Caribbean Early Warning System Workshop

Hamonization in Existing EWS

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Between 2006 and 2007 a country-level survey conducted by WMO found that the hazards affecting the Caribbean are tropical cyclones, flash floods, thunderstorms, storm surges, coastal flooding, drought, landslides, strong winds, river flooding and earthquakes.
Between 1980 and 2007 WMO documented that nearly 98% of disasters, 99% of casualties and 99% of economic losses related to natural hazards were caused by recurrent meteorological, hydrological and climate related events primarily tropical cyclones, storm surges, floods and drought.
Harmonization

MHEWS

Cyclone • Landslide

Flood • Drought

Multi-Hazard Early Warning Systems (MHEWS)
Harmonization...cont’d

During 2010-2011 WMO with support from regional and international partners conducted a comprehensive assessment of the institutional and technical capacities and needs of the Caribbean region to support MHEWS.

The outcomes of this assessment can be found in the document presented.
Harmonization...cont’d

Components of Effective MHEWS
Harmonization...cont’d

- Hazard Data
- Economic Data
- Social Data
- Online Decision Support Forum

DEWETRA
- Data Ingestion
- Process Modeling
- Scenario Development
- Risk Analysis

Caribbean Dewetra Platform
Harmonization...cont’d

Caribbean Dewetra Platform Conceptualization
MHEWS Components

Weather Monitoring – Station Data
MHEWS Components…cont’d

Weather Monitoring - GOES
MHEWS Components…cont’d

Weather Monitoring – Weather Radar
MHEWS Components…cont’d

Climate Monitoring – Drought Monitor (1 month SPI)

Short-term conditions (soil moisture, plant stress)
MHEWS Components…cont’d

Climate Monitoring – Drought Monitor (12 month SPI)

Long-term conditions (river flows, reservoirs)
MHEWS Components…cont’d

Weather Forecasting - WRF
MHEWS Components…cont’d

Weather Forecasting – NHC Forecast Track & Cone
MHEWS Components…cont’d

Wave Height Forecasting – TAOS
MHEWS Components…cont’d

Climate Prediction – Outlooks

Work in progress
MHEWS Components...cont’d

Risk Analysis - Elements at Risk
MHEWS Components…cont’d

Risk Analysis – Population Demographics
MHEWS Components…cont’d

Rain Gauge

Water level sensor 1

Water level sensor 2
MHEWS Components…cont’d

- **Warning Level 1 (Alert Stage)**
  - Flood is possible but the condition does not pose any imminent danger to the residents.
- **Warning Level 2 (Preparation Stage)**
  - It is very likely that the flood may take place.
- **Warning Level 3 (Evacuation Stage)**
  - Flood is absolutely very dangerous for the people.

Dissemination and Warning
MHEWS Components…cont’d

Predicted rainfall intensity 2013/10/16 23Z – 2013/10/17 00Z
MHEWS Components…cont’d

From: rtff.cimh@yahoo.com To: ['sboyce@cimh.edu.bb', 'dfarrell@cimh.edu.bb'] Date: Thu Oct 17 22:24:03 2013

Subject: Rainfall Intensity Alert

//TEST// The WRF hourly rainfall intensity has exceeded 50 mm/hr in the Rio Cobre watershed. Flash flooding is a possibility in the next 48 hrs //TEST//
MHEWS Components...cont’d

Weather/Climate Impacts Reporting – Crowd Sourcing
MHEWS Components…cont’d

Weather Impacts Reporting – Crowd Sourcing
Summary

Components of Effective MHEWS

- Monitoring and Forecasting
- Risk Analysis
- Dissemination and Warning
- Preparedness and Response
Thank You

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