



World Meteorological Organization

Working together in weather, climate and water

Technical Cooperation Workshop for Development of the Caribbean Regional Cooperation Programme in Multi-Hazard Early Warning System

Working Group B

Session 5: Outcomes

- **Forecasting capacities and expertise and related telecomm**
- **Observing networks and monitoring and related telecomm**
- **Coordination of multi-hazard watch and warning systems**



Country/Territory /Agency Represented in Working Group B

Countries /Territories

- Barbados
- Dominica
- Grenada
- St Vincent and the Grenadines
- Trinidad and Tobago

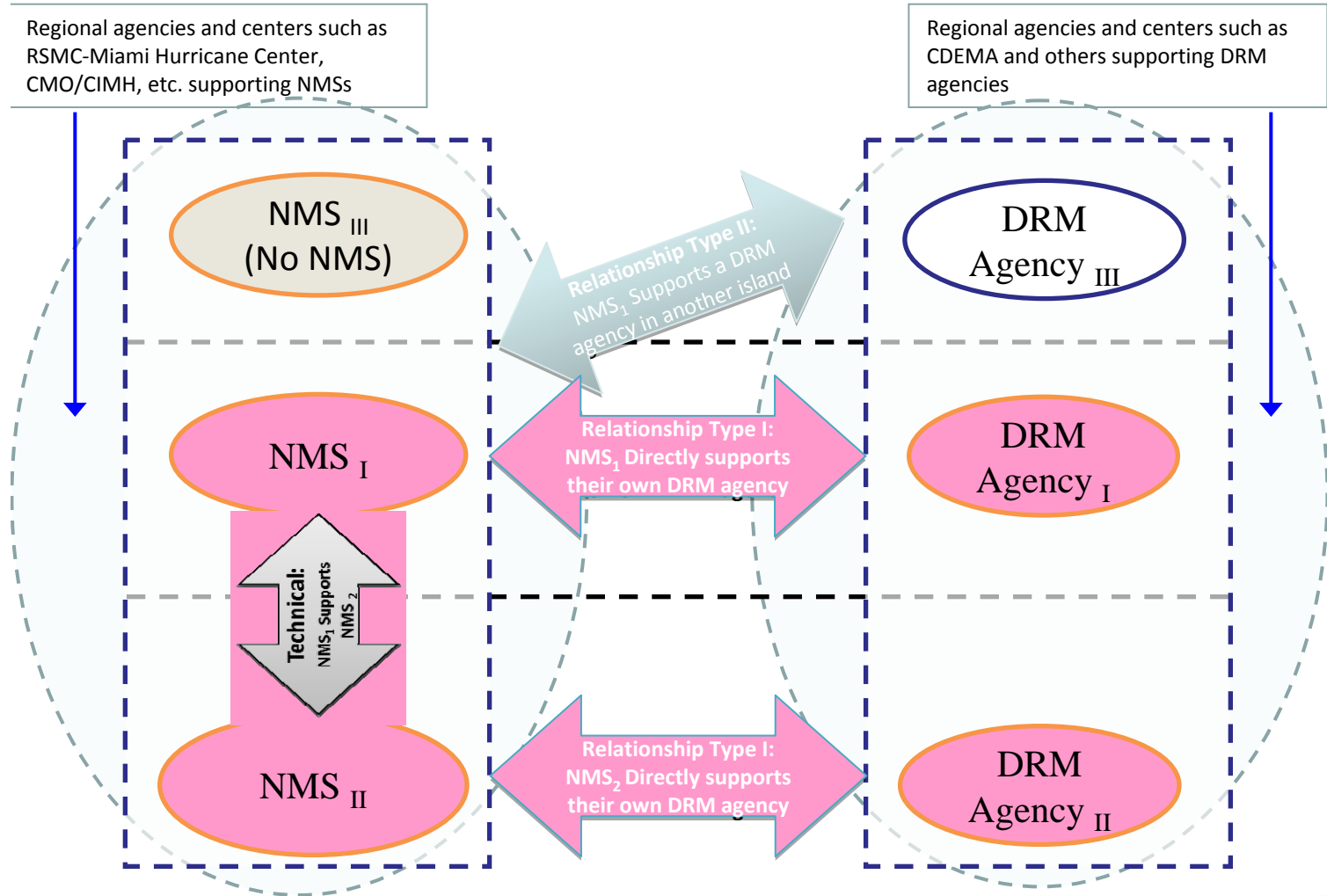
Agencies

- CARIB-HYCOS
 - CCRIF
 - CIMH
 - JICA
 - USA COMET
 - World Bank
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Different relationships between Disaster Management Agencies and Meteorological Services

- Antigua & B.
- Bahamas
- Barbados
- Belize
- Cayman
- Cuba
- Curaçao
- Dominican Rep.
- Guadeloupe
- Guyana
- Haiti
- Jamaica
- Martinique
- St Lucia
- Suriname
- Trinidad & T.
- Aruba
- Dominica
- Grenada
- St Marteen
- St Vincent & G.





Forecasting capacities, expertise and related telecomm - Needs and Gaps

- Need higher resolution models (> 4KM resolution) to capture localized features
 - Need for more training in radar and satellite interpretation
 - Need for bi-directional real-time observation data exchange between all related EWS stakeholders
 - Skill in interpretation and use and communication of probabilistic forecasts
 - Need for assessment and selection of existing and appropriate storm surge/wave models to be used at the national level
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Forecasting capacities, expertise and related telecomm - Needs and Gaps

- Need for training on upper air sounding indices that are appropriate for tropical forecasting (e.g. LCL, SWAT, Total Totals)
 - Need for forecaster training on interpretation and utilization of climate products and services
 - Need for regional climate services to support the national climate requirements
 - Need for additional communication avenues
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Forecasting: Revision of Doc 4

Prioritization of Section 4.5.7 Bullet 3

Strengthening of the forecasting capacities through:

1. Upgrading the forecasting system (e.g. data flow, software, workstations), to facilitate easy and integrated access to a wider variety of numerical products, intelligent forecasting guidance systems and of monitoring observations (national and regional);

2. Training of forecasters in the latest methodologies and analysis techniques, including probabilistic and deterministic model outputs.

3. Strengthening of real-time coordination of data and forecasts at national level with other technical agencies such as hydrological institutions;

4. Strengthening of real-time exchange and coordination at regional level, especially in the case of neighboring forecast offices and of NMS II countries/territories;



Observing networks and monitoring and related telecomm - Needs and Gaps

- Need for standardization of observation equipment and data
 - Need a cooperation framework to ensure timely observational data access among those entities that collect observational data.
 - Need for a national central collecting repository for collecting observational data
 - Refresher training for observers at non-automatic observation stations
 - Need for QMS for observation systems and processes
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Observations: Revision of Doc 4

Section 4.5.7 Bullet 6

Strengthening of telecommunication networks through:

1. Strengthening of transmission systems for exchange and data collection at national to regional levels.
 2. Implementation/enhancement of reliable systems for back-up and redundancy (e.g. internet)
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Coordination of Multi-Hazard Watch and Warning Systems (National – Regional aspects)

Needs and Gaps

- Need for a yearly regional meeting of Meteorological services and Disaster Management agencies for developing / maintaining coordination mechanisms among the Caribbean Islands
 - Need for inclusion of the disaster management agencies in CMO meetings
 - Need for inclusion of the Meteorological Services in CEDMA conference
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Coordination of Multi-Hazard Watch and Warning Systems (National – Regional aspects)

Needs and Gaps

- Need for institutionalizing warning and watch coordination mechanisms among the Caribbean Islands
 - Need for training of forecasters in countries/ territories without forecasting capabilities
 - Need for each island to develop protocols and zones of elevated monitoring and alerts to disaster management authorities
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Coordination of Multi-Hazard Watch and Warning Systems (National – Regional aspects)

Needs and Gaps

- Familiarization of forecasters with countries/ territories for which they have responsibility (Type II relationship)
 - Need for a clearing house of resources of effective audience communication and feedback mechanisms
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Thank You
