

Research for Action on Climate Change and Health in the Caribbean: **A Public, Private, People's and Planetary Agenda**

Caroline F. Allen¹, Renée M. West¹, Georgiana Gordon-Strachan², Saria Hassan³,
Shelly McFarlane², Karen Polson-Edwards⁴, Audreyanna Thomas⁴, C. James
Hospedales^{5*}, Robert Dubrow^{6*}



¹Blue Sky Development Consulting

²Caribbean Institute for Health Research, The University of the West Indies

³Rollins School of Public Health, Emory University

⁴Pan American Health Organization

⁵EarthMedic and EarthNurse Foundation for Planetary Health

⁶Yale Center on Climate Change and Health, Yale School of Public Health

*Co-chair

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17. FUNDING STREAMS FOR CLIMATE AND HEALTH ACTION

17.1. WHAT IS HAPPENING?

The Ministry of Health does not have a budget for climate change and health. Funding has to be sourced externally, through projects, writing proposals, through PAHO and other agencies.

Interviewee from the health ministry of an unnamed Caribbean island, in Allen et al. (2021)

Funding for climate change and health action and research in Caribbean countries is often highly dependent on external sources, as indicated by the stakeholder quoted above. This is partly because of the limited finances of Small Island Developing States (SIDS), which are highly vulnerable to climate change-related shocks such as hurricanes. Traditional patterns of dependency on metropolitan countries may also play a role. Funding appears to be mainly grant funding, i.e. not national government funding, and therefore not sustainable. This funding is tied to governments' political will and awareness of the issues, as well as what international donors are willing to fund (Allen et al., 2021). This chapter will focus on financing for health programming; funding for research is covered in Chapter 11, "Research and surveillance in climate and health".

The Fifth Assessment Report of the Intergovernmental Panel on Climate Change estimates that in 2050 adaptation costs in developing countries will be USD 70–100 billion annually (AF, n.d.; Cissé et al., 2022). The World Health Organization (WHO) has identified financial constraints as a major barrier to the implementation of health adaptation priorities (Watts et al., 2021). The participation of the global health sector in international climate financing mechanisms has been limited. In the 2020 Adaptation Fund (AF) database, the majority of projects were focused on indirect benefits to the health system, such as enhanced disaster preparedness and food security; none were explicitly aimed at strengthening health systems and none were directed through ministries of health (Cissé et al., 2022).

The Caribbean region, with its high levels of indebtedness, economies that are highly sensitive to climate variability and change, and human and financial resource constraints, is at risk of falling into greater poverty if climate change adaptation and mitigation measures are not put in place. The challenges faced by the Caribbean are profound and require funding from a variety of sources at national, regional and international levels from the private and public sectors (CCCCC, 2012). Caribbean countries and regional institutions have collaborated to call for greater assistance from developed countries and for solidarity within the region in providing assistance to countries and communities in need. The Caribbean Community (CARICOM) and individual ministers and heads of state continue to advocate at international meetings for the necessary funding for reconstruction, building back better, adaptation and mitigation (CARPHA, 2018).

Dominica provides an example of the financial challenges facing Caribbean SIDS in becoming climate resilient. After Hurricane Maria devastated Dominica in 2017, Prime Minister Roosevelt Skerrit addressed the 72nd United Nations General Assembly and declared the national situation an "international humanitarian emergency". In his speech, he vowed to rebuild Dominica as the first climate-resilient nation by 2030. The cost of Dominica's Climate Resilience and Recovery Plan (CRRP) is estimated at XCD 8.2–9.8 billion.¹ As of 2021, Dominica had invested approximately XCD 1.7 billion on critical infrastructure and other projects since Hurricane Maria. Hence, the remaining financing gap is estimated at about XCD 6.5–8.1 billion. Based on current government capital expenditure and assuming steady revenues and expenditure, the expected financing gap in delivering the CRRP by 2030 is XCD 2.5–3.5 billion. The CRRP includes the construction of well-planned and durable

¹ XCD: Eastern Caribbean dollar.

infrastructure, including roads and bridges, water and sanitation facilities, power supplies and health facilities. The targets for 2030 include 100% of primary roads and bridges open within three days of the passing of a major weather event; at least 60% of water/sanitation facilities operating within seven days; at least 90% of power coverage restored within three days; and no more than 5% of healthcare facilities severely damaged or destroyed by an extreme weather event (this will include using smart health facility concepts; see Chapter 16, “Smart health facilities”) (Baron, 2021; Government of the Commonwealth of Dominica, 2020).

A variety of multilateral and bilateral funding sources are available. As well as the sources presented below, there are opportunities for funding by individual countries through bilateral arrangements, with details available from the United Nations Framework Convention on Climate Change (UNFCCC) (2018a).

Adaptation Fund

Since 2010, the AF has committed USD 998 million to projects and programmes. This funding covers 100 countries, including 15 SIDS and 30 least developed countries, serving about 38 million total beneficiaries. The AF also pioneered the Direct Access system, empowering countries to access funding and develop projects directly through accredited national implementing entities (AF, n.d.). The fund is financed in part by governments and private donors and also a 2% share of proceeds of certified emission reductions (CERs) issued under the Kyoto Protocol’s Clean Development Mechanism (CDM) projects. The World Bank serves as trustee (World Bank, 2023). The CDM allows emission-reduction projects in developing countries to earn CER credits, each equivalent to one tonne of CO₂. These CERs can be traded and sold, and used by industrialised countries to meet a part of their emission reduction targets under the Kyoto Protocol (AF, n.d.; UNFCCC, 2018b). Activities funded by the AF include training people in climate resilience measures, developing early warning systems, and measures to restore or preserve natural habitats. In 2019, the main areas of investment were food security, agriculture, water management, rural development, and coastal zone management (AF, 2021).

Countries directly receiving funds from the AF through national implementing entities include Antigua and Barbuda, Belize, Cuba, Dominica, the Dominican Republic, Jamaica, Saint Lucia and Trinidad and Tobago. The projects funded are not directly related to health adaptation but involve aspects such as resilience to flooding, coastal rehabilitation, innovative technologies for improved food security and safety, and marine conservation (AF, 2023). For example, Cuba’s project involved coastal management to reduce flooding through recovery of coastal ecosystems and forests; 21,500 people directly benefited from reduced coastal flooding (at least 45% of them women) (AF, 2021).

Climate Investment Funds

Founded in 2008, the Climate Investment Funds (CIF) represents one of the first global efforts to invest in a dedicated climate finance vehicle. It was created following the recognition that there was a need to deliver climate-smart investment at scale. The CIF supports developing and emerging economies in shifting to climate-resilient and low-carbon development. Since it was established, it has channelled over USD 10 billion from governments and the private sector in 15 donor countries to support more than 370 projects in 72 countries. The resources are held in trust by the World Bank and disbursed as grants, highly concessional loans and risk mitigation instruments to recipient countries through multilateral development banks (MDBs): the Inter-American Development Bank and the World Bank in the case of the Caribbean. The CIF benefits from the MDBs’ ability to leverage funding, mobilise other actors and harmonise policy support (CARPHA, 2018; Climate Investment Funds, 2023a, 2023b).

The CIF consists of two main funds: the Strategic Climate Fund and the Clean Technology Fund. The Strategic Climate Fund finances new approaches or scales up activities through the Pilot Programme for Climate Resilience (PPCR), the Scaling Up Renewable Energies Programme in Low Income Countries, and the Forest Investment

Programme. Other programmes include the Global Climate Action programmes; Nature, People and Climate; and Renewable Energy Integration (Climate Investment Funds, 2023c,d).

Ongoing Caribbean projects under the PPCR are not directly related to health systems and services, but relate to aspects of agriculture, infrastructure and urban flooding. For example, Saint Lucia's project to support climate-resilient investments in the agriculture sector included providing small to medium-sized loans to farmers, farmers' associations, distributors/wholesalers and processing companies in Saint Lucia; this was approved in 2017 with CIF funding of USD 0.80 million (Climate Investment Funds, 2023e). Also in 2017, Haiti's project for municipal development and urban resilience was approved with CIF funding of USD 7 million. One of its key objectives was to reduce climate risks and urban flooding in the city of Cap-Haïtien (Climate Investment Funds, 2023f).

Green Climate Fund

The Green Climate Fund (GCF), the world's largest climate fund, was established in 2010 as a dedicated financing vehicle for developing countries, serving as the financial mechanism of the UNFCCC and the Paris Agreement. Since the approval of the first funded project in 2015, GCF has built a portfolio of over 100 projects (Green Climate Fund, 2023a).

The GCF aims to ensure that at least 50% of adaptation funding is allocated to particularly vulnerable countries, including least developed countries, SIDS and African states. Developing countries appoint a national designated authority, which acts as the interface between their government and the GCF, and must approve all GCF project activities within the country. This country-driven approach ensures the GCF's activities operate in harmony with national priorities (CARPHA, 2018).

The initial mobilisation phase of the GCF (2014) raised USD 10.3 billion from 49 contributor countries, regions and cities. The first replenishment phase, GCF-1 (2020–2023 period), has received pledges from 34 contributors totalling USD 10 billion. The second replenishment phase, GCF-2 (2024–2027 period), is still in the planning and consultation stage. The World Bank acts as a trustee for the GCF; its functions include the receipt, holding and investment of financial contributions from contributors, the transfer of financial resources as instructed by the GCF and the preparation of summary financial reports (Green Climate Fund, 2023c).

The Caribbean region's engagement with the GCF is gaining traction, as several countries have benefited from the GCF Readiness and Preparatory Support Programme, which is designed to support countries' engagement with the GCF, to develop climate change projects and to enhance country ownership. To date, almost all CARICOM Member States have had a Readiness Project approved by the GCF, with most of them partnering with entities accredited by the GCF. There are two regional entities accredited by the GCF, the Caribbean Community Climate Change Centre (CCCCC) and the Caribbean Development Bank (CDB) (CARPHA, 2018).

Antigua and Barbuda, the Bahamas, Barbados, Belize, Cuba, Dominica, the Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname and, Trinidad and Tobago have received funding for national projects (Green Climate Fund, 2023c).

Global Environment Facility

The Global Environment Facility (GEF) supports developing countries' work to address the world's most pressing environmental issues. Their work is focused on five areas – biodiversity loss, chemicals and waste, climate change, international waters and land degradation – and they take an integrated approach to support more sustainable food systems, forest management and cities (Global Environment Facility, 2023a). Both developed and developing countries are or have been donors to the GEF Trust Fund. Since its inception, the GEF has received contributions from 40 donor countries. In the beginning, countries implemented activities with the

assistance of the World Bank, the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). Today, 185 countries and 18 agencies including civil society organisations, indigenous people and the private sector have benefited from GEF support (Global Environment Facility, 2023b).

The Special Climate Change Fund (SCCF) of the GEF was established to support adaptation and technology transfer in all developing country parties to the UNFCCC. The SCCF supports both long-term and short-term adaptation activities in water resource management, land management, agriculture, health, infrastructure development, fragile ecosystems, including mountainous ecosystems, and integrated coastal zone management (Global Environment Facility, 2023c).

One of GEF's projects, the Pilot Program on Climate Change Adaptation to Protect Human Health (2010–2014), was funded by the SCCF and jointly implemented by the WHO and UNDP. This global pilot project was designed to increase the adaptive capacity of national health system institutions, including field practitioners, to prepare for, respond to and recover from the health risks of climate variability and change. The project covered seven countries: Barbados, Bhutan, China, Fiji, Jordan, Kenya and Uzbekistan. Total funding for the project was USD 21.1 million, with USD 4.5 million from the GEF SCCF; co-financing made up additional funding (Ebi, 2015). See Box 1 for more details of the Barbados project.

Box 1: Pilot Programme on Climate Change Adaptation to Protect Human Health – Barbados

The specific objective: to strengthen national adaptive capacity to address health issues related to climate change-attributable water scarcity.

All **project outcomes** dealt with wastewater reuse, and the project developed and implemented country-specific outputs in relation to the following defined outcomes.

- Outcome 1: Policies and programmes are implemented to ensure health risks do not increase as a result of using treated wastewater to recharge aquifers and for irrigation.
- Outcome 2: Capacity is strengthened on climate change and health, and public acceptance of the use of treated wastewater for nonpotable use is increased.
- Outcome 3: The public stores water safely to prevent the breeding of *Aedes aegypti* mosquitoes.

Lessons learned included:

- The development of water quality standards for the use of treated wastewater improved water quality and safety. Improved practices for the storage of rainwater prevented the breeding of *Aedes aegypti*, thus decreasing the incidence of dengue fever.
- Adequate support is needed, both technical and administrative, to scale up the project.
- Health can be a powerful driver of change in relation to climate change issues.
- The public is aware of climate change, but not of its implications on health, so awareness-raising and education is critical for building resilient communities.
- The poster competition implemented in schools attracted a lot of interest and participation from students.
- There should be continuous dialogue with policymakers, and it is important to communicate the results of the project in a relevant way to inform policymaking.
- More technical guidance should be provided at the initial stages of project implementation.

Key products included:

- Young citizens – students’ workbook and notebook on piloting climate change adaptation to protect human health;
- Rainwater storage practices – guidelines for public health safety and protection, Barbados’ adaptation to climate-driven health risks, climate change adaptation to protect human health, adapted from WHO;
- Guidelines for the safe use of wastewater, excreta and greywater. Early communication and alert system for water quality, adapted from WHO.

Source: WHO (2015).

Antigua and Barbuda, the Bahamas, Barbados, Belize, Cuba, Dominica, the Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname and Trinidad and Tobago have received GEF funding for national projects (Global Environment Facility, 2023d).

Caribbean Development Bank

The CDB has a long history of supporting disaster risk reduction programmes in the Caribbean. The vision of the bank’s Climate Resilience Strategy 2019–2024 is of climate-resilient, sustainable development in Borrowing Member Countries through enhanced and sustained climate actions. The CDB’s work has four main priorities (CDB, 2018):

- Scaling up climate resilience actions in climate-vulnerable sectors;

- Mobilising concessionary resources;
- Supporting an enabling environment for climate action;
- Operationalising the strategy in concert with CDB.

The CDB has two major climate change projects:

- The Community Disaster Risk Reduction Fund (CDRRF). The CDRRF is a multi-donor trust fund managed by the CDB, with contributions from the Government of Canada, the European Union and the CDB. CDRRF finances community-driven projects, selected through a competitive process, that are aimed at reducing the impacts of natural hazards and climate change. These projects support farmers, fisherfolk, small-business owners and employees, and young people and the elderly in these communities through infrastructure improvements, hazard and vulnerability assessments and training initiatives. Currently, the CDRRF finances and supports eight projects in four countries – Belize, the British Virgin Islands, Jamaica and Saint Vincent and the Grenadines (CDB, 2023a).
- The Climate Action for Resilience Enhancement (CARE) Programme. Launched in February 2022, CARE is a five-year, EUR 14 million initiative to establish disaster risk management and climate resilient-building projects in the CDB’s Borrowing Member Countries. The programme is funded by grant financing from the European Union through the 11th European Development Fund’s Intra-African Caribbean Pacific–European Union Natural Disaster Risk Reduction Programme and is implemented by the CDB. The CARE Programme focuses on improving disaster risk management and climate change adaptation governance in the CDB’s Borrowing Member Countries and strengthening their evidence-based planning, decision-making and financial response. It also seeks to strengthen community infrastructure and livelihood resilience to climate change effects and natural hazards (CDB, 2023b).

Commonwealth Secretariat: Commonwealth Climate Finance Access Hub

The Commonwealth Climate Finance Access Hub is helping to release vital finance to Commonwealth nations; beneficiaries include Antigua and Barbuda, Barbados and Jamaica. As of July 2021, 32 projects in 6 countries have been mobilised through support from the hub, with funds totalling USD 44.1 million. A further USD 762 million worth of projects are in the pipeline (Scotland, 2021).

Financial sector – banking and insurance

Globally, it is estimated that there will be 250,000 additional deaths per year due to climate change between 2030 and 2050. The direct costs of these deaths is estimated at USD 2–4 billion per year on average from 2030. This will lead to losses to the insurance sector because insurers will have to pay more claims. Only about 30% of the Caribbean public has health insurance, which places a burden on the general public through higher taxes. Over time, fewer and fewer people will be covered as global warming causes an increase in insurance claims and costs. The financial sector is the custodian of national and regional savings, and therefore has the potential to invest those savings to promote growth in the national and regional economies, i.e. invest in ventures such as eco-tourism, renewable energy and other eco-friendly businesses that combat climate change and produce health co-benefits. The financial services industry is also the custodian of large amounts of data and has access to reinsurers, whose job it is to better predict the future through research. Financial services have also invested heavily in data science capabilities (Tewari, 2021).

Republic Financial Holdings Limited (RFHL), headquartered in Trinidad and Tobago, is the registered owner of all the banks in the Republic Group in the Caribbean.² RFHL signed the Global Principles for Responsible Banking and joined the Net-Zero Banking Alliance as a founding member in 2020, and it was the only signatory in the English-speaking Caribbean. This was in line with the bank's commitment to achieve net-zero greenhouse gas emissions in its financing activities by 2050. One of its objectives is to discover areas of positive impact that link to the United Nations Sustainable Development Goals. RFHL has committed funds to help mitigate the effects of climate change and construct climate-resilient infrastructure throughout all territories where its banks are located (Republic Bank, 2023a). See Box 2 for some examples of RFHL's work (Republic Bank, 2023b).

Even though RFHL's work does not directly fund health-related climate change projects, its pledge is to increase access to funds to (Republic Bank, 2023a):

- Make electric vehicles accessible to more people.
- Support the development of renewable energy and related technologies, as well as the transition away from fossil fuels and towards more environmentally friendly energy sources.
- Provide loans that contribute to energy efficiency and fund construction projects that deploy climate-resilient technology.
- Support initiatives and projects that support environmental sustainability, renewable energy projects, green initiatives and the blue economy in a socially minded and just manner.
- Build all its new properties in accordance with Leadership in Energy and Environmental Design (LEED) Certified Standards by 2025, and make its existing properties more environmentally friendly and energy efficient.

²Caribbean RFHL banks are in Anguilla, Barbados, the British Virgin Islands, Cayman Islands, Grenada, Guyana, Saint Lucia, Saint Maarten, Suriname, and Trinidad and Tobago.

Box 2: Case study – Republic Bank of Trinidad and Tobago

In May 2022, RFHL partnered with Caribbean Bottlers Trinidad and Tobago Limited (Coca-Cola) and Blue Waters Products Limited to embark on the “Every Bottle Back” pilot project, which saw over 200 eco-bins placed around Port of Spain and at other locations, such as the bank’s branches and units, to encourage the deposit of plastic bottles to be exported and recycled. Between May and August 2022 over 350 000 bottles were collected – about 14 000 pounds in weight. The pilot programme has the ultimate goal of establishing a plastic bottle recycling plant in Trinidad.



RFHL is also providing loans and investments that enable the sale of electric and hybrid cars; loans that are aligned to the promotion of clean fuels, renewable energy and technology that can contribute to an improvement in energy efficiency; and loans for construction that deploys climate-resilient technologies. In addition, RFHL has transitioned from printed to digital statements for its retail customers.

Source: Republic Bank (2023b).

Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company

The Caribbean Catastrophe Risk Insurance Facility (CCRIF) was established in 2007 as the first multi-country risk pool in the world. In 2014, it was registered as a Segregated Portfolio Company (SPC) to allow for new products and to expand its geographical reach. CCRIF SPC is a not-for-profit pooling facility that offers insurance in times of devastating tropical cyclones/hurricanes, earthquakes and excess rainfall events, providing quick, short-term finances. The company is owned, operated and registered in the Caribbean and offers policies to Caribbean and

Central American governments and two utility companies.³ The CCRIF SPC also has an aggregated deductible cover (ADC) policy feature for tropical cyclone and earthquakes. The ADC was designed to be akin to a dedicated reserve fund providing a minimum payment for events that are not of a sufficient scale to trigger a policy payment (CCRIF SPC, 2023).

In July 2019, the facility, in collaboration with the World Bank and the United States State Department, introduced cover for the fisheries sector for two member countries: Saint Lucia and Grenada. In October 2020, the CCRIF SPC introduced cover for electric utilities in Anguilla (ANGLEC) and Saint Lucia (LUCELEC). The facility helps to mitigate the short-term cash flow problems that small developing economies suffer after major natural disasters. CCRIF SPC's parametric insurance mechanism allows it to provide rapid payouts to help members finance their initial disaster response and maintain basic government functions after a catastrophic event (CCRIF SPC, 2023).

The CCRIF SPC operates through a Multi-Donor Trust Fund (MDTF) under the leadership of the World Bank, and currently channels funds from various donors, including Canada, through Global Affairs Canada; the United States of America, through the Department of the Treasury; the European Union, through the European Commission; and Germany, through the Federal Ministry for Economic Cooperation and Development and KfW – Germany's main development bank. The CBD has supplied additional financing, with resources provided by Mexico; the Government of Ireland; and the European Union through its Regional Resilience Building Facility managed by the Global Facility for Disaster Reduction and Recovery and the World Bank (CCRIF SPC, 2023).

From 2007 to 2022, CCRIF SPC made 54 payouts to 16 member governments totalling approximately USD 269 million. Of this amount, USD 144 million was for tropical cyclones/hurricanes; USD 49 million for earthquakes and USD 66 million for excess rainfall. The largest Caribbean payouts⁴ were USD 40 million to Haiti following an earthquake (2021); USD 20.4 million to Haiti after Hurricane Matthew (2016); USD 19.2 million to Dominica after Hurricane Maria (2017); and USD 13.6 million to Turks and Caicos after Hurricane Irma (2015). The most recent Caribbean payouts were USD 8.2 million to Trinidad and Tobago for rainfall events (2022). In addition, the CCRIF SPC has made 23 payments totalling approximately USD 3.2 million under member governments' ADC (CCRIF SPC, 2023).

Research and surveillance

Globally, the *Lancet* Countdown on Health and Climate Change continues to monitor the economic impact of climate change and the financing of health adaptation and mitigation measures (Romanello et al., 2022). There are several policy frameworks and action plans calling for increased solicitation of financing, e.g. The *Lancet* Countdown on Health and Climate Change: Policy brief for Small Island Developing States (Parker et al., 2022)

³Nineteen Caribbean governments are currently CCRIF SPC members: Anguilla, Antigua and Barbuda, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Grenada, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Sint Maarten, Saint Vincent and the Grenadines, Trinidad and Tobago and Turks and Caicos Islands. Three Central American governments are currently members of the facility: Guatemala, Nicaragua and Panama. Two electric utility companies are currently members of the facility: the Anguilla Electric Company Limited (ANGLEC) and St. Lucia Electricity Services Limited (LUCELEC).

⁴Payouts are short-term liquidity that are made to the insured government, rapidly, after a disaster. Payouts are calculated based on models incorporating hazard levels such as wind, storm surge and waves for hurricanes and ground shaking for earthquakes. There is no need for a loss adjuster to survey the area or country to determine loss, a process that could take months or even years. Payments are made against a claims process in which proof must be provided demonstrating damage caused and receipts paid or estimates for replacement/repair. For traditional insurance payments, the loss adjuster visits the disaster area and, for example, determines the cost of repair relative to the original replacement cost for a building. Payment is dependent on the total amount of cover bought by the government and the deductible selected. For details see www.ccrif.org/frequently-asked-questions.

and the Caribbean Action Plan on Health and Climate Change (CAPHCC). The CAPHCC includes proposed actions to increase financing for climate change and health, along with indicators of progress (PAHO, 2019). Proposed actions include the creation of fund and project management functions for climate change projects and programmes within ministries of health; increased national budgets for climate change and health; and strengthening of national capacities to negotiate for climate change and health financing. Indicators of progress include the number of countries with climate change and health projects funded by main international funding mechanisms and development partners, and the proportion of national budgets allocated for climate change and health.

Studies have estimated the financial impact of climate-related events in the Caribbean. For example, in 2010, Hurricane Tomas was estimated to have caused USD 5.6 million worth of damage in Saint Lucia (ECLAC, 2011), and, in 2017, the estimated damage to health infrastructure in Dominica after Hurricanes Irma and Maria was USD 10.3 million (Ministry of Health and the Environment, 2017). See Chapter 16, “Smart health facilities”.

Following Hurricane Dorian in 2019, food security was threatened in the Bahamas (R4ACCHC, 2022). In Jamaica, Hurricane Sandy in 2012 resulted in agricultural losses of over JMD 4 billion, with 40,000 farmers affected (Bedasse, 2018). See Chapter 12, “Agriculture and food safety and security”.

17.2. WHAT SHOULD BE DONE?

Individual and community actions and how to support them

Increase community organisations' access to funding

Civil society organisations (CSOs) play a vital role in both climate change adaptation and mitigation, particularly through projects that improve health outcomes. In the Caribbean there is usually very little government funding available to them, and, where there is funding, it is often very difficult to access. Funding should be increased, application processes should be made simpler and grant assessors should be educated on climate change mitigation and adaptation processes (Jaramogi, 2021; R4ACCHC, 2023a). Innovative funding mechanisms, e.g. payment-in-advance initiatives, should be made available to CSOs. Grant proposal writers within community organisations should be trained in grant writing and project management; where community organisations do not have the capacity for in-house training, technical support should be made available to assist with proposal writing and support should be given for the implementation of projects, especially larger ones (R4ACCHC, 2023a).

Structural/governmental and private sector actions

Include climate change considerations in disaster management plans

Incorporating climate change and health considerations into disaster reduction and management strategies could improve funding opportunities and increase potential funding streams (Aitsi-Selmi et al., 2015). This can be done at both the regional and national level.

Advocate at the international level for more funding for Caribbean SIDS

Less than 2% of climate change funding has gone to health projects, while SIDS have received only 2% of climate change adaptation funding.

Dr Carissa Etienne, former director of PAHO (Etienne, 2021)

The challenges faced by the Caribbean are profound, and require funding from a variety of sources at national, regional and international levels from the private and public sector (CCCC, 2012). Under Article 9 of the 2015 UNFCCC Paris Agreement, it is stated that “developed countries will provide financial resources to assist developing countries with respect to both mitigation and adaptation” activities (UN, 2015, p. 13). Advocacy from governments is needed to secure funding and support for health-related Caribbean adaptation and mitigation measures from developed countries, who have the greatest historical responsibility for climate change (Dubrow, 2021; Ortiz, 2021). Caribbean countries are relatively small and have limited resources, and therefore need to seek funding collectively through regional bodies such as the CCCCC, the Caribbean Public Health Agency (CARPHA) and the University of the West Indies. The creation of a specific regional entity for the sole purpose of mobilising funding across a range of priorities would be helpful; such a regional funding entity would not only seek funding for climate and health adaptation strategies, but could also finance innovative ways to boost agriculture and reduce the region’s dependency on food imports (R4ACCHC, 2023b). Specialised funding streams should be developed for SIDS, focusing on addressing determinants of health and strengthening health systems.

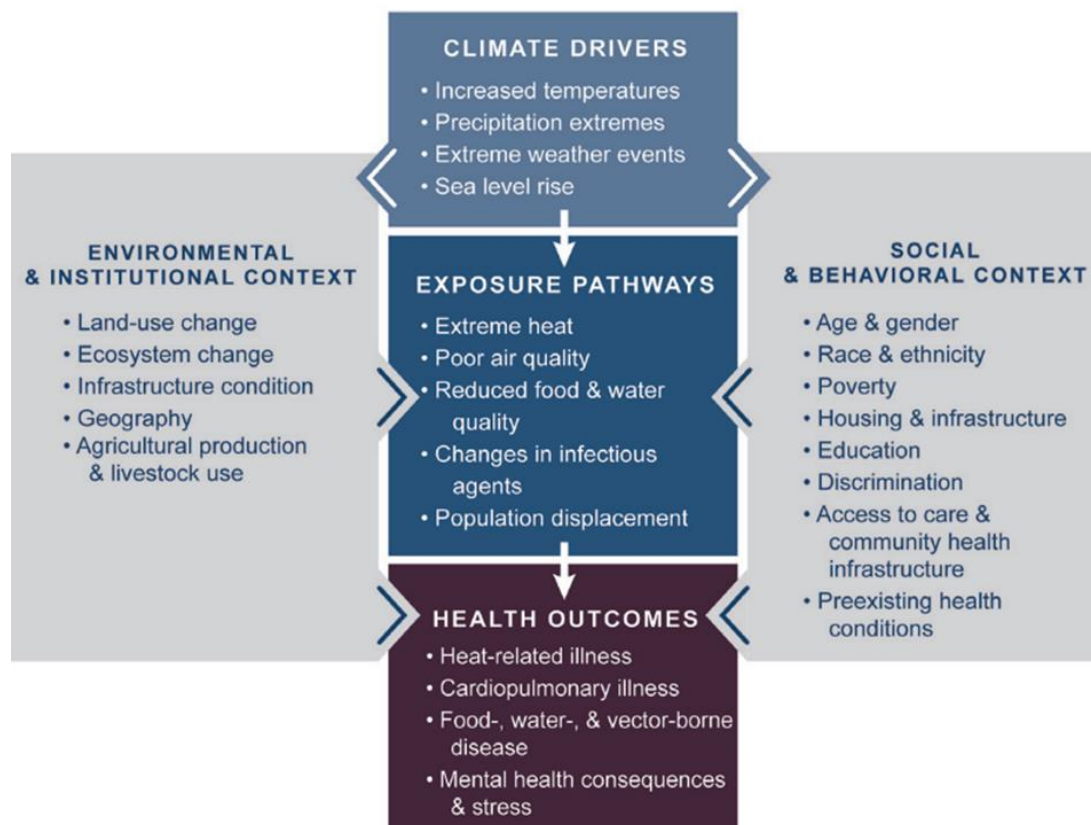
Encourage more public–private funding and partnerships

RFHL is strengthening its focus on climate change financing (Republic Bank, 2023a); other financial institutions should do the same. Collaborations between financial and commercial institutions, governments and technical agencies can be fruitful. For example, the Caribbean Hotel and Tourism Association has collaborated with CARPHA to strengthen its sustainable tourism and health initiatives. More collaborations such as these are needed to help build climate resilience throughout health services and systems, including health facilities.

Increase health policymakers' knowledge on climate change processes

With respect to allocation of funds for climate change and health efforts, policymakers need to better understand the linkages between climate change and population health and the contextual factors that affect those linkages. They need to understand what the climate drivers are, the environmental and institutional context, the social and behavioural context, and the exposure pathways that result in climate change-induced health outcomes (R4ACCHC, 2023a) (see Figure 2).

Figure 2: Framework used to understand climate change impacts, exposure and vulnerability



Source: USGCRP (2016) (<https://health2016.globalchange.gov/>).

Create a database of available funding relevant to Small Island Developing States and the Caribbean

Organisations need to know where they can access funding and for what specific purpose. Creating a database of the different funders (international, regional and national) will help organisations access funding (R4ACCHC, 2023a). Table 1 shows that lack of knowledge of funding opportunities is a barrier to accessing funding.

Train national and regional experts in grant writing

For a grant proposal to be successful, it must be written according to the donor's specifications. As with policymakers, grant writers need to be familiar with the climate change processes that increase vulnerability to health-related impacts. Expertise needs to be gained in writing such proposals. Table 1 shows that lack of capacity to prepare proposals is a barrier to accessing funding.

Table 1: Some challenges to accessing international funding in eight Caribbean countries^a

Caribbean countries	AT	BAH	DOM	DR	GRN	GUY	JAM	SLU	TNT
Lack of information on the opportunities	✓		✓	✓	✓		✓		✓
Lack of connection by health actors with	✓		✓	✓		✓	✓		
Lack of success in submitted applications								✓	
Lack of country eligibility		✓			✓			✓	✓
Lack of capacity to prepare country	✓				✓	✓	✓	✓	

^aAs assessed in their Health and Climate Change Country Profile.

Notes: AT, Antigua and Barbuda; BAH, the Bahamas; DOM, Dominica; DR, the Dominican Republic; GRN, Grenada; GUY, Guyana; JAM, Jamaica; SLU, Saint Lucia; TT, Trinidad and Tobago.

Source: WHO and UNFCCC (2020a–f; 2021a–c).

Advocate for funding eligibility criteria to be based on country vulnerability rather than economic classification

There are disparities in access to funding between countries, even within the Caribbean. Countries across the region are classified differently by donors. For example, those classified as “high-income” countries, such as Barbados and Trinidad and Tobago, may not get funding, whereas Jamaica, classified as an “upper-middle-income” country, may receive funding. Most of the Eastern Caribbean countries have challenges in accessing funding because of their income level classification, despite their high degree of vulnerability. It can be challenging to acquire grants or loans for regional projects because of the mix of country income levels within the Caribbean (Allen et al., 2021; Harewood, 2021). This influences the rate of success of applications (Table 1).

Research gaps and how to address them

Determine how to generate sustainable funding streams and mechanisms to support policy and programme implementation to address the effects of climate change on health

Government financing for the climate change and health agenda is critical. In the short term this may need to come from outside organisations, e.g. the GCF. It is critically important to build health economics and financial modelling into programmes to understand the costs and benefits of mitigation and adaptation policies, and hopefully show long-term cost savings that can help sustain such programmes in the future. Some questions include (Hassan, 2021a):

- What is the role of public–private partnerships in developing and supporting funding?
- How can we measure the long-term returns on investment for private entities?
- How are upwards and downwards accountability aligned to create and secure access to funding for climate change and health?
- How can governments support a leadership structure (e.g. a coordinating centre similar to the National Institutes of Health) that can bring together individual grantees to develop common assessment tools, standards and indicators tailored to the Caribbean?

Conduct cost–benefit and cost-effectiveness analyses to understand the financial implications of regional initiatives and action plans

Understanding the financial implications of programmes to build climate-resilient health systems and services is critical for sustainability. There is a need for both cost–benefit and cost-effectiveness analyses to understand

the short- and longer-term implications of climate-resilient health systems. Examples of questions could include (Campbell-Lendrum et al., 2009; Hassan, 2021b; R4ACCHC, 2023a):

- Has the EU/CARIFORUM Climate Change and Health Project: Strengthening Climate Resilient Health Systems in the Caribbean been cost-effective?
- How do we ensure sustainable funding for the programmes within the EU/CARIFORUM Climate Change and Health Project: Strengthening Climate Resilient Health Systems in the Caribbean (for example, the Climate Change Leadership Programme) if initial funding is foreign based (Oura, 2021)?
- What additional funding would be needed for climate change and health to support the data generated by the Caribbean Action Plan on Health and Climate Change?

Community climate and health projects should also be evaluated in terms of cost–benefit, cost-effectiveness and lessons learned (R4ACCHC, 2023a).

Determine the effectiveness of actions at the individual, community, structural/government and private sector levels

Climate change and health actions should be evaluated to ensure cost-effectiveness, efficiency and value for money. Process, impact, cost–benefit and/or cost-effectiveness evaluations may be conducted. Determining the barriers to and facilitators of implementing a suggested action would also be helpful in determining the limitations and challenges, and recommendations for the way forward. Research questions could include:

- How many CSOs were trained in proposal writing?
- At how many international meetings did Caribbean leaders call for increased international climate funding for Caribbean SIDS?
- What was the increase in public–private funding arrangements for climate change-related health adaptation and mitigation projects?
- How many health policymakers were trained in climate change impacts, exposure and vulnerability?
 - How was the increase in knowledge brought about? What was the cost of each training initiative?
 - How many countries have created a database of available funding?
- What steps were taken to adjust funding eligibility criteria at the Caribbean level to prevent exclusion of certain countries based on international economic classification?

Surveillance gaps and how to address them

Monitor national, regional and international funding received by countries

Budget allocation data are available but not always accessible. There are national-level budgets related to adaptation, but they may not be titled “adaptation”. Relationships would need to be strengthened with ministries of finance to be able to identify the funds allocated to adaptation measures. A major challenge is that ministries and programmes operate largely in silos, so it may be necessary to seek data from several agencies. Furthermore, identification of funding received for health adaptation in particular may be especially challenging. Capacity for analysis needs to be strengthened, especially since analysis is concentrated among a few people with many responsibilities. Funds are needed to ensure that research and analyses take place (Allen et al., 2021). It is important to monitor the funding expenditure to enable effective evaluation (R4ACCHC, 2023a).

Research and surveillance capacity-strengthening needs

To strengthen research and surveillance, resources must be dedicated to research and surveillance on climate change and health in Caribbean SIDS (Allen et al., 2021). This means dedicating funding to staff, equipment and

institution-building, as discussed in Chapter 11, “Research and surveillance systems”. These resources should come from within and outside the region.

Capacity must be built in implementation science and implementation research, impact evaluation, qualitative and mixed methods research, and advanced statistical methodologies. The following additional expertise is required:

- Proposal writing;
- Economics and finance;
- Management and business;
- Budget analyses.

Statisticians and communications specialists with writing skills are needed to make technical reports accessible to decision-makers.

17.3. REFERENCES

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