



The Dominica In-Country Workshop:

Mapping provider capacity and user needs for climate information and services

Conference Room of the Office of Disaster Management, Jimmit, Dominica

FRIDAY MARCH 18TH, 2016

Prepared by: Viola Pascal (DMS), Roché Mahon (CIMH), Cédric Van Meerbeeck (CIMH)



Table of Contents

1.0	Background	3
2.0	Workshop Overview.....	4
3.0	Session 1: International, regional and national context of climate services	4
4.0	Session 2: Sectoral applications of Climate Information Products and Services	9
5.0	Session 3: ENSO and Early Warning	12
6.0	Session 4: Baseline user needs.....	13
7.0	Session 5: Way Forward.....	13
	APPENDIX 1: PARTICIPANT LIST	15
	APPENDIX 2: AGENDA.....	17

1.0 Background

Addressing climate change and increasing climate variability have been made regional and national priorities by the Heads of Government of the Caribbean Community (CARICOM). Climate variability and change, as exemplified by observed extreme weather and climate events, such as droughts, floods and tropical cyclones, continue to pose significant risks for the Caribbean region. These make the development of climate early warning information systems critical components of preparedness, risk reduction and adaptation. Appropriate climate services, tailored to the Caribbean islands, will rely on such early warning information systems if the goals of supporting adaptation and disaster risk reduction are to be realized.

As part of a global effort to establish the systematic development and delivery of climate services in the Caribbean, as well as, other regions¹, the World Meteorological Organization (WMO) has secured generous funding from the American People through the United States Agency for International Development (USAID) and from Environment Canada to implement activities that enhance the capacities and mechanisms for climate services production and delivery in Caribbean Small Island Developing States.

This work will continue the process in the Caribbean region that builds the necessary partnerships that facilitate and promote the use of climate information in sectoral users' decision-support systems for climate risk management and adaptation strategies. This is critical since the main driving forces of socio-economic development of Caribbean States (e.g. tourism) remain highly sensitive to climate. Sector-specific climate information at appropriate spatial and temporal scales can be particularly helpful to anticipate, prepare for and respond to climate-related risks and opportunities. In fact, sectoral Early Warning Information Systems across Climate Timescales (EWISACTs) can be of great value because they can provide early warning of potential impacting climatic events that may have implications for a wide range of climate-sensitive sectoral decisions.

The Dominica Meteorological Service, in collaboration with the CIMH, took the opportunity to map user needs for climate information and services in the Agriculture and Food Security, Water, Health, Disaster Risk Management, Energy and Tourism sectors, as well as, to further baseline national institutional capacity to deliver climate services to these sectors. The objectives of this National Workshop were to:

1. Familiarize country representatives with the Caribbean's programmatic approach to the design, development and delivery of user oriented climate information;
2. Share the preliminary results of an assessment of provider capacity for the delivery of climate services in Dominica and the wider Caribbean;
3. Assess sectoral needs in Dominica for climate information and services, as well as, capacity needs to ingest and respond to climate information;
4. Discuss national perspectives on early warning and response to the potential impacts of ENSO events; and

¹ The Global Framework for Climate Services (GFCS), which provides a worldwide mechanism for coordinated actions to enhance the quality, quantity and application of climate services.

5. Begin to strategise for the formation of a National Sectoral EEWISACTs Committee (NSEC).

This report summarizes the outputs of the workshop convened to explore the above objectives.

2.0 Workshop Overview

The meeting was carried out according to the meeting agenda (see Appendix 2). The meeting proceedings included presentations and guided discussions over five (5) sessions.

A total of 21 participants attended the one day meeting (see Appendix 1). Five of six targeted climate sensitive sectors (Agriculture and Food Security, Water, Health, Disaster Risk Management and Tourism) were represented.

There was media presence from a number of TV outlets including the Government Information Service (GIS) (televised news), CBN4 news (televised news), Vibes Radio (radio news). Finally, a GIS interview with Dr. Van Meerbeeck summarizing the activities and goals of the workshop was posted on Youtube at: https://www.youtube.com/watch?v=Jkileb_qhcM.

3.0 Session 1: International, regional and national context of climate services

Dr. Cédric Van Meerbeeck and Dr. Roché Mahon (CIMH) delivered a joint presentation on the Global Framework for Climate Services (GFCS) and the Caribbean RCC approach to the delivery of user-oriented climate information, products and services.

The Presentation:

- Outlined the case for the GFCS as a WMO led, globally coordinated approach to support climate risk management through capacity building in the development, provision, effective communication and uptake of user-oriented climate information and derived products and services. Five priority areas have been identified under the GFCS: Health, Agriculture and Food Security, Water, Energy and Disaster Risk Reduction.
- Detailed the past, as well as, the innovative present and future approach to the delivery of climate forecast information through the Caribbean Climate Outlook Forum (CariCOF). A first step was the provision of generic seasonal precipitation outlooks using probabilistic forecasts, which followed the global standard among Regional Climate Outlook Forums (RCOFs). A second step concerned the packaging, contextualization and communication and dissemination of generic climate forecast information through the delivery of the Caribbean Climate Outlook Newsletter. A third step comprised of delivering user-demand driven and thematically tailored climate information. This was achieved in a first stage through the delivery of drought early-warning information, e.g. the provision of Caribbean drought outlooks

based on drought alert maps and the packaging of drought monitoring and forecast information into the Caribbean Drought and Precipitation Monitoring Network's Caribbean Drought Bulletin.

- Dr. Van Meerbeeck ended by suggesting that for effective uptake of climate information into decision making, such information would have to be tailored to suit the needs of sectoral practitioners.

Dr. Roché Mahon (CIMH) presented an overview of the work that the Institute has undertaken in the past year (2015) towards the development of sector-specific Early Warning Information Systems across Climate Timescales (EWISACTs). She reiterated an earlier point made by Dr. Van Meerbeeck - that although the CIMH currently develops a wide range of climate information products, these are quite generic in nature. Although the suite of generic climate information products are being used and are useful to sectoral stakeholders, there is an opportunity for the products to be of even more benefit if in fact they were tailored to the specific operating contexts of sectoral users.

Moving forward, CIMH is working towards developing sectoral EWISACTs under the USAID funded Building Regional Climate Capacity in the Caribbean (BRCCC) Programme. The BRCCC Programme will provide the support needed to advance the product tailoring process that takes the region towards the development of right-scaled, tailored user oriented climate early warning information. This work is being conducted under the auspices of the GFCS which was crystallised by the WMO and its partners in August 2009 at the third World Climate Conference with the vision to "...enable society to better manage the risks and opportunities arising from climate variability and change, especially for those who are most vulnerable to climate-related hazards" (WMO, 2011, 2014).

The sectoral EWISACTs methodology has 6 steps as can be seen in Figure 1.

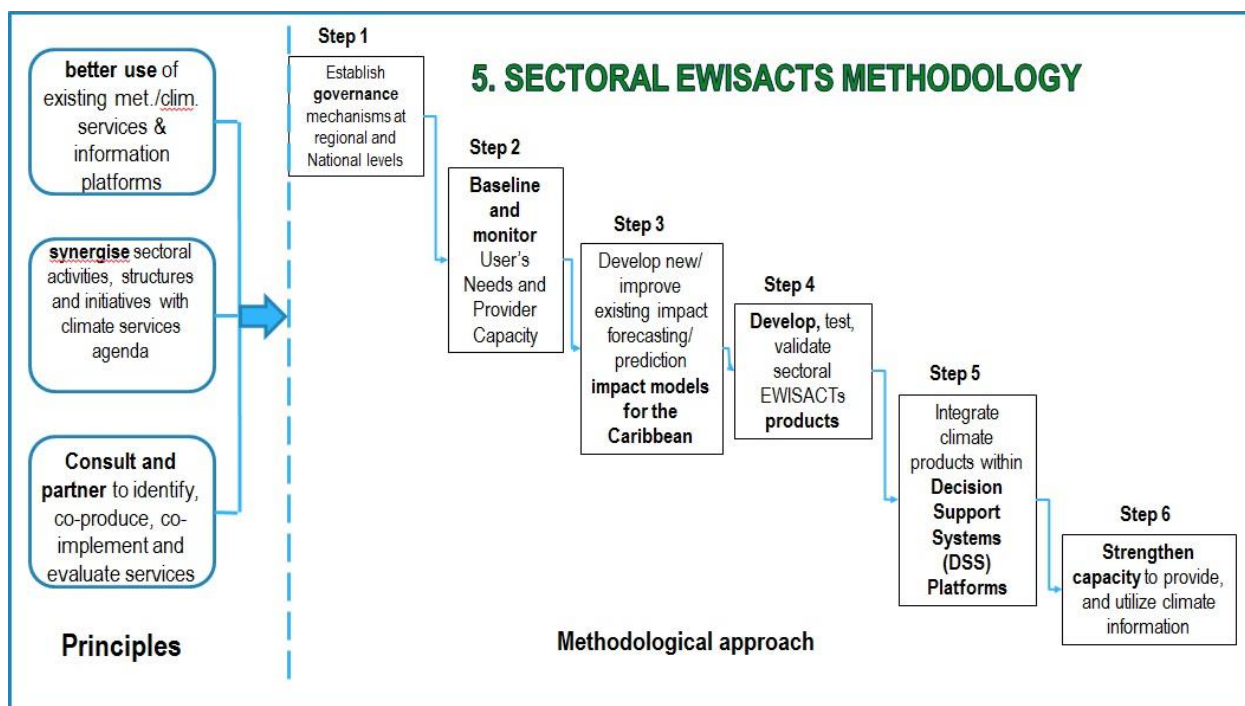


Figure 1: Methodological approach to the development of sectoral EWISACTs

Source: CIMH

With regard to Step 1, Dr. Mahon talked about establishing governance mechanisms at 2 levels:

1. Regional
2. National

She showcased how regional stakeholder organisations were organizing themselves to co-design, co-develop and co-implement the delivery of climate services in the region's six climate-sensitive sectors in the form of the Consortium of Regional Sectoral EWISACTs Coordination Partners.

Next, she outlined 3 potential options for organizing national governance mechanisms for the delivery of climate services going forward:

1. National Climate Change Committee (NCCC)
2. National Disaster Management Committee (NDMC)
3. National Sectoral EWISACTs Committee (NSEC)

She emphasized that participants would have an opportunity to discuss and evaluate the appropriateness of these options for the Dominica national climate services context in more detail in Session 5.

Dr. Mahon indicated that the CIMH was conducting an assessment of users' decisions, awareness of, perception of, use of climate information and encouraged all Workshop

participants that did not yet participate in this survey to do so in the dedicated baselining session (Session 4).

She further informed that the Institute was also assessing NMHS capacity to provide climate information around the 5 pillars of the GFCS.

Finally, Dr. Mahon highlighted that the Dominica In-Country Workshop would contribute towards advancing steps 1 and 2 in the sectoral EWISACTs methodology and thanked all in attendance for their valuable contributions to national and regional processes.

Questions/discussions

Kishma Registe (CARDI) raised the issue of Dominica being in a drought but having rain for the week (March 15-17).

Dr. Van Meerbeeck responded by asserting that Dominica had been experiencing a weather event within climate. Drought does not mean it is entirely dry. Rather, drought is a creeping hazard that builds over long periods of time (typically months to a year in the Caribbean) as rainfall accumulation remains below average over the entire duration of those periods. As such, the dryness impacts socio-economic activity increasingly over time. He further explained that the misconception that rainfall would mean there is no drought points to the dire need for a better understanding of weather and climate information and products by the public/layman. Proficient literacy in this area would have clarified that the drought in 2015 was part of the reason for the devastating damage suffered from Tropical Storm Thomas in August.

While weather forecasts issued by the Dominica Meteorological Services are often accurate, there is a perception of failure to communicate with the population because the message gets lost. Dr. Van Meerbeeck suggested that there are two contributing factors to this perception that can be worked on: (1) the fact that forecasters are not primarily trained in effective communication of technical information. As such, the message conveyed does not necessarily resonate with the audience; and (2) the fact that the population either does not consistently heed warning information coming from the Meteorological Service, with some other weather information brokers such as Accuweather being better communicators, while at the same time not providing accurate information at the scale required by the population. With adequate investment into the Dominica Meteorological Service, a more appropriate staff allocation and expanded early-warning network for both weather and climate can be achieved.

Mrs. Bazil-Lawrence called for the public to visit the various outlets/avenues for providing weather information to the public by the DMS.

Annie Carrette-Joseph (DMS) - Meteorological and Climate Service Delivery of the Dominica Meteorological Service: Past, Present and Future

- The presentation highlighted the various functions carried out at the DMS and the attendant products and services
- Noted that the first responsibility is to the aviation industry
- Other functions include daily weather forecast along with three day outlook, processing of climate products and requests for data as well as public outreach
- Climate products generated by the DMS includes monthly weather summaries, agro-climatic bulletins, quarterly meteorological bulletins and specialized data request
- Products generated in collaboration with CIMH – precipitation outlook, temperature outlook and drought alerts

Questions/discussions

- Dr. Van Meerbeeck highlighted that, based on 2015 rainfall data, even after Tropical Storm Erika, rainfall accumulations for the year were still below normal (and among the driest years on record). Those data thus confirm that Dominica was, even at the time of the current Workshop, still in a meteorological drought.
- Dr. Van Meerbeeck then clarified the different types of drought, depending on its duration. Meteorological drought, which is measured by the rainfall deficit over a specified amount of time, can be identified before it starts impacting the socio-economic sectors, i.e. usually within one month of its onset. Agricultural drought tends to arise from several weeks to three months into the drier than normal period and refers to when the soil water content falls below the level needed to support optimal agricultural production. The next type of drought to materialize, in increasing amount of time since the start of the drier than normal period, is hydrological drought which usually in the Caribbean Islands takes 6 to 12 months to surface and entails reduced availability of water in water producing reservoirs. Finally, socio-economic drought speaks to below-normal rainfall increasingly affecting socio-economic sectors, in time encompassing a larger slice of the area's product.
- Mr. Trotter, an extension officer with the Ministry of Agriculture and Dr. Van Meerbeeck then delved deeper into the discussion on the impact of Erika being worsened by climatic conditions. Mr. Trotter then questioned whether, and Dr. Van Meerbeeck confirmed that some climate impacts to society be prevented or reduced with better use of climate knowledge. Dr. Van Meerbeeck then suggested there is an acute need for better awareness of climate and weather risk management tools and decision support systems, in particular the Caribbean DEWETRA platform. Effective use of the Caribbean DEWETRA platform, driven in part by Dominica's government's geographical information systems, could for instance have highlighted areas particularly at risk for landslides far ahead of a disaster such as Tropical Storm Erika. This is possible as DEWETRA contains, besides natural hazard information layers, layered vulnerability maps.

Dr. Roché Mahon asked whether participants were aware of the range of climatological products issued by the DMS.

- Participants from the agriculture sector responded that they were aware of and actively used the DMS range of climate products.
- However, the tourism representative reported that they were personally not aware and do not use the products at this time. This is potentially the case with other tourism sector stakeholders. The representative further expressed interest in accessing the information/products provided by the DMS. These products may be useful planning tools for the sector's large, outdoor events such as Dominica's Jazz 'n Creole Festival.

Action Item

Lolita Raffoul (Tourism) - Expressed interest in the development and delivery of a Climate Bulletin specific for the tourism sector.

4.0 Session 2: Sectoral applications of Climate Information Products and Services

Sector Presentations

CIMH Climate Early Warning Information Products: An Overview (with examples of regional and national level use)

Eric Sylvester St. Ville – Health Sector

- Use climate data to assess the seasonality of Dengue fever saw correlation between increase rainfall, higher temperature and dengue cases
- GI also spike with higher rainfall and temperature values

Action Item

Mr. St. Ville expressed interest in climate products prepared specifically for the health sector.

Dr. Roché Mahon provided an overview of sector-specific product ideas and concepts currently being explored at CIMH for the health sector, including:

- A heat stress index; and
- A vector proliferation index especially with regard to the *Aedes Aegypti* mosquito which is the vector for dengue fever, dengue hemorrhagic fever (DHF), Chik-V and ZikV.

Dr. Mahon also stressed that in seeking to develop these indices in the near-term, there is also a need and opportunity to build the region's capacity to do time series modelling to explore the relationship between climate and health outcomes. Dr. Roché Mahon asked participants for their perceptions of the quality of the working relationship between the various sectors and the DMS.

- Mr. St. Ville reported that the health sector has an excellent working relationship with the DMS especially over the past 2 years when the two sectors worked closely on the development of the Dominica Climate Change Vulnerability and Adaptation Assessment.
- The Ministry of Agriculture spoke of having a long-term work relationship with the DMS and the opportunity for the relationship to be further strengthened going forward.
- Mr. Magnus also noted that the working relationship between the DMS and DOWASCO has strengthened in recent times.

The need to build the capacity of the DMS was being partially addressed under the DVRP/PPCR capacity building project.

An update was provided by Andrea Marie on the plans for developing the DMS under the DVRP/PPCR project such as increase in equipment and staffing, as well as, for a new building.

Action Item

Provide documentation to Dr. Mahon of the work carried out developing the capacity of the DMS towards establishing a hydro-meteorological centre under the DVRP/PPCR project.

Adisa Trotter - Agriculture and Food Security Sector

Highlights of the presentation included:

- Climate products tailored for the agricultural sector were outcomes of the CAMI project (2012).
- There are plans to work out normals for Grandbay which now has 30 years of data
- Expressed desire for tools software/hardware and training to further analyze meteorological data to increase usability to the agriculture sector
- Expressed the significant role that climate early warning services can play to the agriculture sector to assist farmers in the decisions towards crop selection, planting and investments and to reduce losses
- Commend the DMS for being persistent in getting the agriculture information to provide timely updates to the agriculture sector
- Suggested incorporating the use of GIS to analyze meteorological data

- Suggested the setting up of national committee to derive stakeholders contribution/feedback on how various sectors can help in the move to develop sector specific climate service
- Call for extension workers to increase their understanding and use of agro-meteorological bulletins

Magnus Williams – Water Sector (DOWASCO)

- Expressed concerns of water availability particularly in the dry season
- CIMH products are used by DOWASCO for public information and to strengthen calls for the public to practice water conservation
- Need to build resilience based on impacts inflicted by previous weather systems
- Call for downscaling of weather information provided to address micro-climate in Dominica
- Public education to better understand products provided

Dr. Mahon informed that the CIMH routinely conducts initial training at various workshops to familiarize participants with the range of climate information products that the CIMH makes available and to help them to interpret the various products the institution provides.

Question

Lolita Raffoul (Tourism) asked how can the tourism sector use climate information provided and whether there was a national plan around this?

Response

- A national plan of action is not available. However the sector could look into tailoring the information to better suit their needs such as advising on personal protection for tourists, methods to keep hydrated and to prevent heat stroke
- Dr. Mahon added that at the regional level, CIMH is looking at developing products for the tourism sector, particularly related to making available seasonal forecasts from tourist generating regions (e.g., UK, US and Canada) as inputs into the region's seasonal marketing programmes.

Action Item

Ms. Raffoul (Tourism) requested the opportunity to provide input into the design of the product being developed by the CIMH for the tourism sector to garner feedback on the best way forward and called for the need to engage the CTO's Sustainable Tourism Committee (STC) in the design process.

Question

Trotter (Agriculture) - Does CIMH provide assistance with soil analysis?

Response

Dr. Van Meerbeeck - CIMH currently does not provide that service but a project could be formulated to get such a process going.

5.0 Session 3: ENSO and Early Warning

Marshall Alexander (DMS) - ENSO Past and Present - National Implications

- Noted ENSO cycles between 1982-2015;
- Highlighted the significant drought that began in the 2009 wet season and continued into 2010;
- Both Douglas-Charles and Canefield Airports (main stations with 30 years of data) recorded rainfall values significantly below average;
- The agriculture sector was significantly affected;
- Reduced output from hydro-electric power which resulted in higher fuel surcharge;
- Highlighted record breaking hot days in Dominica in October 2015 of 35.5 °C (97.0 °F);
- There were increased incidences of forest fires.

Dr. Van Meerbeeck highlighted the need to be vigilant with regards to possible flood events when coming out of a drought or dry period and entering into a wet – and possibly wetter than usual – wet season. This is due to the limited infiltration capacity of water into parched soil. Flash flooding occurring after a dry period, along with reduced soil stability because of reduced plant root activity, then also increases the risk of landslides.

Question

Trotter (Agriculture) - Can the information be applied to a water modelling system and then be used to forecast flooding?

Response

Dr. Van Meerbeeck - One cannot expect to forecast with a very high level of certainty or to forecast exact rainfall or river discharge amounts months ahead of time, but some helpful information could be provided, such as areas most at risk over a certain period or an expected risk/alert level for the period.

In an ensuing discussion on a potential Flood and Drought Policy Plan for Dominica, the issue was raised that Dominica could serve as a water resource for other islands, since water

surpluses are maintained during droughts. The tourism sector representative then noted that Dominica should not sell itself short and should protect its water resources.

6.0 Session 4: Baseline user needs

Dr. Roché Mahon, CIMH led the User needs data collection survey session by facilitating participants to complete the Caribbean Climate Services User Baseline Survey. In her introductory remarks, she noted that at its core, climate services are climate information prepared and delivered to meet users' needs. As a WMO designated RCC in demonstration phase, the CIMH is expected to generate regional and sub-regional tailored products. As national climate service providers, NMHSs (including the DMS) are in a similar situation. However, knowledge regarding enduser needs is not presently empirically robust and there are insufficient baselines to inform product tailoring and development for climate sensitive sectors. Since the Caribbean is formally at the start of its process of implementing the GFCS, a formal measurement of enduser needs is needed.

Six questionnaires were completed during this session bringing the number of sectoral user responses from Dominica to a total of 13.

7.0 Session 5: Way Forward

Dr. Roché Mahon, CIMH, facilitated participants in a discussion on the options and opportunities for national governance of the climate services agenda in Dominica. In her brief introductory presentation, she highlighted that the goal of working towards the early establishment of a representative stakeholder governance mechanism was to foster joint provider and user ownership of the climate services process. She identified 3 possible governance mechanisms for participants to further consider:

- Option 1: National Climate Change Committee (NCCC)
- Option 2: National Disaster Management Committee (NDMC)
- Option 3: National Sectoral EWISACTs Committee (NSEC)

She highlighted lessons from similar governance processes that were being established at the national levels in Barbados and Trinidad and Tobago, as well as, lessons from establishing a regional level governance mechanism in the form of the Consortium of Regional Sectoral EWISACTs Coordination Partners.

Question

Colbert Toulon (Agriculture) queried the power of regional institutions (CIMH) to influence national decisions.

Response: CIMH only provides advice and technical support to its 16 Member States. It cannot dictate political decisions or processes.

Andrea Marie (DVRP/PPCR) - Need to first assess the root cause of the problem(s) before seeking to change the mandate of an organization.

Discussion on the possible structure of NSEC

Mr. Fitzroy Pascal, ODM provided an overview of the structure of the National Emergency Planning Organization (NEPO) and commented on the feasibility of building on the NEPO framework in Dominica to deliver climate services.

Currently, there are nine committees under the NEPO with various responsibilities for disaster and security management. The mandates of the NEPO committees as well as their operations are not optimal presently and therefore it is not a simple matter of just selecting one of these committees. Moreover, since the level of the Committee members is usually that of Cabinet members, Permanent Secretaries, top officials of the Dominica Police Force and the Fire and Ambulance etc., it may be difficult to fully engage the time, attention and commitment of these members.

Andrea Marie, DVRP, suggested that a more practical committee that can potentially work at the operational level should be set up. This committee can supply information to NEPO level for decision-making. There is already an existing committee under the DVRP/PPCR to assess the development of the DMS. There is a possibility to explore how that committee could be further utilized. Alternatively, a national Climate Change Committee is also in existence and Dominica could look into utilizing this avenue as well. Finally, it was proposed that the DMS spearhead a new committee with stakeholder/sectoral contributions as the DMS has limited staffing.

Way forward – Karen Bazil-Lawrence, DMS, commented that the need for Climate Services is essential and that the DMS is committed to working on getting the service to the public. However, the DMS will need the support of other sectors due to limited staffing and other capacity issues. In addition, the other sectors are more aware of what they need specifically and will be better able to inform the design and delivery of product outputs. A meeting will be convened to look at formulating the working committee.

Closing remarks:

Dr. Van Meerbeeck noted that he was grateful for the level of participation of the audience and also expressed the commitment of the CIMH to continue to work with the DMS to develop climate services.

Karen Bazil-Lawrence (DMS): Called for participants from various sectors to communicate their specific needs for climate services and further expressed commitment of the DMS to put effort behind providing climate services.

8.0 Summary of Follow-up Items

1. DVRP and DMS to share documentation with CIMH of the work carried out under the DVRP Project to develop the capacity of the DMS towards establishing a hydro-meteorological centre.
2. A meeting to be convened by the DMS to investigate formulating the working multi-stakeholder committee for the national delivery of climate services.

APPENDIX 1: PARTICIPANT LIST

Dominica In-Country Workshop Participants			
Name	Organization	Contact	
Dr. Cédric Van Meerbeeck	Caribbean Institute for Meteorology and Hydrology		
Dr. Roché Mahon	Caribbean Institute for Meteorology and Hydrology		
Magnus Williams	Dominic Water and Sewerage Company (DOWASCO)	m.williams@dowasco.dm	275-1155
Kishma Registe	Caribbean Agricultural Research and Development Institute (CARDI)	kisho54@hotmail.com	225-6332
Ricky Brumant	Division of Agriculture	brumant@dominica.gov.dm	614-1158
Adisa Trotter	Division of Agriculture	aictudoa@gmail.com	266-3804
Colbourn Toulon	Division of Agriculture	d53971@yahoo.com	
Davis Carbon	Division of Agriculture	davis.carbon@outlook.com	
Bradley Guye	Forestry, Wildlife and Parks	guyeb@dominica.gov.dm	266-5860
Lolita Raffoul	Discover Dominica Authority	lrffoul@dominica.dm	448-2045

Andrea Marie	Pilot Program for Climate Resilience /Disaster Vulnerability Reduction Program (PPCR/DVRP)	ppcrdvrp@dominica.gov.dm	266-3139
Eric Sylvester St. Ville	Ministry of Health and Environment	ericstville@yahoo.com	613-6346
Fitzroy Pascal	Office of Disaster Management	odm@dominica.gov.dm	448-7777
Albent Toussaint	Government Information Service (Media)	gisdominica.gov.dm	266-3222
Jordan Jerome	Vibes Radio (Media)		440-8152
Joc Petit	CBN4 (Media)	CBN4NEWS@gmail.com	
Karen Bazil-Lawrence	Dominica Meteorological Service	bazilkaren@hotmail.com	275-5461
Marshall Alexander	Dominica Meteorological Service	marshallalexander@hotmail.com	225-6995
Farrah Rocque-Carriere	Dominica Meteorological Service	rocquette21@yahoo.com	277-2237
Annie Carrette-Joseph	Dominica Meteorological Service	a_carrette@hotmail.com	285-7112
Janelle Garraway-McPherson	Dominica Meteorological Service	janellejj@gmail.com	225-6698
Viola Pascal	Dominica Meteorological Service	viola.pascal@yahoo.com	317-6000

APPENDIX 2: AGENDA

The Dominica In-Country Workshop: Mapping provider capacity and user needs for climate information and services

**Friday March 18th, 2016
Conference Room of the Office of Disaster Management
Jimmit, Dominica**

Meeting Agenda

Meeting Objectives:

1. Familiarize country representatives with the Caribbean's programmatic approach to the design, development and delivery of user oriented climate information;
2. Share the preliminary results of an assessment of provider capacity for the delivery of climate services in Dominica and the wider Caribbean;
3. Assess sectoral needs in Dominica for climate information and services, as well as, capacity needs to ingest and respond to climate information;
4. Discuss national perspectives on early warning and response to the potential impacts of ENSO events; and
5. Begin to strategise for the formation of a National Sectoral Early Warning Information Systems across Climate Timescales (EWISACTs) Committee (NSEC).

TIME	SESSION		RESOURCE AGENCY/PERSON
8:30 – 9:00	Arrival and registration		All
9:00 – 9:10	Welcome remarks		Karen Bazil-Lawrence (DMS)
9:10 – 9:25	Introduction of participants/Icebreaker		DMS and CIMH
9:25 – 9:50	Session 1 International, regional and national context of climate services	The GFCS and the Caribbean RCC approach to the delivery of user-oriented climate information, products and services	Cedric Van Meerbeek and Roché Mahon (CIMH)
9:50 - 10:10		Meteorological and Climate Service Delivery of the Dominica Meteorological Service: Past, Present and Future	Annie Carette-Joseph (DMS)
10:10 – 10:20		Discussion	All
10:20 – 10:35	Coffee break		
10:35 - 10:55	Session 2 Sectoral applications of Climate Information Products and Services	CIMH Climate Early Warning Information Products: An Overview (with examples of regional and national level use)	Cedric Van Meerbeek (CIMH)
10:55 – 11:25		The Use of Climate Early Warning Information in climate sensitive sectors: - Agriculture & Food Security Sector - Water Sector - Health Sector	Adissa Trotter (Ministry of Agriculture) Magnus Williams (DOWASCO) Eric Sylvester St. Ville (Ministry of Health)
11:25 – 11:40		Discussion	All
11:40 – 11:55	Session 3 ENSO and Early Warning	ENSO Past and Present - National Implications	Marshall Alexander (DMS)
11:55 – 12:15		Discussion on on-going and expected climate impacts	All
12:15 – 1:15	Lunch		
1:15 – 2:15	Session 4 Baselining provider capacity and user needs	User Needs - Data Collection Session	All
2:15 – 2:25	Coffee break		
2:25 – 3:10	Session 5 Way Forward	Discussion on options for national governance of the climate services agenda	All
3:10 – 3:15		Close	DMS and CIMH