Common objectives
Activities:
   Infrastructure
   Training
   Operational changes
ICG/HC Collaboration:
   Future Meetings
Disaster Prevention and Preparedness
Multi-hazard warning framework

The Committee considered several areas of potential contribution through its technical plan including:

(i) standardization of tropical cyclone databases, metadata, analyses and mapping to support risk assessment projects such as World Bank’s CAPRA which was initiated in February of 2008,

(ii) an integrated approach to tropical cyclone, storm surge, wind-waves, swells and flood forecasting, through model-based marine-related forecasting systems,

(iii) need for enhanced warning communication and dissemination targeted at coastal risk managers and decision-makers,

(iv) strengthening the interfaces with the regional and national offices of the humanitarian agencies to provide more targeted information to support humanitarian contingency planning and response operations, and

(v) development of value-added products combining meteorological, oceanographic, and hydrological information and forecasts with high resolution satellite imagery, building on innovative examples emerging from the collaboration of WMO with UNOSAT and RSMCS-ECMWF.
Cooperation in activities to be undertaken on storm surges as a project of the WMO Tropical Cyclone Programme in the Hurricane Committee area:

• develop storm surge maps and undertake hazard assessment activities
• undertake bathymetric and topographic data collection for vulnerable areas
• Include the tsunami and other coastal hazards early warning system community in storm surge modelling and hazard assessment activities
Disaster Prevention and Preparedness
Multi-hazard warning framework

- The US Third Border Initiative supported increased funding in 12 countries for disaster preparedness and mitigation efforts to shield critical commercial and environmental infrastructure from natural disasters.
- Enhancement, renovation, and rehabilitation of upper-air and surface observation systems, hydro-meteorological and sea-level monitoring networks (i.e., tide-gage networks):
  - Antigua & Barbuda, Bahamas, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts & Nevis, St. Lucia, Suriname.
- A tide gage deployment in the Dominican Republic was an initial step in a larger multi-purpose Caribbean sea-level monitoring system, which will require wider national commitments to implement.
Communications: EMWIN

• 2\textsuperscript{nd} component of the TBI project:
  – Implementation of and training on the \textit{Emergency Managers Weather Information Network (EMWIN)}. Emergency managers in several nations have used EMWIN to rapidly respond to tornados, hurricanes and tsunamis.

• A reliable, priority-driven weather-warning and data broadcast system, in operation for a decade.

• Provides free rapid dissemination of warnings, forecasts, graphics and imagery
Communications: EMWIN

• Strengthens emergency preparedness and disaster risk reduction.

• In the Caribbean region, early warning and dissemination of hurricane-related information for primary users
  – meteorological services with warning responsibilities
  – emergency managers with disaster mitigation responsibilities.

• Has potential to be part of an integrated multi-hazard early warning system.
EMWIN-N Background:

- Changes in the next series of GOES satellites, the GOES-N thru P constellation, have necessitated development of EMWIN-N. Sometime before 2011 the current GOES satellites will be removed from operation and will be replaced by the new series.
- All current EMWIN users will need to migrate to newer technologies due to frequency, power and modulation changes.
- In addition, EMWIN users and vendors have also stressed the importance of increasing the EMWIN data rate and keeping the cost of the GOES-N transition as low as possible. The EMWIN team together with NESDIS has been developing a design to meet these needs. More details available through http://www.weather.gov/emwin/
Communications: EMWIN

• EMWIN Training, in support of the TBI, consisted of comprehensive one-week training workshops.
• National Hurricane Center in Miami, Florida, March 5-9, 2007.
• Silver Spring at the NOAA Campus July 15-22, 2007
Communications: ISCS Upgrade

- Current Plan for ISCS Re-compete and New System Installation
- 27 March 2008 Draft RFP available and open for questions
- Official RFP out June 2008
- Award Expected by end of December 2008 at earliest – early February 2009 at the latest
- Dual Systems running through end of December 2009
- Old ISCS (ISCS-G2) decommissioned 01 January 2010
Training -
5th WORKSHOP ON STORM SURGE & WAVE FORECASTING
MELBOURNE, AUSTRALIA, 1 TO 5 DECEMBER 2008
(WMO TCP / IOC/ JCOMM)

Storm Surge Watch Scheme

- Regional Specialized Meteorological Centres with Activity Specialization in Tropical Cyclones can act as the Regional Storm Surge Forecast Producing Centres
- Specialized Products – data analysis and model forecast outputs
- Watch products to be incorporated in the Tropical Cyclone Advisory Arrangements

Figure 1: Possible concept for a Global Storm Surge Watch Scheme
Training - Previous Workshops, meetings & conferences

• Prior to that:
  • 10TH INTERNATIONAL WORKSHOP ON WAVE HINDCASTING AND FORECASTING AND COASTAL HAZARD SYMPOSIUM NORTH SHORE, OAHU, HAWAII, NOVEMBER 11-16, 2007,
    – more of an academic research conference;
    – Every 2 years, few sessions devoted to storm surge, but nothing in a training sense
    – 11th Wave Workshop is planned for October 18-23, 2009 to be held at the Prince George Hotel in Halifax, Canada.
• First JCOMM Scientific and Technical Symposium on Storm Surges, in Seoul, Republic of Korea, 2-6 October 2007.
• Problem - none of these events are actually held in our region, where they would be the most accessible to the operational centres concerned.
Proposed TCP/JCOMM Workshop on Storm Surge and Wave Forecasting

• WMO Secretariat expressed its intention to organize a TCP/JCOMM Workshop on Storm Surge and Wave Forecasting in this region through the Iberia-American cooperation in late 2009
• This workshop would provide NMHSs, especially those of developing countries, with
  – open source and transferable numerical models for ocean waves and storm surges connected with tropical cyclones and
  – access to existing products worldwide, and guide them in using these products for operational forecast.
• The Committee welcomed the proposal of organizing the storm surge workshop in this region
• Expressed concern that late 2009 might not be opportune for some of the members due to the various engagements that were already arranged toward the end of the year.
• The Committee therefore urged the WMO Secretariat to liaise closely with the Committee members to coordinate the programme and planning of the workshop.
Training - WMO Hurricane Forecasting Workshop (NHC)

- Annual WMO Workshops
- Some training on analysis and forecasting of storm surge
- Next one to be held at March 23-April 3, 2009
- However,
  - not a workshop on surge forecasting techniques
  - not an appropriate venue for adding tsunami modelling methods.
  - Places available for operational hurricane forecasters only
  - Usually 1 per Regional WMO Member State
Changes for 2009 Hurricne Season to TC products from NHC/RSMC Miami

- The Tropical Cyclone Storm Surge Probability products, previously experimental, will become operational. In addition, the products will be available with thresholds of one foot increments ranging from two to 25.
- Storm surge information and forecasts in the Public Advisory will be expressed in terms of “height above ground level” or “inundation”.
How will ICG/HC Collaborate in future?

- The Hurricane Committee recommended that the proposed WMO RA IV Working Group on Disaster Risk Reduction and Service Delivery (DRR-SD) include representation on the ICG within their Terms of Reference. The Committee also agreed with the suggestion that the ICG be invited to participate in the work of the Hurricane Committee. It further recommended that the work of the WG DRR-SD be coordinated with that of the Hurricane Committee and that a representative of that body participate in the Committee’s session.

  - NOTE – subsequently, at RAIV 15th Session in April 2009, the structure of WGs in RAIV has been reviewed to 2 main WGs (Mgmt and HC), from which task teams will be formed and directed on an as needed basis…

- As HC Vice-chair and host country delegate for HC32, Mark Guishard will ensure an invitation will be sent for ICG representation at the HC32 next year
Upcoming meetings

• Hurricane Committee requested Dr. Mark Guishard to represent them at ICG/CARIBE EWS IV.

• Next Hurricane Committee Meeting to be held earlier than usual, March 2010 in Bermuda
Any Questions?

ICG/CARIBE EWS-IV
Fort-de-France, Martinique
June 2-4, 2009