1.0 BACKGROUND

Large zones of the Caribbean and Adjacent Regions are vulnerable to earthquake-induced tsunamis. During the last 500 years, the Caribbean has experienced devastating tsunamis that have caused incalculable damage (NGI, 2009). Catastrophic events have tended to occur on an average of every 26 years and in the last 170 years, the combined loss of human lives is 3,510, according to available data (Ref: Caribbean Tsunamis, A 500-Year History from 1498-1998 by Karen Fay O'Loughlin and James F. Lander (2003: ISBN 1-4020-1717-0); Tsunamis of the Eastern US, NGDC, 2002 Science of Tsunami Hazards, vol 20, #3, pg 120; PRSN on Haiti, 2010)

Although tsunamis are not the major natural hazard in the Caribbean, they have the potential to produce catastrophic regional disasters (O'Loughlin and Lander, 2006), and thereby slow down the economic development in this region heavily dependent on its natural environment. With growing populations and a concentration of infrastructure – much of which is linked to tourism – along vulnerable coastlines, the risk exposure which the Caribbean region faces without a coordinated and comprehensive tsunami mitigation programme is magnified.

Experience has shown in such tsunami-prone basins, the most effective Tsunami Early Warning System (TEWS) requires a Tsunami Warning Centre (TWC) staffed with the latest tsunami science coupled with both historical and potential tsunami threat expertise within their home major basin (e.g. Atlantic, western Atlantic etc.). No greater threat to life exists than from the short-fused tsunami where it becomes more imperative than ever that the TWC issues the appropriate language and culturally designed alert(s) with life-saving information utilizing both, maximum speed message distribution (e.g. satellite etc.), and tone-alerting receivers available to all Member Nations, their point of contacts, first responders etc.

The Tsunami Information Centre (TIC), is also an important component involving primarily tsunami outreach, preparedness (TsunamiReady) and education provided in a culturally and language sensitive manner.

For an effective Tsunami Early Warning System (TEWS), these two components, a TWC and a TIC are critical to the protection of life from what is one of nature's most horrific killers. TEWS requires earth monitoring and detection, tsunami science and research, major basin expertise, applications of all these towards the tsunami warning decision that is close to immediate, followed by timely updates, culturally and language sensitive text with response guidance. However, the best tsunami mitigation expertise and service is for naught without the investment by the sovereign Member States in education, preparedness, risk assessment, and practice.

Implementation of an end-to-end maximum effective TEWS for the Western Atlantic, and Caribbean and Adjacent Regions requires a permanent Caribbean Tsunami Warning Centre and the establishment of a Caribbean Tsunami Information Centre (CTIC) efficiently serving as an information resource from which Member State government agencies, public and private stakeholders at all levels, and the general public can draw upon to protect life and serve their State's economic well-being.
2.0 CTIC GOAL

The goal of the CTIC is to improve all aspects of tsunami warning and mitigation including hazard assessment, warnings, preparedness and research.

3.0 CTIC MISSION

The overall mission of the CTIC is to mitigate the effect of tsunamis throughout the Caribbean and adjacent regions.

4.0 CTIC PURPOSE

i. Monitor the effectiveness of the tsunami warning system and recommend improvements with regard to communications, data networks, data acquisition, data processing, tsunami forecasting methods, and information dissemination in conjunction with the designated regional warning centre and with such national warning systems that exist;

ii. Bring to regional and national stakeholders knowledge on tsunami warning systems, and on how to become active participants in the activities of the ICG/CARIBE EWS;

iii. Assist national stakeholders in the establishment of warning and mitigation systems, and the improvement of tsunami preparedness for all through the implementation of comprehensive mitigation programmes in risk assessment, warning guidance and emergency response, and education and awareness;

iv. Act as a technical resource for strengthening both the technical and institutional aspects of the ICG/CARIBE EWS, in addition to fostering research and its application to prevent loss of life and minimize damage to property;

v. Act as an information resource providing for the development, publication, and distribution of educational and preparedness materials on tsunamis and tsunami hazards; and

vi. Act as an information resource on tsunami events, cooperating with the World Data Centre for Solid Earth Geophysics and the ITIC in collecting and making available through appropriate channels all records pertaining to tsunami events, and assisting national authorities in making investigations of all aspects of major tsunamis, including the development of standard survey procedures for such investigations.

vii. Support Member States in the preparation and conduction of regional and national exercises

The functions and specific activities of the CTIC are included as Annex I.

5.0 THE ROLE OF CTIC BOARD

It is envisioned that the CTIC Board will provide oversight for the operations and activities of the CTIC, thus facilitating regional ownership and ensuring the sustainability of the CTIC as the principal institution with responsibility for tsunami mitigation throughout the Caribbean and adjacent regions.

6.0 RESPONSIBILITIES OF THE CTIC BOARD

The responsibilities of the CTIC Board have been defined as follows:

i. Provide strategic guidance to ensure the sustainable management, and operations of the CTIC, including the mobilisation of resources;
ii. Provide overall oversight for the implementation of the CTIC Work Plan activities and production of materials;

iii. Conduct periodic monitoring of the implementation of CTIC activities through the review and approval of quarterly progress reports submitted by the CTIC Director;

iv. Ensuring that the financial control and audit mechanisms of the CTIC are executed in accordance with the applicable UNESCO or host country rules as indicated in the host agreement; and

v. Provide input into annual work plans, budgets and implementation schedules for CTIC activities prior to ratification by the ICG/CARIBE EWS.

7.0 COMPOSITION OF THE CTIC BOARD

The CTIC Board shall be comprised of key representatives of the ICG/CARIBE EWS, IOC/UNESCO, its host government and Member States representatives. The CTIC Board will be complemented by regional experts in the areas of Early Warning Systems, Disaster Management, Coastal Zone Management and Information Management in the capacity of Observers. As part of the arrangements for establishing the CTIC though the Enhancing Resilience to Reduce Vulnerability in the Caribbean (ERC) Project, funded by the Government of Italy and executed by United Nations Development Programme (UNDP) Barbados and the OECS, the UNDP will also be a member of the CTIC until project closure at the end of December 2013. Membership by representatives will be on both permanent and rotational bases.

Specifically, the CTIC Board will be comprised as follows:

Core Members:
Chair, ICG/CARIBE EWS
Representative, IOC/UNESCO
Representative, CTIC Host Government
Representative, UNDP Barbados and the OECS (until 31 December 2013)
Representatives (2), ICG/CARIBE EWS Member States, one of which should be the Chairperson (or designate) of Working Group IV.

Observers:
Representative, CTIC Board meetings host country
Director, CTWC, (Manager, Caribbean Tsunami Warning Program pending the establishment of the CTWC)
Representatives (2), donor agencies
Representatives (2), partner agencies

CTIC Board Secretariat:
Director, CTIC

*Unless otherwise decided by the ICG/CARIBE EWS, the asterisked representatives will sit for the two-year duration on the Board.

The ICG/CARIBE EWS may invite additional representatives to support the work of the CTIC Board as deemed appropriate. Furthermore, Member State representation on the CTIC
Board should reflect the multi-lingual nature and geographical spread of the ICG/CARIBE EWS.

8.0 GENERAL RULES GOVERNING ACTIVITIES OF CTIC BOARD

- Participation of representatives on the CTIC Board shall preclude their potential independent input or contracting for consultant services to implement CTIC activities.
- External evaluation to be decided and organized by ICG/CARIBE EWS.
- Decisions taken by the CTIC Board will be taken by consensus.

The following general administrative provisions are intended to guide the meetings of the CTIC Board:

- It is expected that the CTIC Board will meet at least once per year.
- The CTIC Board will approve quarterly reports and other inter-sessional work by correspondence.
- The quorum for meetings is at least 51% of its core members.

9.0 RESPONSIBILITIES OF THE CHAIRPERSON

Unless otherwise decided by the ICG/CARIBE EWS, the CTIC Board will meet under the chairmanship of the Chair, ICG/CARIBE EWS. The Chair of the CTIC Board will be responsible for:

i. Conducting the meeting;
ii. Ensuring, in collaboration with the CTIC Director, that an accurate summary of each meeting is prepared and forwarded to all members;
iii. Ensuring adequate follow-up on the undertakings of the members of the Board; and
iv. Representing the CTIC Board at official meetings.

10.0 SECRETARIAT OF THE CTIC BOARD

The Director of the CTIC will act as Secretary to the CTIC Board. The Secretary will be responsible for preparing meeting documents in advance of meetings and will ensure that the records of all official meetings are forwarded to Members not later than two weeks after the conclusion of the respective meeting.

11.0 COMMUNICATION

To the extent possible, the exchange of information outside the official CTIC Board meetings and preparation work for the CTIC Board meetings will be conducted through virtual meetings and or email.

12.0 DURATION

The composition of the CTIC Board will be determined by the ICG/CARIBE EWS and shall endure for a maximum of two years, after which the membership of the CTIC Board will be reviewed.
13.0 FUNDING FOR CTIC BOARD MEETINGS

Observers will be expected to fund their travel costs and per diem to facilitate participation in CTIC Board Meetings unless otherwise indicated. Funding to facilitate the participation of core CTIC Board members and the logistical costs of convening CTIC Board meetings will be provided from the CTIC budget.

14.0 MEETING LOCATION

Meetings of the CTIC Board will be convened on a rotational basis among ICG/CARIBE EWS Member States.

---

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

Annex I

Recommendation ICG/CARIBE EWS-II/12

**Caribbean Tsunami Information Centre:**
Functions and Activities

The functions of the CTIC should include to:

1. Monitor the performance and effectiveness of the regional and national tsunami warning activities and seek the cooperation of all stakeholders in improving the system. Activities may include to:
   - Maintain close familiarity with the operations and needs of the designated regional Tsunami Warning Centre (TWC), and work closely with the regional TWC to assist as needed with warning operations improvements.
   - Maintain communications with the designated contacts and focal points for the ICG/CARIBE EWS, and as appropriate, national Tsunami Warning Centres, and national Disaster Management Offices.

2. Serve as an information resource for the availability of technical information required for an effective tsunami warning system. Cooperate with experts to ensure that knowledge of new technology applicable to the warning system is made available to all participants. Activities may include to:
   - Provide, or arrange for, consultative services to stakeholders wishing to develop or improve their warning system capability, and liaison services between international, regional and national stakeholders for planning and development of warning systems;
   - Conduct, or arrange for, assessments of existing facilities and the recommendation of improvements, in such areas as instrument standardization, operational scientific evaluation and interpretation, and real-time communications;
   - Initiate, coordinate, or conduct technical training programmes, workshops, and seminars, dealing with all aspects of tsunami warning and preparedness, taking
advantage of national, regional, and international experts to provide and share experiences;
• Encourage and facilitate a visiting scientist programme, and promote the exchange of scientists among countries;
• Cooperate with international scientific and professional organizations in the encouragement and application of tsunami research, in the standardization of tsunami data collection, and the identification of research needed to improve the tsunami evaluation capabilities of the tsunami warning centres;

3. Serve as an information resource for the availability of educational, preparedness, and other awareness materials required for an effective tsunami warning and mitigation system. As needed, activities may include to:
• Initiate and foster the development and distribution of materials in the local language and context in partnership with national and local agencies and civil society organizations;
• Initiate and implement national and community level awareness programmes, as are appropriate, for the effective delivery of awareness information in partnership with community stakeholders;
• Encourage and assist as requested in the development of national social awareness materials for events and institutions, such as museums, memorial events, sign boards and other tsunami event memorials or materials, informative roadside signage or exhibits which remember the damaging aspects of past tsunamis;
• Encourage the posting of hazard, evacuation, or other interpretative signage to increase public awareness for effective and timely tsunami warning response.

4. Serve as an information resource on tsunami events and other historical information on tsunami warning and mitigation activities nationally and in the region. Activities may include to:
• Assist the ITIC and the World Data Centre for Solid Earth Geophysics (WDC/SEG) in soliciting and collecting as complete a set as possible of seismic, sea level, and other geophysical and oceanographic records, together with supplementary data and descriptive information for each tsunami event;
• Support, participate, and widely disseminate tsunami event information, including summaries of tsunamis and publications such as, for example, regional tsunami catalogues, taking advantage of the resources of the ITIC and WDC/SEG;
• Maintain a tsunami event data file and library on tsunamis sufficient to meet CTIC requirements and responsibilities;
• Disseminate, or arrange for, regular reports on tsunami warning and mitigation activities from regional and national stakeholders (such as newsletters and/or bulletins).