MAURITIUS

HEALTH & CLIMATE CHANGE

COUNTRY PROFILE 2021

Small Island Developing States Initiative

World Health Organization

United Nations
Framework Convention on
Climate Change

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Acknowledgements

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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 are then exacerbated by climate change. As is often the case, nations at greatest risk are often 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 COP23 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 though that building resilience must happen in parallel with the reduction of carbon emissions by countries around the world in order to protect the most vulnerable from climate risks and to gain the health co-benefits of mitigation policies.

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 which 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 March 2018, Ministers of Health gathered in Mauritius to develop a regional SIDS 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 Mauritius provides a summary of available evidence on climate hazards, health vulnerabilities, health impacts and progress to date in the health sector’s efforts to realize a climate-resilient health system.

KEY RECOMMENDATIONS

1 DEVELOP AND IMPLEMENT A CLIMATE CHANGE AND HEALTH STRATEGIC ACTION PLAN FOR MAURITIUS

Develop a national health and climate change plan. Its full implementation will be supported by 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.

2 CONDUCT A HEALTH VULNERABILITY, IMPACTS AND ADAPTATION ASSESSMENT

Conduct a national assessment of climate change impacts, vulnerability and adaptation for health. Ensure that results of the assessment are used for policy prioritization and the allocation of human and financial resources in the health sector.

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

No international funding is currently being accessed to aid with health and climate change initiatives. Additional funding would help to further the implementation of policies and to strengthen health system resilience to climate change.

4 BUILD CLIMATE-RESILIENT AND ENVIRONMENTALLY SUSTAINABLE HEALTH CARE FACILITIES

Measures can be taken to prevent the potentially devastating impacts of climate change on health service provision, including: 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). A commitment towards low-emission, sustainable practices to improve system stability, promote a healing environment and to mitigate climate change impacts can also be taken.

WHO RESOURCES TO SUPPORT ACTION ON THESE KEY RECOMMENDATIONS:

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

BACKGROUND

Mauritius is an island state located in the Indian Ocean in Southern Africa. The climate is tropical, consisting of dry winters and humid summers. Mauritius' terrain consists of a central plateau surrounded by mountains, with the main island almost completely surrounded by coral reefs *(1)*. Whilst absolute poverty is low in Mauritius, income inequality is an issue which could hinder socio-economic development *(2)*.

Mauritius is considered a particularly vulnerable nation to the impacts of climate change *(3,4)*. These impacts include: rising temperatures, altered precipitation patterns, sea level rise, coastal erosion, and increased extreme weather events. Such changes present health risks to the population of Mauritius, including increased risk of vector-borne diseases, noncommunicable diseases, food insecurity and the destruction of marine habitats, with associated negative effects for human health *(4)*.

Climate change adaptation and mitigation are top priorities of the Mauritius Government's Programme of 2015–2019, and include legislation such as the National Disaster Risk Reduction and Management Act (2016) and the National Climate Change Adaptation Policy Framework (2012) *(4)*. Health sector adaptation is also recognized as a top adaptation priority in Mauritius' Nationally Determined Contribution (NDC) to the UNFCC, to enable the country to cope with its growing population and additional climate-related health burdens *(5)*.

CLIMATE HAZARDS RELEVANT FOR HEALTH

Climate hazard projections for Mauritius

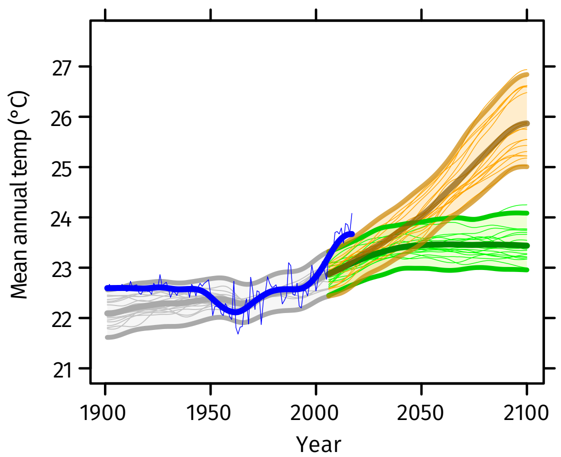
Country-specific projections are outlined up to the year 2100 for climate hazards under a 'business as usual' high emissions scenario compared to projections under a 'two-degree' scenario with rapidly decreasing global emissions (see Figures 1–5).

The climate model projections 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

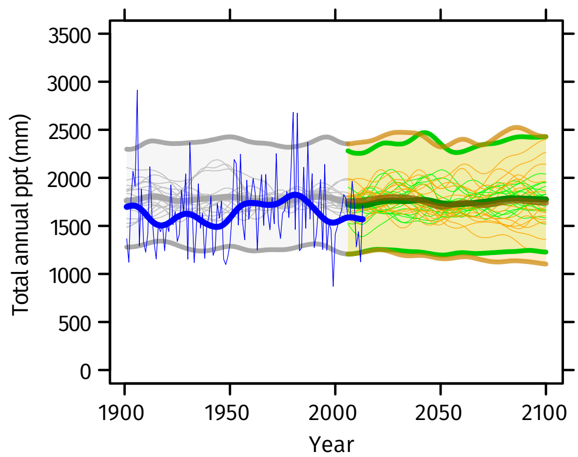
FIGURE 1: Mean annual temperature, 1900–2100



Under a high emissions scenario, the mean annual temperature is projected to rise by about 2.8°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

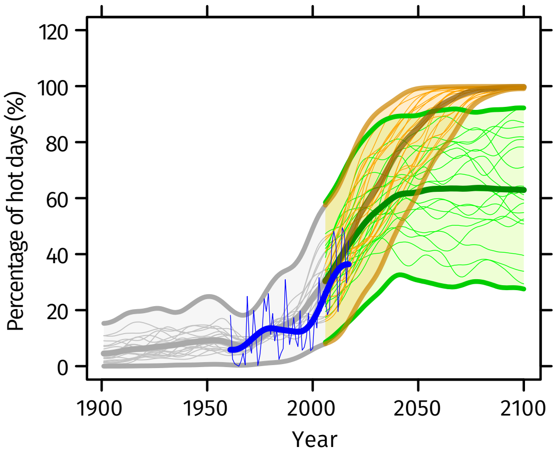
FIGURE 2: Total annual precipitation, 1900–2100



Total annual precipitation is projected to remain almost unchanged on average under a high emissions scenario, although the uncertainty range is large (-22% to +18%). If emissions decrease rapidly, there is little projected change on average, with an uncertainty range of -9% to +9%.

More high temperature extremes

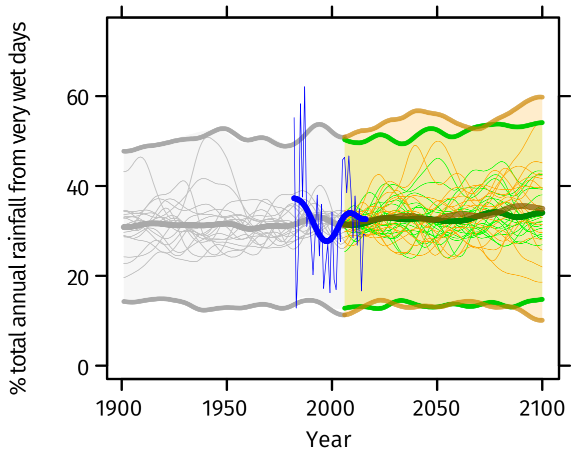
FIGURE 3: Percentage of hot days ('heat stress'), 1900–2100



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 100% of days on average are defined as 'hot' by the end-of-century. If emissions decrease rapidly, about 65% of days on average are 'hot'. Note that the models tend to overestimate the observed increase in hot days (by about 4% on average for 1981–2010). 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'), 1900–2100

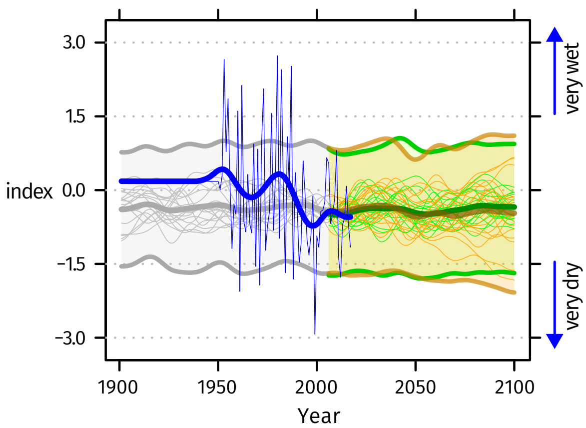


Under a high emissions scenario, the proportion of total annual rainfall from very wet days[e] (about 32% for 1981–2010) could increase a little by the end-of-century (to about 35% of days on average with an uncertainty range of about 12% to 57%), with less change if emissions decrease rapidly. Total 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.

SPI12 values show little projected change from an average of about -0.4, indicating little change on average in the frequency and/or intensity of wet episodes and drought events. Year-to-year variability remains large with both wet and dry episodes of varying intensity continuing to occur into the future.[f]



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] Observed historical record of mean temperature and total precipitation is from CRU-TSv3.26. Observed historical records of extremes are from JRA55 for temperature and from GPCC-FDD for precipitation.

[c] Analysis by the Climatic Research Unit, University of East Anglia, 2018.

[d] A 'hot day' ('hot night') is a day when maximum (minimum) temperature exceeds the 90th percentile threshold for that time of the year.

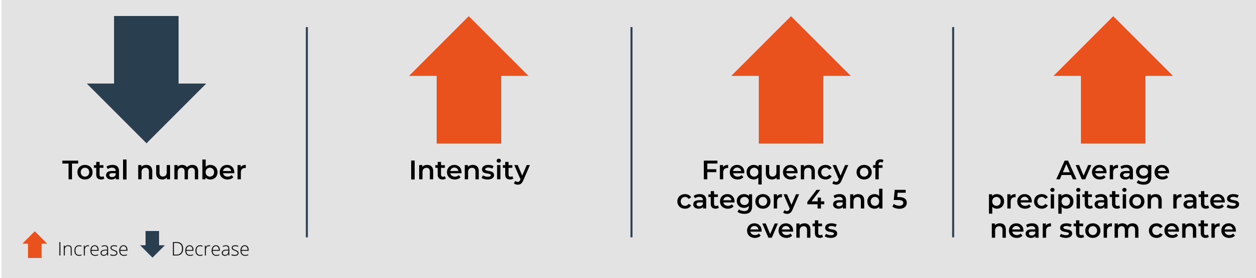
[e] The proportion (%) of annual rainfall totals that falls during very wet days, defined as days that are at least as wet as the historically 5% wettest of all days.

[f] SPI is unitless but can be used to categorize different severities of drought (wet): 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

It is anticipated that the total number of tropical cyclones may decrease towards the end of the century. However, it is likely that human-induced warming will make cyclones more intense (an increase in wind speed of 2–11% for a mid-range scenario (i.e. RCP4.5 which lies between RCP2.6 and RCP8.5 – shown on pages 4–5) or about 5% for 2°C global warming). Projections suggest that the most intense events (category 4 and 5) will become more frequent (although these projections are particularly sensitive to the spatial resolution of the models). It is also likely that average precipitation rates within 100 km of the storm centre will increase – by a maximum of about 10% per degree of warming. Such increases in rainfall rate would be exacerbated if tropical cyclone translation speeds continue to slow *(6–13)*.[a]

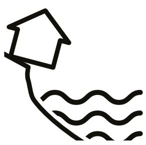
POTENTIAL FUTURE CHANGES IN TROPICAL CYCLONES: A GLOBAL PERSPECTIVE *(6–13)*[a]

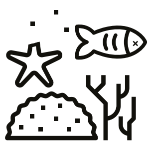


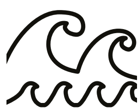
Sea level rise

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. The continuing rise in sea level means that higher storm surge levels can be expected regardless of any other changes in the characteristics of storm surges.

Potential impacts of sea level rise include


Coastal erosion


Ecosystem disruption


Higher storm surges

预览已结束，完整报告链接和二维码如下：
https://www.yunbaogao.cn/report/index/report?reportId=5_23899
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