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FOR

THE CONSORTIUM OF REGIONAL SECTORAL EARLY WARNING INFORMATION SYSTEMS ACROSS CLIMATE TIMESCALES (EWISACTS) COORDINATION PARTNERS

Prepared by: The Caribbean Institute for Meteorology and Hydrology (CIMH)
The Caribbean Agricultural Research & Development Institute (CARDI)
The Caribbean Water and Wastewater Association (CWWA)
The Caribbean Disaster Emergency Management Agency (CDEMA)
The Caribbean Public Health Agency (CARPHA)
The Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)
The Caribbean Tourism Organization (CTO), and
The Caribbean Hotel and Tourism Association (CHTA)¹

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¹ The order of logo placement and Agency listings is representative of the order in which sectors were referenced at the inception of Consortium meetings in 2015.

1. BACKGROUND

The impacts of climate extremes, variability and change pose a serious threat to the social and economic development of the Caribbean region. These impacts include damage and loss associated with changing weather and precipitation patterns, more frequent and intense storms, floods and drought; accelerated coastal erosion; sea level rise; enhanced saltwater intrusion to coastal aquifers; and increased air and sea surface temperatures that influence hurricane intensity. These impacts are projected to be further exacerbated in the coming years, threatening infrastructure, energy production, economic activity, freshwater supplies, agricultural productivity, coastal ecosystems and reefs, fisheries, industrial production, urban and rural development, community livelihoods and well-being.

Early Warning Systems are recognised by several international and regional frameworks (including the *Global Framework for Climate Services (GFCS)*², the *SIDS Accelerated Modalities of Action (SAMOA) Pathway*³, the *Paris Agreement*⁴, the *Sendai Framework for Disaster Risk Reduction*⁵, the *Executive Action Plan 2023-2027 of Early Warnings For All*⁶, the *Implementation Plan for the 'Regional Framework for Achieving Development Resilient to Climate Change'*⁷, the *Regional Comprehensive Disaster Management (CDM) Strategy and Programming Framework 2014-2024*⁸, and the *Caribbean Pathway for Disaster Resilience in the Caribbean Community*⁹) as critical to the effective management of climate-related disasters and adaptation to climate extremes, variability and change. Climate extremes, variability and change occur on timescales ranging from sub-seasonal to seasonal to decadal and beyond, making it necessary to develop effective Early Warning Information Systems across Climate Timescales (EWISACTs). The Caribbean EWISACTs programme coordinated by the WMO-designated Regional Climate Centre (RCC) for the Caribbean, hosted by the Caribbean Institute for Meteorology and Hydrology (CIMH), seeks to deliver early warning services across climate timescales (from sub-seasonal to seasonal to decadal and centennial), as well as for extreme events. The Caribbean approach embraces all five pillars (Observations and Monitoring; Research, Modelling and Prediction; Climate Services Information System; User Interface Platform and Capacity Development) of the

² Developed by the World Meteorological Organization in 2009.

³ Developed as an outcome of the SIDS Conference in 2014.

⁴ The legally binding international treaty on climate adopted by 194 Parties.

⁵ Developed by the United Nations International Strategy for Disaster Reduction (UNISDR), now the UN Office for Disaster Risk Reduction (UNDRR) in 2015.

⁶ Launched by the World Meteorological Organization and its partners at COP27 in November 2022.

⁷ Developed by the Caribbean Community Climate Change Centre (CCCCC) in 2011.

⁸ Developed by the Caribbean Disaster Emergency Management Agency (CDEMA) in 2014.

⁹ Developed by the Caribbean Disaster Emergency Management Agency (CDEMA) in 2018 and endorsed by the Heads of Government of the Caribbean Community.



GFCS, that underpin the production and use of climate early warning information. When aligned with priority climate-sensitive sectors, EWISACTs improves the effectiveness and efficiency of sustainable planning, adaptation and mitigation strategies across major climate-sensitive socio-economic sectors and support regional growth resilient to climate risks.

2. THE CONSORTIUM OF REGIONAL SECTORAL EWISACTS COORDINATION PARTNERS

Within this context, the Consortium of Regional Sectoral EWISACTs Coordination Partners is a formalized sectoral mechanism that drives and champions the co-design, co-development and co-delivery of tailored climate products and services in the agriculture and food security, disaster risk management (DRM)¹⁰, energy, health, tourism, and water sectors¹¹. By providing an opportunity for representing sector issues, positions and recommendations related at its climate-related meetings, the Consortium is intended to facilitate the consultative and participatory processes necessary for successful EWISACTs development and implementation¹².

2.1. Role

The Consortium of Regional Sectoral EWISACTs Coordination Partners will¹³:

1. Provide strategic and technical guidance on, and support to the development and implementation of regional Sectoral EWISACTs;
2. Advise on the design, development and delivery of tailored climate products and services in climate-sensitive sectors;
3. Provide a forum for initial and periodic review of relevant technical documents related to sectoral climate products and services;
4. Identify critical gaps and opportunities for inter-sectoral linkages and synergies at the regional and national levels;
5. Facilitate the visibility of Sectoral EWISACTs at the regional and national levels;
6. Promote the transfer of non-confidential data, technology, information and knowledge across Consortium Partners;
7. Facilitate the sustainability of Sectoral EWISACTs outputs;

¹⁰ In the Caribbean, the terminology used for this sector is 'Disaster Risk Management' to embody all aspects of the environment. For the Global Framework for Climate Services (GFCS), this sector is referred to as 'Disaster Risk Reduction' (DRR).

¹¹ The Global Framework for Climate Services (GFCS) has five initial priority sectors: agriculture and food security, water, health, disaster risk reduction and energy. The tourism sector has been identified as an additional priority sector by the Caribbean region.

¹² The Consortium of Regional Sectoral EWISACTs Coordination Partners complements the work of the Regional Early Warning System Consortium (REWSC) chaired by CDEMA which aims to increase efficiencies through stronger coordination to address early warning systems for multiple natural and anthropogenic hazards including geological hazards.

¹³ As articulated in the Regional Roadmap and Plan of Action 2020-2030.

8. Facilitate the monitoring, evaluation, and reporting of sectoral EWISACTs progress and development; and
9. Facilitate resource mobilisation through, inter-alia, the development of joint funding proposals including integrating public/private partnerships in support of Sectoral EWISACTs implementation.

2.2. Chairmanship

The Consortium will be chaired by the Principal of the CIMH or the Principal's designate. The Chairmanship can be transferred to other Partner organisations of the Consortium by a majority vote by Partners. The Chair, with the support of the Secretariat is responsible for:

- Liaising, where necessary, with members of the Consortium to enhance collaboration and partnership;
- Convening meetings of the Consortium;
- Ensuring that an accurate record of the discussions and decisions of each meeting is prepared and forwarded to Consortium members; and
- Ensuring adequate follow-up on the meeting decisions of the Consortium.

2.3. Secretariat

CIMH will serve as the Secretariat and will provide administrative services to the Consortium. The roles of the Secretariat are to:

- a. Coordinate and plan meetings;
- b. Prepare a meeting report for each Consortium Meeting;
- c. Document workplans and decisions taken by the Consortium; and
- d. Monitor the progress of the Consortium's implementation of the Sectoral EWISACTs Regional Roadmap and Plan of Action (RPA) 2020-2030.

2.4. Membership

In addition to the Chair, the members of the Consortium will be representatives from lead regional sectoral institutions with technical expertise in the areas of agriculture and food security, water, disaster risk management, health, energy, and tourism:

1. Agriculture and food security – The Caribbean Agricultural Research & Development Institute (CARDI);
2. Water – The Caribbean Water and Wastewater Association (CWWA);
3. Disaster risk management – The Caribbean Disaster Emergency Management Agency (CDEMA);
4. Health – The Caribbean Public Health Agency (CARPHA);



5. Energy – The Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE);
6. Tourism – The Caribbean Tourism Organization and the Caribbean Hotel and Tourism Association (CTO and CHTA); and
7. Chair and climate services provider – The Caribbean Institute for Meteorology and Hydrology (CIMH).

The Consortium reserves the right to review the status of members periodically and make adjustments in this regard in response to changing societal information needs to build the region's climate resilience.

The specific responsibilities of sectoral partners are detailed in Appendix 1.

2.5. Observer Status

Observer status will be accorded to relevant regional level organisations, that may facilitate advancement of the work of the Consortium, namely the CARICOM Secretariat, the Organisation of Eastern Caribbean States (OECS) Commission, the Caribbean Community Climate Change Centre (CCCCC), the Caribbean Meteorological Organization Headquarters Unit (CMO HQ), the Pan American Health Organization (PAHO), the University of the West Indies (Climate Studies Group Mona, CSGM), the Global Water Partnership – Caribbean (GWP-C) and the Agricultural Alliance of the Caribbean (AACARI).

The Consortium reserves the right to review Observer status periodically and make adjustments in this regard in response to changing societal and sectoral information needs to build the region's climate resilience.

2.6. Meetings

The Members of the Consortium will govern the conduct of its meetings. Meetings will be convened at times convenient to Consortium members. A quorum of more than 50% of members will be necessary to convene a meeting.

2.7. Frequency of Meetings

The Consortium will meet as frequently as is deemed necessary, but at least once a year (whether virtual or otherwise).



2.8. Agenda

The Agenda will be prepared by the Chair, following consultation with the members of the Consortium.

2.9. Communication

The preparation of the records of all official meetings of the Consortium will be the responsibility of the Secretariat. In preparation for the meeting, the agenda, objectives and working documents will be available online at least 2 days prior to the meeting. The presentations, participant list and outcome documents will be available no later than two (2) weeks after the end of the meeting. The draft Report of the meeting will be forwarded to the Consortium members no later than six (6) weeks after the conclusion of meetings for review by meeting participants.

2.10. Decision-Making

Decisions will be made by consensus. A majority of the representatives (i.e. more than 50% of members) of the Consortium will constitute a quorum for decision-making. If a quorum cannot be achieved, then documents and key decisions will be circulated to members with a clear deadline date for feedback. If no feedback is received, it will be assumed that Members are in agreement with the contents of the document(s) and, as a result, the document(s) will be deemed approved.

2.11. Funding of Consortium Activities

Consortium partners will investigate avenues for mobilizing funding (such as donor funding and crowdfunding) to support the various activities agreed to, as well as, to support the meetings of the Consortium.



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1. INTRODUCTION

Regional coordination of activities under the Sectoral EWISACTs Programme will be facilitated through partner agencies representing six climate-sensitive sectors (see Section 2.3 on Membership above). Appendix 1 of this TOR presents the sector-specific responsibilities for: 1) the Caribbean Agricultural Research & Development Institute (CARDI) as the Agriculture and Food Security EWISACTs partner, 2) the Caribbean Water and Wastewater Association (CWWA) as the Water EWISACTs partner, 3) the Caribbean Disaster Emergency Management Agency (CDEMA) as the Disaster Risk Management EWISACTs partner, 4) the Caribbean Public Health Agency (CARPHA) as the Health EWISACTs partner, 5) the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) as the Energy EWISACTs partner, and 6) the Caribbean Tourism Organization (CTO) and the Caribbean Hotel and Tourism Association (CHTA) as joint tourism EWISACTs partners for the period January 1st 2023 – December 31st 2025.

The CIMH in its role as a regional climate services provider will partner with the above named agencies in their execution of sector-specific responsibilities. These are outlined below.

2. SECTOR-SPECIFIC RESPONSIBILITIES

The **Agriculture and Food Security EWISACTs Partner** will:

1. Support the co-development and co-implementation of a triennial Agriculture Sector Work Plan (which will run for the period January 1st 2023 – December 31st 2025) in support of the Sectoral EWISACTs Roadmap and Plan of Action 2020-2030;
2. Facilitate broader dialogue and sustained engagement with regional and national agricultural governance mechanisms (e.g., through COTED and other regional mechanisms such as CARICOM's Food and Nutrition Cluster), as well as regional plans and programming (eg. CARDI's Strategic Plan);
3. Provide support to the convening of outreach and/or training workshops;
4. Facilitate the promotion of an agriculture sector EWISACTs through existing and proposed platforms (e.g., meetings and/or conferences such as the Caribbean Week of Agriculture and the Caribbean Food Crops Society Conference; CARDI's website, as well as its traditional and social media platforms; and the Caribbean Society for Agricultural Meteorology (CariSAM);
5. Support the principle of data sharing between CIMH and the CARDI membership;
6. Facilitate the identification and sharing of non-confidential textual and georeferenced sectoral datasets for integration into CIMH's databases and platforms;
7. Facilitate the identification and sharing of historical climate-related impact data to Caribbean agricultural systems for input into the Caribbean Climate Impacts Database;



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8. Support the conduct of research that examines associations between climatic variables and relevant agricultural productivity outcomes (e.g., crop simulation modelling to assess crop sensitivity to temperature and rainfall extremes), as well as, research to identify climate resilient measures;
9. Assist in the coordination of the receipt of feedback from CARDI Member Countries on work related to an agriculture EWISACTs (e.g., baseline surveys, the coordination of interviews);
10. Continue to collaborate on the joint development of the monthly Caribbean Agroclimatic Bulletin co-authored by CARDI and the CIMH;
11. Promote the dissemination and application of climate information in Caribbean farming communities through various platforms and tools; and
12. Participate and contribute to Consortium meetings and bi-annual CariCOFs.

The **Water EWISACTs Partner** will:

1. Support the co-development and co-implementation of a triennial Water Partner Sectoral EWISACTs Work Plan (which will run for the period January 1st 2023 – December 31st 2025) in support of the Sectoral EWISACTs Roadmap and Plan of Action 2020-2030;
2. Incorporation of aspects of the triennial Water Partner Sectoral EWISACTs Work Plan (see point 1) into the CWWA (2022-2025) Strategic Plan;
3. Facilitate broader dialogue and sustained engagement with regional and national water resource management governance mechanisms, plans and programming (e.g., annual and national section meetings, conferences and other duly convened meetings of the CWWA);
4. Provide support to the convening of outreach and/or training workshops;
5. Facilitate the promotion of a water sector EWISACTs through existing platforms (e.g., the CWWA website - <http://www.cwwa.net>, social media and publicity platforms);
6. Support the principle of data sharing between CIMH and the CWWA membership and partners;
7. Facilitate the identification and sharing of non-confidential textual and georeferenced sectoral datasets for integration into CIMH's databases and platforms;
8. Facilitate the identification and sharing of historical climate-related impact data related to drought and excess precipitation for input into the Caribbean Climate Impacts Database;
9. Support the conduct of research that examines associations between climatic variables and relevant sector-specific outcomes;
10. Assist in the coordination of the receipt of feedback from CWWA Member Countries on work related to a water resources management EWISACTs (e.g., baseline surveys, the coordination of interviews); and
11. Provide a technical space for CIMH to contribute to the content of the quarterly CWWA Infostructure Newsletter.

The Disaster Risk Management EWISACTs Partner will:

1. Support the co-development and co-implementation of a triennial Disaster Risk Management Sector Work Plan (which will run for the period January 1st 2023 – December 31st 2025) in support of the Sectoral EWISACTs Roadmap and Plan of Action 2020-2030;
2. Facilitate broader dialogue and sustained engagement with regional and national DRM governance mechanisms (e.g., the Comprehensive Disaster Management Coordination and Harmonization Council, Regional Early Warning Systems Consortium, National Disaster Management Committees, Country/National Comprehensive Disaster Management Work Programmes, National Disaster Management Plans);
3. Provide support to the convening of outreach and/or training workshops;
4. Facilitate the promotion of a DRM sector EWISACTs through existing platforms (e.g., Technical Advisory Council (TAC) meetings, the CDM conference, Sector Sub-Committee meetings, the CDEMA website, traditional and social media);
5. Support the principle of data sharing between CIMH and the CDEMA membership;
6. Facilitate the identification and sharing of non-confidential textual and georeferenced sectoral datasets, as well as historical climate-related impact data to major socio-economic sectors for integration into the CIMH's databases and platforms, as well as the Caribbean Risk Information System¹⁴;
7. Support the conduct of research or a review of research that examines associations between climatic variables and socio-economic outcomes;
8. Assist in the coordination of the receipt of feedback from CDEMA Participating States on work related to a DRM EWISACTs (e.g., baseline surveys, the coordination of interviews);
9. Provide technical input that contributes to the development, tailoring, and validation of DRM specific climate information co-produced by CIMH;
10. Promote the dissemination of climate information to National Disaster Management Organisations (NDMOs); and
11. Facilitate the embedding of DRM specific webpage links hosted on the RCC website with the CDEMA Resources webpage.

The Health EWISACTs Partner will:

1. Support the co-development and co-implementation of a triennial Health Sector Work Plan (which will run for the period January 1st 2023 – December 31st 2025) in support of the Sectoral EWISACTs Roadmap and Plan of Action 2020-2030;
2. Facilitate broader dialogue and sustained engagement with regional and national health governance mechanisms, plans and programming (e.g., through the annual Chief Medical Officer meeting, the annual Council for Human and Social Development, and the annual Council for Trade and Economic Development);
3. Provide support to the convening of outreach and/or training workshops;

¹⁴ See: cdema.org/cris



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4. Facilitate the promotion of a health sector EWISACTs through existing platforms (e.g., the CARPHA Annual Scientific Research Conference, the CARPHA website, traditional and social media);
5. Support the principle of data sharing between CIMH and the CARPHA membership;
6. Facilitate the identification and sharing of textual and georeferenced sectoral datasets for integration into the CIMH's databases and platforms;
7. Facilitate the identification and sharing of non-confidential, historical climate-related impact data to Caribbean health systems for input into the Caribbean Climate Impacts Database;
8. Support the conduct of research or a review of research that examines associations between climatic variables and relevant health outcomes;
9. Assist in the coordination of the receipt of feedback from CARPHA Member Countries on work related to a health EWISACTs (e.g., baseline surveys, the coordination of interviews);
10. Continue to collaborate on the joint development of the quarterly Caribbean Health Climatic Bulletin co-authored by the CARPHA, PAHO and the CIMH;
11. Promote the dissemination and application of climate information to the health provider community through various platforms; and
12. Facilitate the embedding of health climate services webpage links hosted on the RCC website with the CARPHA Resources webpage.

The Energy EWISACTs Partner will:

1. Support the co-development and co-implementation of a triennial Energy Sector Work Plan (which will run for the period January 1st 2023 – December 31st 2025) in support of the Sectoral EWISACTs Roadmap and Plan of Action 2020-2030;
2. Lead the development of Integrated Resource and Resilience Plans and Vulnerability and Risk Assessments for CARICOM States, with support from the CIMH to assess the impact of climatological, hydrometeorological and geological hazards on national electricity systems;
3. Facilitate broader dialogue and sustained engagement with regional and national energy governance mechanisms (e.g., with the Ministers of Energy through the CARICOM Energy Programme; National Focal Institutions);
4. Provide support to the convening of outreach and/or training workshops;
5. Facilitate the promotion of an energy sector EWISACTs through existing and proposed platforms (e.g., meetings and conferences such as the Caribbean Renewable Energy Forum, the CARILEC Renewable Energy and Smart Grid Conference and Trade Show, website(s), traditional and social media);
6. Support the principle of data sharing between CIMH and the CCREEE (through the Caribbean Energy Knowledge Hub);
7. Facilitate the identification and sharing of non-confidential textual and georeferenced sectoral datasets for integration into the CIMH's databases and platforms;
8. Facilitate the identification and sharing of historical climate-related impact data to Caribbean energy systems for input into the Caribbean Climate Impacts Database;



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9. Support the conduct of research that examines associations between climatic variables and relevant energy outcomes (e.g., renewable energy modelling), as well as, research to identify remedial measures;
10. Assist in the coordination of the receipt of feedback from the CCREEE National Focal Institutions and Thematic Hubs on work related to an energy EWISACTs (e.g., baseline surveys, the coordination of interviews);
11. Promote the dissemination of climate information to the energy community through various platforms (e.g., the CCREEE website, social media); and
12. Facilitate the embedding of an energy climate services webpage links hosted on the RCC website with the CCREEE Resources webpage.

The joint **Tourism EWISACTs Partners** will:

1. Support the co-development and co-implementation of a triennial Tourism Sector Work Plan (which will run for the period January 1st 2023 – December 31st 2025) in support of the Sectoral EWISACTs Roadmap and Plan of Action 2020-2030;
2. Continue to facilitate broader dialogue and engagement with regional and national tourism governance mechanisms, plans and programming (e.g., the Council of Tourism Ministers and Commissioners, the CTO Board of Directors, the CHTA Executive Committee, the CHTA Board of Directors, the CHTA Committees, the Caribbean Society of Hotel Association Executives, National Hotel and Tourism Associations, National Tourism Emergency Management Committees);
3. Provide support to the convening of outreach and/or training workshops;
4. Facilitate the promotion of a tourism sector EWISACTs through existing platforms (e.g., meetings and conferences such as the Caribbean Travel Marketplace¹⁵; the Caribbean Hospitality Industry Education Forum (CHIEF); and the Sustainable Tourism Conference¹⁶; the CHTA/Caribbean Alliance for Sustainable Tourism (CAST) Sustainability Webinar Series; the CHTA and CTO's websites, as well as, traditional online communications and social media platforms);
5. Support the principle of data sharing between CIMH and the CTO and CHTA membership;
6. Facilitate the sharing of non-confidential available climate-related impact data to Caribbean tourism systems for input into the Caribbean Climate Impacts Database;
7. Continue to support the conduct of research or a review of research that examines associations between climatic variables and relevant tourism productivity outcomes;
8. Assist in the coordination of the receipt of feedback from CTO and CHTA Members on work related to a tourism EWISACTs (e.g., baseline surveys, the coordination of interviews);
9. Continue to collaborate on the joint development of the quarterly Caribbean Tourism Climatic Bulletin co-authored by the CTO, the CHTA and the CIMH; and
10. Promote the dissemination and application of climate information to regional tourism stakeholders through various institutional platforms.

¹⁵ Usually convened in January.

¹⁶ Usually held in April.

About the Caribbean Institute for Meteorology and Hydrology (CIMH)

The CIMH is an Institution of the Caribbean Community (CARICOM) and the technical Organ of the Caribbean Meteorological Organization (CMO). The mandate of the CIMH is to assist in improving and developing the National Meteorological and Hydrological Services (NMHSs), as well as, providing the awareness of the benefits of Meteorology and Hydrology for the economic well-being of the CIMH Member States. This is achieved through training, research, investigations, and the provision of related specialized services and advice. The specific functions of CIMH include:

1. **World Meteorological Organization (WMO) Regional Training Centre (RTC):** CIMH trains professionals in operational meteorology and hydrology and the climate sciences. CIMH is also responsible for the delivery of courses for the completion of the BSc Degree in Meteorology at the University of the West Indies.
2. **Centre for research in Meteorology, Hydrology, Climatology and Associated Sciences:** The Institute is the leading institution in the English-speaking Caribbean engaged in focused and inter-disciplinary research in tropical meteorology, tropical climatology, hydrology and water resources management. This often necessitates collaboration with other relevant regional national and international organisations.
3. **Regional Climate and Hydrological Data Centre:** Since its inception, the Institute has been used by Member States of the CMO as a location for the region's climate data archive. As part of this responsibility, the Institute is responsible for collecting the region's climate data, quality assuring the data, archiving the data and disseminating the data to regional and international stakeholders.
4. **WMO Regional Instrument Centre (RIC):** In its capacity as the RIC for Member States of the CMO, the Institute supports instrument calibration, instrument maintenance and repair, identification of appropriate instruments for the region and instrument procurement and installation. In addition, the Institute conducts training programmes in instrument maintenance and calibration for persons from and outside of the region. The Institute is also active in research and development leading to the development of new instruments and better instrument maintenance programmes.
5. **WMO Regional Centre of Excellence for Training in Satellite Meteorology:** CIMH is one of the network of thirteen training Centres of Excellence worldwide established by WMO that actively participating in the Virtual Laboratory for Training and Education in Satellite Meteorology (VLab) programme. These Centres are working together to improve the utilization of data and products from meteorological and environmental satellites.
6. **Regional Climate Centre (RCC):** CIMH has already established itself as the primary provider of climate services and products to the several socio-economic sectors in the Caribbean. Seeking to establish itself as a WMO Regional Climate Centre for the Caribbean, CIMH launched the Demonstration Phase in April 2013, as it builds toward full designation.
7. **Caribbean Centre for Climate and Environmental Simulations (CCCES):** The CCCES was established in 2014 at the CIMH through support from the USAID BRCCC Programme. The CCCES is part of the region's strategy to build and sustain regional resilience to the risk posed by climate change, increasing climate variability, extreme weather and increasing environmental degradation and change. The CCCES addresses resilience in these areas by providing CARICOM scientists, engineers and researchers with state-of-the-art computations resources to conduct complex simulations and analyses within and across disciplines on a range of scenarios (cover varying spatial and temporal scales) to adequately identify, bound and mitigate the drivers of risk to the social and economic development of the Caribbean.
8. **WMO SDS-WAS Regional Node for Pan-America:** The CIMH hosts the WMO Sand and Dust Storm Warning Advisory and Assessment System (SDS-WAS) Regional Center for the Americas. The Node provides regional seven-day forecasts of surface dust, PM2.5, PM10 and ozone (O3) concentrations for the greater Caribbean region and provides information for global SDS-WAS forecasts and other monitoring tools. Following the aims



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of the SDS-WAS, the Barbados Centre is a node for collaboration across the Americas, working with other SDS-WAS Centres to develop, refine and distribute to the global community products that are useful in reducing the adverse impacts of SDS, and to assess the impacts of SDS on society and nature.

9. **Regional Marine Forecast Support Centre:** The CIMH hosts the Regional Marine Forecast Support Centre for the Caribbean which was established in November 2021 to support the forecasting of marine processes including: (i) significant wave height and wave period, (ii) marine currents, (iii) sea surface temperature, (iv) salinity and other changes in marine chemistry, (v) freshwater fluxes, (vi) storm surge, and (vii) marine pollution from on-land sources and marine industrial activities. The forecasts support disaster risk reduction, fisheries, marine transport, tourism, as well as ocean policy and governance.



About the Caribbean Agricultural Research & Development Institute (CARDI)

The Caribbean Agricultural Research & Development Institute (CARDI) was established in 1975 by the Heads of Governments of the Caribbean Community (CARICOM) to serve the agricultural research and development needs of the member states of CARICOM.

CARDI is positioned to “increase agricultural and food production and productivity through the use of science, technology, innovation, information resources and sustainable natural resources management, thereby increasing the competitiveness of the agri-food sector and enhancing food and nutrition security” and thus improving the quality of rural life.

The vision of the Institute is to be the Centre of Excellence in the Caribbean for the provision and application of research for development in agriculture that contributes to the creation of wealth and the competitiveness of the sector in the Region.

Its Mission is to contribute to the sustainable development of Caribbean people by the generation, transfer and application of appropriate technologies through agricultural research for development.

CARDI has as part of its Strategic Plan committed to the strengthening of collaboration and partnerships with national, regional and international organisations. The Strategic Plan also articulates a programme in climate change which is aimed at the implementation of the Region’s agricultural research and development initiative to adapting to and mitigating global climate change. A part of these two important components is collaboration with agencies and programmed which provide climate services to the agriculture sector.

In this regard, CARDI has had a proud record of collaboration with the Caribbean Institute for Meteorology and Hydrology (CIMH) viz:

- CARDI has attended every session of Caribbean Climate Outlook Forum (CariCOF) since its re-introduction into the Region in 2010;
- CARDI in collaboration with the CIMH, the World Meteorological Organization (WMO) and National Meteorological and Hydrological Services (NMHSs) of ten Caribbean member States also executed the programme entitled Caribbean Agro-Meteorological Initiative (CAMI) which was funded by the Organisation of African Caribbean and Pacific States (ACP) Science and Technology (S&T) Fund to provide training and information to agricultural stakeholders in the region over the period 2010 -2013;
- CARDI has taken a very serious interest in all matters pertaining to the provision of climate services to the agricultural community including participation in the Global Framework for Climate Services (GFCS) Meeting (Trinidad, May 2013); and
- CARDI was a member of the Building Regional Climate Capacity in the Caribbean (BRCCC) Programme Steering Committee.



About the Caribbean Water and Wastewater Association (CWWA)

The CWWA was established by an Act of Parliament of Trinidad and Tobago in 1991. It is located in Trinidad and housed at the Headquarters of the Water and Sewerage Authority of Trinidad and Tobago (WASA). It is the only regional, professional body representing the water and waste management sectors in the Caribbean. Its membership comprises water and waste professionals/experts, companies in the private sector, other professional water and waste management associations within the hemisphere, students and regional organisations.

The CWWA is governed by an Executive Board drawn from its Membership and the day-to-day operations are managed by the Secretariat headed by an Executive Director. The Association has embarked on the implementation of a 3 year Strategic Plan spanning 2023 to 2025. Some elements of the plan include the further enhancement of 1. programme development through technical cooperation with donor and development agencies; 2. expansion of its training portfolio; 3. expansion of its membership base and development of national sections; 4. resource mobilisation and 5. building of partnerships.

The CWWA has a strong network of partners who have supported it and or with whom it has collaborated. These include the Pan American Health Organisation (PAHO), the UNESCO International Hydrological Programme (UNESCO-IHP), the Inter-American Development Bank (IDB), UN Habitat, United Nations Environment Programme (UNEP), the Inter-American Association of Sanitary and Environmental Engineering (AIDIS) (Spanish: Asociación Interamericana de Ingeniería Sanitaria y Ambiental), the Global Water Operator's Partnership (GWOPA), the Caribbean Water and Sewerage Association (CAWASA), the Caribbean Development Bank (CDB), Caribbean Desalination Association (CaribDA), the Global Water Partnership–Caribbean (GWP-C) and the Pacific Waterworks Association (PWA). It is also unofficially recognised by the CARICOM Secretariat as well as the OECS Commission as a voice for water for the region.

Since 2004, the CWWA has organised the High-Level Forum (HLF) (formerly High-Level Session) of Caribbean Ministers Responsible for Water and in 2017 an equivalent forum for waste was established. At these sessions, discussions of policy and political issues regarding the water sector are addressed by Government officials, technical agencies and development partners. In recent years, these have included the issues of climate and its impact on the water sector, wastewater, investment and financing, to name a few. The Annual Conference and Exhibition of the CWWA is held on a rotating basis in member countries and is usually supported by the national water utility and waste management company. This is its flagship event, attracting close to 400 persons in the sector, sponsors and exhibitors. The Conference is the largest such gathering of water and waste management professionals in the Caribbean.

The work of the CWWA has focused on training of its membership and capacity building. It has signed a Memorandum of Understanding (MOU) with CAWASA for the joint Secretariat of the CariWOP or Caribbean Water Operators Partnership which is a platform for twinning of Utility Companies with a view to exchanging expertise, joint training, information-sharing and generally supporting each other in their development. The CWWA also sits on technical committees of regional projects such as the Caribbean Regional Fund for Wastewater Management (CreW+) and the Integrated Water and Ecosystems Project (IWEco), both of which are funded by the Global Environment Facility (GEF), executed by UNEP and other partners.

The CWWA recognises the significance of Climate Change to the sector and has committed to working with relevant agencies to have the impacts mitigated against and build resiliency in the water sector. The CWWA chairs the Implementation Monitoring Committee (IMC) for the recent Regional Strategic Action Plan (RSAP) for the



Governance and Building Climate Resilience in the Water Sector and overall management and financing of water projects in the Caribbean has been approved by government Ministers responsible for water and wastewater throughout the region, and it serves as a platform for action in those sectors.

About the Caribbean Disaster Emergency Management Agency (CDEMA)

The Caribbean Disaster Emergency Management Agency (CDEMA) was established in 1991 as the Caribbean Disaster Emergency Response Agency (CDERA) by the Heads of Government of the Caribbean Community (CARICOM) as the lead regional Agency to provide guidance and oversight of disaster management in the Caribbean. In this regard, the Agency must make an immediate and coordinated response to any disastrous event affecting any Participating State, once the State requests such assistance. The Agency transitioned in 2009 to CDEMA, having recognized the need to officially expand its mandate to include a focus on the promotion of disaster loss reduction and mitigation in the Participating States.

CDEMA's objectives as articulated in the Agreement Establishing CDEMA are as follows:

- a) Mobilising and coordinating disaster relief;
- b) Mitigating or eliminating, as far as practicable, the immediate consequences of disasters in Participating States;
- c) Providing immediate and coordinated response by means of emergency disaster relief to any affected Participating State;
- d) Securing, coordinating and providing to interested inter-governmental and nongovernmental organisations reliable and comprehensive information on disasters affecting any Participating State;
- e) Encouraging – i) The adoption of disaster loss reduction and mitigation policies and practices at the national and regional level; ii) Cooperative arrangements and mechanisms to facilitate the development of a culture of disaster loss reduction; and
- f) Coordinating the establishment, enhancement and maintenance of adequate emergency disaster response capabilities among the Participating States.

CDERA, now CDEMA, spearheaded the adoption of a strategic CDM framework in 2001 in collaboration with stakeholders. The strategic objective of CDM is the integration of disaster management considerations into the development planning and decision-making processes of Participating States (PSs). The CDM Strategy is now in its third iteration for the period 2014-2024 which was informed by findings from a review of the progress made on the Strategy 2007-2012 through extensive broad-based stakeholder consultations, which lasted over one year. The goal of the CDM Strategy 2014-2024 is to realise "Safer, more resilient and sustainable CDEMA Participating States through Comprehensive Disaster Management." This goal is supported by four (4) global high level priority outcomes and sixteen (16) specific final outcomes.



About the Caribbean Public Health Agency (CARPHA)

The Caribbean Public Health Agency (CARPHA) combines the functions of five former Caribbean Regional Health Institutions (RHIs) into one single agency. These include The Caribbean Environmental Health Institute (CEHI), The Caribbean Epidemiology Centre (CAREC), The Caribbean Food and Nutrition Institute (CFNI), The Caribbean Health Research Council (CHRC) and The Caribbean Regional Drug Testing Laboratory (CRDTL). These institutions had, and continue through CARPHA, to possess a long history of technical cooperation with its Member States and partners, to provide expertise in health systems and support for country-level implementation. Given the disparity in size and resources across the region the principles of solidarity in health have been practiced for several decades, and within this collective system CARPHA has several comparative advantages. This includes: mechanisms to work with states and territories in the Caribbean; convening role; development and implementation of health policies, strategies, standards and guidelines; the ability to connect the Region to global experts and technical resources through its various networks and partners.

CARPHA provides strong regional leadership, technical cooperation and promotes evidence-based decision making to its Member States as they pursue the goals of the current (fourth) iteration of the Caribbean Cooperation for Health (CCH IV). As the public health agency for CARICOM, CARPHA is mandated to lead strategic collaborative efforts among Member States and other partners to promote equity in health, to combat disease, and to improve the quality of the lives of the peoples of the Caribbean. CARPHA aims to be the major regional catalyst for ensuring that all peoples of the Caribbean enjoy optimal health, and that we contribute to the well-being of their families and communities. In this regard, CARPHA is well-positioned to be the mechanism through which the objectives of this project can be achieved.

This project is fully consistent with CARPHA's current activities in the area of environmental health as well as public health. CARPHA Member States include a number of vulnerable Small Island Developing States (SIDS) and low-lying coastal states. These SIDS face significant challenges to their sustainable development as a result of climate change, natural and environmental disasters and other global threats. Our Environmental Health and Sustainable Development Department (EHSD) is based in St. Lucia. This department supports the Caribbean's sustainable development agenda by playing a lead role in key areas related to environmental management for optimal public health.

CARPHA also has an excellent track record in the implementation and execution of projects, and as a regional centre works with Member States, and other key partners, to protect and promote the health of people in the Caribbean. Since its formal operationalisation in 2013, CARPHA has been awarded multi-million dollar project funding from development partners to respond to the priorities and needs of CARPHA Member States.

CARPHA will provide the technical leadership for the health components in the execution of the project. CARPHA is headquartered in Port of Spain, Trinidad and Tobago. It is responsible for regional initiatives and providing the necessary technical cooperation to CARICOM to advance the regional health agenda. Our Environmental Health and Sustainable Development Department will spearhead this project.



About the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)

The CCREEE is an institution of CARICOM, established in the framework of the Global Network of Regional Sustainable Energy Centres (i.e. the GN-SEC) and its sub-network for small island developing states (SIDS) in Africa, the Caribbean, the Indian Ocean and the Pacific. It builds on the regional intervention logic of other GN-SEC centres, creating integrated and inclusive regional markets for sustainable energy products and services by mitigating existing barriers through various tools and methodologies. The CCREEE is the implementation hub for sustainable energy activities and projects within the CARICOM region and was operationalised with the signing and ratification of the Agreement establishing the CCREEE in May 2018.

The CCREEE has a clear vision, mission and mandate which are fully aligned with the CARICOM's vision, mission and core values: *"A Caribbean Community that is integrated, inclusive and resilient; driven by knowledge, excellence, innovation and productivity; a Community where every citizen is secure and has the opportunity to realise his or her potential with guaranteed human rights and social justice; and contributes to, and shares in, its economic, social and cultural prosperity; a Community which is a unified and competitive force in the global arena"*.

Mandate of CCREEE

The CCREEE, a specialized agency with an official CARICOM and SIDS DOCK mandate to promote renewable energy (RE) and energy efficiency (EE) investments, markets and industries in the Caribbean, identified three strategic priorities:

Create: A market intelligence repository – knowledge hub aimed at enhancing capacity within the regional energy sector;

Optimise: Support and accelerate innovative applications of technology, policy and finance through the development of tools;

Embed and Transform: Utilise sustainable energy as a means to advance the wellbeing of at risk and vulnerable groups

Through these priorities, the Centre aims at improving access to modern, affordable and reliable energy services, energy security and mitigation of negative externalities of the energy system (e.g. local pollution and GHG emissions).

The CCREEE has a technical mandate and provides action- and service-oriented services to a broad range of public and private partners and clients. Under its governance structure, the CCREEE works closely with the CARICOM Energy Unit, and each part of the structure has defined responsibilities and tasks. The main decision-making elements of the structure are the Executive Board, the Technical Committee and the Secretariat (in Bridgetown). They work in close collaboration with National Focal Institutions, the Regional Universities Network, and a group of Thematic Hubs who address topics of particular interest for the energy market.

The CCREEE acts at the regional level as a hub for articulating, complementing and coordinating the efforts from the international community to respond to the CARICOM Secretariat and Member States' needs since it was conceived to support the overall objective of pursuing a low-carbon path and fulfilling regional and national goals for all Member States.



The technical portfolio of the Centre is composed of strategic programmes intended to address barriers to the introduction and development of certain sustainable energy technologies and solutions. Barriers are often related to policy and regulatory frameworks, capacity, knowledge and data availability, awareness, financing tools, as well as the promotion of innovative ideas and entrepreneurship. The Centre's strategic programmes include knowledge management and transfer, energy access, sustainable industry and business, sustainable transport, finance and project support, climate resilience, and sustainable buildings. These programmes are encapsulated in three core areas: the CARICOM Energy Knowledge Hub, Integrated Resource and Resilience Planning and the Project Preparation Facility.

The geographic scope of intervention of CCREEE is defined as follows. The Centre (...):

- Supports and executes RE&EE activities and projects which cover one or more CARICOM Member State(s); however, the Centre is also disposed to supporting the wider Caribbean.
- Focuses primarily on activities and projects with regional impact or national projects which demonstrate high potential for scaling-up or regional replication.
- Works in urban and rural areas, due to the high relevance of decentralized RE&EE technologies and services for rural areas linked with the agricultural sector.

The Centre promotes all appropriate and sustainable renewable energy and energy efficiency technologies, including renewable energy-based hybrid systems and mini-grids. The Centre considers important cross-cutting issues such as mainstreaming of environmental assessments and standards in project planning and approval procedures, the energy-water-food nexus, gender mainstreaming and the decommissioning and recycling of RE&EE technologies.



About the Caribbean Tourism Organization (CTO)

The Caribbean Tourism Organization (CTO), with headquarters in Barbados, is the Caribbean's tourism development agency comprising membership of 26 countries and territories including Dutch, English, French and Spanish, as well as a myriad of private sector allied members.

Vision and Purpose

The CTO's vision is to position the Caribbean as the most desirable, year round, warm weather destination and our purpose is Leading Sustainable Tourism – One Sea, One Voice, One Caribbean.

Objectives

The primary objective of the Caribbean Tourism Organization is to provide to and through its members the services and information necessary for the development of sustainable tourism for the economic and social benefit of the Caribbean people by:

- providing an instrument for close collaboration in tourism among the various territories, countries and other interests concerned;
- developing and promoting regional travel and tourism programs to and within the Caribbean;
- providing members with opportunities to market their products more effectively to both the Caribbean and the international tourism marketplaces;
- assisting member countries, particularly the smaller member countries with minimal promotional budgets, to maximize their marketing impact through the collective CTO forum;
- carrying out advertising, promotions, publicity and information services calculated to focus the attention of the public upon the Caribbean as one of the world's outstanding tourist destinations;
- providing a liaison for tourism matters between member countries;
- providing a sound body of knowledge on tourism through data collection, collation and research;
- creating processes and systems for disseminating and sharing tourism information;
- providing advice, technical assistance and consultancy services with respect to tourism
- providing training and education for Caribbean nationals and for international travel agents;
- seeking to maximize the contribution of tourism to the economic development of member countries and the Caribbean through programs likely to increase foreign exchange earnings, increase employment, strengthen linkages between tourism and other economic sector like manufacturing and agriculture, and to reduce leakages from Caribbean economies;
- encouraging coordination with respect to research and planning and the efficient allocation of local, regional and international resources at both government and non-governmental levels in tourism development;
- researching and identifying the ecological effects of tourism with a view to recommending and /or initiating action aimed at minimizing the negative and enhancing the positive effects;
- promoting the consciousness of the need to preserve both the natural and man-made beauty of the Caribbean environment and demonstrating its direct relationship to the development of an attractive tourism product;
- developing a tourism product which is essentially Caribbean and which, through maximizing economic benefits, has minimal adverse social and psychological effects on the integrity of Caribbean peoples.



About the Caribbean Hotel and Tourism Association (CHTA)

The Caribbean Hotel and Tourism Association is a Federation of Associations, encompassing 33 national hotel and tourism associations (NHTA) from around the region. The diversity that characterizes the federation of CHTA throughout the Caribbean offers its members the opportunity to benefit from the strengths of its colleagues from other countries and other NHTAs. CHTA is headquartered in Miami, Florida, and maintains a project office in Barbados. The Association is governed by a board of directors elected by the member NHTAs, according to their size. In addition to hotel and NHTA representation, its Board of Directors includes representation from tourism-related businesses and affiliated organizations including the Caribbean Society of Association Executives (CSHA), the Caribbean Association of Industry and Commerce (CAIC), the Caribbean Council (CC), and the Caribbean Tourism Organization (CTO). CHTA created and supports other nonprofit organizations including; the Caribbean Alliance for Sustainable Tourism; the Caribbean Hotel and Tourism Association Education Foundation; and the Caribbean Society of Hotel and Tourism Association Executives.

CHTA's Shared Vision:

For the Caribbean to be the most desirable tropical vacation region in the world to visit.

Purpose:

To provide leadership, tools, resources and knowledge aimed at helping members to grow their tourism business and fostering an environment which celebrates, enriches and sustains tourism to the benefit of the industry and its stakeholders.

Focus:

Six Primary Areas of Focus Guide Our Work:

1. Capacity Building
2. Marketing
3. Sustainable Growth
4. Situation Management
5. National Hotel and Tourism Associations
6. Operations and Governance

CHTAs Success is Enabled and Underpinned by:

- Financial and Human Resources – *Realign, Grow and Diversify*
- Communications – *Strengthen and Expand Internal and External*
- Engagement – *Leadership, Membership, Partners and Industry Stakeholders*
- Advocacy – *Representation and Voice*

About CAST

CAST serves as an initiative of CHTA to provide tourism enterprises with sustainability resources, best practices and work alongside CHTA committees to provide support for the advocacy of sustainability within the region.

Strategic Focus & Services

- Information & Resources: providing detailed studies of sustainability examples, lessons learned and resources to make the case for sustainability throughout tourism enterprises. To work in partnership with aligned groups and organizations throughout the region.
- Advocacy: promoting responsible environmental and social issues within the Caribbean tourism sector and representing the interests and successes of the sector at key regional and international forums; reporting



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on meeting outcomes to the sector. Contribution to influence governance and decision making regarding sustainability within the sector.

- Sustainability Training & Special Projects: through the use of toolkits, special publications & projects (Resource Guides), training programs and modules.

Objectives

- To serve as a first step resource to tourism enterprises in the area of information and education for sustainable tourism implementation.
- To provide tangible results to tourism enterprises through sustainability training and education. Assist with certification guidance, vendor and products information.
- Develop synergies and strategic partnerships with sustainable tourism efforts to ensure a cohesive solution to sustainability within the region.