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

Review of the Outcome of the Assessments and Consultations for Development of the Caribbean Regional MHEWS Programme and Priorities for Phase I project

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Outline

- Content and methodology of report
- Policies and legal frameworks and institutional arrangements
- Assessment of capacities and needs for strengthening operational cooperation on MHEWS

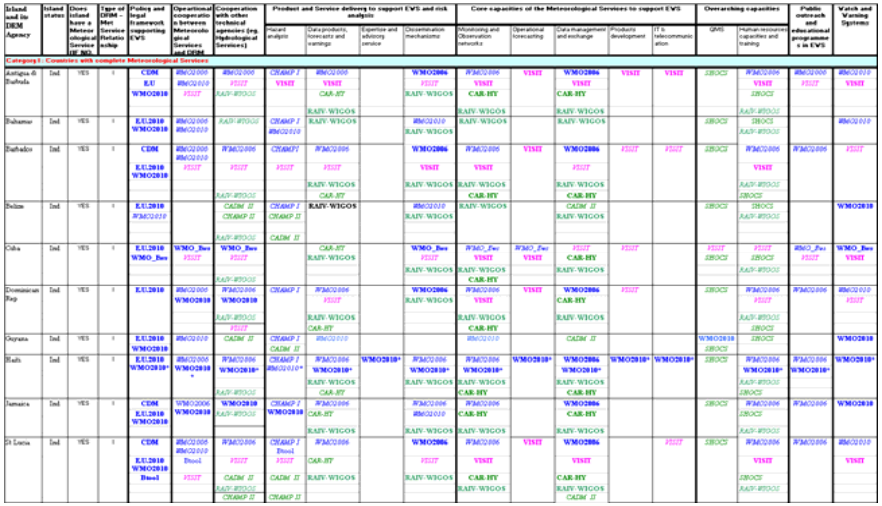
Issues addressed in the Assessment Report (Doc. 4)

- Legal frameworks and Types of relationships between DRM agencies and Meteorological Services in the Caribbean
- Capacities of Meteorological Services to support DRM and MHEWS stakeholders
- Overview of gaps, needs and recommendations in the MHEWS context

Section 2: Methodologies for assessment of the capacities, gaps and needs in context of MHEWS

- Mapping and review of existing assessments (Table 2a)
- Mapping and review of MHEWS-related projects and programmes (Table 2b)
- Visits and consultations throughout the region to complement information (Table 2c)

Table 3: Mapping of information provided in visits and assessments



Section 3: Policies, legal frameworks and institutional arrangements to support DRR and EWS

Table 4: Overview of the overall policies and legal framework supporting DRR and EWS

Island and its DRM Agency	Island Status	Does the island have a Met Service (IF NO, dependent on ?)	Type of DRM – Met Service Relationship	Legal framework establishing legal authority and role of different DRM agencies	Legal framework mandating powers in emergencies	Legislation in place for providing succession of senior officials?	Status of CDEMA Model Legislation (2006)	National Disaster Fund established?	Is there legislation defining role of NMHS in DRR	Is there a perceived need for clearer and better defined legislation and policy	Defined policies and priorities
Category 1: Countries with complete Met Service											
ANTIGUA & BARBUDA	ACP	YES	I	2002 Disaster Management Legislation of Antigua and Barbuda		YES		NO			Shelter Policy
BAHAMAS	ACP	YES	I	2006 Disaster Preparedness and					NO	YES	
BARBADOS	ACP	YES	I	2006 Emergency Management Act		YES	*in drafting phase*	YES	NO	YES	Disaster Management, Shelter, Donations, Relief and Emergency Housing Assistance Policy
BELIZE	ACP	YES	I	1999 National Emergency Management Act							
CAYMAN ISLANDS	UK OCT	YES	I	*in drafting phase*	1997 Emergency Powers Act						
CUBA	ACP	YES	I	Defense / 1997 Decree on the Civil Defense System / 1999 Resolution							
CURACAO	NL OCT	YES	I								
DOMINICAN REPUBLIC	ACP	YES	I	2002 Law on Risk Management					YES	NO	
GUADELOUPE	FR OR	YES	I								
GUYANA	ACP	YES	I								
HAITI	ACP	YES	I							YES	
JAMAICA	ACP	YES	I	1993 Disaster Preparedness and Emergency Management Act (*revision in draft*)				YES	NO	YES	Disaster Management, Hazard Mitigation, Shelter and Relief Policies
MARTINIQUE	FR OR	YES	I								
ST LUCIA	ACP	YES	I	2006 Disaster Management Act	1995 Emergency Powers Act	NO	*assented*		YES	YES	Disaster Management, Disaster Mitigation, Shelter, Donations, Relief, School Mitigation and Emergency Housing Assistance Polices. A Recovery Policy is being drafted.
SURINAME	ACP	YES	I								
TRINIDAD & TOBAGO	ACP	YES	I	1978 Disaster Measures Act		YES	*in drafting phase*		NO	YES	none

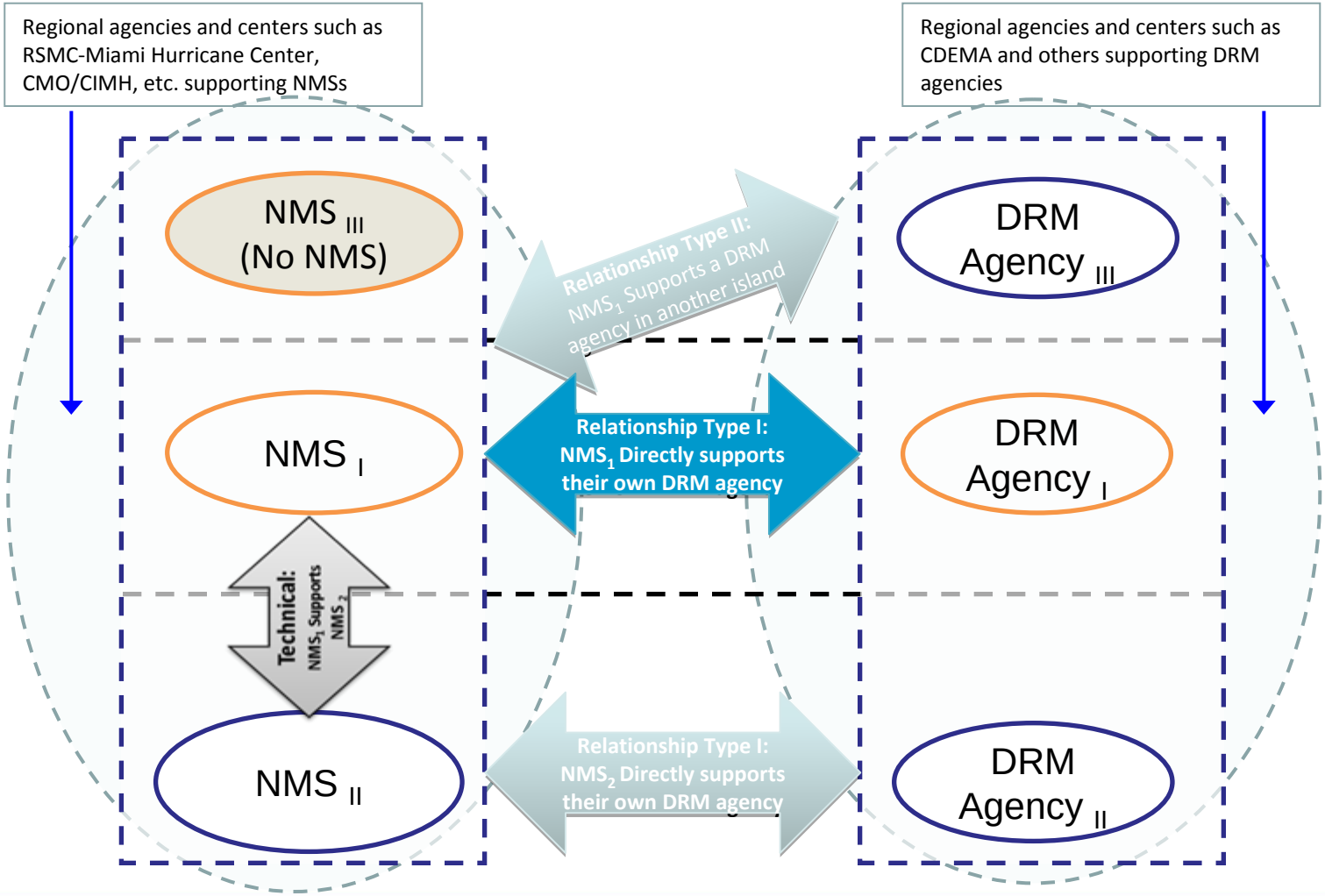
Table 5: DRM Agencies and their capacities

Island and its DRM Agency	Island Status	Does the island have a Met Service (IF NO, dependent on ?)	Type of DRM – Met Service Relationship	DRM Agency	Professional staff (2006)	Form of administration	Parent Gov. Department : Ministry	Source of financing	National Disaster Committee with Coordinator in place?	National Disaster Plan in place? (YES/NO)	Met Service represented in DRM coordination?	Specific Disaster Plans in Place	Comments
Category 1: Countries with complete Met Service													
ANTIGUA & BARBUDA	ACP	YES	I	NODS	6	Full government department	Ministry of Social Transformation	Separate budget head	YES	YES	YES	Hurricanes, Search and Rescue (Marine and Land), Aircraft Incidents, Oil Spills and Mass Casualty Incidents	NODS has highlighted its coordination mechanisms and preparedness for the hurricane season period, but at the same time emphasized its institutional weakness, citing not only the deficit of equipment and resources, but also the cost involved in subcontracting to private enterprises. The National Disaster Plan is updated less than once a year.
BAHAMAS	ACP	YES	I	NEMA			Office of the Prime Minister				YES		
BARBADOS	ACP	YES	I	DEM	2	Full government department	Ministry of Agriculture	Separate budget head	YES	YES	YES	Hurricanes, Floods, Land and Marine Search and Rescue, Aircraft Incidents, Oil Spills, Mass Casualty Incidents and Fire	
BELIZE	ACP	YES	I	NEMO	21	Full government department	Ministry of Public Utilities		YES		YES		
CAYMAN ISLANDS	UK OCT	YES	I	HMCI					YES		YES		The Cayman Islands' DRM appears very active in disaster preparedness and contingency planning It has also established MOUs with most NGOs and private sector organisations, and put in place Standard Operating Procedures (SOPs) for all aspects of disaster response.
CUBA	ACP	YES	I	DC		Full government department	Ministry of Civil Defense		YES	YES	YES		Cuba has a strong policy of self reliance and maintains important stocks of material and resources at national and local level for immediate response to disasters.
CURACAO	NL OCT	YES	I				Lt Governor		YES		YES (MDNAA)		Progress on the development of specific contingency plans is reported to be slow due to lack of funding and manpower.
DOMINICAN REPUBLIC	ACP	YES	I	COE	200+						YES		
GUADELOUPE	FR OR	YES	I	SIDPC Gd			Etat Major						Responsibilities for risk reduction, preparedness and response are widely distributed within the government. All the French territories depend primarily on support from France in case of a major disaster.
GUYANA	ACP	YES	I	CDC	15	Full government department	Office of the President		YES		YES		
HAITI	ACP	YES	I	DPC							YES		
JAMAICA	ACP	YES	I	ODPM	18	Statutory organisation	Ministry of Land and Environment	Budget under parent ministry	YES	YES	YES	Hurricanes, Floods, Earthquakes, Oil Spills, HAZMAT, MCI, Fire, Civil Unrest	
MARTINIQUE	FR OR	YES	I	SIDPC EMZA			Etat Major						Responsibilities for risk reduction, preparedness and response are widely distributed within the government. All the French territories depend primarily on support from France in case of a major disaster.
ST LUCIA	ACP	YES	I	NEMO	5	Full government department	Office of the Prime Minister	Separate budget head	YES	YES	YES	Hurricanes, Floods, Landslides, Earthquakes, Volcanic Eruptions, Search and Rescue (Land and Marine), Aircraft Incidents, Oil Spills, HAZMAT, MCI and Fire.	
SURINAME	ACP	YES	I	NCCR	12	Full government department							Limited intervention capacity
TRINIDAD & TOBAGO	ACP	YES	I	ODPM	2	Department Unit	Ministry of National Security	Budget under parent ministry	YES	YES	YES	Hurricanes, Floods, Earthquakes, Search and Rescue (Marine and Land), Aircraft Incidents, Oil Spills, MCI, Fire and Civil Unrest	Budget is reported to be around US$ 5M a year

Table 6: Relationships and dependencies between DRM agencies and Met services

Country/ Territory and its DRM Agency	Type of Regional grouping	DRM Agency	Does Country/ Territory have a Met Service?	DRM Agency depends on Met Service of (if different from own):	Met Service depends on support of the Met Service of:	OTHER countries / territories that the Met Service has a mandate for (italic: mandate to support another Met Service / bold: mandate to support another DRM Agency directly):	Responsible Hydrological Service
NMS Category 1: DRM Agency depends on the island's own Met Service, and the Met Service has full own capacity							
Belize	ACP	National Emergency Management Organization (NEMO)	YES				
Cuba	ACP	National Civil Defense (DCN)	YES				~~Instituto Nacional de Recursos Hidraulicos.~~
Dominican Republic	ACP	Civil Defense (DC)	YES				~~Instituto Nacional de Recursos Hidraulicos.~~
Guyana	ACP	Civil Defense Commission (CDC)	YES				Hydrometeorological Service
Haiti	ACP	Direction de la Protection Civil (DPC)	YES				Service National des Ressources en Eaux
Jamaica	ACP	Office for Disaster Prevention and Emergency Management (ODPEM)	YES				Water Resources Authority
St Lucia	ACP	National Emergency Management Organization (NEMO)	YES				Water Resources Management Agency
Suriname	ACP	National Coordination Centre for Disaster Preparedness (NCCR)	YES				none
Martinique	FR OR	Service Interministériel Départemental de la Protection Civil Etat Major de la Zone Antilles (SIDPC EMZA)	YES				DIREN Martinique
Cayman Islands	UK OCT	Hazard Management Cayman Islands (HMCI)	YES				CIMH
Antigua & Barbuda	ACP	National Office of Disaster Services (NODS)	YES			**St Kitts and Nevis, Anguilla, British Virgin Islands, Montserrat**	Antigua Public Utilities Authority
Bahamas	ACP	National Emergency Management Agency (NEMA)	YES			**Turks and Caicos Islands**	Water Sewage Company

Different relationships between Disaster Management Agencies and Meteorological Services



Different relationships between Disaster Management Agencies and Meteorological Services

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Bahamas
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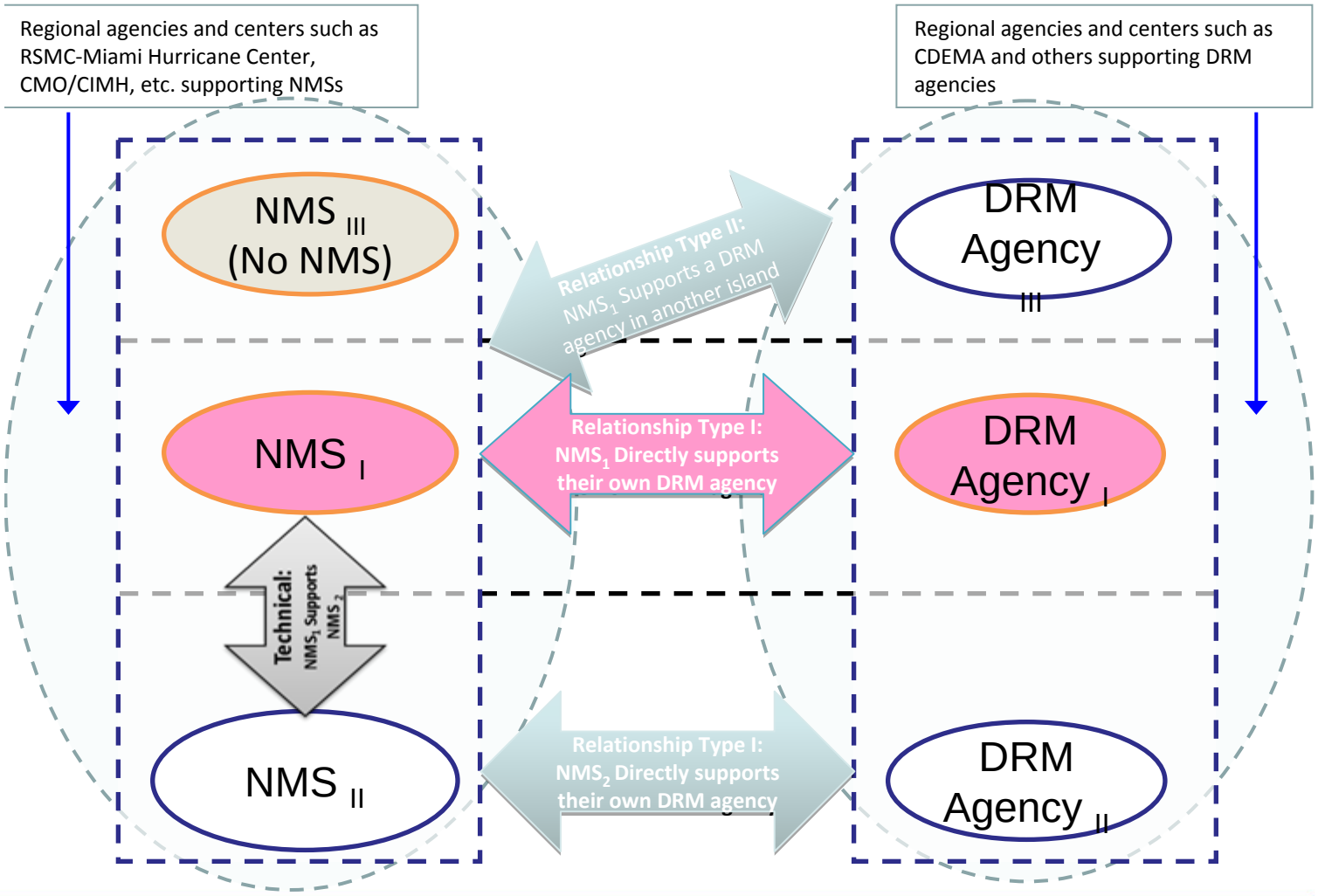
Belize
Cayman
Cuba
Curaçao
Dominican Rep.
Guadeloupe
Guyana
Haiti
Jamaica
Martinique
St Lucia
Suriname
Trinidad & T.



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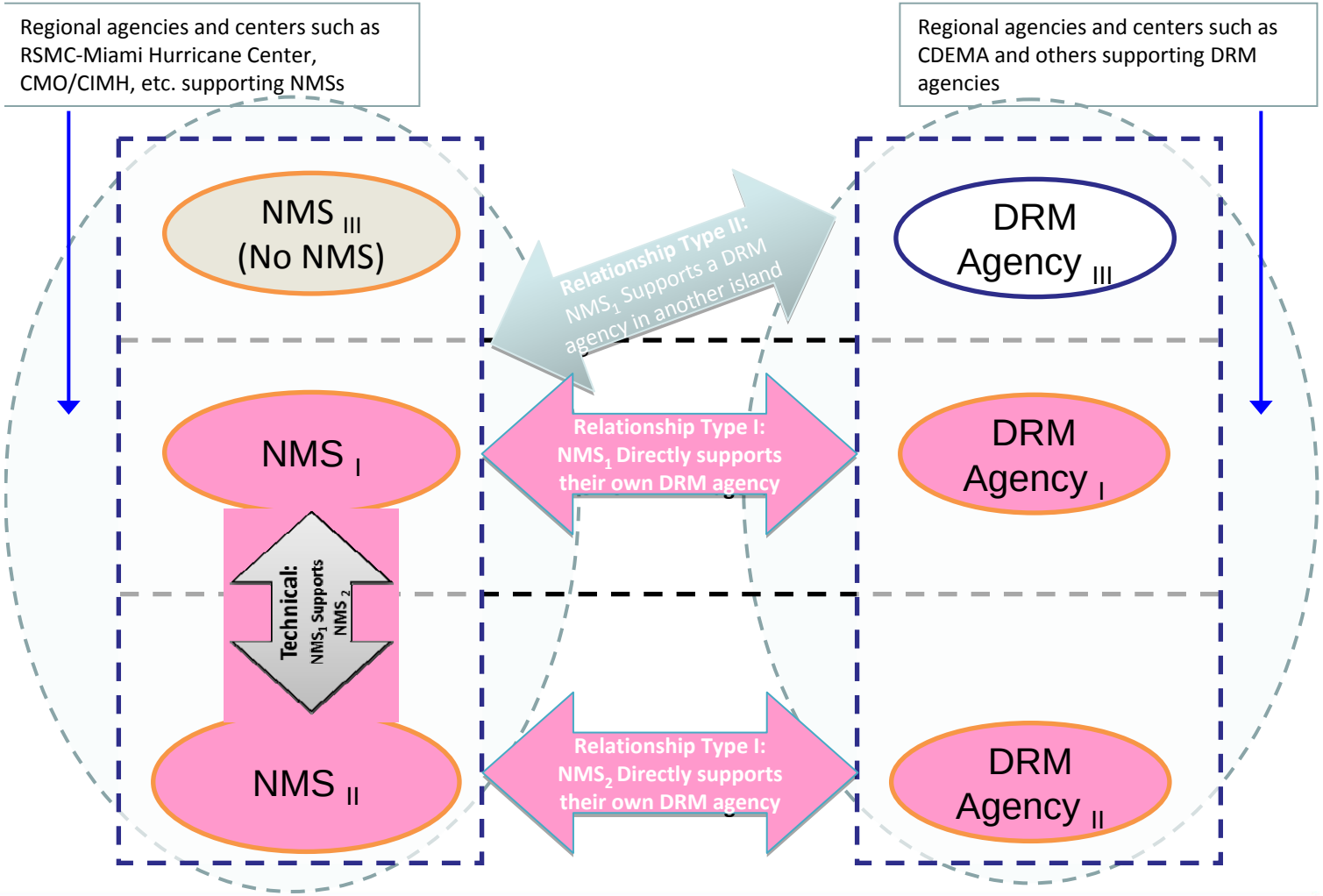
Dominica
Grenada
St Marteen
St Vincent & G.



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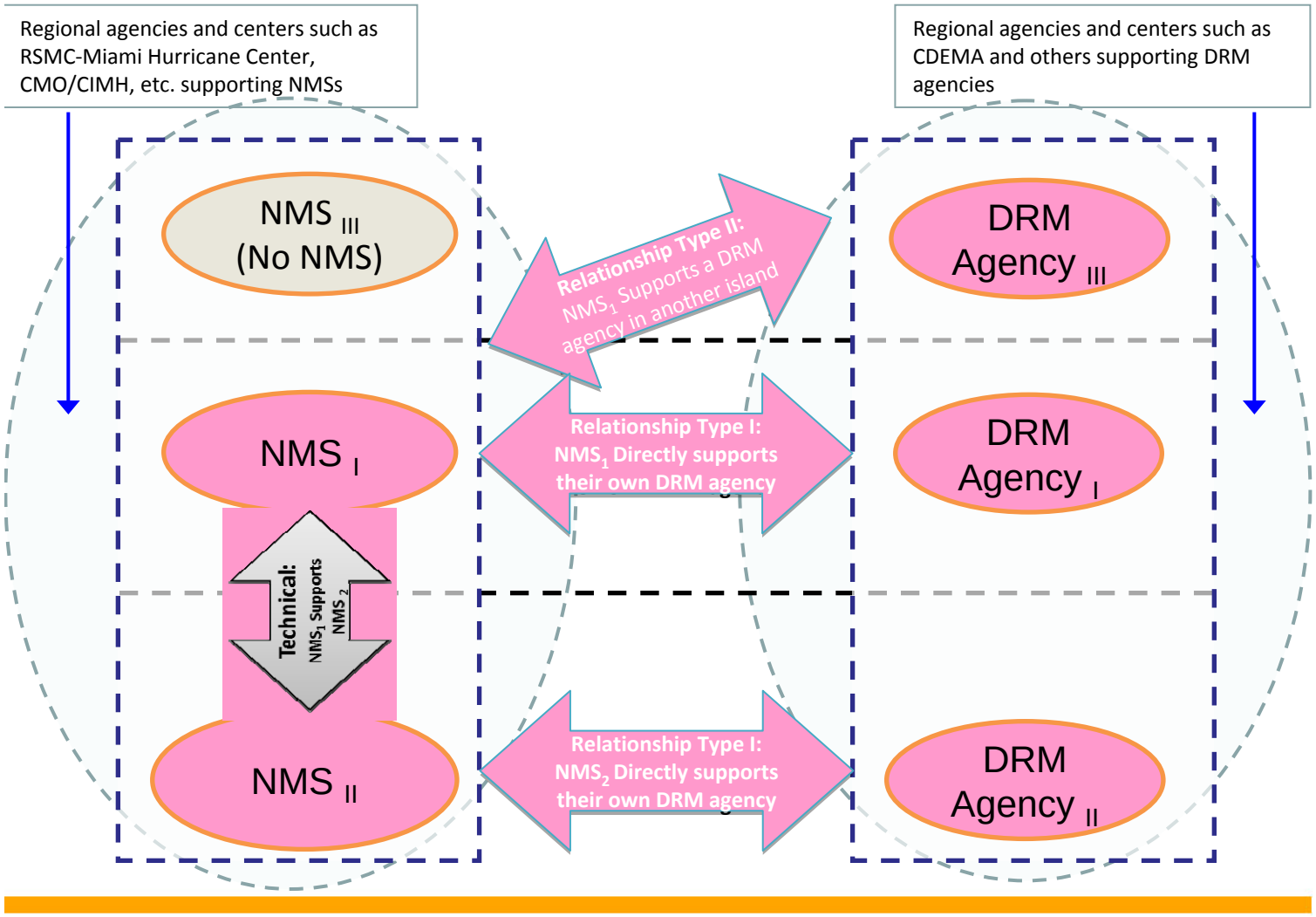
Aruba
Dominica
Grenada
St Marteen
St Vincent & G.
Anguilla
BVI
Bonaire
Montserrat
St Kitts & N.
St Martin/St Barth
Saba/St Eustatius
Turks and C.



Section 3: Policies, legal frameworks and institutional arrangements to support DRR and EWS

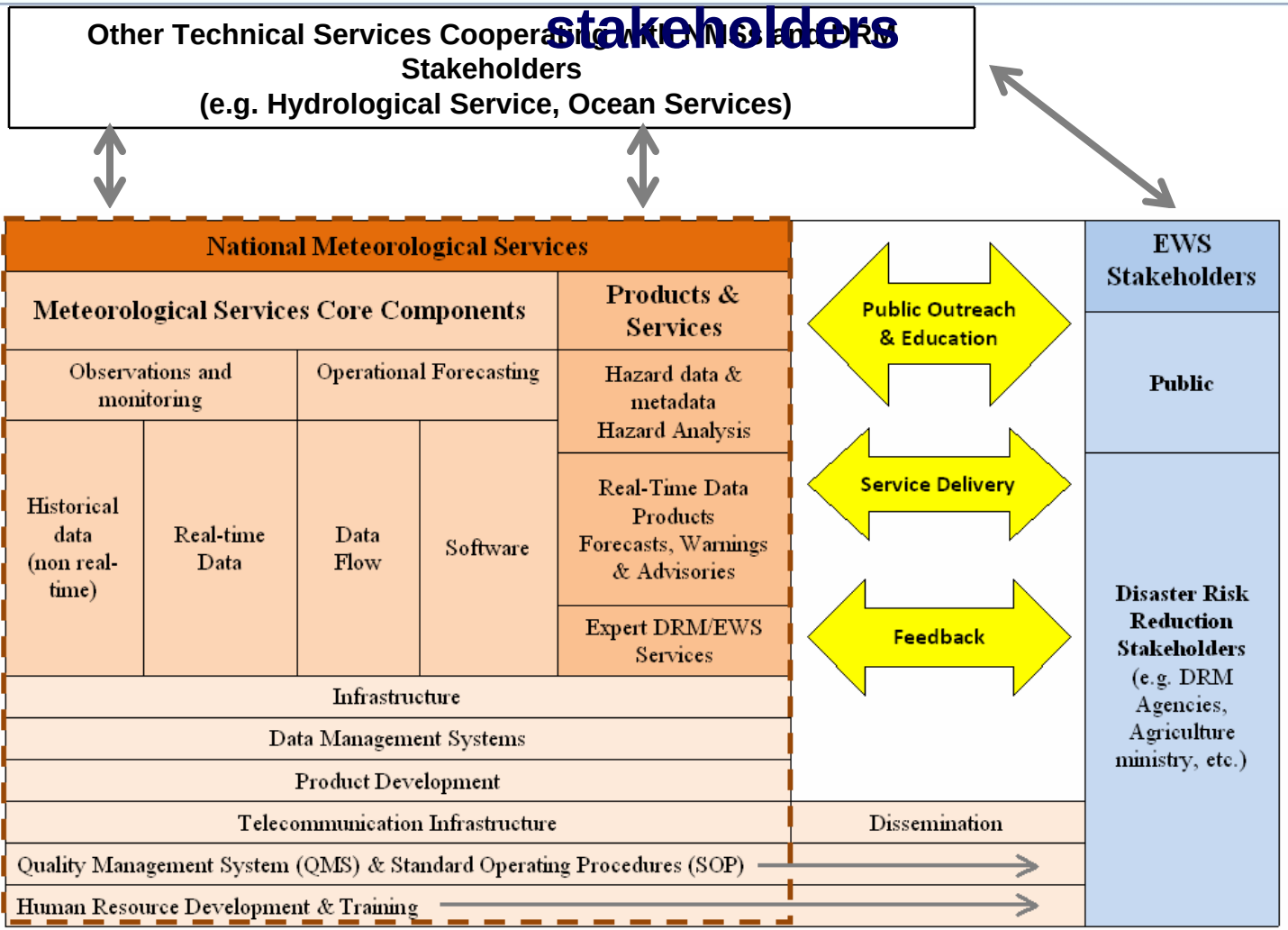
CAPACITIES AND GAPS

- All but one of the countries have a legal framework in place that gives legal authority to the DRM agency and that clearly defines its specific mandate
- Role and mandate of the Met Services is not often defined in the national legislation

RECOMMENDATIONS

- Further studies need to be conducted to better understand the legal frameworks with respect to their authority and coordination Meteorological service and disaster management

Linkages of Meteorological Services with EWS stakeholders and core capacities of Meteorological Services to support EWS and DRM stakeholders



4. Assessment of capacities and needs for strengthening operational cooperation on MHEWS

4.3 – Operational cooperation between Meteorological Services and DRM Agencies

4.4 - Product and service delivery of the Meteorological Services to DRM Agencies to support MHEWS stakeholders

4.5 - Core capacities of the Meteorological Services to support MHEWS

4.6 - Overarching capacities of the Meteorological Services to support MHEWS

4.7 - Public outreach and educational programme in MHEWS

4.8 - Watch and Warning Systems

4.3 - OPERATIONAL COOPERATION BETWEEN METEOROLOGICAL SERVICES AND DRM AGENCIES IN THE CONTEXT OF MHEWS

GAPS AND NEEDS

- Need for strengthening of the relationship between Meteorological Services, Hydrological Services and DRM agencies to improve cooperation, coordination and understanding of their respective capacities, needs and challenges with regards to MHEWS
- Need for strengthening of communication protocols among EWS stakeholders, including DRM agencies and Met Services, to improve feedback mechanisms and continual improvement, especially for countries/territories with relationships type II.
- Need for coordinated multi-EWS stakeholder drills and exercises.

RECOMMENDATIONS :

- Organization of national and regional workshops and training sessions for Meteorological Services, DRM agencies and EWS-stakeholders to identify users and their respective needs, capacities and challenges and to develop guidance for cooperation and coordination procedures, including feedback mechanisms and exercises.

4.4 - PRODUCT AND SERVICE DELIVERY OF METEOROLOGICAL SERVICES TO DRM AGENCIES TO SUPPORT MHEWS STAKEHOLDERS

GAPS AND NEEDS

- Need to enhance product and service delivery for real-time purpose (forecast and warning products) as well as for preparedness and planning
  - Met Services need to strengthen their capacities for hazard analysis, through improved data management, including exchange and data rescue, and modeling
  - Real-time service delivery, production and dissemination mechanisms need to be strengthened (public web site management, back-up systems.
- Need for strengthening real-time coordination mechanisms between Meteorological Services, other technical institutions and DRM agencies to provide input on forecasts and warnings products.
- Need for improvement for the credibility and the impact of live communication on media through better relationship and knowledge transfer between the Meteorological Services and the media.

RECOMMENDATIONS (1/2)

Hazard analysis:

- Access to quality controlled historical data (data rescue capacities) including metadata and hazard databases
- Access to hazard modeling capacities at national level; through regional sharing of resources ; under international programmes
- Access to up to date information on topography and bathymetry with sufficient resolution
- Sharing methodologies and statistical tools

4.4 - PRODUCT AND SERVICE DELIVERY OF METEOROLOGICAL SERVICES TO DRM AGENCIES TO SUPPORT MHEWS STAKEHOLDERS (continued)

RECOMMENDATIONS (2/2)

Dissemination mechanisms:

- Full redundancy at national level and back-up systems through regional arrangements to ensure continuity
- Use of coordinated protocols and systems between Meteorological Services, DRM agencies and EWS stakeholders that enable end to end efficiency and control
- Capacities for web site management in the Meteorological Services or at national level or through a regional approach

Communication:

- Strengthening of relationship with the media and organization of bilateral trainings
- Use of specific production systems dedicated to TV broadcasting

4.5 - CORE CAPACITIES OF THE METEOROLOGICAL SERVICES TO SUPPORT MHEWS

GAPS AND NEEDS

- Need to strengthen the observation capacities through better coverage and coordination/exchange at national and regional level.
- Need to upgrade the forecasting system including integrated access to a wider variety of numerical products and forecasting guidance output.
- Need for enhanced real-time coordination at the:
  - National level, between Meteorological and other technical Services (especially Hydrological Institutions)
  - Regional level, between forecast offices for consensual forecast and guidance (especially between neighboring territories).
- Need for improvement of database management and sharing through implementation of quality controlled GIS databases with meta-data and historical series and exchange mechanisms at national and regional levels

4.5 - CORE CAPACITIES OF THE METEOROLOGICAL SERVICES TO SUPPORT MHEWS (CONTINUED)

RECOMMENDATIONS

- National and regional coordination mechanism to improve observation network coverage and data exchange, including countries/territories meteorological and hydrological data as well as regional data such as radar, coastal marine and lightning
- Access to a wider variety of numerical products, forecasting guidance systems and of monitoring observations including meteorological, hydrological and marine observations through an integrated system
- Mechanisms for real-time regional coordination based on consensus guidance

4.6 - OVERARCHING CAPACITIES OF THE METEOROLOGICAL SERVICES TO SUPPORT MHEWS

GAPS AND NEEDS

- Need for well defined procedures and framework of the Meteorological Services for all their EWS supporting activities (with special consideration should be given to relationship II countries/territories)
- Need to develop and strengthen training programmes, workshops and the exchange of good practices on all activities that support MHEWS, including cross-training programmes (e.g. bilateral exchange of forecasters)

4.6 - OVERARCHING CAPACITIES OF THE METEOROLOGICAL SERVICES TO SUPPORT MHEWS (Continued)

RECOMMENDATIONS

- Implementation of a comprehensive QMS to frame the MHEWS-oriented activities of the Meteorological Services and the feedback mechanisms from DRM agencies and population for continual improvement.
- Strengthening of training programmes on all activities that support MHEWS (e.g. forecast, maintenance, computer engineering, statistics, communication, QMS), including cross-training programmes.

4.7 - PUBLIC OUTREACH AND EDUCATIONNAL PROGRAMMES IN MHEWS

GAPS AND NEEDS

- Need to improve public education on weather-related risk (hazard, vulnerability, response, challenges, etc.) with local input, under regional or international collaboration

RECOMMENDATIONS

- Development or adaptation of multimedia educational programmes on all hazards and risks, with local input (e.g. illustrations, footages, personalities) through partnerships with regional and/or international organization.

4.8 - WATCH AND WARNINGS SYSTEMS (WWS)

GAPS AND NEEDS

- Need for strengthening the framework at national level for comprehensive real-time management of weather-related hazards to support DRM agencies and public information.
- Need for implementation or strengthening of mechanisms and procedures for real-time coordination during meteorological and hydrological hazard events, between countries/territories (especially among neighboring territories), taking into account existing regional systems (e.g. RSMC for tropical cyclones) and the role of regional centers.

RECOMMENDATIONS

- Implementation of comprehensive and multi-level criteria-oriented weather warning system for multi-weather-related risk management with regional coordination mechanisms

Thank You

http://www.wmo.int/pages/prog/drr/events/Barbados/index_en.html