Climate and Health Research Innovation Workshop in the Caribbean

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INTRODUCTION

The Caribbean is one of the world's most climate-exposed regions—and among the least resourced to absorb related health impacts. From more intense hurricanes and heat waves to rising rates of vector-borne disease, climate change is already disrupting health systems and deepening inequities across the region (Gordon-Strachan et al., 2025; Allen et al., 2024; Hassan et al., 2025).

Yet, despite the scale of the challenge, climate and health remain under-integrated in Caribbean research, training, and investment strategies. Efforts have been underway to address this challenge but are hampered by inadequate resources; *Appendix A* provides a selected bibliography describing climate-health efforts in the Caribbean. To date, public health and environmental systems are often siloed, workforce development is fragmented, and opportunities for collaboration or pooled funding are limited.

Recognizing the need for more integrated approaches, a regional workshop, "Climate and Health Research Innovation Workshop in the Caribbean," was held in Barbados on May 6, 2025 to assess current gaps and explore opportunities to strengthen climate-health research and workforce development. Co-hosted by the National Academy of Medicine, The University of Pittsburgh School of Public Health, the Caribbean Public Health Agency (CARPHA), EarthMedic/EarthNurse, and regional academic partners, the event brought together researchers, policymakers, funders, and institutional leaders to chart a more coordinated regional agenda.

This Discussion Proceedings draws on insights from that convening and describes a framework grounded in three pillars developed as a result of the workshop: 1) strengthening the evidence base, 2) building a trained and connected climate-health workforce, and 3) enabling long-term collaboration and investment. The framework was informed by an earlier environmental scan identifying priorities for bolstering resilience in the context of climate change in Dominica and Puerto Rico. The resulting framework illustrates the assessment of four domains: 1) the public health infrastructure, 2) essential capabilities, 3) underlying health disparities, and 4) climate sensitive health outcomes (Covert et al., 2022).

With the right systems in place, the Caribbean can become a leader in developing climate-health solutions that are not only regionally grounded, but globally relevant.

WORKSHOP OVERVIEW

The purpose of the workshop was to bring together regional and global stakeholders to surface priorities for advancing climate-health research, training, and institutional collaboration in the Caribbean. The format was a hybrid event including high-level remarks, expert panels, and structured breakout discussions. See *Box 1* for a list of workshop speakers and moderators. Inclusion criteria for invitees and attendees included consideration by the organizers of public sector, private sector, civil society and academic and Caribbean regional institutions and units as well as funders and partners who work in the climate and health space. Approximately 40 attendees participated, representing institutions from across the Caribbean and internationally (see *Appendix B*). These included researchers, public health professionals, government representatives, funders (e.g., the Pan American Health Organization [PAHO], Burroughs Wellcome Fund [BWF], and Grand Challenges Canada [GCC]), and academic leaders (e.g., the University of the West Indies [UWI], and the University of Pittsburgh).

EMERGING THEMES FROM THE WORKSHOP

Workshop participants identified three clear strategic priorities: 1) strengthening the evidence base around the local health impacts of climate change; 2) building and cultivating an effective climate-health workforce in the Caribbean; and 3) galvanizing collaboration and investment in regional solutions.

Strengthening the Evidence Base

Collection and application of climate-health data constitute a major challenge for the Caribbean region. Participants noted that data are fragmented across separate national health ministries, sectors, and platforms. Most countries lack formal systems for integrating environmental exposures with health outcomes.

In addition, data collection reflects minimal linkage between climate data and key health indicators (e.g., vector-borne diseases, respiratory conditions, maternal and child health). There are few protocols or standards for cross-sectoral data sharing and governance and weak institutional capacity for applied research, analysis, and publication, especially among early-career professionals.

Despite these challenges, participants identified several emerging opportunities to advance the collection and application of climate-health data in the Caribbean. For example, the Early Warning Information Systems Across Climate Timescales consortium of organizations—which helps to coordinate disaster management, water, resources, agriculture and food security, public health, and renewable energy across the region—and similar efforts could serve as platforms for data integration (WMO, 2024). In addition, the CaribData initiative is working to improve regional data harmonization (CaribData, n.d.). Participants noted that broader adoption of FAIR data principles (Findability, Accessibility, Interoperability, and Reuse) could support ethical, accessible data use (GO FAIR, n.d.).

To accelerate the development of a robust evidence base, workshop participants laid out a number of high-priority actions, including completing a regional mapping of available data sets and research initiatives. Another important step is establishing regional data governance protocols for ethical use and sharing of multisectoral data. Finally, participants called for investment in training for data science, scientific writing, implementation research, and policy translation.

Building a Trained and Connected Climate-Health Workforce

Another key gap identified in the Caribbean region's climate-health capacity is the lack in most countries of structured pathways to train and retain professionals working at the intersection of climate and health.

For example, participants noted the lack of a shared set of competencies or curriculum across

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BOX 1 | Workshop Speakers and Moderators

Juan Acuna, MD, MSc, Associate Dean for research, American University of Antigua

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Chris Hanley, MBA, Director, Grand Challenge on Climate and Human Health, National Academy of Medicine

Saria Hassan, MD, MPH, Assistant Professor, Emory School of Medicine and Rollins School of Public Health, Co-chair, Research for Action on Climate and Health in the Caribbean Project

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James Hospedales, MB BS, MSc, FFPH, Founder, EarthMedic and Nurse Foundation for Planetary Health Co-chair, Research for Action on Climate and Health in the Caribbean Project

Lisa Indar, PhD, MSc, BSc, Executive Director, Caribbean Public Health Agency

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Shalini Pooransingh, MD, MPH, Coordinator, UWI, St. Augustine Campus

Caitlin Rublee, MD, MPH, Assistant Professor of Emergency Medicine, University of Colorado School of Medicine and Colorado School of Public Health

Johanna Sanchez, PhD, Senior Program Manager, Climate Change, Grand Challenges Canada

Lindonne Telesford, MSPH, Associate Professor and Assistant Dean in the Department of Public Health and Preventive Medicine at St. George's University in Grenada

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SOURCE: Created by authors.
NOTE: Affiliations listed reflect individual institutional positions at the time of the workshop.

institutions. Regional training programs are fragmented, short-term, and not integrated into professional advancement. There is limited access to mentorship, career ladders, or networks to retain skilled professionals within the region.

Workshop participants highlighted examples of existing efforts that have not yet been institutionalized or scaled, including the Climate Change and Health Leaders Fellowship Program at UWI, which provides training for early to mid-career professionals in public health, health care, agricultural health, or environmental health across 10 Caribbean countries (UWI, 2024). The region has some 30 countries and over 40 institutions responsible for training health professionals. Climate change and health is a relatively new area. It takes time to achieve coordinated, sustainably funded programs. Other examples highlighted by participants is the Caribbean Climate Change and Health Responders Courses provided by the Columbia Mailman School of Public Health in the United States, in collaboration with EarthMedic (Sorensen and Hospedales, 2024; Sorensen et al., 2025). Technical guidance and plans developed by PAHO also provided important support (PAHO, 2019).

To improve workforce development and training capacity in the Caribbean, participants called for the co-development of a regional roadmap for education and workforce building across disciplines. Another solution highlighted was to embed climate-health competencies in existing medical, public health, and environmental training programs across the region. Finally, workshop participants stressed the importance of peer learning, mentorship, and continuing education opportunities tied to institutional recognition and promotion.

Enabling Collaboration and Investment

Barriers to collaboration and investment are a third major challenge to climate-health capacity building in the Caribbean. Workshop participants pointed out that regional efforts remain largely project-based, with few mechanisms for sustained collaboration, pooled resources, or visibility in global funding spaces.

Participants noted that there is no regional platform or governance body to coordinate research and training agendas. Further, there is limited infrastructure to support grant writing, funder engagement, or monitoring of shared outcomes. Opportunities are often missed due to lack of strategic alignment across national ministries or institutions.

In discussing possible solutions, participants explored the merits of a Caribbean climate-health research and training consortium with rotating leadership and shared governance. In addition, participants proposed the creation of a regional resource hub to support proposal development, fundraising, and communications with donors. Joint concept notes and funding strategies that reflect shared regional priorities and readiness for implementation could significantly advance fundraising potential as well as coordination and collaboration.

Workshop participants identified specific potential partners to engage in efforts to increase the region's capacity for funding and collaboration, including regional actors (e.g., CARPHA, UWI, and national ministries of health and environment); funders such as BWF, GCC, Horizon Europe, and development banks; and diaspora-based institutions and philanthropic partners with Caribbean ties.

CONCLUSION: A FRAMEWORK FOR REGIONAL RESEARCH AND INNOVATION TO ADDRESS KEY GAPS

Fragmented, ad hoc initiatives cannot meet the scale or urgency of climate-health challenges in the Caribbean. As such, workshop participants called for the urgent development of a shared framework to help align goals, reduce duplication, and attract long-term investment.

Necessary components of the framework include shared protocols for climate-health data collection, access, and ethical governance and a regional training consortium or fellowship

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model housed in existing academic institutions. Participants also discussed the benefits of joint governance and proposal mechanisms, potentially supported by a rotating secretariat or regional hub. Institutional incentives will be necessary to support retention of trained professionals and foster cross-country collaboration.

Workshop participants stressed that the framework should reflect a reinforcing model—where investments in data systems enable stronger training, which in turn strengthens institutions, attracts funding, and accelerates action.

With targeted support and collaborative structure, the Caribbean can lead by example—demonstrating how climate-resilient health systems can be built through regional solidarity, innovation, and data-driven investment.

PRIORITY ACTIONS

The Caribbean region is ready to act, but lacks mechanisms to sustain momentum, coordinate across countries, and secure long-term investment. To energize and sustain efforts, the above-named authors identified the following priorities for action and investment:

1. **Invest in a Caribbean-wide implementation framework for regional research and innovation.** Priorities for implementation include:
   a. Core funding to create and sustain a regional transdisciplinary data hub, allowing for shared systematic collection, analysis support, access, distribution, and publication support.
   b. Establishment of a regional research coordination center as an incubator hub for the development of team-based grant proposals.
   c. Support for a climate and health emerging scholars research network.
2. **Build a transdisciplinary climate and health workforce.** Priorities for implementation include:
   a. In collaboration with regional academic institutions, develop a joint competency-based curriculum integrating climate and health competencies in existing curricula for students enrolled in health sciences institutions.
   b. In collaboration with regional accreditation organizations, develop a climate and health education portfolio for regional primary care providers and other health professionals practicing on the frontlines, approved as continuing education credits.
3. **Conduct an asset mapping assessment of existing research, education, and training and related funding and support resources as a foundation for the proposed regional implementation framework in climate and health.**
4. **In collaboration with regional governing and policy leaders, embed the recommendations of this implementation framework into climate and health investment priorities.**

Workshop participants from key academic institutions and civil society organizations, relevant Caribbean community (CARICOM) regional organizations, particularly PAHO, will be responsible for advocating and implementing workshop recommendations. This has already begun in the PAHO Caribbean climate and health planning workshop held in June 2025, and in joint applications for research funding in climate and health. The Research for Action on Climate and Health in the Caribbean consortium (including, EarthMedic, Emory, PAHO, UWI, and Yale) also play a key role in ensuring the use of the workshop recommendations.

APPENDIX A

Selected Bibliography, Caribbean Climate-Health Resources

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APPENDIX B

Workshop Participants

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DISCLAIMER

This Discussion Proceedings was prepared by **Maureen Lichtveld, Loren de Freitas, Firoz Abdoel Wahid, James Hospedales, Celynne Balatbat,** and **Chris Hanley** as a factual summary of what occurred at the meeting and areas of future focus and key themes. The statements made are those of the rapporteurs or individual meeting participants and do not necessarily represent the views of all meeting participants; the planning committee; members of the associated program; the National Academy of Medicine; or the National Academies of Sciences, Engineering, and Medicine.

REVIEWERS

To ensure that it meets institutional standards for quality and objectivity, this Discussion Proceedings was reviewed by **Lindonne Telesford,** St. George's University and **David Dyjack,** National Environmental Health Association.

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