

GUYANA



HEALTH & CLIMATE CHANGE **COUNTRY PROFILE 2020**

Small Island Developing States Initiative



United Nations
Framework Convention on
Climate Change



PAHO

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“Strengthening health systems resilience is a high priority; act now.”



EXECUTIVE SUMMARY

Despite producing very little greenhouse gas emissions that cause climate change, people living in small island developing States (SIDS) are on the front line of climate change impacts. These countries face a range of acute to long-term risks, including extreme weather events such as floods, droughts and cyclones, increased average temperatures and rising sea levels. Many of these countries already have a high burden of climate-sensitive diseases that may be exacerbated by climate change. Some of the nations at greatest risk are under-resourced and unprotected in the face of escalating climate and pollution threats. In recent years, the voice of the small island nation leaders has become a force in raising the alarm for urgent global action to safeguard populations everywhere, particularly those whose very existence is under threat.

Recognizing the unique and immediate threats faced by small islands, WHO has responded by introducing the WHO Special Initiative on Climate Change and Health in Small Island Developing States (SIDS). The initiative was launched in November 2017 in collaboration with the United Nations Framework Convention on Climate Change (UNFCCC) and the Fijian Presidency of the 23rd Conference of the Parties (COP23) to the UNFCCC, held in Bonn, Germany, with the vision that by 2030 all health systems in SIDS will be resilient to climate variability and climate change. It is clear, however, that, in order to protect the most vulnerable from climate risks and to gain the health co-benefits of mitigation

policies, building resilience must happen in parallel with the reduction of carbon emissions by countries around the world.

The WHO Special Initiative on Climate Change and Health in SIDS aims to provide national health authorities in SIDS with the political, technical and financial support required to better understand and address the effects of climate change on health.

A global action plan has been developed by WHO that outlines four pillars of action for achieving the vision of the initiative: empowerment of health leaders to engage nationally and internationally; evidence to build the investment case; implementation to strengthen climate resilience; and resources to facilitate access to climate finance. In October 2018, ministers of health gathered in Grenada to develop a Caribbean Action Plan to outline the implementation of the SIDS initiative locally and to identify national and regional indicators of progress.

As part of the regional action plan, small island nations have committed to developing a WHO UNFCCC health and climate change country profile to present evidence and monitor progress on health and climate change.

This WHO UNFCCC health and climate change country profile for Guyana provides a summary of available evidence on climate hazards, health vulnerabilities, health impacts and progress to date in health sector efforts to realize a climate-resilient health system.

KEY RECOMMENDATIONS

1 INSTITUTIONALIZE CLIMATE CHANGE IN THE MINISTRY OF HEALTH AND MEDICAL SERVICES ORGANIZATIONAL STRUCTURE

Create a division within the Ministry of Health and Medical Services with existing supportive legislation to include climate change and health as a core function, to oversee the implementation of the Solomon Islands National Climate Change and Health Adaptation Plan 2011 and to strengthen the weak collaboration within the health sector and with other sectors. Relevant climate change and health activities to be streamlined into respective department's annual operational plan where relevant.

2 COMPLETE AND IMPLEMENT A HEALTH AND CLIMATE CHANGE STRATEGY/PLAN FOR GUYANA

Complete the development and implementation of a national health and climate change plan in alignment with the Guyana National Climate Change Policy and Action Plan (2019) and National Adaptation Plan (2019), ensuring that adaptation priorities are specified, health co-benefits from mitigation and adaptation measures are considered, necessary budget requirements are allocated and regular monitoring and review of progress will support its full implementation.

3 STRENGTHEN INTEGRATED RISK SURVEILLANCE AND EARLY WARNING SYSTEMS

Develop systems that facilitate collection of data on climate-sensitive diseases and utilize meteorological information to inform early warning systems. Guyana is expected to be affected by a range of health threats due to climate change, including thermal stress, vector-borne, waterborne and foodborne diseases, and mental health and well-being issues, which should also be captured by risk surveillance and early warning systems.

4 ADDRESS BARRIERS TO ACCESSING INTERNATIONAL CLIMATE CHANGE FINANCE TO SUPPORT HEALTH ADAPTATION

Identify and address the main barriers (lack of connection by health actors with climate change processes and a lack of capacity to prepare country proposals) in an effort to access international climate change finance to support adaptation in the health sector.

5 BUILD CLIMATE-RESILIENT HEALTH CARE FACILITIES

Implement measures to prevent the potentially devastating impacts of climate change on health service provision, including the following: conducting hazard assessments, climate-informed planning and costing, strengthening structural safety, contingency planning for essential systems (electricity, heating, cooling, ventilation, water supply, sanitation services, waste management and communications). Additionally, promote and support low-emission, sustainable practices to improve system stability, promote a healing environment and to mitigate climate change impacts in keeping with the strategic objective of the Guyana Green State Development Strategy.

WHO RESOURCES TO SUPPORT ACTION ON THESE KEY RECOMMENDATIONS:

<https://www.who.int/activities/building-capacity-on-climate-change-human-health/toolkit/>

BACKGROUND

Guyana, the only English-speaking country in the north eastern corner of the South American continent, has four distinct geographical areas, including the low coastal belt that is 1 metre to 1.5 metre below mean high tide level (1).

Temperatures in Guyana vary geographically with high altitude regions experiencing cooler temperatures than the coastal, lowland, and savannah zones. Mean air temperatures in the upland regions and the interior (west) side of the country are between 20°C to 23°C and from 25°C to 27.5°C across the rest of the country (1).

Guyana’s precipitation pattern is influenced primarily by the seasonal shift of the Inter-Tropical Convergence Zone (ITCZ), however, on an inter-annual and decadal basis, the country experiences the El-Niño Southern Oscillation (ENSO) effects. Coastal areas are dominated by a ‘tropical wet’ marine climate where mean annual precipitation is greater than 2000 mm/year, while the savannah experiences mostly a drier ‘tropical wet-dry’ climate with mean precipitation of 1400–1800 mm/year (2).

Guyana is vulnerable to climate change and already experiences severe floods and droughts. Other impacts include sea level rise, changing precipitation patterns, increased temperatures, and extreme weather events that pose risks to human health, through the spread of vector-borne diseases, foodborne and waterborne diseases, food and economic insecurity, and saltwater intrusion of aquifers.

The Guyana Government has demonstrated unequivocal commitment to global efforts in climate change mitigation and adaptation. Notable initiatives include the Low Carbon Development Strategy in 2009 (3), the Green State Development Strategy (2017), the Guyana Climate Change Policy and Action Plan (Draft) 2019 (4), and the National Adaptation Plan (Draft, 2019) – all of which will provide the point of reference for Guyana to build resilience to climate change, adapt to the health effects of climate change, and maximize the health co-benefits available through climate mitigation and adaptation.

HIGHEST PRIORITY CLIMATE-SENSITIVE HEALTH RISKS FOR GUYANA

Direct effects	
Health impacts of extreme weather events	✓
Heat-related illness	
Indirect effects	
Water security and safety (including waterborne diseases)	✓
Food security and safety (including malnutrition and foodborne diseases)	
Vector-borne diseases	✓
Air pollution	
Allergies	
Diffuse effects	
Mental/psychosocial health	✓
Noncommunicable diseases	
Mitigation actions to reduce emissions through sustainable procurement	
Mitigation measures to reduce emissions of health facilities	✓
Mitigation measures by coordinating with other sectors	✓

Source: Adapted and updated from the PAHO Health and Climate Country Survey 2017 (5).

CLIMATE HAZARDS RELEVANT FOR HEALTH

Climate hazard projections for Guyana

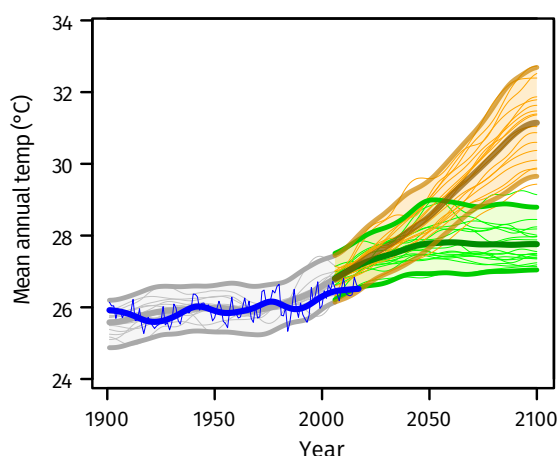
Country-specific projections are outlined up to the year 2100 for climate hazards under a 'business as usual' high emissions scenario compared to projections under a 'two-degree' scenario with rapidly decreasing global emissions (see Figures 1–5).

The climate model projections given below present climate hazards under a high emissions scenario, Representative Concentration Pathway 8.5 (RCP8.5 – in orange) and a low emissions scenario (RCP2.6 – in green).^a The text describes the projected changes averaged across about 20 global climate models (thick line). The figures^b also show each model individually as well as the 90% model range (shaded) as a measure of uncertainty and the annual and smoothed observed record (in blue).^c In the following text the present-day baseline refers to the 30-year average for 1981–2010 and the end-of-century refers to the 30-year average for 2071–2100.

Modelling uncertainties associated with the relatively coarse spatial scale of the models compared with that of small island States are not explicitly represented. There are also issues associated with the availability and representativeness of observed data for such locations.

Rising temperature

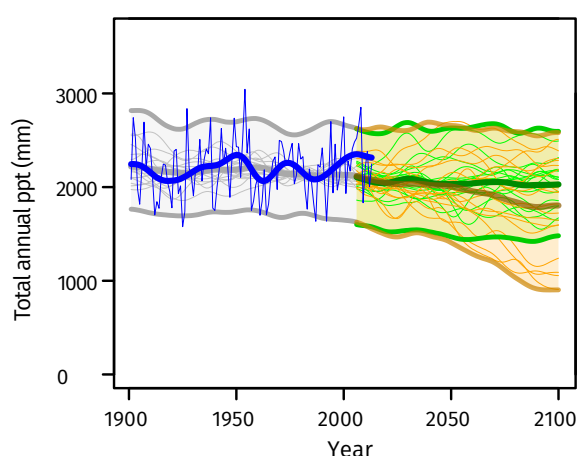
FIGURE 1: Mean annual temperature, 1900–2100



Under a high emissions scenario, the mean annual temperature is projected to rise by about 4.1°C on average by the end-of-century (i.e. 2071–2100 compared with 1981–2010). If emissions decrease rapidly, the temperature rise is limited to about 1.3°C.

Decreasing total precipitation

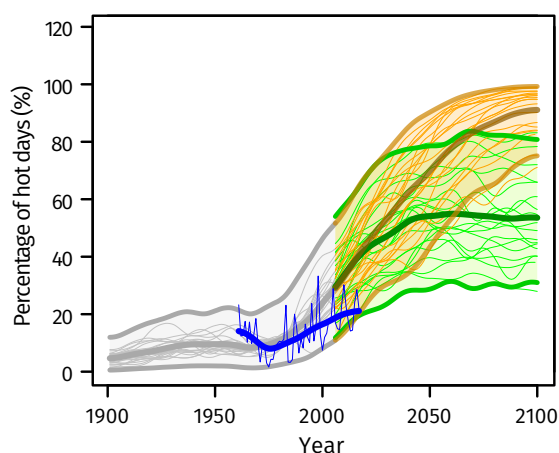
FIGURE 2: Total annual precipitation, 1900–2100



Total annual precipitation is projected to decrease by about 15% on average under a high emissions scenario, although the uncertainty range is large (-48% to +9%). If emissions decrease rapidly there is little projected change on average: with a decrease of 4% and an uncertainty range of -18% to +5%.

More high temperature extremes

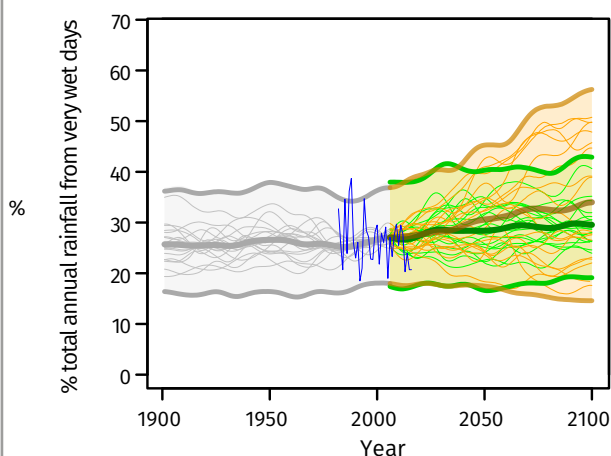
FIGURE 3: Percentage of hot days ('heat stress'), 1900–2100



The percentage of hot days^d is projected to increase substantially from about 15% of all observed days on average in 1981–2010 (10% in 1961–1990). Under a high emissions scenario, almost 90% of days on average are defined as 'hot' by the end-of-century. If emissions decrease rapidly, about 55% of days on average are 'hot'. Note that the models overestimate the observed increase in hot days (about 20% on average in 1981–2010 rather than 15%). Similar increases are seen in hot nights^d (not shown).

Small increase in extreme rainfall

FIGURE 4: Contribution of very wet days ('extreme rainfall' and 'flood risk') to total annual rainfall, 1900–2100

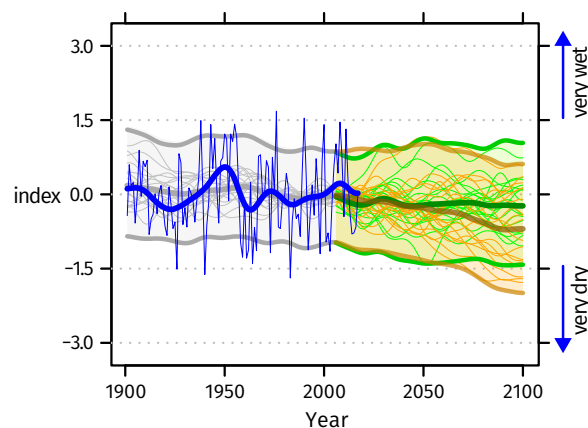


Under a high emissions scenario, the proportion of total annual rainfall from very wet days^e (about 26% for 1981–2010) could increase by the end-of-century (to around 33% on average with an uncertainty range of about 15% to 55%), with less change if emissions decrease rapidly. Total annual rainfall is projected to decrease (see Figure 2).

FIGURE 5: Standardized Precipitation Index ('drought'), 1900–2100

The Standardized Precipitation Index (SPI) is a widely used drought index which expresses rainfall deficits/excesses over timescales ranging from 1 to 36 months (here 12 months, i.e. SPI12).^f It shows how at the same time extremely dry and extremely wet conditions, relative to the average local conditions, change in frequency and/or intensity.

Under a high emissions scenario, SPI12 values are projected to decrease to about -0.6 on average by the end of the century (2071–2100), with a number of models indicating substantially larger decreases and hence more frequent and/or intense drought. Year-to-year variability remains large with wet episodes continuing to occur into the future.



NOTES

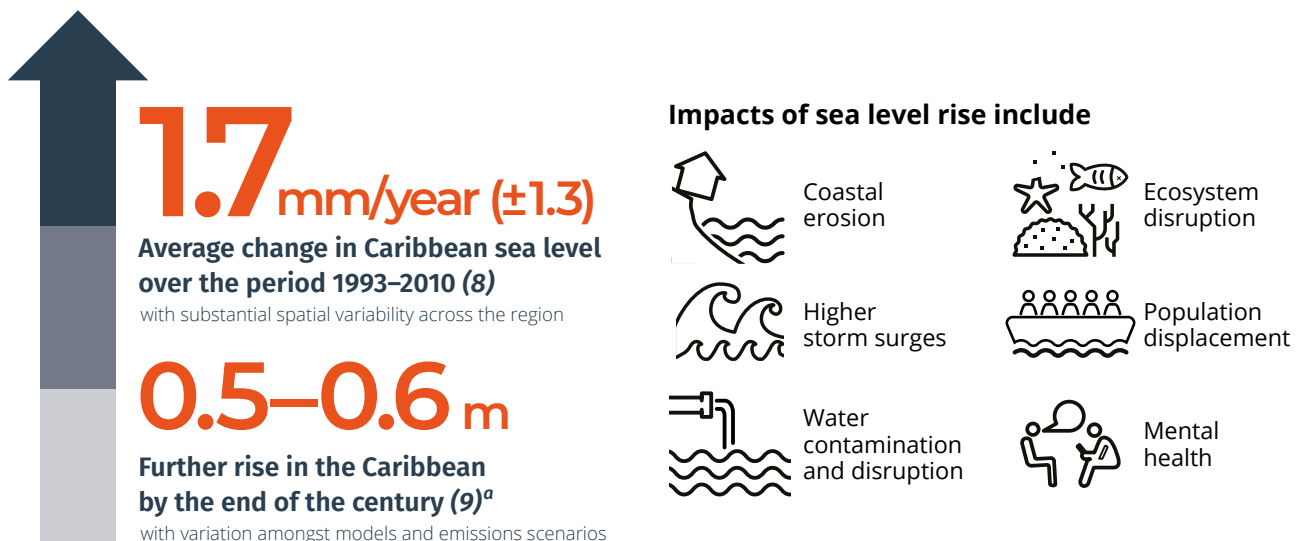
- ^a Model projections are from CMIP5 for RCP8.5 (high emissions) and RCP2.6 (low emissions). Model anomalies are added to the historical mean and smoothed.
- ^b Analysis by the Climatic Research Unit, University of East Anglia, 2018.
- ^c Observed historical record of mean temperature is from CRU-TSv3.26 and total precipitation is from GPCC. Observed CRU historical records of extremes are from JRA55 for temperature and from GPCC-FDD for precipitation.
- ^d A 'hot day' ('hot night') is a day when maximum (minimum) temperature exceeds the 90th percentile threshold for that time of the year.
- ^e The proportion (%) of annual rainfall totals that falls during very wet days, defined as days that are at least as wet as the historically 5% wettest of all days.
- ^f SPI is unitless but can be used to categorize different severities of drought (wet): +0.5 to -0.5 near normal conditions; -0.5 to -1.0 slight drought; -1.0 to -1.5 moderate drought; -1.5 to -2.0 severe drought; below -2.0 extreme drought.

Sea level rise

From 1951 to 1979, sea level off Guyana rose at a rate some five times the global average (0.4 inch, or 10.2 millimetres per year), around six times the twentieth century average or three times the 1993 to 2009 annual average (6).

Guyana is particularly vulnerable to sea level rise stemming from climate change, plus regional shifts in the height of the sea. The Guyana initial National Communication to the UNFCCC (2002) states that the mean sea level along the Atlantic coast of Guyana is projected to rise by about 40 cm by the end of the twenty-first century, that is, at a rate 2–4 mm per year. Moreover, the contribution of meltwater from land ice would increase the rate of sea level to approximately 60 cm by the end of the next century (6).

According to the Vulnerability and Adaptation Assessment Report (draft, Office of Climate Change, 2019): calibration and assembly of global estimation of sea level rise carried out by a continuous series of satellite altimeter sea level measurements from the T/P, Jason-1, and Jason-2 reveal that sea level has been rising over the past 17 years at a mean rate of 3.4 ± 0.4 mm per year after correction for glacial isostatic adjustment (GIA) (7). The report further states that there is considerable interannual variation due to ENSO processes, so the rate average over any individual four-year period can be significantly different.



^a Estimates of mean net regional sea level change were evaluated from 21 CMIP5 models and include regional non-scenario components (adapted from WGI AR5 Figure 13-20). The range given is for RCP4.5 annual projected change for 2081–2100 compared to 1986–2005.

HEALTH IMPACTS OF CLIMATE CHANGE

Heat stress

Climate change is expected to increase the mean annual temperature and the intensity and frequency of heat waves, resulting in a greater number of people at risk of heat-related medical conditions. Heat waves, i.e. prolonged periods of excessive heat, can pose a particular threat to human, animal and even plant health, resulting in loss of life, livelihoods, socioeconomic output, reduced labour productivity, rising demand for and cost of cooling options, as well as contribute to the deterioration of environmental determinants of health (e.g. air quality, soil, water supply).

Heat stress impacts include:

- heat rash/heat cramps
- dehydration
- heat exhaustion/heat stroke
- death.

Particularly vulnerable groups are:

- elderly people
- children
- individuals with pre-existing conditions (e.g. diabetes)
- the socially isolated.

The UNICEF Climate Landscape Analysis for Children 2018 Report (page 51) (10) indicates that even when children (in Guyana) are allowed to attend school the heat is so intense that they become very restless and lack concentration. In fact, stakeholders note that the boys would often take off their shirts in an effort to feel cool. Additionally, heat waves will be of significant risk for children, particularly those living in urban settings where heat island effects may become more frequent due to increasing temperatures.

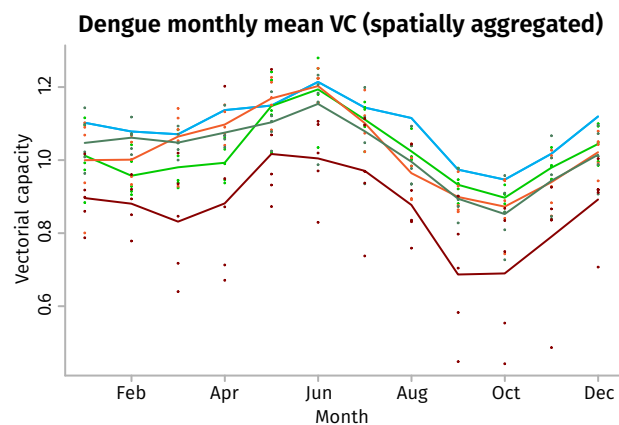
Infectious and vector-borne diseases

Some of the world's most virulent infections are also highly sensitive to climate: temperature, precipitation and humidity have a strong influence on the life-cycles of the vectors and the infectious agents they carry, and influence the transmission of water- and foodborne diseases (11,12).

Small island developing States (SIDS) are vulnerable to disease outbreaks. Climate change could affect the seasonality of such outbreaks, as well as the transmission of vector-borne diseases. Figure 6 presents modelled estimates for Guyana of the potential risk of dengue fever transmission under high and low emission scenarios.^a The seasonality and prevalence of dengue transmission may change with future climate change, but Guyana is consistently highly suitable for dengue transmission under all scenarios and thus vulnerable to outbreaks (13–16).^{b,c}

FIGURE 6: Monthly mean vectorial capacity (VC) in Guyana for dengue fever. Modelled estimates for 2015 (baseline) are presented together with 2035 and 2085 estimates under low emissions (RCP2.6) and high emissions (RCP8.5) scenarios

- 2015, baseline
- 2035, low emissions scenario RCP2.6
- 2035, high emissions scenario RCP8.5
- 2085, low emissions scenario RCP2.6
- 2085, high emissions scenario RCP8.5



^a A suite of mathematical models was systematically developed, then applied and interpreted by a team of researchers at Umeå University (Sweden) to assess the potential for mosquito-borne disease outbreaks (e.g. dengue, chikungunya, Zika and malaria) in terms of climate-dependent VC. The baseline year is 2015, Climatic Research Unit CRU-TSv4.01. Future projections are represented for two emissions futures (Representative Concentration Pathways: RCP2.6, RCP8.5), five climate change projections (Global Climate Models: gfdlesm2m, hadgem2-es, ipsl-cm5a-lr, miroc-esm-chem, noresm1-m). (2018) Umeå University, Sweden.

^b Given the climate dependence of transmission cycles of many vector-borne diseases, seasonality of epidemic risk is common; however, many SIDS, due to tropical latitudes, tend to have less seasonality than more temperate areas.

^c The actual occurrences/severity of epidemics would be quite different for each disease in each setting and could depend greatly on vector- and host-related transmission dynamics, prevention, surveillance and response capacities that are not captured in this model.

Noncommunicable diseases, food and nutrition security

Climate change is likely to exacerbate the triple-burden of malnutrition and the metabolic and lifestyle risk factors for diet-related NCDs. It is expected to reduce short- and long-term food and nutrition security both directly, through its effects on agriculture and fisheries, and indirectly, by contributing to underlying risk factors such as water insecurity, dependency on imported foods, urbanization and migration, and health service disruption. These impacts represent a significant health risk for SIDS, with their particular susceptibility to climate change impacts and already overburdened health systems, and this risk is distributed unevenly, with some population groups experiencing greater vulnerability.

In particular, the agriculture sector in Guyana is regarded as being extremely vulnerable to climate variability and change, due to the natural connections and dependencies that exist between climatic conditions, plant development and animal health, and water availability. This vulnerability is exacerbated in Guyana by factors such as land use, water resources, drainage and irrigation systems, which increase the exposure and sensitivity of the sector to climate impacts.

Some of the main climate change risks identified for the agriculture sector are as follows:

- Sea level rise and saline water intrusion causing damage to crops;
- Flooding, which causes a reduction in the discharge window available for coastal drainage. This could affect sugarcane crop production; and
- Drought, which could affect agricultural production, food security and human health and well-being.

NONCOMMUNICABLE DISEASES IN GUYANA

58.3

Healthy life expectancy (2016) (17)

7.5%

Adult population considered **undernourished** (2015–17 3-year average) (18)



19.2%

Adult population considered **obese** (2016) (19)

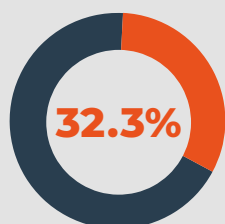


9.1%

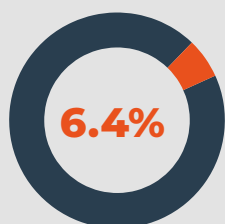
Prevalence of **diabetes** in the adult population (2014) (20)



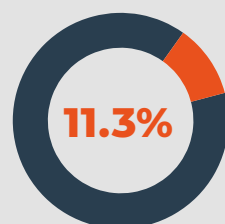
MOTHER AND CHILD HEALTH



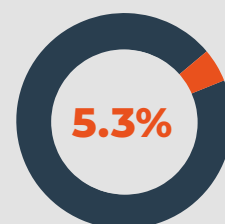
Iron deficiency anaemia in women of reproductive age (2016) (21)



Wasting in children under five years of age (2014) (22)



Stunting in children under five years of age (2014) (22)



Overweight in children under five years of age (2014) (22)

HEALTH VULNERABILITY AND ADAPTIVE CAPACITY

SDG indicators related to health and climate change

Many of the public health gains that have been made in recent decades are at risk due to the direct and indirect impacts of climate variability and climate change. Achieving Sustainable Development Goals (SDGs) across sectors can strengthen health resilience to climate change.

1. NO POVERTY



Proportion of population living below the national poverty line (23)

N/A

3. GOOD HEALTH AND WELL-BEING



72

Universal Health Coverage Service Coverage Index (2017)^a (24)

4.2%

Current health expenditure as percentage of gross domestic product (GDP)^b (2016) (25)

31.3

Under-five mortality rate (per 1000 live births) (2017) (26)

6. CLEAN WATER AND SANITATION



Proportion of total population using at least basic drinking-water services (2017)^c (27)

96%

Proportion of total population using at least basic sanitation services (2017)^c (27)

86%



13. CLIMATE ACTION

Total number of weather-related disasters recorded between 2000 and 2018^d (28)

6

Highest total number of persons affected by a single weather-related disaster between 2000 and 2018^c (28)

274 774

^a The index is based on medium data availability. Values greater than or equal to 80 are presented as ≥80 as the index does not provide fine resolution at high values; 80 should not be considered a target.

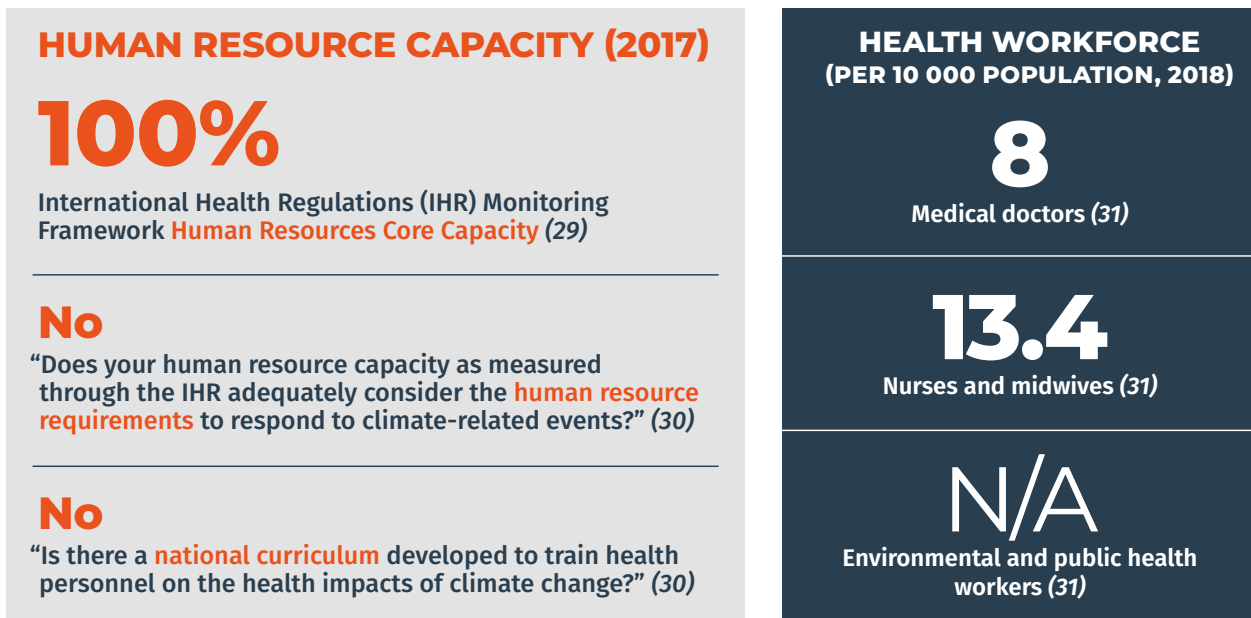
^b This indicator is not an SDG indicator.

^c Data for safely managed drinking-water and sanitation services are not consistently available for all SIDS at this time, therefore 'at least basic services' has been given for comparability.

^d Data for SDG13.1 are currently not available. Alternative indicators and data sources are presented.

Health workforce

Public health and health care professionals require training and capacity building to have the knowledge and tools necessary to build climate-resilient health systems. This includes an understanding of climate risks to individuals, communities and health care facilities and approaches to protect and promote health given the current and projected impacts of climate change.



While there are no specific WHO recommendations on national health workforce densities, the ‘Workload Indicators of Staffing Need’ (WISN) is a human resource management tool that can be used to provide insights into staffing needs and decision making. Additionally, the National Health Workforce Accounts (NHWA) is a system by which countries can progressively improve the availability, quality and use of health workforce data through monitoring of a set of indicators to support achievement of universal health coverage (UHC), SDGs and other health objectives. The purpose of the NHWA is to facilitate the standardization and interoperability of health workforce information. More details about these two resources can be found at: <https://www.who.int/activities/improving-health-workforce-data-and-evidence>.

Health care facilities



Climate change poses a serious threat to the functioning of health care facilities. Extreme weather events increase the demand for emergency health services but can also damage health care facility infrastructure and disrupt the provision of services. Increased risks of climate-sensitive diseases will require greater capacity from often already strained health services. In small island developing states, health care facilities are often in low-lying areas, subject to flooding and storm surges making them particularly vulnerable.

14.8

Health centres*

3.4

Hospitals*

89

Assessed SMART health facilities (32)^a

5

Designated SMART health facilities (32)^a

* Total density per 100 000 population (2013) (29)

^a See SMART Hospitals Toolkit - Health care facilities are smart when they link their structural and operational safety with green interventions, at a reasonable cost-to-benefit ratio. https://www.paho.org/disasters/index.php?option=com_content&view=article&id=1742:smart-hospitals-toolkit&Itemid=1248&lang=en

HEALTH SECTOR RESPONSE: MEASURING PROGRESS

The following section measures progress in the health sector in responding to climate threats based on country-reported data collected in the 2018 WHO Health and Climate Country Survey (30). Key indicators are aligned with those identified in the Caribbean Action Plan.

Empowerment: Progress in leadership and governance

National planning for health and climate change

Has a national health and climate change strategy or plan been developed? ^a	UNDER DEVELOPMENT
Title: Action Plan on Health and Climate Change Year: 2018 (Draft to be finalized)	
Content and implementation	
Are health adaptation priorities identified in the strategy/plan?	HEALTH ADAPTATION PLAN
Are the health co-benefits of mitigation action considered in the strategy/plan?	PRESENTLY UNDER CONSIDERATION
Performance indicators are specified	✓
Level of implementation of the strategy/plan	IN PILOT PHASE (THROUGH SMART HOSPITALS)
Current health budget covers the cost of implementing the strategy/plan	BUDGET HAS NOT BEEN PREPARED AS YET

✓=yes, ✗=no, O=unknown, N/A=not applicable

^a In this context, a national strategy or plan is a broad term that includes national health and climate strategies as well as the health component of national adaptation plans (H-NAPs).

National progress

It should be noted that Guyana has undertaken several initiatives that guarantee the incorporation of health impacts and adaptation and mitigation responses within the health sector. Chief among these are:

- Guyana Second National Communication to the UNFCCC, 2011.
- Green State Development Strategy, 2017.
- National Adaptation Plan (draft), 2019.
- National Climate Change Policy and Action Plan (draft), 2019.

Intersectoral collaboration to address climate change

Is there an agreement in place between the ministry of health and other sectors in relation to health and climate change policy?

Sector ^a	Agreement in place
Transportation	✗
Electricity generation	✗
Household energy	✗
Agriculture	✓
Social services	✗
Water, sanitation and wastewater management	✓

✓=yes, ✗=no, O=unknown, N/A=not applicable

^a Specific roles and responsibilities between the national health authority and the sector indicated are defined in the agreement.

Evidence: Building the investment case

Vulnerability and adaptation assessments for health

Has an assessment of health vulnerability and impacts of climate change been conducted at the national level?



TITLE: Climate Resilience Strategy and Action Plan (CRSAP) for Guyana, 2016

<https://www.lcds.gov.gy/index.php/documents/reports/national/self-assessment-and-action-plan/262-climate-resilience-strategy-and-action-plan-for-guyana>

Have the results of the assessment been used for policy prioritization or the allocation of human and financial resources to address the health risks of climate change?

Policy prioritization influence: The CRSAP has been used as the point of reference for the development of Guyana NAP, which identified priority areas for the health sector. The strategy identifies the resilience objectives as follows:

- Improve knowledge on climate vulnerability of the sector, particularly climate-related diseases and appropriate prevention and treatment
- Enhance monitoring and evaluation of climate impacts on health
- Promote adaptation good practice and develop innovative solutions
- Develop national early warning systems for the health sector based on short-and medium-term climate forecasts and strengthen the capacity of the health sector to respond effectively to the climate-related risks
- Develop 'climate smart' health facilities, especially in the interior, which incorporate design features (e.g. renewable energy sources, water harvesting capacity) to ensure effective functioning during times of climate-induced stress
- Reduce the exposure of communities to health-related risks associated with flooding
- Establish a line item on the national budget for climate change activities for health

Human and financial resource allocation influence: The draft NAP identifies a budget for the priority areas.

Implementation: Preparedness for climate risks

Integrated risk monitoring and early warning

Climate-sensitive diseases and health outcomes	Monitoring system in place ^a	Monitoring system includes meteorological information ^b	Early warning and prevention strategies in place to reach affected population
Thermal stress (e.g. heatwaves)	✗	✗	✗
Vector-borne diseases	✗	✗	✗
Foodborne diseases	✗	✗	✗
Waterborne diseases	✗	✗	✗
Nutrition (e.g. malnutrition associated with extreme climatic events)	✗	✗	✗
Injuries (e.g. physical injuries or drowning in extreme weather events)	✗	✗	✗
Mental health and well-being	✗	✗	✗
Airborne and respiratory diseases	✗	✗	✗

✓=yes, ✗=no, O=unknown, N/A=not applicable

^a A positive response indicates that the monitoring system is in place, it will identify changing health risks or impacts AND it will trigger early action.

^b Meteorological information refers to either short-term weather information, seasonal climate information OR long-term climate information.

Emergency preparedness

Climate hazard	Early warning system in place	Health sector response plan in place	Health sector response plan includes meteorological information
Heatwaves	✗	✗	✗
Storms (e.g. hurricanes, monsoons, typhoons)	N/A	N/A	N/A
Flooding	✓	✓	✓
Drought	✓	✓	✓



✓=yes, ✗=no, O=unknown, N/A=not applicable

Resources: Facilitating access to climate and health finance

International climate finance

Are international funds to support climate change and health work currently being accessed?		
If yes, from which sources?		
<input checked="" type="checkbox"/> Green Climate Fund (GCF)	<input type="checkbox"/> Global Environment Facility (GEF)	<input checked="" type="checkbox"/> Other multilateral donors
<input checked="" type="checkbox"/> Bilateral donors	<input type="checkbox"/> Other: _____	

Funding challenges

Greatest challenges faced in accessing international funds			
Lack of information on the opportunities		Lack of country eligibility	
Lack of connection by health actors with climate change processes		Lack of capacity to prepare country proposals	
Lack of success in submitted applications		None (no challenges/challenges were minimal)	
Other (please specify):		Not applicable	

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