

# Executive Summary

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## Climate Variability and Change and their Health Effects in the Caribbean: Information for Adaptation Planning in the Health Sector

*“I hope also that your work will result in greater understanding, perhaps renewed and greater commitment from our international partners to assist small island States in confronting climate change and its effects. Perhaps when the human health costs of climate change are appreciated and added to the material costs and environmental damages faced by small island States a new spirit of partnership and cooperation will emerge.”*

*His Excellency Tuiloma Neroni Slade, Keynote Speech  
Barbados, May 21, 2002*

*“Ministries of Health should play a central role in this response -- but should also remember that finding enduring solutions will depend on inter-sectoral communication and convergence.”*

*Professor Tony McMichael, Keynote Speech  
Barbados, May 21, 2002*

Small island states are particularly vulnerable to the effects of climate variability and change. As exemplified in the quotations above from keynote speeches, the Barbados Conference and Workshop on Climate Variability and Change and their Health Effects in the Caribbean addressed the seriousness of health-related consequences and the inter-sectoral nature of possible responses.

The Pan American Health Organization (PAHO)/World Health Organization (WHO) organized this event under the auspices of the Government of Barbados and the Interagency Network on Climate and Human Health formed by WHO, the World Meteorological Organization and the United Nations Environment Programme. The overall objectives of the conference and workshop were to:

1. inform health scientists, practitioners, and officials of the impacts of climate variability and long-term climate change in the Caribbean region;
2. integrate health-relevant sectors (e.g., water resources, agriculture and fisheries);
3. introduce strategies in coastal zone management as they relate to sewage disposal and other health issues;
4. foster joint interdisciplinary research projects among local participants, as well as developed/developing nation scientist partnerships; and
5. promote the incorporation of global, regional and national climate information into planning for public health services at the national level.



The conference was open to the public with approximately 145 participants. The geographic focus of the conference portion was broader than island countries and included mainland countries in the Caribbean basin as well. Most participants came from the Caribbean region. The countries and territories represented were Anguilla, Antigua and Barbuda, Australia, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Canada, Colombia, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Kenya, Mexico, Netherlands Antilles, New Zealand, Panama, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Suriname, Trinidad and Tobago, United Kingdom of Great Britain and Northern Ireland, and United States of America.

The presentations for the conference began with an opening ceremony that included two directors of Caribbean regional health offices, two Barbados ministers, and the Secretariat of the Interagency Network on Climate and Human Health. The first keynote address highlighted the vulnerability of Small Island Developing States to climate change, with particular concerns for sea level rise and the reemergence of vector-borne diseases. The second keynote address focused on the detection of health impacts from climate change, stressing the need to introduce adaptive intersectoral policies despite uncertainties about forecasts of climate change and associated impacts.

There were 23 technical presentations, five panel discussions and a poster session. They collectively

1. provided an overview of the basic concepts of climate variability and change;
2. reviewed health status in the Caribbean region with particular reference to climate variability and change;
3. presented frameworks for evaluating the vulnerability of the health system to climate variability and change;
4. presented frameworks for assessing and responding to climate-related health risks;
5. examined linkages between climate and human health; and
6. examined public health policies and strategies for adaptation to climate variability and change.

Major health issues highlighted were vector-borne diseases (dengue, malaria), waterborne diseases, heat stress, asthma, disaster response to climate and weather phenomena, and toxins in fish. The emphasis was on work conducted in or relevant to the Caribbean basin. Some presentations discussed ecological effects that are unique to the Caribbean, focusing on an episode of massive contamination of the sea linked to river outflows from South America as well as the annual atmospheric transport of African dust across the Atlantic to the Caribbean. The policies and strategies for adaptation to climate variability and change covered a broad range of topics, from the control of specific diseases to general communication strategies for climate and health.

The workshop was organized into five workgroups with 39 participants from the region, including the public health, climate/weather and environment sectors. The workshop focused on Caribbean islands and the Caribbean Community countries. The countries and territories represented were Anguilla, Antigua and Barbuda, Bahamas, Barbados, Belize, British Virgin Islands, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Netherlands Antilles, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago. The



specific objectives of the workshop were designed to provide more detail within the overall objectives of the conference and workshop stated above. The specific objectives of the workshop were to:

1. generate awareness of the impact of climate variability and change on health in the Caribbean region (including other regions with closely-related issues, such as the Pacific Islands);
2. understand how climate data are and could/should be used in health planning;
3. identify the elements of a framework for proactive health/climate actions to assess vulnerabilities and implement mitigation and adaptation strategies in relation to adverse health impacts of climate variability and change;
4. discuss and define the roles of health and climate professionals in the implementation of the framework for proactive health/climate actions;
5. identify key partners and assess institutional/organizational arrangements that must be strengthened and what new entities must be put in place at the national and regional levels to assess vulnerabilities and implement mitigation and adaptation strategies in relation to adverse health impacts of climate variability and change; and
6. identify follow-on capacity-building activities to address climate variability and change and health nationally and regionally.

The workgroups along with facilitators and resource people discussed issues of awareness, use of data, roles of health and climate professionals, and institutional linkages needed. They reached consensus on 22 recommendations for future work on climate and health in the region. The consensus recommendations generally fall into the categories of enhancing awareness, using data and strengthening institutions.

## **Recommendations by Workshop Consensus**

### ***Awareness of Impact***

1. Build awareness throughout the region.
2. Expand the knowledge base of relationships between climate variability and change and health, through nationally- and regionally-based research and engagement of existing interpretive expertise.
3. Identify entry points to build this awareness and develop adaptation and prevention strategies.
4. Promote cross-sectoral communication and consultation in developing these strategies (entry points can be both event- and stakeholder-based).
5. Establish early warning systems that incorporate monitoring of seasonal, interannual and long-term climate events.

### ***Public Health Programs and Planning: Using Data***

6. Conduct inventories of existing data, identify current data gaps, and develop strategies to fill these gaps.
7. Establish better data management systems, programs and practices, including the establishment of data quality standards and the distribution of examples of best practices regionally.
8. Identify, engage and enhance appropriate national and regional institutions for data handling, analysis, and tertiary, multi-sectoral product development; and facilitate and enable networking.
9. Encourage fuller use of available data through regional and national capacity building (human resources, information technology, etc.).
10. Develop and maintain firmer inter-sectoral linkages.

***Public Health Programs and Planning: Using Data  
Special Situations: El Niño - Southern Oscillation  
(ENSO); Sea Level Rise***

11. Establish verifiable links between ENSO, extreme weather events, and climate variability and health consequences in the Caribbean.
12. Identify and map locations, hazards and communities especially at risk and vulnerable to sea level rise and associated health risks, taking a holistic, cross-sectoral view.
13. Develop long-term adaptive strategies for sea level rise, based on an understanding of current coping strategies and of national development priorities.

***Institutional and Organizational Arrangements***

14. Evaluate current indicators and generate regional standards.
15. Work effectively with policymakers to enhance awareness of climate variability and change, and to catalyze discussion at national and regional levels.
16. Develop institutional arrangements for data integration and dissemination.
17. Improve exchange of knowledge by developing effective mechanisms for information sharing.
18. Improve national and regional facilities and funding for interdisciplinary research.
19. Improve education and training through further workshops, follow-on networking (beginning with the participants of this workshop), and structured training at local, national and regional levels.
20. Find and use entry points for climate/health issues.
21. Engage existing regional and national institutional mechanisms and processes for climate change adaptation, including national climate committees and the Caribbean Community Climate Change Centre.

22. Obtain institutional support from international organizations (especially PAHO) in activities related to capacity building, research and regional/national assessments.

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