del memorando de entendimiento entre el Gobierno de Barbados y la UNESCO-COI relativo al CTIC, que se había reforzado con la ampliación de su duración de 3 a 5 años.
43. **El ICG tomó nota con reconocimiento** de la estrecha cooperación entre el CTIC, la ITIC-CAR, el grupo de trabajo 4, el Equipo de Trabajo sobre CARIBE WAVE y la UNDRR para fomentar la preparación, la disponibilidad operacional y la resiliencia a fin de mitigar los efectos de los tsunamis y otras amenazas costeras en la región del CARIBE-EWS, en particular en relación con la ejecución del programa Tsunami Ready, la elaboración y difusión de recursos de divulgación y formación, y el apoyo al Decenio de las Naciones Unidas de las Ciencias Oceánicas para el Desarrollo Sostenible, incluida la labor del Grupo de Trabajo sobre seguridad oceánica del Decenio para América Tropical y el Caribe.
44. **El ICG acogió con satisfacción** la ampliación del mandato del CTIC desde su creación debido a la armonización con marcos y programas estratégicos de políticas, como los Objetivos de Desarrollo Sostenible de las Naciones Unidas, el Marco de Sendái para la Reducción del Riesgo de Desastres, el Decenio del Océano de las Naciones Unidas, la iniciativa Alertas Tempranas para Todos de las Naciones Unidas, la Estrategia Integral de Gestión de Desastres y el Marco de Programación dirigidos por la Agencia Caribeña para el Manejo de Emergencias por Desastres (CDEMA) y el Programa Tsunami Ready de la UNESCO-COI, lo que había dado lugar a un aumento de la carga de trabajo y de las oportunidades para integrar plenamente el papel y las funciones del CTIC (incluidos otros peligros costeros) en los planos regional y mundial, y **valoró además** las nuevas cuestiones políticas, como la necesidad de integrar las ciencias sociales, el cambio de comportamiento y las personas discapacitadas y vulnerables (jóvenes, mujeres, grupos indígenas o pobres).
45. **El ICG recomendó** al Comité de Dirección de CARIBE-EWS que realizara un examen estratégico de los recursos humanos necesarios para garantizar que el CTIC tuviera la capacidad adecuada para ejecutar y aplicar eficazmente las actividades de los programas y proyectos y así apoyar los marcos del lCG/CARIBE-EWS y la iniciativa Alertas Tempranas para Todos.
46. **El ICG recordó** que el Día Mundial de Concienciación sobre los Tsunamis se celebraba anualmente el 5 de noviembre y **señaló** que el tema de 2024, “Empoderar a los niños y los jóvenes para garantizar que la próxima generación esté preparada para los tsunamis”, complementaba los esfuerzos de CARIBE WAVE 24.
47. **El ICG reconoció** el liderazgo del CTIC en la organización de actividades que promovieron una mayor visibilidad del Día Mundial de Concienciación sobre los Tsunamis en 2021, 2022 y 2023, y una importante participación en él, y **alentó** a los Estados Miembros a celebrar el Día Mundial y a informar de sus actividades al CTIC.
48. **El ICG tomó nota** del éxito del ejercicio CARIBE WAVE 24, en el que participaron todos los Estados Miembros y al que se inscribieron más de 475 000 personas, e **instó** a los Estados Miembros a responder en el debido plazo a las evaluaciones de la encuesta CARIBE WAVE 24.
49. **El ICG decidió** que el ejercicio CARIBE WAVE 25 tendría lugar el jueves 20 de marzo de 2025 y comenzaría con un mensaje ficticio a las 15:00 UTC para la prueba de comunicación desde el PTWC y el CATAC a los TWFP y NTWC, y **confirmó** que en el ejercicio CARIBE WAVE 25 se utilizarían las dos hipótesis de CARIBE WAVE 20, esto es, 1) la hipótesis de Jamaica de 1692 y 2) la hipótesis de Lisboa de 1755.
50. **El ICG pidió** a los Estados Miembros que consideraran la posibilidad de llevar a cabo la totalidad o parte de sus actividades de respuesta al ejercicio durante horas no laborables, en particular por la noche, para estar mejor preparados para los tsunamis, que tienen más probabilidades de ocurrir durante las horas no laborables, y, además, **recordó** a los Estados Miembros que consideraran la posibilidad de incluir su hipótesis seleccionada para CARIBE WAVE 25 en un marco de riesgos múltiples siempre que fuera posible.
51. **El ICG sugirió** al Equipo de Trabajo sobre CARIBE WAVE que estudiara la manera de hacer participar en mayor medida a los turistas y las organizaciones turísticas, como la Organización de Turismo del Caribe (OTC), en los ejercicios de CARIBE WAVE, con el objetivo de elaborar directrices y recursos multilingües sobre la participación de los turistas en los ejercicios CARIBE WAVE, y **sugirió además** al Equipo de Trabajo sobre CARIBE WAVE que estudiara la manera de hacer participar en mayor medida a las autoridades marítimas y portuarias nacionales y regionales para que pudieran poner a prueba sus planes y procedimientos.
52. **El ICG agradeció** el informe y los progresos realizados por el CATAC durante el periodo entre reuniones, así como sus continuos esfuerzos para seguir mejorando su sistema sismológico y poder determinar la fuente y enviar productos sobre tsunamis procesables y a tiempo en caso de terremotos de propagación lenta (sismos tsunamigénicos), que se producen en América Central, así como para mejorar la capacidad de sus usuarios e informarles de estos posibles eventos.
53. **El ICG recomendó** al CATAC que siguiera aplicando los métodos de alerta temprana contra seísmos para acelerar y mejorar las alertas contra tsunamis para América Central y **tomó nota** de que el CATAC había presentado y analizado en la conferencia “Cities on Volcanoes”, celebrada en Antigua (Guatemala) del 11 al 17 de febrero de 2024, un concepto de sistema de alerta contra los tsunamis para fenómenos volcánicos en los grandes lagos de Nicaragua.
54. **El ICG tomó nota** de los desafíos del CATAC durante el ejercicio CARIBE WAVE 24 y **tomó nota además** de que el CATAC proporcionaría la guía del usuario actualizada a más tardar en marzo de 2025 para que el ICG/CARIBE-EWS la examinara en su 18ª reunión.
55. **El ICG recomendó** al CATAC que mantuviera su plena funcionalidad de manera provisional para poder ayudar a los NTWC, los TWFP y las autoridades de gestión de emergencias de América Central a hacer frente a esos desafíos, y **recomendó además** que se designara al CATAC como TSP en su 18ª reunión en 2025 para que la Asamblea de la COI pudiera examinar la admisión definitiva del CATAC como TSP en junio de 2025.
56. **El ICG tomó nota** de la recomendación de la UNESCO, comunicada por la Secretaría, de celebrar reuniones reglamentarias y conferencias periódicas de forma presencial solo una de cada dos veces, y las demás de forma virtual, a fin de reducir la huella de carbono de la UNESCO y poder cumplir su objetivo de reducir sus emisiones en un 31 % de aquí a 2030, en consonancia con los objetivos del Acuerdo de París.
57. **El ICG tomó nota** de los diversos vigésimos aniversarios del ICG/CARIBE-EWS, a saber, el 20º aniversario de la creación del ICG/CARIBE-EWS (2025), el 20º aniversario de la primera reunión del ICG/CARIBE-EWS (2026) y la 20ª reunión del ICG/CARIBE-EWS (2027).
58. **El ICG tomó nota además** de que estos aniversarios ya se habían considerado una importante oportunidad para sensibilizar sobre los logros y los retos pendientes en lo que se refiere a garantizar la resiliencia a los tsunamis en el Caribe y sus regiones adyacentes, en el contexto más amplio de los sistemas de alerta temprana de peligros múltiples (MHEWS) y la iniciativa Alertas Tempranas para Todos del Secretario General de las Naciones Unidas y de la reanudación tras la pandemia de las actividades de preparación para casos de tsunamis.
59. **El ICG tomó nota en particular** de la importancia de las reuniones presenciales, que brindaban oportunidades de intercambio oficioso fuera de las reuniones oficiales para abordar cuestiones que facilitaban el trabajo del ICG.
60. **El ICG decidió** celebrar la 18ª reunión del ICG/CARIBE-EWS (ICG/CARIBE-EWS-XVIII) de forma presencial la semana del 5 de mayo de 2025 y estudiar la posibilidad de organizar inmediatamente después una cumbre de Tsunami Ready para examinar las ventajas y las enseñanzas extraídas y establecer una hoja de ruta para que la totalidad de las comunidades estuvieran preparadas y fueran resilientes frente a los tsunamis gracias a iniciativas como Tsunami Ready.
61. **El ICG tomó nota con reconocimiento** de las consideraciones expresadas por Francia (Martinica) y Panamá para acoger la 18ª reunión del ICG/CARIBE-EWS.
62. **El ICG decidió** celebrar la 18ª reunión del ICG/CARIBE-EWS de forma virtual si no se transmitía oficialmente a la Secretaría, antes del 9 de agosto de 2024, una comunicación oficial de Francia (Martinica), Panamá u otro Estado Miembro interesado en acoger la reunión.
63. **El ICG recomendó** celebrar la 19ª reunión del ICG/CARIBE-EWS (ICG/CARIBE-EWS-XIX) de forma presencial, posiblemente la semana del 20 de abril de 2026.
64. **El ICG tomó nota con satisfacción** de la posibilidad de que Barbados acogiera la 19º reunión del ICG/CARIBE-EWS.
65. **El ICG decidió** considerar la posibilidad, a partir de 2026, de celebrar sus futuras reuniones de forma presencial solo cada dos años, y las demás veces de forma virtual.

# **WELCOME AND OPENING**

1. The Seventeenth Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS XVII) was held from 6-9 May 2024, hosted in a hybrid format in Managua, Nicaragua and online.
2. The Session opened on Monday, 6 May 2024 at 15:00 UTC, under the guidance of Vice-Chair Ms Regina Browne (Chairperson). She initiated the session warmly by welcoming the participants and thanking the Host Country Representatives.
3. The Chairperson thanked all in-person and remote participants of the session, where 8 Member States are represented in-person, and 7 Member States are represented online. A total of 83 participants contributed to the ICG/CARIBE-EWS XVII, including 27 Observers (27 in-person, 56 virtual). She highlighted the fact that the very late availability of a Host Country for this ICG is the main reason for having a hybrid session with more online participants than in-person participants.
4. The Chairperson informed the delegations of the availability of the ES and FR interpretation services through Zoom, for which the details were disseminated to all participants earlier. She also informed the delegations that the session was recorded through Zoom.
5. The Chairperson invited one of the following National Authorities of Nicaragua to deliver their remarks:

## NICARAGUAN AUTHORITIES

## INETER

1. Dr. Vladimir Gutiérrez, Co-Director of INETER, Representative of the Government of Nicaragua, welcomed the colleagues attending both online and offline. He emphasized that the general and socio-natural risks are highly significant in terms of tsunamis and other natural hazards for Nicaragua. He highlighted Nicaragua’s vulnerability to tsunamis and noted that the country hosts the CATAC headquarters, with support from Japan, which is crucial for Central America. Dr Gutiérrez also reflected on the 1992 earthquake and tsunami, with its epicenter near Masa Chapa, describing it as a turning point that prompted Nicaragua to better prepare for natural disaster. He expressed his hope for fruitful discussion that would enhance collaboration, broaden exchanges, and allow countries to share experiences aimed at developing better mitigation strategies for natural hazards. Finally, he extended his gratitude to all participating Member States.

## CATAC

1. Dr. Wilfried Strauch, Coordinator of CATAC/INETER, shared insights into CATAC’s experience with the development of tsunami warning systems in Nicaragua and Central America. He provided a historical overview, emphasizing the desire among Central American countries to establish tsunami warning systems after experiencing several tsunami events. Dr Strauch highlighted the extensive discussions held on this topic, during which they reached out to UNESCO and the Pacific Tsunami Warning Centre (PTWC). In closing, he expressed his gratitude to all colleagues participating in the meeting and conveyed his hopes for its success.

## INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION OF UNESCO

1. Mr Vidar Helgesen (Executive Secretary of IOC and Assistant Director-General of UNESCO), welcomed participants of the ICG/CARIBE-EWS XVII through a video message and expressed his gratitude to the Nicaraguan Government for hosting the meeting. He emphasized the importance of the Ocean Decade Tsunami Programme (ODTP) and Tsunami Ready Recognition Programme (TRRP). In addition, Mr Helgesen acknowledged the critical role of participants in contributing to the global multi-hazard system framework, specifically the Early Warnings for All (EW4All) initiative. He highlighted that this framework offers a significant opportunity to address local, national, and regional challenges, ensuring that “no one is left behind”. In conclusion, he expressed his hope that the decision process regarding the host country for the ICG in the coming years, including the 20th anniversary of the ICG/CARIBE-EWS in 2025, would prioritize concentrating resources to better serve communities and people in need.

## ICG/CARIBE-EWS CHAIR

1. Mr Gerard Metayer (Chair) delivered his opening remarks virtually, expressing regret for not being able to attend the meeting in person due to the social situation in Haiti. He thanked the Government of Nicaragua for hosting the event and extended his gratitude to the Technical Secretariat, Member States, and other organizations. Mr Metayer also recognized the ongoing efforts of UNESCO, along with organizations such as NOAA and CTIC, in building a comprehensive tsunami preparedness system. Mr Metayer also reflected on the upcoming 20th anniversary of the ICG/CARIBE-EWS and expressed his willingness to discuss which activities and workshops to commemorate the milestone. Lastly, he concluded by wishing a constructive and successful meeting.
2. The Chairperson thanked all the speakers and informed the delegates that a Tsunami Ready Meeting will be conducted on Friday, May 10, 2024, from 08:00–13:00, at the same venue as the ICG/CARIBE-EWS XVII session. This meeting was announced in the Circular letter announcing the ICG/CARIBE-EWS XVII as a workshop to be conducted by the International Tsunami Information Center–Caribbean Office (ITIC-CAR) in coordination with the Caribbean Tsunami Information Center (CTIC) with funding support from the US Agency for International Development (USAID). However, due to the unfortunate injury of Christa von Hillebrandt-Andrade G. von Hillebrandt-Andrade (ITIC-CAR) preventing her from being in Managua in-person and considering the interest received from only Anguilla, Antigua, Barbuda, and USVI in the workshop, it was decided to hold a meeting instead of a workshop to be moderated by Alison Brome (CTIC) where Ms. von Hillebrandt-Andrade (ITIC-CAR) would join remotely.

# **ORGANIZATION OF THE SESSION**

* 1. ADOPTION OF AGENDA

1. The Chairperson informed the Plenary on the [Provisional Agenda](https://oceanexpert.org/document/34274) based on the discussions that took place at the ICG/CARIBE-EWS online Midterm Officers Meeting on 1-2 February 2024, taking into account the Recommendations and instructions given at ICG/CARIBE-EWS XVI, as well as the relevant parts of the IOC Rules of Procedures ([IOC/INF-1166](http://unesdoc.unesco.org/images/0012/001251/125186m.pdf)).
2. The Chairperson informed the delegates on the availability of the Provisional Annotated Agenda to be updated regularly as new documents/presentations and information are available.
3. The Chairperson invited delegations to introduce themselves (Name and Surname, Country, Position) the first time they took the floor during the ICG. On the consequent occasion, delegations are kindly invited to state their Name and Surname at the very beginning each time they take the floor, especially for the purposes of drafting the report based on Zoom recordings.
4. The Chairperson opened the floor for Delegates to comment on the Provisional Agenda. No comments were raised, and the agenda was approved as presented.
   1. DESIGNATION OF THE RAPPORTEUR(s)
5. The Chairperson requested Delegates to propose candidates for Rapporteur of the meeting. As customary the meeting was requested to choose one rapporteur for each of the languages of the meeting (English [EN], French [FR], and Spanish [ES] for this meeting). They were supported by the Secretariat.
6. Delegates elected one Rapporteur for each language of the meeting.

* USA Delegation nominated Dr McCreery (USA) as EN Rapporteur.
* France Delegation nominated Ms Valérie Clouard (Martinique, France) as the FR Rapporteur.
* Nicaragua nominated Dr Strauch (Nicaragua) as ES Rapporteur.
  1. CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION

1. The Chairperson informed the Plenary that to facilitate the proceedings of the meeting a [Provisional Timetable](https://oceanexpert.org/document/34275) has been prepared by the Secretariat in coordination with the Chair. The Chairperson asked Dr Öcal Necmioğlu, Technical Secretary of the ICG/CARIBE-EWS (Technical Secretary) to introduce the documentation and other logistic details for the meeting, including the Reception/Welcome Dinner.
2. Dr Necmioğlu indicated that [the meeting website](https://oceanexpert.org/event/4089#agenda) includes all the documents required for the meeting. It also includes National Reports delivered by [Antigua and Barbuda](https://oceanexpert.org/document/34344), [Barbados](https://oceanexpert.org/document/34227), [British Virgin Islands](https://oceanexpert.org/document/34503), [Colombia](https://oceanexpert.org/document/34305), [Costa Rica](https://oceanexpert.org/document/34228), [France](https://oceanexpert.org/document/34357), [USA](https://oceanexpert.org/document/34269), and [Venezuela](https://oceanexpert.org/document/34360) and each Member State has been allocated a maximum of 5 minutes for presentation including discussions. Delegations could download all documents and PowerPoint presentations from the meeting website once they are available.
3. Dr Necmioğlu asked all speakers presenting reports to the plenary, including national reports, to provide a succinct paragraph summarising the main aspects of their presentation and issues for discussion, to facilitate the reporting. Member States and other Delegates are reminded that the time allocations include questions, comments, and discussion. Consequently, if presentations run too long no discussion can be facilitated given the time constraints of the meeting. In-person participants will be provided with the opportunity for feedback followed by online delegates.
4. The meeting was also conducted in a hybrid format and translations were provided for English, Spanish, and French languages. The language of the Plenary is English. As the interpretation was available through an online service provider, each in-person participant was recommended to connect to the meeting link they have been provided with and listen to the translations of the interventions from the online participants, when applicable, through their personal computers. Nevertheless, for discussions, online participants were encouraged to raise their hands or place comments and questions in the chat box.
5. Delegations noted that no interpretation services were available on Wednesday for the intrasessional working groups. However, a separate Teams invitation could be arranged if online participants wished to join the discussion. In such a case, it was strongly recommended to avoid parallel intrasessional Working Groups to consider conducting discussions in the main room, allowing participation from all in-person and remote participants.
6. The ICG Chairperson indicated that in order to ensure the smooth work of the session and facilitate the generation of recommendations and agreements the plenary is asked to set up intra-sessional Working Groups. Upon feedback provided by the delegations, as the delay experienced on Tuesday, the following structure has been implemented:

**09:30-10:45 CARIBE WAVE 2025 and 2026**

moderated by Charles McCreery (PTWC), supported by Alison Brome, Programme Officer for Coastal Hazards and the Caribbean Tsunami Information Centre (CTIC).

**11:00-12:30 Strategic discussion related to the inclusion of other coastal hazard warning systems in the work of the ICG/CARIBE-EWS, especially in close connection with the ongoing EW4All and MHEWS initiatives**

moderated by Dr Lorna Inniss (Head of IOCARIBE Secretariat), supported by the Technical Secretary Dr Öcal Necmioğlu.

**13:30-15:00 Strategic discussion related to the future role of CTIC**

moderated by Ms Brome (CTIC) and supported by Technical Secretary Dr Öcal Necmioğlu.

**15:30-17:00 Restructuring of the ICG/CARIBE-EWS Governance**

i) consideration of creating an ICG/CARIBE-EWS Steering Committee, following the best practices of other ICGs

ii) better alignment of the ICG/CARIBE-EWS work program with ODTP

iii) activities related to the 20th year anniversaries in 2025, 2026 and 2027

moderated by the Technical Secretary, Dr Öcal Necmioğlu, and supported by Dr Silvia Chacon Barrantes (SINAMOT).

**Recommendations Committee** chaired by Ms. Susan Hodge (Anguilla), supported Dr Wilfried Strauch (Nicaragua), Dr Charles McCreery (USA), Dr Lorna Inniss (IOCARIBE) (Head of IOCARIBE Secretariat), and supported by the Technical Secretary Dr Öcal Necmioğlu.

1. Dr Necmioğlu reminded the Plenary of the Tsunami Ready Recognition Programme, addressing agenda item 3.10 at the end of the 2nd day. This may render a separate intrasessional working group unnecessary.
2. The Chairperson, Ms Browne opened the floor for questions and comments, inviting suggestions from delegations regarding intrasessional Working Groups.
3. Mr Gregory Mitchell Schoor (USA) proposed establishing intrasessional Working Group to commemorate the 20th anniversary of the ICG/CARIBE EWS.
4. Dr Silvia Chacon Barrantes (Costa Rica) expressed her concerns about a large number of groups and suggested merging them to restructure the governance of the ICG and the strategic discussion in alignment with ODTP.
5. Mr Gregory Schoor (USA) expressed their flexibility regarding this suggestion and Dr Necmioğlu (UNESCO-IOC) recommended discussing the 20th anniversary under agenda 9. Dr Chacon Barrantes (Costa Rica) proposed incorporating that discussion into the merged agenda concerning the restructuring of the ICG governance and the strategic discussion of the ODTP. The Secretariat stated that a proper summary would be prepared and disseminated after the coffee break.
6. Dr Lorna Inniss (IOCARIBE) proposed initiating one WG that might require less time before proceeding with another, rather than conducting them concurrently.
7. Dr Chacon Barrantes (Costa Rica) questioned whether to have a parallel WG or a single WG. She recalled the Chairperson’s proposal for one large working group to cover all subjects. Dr Necmioğlu explained that colleagues have the flexibility to adjust discussion within the allocated 90 minutes in the timetable. In addition, he added this approach aims to enhance participation among both online and offline participants.
8. Dr Chacon Barrantes (Costa Rica) expressed her concern that having a single large WG hinders the participation of the members by raising her experience to split the intra-sessional WG. She suggested dividing the day to accommodate two working groups (morning/afternoon.)
9. Mr Sherrod Marlon James (Antigua and Barbuda) alerted that if a colleague is the sole representative, they would effectively miss out on two sessions if they run in parallel, highlighting their limited delegation size. Dr Necmioğlu emphasized that the decision ultimately rests with the ICG regarding how to proceed.
10. Dr Chacon Barrantes (Costa Rica) proposed using Zoom’s split function to include online participants. Dr Necmioğlu acknowledged this suggestion but reminded everyone that there would be no interpretation services on Wednesday. Lastly, he also requested that online participants confirm their preferences in the chat to assist with technical setup.
11. Ms Christa von Hillebrandt-Andrade (USA) sought clarification on their suggestion regarding the 20th anniversary WG, noting that it involves multiple issues for a successful celebration. She also pointed out that the Secretariat indicated the recommendation group would not meet during the timeframe of the intrasessional WGs. Furthermore, she emphasized that their suggestion was to keep the intra-sessional WG on the 20th anniversary but to make it shorter than the other 4 intrasessional WGs in terms of time allocation. Dr Necmioğlu highlighted the suggestion of Dr Chacon Barrantes (Costa Rica) about integrating the 20th anniversary, the strategic discussion of the ODTP, and restructuring governance.
12. Mr Metayer (Chair) suggested dedicating one group solely to work on the celebration of the 20th anniversary.
13. Dr Chacon Barrantes (Costa Rica) stated that whether they have one WG consecutively or multiple WGs, the number of WGs is not the main issue. Dr Necmioğlu agreed and mentioned that focusing solely on one WG might place too much responsibility on the rapporteur. He proposed continuing with several WGs, following the proposal made by Dr Chacon Barrantes about the 20th anniversary.
14. Based on the feedback received, the Chairperson provided additional details regarding the consecutive WG sessions via email, and all the noted updates were posted on the OceanExpert and sent via email.
15. The Chairperson recalled that, as customary, each of the intrasessional working groups would report to the plenary session under their respective agenda items. The Chairperson also requested that intrasessional Working Groups produce recommendations for discussion by the ICG or revise those included in the intralesional Working Groups and Task Teams reports and report to the Recommendations Committee accordingly.
16. The Chairperson requested that the time allocated for reports in plenary be minimized to allow for more extensive exchange of views and decisions on policy matters. The focus should be on their main achievements and expected future work.
17. The Chairperson opened the floor for comments from delegates on the [timetable](https://oceanexpert.org/document/34275). As no comments were raised by the delegates, the timetable was approved.

# **REPORT ON INTERSESSIONAL ACTIVITIES**

* 1. CHAIR’S REPORT

1. Mr Metayer (Chair), The Chairperson of ICG/CARIBE-EWS, presented his [report](https://oceanexpert.org/document/34302) online.
2. The Metayer informed the delegations on the updates regarding new nominations, as follows: 1) the Nomination of Gisela Baez as CARIBE WAVE TT Vice Chair 2) the Nomination of Antonio Aguilar as CARIBE WAVE TT Chair 3) the Nomination of Silvia Chacon Barrantes and Alison Brome at TOWS-WG-XVII DMP TT 4) the Nomination of Charles McCreery (Chip) and Elizabeth Vanacore (Liz) at TOWS-WG-XVII TWO TT.
3. Mr Metayer reported on the synergies between Chair and Vice Chairs, the meeting with John Cortinas, Director of Atlantic Oceanographic and Meteorological Laboratory of NOAA, in Paris for strengthening cooperation IOCARIBE and ICG/CARIBE-EWS, organizing and attending the midterm meeting for ICG/CARIBE-EWS Officers, and organizing the ICG/CARIBE-EWS XVII session.
4. Dr Necmioğlu proposed that the 20th anniversaries in 2025 and 2026 could be combined and suggested organizing a 3-day workshop in 2025 to review collective accomplishments, assess gaps and challenges in the current situation, and discuss future prospects. This workshop could also provide an opportunity to hold a 2-day ICG/CARIBE-EWS Steering Committee Meeting, should the ICG choose to establish one. It was suggested that the workshop and meeting be held in a Member State or Territory where stronger engagement in the ICG/CARIBE-EWS work program is sought and where no previous governance meetings have taken place. Additionally, this event could coincide with a Tsunami Ready Recognition ceremony for a community.
5. The Chairperson opened the floor for the comments. No comments were raised by the Member States.
   1. CARIBE-EWS SECRETARIAT REPORT
6. The Technical Secretary of ICG/CARIBE-EWS, Dr Necmioğlu presented the Secretariat [report](https://oceanexpert.org/document/34313). He explained the Circular Letters of the Call for nomination for ICG/CARIBE-EWS WGs and TT the announcement of the CARIBE WAVE 24 Tsunami Exercise in the Caribbean and Adjacent Regions on 1st March 2024, and the Invitation for the ICG/CARIBE-EWS-XVII. He also reported on the publication of the Spanish version of the Manual and Guides 86 on Multi-Annual Community Tsunami Exercise Programme Guidelines for the ICG/CARIBE-EWS and noted that the final report of the ICG/CARIBE-EWS XVI has been published and is available online.
7. Dr Necmioğlu presented the delegations on the new format for the ICG/CARIBE-EWS and ICG/PTWS contact points database, with the aim of standardizing the entries and to minimize human error. In the future, the Secretariat might explore converting this into an online platform.
8. Dr Necmioğlu presented the definitions of the Tsunami National Contact (TNC) and Tsunami Warning Focal Point (TWFP) in the Tsunami Glossary (2019) and stressed the importance of reporting any change of personnel to the Secretariat as early as possible.
9. Concerning the WGs/TTs, Dr Necmioğlu proposed that TNCs of the member states encourage broader participation and representation of their experts. He also noted that young professionals could contribute valuable insights from their experiences in capacity development.
10. Dr Necmioğlu presented the [ICG/CARIBE-EWS Action Monitor](https://oceanexpert.org/document/34340) as a useful tool to monitor the execution of the Decisions and Recommendations of the ICG/CARIBE-EWS and relevant Ocean Decade Tsunami Program Research and Development Implementation Plan (ODTP-RDIP) milestones. 32 actions assigned to the entire ICG since the last session. Of these, 10 tasks have been completed, 12 are in progress, 9 have not yet started, and 3 have either failed or been delayed. He emphasized the importance of assessing how much the ICG has achieved and the need to establish a work programme based on SMART (Specific, Measurable, Achievable, Realistic, Timely) principles.
11. Dr Necmioğlu underlined the fact that the ICG/CARIBE-EWS is the only ICG without a Steering Committee (SC). He added that a SC would provide advisory support to the Chair without assuming any responsibilities from the Chair. Additionally, he noted that establishing an SC could present a valuable opportunity to engage with territories that have not yet been visited by experts involved.
12. Regarding the requirements for an in-person ICG, Dr Necmioğlu explained the UNESCO requirements which are six months in advance of the Host Country Agreement. He proposed the ICG i) to decide automatically for an online next session if no Member State expresses its availability under the respective agenda item on the last day of the current ICG session, or if no Member State expresses its availability under the respective agenda item on the last day of the Current ICG/CARIBE-EWS session, request the Secretariat to issue a Circular Letter within two weeks after the current ICG/CARIBE-EWS session inviting all Member States of ICG/CARIBE-EWS to host the next session of the ICG/CARIBE-EWS with a deadline of 3 months after the current ICG/CARIBE-EWS session, and in case no Member State expresses its availability by then, to automatically decide on the next session of the ICG/CARIBE-EWS to be conducted online.
13. Dr Necmioğlu emphasized the ICG/CARIBE-EWS XX will take place in 2025, marking the 20th anniversary of the establishment of the ICG/CARIBE-EWS. Additionally, 2026 will commemorate the 20th anniversary of the first ICG/CARIBE EWS Session held in Barbados. He mentioned the upcoming “Joint Expert Meeting on Seismic Sources in the Northwest Caribbean and on Non-Seismic Sources of Tsunamis for the Caribbean and Adjacent Regions” which will be held in Heredia, Costa Rica, under the scientific leadership of WG1. Currently, 16 experts expressed their availability for the meeting (14 in-person/ 11 need funding, 2 virtual). Lastly, he highlighted ongoing collaborative efforts with NOAA National Ocean Service – Center for Operational Products & Services (NOAA/NOS/CO-OPS) to build on the successful example of the 2023 Tides Training courses in Costa Rica and it aims at both Spanish and English in-person courses.
14. Dr Chacon Barrantes (Costa Rica) welcomed Dr Necmioğlu as the new Technical Secretary of the ICG/CARIBE-EWS. She mentioned that identification of a host country was not an issue before the COVID pandemic.
15. Ms von Hillebrandt-Andrade (USA) commented on the failure of the Multi-Annual Community Tsunami Exercise Programme Guidelines for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions Training that was supposed to take place following the meeting of the TT of Caribe Wave. She reported that initial conversation has taken place with CTIC to revamp this activity.
16. The **ICG noted** the report of the ICG/CARIBE-EWS Secretariat.
    1. REPORT OF THE CARIBBEAN TSUNAMI INFORMATION CENTER (CTIC)
17. Ms Alison Brome, Programme Officer for Coastal Hazards and the Caribbean Tsunami Information Centre (CTIC) presented her [report](https://oceanexpert.org/document/34337) on the status of CTIC activities 2023-2024, challenges and considerations, and recommendations.
18. Ms Brome explained the status of Tsunami Ready 17 Tsunami tsunami-recognized communities in 13 Member States/Territories and 12 communities in the nomination/renewal process. The last 3 communities that have been recognized are (Deshaies, Guadeloupe, France; Saint George Paris, St. Vincent and the Grenadines; and Christ Church West, Barbados.
19. Ms Brome reported on the implementation of a project in Grenada funded by the Government of Australia. She also referenced additional initiatives, including the UNESCO-IOC CARIBE-EWS NORAD Project Communities and a recently completed project in the Dominican Republic. Furthermore, she highlighted the ongoing ITIC-CAR USAID/BHA Project Communities for 2022-2023. CTIC is currently implementing projects in Anguilla, Antigua and Barbuda, and Honduras.
20. Concerning the Tsunami Ready Evaluation Survey, Ms Brome stated that CTIC works closely with the WG 4.
21. Ms Brome reported the completion of the renewal process for eight communities under the UNESCO-IOCs Tsunami Ready Recognition Programme (TRRP). However, she noted that some communities have experienced delays due to unmet requirements. She emphasized that these delays represent an emerging issue, particularly regarding the review process for TRRP nominations and ensuring timely renewals.
22. Ms Brome reported on the continued CTIC activities, including CARIBE WAVE 2024, CTIC Brochure, CTIC Website, distribution of PAE products and support Member States outreach and capacity building initiatives, CTIC MoU with Government of Barbados, WTAD 2023, and support to UNESCO Cluster Office, Kingston in advancing MOU with CDEMA.
23. Ms Brome highlighted the challenges related to financial and human resources at CTIC. She reiterated the Secretariat’s concerns regarding the role and sustainability of CTIC as a key issue. She expressed a desire to discuss the impact of these factors on the organization’s support and performance. Furthermore, she stressed the importance of CTIC’s governance and the need for collective ownership to support and enhance overall performance.
24. Ms Brome acknowledged and expressed appreciation for the cooperation between CTIC, ITIC-CAR, ICG/CARIBE-EWS, the Tsunami Ready Task Team, and WG 4 in formulating recommendations for ICG/CARIBE-EWS XVII. She also recognized the successful collaboration between CTIC and the CARIBE WAVE Task Team and recommended strengthening partnerships between CTIC, ICG/CARIBE-EWS WG4, CARIBE WAVE TT, and key partners, including UNDRR, CDEMA, CEPREDENAC, and UWI, to enhance Member States’ preparedness and resilience.
25. Concerning other recommendations, Ms Brome stated that they encourage Member States to organize WTAD activities and share their experience. In addition, she added that they recommended the formalization of agreements regarding a sustainable framework for technical cooperation, and a strategic review of the CTIC governance structure and staffing resources. Lastly, she added the importance of the contribution of human resources and stressed that CTIC will continue to work with the IOC Secretariat, CARIBE-EWS Member States, and partners for resource mobilization and staffing efforts of the CTIC.
26. Ms von Hillebrandt-Andrade (USA) expressed her anticipation on further collaboration with CTIC on advancing tsunami preparedness, awareness, and resilience in the region. She noted that ITIC-CAR has received funding from USAID to initiate the TRRP for Belize and expressed her eagerness to work with CTIC on this initiative.
27. Ms Marie-Noëlle Raveau (France) raised a question regarding the CTIC Brochure, specifically whether there is a process for the French translation. Ms Brome responded that they have discussed this and are looking forward to approaching France. She added that they moved to Spanish after finalizing the English version.
28. Dr Necmioğlu commented that for this ICG, the CL was also issued in French language, and interpretation was also provided in French, ensuring that no one was left behind. He added the Secretariat will continue with this inclusive approach, subject to the availability of the funds.
29. Mr Metayer (Chair) expressed his gratitude to Ms Brome even though she is the only resource person. In addition, he added that the CTIC and ITIC-CAR also should be in better coordination, cooperation, and synchronization regarding activities, awareness, and training. He recalled raising the point during the officers’ meeting regarding the need for a document that outlines their progress and achievements in relation to the ongoing TRRP community and renewal efforts.
30. Ms Brome appreciated his support and noted that his intervention could be included in their follow-up action. In terms of the evaluation, she acknowledged the evaluation is critical under the TRRP and the CARIBE. In addition, she also mentioned that it is important to have a full document that has feedback from all member states.
31. **The ICG** noted the report of CTIC.
    1. REPORTS FROM UN AND NON-UN ORGANISATIONS
       1. IOCARIBE
32. The [report of the IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE)](https://oceanexpert.org/document/34327) was presented in-person by Dr Lorna Inniss (IOCARIBE). Dr Necmioğlu reminded the delegations that during the online Midterm Officers Meeting it was agreed to have a dedicated item in the agenda of the ICG/CARIBE-EWS XVII on Strengthening Cooperation Between IOCARIBE and ICG/CARIBE-EWS and as agreed earlier that there was a dedicated intersessional working group discussion on this matter.
33. Dr Inniss commented on the ten recommendations that were taken at the 17th Intergovernmental Group Meeting (IGM XVII) of IOCARIBE. She acknowledged the need to prioritize the development of an advanced early warning system for extreme weather events and inclusion of the implementation of regular drills in coastal communities and training of residents in response measures, improving preparedness and resilience. IOCARIBE is actively seeking and cultivating strategic partnerships with various and innovative sources to secure funding opportunities and in-kind resources in support of IOCARIBE initiatives. Dr Inniss stressed the importance of the need to establish a closer working relationship with the ICG/CARIBE-EWS.
34. The recommendation on stakeholder engagement focuses on the provision of assistance to Member States in executing ocean literacy activities, which include utilizing "A New Blue Curriculum: A toolkit for policymakers" and conducting a feasibility study for the establishment of a new regional blue schools’ network.
35. Dr Inniss noted that IOCARIBE serves as the coordinating body for the Ocean Decade Project on “Integrating Coastal Hazard Early Warning Systems for the Tropical Americas and Caribbean (iCHEWS)”. She added that they are selecting programmes that continue to progress, with some programmes, such as GOOS, being realigned to adopt a multi-hazard approach.
36. Dr Inniss recalled they requested to conduct an assessment to identify, prioritize, and address the data, information, and knowledge needs for the pro-active actions within the context of the IOCARIBE programmes. She noted that information pertaining to ocean hazards is inherently complex, highlighting the importance of collaboration with the ICG to effectively tackle these challenges.
37. Dr Inniss highlighted the decision of IOCARIBE GOOS to identify and inventory priority observational needs, including communication, social science, and ocean literacy within the region while considering available resources and avoiding duplication of previous work. She noted that this need could be a reason to strengthen collaboration between IOCARIBE and the ICG. Additionally, she also proposed several activities, such as training sessions, support for data collection approvals in EEZs, and engagement sessions for policymakers. Lastly, she mentioned projects such as “CoastPredict TAC Region, A Turnkey Basic Observing System for Caribbean SIDS, and Observation and Modeling for Decision Making*”*, explaining that they are beginning to develop a multi-hazard framework ahead of the hurricane season.
38. In relation to Ocean Literacy, Dr Inniss raised some activities and highly recommended the establishment of a Regional Task Team on Ocean Literacy. Concerning the Harmful Algal Blooms (HAB), she expressed a personal concern that the scientific information has not effectively reached users in a multi-hazard context. Additionally, she mentioned that the group is considering having an in-person workshop focused on early warning systems for HAB.
39. Regarding the Sargassum which has not yet been designated as a hazard, Task Team 3 works on significant science in the Sargassum region. Dr Inniss noted that Task Team 3 focuses on developing an integrated observing system for Sargassum.
40. Dr Inniss reported that they have two proposals for the establishment of two additional WGs within IOCARIBE. She expressed hope for an expansion of the overall governance framework for IOCARIBE. In terms of WG 1, she stated that they aim to establish an ocean data and information management WG within four months, citing the abundance of ocean science, data, analysis, and documentation available in the region. Ms Inniss also noted the challenges young researchers face in accessing data and proposed the creation of a specific WG for an Ocean Biogeographic Information System to address this issue.
41. Concerning the Ocean Best Practices System (OBPS), Dr Inniss raised the “ADAPT PROJECT”, a development of online training courses for their member states in the region on ocean observing networks. She also stated that the Ocean InfoHUB Latin America Caribbean Pilot project allows countries or partners with open data and information to either share their data or retain it as metadata. Lastly, Dr Inniss mentioned Ocean Teacher Global Academy (OTGA) as one of the projects offering an online training course.
42. In terms of the Marine Spatial Planning (MSP) Activities, Dr Inniss raised her concern about the incorporation of the risks associated with ocean and coastal hazards in these initiatives. In addition, she indicated her interest in engaging in discussions with the ICG regarding various projects, including the Regional MSP Forum, Regional MSP Training, pilot projects in the Dominican Republic and Colombia, and the implementation outcomes from the IOCARIBE MSP Forum 2022, was funded by PROCARIBE+ Project.
43. In terms of the governance for capacity development, Dr Inniss expressed her desire to enhance capacity across the region to address risks and ensure that key individuals are aware of these risks within the EW4All framework. Additionally, Dr Inniss noted that the ocean literacy subgroup falls under the capacity development WG.
44. Dr Inniss stated that partnerships for capacity development are critical, and they have approached the ‘All Atlantic Ocean Research and Innovation Alliance (AAORIA)’. She mentioned the potential partnership with the Puerto Rico Sea Grant Programme and highlighted the importance of involving young professionals in every aspect, as well as the possibility of a regional UNESCO Chair.
45. In response to the question from Mr Fabian Hinds (Barbados), Dr Inniss acknowledged that the MSP focuses on the blue economy but was unaware of any process currently underway in Barbados regarding the MSP. She further added that the actual implementation of MSP is taking place in the Dominican Republic and Colombia, but the regional forum and training are open to all countries. She also expressed her interest in conducting a case study in Barbados within the next two years in relation to specific projects.
46. Mr Fabian Hinds further asked about the time framework for that project and Dr Inniss responded that it is not available yet. In addition, Barbados Delegation acknowledged the challenge of data sharing and suggested implementing it at the regional level such as at the university for sustainability. Dr Inniss thanked their suggestion and recognized the importance of inviting the university, however, she expressed a desire to set targets for research institutions because of their excellent work in the Caribbean region regarding data collection.
47. Mr Sherrod Marlon James (Antigua and Barbuda) thanked Dr Inniss for her presentation and raised a need to investigate what the capabilities of the monitoring mechanisms are necessary and what capabilities are needed at regional and national levels for the achievement of the tactical operational level.
48. Mr Jasen Penn (British Virgin Island) commented on the partnerships and expressed his gratitude for Dr Innis’ point about the University of Puerto Rico and the community college. He raised a question about whether it is possible to gain access to the activities in overseas territories. In addition, he agreed with the importance of the sargassum related work. Dr Inniss highlighted that there is no difference between territories and countries at the UNESCO-IOC working level.
    * 1. UNDRR (WTAD and EW4All)
49. The [report of the United Nations Office for Disaster Risk Reduction (UNDRR)](https://oceanexpert.org/document/34325) item was presented online by Mr Jair Torres.
50. Mr Torres started the presentation with the background of launching the EW4All on 23rd March 2022. In terms of the Executive Action Plan, there are four pillars (Disaster Risk Knowledge, Monitoring and Forecasting, Warning Dissemination, and Response Capabilities), and MHEWS Governance which brings these four pillars together.
51. In terms of the implementation, Mr Torres outlined the designed process including gap analysis, roadmap design, budgeting of activities, preparation of project proposals, and roadmap implementation. Mr Torres (UNDRR) also provided examples of three countries that have begun piloting initiatives in the Caribbean at the national, regional, and international levels, noting that they anticipate expanding these efforts throughout the broader Caribbean region. Additionally, he emphasized the significance of regional entities, as their involvement could enhance implementation at the regional level due to the critical mass they represent.
52. Mr Torres explained that some Caribbean countries already have developed close cooperation with CDEMA such as Antigua and Barbuda in 2018, Barbados in 2021, the Commonwealth of Dominica in 2018, the Republic of Guyana in 2021, Saint Lucia in 2018, St. Vincent and the Grenadines in 2018, and Republic of Trinidad and Tobago in 2021. In addition, he mentioned gap analysis and roadmap design by highlighting that an important point is to ensure all of the Caribbean countries will be covered by different EWS in their own territories.
53. Concerning the recommendations, Mr Torres highlighted the willingness of countries to work on MHEWS by communicating with the co-chairs. In addition, he emphasized the implementation as a roll-out phase and a whole government and society approach to make sure that no one is left behind. Lastly, he raised an aim to adopt a Result-based Based Management Approach by CDEMA.
54. Mr Torres underlined the importance of MHEWS, and its initiative has been taken not only in the framework of the initiative itself but also in the framework of what they wanted to bring in SIDS 4 by mentioning the contribution to the finalized document.
55. Dr Inniss (IOCARIBE) thanked Mr Torres for his presentation and if asked if a national committee in each country was established for the EW4All initiative and if so, whether there is a possibility to work with that committee to address ocean risks as well. Mr Torres explained the rollout process, which ensures that it includes different national consultations involving people from various communities. Additionally, he highlighted the governance approach for ensuring MHEWS at the regional and national levels. Lastly, Mr Torres added that these national committees will support the implementation.
56. Mr Metayer (Chair) expressed his gratitude for the presentation. He raised a question about what kinds of initiatives they could see in Haiti before the cyclone season.
57. Mr Torres responded that they started the project in Haiti last year. For Haiti’s security during the cyclone season, they would continue to follow the planned schedule or meetings set by Civil Protection. He explained some aspects of the projects, such as finalizing the identification of gaps by different national institutions. Additionally, He noted that they received funding from the Swedish government to support this project. Mr. Torres further stated that while there is no individual workshop, they could organize it as a virtual meeting. Lastly, he anticipated receiving further funds for specific Early Warning System to build different capacity strategies and hoped to organize additional projects before the cyclone season.
    * 1. WMO
58. The [report of World Meteorological Organization (WMO)](https://oceanexpert.org/document/34315) was presented in-person by Rodney Martinez.
59. Mr Martinez (WMO) started his presentation with the video “[*How do National Meteorological and Hydrological Services and WMO support Tsunami Early Warnings?*](https://youtu.be/1gp2TPfAzm0?feature=shared)”. Mr Martinez stated that WMO supports NMHS, to strengthen their efforts in tsunami early warning, and maximize efficiencies. In terms of where WMO supports the tsunami EWS process, there are 2 key areas: 1) Infrastructure, especially via the WMO Information System (WIS), and observations 2) Early Warning Services, especially to strengthen the last mile of communication. Also, he mentioned the WMO-IOC Strategy (2021-2025) approved by WMO and IOC, in 2021.
60. WIS 2.0 is expected to replace GTS by 2030 as a tool of global cache, global broker, global discovery catalog, and global monitoring. Pilot implementations are in place in several countries. in different countries and several contributions in the Caribbean.
61. WIS2Box Node is currently being used by 11 of 16 Member States for sharing data using BUFR format as a significant contribution to EW4All.
62. In terms of the 4 pillars of EW4All, Mr Martinez emphasized the importance of working at local and global levels and also joining forces with different UN agencies and diverse partners for working MHEWS. Concerning pillar 2, WMO has a responsibility for tsunami, and ocean data and includes all their efforts.
63. In terms of other touchpoints, Mr Martinez mentioned the CAP implementation for using MET Services. Additionally, he mentioned that WMO started producing several awareness videos in local languages in the Pacific and Caribbean regions, focusing on coastal inundation and the value of ocean buoys. He also underscored the importance of the joint hazard response with METAREAS and NEVAREAS. Lastly, he mentioned the upcoming development of the WMO Marine Service Courses.
64. Mr Martinez raised the 46th RA IV Hurricane Committee Ocean Panel to consolidate the value chain from ocean observations to coastal inundation forecasting.
65. Mr Martinez addressed the 2024 events of interest including EW4ALL, WMO-IOC JCB, WMO EC-78, WMO Marine Competency for testing pilots, and WMO Marine Service Courses.
66. Mr Martinez stressed that the WMO makes improvements in the Systematic Observations Financing Facility (SOFF) in terms of influence. Concerning CREWS 2.0, it has been approved and they have started to implement it, including tsunami and EWS.
67. Mr Martinez added the final remarks that challenges ahead in the region require enhanced coordination, collaboration, and complementarity. In addition, he emphasized the importance of being innovative, resourceful, and efficient in delivering to Member States and regional collaboration that is essential to leverage the existing opportunities and move ahead faster.
68. Dr Necmioğlu raised a question about the advantage of WIS2.0, specifically regarding its use of satellite-based internet connectivity. He also understood that while the WIS is replacing GTS, the WIS operates on internet protocols, whereas GTS remains an important satellite component. He noted that TSP products are used as a backup in case other traditional or classical communication technologies fail.
69. Mr Martinez answered that the idea came from the change of architecture about how to deal with it. In addition, he agreed with the secretariat’s point and added that it is for the improvement of the way to process the data.
    * 1. NCEI/WDS
70. The [report of the NOAA National Centres for Environmental Information (NCEI) World Data Service (WDS) for Geophysics](https://oceanexpert.org/document/34312) was presented online by Dr Nicolas Arcos (USA).
71. Dr Arcos (USA) began his presentation with the background of WDS by addressing long-term archives, data management, and access to global tsunami data. In terms of the historical tsunami data, Mr Nicolas Arcos highlighted that the authoritative source is reliable and has a user interface that provides a REST API.
72. Concerning the Tsunami Sources Events and Observations as runups, Dr Arcos stated they have over 50 fields for this that include basic information such as date, location, latitude/longitude, cause (earthquake, volcanic eruption), maximum water height, socio-economic data (deaths, injuries, damage), and source references. He added that they have 2,500+ global tsunami events over 1,400 confirmed and 32,000+ observations.
73. Dr Arcos highlighted the source document and the national reports from the ICGs regarding what has been observed in those countries for characterizing hazards. He explained the gaps in records and tsunami source event data as well as tsunami runup data since 2020, which demonstrate that the tsunami data functions well.
74. In terms of the Caribbean, they added old and new events in the tsunami region. Dr Arcos raised some projects with ITIC such as global posters about tsunamis, significant earthquakes, and significant volcanic eruptions. At the regional level, they worked on the historical Caribbean tsunamis.
75. Dr Arcos stated that they supported the host of Caribbean and Adjacent Regions Tsunami Sources and Models (CATSAM) as a regional map viewer in collaboration with CARIBE-EWS WG1 (Former WG 2) and they have 35 + scenarios for a better understanding of the region.
76. Concerning the Analog Data Records (Marigrams), Dr Arcos stated that it is a historic paper record with lots of scans from diverse stakeholders. He added that this will help when a particular scan copy or image is needed. Dr Arcos also mentioned that they have a Digital Elevation Models (DEMs) Team, which updated the ETOPO programme in 2022, a global relief model. Additionally, he stated that IVERT provides error statistics for assessing the quality of a DEM for food, and storm-surge modelling by using ICESat-2 satellite data.
77. Dr Arcos highlighted the importance of making these sources accessible to the public. He encouraged member states to express their interest if they are interested. Lastly, he mentioned that they are seeking partners to improve their database, requesting information on new or incorrect data, discussing the 20th anniversary, and conducting research in a historical context in the region.
78. Mr Jasen Penn (British Virgin Island) raised a question about whether the IVERT is downloadable software. Mr Arcos answered that it is not designed to develop a model rather it is for the validation of the existing model. In terms of the user who has the DEM, it provides error statistics of how the DEM is compared to the ICESat-2.
79. Mr Fabian Hinds (Barbados) requested clarification about the depth of ‘Shallow-water bathymetry’ in the IVERT. Mr Arcos stressed that it is not part of the tool yet but up to 30 meters is what they believe.
80. Dr Necmioğlu wanted to know if the digitized waveform data is not downloadable, unlike the image file. Dr Arcos responded that this is correct, except for the exact number they have digitized. Dr Necmioğlu further asked if the platform suggested by Dr Arcos could be developed into a global tsunami record database. Dr Arcos replied that this idea is their hope, but it requires standards and funding. Dr Necmioğlu then asked if they currently have a global database from which researchers can download all event-based data in digitized format. Dr Arcos answered that they do not have such a database, and each country has its own access point.
    * 1. Puerto Rico Seismic Network (PRSN)
81. The [report of the Puerto Rico Seismic Network (PRSN)](https://oceanexpert.org/document/34323) was presented online by Dr Victor Huerfano.
82. Dr Huerfano started his presentation by highlighting the new works this year. PRSN operates 7 sea level stations in Puerto Rico and supports NOAA/NOS in the maintenance of 10 more stations. In addition, they supported the operations of three regional stations. He stressed that the data are transmitted every 6 minutes on GOES or via Earthworm export/seedlink modules each minute for selected stations and the data can be accessed via the PRSN GOES/tk, Tides and Currents/tsunami site of NOAA, and the IOC Sea Level Data Facility. Lastly, he mentioned the operation of three tsunami cameras by PRSN.
83. In terms of future plans, Dr Huerfano hoped for the installation of 2 new Tide Gauges, upgrade of the PRSN website, additional tsunami cameras, incorporation with the CARICOOS – HF radars (research), and network operators training (tentative).
84. Concerning the Seismic network, Dr Huerfano mentioned they have 35 seismic stations in Puerto Rico, BVI, and the Dominican Republic. Dr Huerfano stressed that PRSMP operates 120+ accelerometers which allowed them to improve their monitoring. In addition, he added that they have reinstallation seismic stations in Aruba for monitoring the region nationally and the installation of two stations and one hundred type-C. Dr Huerfano stated that they worked on the upgrade to the ANSS/AQMS, and the data are available via the EarthScope server and PRSN caster or seedlink.
85. Dr Huerfano outlined future plans, including the installation of one station in the northeastern part of the Island, two more accelerometers, and an upgrade to the PRSN website.
86. Dr Huerfano stated that PRSN operated a GPS/GNSS Network of 22 permanent high-rate stations (Real-time) and all the permanent GPS stations are equipped with either a Trimble NetRs, NetR9, or Alloy GPS/GNSS receiver and Choke ring antenna. In addition, he mentioned that 12 stations were upgraded to add RTX correction and GPS/GNSS short courses in August 2023. He noted that all data are accessible through the EarthScope server, as well as via the PSRN caster or Seedlink.
87. Dr Huerfano shared plans to install two additional new stations in the eastern part of the island, implement the TEC and IR algorithms in PRSN for research and sea level monitoring, upgrade software, and further enhance the PRSN website.
88. In terms of the Tsunami Ready/NTHMP, Dr Huerfano emphasized that the coastline of Puerto Rico has fully met the requirements of the TRRP. He explained that 58 EMWIN/NWWS systems were installed in Puerto Rico, four of which are equipped with DartCom hardware.
89. Dr Huerfano highlighted the distribution, updating, and testing of hundreds of NOAA radios, as well as the maintenance of thousands of tsunami signages. Regarding the education and outreach programme, he estimated that thousands of individuals have been impacted. He further mentioned the update of tsunami vulnerability profiles using new census-2020 data and the development of a new generation of tsunami maps. For Caribe Wave 2024, participation is expected to exceed 135,000, while more than 400,000 participants are anticipated for the Shakeout 2023 drills and exercises. On the subject of tsunami day, he referenced two activities, namely 1) Social media outreach, with a potential impact of 750,000 Facebook followers, and 2) Participation in the Tsunami Evacuation Workshop in Costa Rica in April 2024.
90. Concerning future initiatives, he outlined plans for 1) two new DartCom installations, sign language support, and non-conventional tsunami signage to increase community participation, and 2) tentative pedestrian modelling training, and 3) addressing ongoing financial uncertainties.
91. Dr Huerfano provided a brief overview of the ongoing research activities, noting the importance of accurate regional characterization for detection purposes. He also reiterated his commitment to improving outreach strategies to better engage the community regarding earthquake and tsunami risks.
92. Mr Metayer (Chair) expressed his gratitude to PRSN. He raised a question about the number of participants for Caribe Wave 2024 (135,000) and ShakeOut 2023 (400,000), as well as the meaning of the ShakeOut. Due to the time limitations, this question was addressed by email after the meeting.
    * 1. SMART Cable
93. The [report on SMART Cable](https://oceanexpert.org/document/34318) was presented online by Dr Matt Fouch (USA).
94. Dr Fouch began his presentation by introducing SMART Cables. Telecommunication cables comprise about 99.5% of all international internet traffic, though this is relatively small compared to satellite communication. Over $10 billion per day is transmitted along these cables including financial transactions. Concerning the ocean floor, there are about 1.4 million km of submarine fiber cable actively in use, with less than 0.1% of cable used for non-telecommunication purposes.
95. Dr Fouch presented a map for seafloor cable and mentioned that amplifiers are located every 60-100 km along the cable. Additionally, he stated that for the CARIBE-EWS earthquake and tsunami early warning, a key opportunity is to leverage commercial infrastructure.
96. Regarding the Joint Task Force for SMART Cables, Dr Fouch stressed that over 200 dedicated volunteers, including retired human resources professionals, are supporting this initiative. He mentioned two primary objectives 1) to provide comprehensive guidance to stakeholders and 2) to promote a positive environment for discussion. He added that the next goal of the JTF is to facilitate recommendations through several UN organizations including other ITU, WMO, IOC, etc. Lastly, the final goal is to promote the development of future SMART cable systems.
97. Dr Fouch outlined the services of SMART Cable 1) SMART Cable Sensor Systems 2) SMART Cable Data Management 3) SMART Cable Data Products. He raised the example of the SMART Repeater Sensor System by highlighting the size of 3-Axis Omni-Tilt Seismic Sensor, Temperature Sensor (External), and Pressure Sensor (External).
98. Concerning the SMART Cables for Natural Hazards Monitoring, Dr Fouch stressed that they have a fully vetted system and have completed all necessary work to ensure that the data is in proper format and is ready to be shared with monitoring agencies.
99. Dr Fouch mentioned an offer from the ASN and introduced a system called the CC-NODE (Climate Change Node) which addresses temperature and includes an accelerometer. He explained that this system is involved in 2 projects 1) New Caledonia- Vanuatu (TAMTAM SMART Cable System) and 2) Portugal (Portugal SMART Atlantic CAM).
100. Dr Fouch explained the CARIBE SMART Cable concepts by focusing on the unique opportunity presented by SMART Cables, which do not need to be populated. Lastly, he highlighted the importance of considering opportunities not only funded by the government but also involving cable providers to secure funding for SMART Cables. Additionally, he mentioned it is possible to demonstrate how SMART Cables can be more secure.
101. Ms Susan Hodge (Anguilla) stated that it was interesting and wondered if the SMART Cables would help address cutting issues during an incoming tsunami. Dr Fouch answered they could provide alerts indicating that something may happen, allowing for the preparation of alternative solutions and the positioning of repair ships, but this does not mean that it could prevent the tsunami.
102. Mr Metayer (Chair) raised a question about the SMART Cables and whether they are really on the ocean floor with the sensors that can detect tsunamis. Dr Fouch answered that a few cables are used for anything except for telecommunication. For example, Japan has 2 and it intends that they would not be able to retrofit or add sensors on the existing cable in the ocean floor. In addition, he added that the cables are on the seafloor and the sensors are the same.
103. Dr Necmioğlu pointed out the recent research on the active phase noise cancellation using the cables themselves, without any additional sensors attached and invited Dr Fouch to comment on this methodology. Dr Fouch mentioned that he is excited about other opportunities for cable sensing techniques. Additionally, he believed there are many opportunities for collaboration and the ability to use both types of sensors. Dr Fouch ouch added that the primary techniques such as interferometry still need to mature before they can be used in operational systems. In terms of real-time monitoring for natural hazards, he believed there is much more to explore.
104. Dr Necmioğlu questioned whether there is a connection between lost opportunities and cable lifespan. Dr Fouch responded that he believed that missing one opportunity last year does not mean that there are lost opportunities, given that the demand for bandwidth is increasing.
105. Mr Metayer (Chair) raised a question about whether SMART Cables could reduce the detection time of tsunamis. Dr Fouch ouch confirmed this, explaining that the SMART Cable offers more opportunities to characterize the location, type, and magnitude of earthquakes. He believed that measuring the pressure that SMART Cables can capture is critical for understanding the magnitude of the tsunami wave.
106. **The ICG noted** the report of UN and non-UN organisations.
     1. STATUS OF OTHER ICGs
        1. ICG/IOTWMS
107. The [report of the ICG/IOTWMS](https://oceanexpert.org/document/34336) was not presented due to the time difference but was made available as a presentation.
     * 1. ICG/NEAMTWS
108. The [report of the ICG/NEAMTWS](https://oceanexpert.org/document/34322) was presented online by Dr Alessandro Amato, Chair of ICG/NEAMTWS.
109. Dr Amato explained the ICG/NEAMTWS structure, including 3 WGs and 3 TTs. He highlighted that they have a new TT on Non-Seismic Tsunami Sources in February.
110. In terms of the achievements, Dr Amato underlined a publication of ‘NEAMTWS 2030 Strategy’ and the European Union funded ‘CoastWAVE’ project which is for strengthening the resilience of coastal communities in the NEAM region.
111. In terms of Pillar 1 (Hazard), he highlighted the importance of the Probabilistic Tsunami Hazard Assessment, which can be used to define the inundation zones.
112. In terms of Pillar 2 (Warning), he reported on the events that occurred in 2023, 7 of them in the Mediterranean and 4 in the Atlantic with magnitude 5.5 to 7.9. He raised the event in Türkiye on Feb 6, 2023, as the first event and it caused the maximum alert level and triggered DRR actions & strong media attention in many countries. In addition, Dr Amato stressed that there was poor coverage of sea level stations in Eastern Mediterranean coasts.
113. For the ongoing activities, Dr Amato raised the important activities which is the New Submarine Cable Ring connecting Portugal Mainland-Azores-Madeira supported by Portugal by using SMART Cable. In addition, he added that non-seismic tsunami sources including strong volcanoes and stated that they are trying to improve the local system and integrate the global system at the regional level in NEAM. Concerning the Tsunami Buoys, two deep ocean pressure sensors will be deployed in the Ionian Sea in 2025.
114. Dr Amato raised Pillar 3 (Mitigation) by providing information on NEAMWave23 and ongoing Tsunami Ready Recognition initiatives. Cannes Municipality in France was the first UNESCO IOC Tsunami Ready Recognized Community in the NEAM region and followed by Büyükçekmece in Türkiye. In addition, he added there are lots of publications, brochures, and videos for communication and outreach which are available on the website.
     * 1. ICG/PTWS
115. The [report of the ICG/PTWS](https://oceanexpert.org/document/34262) was presented online by Mr Yuji Nishimae, Chair of ICG/PTWS.
116. Mr Nishimae started his presentation by describing the thirtieth session of the ICG/PTWS Session in Tonga with eight adopted recommendations and the 8th joint ICG/PTWS-IUGG Joint Tsunami Commission Technical Workshop.
117. In terms of the PTWS response to Hunga Tonga-Hunga Ha’apai Volcanic Eruption and Tsunami, PTWC provided special products for an HTHH volcano-generated tsunami in March 2022. In January, HTHH Volcano Permanent Monitoring and Warning Procedures were published as the IOC CL-2984 dated 19th January 2024) as IOC TS 188.
118. Mr Nishimae described the ICG/PTWS Organization Structure, reporting that 3 TTs were dissolved and 4 new TTs were established.
119. Concerning the development of tsunami forecasting and tsunami warning systems for non-seismic events, including tsunami-generated volcanoes such as HTHH eruptions, this is an urgent issue for the global tsunami warning and mitigation system. Therefore, the new TTs were established under the WG2: 1) TT on Tsunami Generated by Volcanoes (TGV), and 2) TT on Forecasting from Ocean Observations (TT-FOO).
120. Mr Nishimae stressed that the thirtieth ICG-PTWS session decided to expand the ICG/PTWS Earthquake source zone because of the adjacent seismic zones. The provision of the Maritime Products for the safety of ships was considered by the TOWS-WG and the last IOC Assembly recommended TSPs collaboration with NAVAREA operators. After that, there is the recommendation that the PTWC finalize necessary preparations to provide special tsunami maritime safety products for ships for all NAVAREA Coordinators in the Pacific. In addition, he added that they decided to conduct the trial transmission to the NAVERA coordinators in PacWave 2024.
121. Mr Nishimae explained the Pacific region has 4 Tsunami Service Providers (TSP) and highlighted that the Central America Tsunami Warning Center (CATAC) is fully operated (24 hours/7 days) on the interim services. In addition, he gave the background of the CATAC that PTWS decided to admit the start of the official full functional operation after the IOC governing body meeting in 2024. He believed that the CATAC plays a pivotal role in both the Pacific and Caribbean regions, so he hoped that the CATAC could operate fully in both regions this year.
122. Mr Nishimaeunderlined the importance of the National Tsunami Warning Competency Framework, as it was approved at ICG/PTWS XXX.
123. Regarding the TRRP in the Pacific region, the number of recognized communities is gradually increasing. A dedicated Task Team on TRRP was established at ICG/PTWS XXX, and he believed its important role is to develop formal PTWS guidelines following the ‘Tsunami Ready Equivalency Approach’ for recognition of tsunami readiness of communities not necessarily implementing the IOC TRRP.
124. Mr Nishimae raised some upcoming events in the ICG/PTWS including the ICG/PTWS Steering Committee Meeting, ICG/PTWS-XXXI Session, and Exercise PacWave 24.
125. Mr Sherrod Marlon James (Antigua and Barbuda) raised a question about the reasons for deciding expansion of the earthquake source zone. Mr Nishimae answered that the reason is that there are a lot of seismic activities which could affect the Pacific region so, they would like to monitor the earthquake activities in that region.
126. **The ICG noted** the report of ICG/NEAMTWS and ICG/PTWS.
     1. TSUNAMI SERVICES PROVIDER REPORT (PTWC)
127. The [report of the Pacific Tsunami Warning Center (PTWC)](https://oceanexpert.org/document/34334) was presented in-person by Dr Charles McCreery (USA), Director of the Pacific Tsunami Warning Centre (PTWC).
128. Dr McCreery opened his presentation by explaining the seismic network and sea-level network. He mentioned 2 events in Panama and north of the leeward islands from 04/20/2023 to 04/30/2024.
129. In terms of the elapsed time to the initial product since 2019, he pointed out some improvements in the performance of epicentre, depth and magnitude estimations.
130. Dr McCreery informed on the updates in the PTWC Products, including the conversion of all upper-case text to mixed-case text, alphabetical order of country/territory names in threat message, organization of ETAs by country/territory, indication of the type of marigram measurement made (crest-to-trough, mid-to-crest, mid-to-trough), and definition pre-forecast potential threat areas by time-to-impact versus distance to the epicentre (not implemented and need to further study).
131. Dr McCreery informed on the new update of the User’s Guide to PTWC products which includes examples of the new format of messages. In addition, he stated it would incorporate information from the 2006 communication plan and retire that plan.
132. Regarding the communication test, Dr McCreery stated that they have the monthly scheduled communication test and unscheduled communication test, however, the unscheduled one was not good enough. He explained they decided to restart the unscheduled communication test and send a letter, and they received the response by a Google Form.
133. Dr McCreery raised the next issue as phasing out telefaxing of PTWC Products. He explained that most PTWC faxes to TWFPS and NTWCs now fail and there is a large cost of PTWC for the faxing service, especially failed faxes due to making multiple tries. He recalled the agreement in the TOWS meeting about phasing out telefaxes as a method of product distribution. Lastly, he added that they are waiting for the IOC Assembly to get the approval.
134. Dr McCreery underlined that they are still working on the implementation of GNSS data ingest and real-time GNSS. In addition, he mentioned an issue with the methodology of non-seismically generated tsunamis, particularly volcanoes (for ex, the VONUT method). In terms of the new items, he mentioned the new design of the “tsunami.gov” website, the new messaging software, and the development of a common analysis system in order to produce probabilistic forecasts. Lastly, he finished his presentation by mentioning the reorganization of 2 US TWCs under a common management structure, Distribution, and updated Users’ Guide for PTWC Products for the CARIBE-EWS, and the development of the maritime products for ships at sea
135. Mr Jasen Penn (British Virgin Islands) questioned about the next lower-level type of communication they would use in the event after phasing out the telefaxes.
136. Dr McCreery answered that if they need to use them, they will continue. However, he highlighted that if the faxes are not working well, it doesn’t help them at all. In addition, Mr Charles McCreery mentioned that communication could be the topic in the ICG regarding alternative ways to achieve reliable communication. He suggested the “[Chatty Beetle](https://www.oceanexpert.net/downloadFile/32426)” as another option.
137. Dr Amato (Chair of ICG/NEAMTWS) wondered whether the document that includes the changes in reading messages is ready to be circulated. Dr McCreery mentioned that it would probably be available soon and it is in the process of a final review from Mr Rick Bailey (UNESCO-IOC).
138. Mr Metayer (Chair) raised 2 questions 1) the exact date of the scheduled communication testing and 2) whether they will have the same products in terms of the joint management structure in 2025.
139. Dr McCreery answered that it is scheduled for the first Thursday of the month if he is not mistaken. Regarding the joint management structure, he believed it would make their programme more efficient. In addition, he added that they currently do not issue graphical products domestically and the PTWC only issues the US Center now.
140. Mr Metayer had the following question about whether they no longer send the unscheduled communication test. Dr McCreery mentioned they currently send only scheduled communication testing, and they will conduct the unscheduled ones, but they couldn’t inform the exact date because doing so would not meet the purpose.
141. Dr Chacon Barrantes (Costa Rica) commented on the request for change the criteria in tsunami products from distance to time, noting that the entire region has the potential to be affected by a tsunami.
142. Dr Necmioğlu, clarified the phasing out of telefaxing was a TOWS recommendation. This recommendation asks the Secretariat to advise all member states by Circular Letter (CL) that fax transmission of tsunami information products will cease 6 months from the date of the CL unless member states advise within 3 months that fax transmission of tsunami products is essential from the NTWC.
143. Mr Fabian Hinds (Barbados) informed that the Caribbean Institute for Meteorology and Hydrology (CIMH) is also responsible for that region, including issuing and managing GEONETCast. Dr Innis (IOCARIBE) commented that they are active and engaged in the establishment of Ocean Observing Systems and hurricane forecasting in that region.
     1. CATAC REPORT
144. The [report of CATAC](https://oceanexpert.org/document/34341) was presented by Dr Wilfried Strauch (Nicaragua), Senior Advisor of the Instituto Nicaraguense de Estudios Territoriales (INETER), which hosts the Central American Tsunami Advisory Centre (CATAC).
145. Dr Strauch expressed his gratitude to the JICA for their continuous support. He gave the background of the establishment of the CATAC by raising the huge earthquake in 1992 on the Pacific Coast of Nicaragua.
146. Dr Strauch stated the CATAC was created in 2016, did the pilot operation in 2019 supported by Japan, and then worked on the interim operation from 2021, December. CATAC system included 400 seismic stations, Tsunami Evaluation (SeisComp TOAST), Earthquake Early Warning (EEW), with the aim of seismological info messages to be disseminated in 2 minutes, and tsunami parameter messages including graphical products to be disseminated in less than 10 minutes.
147. Dr Strauch explained their service areas and monitoring zones in order to observe the arrival of the tsunami on the coast of Central America within 1 hour. CATAC fulfilled all performance indicators and stressed that the values achieved after final implementation in 2024 are better compared to those achieved during preliminary operations until 2019.
148. In terms of the assessment of the tsunamigenic potential adopted by CATAC based on preliminary seismological parameters, Dr Strauch explained the different tsunami potential descriptions by magnitude. He raised his experience with the processing of earthquakes larger than M7, including the case of the 2021 Haiti earthquake.
149. Dr Strauch stated that they have provided advice to countries in Central America not only during emergencies but also regarding CATAC products, analysis of weaknesses in the countries, and cooperation with institutions in Central American countries to improve their capacities.
150. Dr Strauch informed on the problems related to the tide stations. He stated that some of them were destroyed by hurricanes, and they have not been able to reinstall them yet. CATAC has developed a system for identifying coastal areas with a reduced time of possible first impact from local tsunamis. In addition, he commented on the possibility of experiencing a tsunami only a few minutes after an earthquake, citing examples: 1) Pacific/Guatemala-El Salvador and 2) immediate tsunami impact following a M7.3 in Honduras in 2009.
151. In terms of moving forward to the processing, Dr Strauch discussed the improvements in both automatic and manual Moment Tensor calculation, including those from near accelerograph stations. He also mentioned the optimization of tsunami simulations using the SeisComP module TOAST. Lastly, he stated that they now have a new GPU that can reduce processing times by more than 20 times.
152. Concerning the Earthquake Early Warning (EEW) products, Dr Strauch underlined that they established EEW in Nicaragua, El Salvador, Costa Rica, and Guatemala. He commented that countries in that region already have EEW, but this means giving other opportunities to get tsunami early warning. He added that the CATAC can transmit fast and make people evacuate before the hazards.
153. Dr Strauch raised some weak points by mentioning the request for the preparation of a regional exercise in Panama. However, during the 17 webinars, he explained that they found the materials were not as they thought they should be. He commented that they are still working on the improvement of situations such as SOPs.
154. In terms of the volcanoes, Dr Strauch stated that the main idea is about what to do with tsunami hazards due to the volcanoes in big lakes in Nicaragua. He added that he hoped to discuss this in the future. Concerning the CATAC testing new messaging methods, he stressed they are still using email, but the outcomes were not satisfactory. He raised computer communication such as SeisCom for good communication.
155. Dr Strauch mentioned they have a good alarm system for tsunamis and hazards in the coastal area by using sirens in Nicaragua. He raised the final request that CATAC fulfil all the conditions for the routine TSP operation.
156. In terms of the proposal to the ICG/CARIBE-EWS XVII, Dr Strauch elaborated on the New User’s Guide for the new standard, considering the new processing methods, messaging formats, and channels. He underlined that they would release the English version and then the Spanish version. Lastly, he highlighted the full operation of the CATAC and endorsed the final admission of the CATAC by the IOC in August.
157. The Secretariat mentioned the discussion regarding the recommendation on the CATAC is on the agenda 5.3. policy matters.
158. Dr Silvia Chacon Barrantes (Costa Rica) asked whether the new User’s Guide is available or not. Dr Strauch answered it is not available now because it needs to be updated. He believed that updating the SOPs and other things needs to be discussed with NTWC and several protection agencies, however, he will present it this Friday. Dr Chacon Barrantes highlighted that the real users of CATAC’s product are themselves, not the disaster management agency. She mentioned disaster management agencies will work on what they issue based on the CATAC products so, she hoped to include that discussion.
159. Dr Strauch added that CATAC is concentrated in the near tsunami area such as central America up to a time distance of 1 hour. In terms of communication channels, they are routinely using only email, but they are introducing other channels as social networks. In addition, he added they are in the process of discussing how to use these new methods to transmit products directly to other Central American countries. Lastly, he added they are now trying to test the SeisComp with WhatsApp and other social media. However, he stated that SeisComp is donated by Japan and the CATAC is not able to buy the new version every year because of the expensive price.
160. **The ICG noted** the report of CATAC.
     1. NATIONAL PROGRESS REPORTS
161. The Chairperson advised that National Reports have been received from the following Member States prior to the start of the session:

3.8.1 [BARBADOS](https://oceanexpert.org/document/34227)

1. Mr Fabian Hinds (Barbados) opened the presentation by introducing the Barbados team and the Technical Standing Committee on Coastal Hazards (TSCCH). The national sea level network has now been updated, and now includes 9 stations.
2. In terms of global tsunami recognition, Barbados achieved the first global TRRP for the area from Shermans, St. Lucy to Mullins in St. Peter in June 2020. Two new pilot initiatives have been launched. Regarding the Common Alerting Protocol (CAP) and mass notification systems, an upgrade is aimed at improving operability and expanding capacity. This includes increasing the number of radio stations from 4 to 18 and signing MOUs with 10 broadcasting stations. In the future, they plan to continue upgrading and collaborating with the DEM, the Ministry of Innovation, Science and Smart Technology, and the Telecommunications Unit to support these upgrades.
3. Mr Metayer (Chair) raised a question about the update of the national sea level network and the reason why some communities are coloured in red. Mr Hinds answered because it is in Port St. Charles, but they pointed to the other sea level stations that are available on the website.

3.8.2 [ANTIGUA and BARBUDA](https://oceanexpert.org/document/34342)

1. Mr Sherrod Marlon James (Antigua and Barbuda) began the presentation with the related activities and coastal hazards. He mentioned they have been working in terms of the number of areas for the preparation and exercises.
2. In terms of the last Caribe Wave Exercise, they involved their stakeholders especially the response agencies with the NGOs, and their local volunteers of the national network. Mr James stated that they did a lot of public awareness, and utilization of the traditional media as well as electronic billboard social media. In addition, this event caused lots of participation from a number of agencies in the education sector from early childhood education.
3. Mr Marlon James stated that they have a number of works with diverse communities in terms of their tsunami evacuation exercises. As the outreach works, they have been working with their ministry liaisons in the education, tourism, and other sectors to build up their preparedness activities and help them develop their plans and policies.
4. In addition, Mr Sherrod Marlon James added that they are working closely with the Met Service and highlighted a number of things that need to be improved in their country. Many activities related to the early warning system have been working under the EW4All. They mentioned they are focused on the identification of gaps.
5. SEDIMA Early Recovery Programme and its development partners, this project is to add the national siren to the CAP system which is their primary early warning system. Mr James mentioned they are dealing with all the modalities with cell phones, and social media. Therefore, they are looking to develop where they have a siren, so they are going to identify the best place to start with for the pilot.
6. Mr James stressed that they are working with the CTIC in order to support and enhance the national TNC and TWFP. In addition, they mentioned that they established the ‘disaster management week’ for public education and awareness. They also bring the ‘YOUTH’ in this event in order to make the next generation aware of the capabilities, careers, avenues that need to be addressed and moving forward.
7. Mr Metayer (Chair) asked about the status of the TRRP implementation in Antigua and Barbuda. Mr James answered that they are coming out of the last TRRP that they were involved in certifying in St. John’s. In addition, they have been engaging the TRRP in their disaster management exhibition week and also in the YOUTH in disaster risk management as well as engaging with the actual policymakers and the general public to build awareness on Tsunami Ready. Lastly, they stated that they push the TRRP as the main engine in terms of their activities.

3.8.3 [COLOMBIA](https://oceanexpert.org/document/34305)

1. Mr Johan Sebastian Reyes opened his presentation by mentioning that they are a part of Colombia Service that issues messages such as sea directions. Additionally, the Office of Natural Disasters sends messages to local communities and authorities.
2. Mr Reyes stressed that they published a national protocol last year which includes procedures and newsletters on how messages are disseminated during seismic evaluations, volcano activity, and changes in sea level.
3. Regarding sea-level measurements, Mr Reyes stated that they have 15 stations and continuously monitor their territories. During Caribe Wave 2023 all officers in the region were trained. The national alert system was activated and the methodology system for national risk reduction and disaster response to natural hazard disasters were refined.
4. In terms of future plans, they agreed to include a project focused on resilient communities facing tsunami threats in the national plan, therefore, they work on the implementation of the tsunami readiness. In addition, Mr Reyes mentioned that they begin to work with communities in the municipality on developing indicators. Mr Reyes further stated that they will continue training to improve assessment in the forecasting newsletter which supports real-time responses to threats and hazards. Lastly, they indicated that they would work on an evaluation approach and assess communication strategies in other communities.

3.8.4 [COSTA RICA](https://oceanexpert.org/document/34228)

1. Dr Silvia Chacon Barrantes (Costa Rica) began her presentation by noting that there was no event in Costa Rica during the intersessional period. She reported on past and upcoming activities, including Spanish-language SL training in November 2023 and the Tsunami Evacuation Workshop in Spanish in April 2024.
2. Regarding work with communities and national parks, Dr Chacon Barrantes stated that there are no evacuation maps yet, but one is planned. Bathymetric surveys are scheduled for the second half of the year to assess sea conditions in Tortuguero and Gandoca-Manzanillo. However, she noted a challenge as reaching Tortuguero requires traveling by boat.
3. Dr Chacon Barrantes also highlighted planned activities, such as a Tsunami Ready panel as part of Congress of Integration of Knowledge for a Sustainable Ocean (CISOS 24), their 10th anniversary, and an exhibition at the national library on historical tsunamis. In addition, she added that Cahuita has submitted the TRRP application, the first tsunami-ready community in that region.
4. Lastly, she noted that they currently have 1 sea level station in the Caribbean region and have received a donation to put 4 more stations. However, they are still searching for a suitable location for the 2nd station. If they are unable to find one, they would place all the stations in the Pacific, though they hope to install the 2nd station in the CARIBE.
5. Dr Strauch (Nicaragua) inquired about Costa Rica’s plan for early childhood education. Dr Chacon Barrantes emphasized their close work with the Ministry of Public Education and mentioned a school located in an inundation area. They have developed evacuation maps for 60 communities, stressing that schools need their own evacuation plans tailored to the community level. She added that each municipality has about 20 coastal members, which is manageable, and they plan to start working with municipalities.
6. Mr Metayer (Chair) asked about plans for the TRRP in the Atlantic. Dr Chacon Barrantes mentioned that they currently have one TRRP which has a multiplier effect, and they hoped to encourage more communities to apply.

3.8.5 [FRANCE](https://oceanexpert.org/document/34304)

1. Dr Valérie Clouard (France) informed that the French delegation group to CARIBE-EWS includes around twenty members from the territories of Martinique, Guadeloupe, St Martin and St Barthélémy and from mainland France, belonging to different organizations.
2. France contributes to the CARIBE-EWS with 15 seismic and 8 tide-gauges stations in real-time. Work continues to maintain and modernize networks of which 90% of data is transmitted and whose returns experience clearly shows the vulnerability to extreme climatic hazards, even if during hurricanes Maria and Irma demonstrated that stations protected by Radomes provide good resistance for cyclones.
3. In connection with WG1, over the last 2 years, there have been several studies carried out, notably research for paleo-tsunamis in Martinique and Saint Martin, the creation of maps flood and tsunami intensity on Martinique, modelling of tsunamis generated by the collapse of the flank of the Pelée volcano in Martinique and again the participation in. Work on the implementation of alert procedures in the event of a volcanic crisis has been completed.
4. Following the creation in 2022 of the National Tsunami Ready Board under the chairmanship of the chief of Interministerial Staff of the Antilles Zone, the municipalities of the territories are committed in the process for TR recognition. In June 2023, the commune of Deshaies in Guadeloupe was officially the first commune of France (not only the French Antilles) recognized as Tsunami Ready by UNESCO. Saint-Barthélémy plans an official commitment to the process later this year.
5. During the Caribe Wave24 exercise, a total of 173,000 people registered with the significant participation of school communities and were able to massively test the FR-Alert alert system, which is a population alert system by cell phone notification.
6. Lastly, Dr. Clouard informed the ICG on the availability of France (Martinique) to host the next session of the ICG.
7. The Secretariat expressed his pleasure to hear the availability of hosting the next ICG from France.
8. Mr Metayer (Chair) inquired about other communities besides Guadeloupe and Martinique in terms of tsunami and TRRP. Dr Clouard answered that there are some communities, such as French Guiana, that are not included in French initiatives, and she believed this should be discussed in the future. Regarding the TRRP, she noted that some other communities are preparing for it.

3.8.6 [ANGUILLA](https://drive.google.com/file/d/1mmRd5lpdFvc3VChTa9p-FzE1Wv855Gjp/view?ts=66367f13)

1. Ms Susan Hodge (Anguilla) informed the ICG on the ongoing work on TRRP, education, and outreach events and activities with a mission to fortify Anguilla’s tsunami preparedness through workshops, educational outreach, and rigorous stakeholder meetings that cover the scope of the UNESCO IOC TRRP.
2. Through the expert meetings, they finished work with a much more sophisticated analysis of the impact on the island and mentioned that most of the results were accurate and highest-resolution data sets that used the best available models. In terms of what sources of tsunami are the best estimates in the Caribbean, they use those data and models to generate the worst scenario for Anguilla and estimate the maximum wave elevation, the maximum inundation area, current speeds and flow depth. The most important thing is that now they have more reliable estimates than before and found that lots of the population were actually located in the hazard zone.
3. Stakeholders for these efforts engaged in reaching out to the community through radio and educational materials. In addition, specialized workshops focused on communication addressed the challenges of conveying the complexities of tsunami hazards from school children to the elderly, ensuring that no one is left behind in terms of education and awareness. Lastly, they commented that they were done with the evacuation exercise and activities.
4. Mr Metayer (Chair) wondered if Anguilla finished the renewal of TRRP; if so, he was curious about the part of renewal and obstacles of the process. Ms Hodge responded that they originally were recognized in 2011 and renewed in 2014. Originally, they planned to renew in 2017 but unfortunately, they couldn't. Ms Hodge (Anguilla) describes trying to make all people understand as the biggest obstacle. In addition, they added they are much more focused on the schools and children to provide a safer zone, when necessary, in natural hazards.

3.8.7 [BRITISH VIRGIN ISLANDS](https://oceanexpert.org/document/34380)

1. Mr Jasen Penn (British Virgin Islands) explained the educational public outreach activities, community projects, and tsunami exercises. A Disaster Expo was conducted with Red Cross in order to share information in terms of tsunami awareness. Concerning CARIBE WAVE 2023, they had lots of participants compared to the past.
2. Mr Penn expressed their gratitude to Puerto Rico’s Strong Motion Program for the re-establishment of seven strong motion sensors. In addition, they stressed that the Puerto Rico Seismic Network in conjunction with the Network of the Americas reestablished two seismic stations. Lastly, they added that the Puerto Rico Seismic Network assisted the Virgin Islands in commissioning a tide gauge in Cane Garden Bay and diagnosed the issue with the tide gauge in Baughers Bay.
3. For the future, Mr Penn raised the need to update tsunami protocols, installation of warning systems such as sirens and visual-type weather cameras, and development of the policy in terms of tsunami warnings and training for the purpose of MHEWS. In conclusion, they highlighted the funding challenges that allow them to facilitate and enhance capacity building for the SIDS.

3.8.8 [USA](https://oceanexpert.org/document/34269)

1. Mr Gregory Schoor (USA) explained that they will continue to advance and strengthen their effort on the TRRP for forecasting, analysing, and disseminating the tsunami warning. They also supported the initiative of ODTP, TRRP in UNESCO-IOC, and CARIBE WAVE exercises and training as part of international and regional capacity enhancement. Lastly, he mentioned ongoing projects involving NOAA, line offices and programmes, US agencies, Puerto Rico, and the US Virgin Islands to fulfil both domestic and international missions.
2. He introduced the transition of the website from the National Weather Service website to the UNESCO-IOC website within the ITIC framework, which is available online. Regarding the Caribe Wave exercises, Puerto Rico and US Virgin Islands also participated in the CARIBE-EWS communication test with PTWC, 136,000 participants from Puerto Rico and 23,000 participants from the Virgin Islands.
3. He mentioned that they work in near real-time to detect tsunamis and build measurement capabilities, including DART and SMART Cable. He highlighted the significant improvement in tsunami forecast accuracy and expressed expectations that this capability will include analysing and integrating a large number of real-time data inputs.
4. In terms of the TRRP, Puerto Rico and the US Virgin Islands maintained their status asTsunami Ready. He emphasized the high priority of applying an inclusive approach to provide a balanced platform for gender and generational participation, noting that the first tsunami brochure in Braille is a global initiative.
5. In conclusion, he stressed their endorsement of contributions to implementing the UNESCO-IOC Tsunami Ocean Decade framework developed by the UN ODTP. Lastly, they are looking forward to celebrating the 20th year of achievement and advancement in the Caribbean region.
6. Ms von Hillebrandt-Andrade (USA) added that there are 200 Tsunami Ready communities in Puerto Rico and the US Virgin Islands recognized as Tsunami Ready through the National Weather Services. She underlined that they are looking for cross-recognition in order to achieve the goal of 100 % of communities prepared for tsunami resilience in 2030 because the UNESCO IOC TRRP is based on the US programme which means they meet all the requirements.
7. Mr Metayer (Chair) expressed his gratitude for support from the US provided to the CARIBE-EWS.

3.8.9 [VENEZUELA](https://oceanexpert.org/document/34229)

1. Mr Anthony Aguilar (Venezuela) presented advances and efforts regarding tsunami-related activities and initiatives. For the early tsunami alert system, they are developing a seismological system that needs to continue improving its reporting capabilities across national territories. Regarding the monitoring of coastal areas, these efforts are part of the national framework, enabling comprehensive coverage, including sea level monitoring and access to the entire system.
2. In terms of the regional seismological system, Mr Aguilar mentioned the preparation of a network utilizing GPS technology, along with local registration efforts. He added that they have been engaging with the main radio organization in Venezuela. They highlighted that they have been successful in considering being a part of a network and information not only for tsunamis but also other natural disasters, and threats. In addition, he emphasized that they transmit information to the radio in real-time and hope to incorporate all local radio stations. Lastly, he reported on the agreement with the CTBTO regarding real time data transmission from its International Monitoring System (IMS).
3. The Secretariat congratulated Venezuela for the agreement with CTBTO and encouraged other Member States to proceed with the agreement in order to receive real-time data from CTBTO.
   * 1. [GUATEMALA](https://oceanexpert.org/document/34362)
4. Mr Robin Onelio Yani Quiyuch (Guatemala) stressed that they had the improvement to detect the tsunami through a joint effort with the CATAC and created the seismic network and early warning system which supported them to use as an efficient 7/24 tool.
5. For tsunamigenic events, they get information from the PTWC and the CATAC. There are currently 76 seismic stations which allow them to get real-time data with good quality for tsunami early warning purposes.
6. Concerning the national sea-level network, the Department of Hydrological Research and Services developed the dashboard to monitor in real-time the sea level. New inundation maps were produced. Several activities focus on tsunami event simulations in close collaboration with the municipalities.
   1. REPORT OF CARIBE WAVE 2024
7. The [report of CARIBE WAVE 24](https://oceanexpert.org/document/34286) was presented online by Mr Anthony Aguilar (Venezuela). Supporting documents for this agenda item are [Draft Caribe Wave 24 Report](https://oceanexpert.org/document/34288) and its [Supplement](https://oceanexpert.org/document/34291), [Media Report](https://oceanexpert.org/document/34292), and [Evaluation Report Status](https://oceanexpert.org/document/34293).
8. Mr Aguilar began his presentation by mentioning objectives as a summary of Caribe Wave 24 and survey results. He provided information about the exercise which was held on 21 March 2024 by mentioning a total of 475,147 people participated. He explained that the issuance of the CL in October 2023, the Handbook Draft in November 2023, 1st and 2nd Webinar in 3 languages (English, Spanish, and French), the exercise in March 2024, and the Hot-Wash and the exercise evaluation due in April 2024.
9. In terms of the Goals and Metrics, Mr Aguilar stated that they achieved 100 % for the goal that the TWFP received the dummy messages. In addition, Mr Aguilar mentioned the increase in participation, which is very important, however, some countries are still unable to join in-person. He encouraged Member States to participate in at least one activity. He explained that the data on the number of participants and categories is important to identify which groups they need to focus on.
10. Mr Aguilar stated that the questionnaire in the evaluation form contained 39 questions for participating countries to provide feedback on the exercise with the deadline extended until April 15. He added that a total of 28 surveys were completed from thirty-seven of the forty-eight Member States and Territories by highlighting the survey completion rate is low.
11. Based on the evaluation form, Mr Aguilar stated that they acknowledge the GTS and satellite system are working well but most of the messages were distributed by email. In addition, Mr Aguilar highlighted the importance of seeking other communication systems to avoid message delays.
12. In terms of the threat messages, the majority of the TWFP/NTWC received simulated messages from the PTWC via email at the times specified in the Exercise Manual. Mr Aguilar raised the challenges of incorporating social scientist engagement.
13. Ms von Hillebrandt-Andrade acknowledged that only one member state indicated that they are using the MON and none of them is using the GEONETCast Americas which creates the redundancy for receiving the products from the PTWC since they are satellite and non-internet based. In addition, they noted the challenges and hoped for improvements in early warning and dissemination.
14. Ms Marie-Noëlle Raveau (France) raised 2 questions: 1) if it would be possible to adjust the timeline after their project about school launching and 2) the process regarding collaboration of seismic scenario and non-seismic scenario.
15. Mr Aguilar mentioned that this is a joint effort from all countries made by the participation of the Member States. He strongly highlighted that success depends on active participation in diverse topics and acknowledging each country’s different context. In addition, they are continuing to receive proposals to incorporate the different scenarios for future exercises. Mr Aguilar underlined that they have to check the proposal about the most convenient time, but they could make an arrangement for the timeline and are open to any suggestion.
16. Dr Necmioğlu, reminded the agenda 5.2 for the CARIBEWAVE 2025 which they could take an opportunity to discuss.
    1. TSUNAMI READY RECOGNITION PROGRAMME
17. The agenda item was supported through an in-person [presentation](https://oceanexpert.org/document/34348) by Mr Fabian Hinds (Barbados), supported by Ms Christa von Hillebrandt-Andrade (USA), Ms Alison Brome (CTIC), and Ms Silvia Chacon Barrantes (Costa Rica) .
18. During the ICG/CARIBE-EWS online Officers Meeting on 1-2 February 2024, it was proposed to have a Tsunami Ready dedicated Task Team because of its transversal nature, to be chaired by Hinds. It was decided to bring this proposal to the attention of the ICG/CARIBE-EWS XVII for decision.
19. Mr Hinds opened his presentation with the recommendations of the Midterm Officers’ Meeting in section 4.4 “WG 4: PREPAREDNESS AND RESPONSE CAPABILITIES” of the Midterm Officers’ Meeting Report. He raised the relevant follow-up actions including the ICG requested CTIC with WG4 regarding the determination of the target number of communities in the CARIBE-EWS for Tsunami Ready Recognition by 2030, and the proposal to ICG/CARIBE EWS-XVII about the establishment of a stand-alone Tsunami Ready Task Team (WG4/Chair) by raising the restructure.
20. In terms of the UNESCO IOC Tsunami Ready Indicators, there are 12 indicators (ASSESS, PREP, RESP). Each proposed WG is relevant to the successful implementation of the 12 Tsunami Ready Indicators.
21. Dr Chacon Barrantes commented that as Mr Hinds (Barbados) mentioned, it is right to not put it under one of the WGs and this point was not in consideration during the past ICG and before the restructuring of the WGs. Ms von Hillebrandt-Andrade highlighted that they are not altering all the TORs or the structure of any WGs by explaining the only proposal is the elevation of the sub-working group to task teams because the assessment, analysis, and forecasting are crucial in the TRRP.
22. The Plenary provided comments or questions on the recommendation. Ms von Hillebrandt-Andrade (USA) invited Ms Brome (CTIC) to review paragraphs on all-donor agencies and countries.
23. **WORKING GROUP PROGRESS REPORTS**
    1. WORKING GROUP 1: RISK KNOWLEDGE
24. [Working Group 1 (Risk Knowledge) report](https://oceanexpert.org/document/34233) was presented online by Dr Frédéric Dondin (France), supported by Dr Raphaël Paris (online).
25. Dr Dondin explained the purpose of the WG1 is to advise the ICG on the identification and characterization of the risk associated with tsunami and other coastal hazards, and their assessment and required modelling.
26. In terms of the Tasks, Dr Dondin raised the review and evaluation of the required methods and data sets, advice to the member states on the requirements for operating the appropriate models for risk assessment, capacity building for risk assessment and their interpretation, presentation a progress report based on the Key Performance Indicators (KPI) related to the UN ODTP, and seeking advice from member states about the coastal hazards and early warning system, and knowledge sharing.
27. Dr Dondin underlined the need for Member States to nominate members with modelling experience to assist in getting files prepared for display on CATSAM and the WG1-supported member states to upload their elevation data.
28. Dr Dondin stated that the WG1 supported the WG2 with the parameters, including associated files such as shapefiles and geotiff of tsunami scenarios once they are available for future Caribe Wave exercises. He raised the recent discussion on new scenarios to be implemented in CATSAM and these were not validated by all the experts contacted, as there is a debate on the reliability of some of them.
29. Dr Dondin informed on the planning to organize two expert meetings for 1) Non-Seismic Sources of Tsunamis in the Caribbean and 2) Seismic Sources of Tsunamis in the NW Caribbean. In CATSAM, they have only one non-seismic scenario which is a landslide at Kick’em Jenny submarine volcano, and two scenarios in the NW Caribbean in the Gulf of Honduras. He highlighted that an update is needed after the meeting in 2025.
30. Dr Dondin described one of the goals as compiling and prioritizing a list of non-seismic sources; and encouraging models of scenarios to be available, when possible. He emphasized this task will be mostly addressed after the meeting on non-seismic sources of tsunamis by getting benefits from new publications.
31. The WG 1 planned to organize regional training, but it is ranked as priority 2 compared to the two expert meetings. Concerning current activities, Dr Dondin mentioned recent papers and an ongoing project in the Grenadines led by Dr Raphael Paris.
32. Dr Victor Huerfano (Puerto Rico) commented that the recommendation is more focused on the hazard assessment, not risk assessment, and raised a question if they have activities related to the risk assessment.
33. Dr Dondin answered that during the midterm meeting, they addressed some changes to the goals, focusing not only on hazards but also on risks. Additionally, he stated that they need to review what has been done and what still needs to be done. He also mentioned that this point will be discussed at the expert meeting to be held this December, specifically regarding how to collect vulnerability and exposure data.
    1. WORKING GROUP 2: TSUNAMI DETECTION, ANALYSIS AND FORECASTING
34. [Working Group 2 (Tsunami Detection, Analysis and Forecasting) report](https://oceanexpert.org/document/34264) presented online by Dr Elizabeth Vanacore (Puerto Rico), supported by Dr Dan McNamara, Ms Gloria Romero and Dr Chris Moore (online).
35. Dr Vanacore provided an update on the current status of seismic station coverage with a decent coverage. Additionally, she reported the current sea level status and underlined that most of the stations are out in the western Caribbean.
36. Dr Vanacore also highlighted the GNSS workshop held at the Puerto Rico Seismic Centre in August 2023. This event was characterized as a field trip to the PRSN GNSS station installation in Anguilla and was conducted in English with over 40 participants. She underscored the necessity for a comprehensive and updated inventory for the CARIBE-EWS.
37. The WG2 participated in the IOCARIBE GOOS –TAC-OOFS Initial Working Group Meeting on January 27, 2024. This meeting presented a valuable opportunity for the tsunami community to engage directly with Ocean Observing Data Centres. She highlighted the call for volunteers and the importance of standardizing metadata formats for sea level data.
38. During the WG2’s first official meeting, several key outcomes such as the suggestion of adding a technical webinar to meetings/series, the need to develop a WG of specialists to support the implementation of cable-based data into tsunami monitoring, and further development of monthly reports to indicate the impact of data availability on tsunami detection.
39. Dr Vanacore mentioned the planning meeting for the sea level workshop in English scheduled for March 2024. She reported the meeting with representatives from UNESCO and NOAA to start the organization of an English language sea level training/workshop, modelled after the previously held Spanish-language workshop in Costa Rica. Lastly, she added a small working group has been established to plan the workshop, with the potential to host it in the USVI.
40. Regarding action items, Dr Vanacore emphasized the need to establish a clear method for transmitting monthly reports to network operators. She also highlighted the importance of ensuring that operators communicate station updates, schedule meetings, create a Cable Task Team, update volunteers, and enhance the quality of monthly reports.
41. Dr Annie Zaino (USA) provided a brief introduction of the EarthScope Contributions ICG/CARIBE-EWS 2024 with the collaboration for the EarthScope between IRIS and UNAVCO which are the non-profit research consortiums.
42. Dr Zaino highlighted their efforts in seismology support and data archiving, including raw seismic data and derived products. This initiative is not only for their own use but also benefits other organizations contributing to the global seismographic network. Additionally, they support geodesy and data archiving for GNSS, borehole strain, and other related areas.
43. Regarding the Network of the Americas (NOTA), Dr Annie Zaino reported that they manage a network of 11540 GNSS stations with ongoing funding for repairs, upgrades, engineering support, and data archiving. She emphasized that the majority of these stations have been upgraded to full GNSS capabilities and now provide 1Hz real-time data.
44. In terms of data services updates, Dr Annie Zaino stated that a key focus is migrating all data operations to the cloud, transitioning from physical servers located in Colorado, Seattle, and Washington. This migration offers advantages such as reduced real-time latency and lower costs for the NSF, etc.
45. Dr Zaino stressed that the success of the network and its operational sustainability are largely attributed to strong partnerships with local agencies and international collaborators. By fully integrating GNSS data into tsunami forecasting models, they have significantly increased the total number of monitoring stations and overall network density. She noted that as they continue to work on this project, the benefits will only grow.
46. Mr Fabian Hinds (Barbados) raised concerns about some stations being non-operational due to the need for battery replacements, referencing the current sea level status map. Dr Vanacore noted and reported this issue.
47. Dr Chacon Barrantes (Costa Rica) mentioned that while they are included on the map, they have a station that has been transmitting without any issues regarding updates.
48. Dr Necmioğlu suggested providing training in both Spanish and English for sea level data to better serve community needs. Dr Vanacore noted this suggestion.
49. Ms von Hillebrandt-Andrade (USA) made a correction on the map which reflects the data ports and maps from the PTWC. She mentioned the new website for ITIC-CAR which features monthly reports and maps.
    1. WORKING GROUP 3: TSUNAMI WARNING DISSEMINATION AND COMMUNICATION
50. [Working Group 3 (Tsunami Warning Dissemination and Communication) report](https://oceanexpert.org/document/34224) was [presented](https://oceanexpert.org/document/34306) online by Ms von Hillebrandt-Andrade (USA), supported by Susan Hodge (in-person).
51. Ms von Hillebrandt-Andrade addressed the TORs and highlighted that the WG3 presents a progress report based on the Key Performance Indicators related to the UN ODTP including capacity building. She identified the focus area of WG3 as an end-to-end tsunami warning system from TWC- Science to DMO/EWA -safety, and then Public.
52. Ms von Hillebrandt-Andrade shared some activities undertaken, including a meeting to review membership, a meeting of the Chair and Vice Chair, and two meetings held in January and April. In addition, she explained the membership (19 members, 18 regular) and the invited experts from UNDRR.
53. In terms of the support of ITIC-CAR, Ms von Hillebrandt-Andrade stated that the WG3 is looking for the TSP to send their products, noting that there are 30 methods available for receiving and disseminating TSP products. She emphasized that the WG3 reviewed other methods and mechanisms used at various levels and agencies from TSPs through national authorities down to the private sector, media communities, and local governments, and mentioned the challenges as redundant and robust methods.
54. Ms von Hillebrandt-Andrade provided feedback from CARIBE WAVE and TSPs PTWC and CATAC. She noted that CATAC relied on email, web, messaging, and social media but lacked the capacity to generate GTS messaging, and social media but lacked the capacity to generate GTS messages. Additionally, she expressed concerns about outdated tsunami protocols among Caribbean American stakeholders. Regarding PTWC, she mentioned that PTWC evaluated Slack as a potential resource for communication and highlighted that Tsunami.gov is being updated. Ms Christa von Hillebrandt-Andrade presented a graph indicating communication methods from 2016 to 2024, showing that email remains the dominant method.
55. As pending actions, she noted the report of ICG XVIII was posted on May 3, 2024, which includes part of the CATAC recommendations. In relation to WG’s recommendations, Ms von Hillebrandt-Andrade emphasized the importance of active participation from all members and encouraged member states to support and motivate members to engage actively in WG3. In addition, the WG3 acknowledged the findings and recommendations from the UN EW4All.
56. Concerning ongoing recommendations from WG3, Ms von Hillebrandt-Andrade mentioned “Recommends CATAC to explore integrating EQEW applications into its tsunami services and products for its TWFP and NTWCs” is closer to the WG2 and explained the whole recommendation of WG3.
57. Dr Victor Huerfano (Puerto Rico) asked about updating the long-term support from the NOAA system. Ms von Hillebrandt-Andrade raised there are some transition plans to support better technology and further updates on any planning and timing of changes that has a possibility to affect the operation.
    1. WORKING GROUP 4: PREPAREDNESS AND RESPONSE CAPABILITIES
58. [Working Group 4 (Preparedness and Response Capabilities) report](https://oceanexpert.org/document/34230) was presented in-person by Dr Chacon Barrantes (Costa Rica), supported by Mr Ngumbah (Saint Kitts and Nevis-online), Dr Edwards (Trinidad and Tobago-online), and Mr Fabian Hinds (Barbados-in-person).
59. Dr Chacon Barrantes explained the timeline for the new WGs and TTs of the WG4. Regarding the outcomes of the first meeting, she stressed that they had 14 participants who decided to organize themselves into subgroups. Additionally, WG4 discussed conducting surveys within MS on best practices, strategies, and measures. Also, the WG4 recommended that ODTP-KPI become the four standards for National Reports.
60. Dr Chacon Barrantes informed on the planning of a workshop on the Manual and Guides 86 on multi-annual exercise planning, noting that funding is pending. During the tsunami evacuation workshop in Costa Rica in April, information was received that only Puerto Rico and Costa Rica had calculated evacuation times. Consequently, they decided to develop tsunami evacuation maps and plans for other Caribbean American countries. Lastly, she added that training in Spanish could be conducted with ICG/PTWS, while English training would be exclusively for ICG/CARIBE-EWS.
61. Dr Chacon Barrantes raised a concern about the national report format, which could hinder some countries’ ability to work on the national report. She suggested that they could create a form such as Google Forms, SurveyMonkey, etc, and to include ODTP indicators in this report.
62. Mr Ngumbah (Saint Kitts and Nevis) proposed a strategy to integrate creative engagement in Disaster Risk Reduction (DRR) Programmes. This project aims to enhance DRR and emergency management across member states. He highlighted the importance of enhancing public awareness, cultivating community resilience, and strengthening preparedness. For initiatives, he raised educational outreach, workshops, public art, digital platforms, and performance arts.
63. Mr Ngumbah explained the implementation phases, including 1) conceptualization and partnerships, 2) Content development, 3) Dissemination via multi-channel campaigns, and 4) Monitoring and adaptation.
64. Mr Ngumbah concluded his presentation by highlighting that a transformative approach to DRR through creative engagement will enhance the efficacy of a community-centric early warning system, engagement, and community resilience. In addition, it will strengthen the partnership between DRR stakeholders and strengthen the creative sector.
65. Mr Hinds explained the Tsunami Ready Report of the WG 4 by mentioning the confirmed members (2023-2025). As for the objectives of tsunami ready, he emphasized ensuring 100% of at-risk communities are prepared for and resilient to Tsunamis by 2030 through efforts like UNESCO-IOCTsunami Ready designation and the development of guidelines and capacity development including sharing of training and evacuation best practices.
66. The modality which is the feedback survey on the implementation of the UNESCO IOC Tsunami Ready Recognition Programme required two responses from each community receiving/renewing their recognition status from 1) the National/Regional Tsunami Ready Board and 2) Tsunami Ready Committees of the community being recognized.
67. Mr Hinds explained the survey implementation strategy including the method (Survey Monkey), language translations (English, French, and Spanish), and the Scope (all UNESCO-IOCTsunami Ready Recognition communities recognized since 2019).
68. Mr Hinds raised some future work such as the conclusion of the post ICG, results of the survey, and survey feedback which is for facilitating the formulation of strategy.
69. Dr Vanacore raised a question about whether the Tsunami Ready survey will include the social scientist in terms of the design of the feedback. Mr Hinds (Barbados) answered that if they are relevant experts, they could invite them. Dr Chacon Barrantes mentioned her concern about creating lots of surveys and the purpose of the national report as the option to harmonize everything. Ms von Hillebrandt-Andrade mentioned this survey is approved by the ICG and in the process of administering.
70. Ms Raveau (Martinique) commented on the new strategy of creative engagement in DRR programmes and argued that they could also only target the question for the emotion which could bring a different view.

1. **POLICY MATTERS**
   1. REVIEW OF TOWS-WG-XVII RECOMMENDATIONS
2. [TOWS-WG-XVII recommendations](https://oceanexpert.org/document/34310) were introduced by Mr Metayer (Chair), Chair of the ICG/CARIBE-EWS, supported by Dr Elizabeth Vanacore (Puerto Rico) and Dr Charles McCreery (USA) as members of the TOWS-WG Task Team on Tsunami Watch Operations: Dr. Silvia Chacon Barrantes (Costa Rica) and Ms Alison Brome (CTIC) as members of the TOWS-WG Task Team on Disaster Management & Preparedness, and the Technical Secretary.
3. Dr Necmioğlu pointed out the considerable amount of work related to the recommendations. He further invited Member States to consider the feasibility of conducting the work for the recommendations still outstanding from the last ICG.
4. Mr Metayer mentioned the document of recommendations is available on the website, therefore, they can always download and give feedback. Given the lack of time, the report of the ICG 17th takes a long time, but he emphasized that they need to check them.
   1. EXERCISE CARIBE WAVE 2025
5. [CARIBE WAVE 25](https://oceanexpert.org/document/34294) was presented online by Mr Antonio Aguilar (Venezuela).
6. Mr Aguilar explained the goals for the ICG XVII and the decision of ICG XVI on CARIVE WAVE 25 which suggest that the CARIBE WAVE 25 exercise consisted of 2 scenarios that include 1) the 1692 Jamaica scenario, and 2) the 1755 Lisbon scenario.
7. In terms of the date and time of the scenario, Mr Aguilar proposed to keep Thursday at 15:00 UTC and raised the possible Thursday dates in March as March 13th and March 20th with the reason that they have Carnaval during March 1st-4th, World Meteorology Day on March 23rd, and Holy week on April 13rd-19th.
8. Mr Aguilar mentioned the pending project as the Multi-Annual Exercise Workshop with a hybrid meeting of CARIBE WAVE TT and its tentative date of meeting is January 2025 in Antigua and Barbuda. He acknowledged the funding from ITIC-CAR.
9. Concerning the decision and recommendation, Mr Aguilar highlighted focusing on the final documents of the CARIBE WAVE with the participation of 100% of the Member States and over 475,000 people engaged. In addition, he added that they encouraged member states who have yet to submit the post-exercise questionnaire to respond by May 17 to include their feedback in the final reports.
10. Mr Aguilar raised other continued recommendations ICG/CARIBE-EWS-XVII including the appreciation of the ITIC-CAR, PTWC, Central America Tsunami Advisory Center, United States Geological Survey (USGS), and the recognition of the good collaboration between CARIBE WAVE TT, CTIC, ITIC-CAR about the CARIBE WAVE Exercises.
11. As the recommendations for review of the Intrasessional WG are based on those of ICG XVII, Mr Aguilar (Venezuela) mentioned that they are open to any proposals of the Member States. In addition, he reiterated the importance of including vulnerable and marginalized groups, including persons with disabilities, in CARIBE WAVE 25.
    1. CENTRAL AMERICA TSUNAMI ADVISORY CENTER (CATAC)
12. This agenda item was introduced online by Mr Metayer (Chair), Chair of the ICG/CARIBE-EWS, through a [presentation](https://oceanexpert.org/document/34314) prepared by the Secretariat.
13. The presentation provided a summary of the [ICG/CARIBE-EWS](https://oceanexpert.org/document/34349) and [ICG/PTWS](https://oceanexpert.org/document/34351) Recommendations from previous sessions and reminded the delegations on the [Global Service Definition Document](https://unesdoc.unesco.org/ark:/48223/pf0000246931#:~:text=This%20Global%20Service%20Definition%20Document,by%20the%20Intergovernmental%20Oceanographic%20Commission.) (IOC Technical Series, 130 - currently being updated) and [Annex IV of ICG/CARIBE-EWS-XI/3 Rev](https://oceanexpert.org/document/34296). (Technical, Logistical and Administrative Requirements of a Regional Tsunami Service Provider for the CARIBE-EWS).
14. The Chairperson invited the Representative of CATAC to provide comments.
15. Dr Strauch (Nicaragua) stated that they provided an overview of CATAC’s capabilities and the development of a database, including seismic stations in Central America, for detecting tsunamis. In addition, CATAC established warning systems in four Central American countries, enabling them to issue early warning messages.
16. Dr Strauch emphasized that CATAC supported Honduras and Panama in developing earthquake early warning capacities. Furthermore, CATAC worked with institutions and civil protection agencies to ensure that CATAC’s products were being used correctly for public benefit. Lastly, he added that the CATAC tested its products and developed communication methods including a tsunami warning application for cell phones, as well as using digital TV and Telegram to distribute their messages.
17. Dr Chacon Barrantes (Costa Rica) acknowledged the progress made by CATAC but raised two concerns regarding the recommendations issued at the last ICG: 1) the User’s Guide had not been presented, and 2) CARIBE WAVE 24. Ms. Silvia Chacon Barrantes stressed that if the exercise had been a real event, the delay in issuing messages could have posed a significant issue, as some messages did not arrive on time. She also emphasized the importance of CATAC’s performance in emergency management and that technical institutions should also be involved. She mentioned concerns about waiting another year for full operational status.
18. Mr Metayer (Chair) noted several problems including the CARIBEWAVE 2024. In addition, he proposed the start date of full operation status be based on commendation from last year to the revision of the document related to the technical requirements.
19. Dr McCreery (USA) raised a question about plans to utilize the GTS for TSP products, which have not yet been backed up. Dr Strauch responded that the MET department is not using the GTS, and he is unsure if GTS would be useful in the Caribbean.
20. Dr McCreery stated that it is important to ensure that countries have redundant methods of receiving messages in a timely manner. Mr Schoor (USA) asked how they could assist in this regard.
21. Dr Strauch stressed that disaster prevention institutions don’t have access to the GTS, however, he mentioned they have a better chance to use faster communications through computer-to-computer connection by observing partners and receiving back some messages with graphical products.
22. Dr Chacon Barrantes (Costa Rica) highlighted the guideline which indicates tsunami ready have three redundant methods to receive and disseminate the warning except for the GTS.
23. Mr Metayer (Chair) raised the issue regarding the communication for the channel in terms of receiving messages. He emphasized that the CATAC needs to be fully functional in 2025.
24. Mr Sherrod Marlon James (Antigua and Barbuda) raised a question to the Member States if they have particular issues in telecom providers and licensing regimes given the situation of using broadcast.
25. Ms Hodge (Anguilla) mentioned they have the same issue with mobile phones and acknowledged that broadcast would be the best for them. In addition, she believed that the system was not built into their license, and it just happened.
26. Mr Hinds (Barbados) informed that they started to push the whole notion of the CAP system with the problem of sending messages at the same time and asked people to download the app.
27. Dr Necmioğlu raised the previous recommendation from the ICG and requested confirmation about the contents related to the GTS and the global service definition document.
28. Ms von Hillebrandt-Andrade (USA) inquired about the impact of not presenting the User’s guide from the CATAC which is indicated in the previous recommendation.
29. Mr Metayer (Chair) stressed that even though the CATAC failed to reach their strategy in terms of the previous recommendations, after starting the full operation, he believed the CATAC could use the other channels of communication.
30. Dr Charles McCreery (USA) clarified the global service definition document which doesn’t require the GTS and describes the various services provided by the existing TSPs.
31. Dr Strauch raised the discussion with scientific institutions and communities in Central America which is not allowing them to draft the User’s guide because of a different view of the status-quo and population. He argued that only one mistake does not mean they did not work well.
32. Dr Necmioğlu emphasized the necessity of establishing a Steering Committee to facilitate the ICG process and address misunderstandings related to the TORs. Furthermore, he invited Dr Chacon Barrantes (Costa Rica) to examine the language in the recommendations, considering the time constraints.
33. Dr Chacon Barrantes acknowledged the importance of the CATAC in their region. Dr McCreery (USA) agreed with that because the PTWC’s products are all in English.
    1. UN OCEAN DECADE TSUNAMI PROGRAMME (ODTP)
34. The [presentation](https://oceanexpert.org/document/34295) on the UN Ocean Decade Tsunami Programme (ODTP) was provided in-person by Dr Chacon Barrantes (Costa Rica), supported by Ms von Hillebrandt-Andrade (online).
35. Dr Chacon Barrantes showed the [video related to the UN ODTP](https://www.youtube.com/watch?v=xxLarl5E59Q) and explained the structure the ODTP Scientific Committee. She highlighted that ODTP seeking major advances in science and preparedness, in addition to combining accurate real-time impact forecasts with strong community preparedness, building towards better resilience. In terms of the key elements of the Research, Development & Implementation Plan, Dr Chacon Barrantes stated that 1) Tsunami Risk Knowledge and 4) Preparedness and Response Capabilities are related to the MHEWS. In addition, she also briefed on 5) capacity development, SIDS and LDCs, Multi-hazard Framework, and 6) Governance and Pathways to Implementation. For 1) Tsunami Risk Knowledge, she mentioned definitions of inundation areas, flow depths and arrival times through Tsunami Hazard Assessment, vulnerability and exposure, methodology to calculate risk and capacity to respond, and using these results from Tsunami Risk Assessments. For 2) Tsunami Detection, Analysis, and Forecasting, Dr Chacon Barrantes underlined the ODTP objective related to the tsunami detection/verification within 10 minutes.
36. She also pointed out the significance of 3) Tsunami Warning, Dissemination, and Communication with the key elements such as effective decision-making to warn, effective construction of warnings, and effective dissemination and communication of warnings. Regarding the key elements 4 on Preparedness and Response Capabilities in close connection to Risk Perception and Awareness, Preparedness, Response Capability, and Mitigation the main expected societal outcome is to make 100% of communities at risk of tsunami prepared for and resilient to tsunamis by 2030. Regarding 5: Capacity Development, Dr Chacon Barrantes stated investment in capacity development for the different stakeholders including the generators and the users of the tsunami early warning system and taking special consideration to the SIDS and LDC should be ensured. Lastly, she explained the framework and plan for achieving overall objectives including the development of capacity, the national tsunami warning system plans/programmes, and R&D community and Industry in terms of the science and technology in 6: Pathways to Implementation.
37. Dr Chacon Barrantes summarized their accomplishments in relation to the priority areas of ODTP within the CARIBE EWS governance, TRRP, analogous programmes with CTIC and ITIC-CAR/USAID, the Spanish-language SL training course, the GNSS workshop in Puerto Rico, and the Tsunami Evacuation Workshop conducted in Spanish in Costa Rica.
38. In terms of the suggested actions, Dr Chacon Barrantes mentioned several key initiatives: the ICG CARIBE EWS update reporting schema, the submission of actions in support of OD (Ocean Data), the Implementation plan for Tsunami Ready, the Recognition of cross-validating UNESCO TR with UNESCO-IOC, the Development of SMART strategy and sensing strategy for tsunami, the Identification of number of at risk communities and the funding for sensing/forecasting and 100% prepared and resilient, request on of MS about recognizing the contribution to UNOD, the Establishment of National Ocean Decade Committee, and Preparation document about KPIs. She concluded her presentation by encouraging member states to submit actions and programmes to ODTP which will aid in finalizing the report.
39. Dr Lorna Inniss (IOCARIBE) emphasized the importance of submitting the actions and programmes related to the ODTP and mentioned the process of the submission is straightforward.
40. Mr Fabian Hinds (Barbados) requested detailed information about the website and the process of submitting the actions and programmes. Dr Inniss highlighted that submission is open to everyone and emphasized the importance of using the Ocean Decade logo which may attract donor interest. In addition, she stated that if the actions proposed by member states are connected to the ICG, it would facilitate agreement. Dr Inniss mentioned that if another country is undertaking the same action, they could submit their proposals together. Lastly, she stated that the website for submissions is [oceandecade.org](https://oceandecade.org/).
41. Dr Necmioğlu informed [two webinars](https://oceandecade.org/news/new-cfda7-resource-mobilization-and-capacity-development-sustainable-ocean-management/) which were held in April, and highlighted the importance of sharing necessary information with Member States in advance. Dr Inniss strongly urged representatives to submit their Ocean Decade actions to IOCARIBE, as this would enable them to receive endorsement from UNESCO HQ. Lastly, she highlighted the importance of their in-person meeting for the Ocean Decade in order to accelerate related work in the region.
    1. 2nd GLOBAL TSUNAMI SYMPOSIUM
42. The [presentation](https://oceanexpert.org/document/34346) on the 2nd Global Tsunami Symposium is available on the website and a summary was provided by Dr Necmioğlu. The 2nd UNESCO IOC Global Tsunami Symposium will be held from Monday 11th to Thursday 14th November 2024 in Banda Ache, Indonesia. The purpose of this symposium is to commemorate two decades after the 2004 Indian Ocean Tsunami, to reflect on what has been achieved in two decades, to identify gaps, challenges, and priorities for tsunami warnings, to identify synergy with global challenges and coherence with global commitments, and to gather the global tsunami community.
43. **PROGRAMME AND BUDGET FOR 2024–2025**
44. The Chairperson indicated that this item is only informational and asked the Technical Secretary to report on the status of regular funding from UNESCO for the Tsunami Unit and in particular for the ICG/CARIBE-EWS.
45. Dr Necmioğlu raised a number of adopted decisions from the 216th session of the UNESCO Executive Board with the increase of budget from 2.1% to 3.1% which indicates an 87% increase of the IOC regular budget. He stressed that the main point of increase is in staff in the field by 60 field positions in order to strengthen the field offices.UNESCO-IOC will enable the science needed for society to respond to climate change and develop a sustainable ocean economy. It will reinforce national capacities for marine biodiversity monitoring and establish marine pest surveillance programmes for example, through Harmful Algal Blooms (HAB) programme. In addition, under the revised program and budget, UNESCO-IOC planned to achieve significant improvements in the accuracy and timeliness of tsunami warnings, including a 100% increase, over the currently existing level, of the number of communities recognized as Tsunami Ready, with a focus on SIDS and LDCs.
46. Dr Necmioğlu mentioned the support for GOOS and IOC ODIS, along with an increase in preparedness and resilience to ocean-related hazards. He also highlighted improved access to multi-language ocean literacy resources and training programmes for member states. He emphasized, ‘A 100% increase in the number of communities recognized as Tsunami Ready, with a focus on SIDS and LDCs.’
47. Dr Necmioğlu believed this would support the design of the Member State’s work programme and recommended not neglecting any overarching requirements from member states. In addition, he suggested that if the ICG/CARIBE had a Steering Committee, it could conduct a SWOT analysis to evaluate strengths and weaknesses for designing the next decade with a clear purpose.
48. Mr Metayer (Chair) requested an explanation of the meaning of LDCs and whether the budget includes provisions for the Steering Committee. Dr Necmioğlu responded that LDCs refer to Least Developed Countries and that the budget for the Steering Committee is not included, as the purpose of this agenda item is to provide an overview of the budget related to the UNESCO-IOC.
49. **INTRASESSIONAL WORKING GROUPS MEETINGS**
50. The Chairperson reminded the plenary regarding the structure of the Intrasessional Working Groups. She further underlined the need to have the draft Decisions and Recommendations to be provided to the Secretariat and Officers by 08:00 tomorrow, at the latest.
    1. CARIBE WAVE 2025 and 2026

*moderated by Dr Charles McCreery (PTWC), supported by Ms Alison Brome (CTIC)*

1. Dr Charles McCreery (USA) raised the key elements for planning the Caribe Wave25 Exercise. He suggested investigating the recommendations from the last ICG and exchanging opinions.
2. Ms von Hillebrandt-Andrade (USA) mentioned they already presented the recommendations about the CARIBE WAVE including the summary of the CARIBE WAVE 24 and information about the CARIBE WAVE 25.
3. Dr McCreery opened the floor regarding the decisions and recommendations.
4. Ms von Hillebrandt-Andrade requested changing “notes the CARIBE WAVE draft final” to “notes the CARIBE WAVE 24 draft final” in the second paragraph. In addition, Ms Christa von Hillebrandt-Andrade clarified that “the participation of 100% of member states” refers to 28 member states, and “the number of 475,000 people engaged” refers to people from the tsunami zone.
5. Regarding the number of participants, Dr Necmioğlu emphasized the need to know the exact number of participants involved in each type of activity. This was in response to a request from the Indian Ocean Tsunami Warning Mitigation System (IOTWMS) for comparison, particularly concerning evacuation drills.
6. Ms von Hillebrandt-Andrade mentioned that the submission date of May 17th for the post-questionnaire for the final reports needs to remain open. Because the ITIC-CAR will be regenerating the graphics and products, and some countries have not submitted them yet. In addition, Ms von Hillebrandt-Andrade pointed out that this is not directly related to the IOC and suggested moving these points to the report, rather than including them in the recommendation
7. Ms von Hillebrandt-Andrade requested adding the ‘in coordination with the Caribbean Tsunami Information Centre (CTIC) and the Task Team’ behind the ‘Appreciates the International Tsunami Information Centre Caribbean Office (ITIC-CAR)’.
8. Mr Sherrod Marlon James (Antigua and Barbuda) raised the idea that the development of Caribbean tourism organizations, marine services, and the military could be included in the dissemination of messages. Because in terms of SIDS, the national income is linked to tourism, and lots of military personnel are stationed in coastal areas.
9. Dr McCreery agreed with that and stated that it should be highlighted in the exercise manual and the response questionnaire, with specific language added.
10. Dr Paul Earle (US Geological Survey) acknowledged the collaboration and support of the work.
11. Dr Necmioğlu highlighted the importance of continuing to conduct good exercises and drills within the MHEWS context to bring communities closer. In addition, he stressed that this could raise awareness that tsunamis are not isolated events. He highlighted the importance of an integrated approach, which is essential for supporting decision-makers in emergency management and recovery efforts.
12. Dr Chacon Barrantes (Costa Rica) suggested moving the paragraph ‘acknowledging the good collaboration between the Caribe Wave Task Team, CTIC, and ITIC-CAR’ to the first paragraph. She also recommended deleting the content related to collaboration in the original first paragraph to avoid redundancy.
13. Ms von Hillebrandt-Andrade noted that the travel time to the Central America Coast and the Caribbean coast of Central America for the 1692 Jamaica Scenario is 2 hours, and it is beyond 1 hour from the AOR by reviewing the 2020 Handbook. Dr Wilfried Strauch believed it was less than 1 hour because of the deep sea and he mentioned he would check the handbook and the travel time. Ms von Hillebrandt-Andrade mentioned the arrival time is 15:52 at Roatán island of Honduras.
14. Dr McCreery announced the two scenarios 1) the 1692 Jamaica Scenario, and 2) the 1755 Lisbon Scenario will proceed if the member states would allow it. of the member states. Mr Alberto from the Department of Geology/University of Puerto Rico raised the alternative way to use other scenarios which are the events in Nicaragua in 1913 and 1930 with the reason of proximity to Central America.
15. Dr Valerie Clouard (France) raised the concern about the time of the Lisbon scenario. Dr McCreery answered that each scenario could start at a different time. Ms von Hillebrandt-Andrade emphasized the flexibility of the time by explaining the communications and dummy messages and mentioned it would be possible to do testing at their convenient time.
16. Dr Necmioğlu highlighted the TOWS-WG recommendation on performing exercises outside the working hours.
17. Mr Antonio Aguilar (Venezuela) mentioned their limitations in participating and engaging in discussions due to the language barrier. He raised several points regarding the timing and date of the CARIBE WAVE exercise. Concerning the timing, he argued that it should be tailored to each country to encourage participation. Additionally, he suggested changing the date to accommodate planned social events in the country, such as festivals, carnivals, and holidays. He also expressed hope that technical details of the scenarios could be developed for the working groups, addressing relevant issues and providing advice and that the communication protocol should be activated to facilitate response.
18. Dr McCreer stated, speaking on behalf of the PTWC, that the simulated products that they produce contain extensive information, including the specific time and origin time of the earthquakes. He added that while changing the date is not challenging, adjusting the timing, specifically all ETAs and observation times included in the message, must be done carefully and will depend on its significance to the member states.
19. Dr Lorna Inniss (IOCARIBE) commented on the issue of timing, stating that it should be determined by each country, as some nations face security challenges at night, making it difficult to conduct the exercise. Additionally, she noted that related information such as the arrival time of messages, should be adjusted accordingly.
20. Dr Elizabeth Vanacore (Puerto Rico) recalled that during the development of the Jamaica scenario, they aimed to maximize the scope of tsunamis, even at the expense of accuracy. Dr McCreery responded that this approach could allow member states to practice downstream events.
21. Given the fact that a decision on the date of CARIBE WAVE needs to be made, Dr McCreery suggested tentatively setting the date as the 20th and designating two times: 15:00 for a dummy message, allowing for flexibility in timing by member states. Ms von Hillebrandt-Andrade suggested indicating the flexibility of the recommendation by adding “with one dummy message for the communication” after “15:00 UTC”.
22. Dr Clouard agreed with the “15:00 UTC”, except in cases where messages arrived in the early morning or during lunchtime. Dr Chacon Barrantes agreed with Dr Clouard’s comment and stated that the Lisbon event could be less useful and less relevant scenario for CARIBE WAVE.
23. Dr von Hillebrandt-Andrade emphasized that they agreed with the scenarios in the last meeting and the Lisbon event is still relevant for some countries in the Caribbean. She added that it presents a valuable opportunity for learning and suggested considering additional options for the next Caribe Wave. Dr Necmioğlu (Secretariat) noted that the Cabo Verde and HTHH in Tonga events could serve as potential options for this purpose.
24. Dr Silvia Chacon Barrantes suggested adding the comment to highlight the usefulness of this scenario, ensuring that member states understand what is being discussed during the meeting.
25. Dr Chacon Barrantes requested to add “consider” before “combine”, and Ms Brome (CTIC) added her comment to include “wherever possible” after “with multi-hazard events”. Ms von Hillebrandt-Andrade requested a change from “multi-hazard events” to “multi-hazard framework”.
26. Dr Chacon Barrantes suggested including the “multi-lingual” before the guidelines/resources. Dr Christa von Hillebrandt-Andrade added a bullet point in the second paragraph for separation and recommended using “further” to indicate that this is an additional suggestion following the last meeting. She also proposed using “national and regional maritime port authorities” instead of “national maritime port authorities
27. Dr Clouard (France) suggested including the recommendations regarding the importance of submitting the questionnaire on time in order to increase the number of member states who respond.
28. Mr Hinds (Barbados) inquired whether wave notifications could be delivered earlier in terms of the decision-making sources. Dr McCreery answered that the initial forecast should be issued within 1.5 hours of the earthquake based on seismic analysis. He added that it is challenging to send them earlier due to the timeline and the rise in sea levels.
29. Dr Lorna Inniss (IOCARIBE) raised a specific request from the United Nations country team in Jamaica. The United Nations country team highlighted that they were not involved in these evacuation drills and expressed a desire to participate in them. Dr McCreery (USA) asked for clarification on whether this was regarding national or TSPs in terms of making a connection. Dr Lorna Inniss believed that there needed to be an agreement, following her comment, Dr McCreery asked her to draft the recommendations.
30. Dr Chacon Barrantes stated that the United Nations agencies should contact the NTWC or Tsunami Focal Points in the respective country about their desire to be involved. Otherwise, it will create a heavy workload for each member state.
31. Ms Brome recalled a conversation with UN agencies in Barbados regarding the issue that the issued messages should be sent to not only UN agencies but also to other diplomatic offices. She also believed this could be a topic for future discussions. Dr Clouard stated that while they inform embassies or other territories in their country, they do not send the messages to UN agencies as they are not directly related to their diplomatic area.
32. Dr Necmioğlu (Secretariat) commented that such communications should be coordinated through the Ministry of Foreign Affairs (MFA) of the respective country, following established principles. Mr Marlon James stressed that countries have their own SOPs, therefore UN agencies should contact them and establish connections with the national disaster mechanism through MOFA at the national level. Dr Necmioğlu (Secretariat) raised the challenge that the primary responsibility of a diplomatic mission is to ensure the welfare of its own citizens.
33. Mr Metayer (Chair) commented on the involvement of tourists and tourism organizations and raised the issue of the maritime sector’s participation in Caribe. Dr McCreery (USA) mentioned that they work on including maritime exercises in PACWAVE and after that, they could include it in Caribe Wave 26.
34. Mr Aguilar requested the addition of a recommendation regarding the continuation of ITIC-CAR’s support for coordinating the exercise. Dr McCreery confirmed the ITIC-CAR would provide this support and Ms von Hillebrandt-Andrade added that while they will investigate the issue, it will require significant time and human effort to justify it to the funding agencies within their organization.
35. Dr McCreery and Dr Chacon Barrantes suggested giving authority to the Task Team to decide the exercise of CARIBE WAVE 26.
36. Dr Necmioğlu stated that discussions regarding the time dedicated to ICG/CARIBE-EWS should take place within the intersessional working group, not the task team.
    1. Strategic discussion related on the inclusion of other coastal hazard warning systems in the work of the ICG/CARIBE-EWS, especially in close connection with the ongoing EW4All and MHEWS initiatives

*moderated by Dr Lorna Inniss (IOCARIBE) (Head of IOCARIBE Secretariat), supported by the Technical Secretary Dr Öcal Necmioğlu*

1. Dr Inniss stated the work of IOCARIBE, and UNESCO-IOC is based on the context of the Ocean Decade. She raised the point of whether they should only discuss sea level-related hazards in their early warning systems, which are linked to what they’re currently doing, or whether they should address linkages for all hazards.
2. In terms of the elements, Mr James (Antigua and Barbuda) preferred to cover all hazards, as they believe Sargassum is a serious problem for their country in terms of tourism, among other coastal hazards.
3. Dr Inniss expressed her hope to hear from Mr Martinez (WMO) and Mr Torres (UNDRR) regarding other sea level-related hazards and what they are doing in relation to the early warning systems, considering ocean science, and early warning system aspects.
4. Dr Inniss raised the inclusion of other coastal hazard warning systems, including Convening Power, Governance, Science Coordination, Data and Information Management, Capacity Development and Literacy, Expansion of ICG Players for Alerts, and other hazard drills. Lastly, she stressed that the key point is how the ICG-CARIBE could harness each element within the IOCARIBE context.
5. In terms of Governance, Dr Inniss believed that discussions with the board are crucial to proceeding with the intergovernmental process. She also suggested having a one-day technical meeting in advance of the inter-governmental meeting for the discussion with other partners such as WMO and EW4All UNDRR for EWS and MHEWS and asked the member state’s opinion.
6. Mr James (Antigua and Barbuda) raised the point of discussion at the regional/sub-regional level. He inquired about a coordinated platform to address several issues, explaining the challenges of Sargassum and the difficulties in responding after coastal hazards occur.
7. Dr Lorna Inniss responded that they have a regional WG for Sargassum and six Task Teams. For oil spills, the UN Cartagena Convention has a WG. Additionally, she noted that what ICG requires from partnerships is to include those structures while ensuring that the entire warning and alert system could be used for other hazards, as there is no reason to develop another alert system if ICG already has one.
8. Mr Metayer (Chair) inquired about the date for presenting the joint report to the IOCARIBE board. Dr Inniss (IOCARIBE) answered that there needs to be an agreement with Mr Gerard, the Chair, and added that it could be scheduled within the next 3-4 months. Furthermore, Dr Inniss encouraged Mr Metayer to share with Ms von Hillebrandt-Andrade (USA) and Dr Chacon Barrantes, members of the WG of the ODTP, if he has any national action activities under ODTP.
9. Dr Inniss emphasized that a significant part of the UNESCO-IOC’s global work involves capacity development. She proposed that ICG assign someone to represent the group in areas such as capacity development, Ocean literacy, Ocean Observing for Operations (IOCARIBE-GOOS), Ocean Data and Information Management, HABs and Sargassum, and Oil spills.
10. Regarding convening power, Dr Inniss made recommendations related to the convening power of ICG/CARIBE-EWS, the value of using IOCARIBE for different national focal points, the use of regional IOCARIBE forums and training to address ICG issues, and access to regional Ocean Decade actors.
11. In terms of the science coordination, Dr Inniss recommended holding a joint meeting on common ocean observing needs, sharing the technical reports and outputs with ICG WGs, ICG Membership to Ocean Observing, Ocean Data & Information, Capacity Development, and the process of providing the progress report at the ICG between Member of WGs and IOCARIBE. Lastly, she expressed her interest in hearing the recommendations about non-sea level-related hazards.
12. Dr Inniss mentioned the incorporation of risk into IOCARIBE capacity development and ocean literacy, as requested specifically by the UN Country Teams in Antigua and Barbuda. Additionally, she expressed interest in having a conversation with the Ocean Literacy Task Team because their tasks, such as the implementation of the blue school initiatives in SIDS, are relevant to hazards and risks.
13. Regarding communications and dissemination of warnings, Dr Inniss believed that collaboration with the ongoing work of the ICG is necessary.
14. Dr Necmioğlu highlighted their effort to ensure they could benefit from available resources and other hazard components. He emphasized the financial losses caused by natural disasters which hinder sustainability. In addition, he also underlined the TOWS-WS recommendations about collaboration with the WMO, particularly in connecting tsunami activities, educational materials, MHEWS, EW4All, and more.
15. Mr James (Antigua and Barbuda) supported the Secretariat’s comment and suggested that, in terms of disaster risk management, they could produce videos and photos for national and local businesses rather than showing impacts from other regions to raise awareness about the seriousness of natural hazards.
16. Mr Martinez (WMO) expressed surprise at the communication challenges in the region and identified opportunities to improve language resources. He highlighted the cooperation and interaction between UNESCO-IOC and WMO, focusing on available data and its integration. Additionally, he proposed hosting a technical webinar and expressed a willingness to support it. Lastly, he pointed out that while they have abundant resources, these are fragmented and emphasized the importance of capacity building to sustain all aspects of EW4ll, which is the operational system.
17. Dr Vanacore (Puerto Rico) commented on data issues. She emphasized the importance of including SMART Cables in the EWS to enhance the system. She also highlighted the significance of open and accessible data, as well as metadata collection for schools and scientists in terms of data management. She suggested that this would be a good opportunity to set a long-term goal for data management.
18. Dr Inniss responded to Dr Vanacore regarding the ocean observing networks, ocean data, and information management, supporting her comment about metadata. She also believed that a regional meeting would be necessary to initiate the process.
19. Dr Inniss reiterated the need for a regional meeting to start the process and emphasized the importance of designing the structure. She suggested two possible approaches 1) Having the ICG take over the meeting or 2) Organizing it separately by a task team. Regarding the hurricane committee meeting raised by Mr Rodney, Ms Lorna Inniss mentioned that they could arrange a joint meeting with IOCARIBE, WMO, and UNDRR
20. Dr Necmioğlu thanked Mr Martinez (WMO) for his suggestion and emphasized the importance of integrating the tsunami early warning system with other hazard components, such as earthquakes, landslides, and volcanoes. He also stressed the need for an executive action plan strategy for the early warning system, recognizing strengths and avoiding the duplication of new task teams. Furthermore, he suggested integrating this topic into the Steering Committee discussion with the member state’s agreement, rather than through a task team meeting.
21. Dr Inniss proposed an expert meeting to address other coastal hazards with contributions from IOCARIBE, WMO, and UNDRR as members of the expert group.
22. Mr Penn (British Virgin Island) supported the suggestion, as it would create synergies and lead to the significant contributions they are aiming for.
23. Dr Necmioğlu reiterated the challenges of creating a new working group or task team, noting that the process involves declaring ownership, member states, etc. He suggested considering this as part of the Steering Committee meeting.
24. Dr Chacon Barrantes supported the approach of creating a “Group of Experts” for other coastal hazards to address this issue, referencing a useful expert meeting held in 2018. She suggested contacting people who participated in that meeting and holding a meeting (in-person or online) due to their expertise. Dr Necmioğlu (Secretariat) requested that the meeting be held online and asked for opinions on who should lead the task of inviting the experts. Dr Chacon Barrantes (Costa Rica) had no answer and decided to discuss it later.

7.3 Strategic discussion related to the future role of CTIC

*moderated by Ms Brome (CTIC) and supported by Technical Secretary Dr. Öcal Necmioğlu.*

1. Ms Brome began by discussing the expanding mandate of CTIC, which includes strategic policy frameworks and programmes such as SDGs, the Sendai Framework, EW4All, and TRRP. She highlighted emerging issues, including social science & behaviour change, the integration of disabled and vulnerable populations, and the resources available for finance and human resources. She emphasized the importance of governance and collective ownership in improving CTIC’s effectiveness.
2. Ms Brome outlined CTIC’s goals for improving all aspects of tsunami warning and mitigation, mirroring the role of ITIC with a technical focus, emphasizing strong links with the PTWC and Regional Service Providers. She stressed the importance of strong regional partnerships fortified by agreements, staff resources, the funding that covers staffing costs, additional project funding, and recurring expenses. Lastly, she mentioned the point of the report is achievable or relevant to the current CARIBE-EWS landscape and the contribution of human resources and financial contributions to CTIC by IOC, member states, donors and partners.
3. Concerning the CTIC Board reporting to ICG/CARIBE EWS & Alignment, Ms Brome discussed the need for oversight, strategic guidance, and periodic monitoring of operations and activities of the CTIC in terms of sustainable management. She provided an overview of CTIC Board Membership, Meeting Frequency, and the approved quarterly reports, and other intersessional work. Lastly, she mentioned the 2013 CTIC Board TOR, focusing on re-evaluating standards related to achievement, meeting funding, and roles and operations of the board.
4. Mr James (Antigua and Barbuda) suggested implementing a rotating internship within their disaster management office and proposed the internship system as a short-term strategy for financial and human resources. In addition, he expressed interest in exploring other long-term options.
5. Ms Brome mentioned that the internship is a key element and that they already have internship systems in place, which is part of the IOC mechanism. She acknowledges that rotating internships could support these systems. Additionally, she recalled the suggestion to involve two member states and requested support for both student-based and staff-based positions. She emphasized that this support could include not only technical assistance but also language support related to translation. She also raised the possibility of partnering with universities and expressed a desire to establish more connections with regional educational institutions, noting that some of them might require funding support.
6. Mr James (Antigua and Barbuda) mentioned the potential connection for collaboration with agencies that have experience in capacity building and expressed interest in future discussions about enhancing departmental capacity.
7. Dr Necmioğlu pointed out that logistical arrangements would be necessary for discussing internships. He mentioned possible changes to UNESCO’s internship policy, which could include funding support and the option for remote work from Barbados. He suggested addressing this topic in a Steering Committee meeting rather than a Task Team. Additionally, he recommended re-establishing the CTIC board and exploring rotation-based internship options, which could significantly benefit young professionals in SIDS and raise awareness on World Tsunami Awareness Day for youth and children.
8. Ms von Hillebrandt-Andrade expressed her gratitude for Ms Brome’s hard work and fully supported the CTIC recommendations, emphasizing the importance of CTIC’s work in TRRP as a key activity.
9. Ms Raveau (Martinique) inquired about the number of TICs and whether they face similar challenges. She expressed interest in learning from other ICGs about how to manage these challenges.
10. Ms Brome answered that there are four TICs for CARIBE, PAC, NEAM, and IO, all of which encounter similar challenges regarding staffing, expanding materials, technical support, TRRP, etc. She mentioned that they hold annual meetings to share experiences and learn from one another.
11. Mr Hinds (Barbados) welcomed the contributions regarding internships and raised the possibility of financial support, stating that they could offer 250 Barbados dollars per week based on government policy. He suggested finding interns through online posting and leveraging connections with universities for additional financial support.
12. Ms Brome noted that they could also financially support interns based on Barbados’s assistance. Regarding the recruitment of interns, she mentioned their existing relationship with the University of West Indies and Barbados Community College, which had previously provided interns to assist with developing educational materials and a website. She also reiterated Dr Necmioğlu’s point about the need for logistical considerations.
13. Dr Necmioğlu suggested drafting recommendations by compiling best practices and identifying potential limitations and challenges. He emphasized the value of internships based on his own experience, while Ms von Hillebrandt-Andrade (USA) noted that their interns have been crucial for implementing projects in the Caribbean, a sentiment that Ms Brome echoed.

7.4 Restructuring of the ICG/CARIBE-EWS Governance

*moderated by the Technical Secretary, Dr Öcal Necmioğlu (UNESCO-IOC) and supported by Ms Silvia Chacon Barrantes Chacon Barrantes (Costa Rica-SINAMOT).*

1. Dr Öcal Necmioğlu (UNESCO-IOC) started his presentation by addressing 3 below issues:

i) consideration of creating an ICG/CARIBE-EWS Steering Committee, following the best practices of other ICGs

ii) better alignment of the ICG/CARIBE-EWS work program with ODTP

iii) activities related to the 20th year anniversaries in 2025, 2026 and 2027

*7.4.1 Consideration of creating an ICG/CARIBE-EWS Steering Committee, following the best practices of other ICGs*

1. Dr Necmioğlu explained that the Steering Committee serves as a consultation and advisory mechanism to the Chair, rather than a decision-making body, by referring to the TOR of the PTWS Steering Committee. In addition, he addressed the TOR of ICG/IOTWS and ICG/NEAMTWS.
2. In the NEAM region, he emphasized the process of accreditation for CTSPs. In the NEAM Region, there is a process for accrediting Candidate Tsunami Service Providers (CTSPs) who wish to declare themselves as TSPs. An expert group is then formed to evaluate and create a proposal to present to the ICG.
3. Dr Chacon Barrantes (Costa Rica) agreed with the idea of having a Steering Committee and it would be a good opportunity for the region.
4. Dr Necmioğlu suggested harmonizing all ToR examples and sending the draft to the recommendation committee. He believed the Steering Committee would be well-positioned if they could finalize the draft and then revise it at the next ICG.
5. Dr Chacon Barrantes requested that the TOR of other ICGs be shared for the discussion tomorrow. Dr Necmioğlu mentioned that all TORs from each ICGs are available on the website, however, a compiled version will be announced once finalized.
6. Ms von Hillebrandt-Andrade believed that having a Steering Committee is a great idea for creating synergy and increasing the efficiency of the coordination, however, she expressed her concern about funding issues for the meeting, particularly those of the TSPs.
7. Dr Necmioğlu raised the current UNESCO policy regarding the reduction of air travel to meet the Paris Agreement and address the environmental impact. However, he also acknowledged the capacity-building needs of SIDS. He proposed a way to balance both requirements, suggesting that during online ICG meetings, they could hold in-person Steering Committee meetings for capacity building.
8. Ms von Hillebrandt-Andrade raised the question of who the members of the Steering Committee would be and suggested that Dr Necmioğlu provide a detailed draft for further review. Dr Necmioğlu agreed that this could be a good idea and advised that the TOR could be similar to the TOR of the ICG/PTWS because some member states in CARIBE-EWS are already part of the PTWS.
9. Dr Necmioğlu stressed that 2025 will mark the 20th anniversary of the establishment of the ICG/CARIBE-EWS and 2026 will mark the 20th anniversary of the first ICG/CARIBE-EWS session in Barbados. Given the current timeframe, the ICG/CARIBE-EWS XX will take place in 2027. Dr Necmioğlu (Secretariat) proposed to have events and workshops under regional groups in 2026 to celebrate, while also holding the ICG. For the international workshop, he suggested incorporating the ideas of Dr Inniss and Mr Martinez regarding a joint technical meeting with agencies such as UNDRR, WMO, CDEMA CENAPRED, etc in order to have a holistic view of the 20th year of tsunami early warning and other coastal hazards.
10. The ICG/CARIBE-EWS decided to discuss the TOR of the Steering Committee after the ODTP agenda.

*7.4.2 Better alignment of the ICG/CARIBE-EWS work program with ODTP*

1. Dr Chacon Barrantes (Costa Rica) discussed the ODTP KPI Preparedness and Response Capabilities, highlighting key milestones. She proposed that the ICG reformulate national reports and start using Google Forms to include these milestones and KPIs for member states to report annually in terms of monitoring ODTP.
2. Dr Necmioğlu agreed with her idea but expressed concern about potential data loss when using official channels through the government. He stated that at least the document should be printed and submitted, otherwise the online platform would be preferable.
3. Dr Chacon Barrantes explained that the online platform allows them to download the answer as PDF. Dr Chacon Barrantes suggested that member states fill out the form, download it as a PDF, and obtain signatures of the member states before submission.
4. Ms von Hillebrandt-Andrade raised two issues regarding the ODTP KPIs. She pointed out that some territories need to submit their reports independently, for example, each territory in the UK must submit its own report, a total of six. She also mentioned that national reports should be based on the ODTP KPIs, even though the WG report will also reference these KPIs. Ms von Hillebrandt-Andrade expressed curiosity about whether these matters were being discussed, specifically regarding the report submission process, its contents, and how to incorporate ODTP KPIs into the reports.
5. Dr Chacon Barrantes explained how evaluation based on ODTP KPIs will be structured. The WG will inquire with each member state about their KPI achievements and propose identifying which KPIs should be addressed and which WGs should oversee them.
6. Dr Vanacore noted that the current version under review is not the ODTP Strategic Plans and KPIs. Following the PTWS meeting, they plan to revise the KPIs to align them with ODTP goals and incorporate Ocean Decade goals. This will involve the next task teams at the TOWS WG level for national and ICG reports through an online form. She recommended waiting for these revisions to avoid additional work after the PTWS meeting.
7. Dr Necmioğlu proposed a recommendation to improve reporting, the national reports with the indication of the possible format that could assist with the work of the Secretariat. Dr Chacon Barrantes agreed with his point.
8. Ms von Hillebrandt-Andrade sought clarification on the TOWS resolution or recommendations shared by Dr Necmioğlu concerning the ICG report of the progress, not the national report. She asked if their recommendation was to expand the current version or to create a new version for the national report.
9. Dr Necmioğlu said that he did not have a clear answer but in his point of view, it would include the Member State reporting. Dr Chacon Barrantes raised her point of view that the ICG report is to build into the national and WG reports.
10. Dr Chacon Barrantes suggested waiting for the recommendation with the consideration of the harmonization and KPIs format on the national reports. In addition, she highlighted the need for a reporting mechanism regarding how many communities have materials to avoid the duplication of requests for the member states.
11. Dr Necmioğlu clarified the point of Dr Chacon Barrantes that TOWS requested the IOC Secretariat to develop a reporting mechanism to allow ICGs to report progress on the related project within the Ocean Decade and against the ODTP-RDIP KPIs, aligning this with the proposed Global KPI.
12. Dr Chacon Barrantes confirmed and raised the concern about how many communities are at risk, stressing the need to address this issue to ensure all risk communities are accounted for.
13. Dr Necmioğlu stressed that the work on the identification of the communities is conducted by Dr Peroche (France) and expected that there will be science-based information for the Caribbean region in terms of the communities at risk. Ms von Hillebrandt-Andrade stated Dr Matthieu Peroche (France) has utilized a global database to define the number of coastal jurisdictions in the Caribbean and adjacent regions. She also mentioned his efforts to uniformly establish at-risk areas through various approaches.
14. Dr Chacon Barrantes also highlighted the importance of input from the member states to accurately define the number of their communities which would streamline the process. She wondered whether to utilize the data from Dr Peroche, share it with the Member States, and set a deadline to rely on the number of communities or wait for the recommendation until the next ICG.
15. Dr Necmioğlu expected that once this process is finalized, all Member States would be notified through Circular Letter or Documentation. However, he expressed concerns about the renewal process of TRRP to maintain its tsunami-ready status.
16. Dr Strauch (Nicaragua) requested that KPIs include the number of devices or systems, such as alerting devices and seismic stations, in each country, as this information is crucial for developing effective monitoring and early warning systems.
17. Dr Chacon Barrantes stressed that the ICG observation network monitoring group is focused on sea-level applications such as sea-level network design and implementation, the status of communication tests, and GNSS by assessing coastal sea level measurements.
18. Dr Strauch expressed that the indicators mentioned by Dr Chacon Barrantes were overly broad for effective reporting. He stated that the indicators should be more targeted, particularly with respect to the goal of achieving 100% tsunami-ready communities. Mr Wilfried Strauch proposed that using tangible indicators, such as the number of devices and systems in place, would facilitate the collection of more precise data, obtainable through publications and other sources.
19. Dr Chacon Barrantes responded by sharing her perspective on the incorporation of relevant questions through the tool introduced by Dr Percohe, advancing the discussion accordingly. However, she expressed concerns regarding disparities in device availability across countries. Dr Chacon Barrantes underscored that offering guidance or advice might, in some cases, necessitate greater financial investment for the installation and maintenance of stations than what is required to meet tsunami-ready standards.
20. Dr Strauch cautioned against the potential for inaccuracies in information. He highlighted the substantial progress made over the past three decades in expanding the number of seismic monitoring centres, citing Honduras as an example, which now operates 30 cost-effective seismic stations, many of which have been repaired and continue to function effectively. In light of these developments, Dr Chacon Barrantes acknowledged Dr Strauch’s points and agreed that the recommendation should include the number of stations, accompanied by appropriate guidance on the optimal number of stations required.
21. Ms von Hillebrandt-Andrade referred to a prior study that explored the minimum number of stations necessary for the effective detection of tsunamis and earthquakes. She pointed out that while some nations may possess a significant number of stations, not all of them may be operational, as evidenced by the findings of the PTWC report. Ms Christa von Hillebrandt-Andrade emphasized the critical importance of understanding which KPIs are pertinent to each WG and how to effectively address these challenges. Ms Marie-Noëlle Raveau (France) concurred with Ms Christa von Hillebrandt-Andrade’s observations.
22. Dr Necmioğlu presented the draft of the TOR for the Steering Committee meeting of the ICG/CARIBE-EWS.
23. Ms von Hillebrandt-Andrade requested clarification regarding the “Monitor performance and interoperability of the CARIBE-EWS". She suggested adding specific activities and ongoing operations of the CTIC given its significance.
24. Dr Necmioğlu explained that “interoperability” is a term commonly used in the NEAMTWS framework, meaning that several TSPs are working in harmony, with access to the same data and tolls through a shared platform to be implemented in the future. He mentioned that the following line (*Examine continuing compliance of Tsunami Service Providers (TSPs) with the adopted operational and organization function and requirements*) also addresses a similar meaning. Therefore, He proposed combining the line with “monitor the performance” as a modification. Ms von Hillebrandt-Andrade (USA) agreed and suggested that Ms Brome (CTIC) could support the content.
25. Mr Metayer (Chair) asked about the process for monitoring the performance and interoperability of the CARIBE-EWS Implementation Plan. Dr Necmioğlu responded that the Steering Committee would serve as the platform to discuss concerns, such as issues with the TSPs.
26. Ms von Hillebrandt-Andrade recalled the TOR from IOTWS, which includes monitoring the actions and recommendations of the ICG WG and TT. She suggested adding a similar provision. Dr Necmioğlu agreed and proposed wording such as “Oversee the execution of the Decisions and Recommendations of the ICG”.
27. Dr Necmioğlu mentioned that after finalizing the CTIC-related TOR, he could distribute it through the OceanExpert as a proposal for the TOR of the ICG/CARIBE-EWS.
28. Ms von Hillebrandt-Andrade raised the question of whether the funding for the meetings should be explicitly indicated. Dr Necmioğlu explained that, typically, funding is not included in the TOR, but he was open to adding it. He clarified that funding references are typically made through Circular Letters, which outline expectations for member state participation through self-funding. He also mentioned guidelines regarding participation (Modus Operandi).
29. Mr Metayer (Chair) expressed concern over the workload in the ICG and suggested that the Steering Committee take charge of preparing the ICG meetings.
30. Dr Necmioğlu thanked him but clarified that the Steering Committee meeting should focus on the programmatic while the Technical Secretariat would handle administrative matters.
31. Ms von Hillebrandt-Andrade requested clarification about “Other member’s representatives” included in the draft ToR. Dr Necmioğlu confirmed it should read “Other member” and revised the document accordingly. In addition, he added that other members of the Steering group, for example, could be UNDRR or external experts.
32. Ms von Hillebrandt-Andrade referred to the dissolution of the Ocean Decade Task Team and questioned the need to include its assignments in the ToR. Dr Necmioğlu answered that within the Steering Committee, tasks could be assigned to one or multiple members, with the decision left to the Steering Committee.
33. Dr Chacon Barrantes reminded Member States to send the suggestions for recommendations that were discussed during the meeting to the ODTP by the recommendation committees.
34. Dr Necmioğlu also emphasized that input should be provided timely before 7PM and the recommendation would be delivered by 7 pm, if not, it will be before the session starts tomorrow.

*7.4.3 Better activities related to the 20th year anniversaries in 2025, 2026 and 2027*

1. Dr Necmioğlu mentioned a recent UNESCO recommendation that statutory meetings and recurring conferences, such as celebrations of international days, should be held in-person only every other year, with online meetings in between.
2. Dr Necmioğlu referred to a draft considering the environmental impact of such events. He proposed repeating offers from Barbados, Panama, and France for hosting in 2026 and 2027, giving time to approach each country about their commitment to host an in-person ICG in 2026. He also raised the idea of organizing a larger event in 2025, involving multiple agencies like WMO and UNDRR, to celebrate the 20th anniversary and reflect on achievements and challenges.
3. Dr Lorna Inniss suggested organizing a technical symposium to review the scientific and policy achievements of the past 20 years.
4. Dr Necmioğlu supported this idea, noting it would help promote TRRP and other components such as data management by WMO and emergency communication such as data management by WMO and emergency communication by EW4All. He also mentioned the possibility of having an in-person ICG meeting in 2026, with a virtual Steering Committee meeting in 2025.
5. Ms von Hillebrandt-Andrade expressed concerns about the logistics and the change in the decision regarding the meeting schedule.
6. Dr Necmioğlu responded by stating that they would present a convincing rationale for holding the meeting. He mentioned that Member States would need to decide whether to align the meeting with the 20th anniversary of the ICG or the 20th anniversary of the decision to establish the ICG.
7. Dr Chacon Barrantes agreed with Ms von Hillebrandt-Andrade’s comment and expressed disagreement with the ICG’s restrictions on virtual meetings. She explained that although the Colombian Delegation wanted to attend the ICG meeting, they were unable to because the invitations specified in-person attendance, except for in cases of strict necessity for virtual participation. She emphasized that the invitation should clearly state whether the meeting would be held in person.
8. Dr Necmioğlu explained the challenge posed by participants withdrawing at the last minute, which made it difficult for UNESCO to invite other participants, even if they were funded by UNESCO. He also stressed that the main issue was not having received information regarding Member States’ availability to host the ICG session.
9. Dr Chacon Barrantes suggested that while hybrid meetings are a great option, they should not become the standard. Dr Necmioğlu raised the option of following UNESCO’s recommendations and deciding to hold an in-person ICG next year with a specific justification.
10. Ms von Hillebrandt-Andrade suggested that if they were to hold an in-person meeting, 2026 would be ideal. Dr Necmioğlu confirmed plans for an in-person ICG meeting and workshop in 2026, along with an online ICG meeting with the Steering Committee in 2025. Dr Chacon Barrantes agreed and emphasized the need to justify both in-person meetings in 2025 and 2026 in the ICG’s decision-making process.
11. Dr Necmioğlu stressed that if they wanted in-person meetings in both 2025 and 2026, they would need strong reasons to support these decisions and address related concerns.
12. Dr Strauch raised the possibility of choosing the meeting location based on geographical considerations, deciding which participants would attend in person or virtually.
13. Ms von Hillebrandt-Andrade provided specific reasons for declaring the meetings, noting that they had already been scheduled by Member States. She also suggested scheduling the next ICG meeting in the first week of May 2025. Dr Necmioğlu noted that the ICG/PTWS-EWS meeting would take place in April and that May would be affected by public holidays in Paris. He also mentioned the requirement for reporting to the 33rd Session of the IOC Assembly one month in advance.
14. Dr Chacon Barrantes emphasized the need to hold the Pacific and Caribbean meetings at different times of the year, as many people participate in both groups. She pointed out that they need enough time to finalize the Caribe Wave but added that if they can complete the Recommendations and Executive Summary for the IOC, the timing would not be a critical issue.
15. Dr Necmioğlu stated that if Member States agreed to the proposed timeline, discussion for tomorrow could focus on whether Panama or Martinique would host the in-person ICG in 2025.
16. Dr Chacon Barrantes asked how long they could wait for confirmation if neither Panama nor Martinique confirmed their availability. Dr Necmioğlu replied that UNESCO allows a six-month lead time for Host Country Agreements but suggested a maximum of three months for negotiations. If neither country confirmed within three months, he would prefer to announce that the 2025 ICG would be held online. Dr Chacon Barrantes and Ms von Hillebrandt-Andrade (USA) agreed, and Dr Necmioğlu added that Barbados could potentially host the 2026 in-person ICG Session.
17. Dr Chacon Barrantes summarized two key points: 1) in-person meetings should be held in both 2025 and 2026 to celebrate the 20th anniversary, TRRP, and ODTP governance, and 2) confirmation from Panama and Martinique should be received by August 9th. If neither is confirmed, the 2025 ICG meeting will be held online.
18. Regarding the 20th anniversary, Ms von Hillebrandt-Andrade mentioned that Dr Arcos (USA) would prepare a historical overview of the CARIBE-EWS, which could be used for the purposes of the anniversary. In addition, she also mentioned Mr Penn (British Virgin Islands) also had materials for social media and suggested creating a video or mini clips for the 20th anniversary. Mr Penn (British Virgin Islands) stated that he had many videos and would share them with colleagues.
19. Ms Susan Hodge (Anguilla) suggested using reflections from those who participated in the Tsunami Ready program to not only share their experiences but also use them as tools for public awareness.
20. Dr Strauch suggested utilizing the tsunami song. Mr James (Antigua and Barbuda) mentioned that they were still using a jingle about lesson-learned in terms of tsunamis. They emphasized that the ICG typically doesn’t engage in interactive educational processes and suggested producing simple board games, apps, and early childhood education materials to improve young generations’ understanding of coastal hazards.
21. Dr Arcos (USA) recalled the 50th anniversary of the PTWS and mentioned that creating a publication was difficult due to time constraints. However, he emphasized that preserving their work through documentation would be valuable. He proposed collecting information, such as pictures and records from each county, to ensure the data is not lost.
22. Dr Chacon Barrantes proposed organizing a drawing contest for children on tsunami preparedness and suggested finding sponsors for the prizes.
23. Dr Necmioğlu emphasized that the event’s primary goal should be to guide them for the next 10 years, considering that tsunamis are not a common hazard in the Caribbean.
24. Ms von Hillebrandt-Andrade answered that to increase awareness would be their goal and even though tsunamis are not common natural hazards, she found that people are aware of the tsunami early warning system in the Caribbean region from the UNDRR report.
25. Dr Necmioğlu emphasized that raising awareness requires connecting people and organizations across regions, rather than focusing internally.
26. Mr Hinds (Barbados) shared Barbados’ experience with natural hazards, explaining that their frequency can be deceptive. He emphasized that initiatives like SMART Cables and drills could enhance awareness in the Caribbean.
27. Ms Hodge (Anguilla) suggested interviewing individuals who were young when the first Caribe Wave occurred in 2011. She argued that these interviews could reveal the impact of the programme on awareness of tsunamis and earthquakes.
28. Mr James (Antigua and Barbuda) stressed the importance of including the tourism sector, given its economic significance, as well as telecommunications companies involved in SMART Cables. They believed these stakeholders should be involved early in the process rather than being presented with finalized ideas and products.
29. Mr Penn (British Virgin Islands) agreed with Mr James (Antigua and Barbuda), emphasizing the importance of involving the private sector, especially tourism. He also echoed the suggestions of Ms von Hillebrandt-Andrade (USA) and Dr Strauch (Nicaragua) about creating songs, jingles and using tsunami inundation maps and emergency responder maps for public outreach. However, he stressed that these efforts would require funding, which would likely come from the private sector.
30. **INTRASESSIONAL WORKING GROUPS REPORTS**
31. The Chairperson invited the Rapporteurs to report on the deliberations and recommendations of the intra-sessional working groups.

8.1 INTRASESSIONAL WORKING GROUP 1 CARIBE WAVE 2025 AND 2026 by Dr McCreery (USA)

1. Dr McCreery noted that member states agreed on both the purpose and the scheduled implementation of the exercise. In addition, he emphasized that the test would be conducted on March 20, 2025 (Thursday). Regarding the scenarios, the two selected were the: 1692 Jamaica and 1755 Lisbon events. Dr Charles McCreery mentioned dummy messages would be sent out at 15:00 UTC for the exercises, although each country could choose the time for their own exercise. He further stated that only the Jamaica scenario would be exercised by CATAC, but PTWC would create dummy messages for both events.

8.2 INTRASESSIONAL WORKING GROUP 2 Strategic discussion related on the coastal hazard warning systems in the work of the ICG/CARIBE, especially in close connection with the ongoing EW4All and MHEWS initiatives by Dr Lorna Inniss (IOCARIBE)

1. Dr Inniss began her presentation by discussing the creation of a Group of Experts under the ICG. She highlighted that UNDRR, WMO, and other experts from various organizations would work on the EW4All. Lastly, she clarified that a Group of Experts already existed but had not yet been officially established by ICG. Therefore, she recommended re-establishing the original Group of Experts with a focus on ensuring technical expertise.
2. Ms von Hillebrandt-Andrade (USA) requested clarification on the Steering Committee/s involvement with a Group of Experts. Dr Lorna Inniss explained that while a Group of Experts is listed, the Steering Committee would finalize whether it falls under the Steering Committee or remains one of the WGs of the ICG.
3. Dr Necmioğlu mentioned that the current version of the draft recommendation would be updated and would include consideration by the Steering Committee. In addition, he added the possibility of including an action item under the TOR of the Steering Committee, understanding that a Group of Experts would be under the Steering Committee and not a WG.
4. Dr Chacon Barrantes (Costa Rica) emphasized that the idea of creating a Group of Experts had been proposed in 2018, and she believed the Steering Committee would be the appropriate body to oversee it. She added that the member states would ultimately decide the status of the Steering Committee.
5. Ms von Hillebrandt-Andrade clarified that a Group of Experts had been established in 2016, with its first meeting in 2018. She suggested that the Steering Committee discuss further collaboration among experts and provide an analysis of why the Group of Experts had not been successful.
6. Mr Metayer (Chair) thanked Ms von Hillebrandt-Andrade for the clarification and endorsement of the re-consideration of the Group of Experts.
7. Dr Necmioğlu updated the recommendations, assigning related tasks to the Steering Committee.

8.3 INTRASESSIONAL WORKING GROUP 3 Strategic discussion related to the future role of CTIC by Ms Alison Brome (CTIC)

1. Ms Brome noted the renewal of the MOU between the government of Barbados and UNESCO-IOC about the confirmation of the hosting agreement, the extension, and the duration.
2. Ms Brome raised several points regarding the expanding mandate of the CTIC, particularly in the areas of strategic policy frameworks, TRRPs, and emerging issues. She highlighted the challenges posed by limited financial and human resources and discussed opportunities to enhance the governance of the CTIC, especially in incorporating assessments and responsibilities.
3. Concerning the internship, Ms Brome proposed options in collaboration with the government of Barbados, member states, CTIC-CAR, and UNESCO-IOC. These internships could be offered at both the student and young professional levels, with opportunities for teleworking and in-person participation. In terms of the ICG/CARIBE EWS-II/12 which was published in 2007, the CTIC will move forward for the improvement.

8.4 INTRASESSIONAL WORKING GROUP 4 Restructuring of the ICG/CARIBE-EWS Governance by Dr Necmioğlu

1. In relation to establishing an ICG/CARIBE-EWS Steering Committee, Dr Necmioğlu stated that the member states agreed on forming a Steering Committee and mentioned they would review the TORs in the next agenda.
2. Concerning the activities related to the 20th anniversaries in 2025, 2026, and 2027, Dr Necmioğlu explained the idea for the events was introduced by the Technical Secretariat before UNESCO recommendation to reduce the carbon footprint caused by air travel. He also emphasized the importance of these anniversaries as opportunities to promote activities and engage with stakeholders within the framework of MHEWS and EW4All.
3. Dr Necmioğlu mentioned that the host country should confirm its availability within three months after the ICG. If no official commitment is announced to the Secretariat, the meeting will be conducted virtually.
4. In terms of a better alignment of the ICG/CARIBE-EWS work program with ODTP, Dr Chacon Barrantes recommended encouraging in-person meetings. She raised technical concerns, such as internet connection issues, interpretation challenges, and low participation, as reasons for this preference.
5. Mr Metayer (Chair) agreed with Ms Silvia Chacon Barrantes’ comment and raised concerns about the visa requirements for each country. He also suggested holding one major event with greater impact, rather than having three separate events.
6. Mr Hinds (Barbados) acknowledged the issue raised by Dr Chacon Barrantes but pointed out the Secretariat’s challenge in meeting UNESCO’s recommendations for complying with the Paris Agreement, stating that this would pose serious challenges, especially for SIDS and LDCS.
7. Dr Inniss thanked the members for their comments and urged them to communicate with their ambassadors and permanent representatives to UNESCO to clarify their needs and challenges. Drawing from her previous experience, she explained that UNESCO recommendations are driven by Member States and mentioned the possibility that her travel request could be automatically rejected if it exceeds 50 days of travel.
8. Dr Necmioğlu agreed with the comments from Dr Lorna Innis and Mr Metayer (Chair). He agreed that focusing on one major event with a higher impact is advisable, given the travel limitations and various other issues. Lastly, he also reminded Member States that the low level of in-person participation was partly due to the late announcement of the Host Country’s availability.
9. Dr Necmioğlu noted that some delays are unintentional, as the intersessional working group was focused on strategic elements guiding ICG decision-making rather than on technical details like scenario decisions or the lack of personnel. Additionally, he emphasized that the ICG/PTWS continues to make good use of scheduled events, webinars, and similar platforms.
10. Dr Chacon Barrantes mentioned that the Pacific experiences more frequent tsunamis compared to the Caribbean. She argued that maintaining momentum by holding the Caribe Wave every year is critical for progress. Dr Necmioğlu stated that this was why he proposed holding one online meeting and one in-person meeting, in accordance with UNESCO’s recommendations, while continuing the annual ICG.
11. Mr Hinds (Barbados) commented that they respect UNESCO’s recommendations, however, it’s equally important to note that in-person meetings allow for greater engagement with other countries. Mr Aguilar (Venezuela) emphasized the importance of in-person meetings to facilitate the exchange of views and foster a deeper understanding of the topics discussed.
12. Ms von Hillebrandt-Andrade addressed two comments 1) Historically, the 3-4 hours Caribe Wave discussion has been the most important aspect, even more than other issues. She believed that in-person meetings are crucial for idea generation, which contributes to their success. 2) She pointed out that, according to UNESCO recommendations, the ICG meeting is important for capacity building in each region, and in-person meetings are justified given the scheduled events, including the significance of the 20th anniversary. She also noted that 2025 marks the 15th year of the tsunami-ready summit in Puerto Rico, which led to the international establishment of the TRRP by UNESCO-IOC. She suggested combining this with the meeting to exchange experiences and enhance capacity in terms of changes before and after the TRRP.
13. Mr Yani (Guatemala) added the comment following Dr Chacon Barrantes and Mr Hinds, advocating for in-person meetings due to the technical challenges they faced such as communication issues and power-cut, etc.
14. **NEXT SESSIONS**
15. Dr Necmioğlu provided a brief introduction to this agenda item. He emphasized the various difficulties encountered in identifying a Host Country for this session of the ICG/CARIBE-EWS, along with additional complications, such as logistical challenges, fewer in-person participants than desired, and some experts being unable to participate without the funding due to the insufficient time for their internal administrative approval processes. This was the result of the very late arrangements, despite the generous availability of Nicaragua. He invited delegations to consider the following alternative meeting structures in the future:

* Hybrid ICG in even years, in-person Steering Committee/Group meetings (if created following the best practices of other ICGs) in odd years
* Hybrid ICG in even years, online ICG in odd years

1. Dr Necmioğlu reported to the ICG that during explorations for this ICG, Cuba, Mexico and Panama had been kindly informed of the possibility of hosting the next ICG in 2025. For 2026, the Secretariat received a communication from Barbados indicating that Barbados will consider hosting the session in 2026. During the presentation of its national report, France also expressed its possible availability to host the next ICG in one of its territories.
2. The Chairperson invited the delegations to consider the following agenda items (9.1 and 9.2) considering the comments and the proposal made by the Technical Secretary.
   1. CONFIRMATION OF DATE AND PLACE OF ICG/CARIBE-EWS XVIII
3. Dr Necmioğlu raised the proposal to hold an in-person ICG meeting on the week of 5th May 2025 and the week of 20th April 2026 as a tentative date. In addition, he noted the potential availability of host countries, including Panama and Martinique as options from France.
4. Mr Yani (Guatemala) confirmed their interest and suggested a method for deciding on a host country. For example, if Panama and Martinique both express their interest in hosting an ICG, one country could take 2025 and the other could take 2026 through communication.
5. Dr Clouard (France) confirmed their interest in having the next ICG and noted the timeline for the invitation. Dr Necmioğlu stated that they are looking forward to having the invitation or confirmation through official channels to the Technical Secretary within 3 months. If the decision is not made by the 9th of August, the meeting will automatically be conducted online.
   1. TARGET DATE AND VENUE FOR ICG/CARIBE-EWS- XIX
6. Dr Necmioğlu noted the possibility of Barbados hosting the ICG/CARIBE-EWS XIX in 2026 coinciding with the 20th anniversary of the first session of the ICG/CARIBE-EWS. The tentative schedule is set for the week of April 20, 2026.
7. Dr Necmioğlu summarized that during the ICG in 2026, they will promote accomplishments, focus on current and remaining challenges, and provide a future outlook.
8. The recommendation included acknowledgment of UNESCO’s recommendation regarding the reduction of carbon footprint by air travel, however, due to scheduled events, they will proceed with the recommendation in 2027.
9. **ADOPTION OF DECISIONS AND RECOMMENDATIONS**
10. **The ICG approved** [recommendations](about:blank) as included under ANNEX I.
11. **ICG/CARIBE EWS WORKING GROUPS AND TASK TEAM MEMBERS LIST**
12. The current composition of the [ICG/CARIBE-EWS Membership](https://oceanexpert.org/document/34307) was introduced online by Mr Metayer (Chair), supported by the Technical Secretary. Mr Metayer (Chair) invited delegations to inform the Technical Secretary in case of any updates to the ICG/CARIBE-EWS Working Groups and Task Team Membership status.
13. Dr Necmioğlu highlighted the importance of the expert registrations in the [OceanExpert](https://www.oceanexpert.org/).
14. **ANY OTHER BUSINESS**

No other business was raised by the Member States.

1. **CLOSE OF THE SESSION**
2. The Chairperson announced the closing of the ICG/CARIBE-EWS XVII on 9 May 2024 at 17:00 and thanked all delegations and representatives of the Government of Nicaragua.

**ANNEX I**

## **ICG/CARIBE-EWS XVII**

## **RECOMMENDATIONS**

Recommendation ICG/CARIBE-EWS-XVII.1

**ICG/CARIBE-EWS Governance**

The Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS),

**Having reviewed** the progress made in the implementation of the CARIBE-EWS since the 16th Session of the ICG/CARIBE-EWS,

**Having considered** the reports of:

Working Group 1 on Risk Knowledge

Working Group 2 on Tsunami Detection, Analysis and Forecasting

Working Group 3 on Tsunami Warning Dissemination and Communication

Working Group 4 on Preparedness and Response Capabilities

Task Team on CARIBE WAVE

Pacific Tsunami Warning Center (PTWC)

Central American Tsunami Advisory Center (CATAC)

Caribbean Tsunami Information Center (CTIC)

Reports of the ICG/PTWS, ICG/NEAMTWS and ICG/IOTWMS

Chair’s Report

Secretariat Report

**Having further considered** the reports on

Tsunami Ready Recognition Programme (TRRP)

UNESCO-IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE)

United Nations Office for Disaster Risk Reduction (UNDRR)

World Meteorological Organization (WMO)

NOAA National Centers for Environmental Information (NCEI) World Data Service (WDS) for Geophysics NCEI/WDS

Puerto Rico Seismic Network (PRSN)

ITU/WMO/UNESCO-IOC Joint Task Force on SMART Cables

UNESCO-IOC Second Global Tsunami Symposium

**Having reviewed** the recommendations of the TOWG-WG-XVII

**Noting** that other ICGs have Steering Committees,

**Recognizing** the value of having a Steering Committee as an efficient instrument of results-based management, especially in providing an oversight in the execution of its decisions and recommendations,

**Further noting** the cross-cutting elements of the ICG/CARIBE-EWS work programme closely connected with EW4All and guided by strategic elements such as the UNODTP and TRRP,

**Further recognizing** that the establishment of an ICG/CARIBE-EWS Steering Committee will mark another step towards harmonization of global ICG governance structures,

**Decides** to establish an ICG/CARIBE-EWS Steering Committee with the Terms of Reference as attached in Appendix 1 to Recommendation ICG/CARIBE-EWS-XVII.1.

**Decides** to continuation of the

Working Group 1 on Risk Knowledge

Working Group 2 on Tsunami Detection, Analysis and Forecasting

Working Group 3 on Tsunami Warning Dissemination and Communication

Working Group 4 on Preparedness and Response Capabilities

Task Team on CARIBE WAVE

with the Terms of References as provided in Appendix 1 to Recommendation ICG/CARIBE-EWS-XVII.1,

**Recalling** the second objective of the ODTP that 100 percent of communities at risk to be prepared and resilient to tsunamis by 2030 through efforts like the UNESCO-IOC Tsunami Ready Recognition Programme (TRRP),

**Noting** the need to further focus on the identification and employing corresponding strategies in the Caribbean and Adjacent Regions,

**Decides** to establish Tsunami Ready Task Team (TT-TR) under the ICG/CARIBE-EWS with the Terms of Reference as provided in Appendix 1 to Recommendation ICG/CARIBE-EWS-XVII.1,

**Notes** the progress made in the implementation of the UN Ocean Decade endorsed SMART Cable initiative in the Pacific and Atlantic,

**Recognizing** the need to investigate the implementation of similar technology in the Caribbean and its Adjacent Regions,

**Decides** the formation of a sub-group under Working Group 2 to specifically address the implementation of such technology in the CARIBE-EWS.

**Noting** the need for the ICG/CARIBE-EWS to better position tsunami activities within the Multi Hazard Early Warning Systems (MHEWS) and UN Secretary General Early Warning for All Initiative (EW4All) initiative,

**Recalling** its decision at its 12th Session on the establishment Group of Experts (GoE) on work and implementation plan to enhance the warning system by including other coastal hazards and adopted Recommendation ICG/CARIBE-EWS-XII.7,

**Also recalling** that the ICG at its 14th Session noted the report of the GoE on work and implementation plan to enhance the warning system by including other coastal hazards,

**Noting** that the Chair of the GoE stepped down before the 14th Session of the ICG,

**Further noting** that one of the priority areas of IOCARIBE is early warning systems for regional hazards, there is a need and benefit to strengthen cooperation between IOCARIBE and ICG/CARIBE-EWS,

**Requested** the Steering Committee to revamp this initiative during the intersessional period in the coordination with of the IOCARIBE Secretariat and the regional offices of WMO and UNDRR, supported by the ICG/CARIBE-EWS Steering Committee and Technical Secretary.

**Noting** the ICG/CARIBE-EWS Action Monitor prepared by the Technical Secretariat as a useful tool to monitor the execution of the Decisions and Recommendations of the ICG/CARIBE-EWS and relevant Ocean Decade Tsunami Program Research and Development Implementation Plan (ODTP-RDIP) milestones,

**Further noting** the work executed by the Secretariat on the revamping of the TNC/TWFP/NTWC Database proving a standard format and ease in maintenance,

**Reminds again** Member States to communicate any changes in TNC/TWFP/NTWC information to the Secretariat and the TSPs as soon as these changes takes place,

**Noted** the nominations for Working Groups and Task Teams in response to CL-2965 circulated on 9 October 2023,

**Underlines** the importance of the active participation of all Working Group and Task Team members,

**Invites** Member States to support and encourage the members to actively engage in the Working Groups and Task Teams,

**Further invites** Member States to inform the Secretariat in case of any updates or additional nominations to the Working Groups and Task Teams.

**Expresses** its gratitude to the Government of Nicaragua for kindly hosting the 17th session of the ICG/CARIBE-EWS in Managua, Nicaragua,

**Acknowledging** the UNESCO recommendation reported by the Secretariat to the ICG on May 8, 2024, to hold statutory meetings and recurring conferences in-person only every second time, and online every other, in order to reduce UNESCO’s carbon footprint to meet its set target of reducing its emissions by 31 per cent by 2030, in line with the goals of the Paris Agreement,

**Also noting** that during the challenging times of the Covid-19 pandemic many tasks and meetings were managed, albeit less effectively, through online and virtual tools,

**Notes** that 2025 will be the 20th anniversary of the establishment of the ICG/CARIBE-EWS, 2026 will be the 20th anniversary of the first ICG/CARIBE-EWS and 2027 will be the 20th Session of the ICG/CARIBE-EWS,

**Further** **notes** that these anniversaries had already been noted as an important opportunity for raising awareness on the achievements and remaining challenges in ensuring tsunami resilience in the Caribbean and its Adjacent regions within the broader context of MHEWS framework and UNSG’s EW4All initiative and the post-pandemic resumption of tsunami preparedness activities,

**Additionally** **notes** that the ICG has been meeting regularly annually in-person (except during the pandemic), and that the in-person meetings have been instrumental in advancing the ICG/CARIBE-EWS and the cooperation between Members States especially the SIDS and LDCs,

**Further notes** the variety of challenges experienced in recent years associated with wholly online and with hybrid meetings that include both numerous delay-causing technical issues and reduced participation, attention, and engagement,

**Especially notes** the importance of in-person meetings providing opportunities for informal exchange of outside of the formal meeting sessions to address issues that facilitate the work of the ICG,

**Decides** to hold the ICG/CARIBE-EWS XVIII in-person in the week of 5 May 2025 and to consider organizing back-to-back the 2nd Tsunami Ready Summit to review the benefits and lessons learned and establish a road map towards 100% communities prepared for and resilient to tsunamis through efforts like Tsunami Ready,

**Further recommends** that for in-person meetings virtual participation will be accommodated in extenuating circumstances and when it does not interfere with the smooth running of the session,

**Recommends** that interpretation for in-person meeting to be performed in-person to avoid interference,

**Notes** with appreciation the considerations expressed by France (Martinique) or Panama to host ICG/CARIBE-EWS XVIII,

**Decides** to conduct ICG/CARIBE-EWS XVIII virtually if no official communication from neither France (Martinique), Panama or any other Member State interested in hosting ICG/CARIBE-EWS XVIII is officially communicated to the Secretariat by 9 August 2024,

**Further notes** that 2026 will be the 20th anniversary of the first session of the ICG/CARIBE-EWS which took place in 2006 in Barbados,

**Recommends** conducting the ICG/CARIBE-EWS XIX in-person tentatively in the week of 20 April 2026,

**Further notes** with appreciation the possibility of Barbados to host the ICG/CARIBE-EWS XIX,

**Further decides** to organize an event back-to-back with ICG/CARIBE-EWS XIX in close coordination with IOCARIBE, WMO, UNDRR and other stakeholders in the Caribbean and Adjacent Regions to promote accomplishments of the ICG/CARIBE-EWS, focus on current and remaining challenges and provide an outlook within the MHEWS framework and aligned with the objectives of EW4All,

**Decides** to consider conducting its future sessions from 2026 onwards in-person only every second year, and online every other,

**Recognising** the need to directly engage with the stakeholders of UNESCO-IOC tsunami programme’s stakeholders in the Caribbean and Adjacent Regions,

**Further** **decides** to consider conducting a back-to-back in-person Steering Committee Meetings with Capacity Building Activities as needed.

Recommendation ICG/CARIBE-EWS-XVII.2

**Risk Knowledge**

The Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS),

**Acknowledges** that a Joint Expert Meeting on Seismic Sources in the Northwest Caribbean and on Non-Seismic Sources of Tsunamis for the Caribbean and Adjacent Regions has been scheduled for 2-5 December 2024 in Heredia, Costa-Rica.

**Underlines** the need to conduct a regional Digital Elevation Model (DEM) Training, identification of its venue, experts, and the tools to be used for this training (open-source software vs license-based software),

**Encourages** Member States to gather their most recent elevation data, at a minimum to provide status availability including extent, resolution, access, format, etc…) for data sharing,

**Notes** the current discussion aiming at Caribbean Marine Atlas 2 for hosting these data.

**Recognizing** the efforts of NOAA/IOC International Tsunami Information Center (ITIC) to include of CATSAM scenarios in the Tsunami Coastal Assessment Tool,

**Requests** CARIBE WAVE Task Team to provide Working Group 1 with the parameters, including associated files (e.g., shapefiles, geotiff, etc.) of the corresponding scenarios once they are available for future CARIBE WAVE exercises,

**Reconfirms** the need to keep updating the Caribbean and Adjacent Regions Tsunami Sources and Models (CATSAM) with new scenarios,

**Acknowledges** that Working Group 1 should consider vulnerability and exposure of communities exposed to tsunami hazard,

**Invites** Members States to nominate tsunami risk specialists to Working Group 1 since currently its members are composed of mainly of hazards specialists but has no risk specialists,

**Encourage** the creation of a sub-group within the Working Group 1 in the future to address vulnerability and exposure themes and related challenges.

Recommendation ICG/CARIBE-EWS-XVII.3

**Tsunami Detection, Analysis and Forecasting**

The Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS),

**Considering** the report of Working Group 2 on Tsunami Detection, Analysis and Forecasting and having reviewed the status of the observational data availability in the Caribbean and Adjacent Regions,

**Notes** the Member States role of network operators in the region for the installation, maintenance, and data transmission from seismic, sea level and GNSS stations in the region;

**Appreciates** the NOAA ITIC-CAR and PTWC for improving the automated processing and continued reporting on the status of seismic and sea level stations,

**Notes** that a high percentage of the stations in the CARIBE-EWS sea level network and seismic network are currently non-operational and therefore can delay the proper assessment of tsunami events and the issuance of timely and accurate tsunami alerts,

**Urges** Member States and operators of seismic and sea-level stations contributing to CARIBE-EWS to maintain their stations in an operational status and regularly review and update the status of its stations, in the IOC Sea Level Monitoring Facility and in PTWC monthly maps posted on the ITIC website, and inform ITIC-CAR and Secretariat on plans for repair,

**Recommends** Working Group 2 performs a quantitative study of the impact of station outages in the Caribbean,

**Further** **recommends** Working Group 2 to work with partners to develop a tool to include the impact of these outages in the monthly reports.

**Notes** the progress made in the implementation of the UN Ocean Decade endorsed SMART Cable initiative in the Pacific and Atlantic,

**Recalls** its recommendation from CARIBE-EWS ICG XVI that a study be conducted to demonstrate improvement in tsunami early warning times with two to four variations on SMART Cable designs for the CARIBE-EWS,

**Further recalls** its recommendation from CARIBE-EWS ICG XVI that Working Group 2 on tsunami detection, analysis and forecasting engage industry stakeholders to understand which telecommunications cables are scheduled for replacement or new installations in the CARIBE-EWS,

**Recommends** the formation of a sub-group under Working Group 2 to specifically address the implementation of such technology in the CARIBE-EWS.

**Encourages** nominations from Member States to this subgroup,

**Recognizing** the importance of digital technologies for capacity building,

**Suggests** that Working Group 2 explore developing quarterly webinars on topics regarding Tsunami Detection, Analysis and Forecasting,

**Acknowledging** the success of the Tides Training Course in Spanish during 13-17 November in 2023, Costa Rica, jointly organized and funded by the International Hydrographic Organization (IHO), the International Maritime Organization (IMO), the Intergovernmental Oceanographic Commission of UNESCO (UNESCO-IOC) and NOAA

**Encourages** the Secretariat with Working Group 2 to organize sea level training courses in English and Spanish languages in alternating years with the support of NOAA and the Secretariat, and in close collaboration with the International Hydrographic Organization (IHO) and the International Maritime Organization (IMO).

Recommendation ICG/CARIBE-EWS-XVII.4

**Tsunami Warning Dissemination and Communication**

The Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS),

**Recognizes** the actions of the Working Group 3 towards the advancement of tsunami warning dissemination and communication,

**Notes** the approval by the IOC Executive Council of the ODTP-RDIP and its recommended actions and milestones for advancing Tsunami Warning, Dissemination and Communication,

**Additionally notes** the reports of UNDRR and WMO on UN EW4ALL,

**Further notes** in CARIBE WAVE reports, the strong dependency of Tsunami Service Providers and Member States on alerting systems based on landlines/submarine cable internet,

**Acknowledges** the Working Group 3 Inventory of Tsunami Warning Dissemination and Communication Methods for the Caribbean and Adjacent Regions,

**Appreciates** the support that the International Tsunami Information Centre Caribbean Office (ITIC-CAR) has provided to prepare this document as well as the contributions of other stakeholders,

**Recommends** Working Group 3 to finalize and submit the Inventory document including the results of the CARIBE WAVE 24 exercise.

**Further recommends** the UNESCO-IOC Tsunami Resilience Section to promote and make available the final document to ICG/CARIBE-EWS Member States and other stakeholders.

**Additionally recommends** Working Group 3 to use the Inventory and EW4ALL initiatives to document the dissemination capabilities, existing alert guidance and capacity enhancement needs in each of the Member States of the ICG/CARIBE-EWS, especially best practices, including traditional and technological solutions to expand methods and systems for the reception of products from the TSPs and dissemination of warnings, define warning authorities and competencies, and address local tsunamis.

**Recalls** the recommendation from ICG CARIBE-EWS XII for Working Group 3 to review and revise Technical, Logistical and Administrative Requirements of a Regional Tsunami Service Provider for CARIBE-EWS

**Requests** Working Group 3 to review and revise Technical, Logistical and Administrative Requirements of a Regional Tsunami Service Provider for CARIBE-EWS and present at its XVIII session at the latest,

**Noting** advances by CATAC in Earthquake Early Warning (EEW), and potential applications for Tsunami warning and communication.

**Recommends** CATAC to explore and inform at ICG/CARIBE-EWS XVIII the integration of EEW applications for disseminating its tsunami services and products to its TWFP and NTWCs.

**Notes** the importance of SOPs being up to date, include timelines, define warning authorities, and address local tsunamis,

**Further** **notes** the findings of CATAC and through the implementation of Tsunami Ready that many member states have out of date Tsunami Response Plans and SOPs,

**Urges** Member States to have up to date Tsunami Response Plans and SOPs, including addressing local tsunamis, as well as designated and trained warning authorities,

**Recognizes** Climate Change as well as multiple recent, ongoing, and future emergencies and disasters and their cascading effects as a manifestation of the systemic nature of risks, and its impact on investments in warning dissemination and communication,

**Urges** the IOC Secretariat to work with the ICG/CARIBE-EWS Steering Committee to develop a strategic plan to mobilize funding and in-kind support for more effective Tsunami Warning and Dissemination with a particular focus for LDCs and SIDS.

Recommendation ICG/CARIBE-EWS-XVII.5

**Preparedness and Response Capabilities**

The Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS),

**Considering** the reports of the Caribbean Tsunami Information Center (CTIC), the United Nations Office for Disaster Risk Reduction (UNDRR) and Working Group 4,

**Notes** with appreciation the strong cooperation between the CTIC, ITIC-CAR, Working Group 4, CARIBE WAVE Task Team and UNDRR for advancement of preparedness, readiness and resilience to mitigate the impacts of tsunamis and other coastal hazards in the CARIBE-EWS, particularly in relation to the implementation of the Tsunami Ready programme, the dissemination and development of outreach and educational resources, support to the United Nations Decade of Ocean Science for Sustainable Development including the work of the Tropical Americas and Caribbean Decade Safe Ocean Working Group,

**Acknowledges** the Workshop on Tsunami Evacuation held in Costa Rica in April 2024 with the participation of seven ICG/CARIBE-EWS Member States: Dominican Republic, Mexico, Guatemala, Nicaragua, Costa Rica, Panama, Colombia and USA (Puerto Rico).

**Appreciates** the leadership by the Extreme Events Institute of the Florida International University, the funding provided by United States Agency for International Development Bureau of Humanitarian Assistance (USAID-BHA) and ICG/CARIBE-EWS Secretariat, and the support of SINAMOT Program of the National University Costa Rica, ITIC-CAR and PRSN to organize this workshop.

**Notes** that during that workshop it was detected that among the participants only Costa Rica and Puerto Rico calculate the evacuation times and use those results to build Tsunami Evacuation Maps and Plans,

**Further** **notes** that evacuation times are necessary to determine the feasibility of tsunami evacuation maps and plans,

**Further** **notes** that the US has a method to calculate evacuation times that has been used by the PRSN and that it is willing to train other Member States,

**Additionally** **notes** the offer of the PRSN to host a workshop on Evacuation Mapping Modelling,

**Recommends** the Secretariat with Working Group 4 to seek funding and organize a workshop on estimation of evacuation modelling.

**Appreciates** the offer of ITIC-CAR to provide an intern for 10 weeks to support the implementation of the Tsunami Ready survey in the ICG/CARIBE-EWS,

**Notes** the challenges on administering and evaluating the data retrieved from the survey within this time period,

**Further** **notes** TOWS request to Task Teams “(xiii) TT-DMP consider the introduction of a Tsunami Ready Evaluation Form in the other ICGs than ICG/CARIBE EWS, its translation to Spanish and French and its administration by the IOC Tsunami Resilience Section”,

**Recommends** its Steering Committee and the Secretariat to evaluate the implementation process in ICG/CARIBE-EWS and informs the ICG/CARIBE-EWS in the implementation of this effort in other ICGs in accordance with the TOWS-WG-XVII recommendation,

**Recalls** that World Tsunami Awareness Day (WTAD) is observed annually on 5 November,

**Further** **recalls** the #GetToHighGround hashtag proposed by UNDRR and #CARIBEWAVE and #TSUNAMIREADY used by ICG/CARIBE-EWS,

**Notes** the 2024 theme for the WTAD is “Empowering Children and Youth, ensuring the next generation is tsunami prepared” which complemented CARIBE WAVE 2024 efforts,

**Further** **notes** that recent changes in social media changed the way to track hashtags,

**Recommends** Member States to adapt the hashtag of the campaign to their specifications, when necessary,

**Acknowledges** the leadership of CTIC in organizing activities leading to increased participation and visibility of WTAD in 2021, 2022 and 2023,

**Encourages** Member States to observe WTAD and to share their activities with CTIC,

**Recommends** CTIC to continue engaging with UNDRR, Working Group 4 and Member States to engage, plan and take action for WTAD 2024,

**Notes** that in the intersessional period the Spanish version of the Manual and Guides 86 on Multi-Annual Community Tsunami Exercise Programme Guidelines for the ICG/CARIBE-EWS was finalized and published,

**Recalls** the recommendation of ICG CARIBE-EWS XVI that a workshop be convened on the MG 86 Multiannual Exercise Guidelines together with a meeting of CARIBE WAVE Task Team to discuss enhancements to facilitate and streamline the execution of and reporting on the exercise, as well as integrating gradual flexibility and complexities in CARIBE WAVE Exercises and synergies with the Tsunami Ready Programme,

**Further recalls** that the workshop was to be co-organized by CTIC and ITIC-CAR and has not been conducted yet,

**Notes** the possibility that this workshop be held in Antigua and Barbuda with partial funding from United States Agency for International Development Bureau of Humanitarian Affairs (USAID/BHA) as part of Tsunami Ready projects,

**Recommends** CTIC and ITIC-CAR in coordination with Working Group 4 and CARIBE WAVE Task Team to organize a joint training on Manuals and Guides 86 and CARIBE WAVE Task Team meeting in Antigua and Barbuda during the following intersessional period,

**Notes** the continuing efforts of the Indian Ocean Tsunami Information Centre (IOTIC) and ITIC in preparing Tsunami Awareness, UNESCO-IOC Tsunami Ready and Tsunami Evacuation Maps, Plans and Procedures (TEMPP) trainings through the Ocean Teacher Global Academy (OTGA) platform and hybrid training workshops and training videos,

**Further** **notes** that the Working Group on Tsunamis and Other Hazards (TOWS-WG) has encouraged the completion of the OTGA Tsunami Awareness and Tsunami Ready courses by the ITIC and IOTIC as a key contribution to building capacity for implementation of the UNESCO-IOC Tsunami Ready Recognition Programme (TRRP) globally,

**Recommends** that once the modules are available, Working Group 4 with CTIC to facilitate the testing and use of the trainings.

Recommendation ICG/CARIBE-EWS-XVII.6

**Tsunami Ready**

The Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS),

**Notes** the Ocean Decade Tsunami Programme Goal that 100% of at-risk communities are prepared for and resilient to tsunamis through efforts like UNESCO-IOC Tsunami Ready Programme

**Congratulates** the Member States and communities that have been recognized as Tsunami Ready in the Intersessional Period: Saint George, Saint Vincent and the Grenadines, Christ Church West, Barbados, and Deshaies, France (Guadeloupe),

**Recognizes** the many Tsunami Ready recognition projects that have and are being implemented across the Caribbean and Adjacent Regions,

**Acknowledges** the funding from United States Agency for International Development Bureau of Humanitarian Assistance (USAID/BHA), Australia, Norway, and European Commission Humanitarian Aid Department's Disaster Preparedness Programme (DIPECHO) for the implementation of the Tsunami Ready program.

**Further acknowledges** Member States, CTIC and ITIC-CAR for the implementation of Tsunami Ready projects,

**Notes** the transverse nature of the UNESCO-IOC Tsunami Ready Programme to all working groups of the ICG/CARIBE EWS

**Further notes** that in the restructuring of the governance structure of the ICG/CARIBE-EWS the Task Team on Tsunami Ready was replaced with a subgroup on Tsunami Ready within Working Group 4 on Preparedness and Response Capabilities

**Recognizes** that the TR sub-group has a lead and members who have begun working on actions relating to Tsunami Ready implementation,

**Further recognizes** that the placement limits the input and interaction of other key stakeholders for Assessment, Tsunami Detection, Analysis and Forecasting and Warning Dissemination and Communication,

**Recommends** that a Task Team of Tsunami Ready be established under the ICG/CARIBE-EWS with the Terms of Reference as provided in Appendix 1 to Recommendation ICG/CARIBE-EWS-XVII.1,

**Notes** the excellent work of Mr. Fabian Hinds as the current chair of the sub-group and **recommends** him to be named the Chair of the Tsunami Ready Task Team supported by Matthieu Péroche as Vice-Chair,

**Invites** all Member States to implement or to support the implementation of Tsunami Ready in their communities, or that of another Member State

**Appeals** to donors to provide funding for the implementation of the Tsunami Ready Programme in the Caribbean and Adjacent Regions.

Recommendation ICG/CARIBE-EWS-XVII.7

**Exercise CARIBE WAVE**

The Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS),

**Notes** the CARIBE WAVE 24 draft final, media, supplement reports and presentation,

**Further notes** the successful conduct of the CARIBE WAVE 24 Exercise with the participation of 100% of the Member States and over 475,000 people registered,

**Congratulates** all the Member States who promoted, participated, and provided feedback on the CARIBE WAVE 24 exercise.

**Notes** only 80% of the Member States provided the feedback which is essential for assessing the functionality including warning, response and preparedness capabilities of CARIBE EWS and future actions,

**Urges** Member States to complete survey evaluations in a timely manner,

**Acknowledges** the good collaboration between the CARIBE WAVE Task Team, CTIC and ITIC-CAR in planning, promoting, executing, and evaluating the annual CARIBE WAVE Exercises.

**Appreciates** the International Tsunami Information Centre Caribbean Office (ITIC-CAR) for their support in generating the handbook, reports and overall coordination and the Pacific Tsunami Warning Center (PTWC) and the Central America Tsunami Advisory Center (CATAC) for providing and disseminating dummy message and simulated products for the CARIBE WAVE 24,

**Further** **appreciates** the United States Geological Survey (USGS) for their continued support in generating simulated ShakeMap and PAGER products for each of the scenarios of CARIBE WAVE 24,

**Instructs** the CARIBE EWS Working Groups and the CARIBE WAVE Task Team to identify actions arising from CARIBE WAVE 24 and past CARIBE WAVE Exercises and identify follow up actions in coordination with CTIC and the CARIBE-EWS Secretariat,

**Reconfirms** that CARIBE WAVE 25 will use the 2 CARIBE WAVE 20 scenarios 1) 1692 Jamaica scenario, and 2) the 1755 Lisbon scenario,

**Decides** that the CARIBE WAVE 25 exercise will take place on Thursday, March 20, 2025, commencing at 15:00 UTC with one dummy message for the communication test from PTWC and CATAC to the TWFPs and NTWCs, and the 1st message for the scenarios coming shortly after according to PTWC and CATAC simulated procedures for the respective scenarios they are supporting. Member States are encouraged to execute activities at times deemed convenient based on national procedures and circumstance,

**Reminds** Member States to consider alternative dates and times for running of CARIBE WAVE 25, if the agreed date is not feasible, and that information on conducting the exercise on alternative dates be shared in the Handbook,

**Requests** that Member States consider conducting all or part of their exercise response activities during non-working hours, particularly at night, to be better prepared for tsunami events that are more likely to occur during non-working hours,

**Recommends** following a coordination process, timetable, and benchmarks for CARIBE WAVE 25, similar to what has been used in prior CARIBE WAVE exercises, and that this includes a series of preparatory webinars,

**Further** **recommends** that the registration process remains at www.tsunamizone.org and that Member States promote registration and participation among their stakeholders,

**Recalls** again the importance of including vulnerable and marginalized groups, including persons with disabilities, in CARIBE WAVE 25,

**Recommends** continuation of the Task Team for CARIBE WAVE,

**Recommends** the Secretariat to inform the UNDRR on the date of CARIBE WAVE 25 and request the theme of the WTAD 25 in advance of the exercise,

**Further** **recommends** that Task Team CARIBE WAVE and Member States consider the theme of WTAD 2025 in the conduct and reporting of the exercise,

**Noting** that CATSAM is a tool for identifying tsunami sources and their associated threat for exercise planning purposes,

**Reminds** Task Team CARIBE WAVE to assist Working Group 1 in prioritizing scenarios to be included in CATSAM,

**Additionally** reminds Member States to consider including their selected CARIBE WAVE 25 scenario within a multi-hazard framework wherever possible,

**Additionally** recommends that Task Team CARIBE WAVE reviews and considers updates to the CARIBE WAVE Post-Exercise Questionnaire,

**Suggests** again that Task Team CARIBE WAVE explores opportunities to further involve tourists and tourism organizations such as the Caribbean Tourism Organisation (CTO), in CARIBE WAVE exercises, with the aim to develop multi-lingual guidelines/resources for the involvement of tourists in CARIBE WAVE Exercises,

**Further** **suggests** that Task Team CARIBE WAVE explores opportunities to further involve national and regional maritime and port authorities so they may exercise their plans and procedures,

**Recommends** that Member States consider UN agencies operating in their countries for receipt of products and relevant information and **further notes** the IOCARIBE agreement to support UN Country Teams by encouraging them to engage with emergency management practitioners in their countries of operation,

**Acknowledges** the consistent support of ITIC-CAR to the work of the TT CARIBE WAVE and looks forward to its continued support to TT CARIBE WAVE,

**Suggests** that the CARIBE WAVE 26 exercise consist of 2 scenarios that include 1) an earthquake generated tsunami based on historical events and, 2) a volcanic generated tsunami, considering the results of the joint experts meeting to be convened in Costa Rica in December 2024.

Recommendation ICG/CARIBE-EWS-XVII.8

**Central America Tsunami Advisory Center (CATAC)**

The Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS),

**Appreciates** the report and advances performed by CATAC during the intersessional period.

**Appreciates** the studies carried out by CATAC on the possible occurrence of local tsunamis in parts of Central America which might arrive to the nearest coasts in only a few minutes after the associated source earthquake.

**Also appreciates** the continuous efforts of CATAC to improve further its seismological system and be able to identify the source and send out timely and actionable tsunami products in case of slow earthquakes (tsunami earthquakes) which occur in Central America and to enhance the capacity of and inform its users about these possible events.

**Recognizes** the continuing support for CATAC provided by the Japan International Cooperation Agency (JICA) especially the funding of a project on “Strengthening the use of Central American Tsunami Advisory Center (CATAC) Tsunami Warning products.” being executed from 2023-2025.

**Notes** that in the preparation of this project CATAC with support from CEPREDENAC and JICA conducted 17 Webinars of 2 hours duration each with all related scientific and civil protection agencies of Central America, and additionally Belize, and Dominican Republic, to identify the status of the use of CATAC products. The findings were presented at a conference during the third Central American disaster exercise on June 13-16, 2023, in the city of Panama organized by CEPREDENAC.

**Appreciates** that within this project CATAC organized from 13-17 Nov 2023 a virtual course on the use of CATAC products for personnel from Civil protection agencies as a preparation for the Third Country Course "Strengthening the use of the Tsunami Warning Products of the Central American Tsunami Advisory Center (CATAC)" which was held from 19-24 Nov 2023 at CATAC/INETER in Managua. The participants were trained on CATAC’s methods and products but also presented the Standard Operation Procedures for tsunami warning used in their organizations and discussed them thoroughly with CATAC.

**Notes** that CATAC identified during this work with emergency management organizations in Central America that most participating institutions have not updated their SOP´s since 2017, the SOP´s do not mention the use of CATAC´s products and do not consider the new graphical products of PTWC, have no clear timelines and are largely not adequate for the cases of possible local tsunamis which might arrive in only a few minutes after the associated source earthquake.

**Appreciates** that CATAC has started to support the countries of Central America in the improvement of this situation, that CATAC visited in February-March 2024 Guatemala, Honduras, and Panama to discuss these matters with NTWC´s, civil protection agencies and related institutions. In Honduras and Panama, multidisciplinary working groups were formed to work on the problems. Multiple tsunami simulations are carried out, and proposals on the improvement of the SOP´s are elaborated. The findings of these groups will be presented at the meeting of the Latin American and Caribbean Seismological Commission (LACSC) at the end of June 2024.

**Appreciates** the support since 2016 of the Swiss Seismological Service for the introduction of Earthquake Early Warning (EEW) in Central America and **notes** the advancement of Nicaragua, El Salvador, Costa Rica, and Guatemala in the implementation of public EEW in their countries and

**Recommends** CATAC to continue with the implementation of EEW methods for the acceleration and improvement of the tsunami warning for Central America.

**Notes** that CATAC has presented and discussed at the Congress “Cities on Volcanoes” in Antigua, Guatemala, in February 11-17, 2024, a concept for a warning system on tsunamis generated by volcanic phenomena in the large lakes of Nicaragua.

**Notes** the recent improvements in the CATAC processing system including the implementation of new workstations with Graphical Processing Cards of latest generation which accelerate the tsunami simulation for the CATAC products by a factor of about 20. Laptops with potent GPU´s are also used by CATAC for the tsunami simulations to be carried out in its training efforts in Central American Region.

**Recognizes** the achievements of CATAC in updating its Servers and Workstations running the Seismological and Tsunami Processing System SeisComP PRO with TOAST to the latest versions 4,5 or 6 and assuring that way its compatibility with the rest of the SeisComP systems operated by the NTWCs of Central America.

**Notes** that the fast technical advancement of CATAC during the intersessional period and the shortcomings found by CATAC in the functioning of the civil protection agencies hindered CATAC in the updating of its User´s Guide (last version elaborated in 2021) as new approaches seem to be necessary and possible.

**Further** **notes** the challenges of CATAC during CARIBE WAVE 24 where all planned messages were sent out timely via email according to the programmed schedule, but 2 messages arrived with delays to the international recipients possibly due to reputation-based deferral or other temporary error, or connection problem with the used mail server,

**Additionally** **notes** that CATAC will provide the updated users guide by March 2025 for the consideration of ICG/CARIBE EWS XVIII,

**Recommends** the use of additional methods for the transmission of CATAC’s products to its users.

**Notes** that CATAC has tested, implemented and used in Nicaragua, and selected institutions in Honduras, Guatemala and Panama, the following new methods for the transmission of its products from its SeisComP system to institutions and persons as NTWCs and TWFPs: which are computer-to-computer transmission, sending out messages via Telegram, Whatsapp, Cellphone App and will implement them in the near future for all its regional users.

**Recommends** that CATAC continues full functionality in an interim manner to be able to support the National Tsunami Warning Centers (NTWCs), Tsunami Warning Focal Points (TWFPs), and emergency management authorities of Central America in addressing those challenges,

**Notes** that the CARIBE EWS XI in 2016 approved Technical, Logistical and Administrative Requirements of a Regional Tsunami Service Provider for CARIBE-EWS which defines TSPs as centres that provide services to the whole CARIBE-EWS region.

**Further** **notes** the update to the Tsunami Watch Operations Global Service Definition Document (2016, TS 130) is in its final stages,

**Requests** the Technical Secretariat to share as soon as available the updated GSDD with CATAC, PTWC and Working Groups 3 and 4,

**Further** **recommends** the consideration of CATAC as a TSP in its XVIII Session in 2025 to enable the IOC Assembly to consider the final admission of CATAC as TSP in June 2025.

Recommendation ICG/CARIBE-EWS-XVII.9

**Caribbean Tsunami Information Center**

**Notes** the renewal of the memorandum of understanding between the Government of Barbados and UNESCO-IOC regarding CTIC which has been strengthened by the extension of the duration from 3 to 5 years.

**Appreciates** the expanding mandate of the CTIC since establishment due to the alignment with Strategic Policy Frameworks and programmes such as the UN Sustainable Development Goals, the Sendai Framework for Disaster Risk Reduction, the UN Ocean Decade, UN EW4ALL Initiative, CDEMA-led Comprehensive Disaster Management Strategy & Framework, and the UNESCO-IOC Tsunami Ready Programme which has resulted in increased workload and opportunities for integration of the full scope of the role and functions of the CTIC (including other coastal hazards) regionally and globally,

**Further appreciates** the emerging policy matters such as the need for integration of social science, behavioural change, disabled and vulnerable (youth, women, indigenous groups, poor),

**Also notes** the contents of the document ICG/CARIBE-EWS-II/12 8 March 2007 regarding provision of financial and human resources from IOC, Member States, donors and partners and the constraints being considered which impacts on the performance and service levels to Member States, partners, and the sustainability of CTIC.

**Further notes** the CTIC Governance and Collective Ownership required to enhance support and improvement on performance and service levels to Member States and partners and foster sustainability,

**Notes** the work of the CTIC since establishment, the coordination forged within the ICG/CARIBE EWS organizational structure and partners,

**Recommends** a strategic review of the staffing resources needed to ensure adequate capacity at the CTIC to effectively execute and implement the programmatic and project activities to support the ICG/CARIBE EWS and EW4All frameworks,

**Urges** ICG/CARIBE EWS Member States to continue to make contributions to the IOC and provide human resources under various arrangements including long- and short-term internships to support the work of the CTIC,

**Recommends** that CTIC continues to work with the Secretariat, Steering Committee, CARIBE EWS Member States and partners to develop a strategic plan to guide the resource mobilization and staffing efforts of the CTIC,

**Recommends** a strategic review by the CARIBE EWS Steering Committee of the CTIC Governance structure in identifying and supporting the implementation of resource mobilization, staff, partnerships, and other frameworks to enhance the ownership and sustainability of the CTIC,

**Further recommends** the integration of the work and role of the CTIC and the CTIC Governance Structure review process with previous assessments, and current considerations within the ICG CARIBE-EWS including the integration of Other Coastal Hazards, EW4All, relevant policy frameworks and programmes and the CARIBE-EWS Steering Committee.

Appendix 1 to Recommendation ICG/CARIBE-EWS-XVII.1

Terms of Reference

**ICG/CARIBE-EWS Steering Committee**

1. The Steering Committee shall act in an advisory capacity to the Chair of the ICG/CARIBE-EWS during the inter-sessional period.

2. The Steering Committee shall coordinate and integrate the work of ICG/CARIBE-EWS in the inter-sessional periods, as implemented through the various working groups and task teams, including but not limited to:

- Maintain the ICG/CARIBE-EWS Organizational Structure and Governance

- Monitor, maintain and update the CARIBE-EWS Implementation Plan

- Oversee the execution of the Decisions and Recommendations of the ICG

- Develop a Strategy for funding CARIBE-EWS activities

- Monitor performance and examine continuing compliance of Tsunami Service Providers (TSPs) with the adopted operational and organizational function and requirements

- Guide the work and direction of the CARIBE-EWS to help deliver the goals of the UN Ocean Decade Tsunami Programme (ODTP) in support of its 10-year Scientific Research Implementation and Development Plan (RDIP).

- Report ICG/CARIBE-EWS progress against the ODTP-RDIP KPIs

- Develop a strategy for effective coordination with IOCARIBE, UNDRR, WMO, and other regional stakeholders

- Revamp the Group of Experts (GoE) work and implementation plan to enhance the warning system by including other coastal hazards during the intersessional period in coordination with of the IOCARIBE Secretariat considering WMO and UNDRR EW4ALL,

- Provide oversight and strategic guidance to CTIC on its implementation of tsunami awareness and capacity building activities

- Organize events and other actions and activities associated with the occasion of the 20th anniversaries of the ICG/CARIBE-EWS

3. The Steering Committee will be composed of the ICG/CARIBE-EWS Officers (Chair and the Vice-Chairs), Chairs and Vice-Chairs of the Working Groups and Task Teams, Directors/Coordinators of the TSPs, CTIC, and other members by invitation of the Chair.

Modus operandi

The Steering Committee will mainly work by correspondence and through virtual meetings and may hold in-person meetings as needed.

Terms of Reference

**Working Group 1: Risk Knowledge**

Purpose: To advise the ICG on the identification and characterization of the risk associated with tsunami and other coastal hazards, and their assessment and required modelling.

Chair: Frederic Dondin (France)

Vice-Chair: Raphaël Paris (France)

Tasks:

• Review and evaluate required methods and data sets, including bathymetry and coastal topography for determining coastal hazards.

• Advise the Member States on the requirements for operating the appropriate models for risk assessment.

• Advise and build capacity for risk assessments and their interpretation.

• Present a progress report based on the Key Performance Indicators related to the United Nations (UN) Ocean Decade Tsunami Programme (ODTP)

• Advise and seek advice from Member States about other coastal hazards that can be included into the warning system.

• Promote the sharing of experience and expertise, and capacity building essential to effective tsunami risk knowledge.

Terms of Reference

**Working Group 2: Tsunami Detection, Analysis and Forecasting**

Purpose: To review and recommend to the ICG priorities and actions required to ensure and enhance existing capabilities as well as explore new technologies to improve tsunami detection and forecasting capability.

Chair: Elizabeth Vanacore (USA - Puerto Rico)

Vice Chairs for Subgroups:

1. Tsunami Source Identification and Characterization (Dan McNamara, USA)

2. Tsunami Detection (Gloria Romero, Venezuela)

3. Tsunami Forecasting (Chris Moore, USA)

4. SMART Cables (TBD)

***Tasks:***

***General:***

• Support the operations of a fully interoperable regional tsunami warning system.

• Support and integrate the work of the subgroups.

• Present a progress report based on the Key Performance Indicators related to the UN ODTP.

• Establish strategies to enhance the warning system by including the detection, analysis and forecasting of other coastal hazards.

• Promote the sharing of experience and expertise, and capacity building essential to effective tsunami source characterization, detection, and forecasting.

***2.1 Tsunami Source Detection, Identification and Characterization***

• Ensure the effectiveness of the observational system by promoting the open exchange of seismic and other relevant data in real time.

• Advise member states on the monitoring and detection capabilities of tsunamigenic sources needed for operating national tsunami warning centres.

• Assure the compliance with the agreed standards for the detection systems.

***2.2 Tsunami Wave Detection***

• Ensure the effectiveness of the observational system by promoting the open exchange of sea level data in real time.

• Advise member states on the tsunami monitoring and detection capabilities needed for operating national tsunami warning centres.

• Assure the compliance with the agreed standards for the tsunami detection systems.

***2.3 Tsunami Forecasting***

• Define the operational requirements for the monitoring and forecasting systems.

• Provide guidance on tsunami forecasting tools to TSPs, NTWCs and provide actionable information to emergency managers.

Explore, experiment and test novel approaches for tsunami forecasting.

***2.4 SMART Cables***

• Conduct a study to demonstrate improvement in tsunami early warning times with two to four variations on SMART Cable designs for the ICG CARIBE-EWS

• Engage industry stakeholders to understand which telecommunications cables are scheduled for replacement or new installations in the CARIBE-EWS.

Terms of Reference

**Working Group 3: Tsunami Warning Dissemination and Communication**

Purpose: To examine current and developing capacities and advise the ICG about the definition and composition of early warnings and tsunami products and the methods and best practices for effective end-to-end dissemination and communication.

Chair: Christa von Hillebrandt-Andrade von Hillebrandt-Andrade (USA – Puerto Rico)

Vice-Chair: Susan Hodge (Anguilla)

• Explore and document the dissemination capabilities and existing alert guidance in the countries of the region.

• Identify the difficulties and challenges existing in the region that hinder the impact of “end to end” dissemination and communication of early warnings.

• Establish strategies for the development and implementation of methods and technologies to strengthen the interaction with the media and dissemination of early warnings within the countries of the region.

• Evaluate communication tests and tsunami exercises, in order to identify weaknesses and make recommendations to help strengthen these delivery systems.

• Create communication protocol and standardized information identifying the minimum acceptable levels for communication and dissemination of tsunami early warning in all countries for approval by the IGC.

• Provide feedback to the Tsunami Service Providers on its products and communication procedures.

• Serve as a reviewing and approving body for proposed changes to TSP products for the CARIBE-EWS or determine if proposed changes warrant going to the ICG for review and approval.

• Present a progress report based on the Key Performance Indicators related to the UN ODTP

• Promote the sharing of experience and expertise, and capacity building essential to effective tsunami warning dissemination and communication

Terms of Reference

**Working Group 4: Preparedness and Response Capabilities**

Purpose: To advise and recommend to the ICG strategies to enhance awareness, education, preparedness, response capabilities and mitigation and to develop the necessary recommendations, tools and procedures.

Chair: Silvia Chacon Barrantes Chacon (Costa Rica)

Vice Chairs for Subgroups:

1. Preparedness and Response capabilities (Jacob Ngumbah, St Kitts and Nevis)

2. Mitigation (Stacey Edwards, Trinidad and Tobago)

***Tasks:***

***General***

• Consider UN Ocean Decade Tsunami Programme and other relevant decade actions,

the Regional Action Plan for the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in the Americas and the Caribbean and the UN Early Warnings for All Initiative (EW4ALL)

• Present a progress report based on the Key Performance Indicators related to the UN ODTP

• Support the development of guidelines and capacity development on preparedness, response and recovery planning for Member States, communities and organizations, which should include sharing of training and evacuation best practices.

***4.1 Preparedness and Response capabilities***

• Identify the public awareness and education strategies and tools that the Member States can integrate into their risk reduction and emergency management programs.

• To closely cooperate with the Caribbean Tsunami Information Centre (CTIC) in carrying out its mandate and in the implementation of its program.

***4.2 Mitigation***

• Identify mitigation best practices related to plans, structural and nature-based solutions

• Advise Member States on measures to minimize impacts to critical infrastructure and marine assets from tsunamis and other coastal hazards.

• Identify and employ strategies to support mainstreaming disaster risk reduction into urban planning

Terms of Reference

**Task Team on CARIBE WAVE**

Purpose: Coordinate planning, running, and follow-up of CARIBE WAVE Exercises.

Chair: Antonio Aguilar (Venezuela)

Vice Chair: Gisela Baez Sanchez (USA – Puerto Rico)

**Tasks:**

• Propose and coordinate development of scenarios agreed by ICGs.

• Coordinate and collaborate with the preparation of CARIBE WAVE activities, including establishing a timeline, publishing of Exercise Manuals, and organization of relevant informational materials and events.

• Follow-up on CARIBE WAVE outcomes including coordinating post-event surveys and reporting

• Propose future exercise scenarios to ICG

Membership: ICG Chair, Working Group Chairs, TR Task Team Chair, Technical Secretary of ICG CARIBE-EWS, CTIC, ITIC-CAR, PTWC, CATAC, CEPREDENAC, CDEMA, EMIZA, other invited experts.

Terms of Reference

**Task Team Tsunami Ready**

Purpose: To identify and employ strategies to ensure 100% of at-risk communities achieve UNESCO-IOC Tsunami Ready recognition.

Chair: Fabian Hinds (Barbados)

Vice-Chair: Matthieu Péroche (France)

**Tasks**:

• Consider Standard Guidelines for the Tsunami Ready Recognition Programme UNESCO-IOC Manual and Guides 74, 2022

• Consider UN Ocean Decade Tsunami Programme Ocean Decade Tsunami Programme Research & Development Implementation Plan (2023) and other relevant decade actions, the Regional Action Plan for the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in the Americas and the Caribbean and the UN Early Warnings for All Initiative (EW4ALL).

• Assist the Secretariat on determining the target number of communities in the CARIBE-EWS for Tsunami Ready recognition by 2030

• Identify communities with a priority for action in the Tsunami Ready recognition process.

• Identify, develop, and recommend a road map to ensure an effective implementation and sustainability of the Tsunami Ready Programme.

• Evaluate the implementation of the Tsunami Ready and its effectiveness in reducing the risk and vulnerability to tsunamis.

• Support the development of guidelines and capacity development on assessment, preparedness and response planning for Member States, communities and organizations, which should include sharing of training and evacuation best practices.

• Present a progress report to the ICG CARIBE EWS based on the Key Performance Indicators related to the UN ODTP.

Members:

Members of the previous Tsunami Ready subgroup of Working Group 4

Chair or his/her designee of each of ICG/CARIBE-EWS Working Group

Programme Officer of CTIC (ex-officio)

Chair of CARIBE-EWS (ex-officio)

**ANNEX III**

**LIST OF PARTICIPANTS**

Seventeenth Session of the UNESCO-IOC Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS-XVII)

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1. The Executive Summary is available in English, French, and Spanish. [↑](#footnote-ref-1)