



# 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**

**Session 3: Operational Cooperation of the NMHS and  
DRM and service delivery for MHEWS**



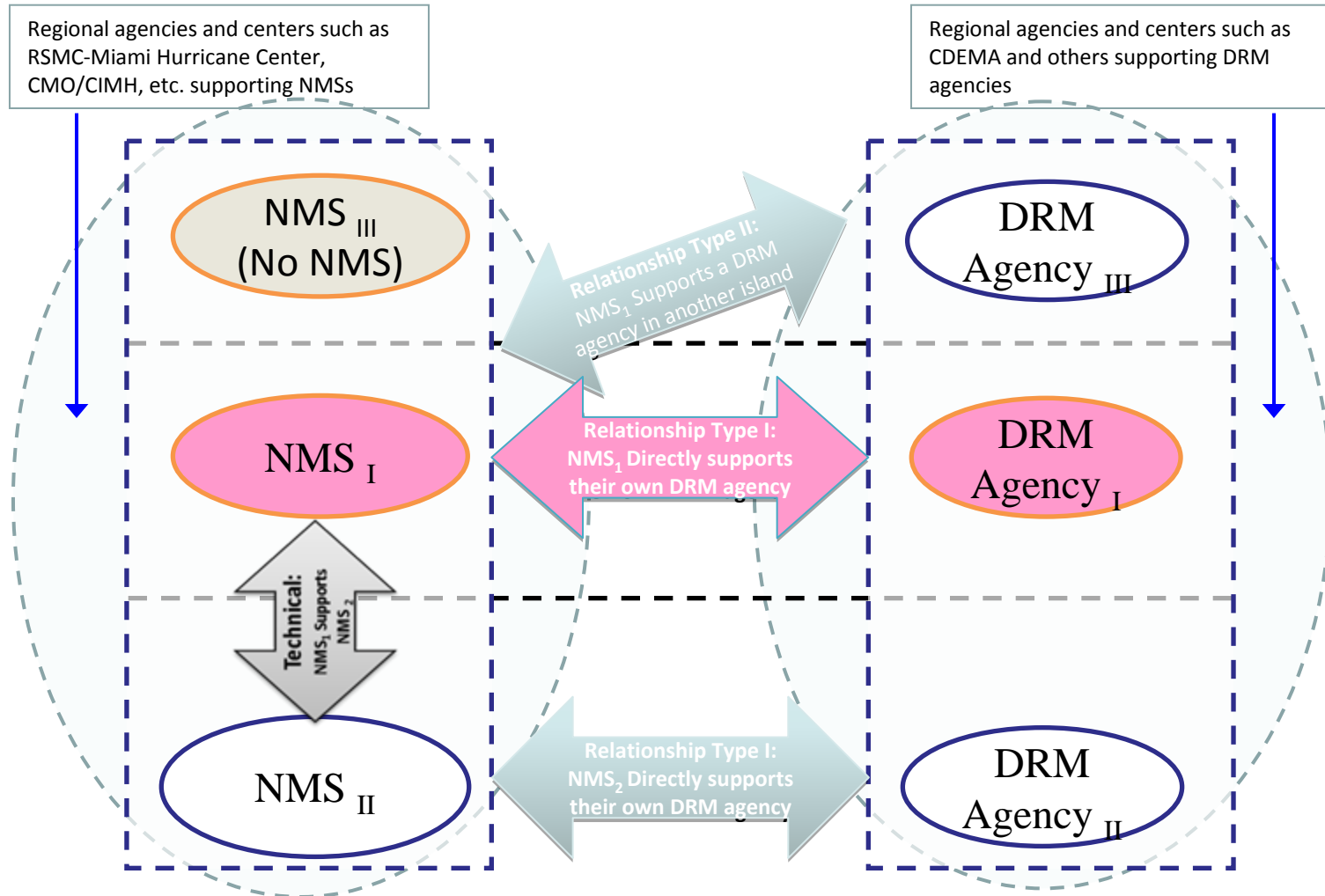
# Presentation of the Group

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- **Participants:** Belize, Cayman Islands, Cuba, Guyana (UNICEF), Suriname, CMO, WFP, World Bank
  - **Facilitator:** Jennifer Milton (Canada)
  - **Rapporteurs:** Glendell De Souza (CMO), Omar Afflick (Cayman Islands), Kashif Rashid (WFP)
  - **WMO Secretariat Support Staff:** Oscar Arango, Charles Baubion
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# All countries of the group have a NMHS-DRM Type I relationship





# But a very diverse Group

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- Small islands, big island and continental countries
  - One country of good practices, others where legislation on Met Service or DRM are just being developed and with scarce Human Resources (HR)
  - Variability in hazards affecting them (hurricane, floods, droughts)
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# MHEWS – Good Practices

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- The NMHS or NMS/NHS and NDO have legislation for their services.
  - NMHS or NMS/NHS assess and advise the NDO of threats using their Standard Operating Procedures (SOP).
  - The NDO uses the Alerts/Watches/Warnings from the information provided to activate the correct response from all level of the country's civil defense based on their SOP.
  - There is an after event review using information from all stakeholders which could lead to a review and change in SOPs.
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# Commonalities

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- All countries have a system where there is separation between the NMS and the NDO within the context of DRM.
  - The NMS deals with the issuance of scientific information associated with the threat. The NDO issues the warning to different levels of national community, from the political directorate to the public.
  - For the most part many methodologies are used to communicate the warnings to the general public.
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# Differences

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- Only one NMHS or NMS/NHS and NDO have SOPs covering all aspects of DRM.
  - Except for one country, none have legislation covering all aspects of their DRM. One have legislation for its NWS and another has legislation for its NDO.
  - In one case it was only flooding of a neighbouring country, which caused it to start an EWS.
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## Differences – (cont'd)

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- One country has no means of receiving a tsunami watch which is issued by the Pacific Tsunami Warning Centre,
  - Another has no plans in place to deal with tsunamis.
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# Priorities - Regional

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- Sharing of radar data for the entire region.
- Instrument calibration:
  - Cuba: Wind tunnel
  - CIMH: Calibration Laboratory
- Tsunami threat assessment



# Priorities - National

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- Cuba:
  - Update radar network to all Doppler capability;
  - Provision of sensors for its observational network;
  - Expansion of its hydrological monitoring network from its present 4 basins to all;
  - Replacement of meteorological telecommunication system (ISCS);
  - TV presentation system;
- Cayman Islands:
  - Staff continuity;
  - Capacity building in Disaster Management
  - Development of a plan to address tsunamis



# Priorities – National (cont'd)

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- Guyana:
    - Communication and coordination between all aspects of DRM
    - Extend Pilot Flood Response Plan to all regions;
  - Belize:
    - Staffing issues:
      - Levels and training
    - Increasing the observational network
    - Hydrological modeling
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# Priorities – National (cont'd)

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- Suriname:
  - Staffing
    - Levels and capacity
  - Increasing observational networks away from the river based communities;
  - Creation of a communication protocols and system for the timely dissemination of forecast and information to the NDO (NCCR) and the communities.



# *Thank You*

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[http://www.wmo.int/pages/prog/drr/events/Barbados/index\\_en.html](http://www.wmo.int/pages/prog/drr/events/Barbados/index_en.html)

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