

Climate Change and Health The Caribbean Perspective

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Gulf of Mexico

Atlantic Ocean

Caribbean Sea

Pacific Ocean




Demographics of the Caribbean


CARICOM Countries

- ▶ Islands – 15 with 5 associate members, 8 observers
- ▶ Population (approx.) – 16,743,693
- ▶ Climate – dry and wet (two seasons)
- ▶ Climate associated diseases – dengue, leptospirosis, malaria yellow fever, cholera, water and food born diseases, respiratory track infection, asthma, TB, heart failure, sun stroke/burn, heat stress, dehydration.

Climate Change and the Caribbean – the Present


- ▶ Increase in max. and min. temp in the past 50 years, and decrease in diurnal temp. range (Patterson et. al.)
 - ▶ Since 1950 increase in hot days
 - ▶ Very cool nights have decreased
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Caribbean Situation – the Future


- ▶ Mean increase of 2°C – 3°C
 - ▶ Reduction in annual rainfall
 - ▶ Sea Level Rise (SLR) (0.21 – 0.48 m)
 - ▶ More intense hurricanes likely
 - ▶ Likely increase in risk of damage and destruction from higher winds and storm surges
 - ▶ Major infrastructure located along the coastal areas.
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- ▶ *“...irrespective of season, surface temperature is projected to increase by 2.0 °C – 3.0 °C across the entire Caribbean...Projections for Jamaica (north), Trinidad (south), and Barbados (east) indicate a warming of up to 2.5 °C, 2.0 °C and 3.0 °C respectively across all months*


Climate Change and Health in the Caribbean

1. Direct threats to health from injury and loss of life
 2. Indirect threats to hunger and malnutrition due to food security
 3. Increase of water and rodent borne diseases
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Threats to Health due to Temp. and increases and Rainfall

- ▶ Increase transmission of dengue fever
 - ▶ Increase episodes of diarrheal disease and sea food poisoning
 - ▶ Increase of dangerous pollutants and ozone
 - ▶ Increase altitudinal range of mosquitoes
 - ▶ Increase respiratory ailments and heat stress
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Study: Threat of Dengue Fever

- ▶ Adaptation of DF to temp. increases
 - ▶ Extrinsic Incubation Period shorten
 - ▶ Transmission increases
 - ▶ Higher temp. increase feeding
 - ▶ Increase probability of Dengue transmission to the new host
 - ▶ Moderate high temp. hasten larval stages and results in more blood meals
 - ▶ Increase temp. enhance metabolism
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Projected Health Impacts of Climate Change for the Caribbean

Health Issues

Dengue fever

Yellow fever

Leptospirosis

Malaria

Resp. tract infection

Bronchitis

Diarrheal diseases

Cholera

Heat stress

Nat. disaster impacts

Severity of Threat

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Prospective Study

- ▶ Breteau Index (BI) – # containers positive for larvae or pupae of *Aedes aegypti* mosquito
 - ▶ BI for T&T 1981 2001 and corresponding dengue cases
 - ▶ BI starts to increase before reports of dengue cases
 - ▶ BI shows potential as a good indicator of dengue
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CARICOM Climate Change Declaration and Framework

In 2009 two steps were taken to address CC in the Caribbean

1. Lilendaal declaration on CC and development – defines national and international position
2. Regional framework for achieving dev. resilience to CC – framework articulates the strategic direction for the region's response to CC risks and provides a road map for action over the 2009 – 2015 period.

Heads of governments mandate the 5Cs to prepare an Implementation Plan to deliver action

Implementation Plan (IP)

- ▶ The 5Cs has developed an IP for 2011 – 2021 to support climate resilient development in the Caribbean
- ▶ The Lilendaal declaration provides the political vision of transformational change required in the CARICOM to respond to cc and its impact on development
- ▶ The CARICOM regional framework establishes a strategic approach to address cc mitigation and adaptation. The framework consists of strategic elements and goals to provide a road map for action

Implementation Plan (IP)

- ▶ The IP lays the groundwork for mainstreaming cc into national development and planning process in CARICOM member states
- ▶ Plan was prepared following extensive and broad based consultation with over 140 stakeholders including politicians, government officials, regional agencies, NGOs private and public sector and donor agencies