

SAMOA



HEALTH & CLIMATE CHANGE COUNTRY PROFILE 2020

Small Island Developing States Initiative



United Nations
Framework Convention on
Climate Change

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Acknowledgements

This document was developed in collaboration with the Government of Samoa and the Ministry of Health.

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. 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 COP23 in Bonn Germany, with the vision that by 2030 all health systems in SIDS will be resilient to climate variability and climate change. In March 2018, Ministers of Health gathered in Fiji to develop a Pacific 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. In the Western Pacific region in particular, the SIDS initiative is a joint effort with For the Future: Towards the Healthiest and Safest Region. It highlights climate change, environment and health as a thematic priority for WHO's work in the Region. The goal is to ensure that countries and communities in the Region have the capacity to anticipate and respond to the health consequences of the changing climate and environment, with the health sector taking a lead role in cross-sectoral, multi-stakeholder efforts.

Samoa's health sector has been involved in the work of climate change and health for many years. The Climate Risk Profile conducted in 2007 identified many specific threats for Samoa, which were dominated by health-related threats. To address these challenges, the Government of Samoa proposed an integrated approach to tackle climate change impacts in relevant sectors. The urgent and immediate adaptation priorities identified in the National Adaptation Plan of Action (NAPA) include the health sector, agriculture sector and the meteorology division of the environment sector. This led to the development of the project Integrating Climate Change Risks into Agriculture and Health Sectors in Samoa, funded by the Global Environment Facility (GEF) and the United Nations Development Programme (UNDP), and coordinated by the Ministry of Natural Resources and Environment. The project aimed to increase the resilience and adaptive capacity of coastal communities in Samoa to the adverse impacts of climate change on agricultural production and public health. Despite the many challenges encountered during the lifespan of the project,

the health sector is appreciative for the strategic climate change and health framework that resulted from this work. Many of the outcomes of the health component of this project have provided climate and health baseline data and, more importantly, strategic guidance to the work of climate and health.

The Climate Adaptation Strategy for Health provides a strategic framework to strengthen the resilience of the health sector, to improve the capacity of the health sector, risk management and response to disasters and climate change. Furthermore, the strategy aims to support cross-sectoral collaboration to ensure health concerns are addressed in decision-making in other sectors to reduce risks from climate change. Given that the scope of climate change-related research is growing, the Climate Adaptation Strategy for Health may need to be reviewed and updated where necessary in light of new information on and understanding of climate change and health issues in Samoa. A lot of the climate and health programmes currently in development aim to build and improve upon these existing activities. This includes the Integrated Community Health Advocacy Programmes, a cross-sectoral collaboration, led by health, to provide awareness of climate-related health threats in communities and schools.

The health sector's vision of a 'Healthy Samoa' practically translates the overarching goal for health development in Samoa. The main priority areas include the prevention of communicable diseases and noncommunicable diseases by raising awareness about simple prevention measures, especially during disasters. This vision also increased the capacity of health professionals and aims at 'Putting the Focus Back into Public Health'. The Public Health role within the Ministry of Health is to improve, promote and protect the health of the population or groups of people as distinct from the health of individuals. This involves health promotion, health protection, health surveillance, monitoring and the investigation of infectious disease outbreaks and hazards in the environment.

Samoa's Ministry of Health would like to express gratitude to all stakeholders and partners who contributed directly or indirectly to the great investment in health and climate change work in the health sector and for their inputs to this WHO UNFCCC health and climate change country profile for Samoa. We look forward to the ongoing collaboration in the implementation of the health and climate change programmes to ensure that Samoa is a safe and climate-resilient nation.

Fa'afetai.

KEY RECOMMENDATIONS

1

STRENGTHEN IMPLEMENTATION OF SAMOA'S CLIMATE ADAPTATION FOR HEALTH STRATEGY

Review, update and strengthen the implementation of Samoa's 2014 Climate Adaptation Strategy for Health (CASH) to ensure it is "by Samoa, for Samoa".

2

STRENGTHEN PUBLIC HEALTH SURVEILLANCE SYSTEM

Strengthen public health surveillance system to include meteorological information and improve monitoring of climate sensitive diseases during and post extreme weather events.

3

CONDUCT HEALTH AND CLIMATE ASSESSMENTS

Conduct health impact assessments (HIA) and a national assessment of climate impacts, vulnerability and adaptation for health. These assessments should also include risks related to water and food supplies, sanitation and vector control, and noncommunicable diseases (including nutrition, psychosocial and mental health). Conduct bi-annual hospital risk resilience assessments.

4

ESTABLISH A HEALTH – CLIMATE EARLY WARNING SYSTEM (H-CLEWS)

Establish a health and climate early warning system and conduct further research linking health and climate information (including CLEWS, early warning and response systems (EWARS), geographic information systems (GIS), health information systems (HIS) and climate risk maps).

5

DEVELOP A COMPREHENSIVE DISASTER MANAGEMENT AND RESPONSE PLAN FOR THE HEALTH SECTOR

WHO RESOURCES TO SUPPORT ACTION ON THESE KEY RECOMMENDATIONS:

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

BACKGROUND

Samoa consists of two main islands, Savaii and Upolu, in addition to several smaller, uninhabited islets (1). The geography of Samoa consists of narrow coastal plains combined with a volcanic, mountainous interior. The climate is tropical, with a rainy season and tropical cyclones from November to April and a dry season from May to October (1,2). It is expected that Samoa will experience rising temperatures, extreme weather events, rising sea levels, ocean acidification, and coral bleaching as a result of climate change.

Such climatic changes can result in both direct and indirect health effects in Samoa (3). These effects bring serious burdens to the health care system, in particular public health surveillance and response. Additionally, public health measures, such as safe water and food shortages, are dependent upon a clean environment and thus are an important indicator for monitoring changes in the risk and burden of noncommunicable diseases and communicable conditions. Climate change also poses specific threats for vulnerable groups, including women, children, the elderly, those with disabilities or existing health problems, and people lacking social support.

There is already increasing evidence of climbing trends of infectious diseases within affected populations and communities during and after extreme weather events. However, there is limited evidence to prove causality of such events, owing to the complexity of identifying and linking climatic causes with health effects. To improve this evidence base, the Ministry of Health and the Meteorology Division in Samoa has strengthened their collaboration to ensure that meteorological data is fed to the public health surveillance system for monitoring disease trends and outbreaks during extreme climatic conditions. Current developments in the area of climate change and health include establishing a public health surveillance system that can manage and track climate-related diseases and monitor disease outbreaks (3).

HIGHEST PRIORITY CLIMATE-SENSITIVE HEALTH RISKS FOR SAMOA

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	✓
Zoonoses	
Respiratory illness	
Disorders of the eyes, ears, skin and other body systems	
Diffuse effects	
Disorders of mental/psychosocial health	
Noncommunicable diseases	
Health systems problems	
Population pressures	

Source: Table adapted from Human health and climate change in Pacific island countries (2015) (4). Please refer to reference (4) for further information on each category.

CLIMATE HAZARDS RELEVANT FOR HEALTH

Climate hazard projections for Samoa

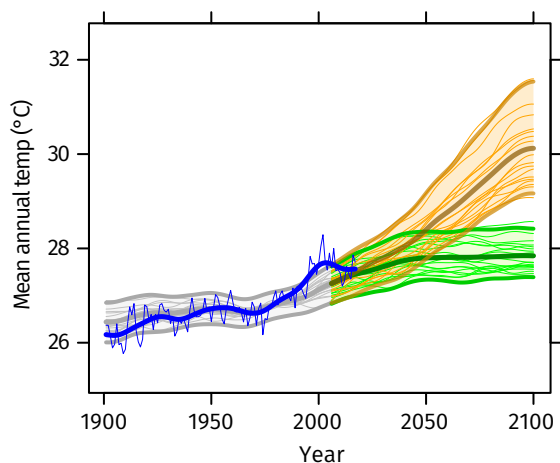
Country-specific projections are outlined up to the year 2100 for climate hazards under a 'business as usual' high emissions scenario compared to projections under a 'two-degree' scenario with rapidly decreasing global emissions (see Figures 1–5).

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

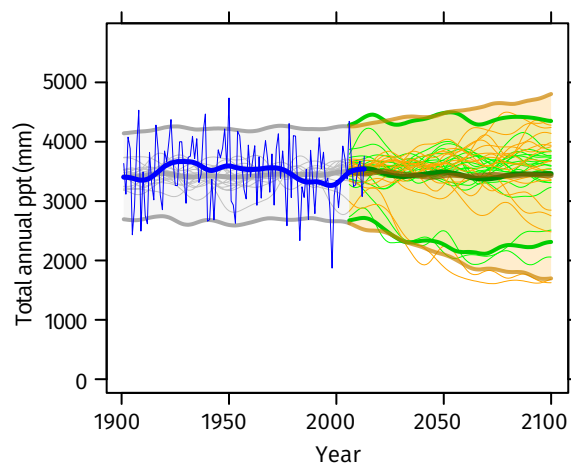
FIGURE 1: Mean annual temperature



Under a high emissions scenario, the mean annual temperature is projected to rise by about 2.7°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 0.8°C.

Little change in total precipitation

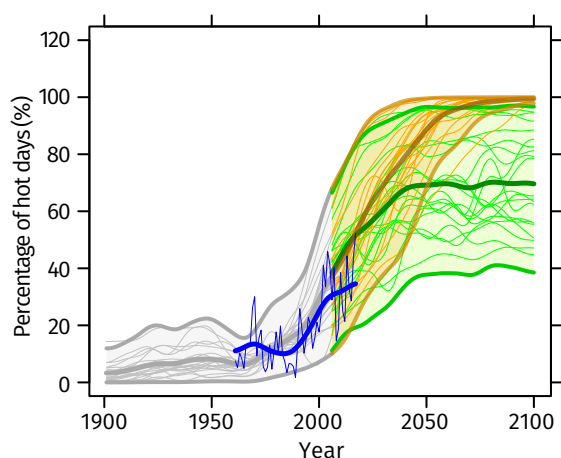
FIGURE 2: Total annual precipitation



Total annual precipitation is projected to remain almost unchanged on average under a high emissions scenario, although the uncertainty range is large (-45% to +19%). If emissions decrease rapidly there is little projected change on average with an uncertainty range of -30% to +10%.

More high temperature extremes

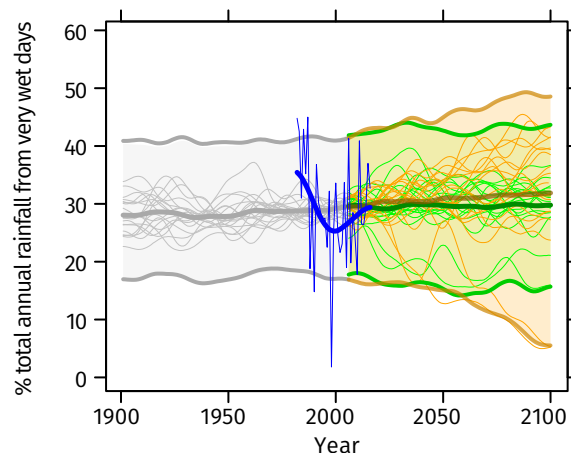
FIGURE 3: Percentage of hot days ('heat stress')



The percentage of hot days^d is projected to increase substantially from about 20% of all observed days on average in 1981–2010 (10% in 1961–1990). Under a high emissions scenario, almost 100% of days on average are defined as 'hot' by the end-of-century. If emissions decrease rapidly, about 85% of days on average are 'hot'. Note that the models tend to overestimate the observed increase in hot days (about 30% of days on average in 1981–2010 rather than 20%). Similar increases are seen in hot nights^d (not shown).

Small increase in extreme rainfall

FIGURE 4: Contribution to total annual rainfall from very wet days ('extreme rainfall' and 'flood risk')

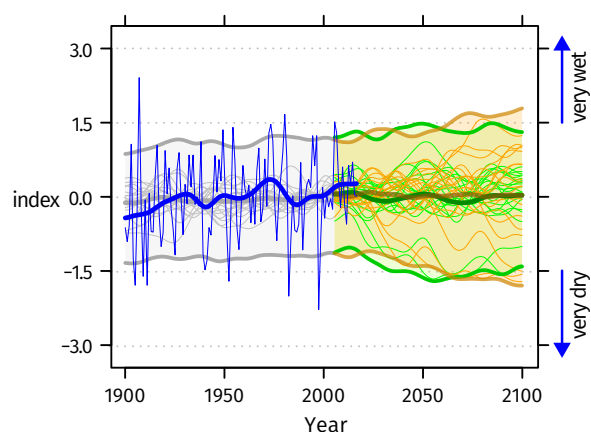


The proportion of total annual rainfall from very wet days^e (about 30% for 1981–2010) shows little change on average by the end-of-century although the uncertainty range is somewhat larger particularly under a high emissions scenario (about 8% to almost 50%). Total annual rainfall shows little projected change (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.

SP12 values show little projected change from zero on average, though year-to-year variability remains large. A few models indicate larger decreases (more frequent/intense drought events) or increases (more frequent/intense wet events).



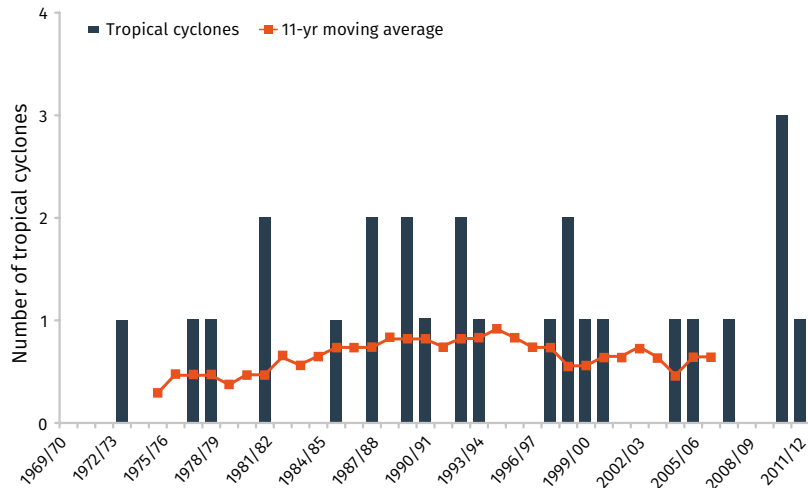
NOTES

- ^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 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 categorise different severities of drought(wet): above +2.0 extremely wet; +2.0 to +1.5 severely wet; +1.5 to +1.0 moderately wet; +1.0 to +0.5 slightly 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.

Tropical cyclones







Tropical cyclones affect Samoa mainly between November and April. Between the 1969/70 and 2010/11 seasons, 26 cyclones developed within or crossed the Samoa Exclusive Economic Zone (EEZ); an average of six cyclones per decade (see Figure 6) (5).

FIGURE 6: Time series of the observed number of tropical cyclones developing within and crossing the Samoa EEZ. The 11-year moving average is in orange




Source: Australian Bureau of Meteorology and CSIRO. Climate Variability, Extremes and Change in the Western Tropical Pacific: New Science and Updated Country Reports, 2014 (5).

POTENTIAL FUTURE CHANGES IN TROPICAL CYCLONES: A GLOBAL PERSPECTIVE (6-13)^a

 Total number	 Intensity	 Frequency of category 4 and 5 events	 Average precipitation rates near storm centre
 Increase  Decrease			

Sea level rise







Sea level rise is one of the most significant threats to low-lying areas on small islands and atolls. Research indicates that rates of global mean sea level rise are almost certainly accelerating as a result of climate change. The relatively long response times to global warming mean that sea level will continue to rise for a considerable time after any reduction in emissions.



0.4-0.9 m
Further rise in Samoa by 2090 (5)

High emissions scenario (RCP8.5). With variation in models and emissions scenarios.

Impacts of sea level rise include

	Coastal erosion		Ecosystem disruption
	Higher storm surges		Population displacement
	Water contamination and disruption		Mental health

^a Information and understanding about tropical cyclones (including hurricane and typhoons) from observations, theory and climate models has improved in the past few years. It is difficult to make robust projections for specific ocean basins or for changes in storm tracks. Presented here is a synthesis of the expected changes at the global scale.

HEALTH VULNERABILITY TO CLIMATE CHANGE

SDG indicators related to health and climate change

In Samoa, climate hazards also threaten the health system and general well-being of Samoa's population. The health sector, together with all other government agencies, villages, private sector and development partners, works collaboratively in an effort to strengthen the country's resilience to climate change and health, in addition to the achievement of all Sustainable Development Goals (SDGs). Sustainable development across sectors can strengthen health resilience to climate change.

1. NO POVERTY



Proportion of population living below the national poverty line (2013) (14)

20.3%

3. GOOD HEALTH AND WELL-BEING



58

Universal Health Coverage
Service Coverage Index (2017)^a (15)

5.5%

Current health expenditure as percentage of gross domestic product (GDP) (2016) (16)

16.5

Under-five mortality rate (per 1000 live births) (2017) (17)

6. CLEAN WATER AND SANITATION



Proportion of total population using at least basic drinking-water services (2017)^b (18)

97%

Proportion of total population using at least basic sanitation services (2017)^b (18)

98%



13. CLIMATE ACTION

Total number of weather-related disasters recorded between 2000 and 2018^c (19)

6

Highest total number of persons affected by a single weather-related disaster between 2000 and 2018^c (19)

12 703

^a The index is based on low 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.

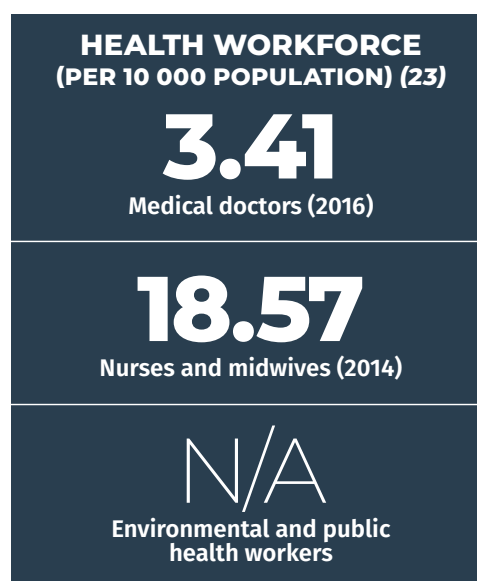
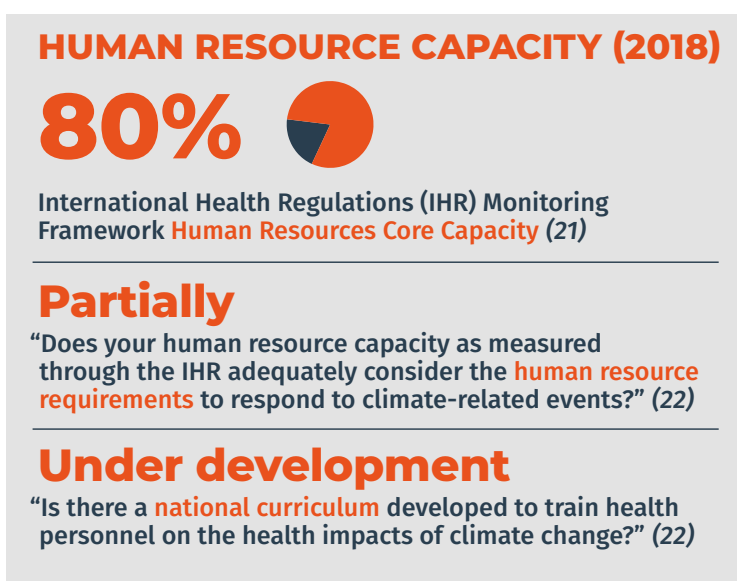
^b Data for SDG6 safely managed drinking-water and sanitation services are not consistently available for all SIDS at this time, therefore 'at least basic services' has been given for comparability.

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

NOTE: Estimates presented here may differ from national estimates.

Health workforce

The development of the Ministry of Health climate change and health unit under the Health Sector Coordination Resourcing and Monitoring Division in 2014 strengthened the coordination and monitoring of climate change and health activities within the health sector. With the increasing demand for implementation of the Climate Adaptation Strategy for Health work plan, the climate change and health unit was transferred to the National Health Surveillance and International Health Regulations Division. This institutional arrangement increases the capability of the health sector to improve risk management and disaster response to public health emergencies and impacts of climate change. The sector is equipped with health professionals and staff who are knowledgeable and dedicated to providing necessary skills and tools to aid in building a climate-resilient health system across the sector and the community at large (20). Yet 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>.

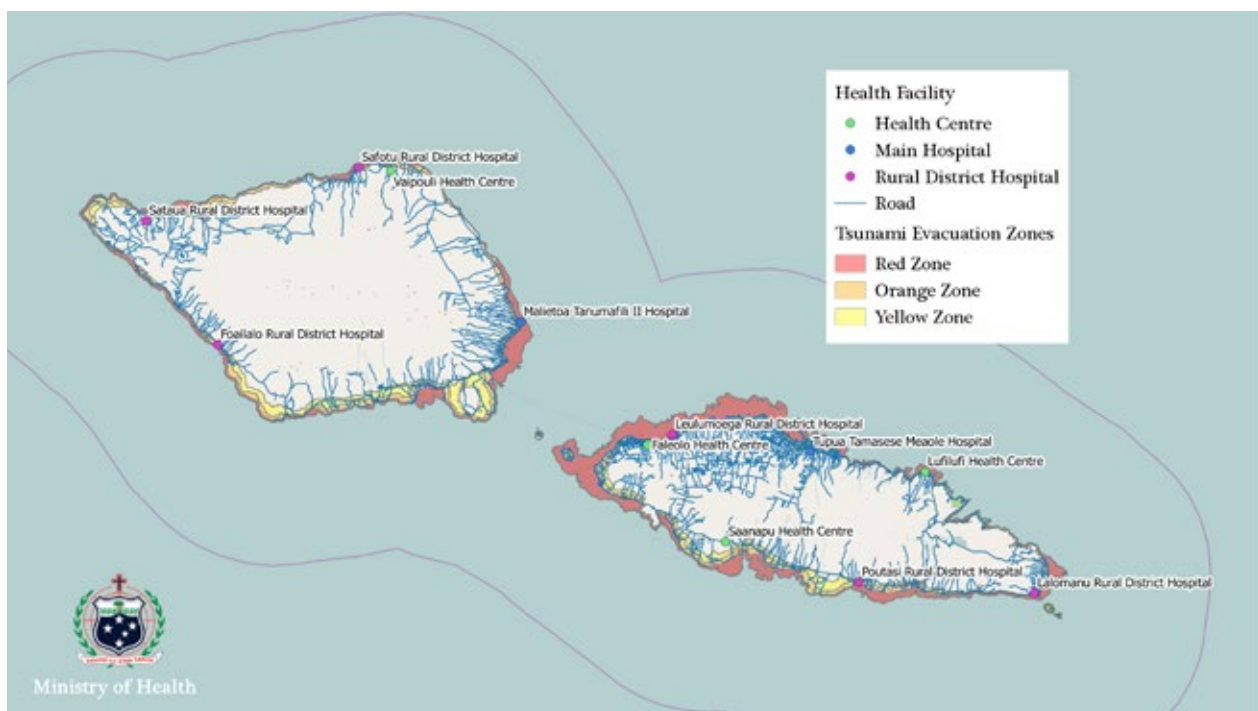
Health care facilities

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 service provision. Increased risks of climate-sensitive diseases will also 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. To prevent potentially devastating impacts of climate change on health service provision, measures can be taken to build the resilience of health care facilities, this includes conducting hazard assessments, climate-informed planning and costing, strengthening structural safety (building codes), contingency planning for essential systems (electricity, heating, cooling, ventilation, water supply, sanitation services, waste management and communications). Health care facilities can also commit to low-emission, sustainable practices to improve system stability, promote a healing environment and to mitigate climate change impacts.



There are two main hospitals in Samoa, TupuaTamaseseMeaole in Upolu and the MalietoaTanumafili II hospital in Savaii, the Ministry of Health administers an additional six rural district hospitals, and four community health centres, as shown on the map below.

A joint collaboration effort by the Ministry of Health and Disaster Management Office, started in 2016, undertook inspections of all the main hospitals, rural district hospitals and health centres in both Upolu and Savai'i. The hospitals are reviewed in terms of their disaster risk resilience, with a range of factors assessed including structure, proximately to hazard zones, hospital accessibility, backup power and water, and communication. Recommendations from the assessment reflect the need to ensure that there are strategies and plans in place to aid all health facilities in case of disasters, as well as a continuous implementation of risk assessments to ensure the validity of information.



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:

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

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 waterborne and foodborne diseases (25). Socioeconomic development and health interventions are driving down burdens of several infectious diseases. However, climate conditions are projected to become significantly more favourable for transmission, slowing progress in reducing burdens, and increasing the populations at risk if control measures are not maintained or strengthened (26). The people of Samoa are vulnerable to and seriously impacted by many climate-sensitive diseases, including zoonotic, infectious, vector-borne and foodborne and waterborne diseases, and large-scale outbreaks of various diseases have been reported.

Vector-borne diseases involve the transmission of infectious pathogens from one medium to another. Widely reported cases of vector-borne diseases in Samoa include dengue and filariasis, which are transmitted by mosquitos, chikungunya, and Ross River virus. Beyond changing climatic conditions, some of the risk factors that produce suitable epidemiological conditions in tropical and sub-tropical developing countries favouring viral transmission by *Aedes* mosquitoes include rapid population growth; rural-to-urban migration; inadequate basic urban infrastructure; increase in volume of solid waste creating breeding habitats in urban areas; international and local travel of infected people; and international trade in goods. Understanding these interactions and implementing suitable vector control strategies is essential in the prevention and control of vector-borne disease, specifically for transmission control.

The occurrence of foodborne and waterborne diseases can also be affected by climate-related events. Increases in diarrhoeal cases can coincide with the cyclone season of Samoa, while periods of heavy rainfall and flooding can compromise the quality of water supplies. This can be linked to typhoid fever, which is endemic in Samoa, and is transmitted mostly via drinking water and eating food contaminated with faeces and/or urine.

Noncommunicable diseases, food and nutrition security

Small island developing States (SIDS) face distinct challenges that render them particularly vulnerable to the impacts of climate change on food and nutrition security including: small, and widely dispersed, land masses and populations; large rural populations; fragile natural environments and lack of arable land; high vulnerability to climate change, external economic shocks, and natural disasters; high dependence on food imports; dependence on a limited number of economic sectors; and distance from global markets. The majority of SIDS also face a 'triple-burden' of malnutrition whereby undernutrition, micronutrient deficiencies and overweight and obesity exist simultaneously within populations alongside increasing rates of diet-related NCDs.

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 over-burdened health systems, and this risk is distributed unevenly, with some population groups experiencing greater vulnerability.

NONCOMMUNICABLE DISEASES IN SAMOA

66

Healthy life expectancy
(2016) (27)

3.1%

Total population considered
undernourished (2015–17
3 year average) (28)



45.5%

Adult population considered
obese (2016) (29)

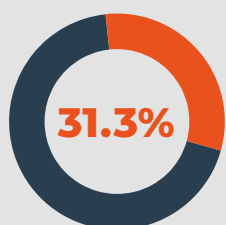


22.8%

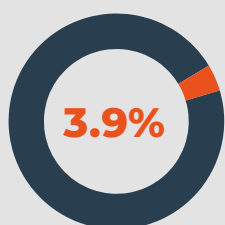
Prevalence of **diabetes**
in the adult population (2014) (30)



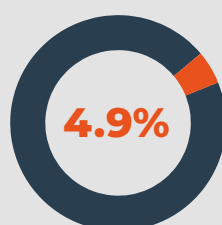
MOTHER AND CHILD HEALTH



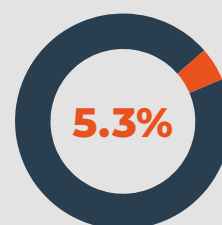
Iron deficiency
anaemia in
women of reproduc-
tive age (2016) (31)



Wasting in children
under five years of
age (2014) (32)



Stunting in children
under five years of
age (2014) (32)



Overweight in
children under
five years of age
(2014) (32)

Other important health considerations include mental health and maternal and child health care. The effects of climate change on psychological well-being are associated with the direct impacts of climate change (injury from extreme weather events) and the indirect environmental and social impacts such as loss of employment and livelihoods, incremental increases in nourishment costs and displacement. Such factors can exacerbate or trigger mental health issues, including post-traumatic stress disorder (PTSD), particularly among vulnerable populations (children, the elderly, those with existing ailments). In terms of maternal and child health, environmental change can be an enormous challenge. In Samoa, there is growing concern for children and mothers and their potentially increased vulnerability to climate change, which could significantly affect the well-being and survival of the next generation among already challenged populations. The impacts of malnutrition, infectious illnesses, environmental problems, and heat exposure on maternal health will prompt serious well-being dangers for mothers and children.



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 change country survey (22). Key indicators are aligned with those identified in the Small Island Developing State Action Plan.

Empowerment: Supporting health leadership

National planning for health and climate change

Has a national health and climate change strategy or plan been developed?^a	
Title: Samoa's Climate Adaptation Strategy for Health Year: 2014	
Content and implementation	
Are health adaptation priorities identified in the strategy/plan?	
Are the health co-benefits of mitigation action considered in the strategy/plan?	
Performance indicators are specified	
Level of implementation of the strategy/plan	MODERATE
Current health budget covers the cost of implementing the strategy/plan	MINIMAL

=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).

ADAPTATION PRIORITIES

Prevention

- strengthen safe food, safe drinking-water and optimize sanitation
- awareness and capacity building
- improving the capacity of individuals and households, through education and consultation, to respond to the health risks posed by climate change
- local level capacity building
- ensure that climate health risks are intergrated into the PEN Faa-Samoa programmes

Control

- strengthen public health surveillance systems for reporting communicable diseases, including the capacity of the new public health laboratory
- strengthen vector surveillance and control through multisectoral programmes
- improved information systems for climate and climate-sensitive health risks
- information sharing and early warning
- improved capacity to forecast drought and water shortages
- strengthen the implementation of disaster risk management (DRM) recommended actions by the health sector

Governance

- consider the wider implications of any adaptation activity prior to implementation and evaluate the impacts of activities after implementation
- Monitoring and evaluation

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 ^b	Agreement in place
Transportation	<input type="radio"/>
Electricity generation	<input type="radio"/>
Household energy	<input type="radio"/>
Agriculture	<input type="radio"/>
Social services	<input type="radio"/>
Water, sanitation and wastewater management	<input type="radio"/>

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

^b 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?	<input checked="" type="checkbox"/>
<p>TITLE: N/A</p> <p>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?</p> <p>Policy prioritization</p> <p>Human and financial resource allocation</p> <p style="text-align: center;">None Minimal Somewhat Strong</p> <p style="text-align: center;">Level of influence of assessment results</p>	<p>N/A</p>

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. heat waves)	○	N/A	✗
Vector-borne diseases	✓	✗	✗
Foodborne diseases	✓	✗	✗
Waterborne diseases	✓	✗	✗
Nutrition (e.g. malnutrition associated with extreme climatic events)	○	N/A	N/A
Injuries (e.g. physical injuries or drowning in extreme weather events)	○	N/A	N/A
Mental health and well-being	○	N/A	N/A

✓=yes, ✗= no, ○=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
Heat waves	✗	✗	✗
Storms (e.g. hurricanes, monsoons, typhoons)	✓	✓	✓
Flooding	✓	✓	✓
Drought	✗	✗	✗

✓=yes, ✗= no, ○=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 type="checkbox"/> Other multilateral donors
<input type="checkbox"/> Bilateral donors	<input type="checkbox"/> Other: _____	

Funding challenges

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

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