

# POLICY MAKERS DIGEST

Key recommendations for strengthening capacities to protect people and livelihoods from disaster & climate change impact

2020

THE REPUBLIC OF  
MAURITIUS



**UNITED NATIONS  
MAURITIUS**



**cadri**  
**Partnership**  
Capacity for Disaster  
Reduction Initiative

The CADRI Partnership is a global UN led partnership that works towards strengthening countries' capacities to pursue integrated and coherent solutions to reduce disaster and climate risks across the Sustainable Development Goals (SDGs).

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This document presents the main findings and recommendations of the report “Diagnosis of Capacities to manage Disaster Risk”, prepared in 2019 at the request of the Government of the Republic of Mauritius.

The capacity diagnosis has been led by the National Disaster Risk Reduction and Management Council (NDRRMC) in close collaboration with the Office of the United Nations Resident Coordinator, with the support of the United Nations Country Team and the CADRI Partnership.



# INTRODUCTION



Climate change and disasters pose a significant risk to the economy and social development path of the Republic of Mauritius. A large share of the population and productive assets are exposed to multiple hazards. With the increasing impact of climate change, it is expected that the intensity and frequency of hydro meteorological hazards such as floods and tropical storms will increase, multiplying the adverse impact on people's lives and livelihoods, ecosystem services and the economy.

Climate change is not the only driver of disaster risk. Rapid unplanned urbanization and infrastructure development have increased the occurrence of flash floods, causing destruction of housing, infrastructure and crops, and putting the population at risk of vector & water borne and skin diseases. Vulnerable groups are disproportionately affected by disaster and climate change impact, especially children, female headed households, and persons living with disabilities.

Mauritius is renowned for its investment in cyclone preparedness and its community-based disaster response teams. Over the past five years, the country has made significant advances in strengthening its policy and institutional framework for disaster risk reduction.

The regulatory framework for land use, urban planning and environment protection also creates a strong foundation for disaster risk reduction. Reducing exposure and vulnerability of the population and economy will require additional efforts, ranging from increasing access to risk information to creating incentives for the enforcement of the regulatory framework.

The selection of recommendations presented here are meant to strengthen the institutional set up and financing arrangements and address the main challenge of access to information on disaster risk by decision makers. Specific actions are proposed to improve investment in disaster prevention and preparedness in six critical sectors: tourism, agriculture, environment, water and sanitation, health, education, and some of them are specific to Rodrigues Island.

The effective implementation of the proposed actions calls for strong leadership of the responsible authorities and commitment of all relevant actors in key socio-economic sectors.



# UNDERSTANDING DISASTER RISK

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Understanding the vulnerability of people and their livelihoods to the impact of disasters is fundamental to making appropriate management and investment decisions at national and local levels.

Mauritius produces a wealth of disaster risk data and can rely on solid surveillance systems to monitor various dimensions of risk: water quality and water availability; extreme weather events through a network of observation stations; epidemics; crop and livestock diseases.

In addition, there is a good understanding of tropical cyclones risk and progress has been made in mapping flood and landslide hazards.

There remain two main challenges to address: i) risk information is not available in the right format for decision makers (open access, digitalized, spatial data, at the right scale, targeted at users) and ii) the assessment of disaster risk does not integrate the analysis of multiple hazards (e.g., between floods and landslides, or between climate and biological hazards) and does not study risk interdependencies.

## KEY RECOMMENDATIONS INCLUDE:

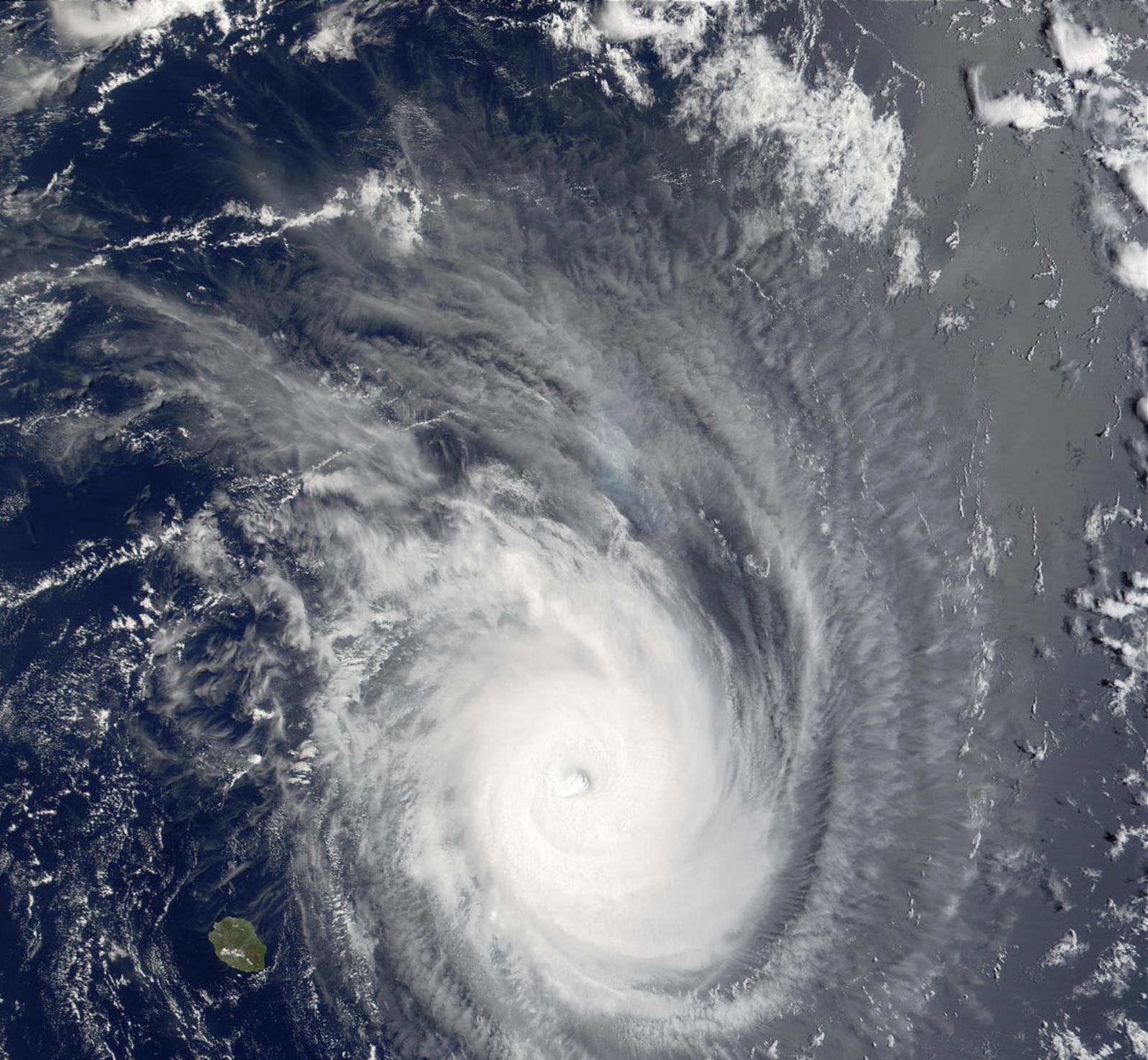
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1.

NDRRMC to develop a guideline to clarify the legal provisions, regulations and available guidance and methodologies to conduct risk assessment and disseminate the guideline to all public institutions

2.

NDRRMC to undertake a mapping of needs for risk information including municipalities, line ministries, tourism, industry, trade & transport, ICT sectors



3.

Increasing investment in GIS software's and training within NDRRMC, the Mauritius Meteorological Services, and key line ministries for application to disaster risk reduction

4.

NDRRMC to establish an information sharing framework to provide easy access to selected information on population vulnerability, hazard prevalence, land use and critical infrastructure, losses and damages

# ROLES AND RESPONSIBILITIES FOR EFFECTIVE DISASTER RISK MANAGEMENT

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The DRR/M Act (2016), the Local Government Act (2011), the Land Drainage Authority Act (2017) as well as key regulations for urban planning and environment protection guide disaster risk reduction (DRR) across socio-economic and environmental sectors. Another notable progress is the budget allocation mechanism set up under the National Environment Fund (NEF) to fund risk reduction projects submitted by sector ministries or local government.

Despite a strong legal and policy framework, still development and informal settlements continues to be situated in disaster prone zones.

While significant responsibilities are entrusted to local councils, they have not been allocated appropriate resources to fulfil their DRR mandate. Similarly, the legal and policy framework can be strengthened to set clearer obligations for sector ministries.

In 2020, there is a unique opportunity to build a more coherent policy framework for DRR, Climate Change and Environment Management with the development of the national DRR strategy, the preparation of the Climate Change Bill and the development of the new environmental strategy.

## KEY RECOMMENDATIONS INCLUDE:

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1.

NDRRMC and the Climate Change Division to conduct a light policy review to achieve consistency in the development of the Climate Change Policy, the Environmental Strategy and the National DRR Strategy

2.

Develop a national DRR strategy and action plan 2020-2030 to set clear priorities and targets



3.

NDRRMC together with the Land Drainage Authority and the Climate Change Division to implement a public education campaign on applicable DRR & CCA regulations

4.

Establish a national multi-stakeholder DRR platform to function as an operational body to implement decisions made by the National Council

5.

Increase percentage of allocation of NEF funding to local government to enable the councils to fulfill their DRR functions. Consider blended financing modalities under the NEF to attract private sector CSR financing

# STRENGTHENING PREPAREDNESS FOR RESPONSE & RECOVERY

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Mauritius disposes over a strong legal and institutional framework for disaster preparedness and response both at national and local level, and the DRM structure is well decentralized in the country. The country is well known for its community preparedness, especially with respect to cyclones. Funding mechanisms are in place to finance preparedness and response efforts.

There is a functioning early warning system for a variety of hazards such as cyclones, tsunami and epidemics

and, to a lesser extent flood and landslide.

Effort are required to improve risk identification and information management system, and in particular flood early warning. Guidelines and arrangements for simulation exercises and pre-positioning of emergency stocks can be further strengthened and a renewed attention should be put on management of complex emergencies such as industrial accidents or whole-of-island epidemics.

## KEY RECOMMENDATIONS INCLUDE:

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1.

Conduct annual preparedness planning including NGOs and private sector, to develop emergency scenario for priority risks and update mapping of actors and response capacities (who does what where)

2.

Alignment of the emergency levels used for planning by NDRRMC with the actual Administrative levels of the Government (Local and National)



3.

Establish an Information Management Unit at NDRRMC to perform information management and communication functions for response

4.

Establish a feed-back mechanism for priority hazards such as cyclones and floods to be tested during the SIMEX

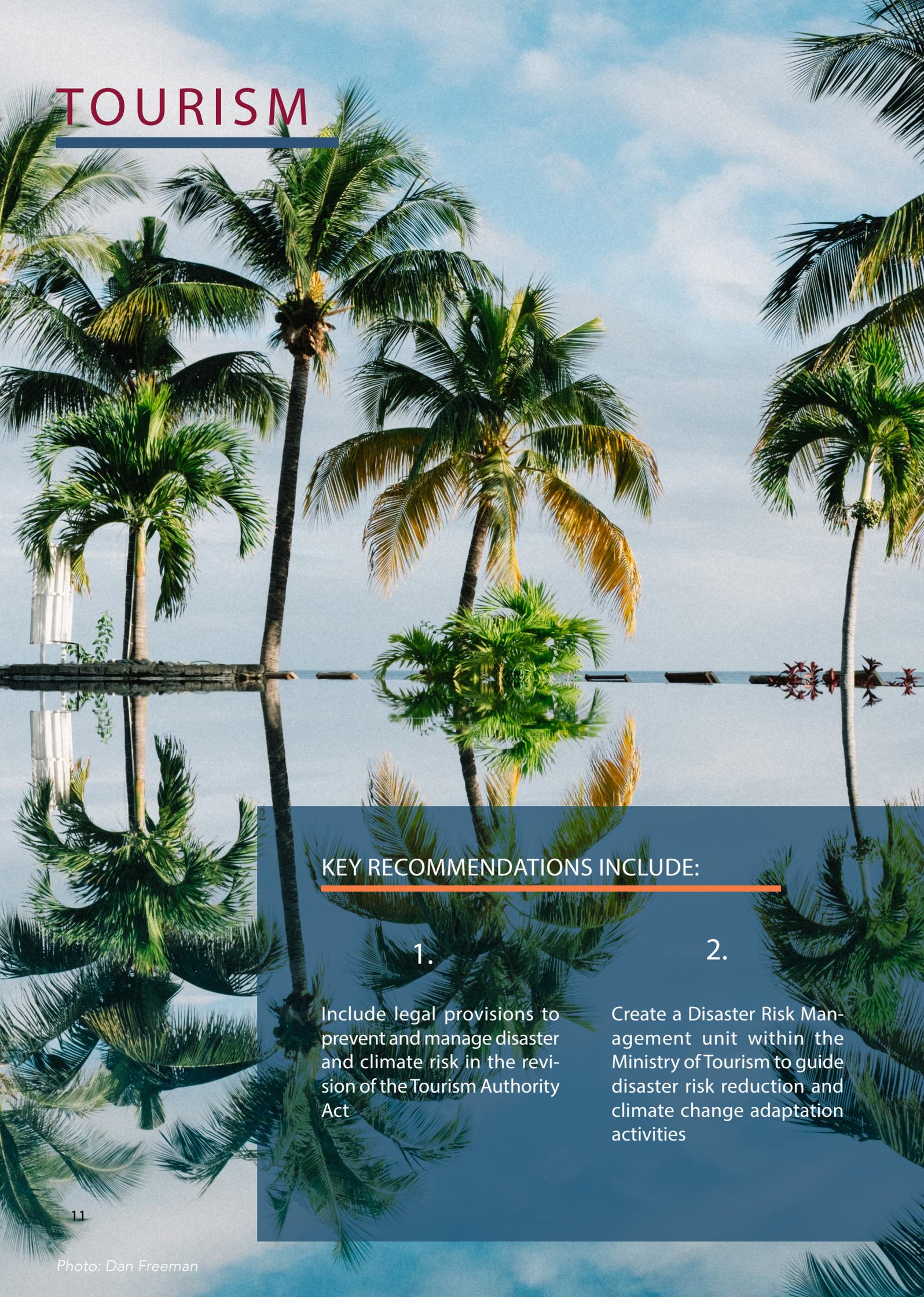
5.

Determine clear threshold/triggers to activate contingency plans

6.

Develop a Mass Evacuation in Natural Disasters Contingency Plan targeting local population as well as foreign nationals (migrants and tourists) including an online registration system and conduct regular SIMEX

# TOURISM



## KEY RECOMMENDATIONS INCLUDE:

1.

Include legal provisions to prevent and manage disaster and climate risk in the revision of the Tourism Authority Act

2.

Create a Disaster Risk Management unit within the Ministry of Tourism to guide disaster risk reduction and climate change adaptation activities



While the tourism sector share in the national economy continues to grow, it is also increasingly exposed to the adverse impact of disasters and climate change. The location of the tourism industry in coastal zone makes it particularly exposed to cyclones, storm surge and floods. The growth of tourism infrastructure in the coastal zone has also led to a significant increase of flood risk in some parts of the island where the natural drainage

system has been disrupted by infrastructure development.

The Tourism Strategic Plan 2018-2021 acknowledge the growing exposure of the sector to natural hazards and climate change. This has yet to translate into risk sensitive programs and the implementation of specific measures to address existing risk and prevent the creation of new risk.

3.

Track losses and damages caused by disasters to the tourism sector revenues including private sector losses

4.

Consider applying Drainage Impact Assessment to tourism private sector development to enable a comprehensive mapping of flood risk in the coastal zone

5.

Undertake a mapping of all tourism accommodation sites and their exposure to disaster and climate risk to include guesthouses and private accommodation in preparedness activities

# AGRICULTURE

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## KEY RECOMMENDATIONS INCLUDE:

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1.

Integrate and harmonize climate adaptation and DRR measures across food crop, livestock, fishery and forestry sub-sectors

2.

Improve the technical capacities of epidemiology experts (including in Rodrigues) on animal health and crop pest and diseases



Agriculture is highly exposed to cyclones, torrential rains and flash floods. Over the past decade, the decrease in sugarcane production resulted in significant land-use changes and conversion of arable land to commercial development. Agriculture continues to be the main source of livelihood in rural areas for about 12,500 small-scale farmers.

The Strategic Plan for Food Crops, Livestock and Forestry Sector 2016-2020 and the 3-year strategic

plan 2018-2021 are cognizant of the risks posed by changing climate and natural hazards. The Food and Agricultural Research and Extension Institute (FAREI) disseminates weather and climate data to help farmers to better plan and minimize crop losses. The National Biosecurity Plan outlines prevention, preparedness and contingency measures for sugarcane, other crop and livestock sectors to manage biological risks.

3.

Explore opportunities of using the existing mobile application 'Mokaro' for disseminating early warning information related to floods, cyclones, tsunamis

4.

Create a depository of available emergency preparedness/contingency plans for sugarcane, other crops, livestock, forestry and fisheries

# ENVIRONMENT

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## KEY RECOMMENDATIONS INCLUDE:

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1.

Harmonize and integrate DRR and climate adaptation priorities and measures in the National Environment Strategy 2020-2030 and CC bill and National Adaptation Plan

2.

Make Environmentally Sensitive Areas publicly available to protect fragile and valued ecosystems in order to maintain their DRR functions



As a tropical island, whose economy is intricately linked with the environment (agriculture, tourism, trade) the role of the coastal eco-systems is critical. At the same time, healthy and resilient ecosystems such as wetlands, forests, mangrove can act as physical barriers to reduce physical exposure to hazards and support adaptation to climate change.

Mauritius has a comprehensive regulatory and policy framework

for environment protection, DRR and climate change, including the Environmental Protection (Amendment) Act 2008. While laws and regulations are cognizant of some hazards such as floods, DRR is not specifically addressed and a multi-hazard approach is lacking. Emerging threats posed by climate change are not given the required attention.

3.

Expand the scope of Environmental Impact Assessment (EIA) to include multi-hazards analysis beyond floods and coastal erosion

4.

Increase the coverage of climate public investment and expenditure review beyond the land and drainage authority and energy sectors to other sectors

5.

Increase technical skills to conduct disaster impact assessments to guide preparedness for environmental emergencies

# WATER & SANITATION

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## KEY RECOMMENDATIONS INCLUDE:

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1.

Close off the sewerage system and refurbish the leaking drinking water pipelines in order to prevent water contamination by sewage at time of floods

2.

Establish preparedness protocols for drinking and wastewater, including maintenance of Wastewater Management Treatment plants

**6** CLEAN WATER AND SANITATION



Three Year  
Strategic Plan  
2018-2021:  
Energy & Public Utilities

Cyclones, floods, dry spells as well as biological hazards such as water borne diseases bear a direct impact on the water supply and sanitation systems. The vulnerability of water and sanitation facilities to disaster risk is increased by damaged drinking water pipelines and the open sewerage system. At times of flooding, sewage can overflow with the risk of contaminating drinking water and causing serious health

problems for the population. The sewage master plan as well as the national water policy are cognizant of the disaster and climate change risk and include targets for disaster risk management and mitigation including in relation to the strengthening of the surveillance and early warning systems for floods and drought.

3.

Wastewater Management Authority (WWA) to introduce and conduct objective random sampling and testing of industry wastewater

4.

Develop water management plans based on hydrologically defined Water Management Areas, to promote local stakeholder structures' participation

5.

Clarify division of labor and coordination between the Wastewater Management Authority and the Solid Waste Management Division with respect to the management of wastewater

# HEALTH



## KEY RECOMMENDATIONS INCLUDE:

1.

Further strengthen surveillance and early detection system and address the lack of effective multisectoral coordination and information sharing to facilitate the implementation of integrated disease and event-based surveillance

2.

Establish a real-time reporting/surveillance system with interoperability between the human and animal health sectors to manage human/animal epidemics risk across all levels



In view of its significant trade exchanges and with more than a million tourists visiting every year, Mauritius is highly exposed to the risk of a pandemic outbreak. During the recent outbreak of Covid19, the country demonstrated its capacity to respond. The country is well equipped to respond adequately to public health emergencies and can rely on a highly educated population, strong community preparedness networks and a well-structured public health system.

The roles and responsibilities of the Ministry of Health and Wellness in public health emergencies are well defined. The national health sector strategy 2017-2021 aims at further strengthening the health sector response by proposing measures to address emerging threats from climate change as well as re-emerging communicable diseases such as Zika and vector borne diseases.

3.

Establish a laboratory information management system for the laboratory investigation capacity as well as a Biosafety Level 3 (BSL-3) laboratory

4.

Conduct simulation exercises applying varying scenarios for biological hazards

5.

Carry out a Hospital Safety Index (HIS) assessment for the Primary Health Care network to strengthen business continuity in hospitals and health facilities in emergencies

# EDUCATION



Mr Pierre is an boat near the reefs.  
Every morning he is the  
use he goes in his  
then he starts catching fish  
At one o'clock he stops  
fishing and  
There he sells the fish to  
Finally, he returns home

## KEY RECOMMENDATIONS INCLUDE:

1.

Scale up existing school safety assessments to all schools in the country

2.

Monitor implementation of School Emergency Response Plan



The integration of DRM in the education sector is a government priority to increase awareness of disaster risk amongst children, parents, teachers, create a safe school culture and empower communities to take preventive as well as preparedness actions.

The Ministry has a dedicated Infrastructure Management Unit responsible for school safety and completed an assessment

of schools in hazard prone areas under the DRR Strategic Framework and Action Plan. The tertiary education system offers bachelor and master's degrees in disaster management including courses in DRR, Climate Change, Health Disaster Management, Humanitarian Logistics and Social Resilience, as well as courses in Civil Engineering and the Building Environment.

3.

Expand offer of university curriculum in infrastructure engineering and student exchange programmes to support resilient infrastructure development

4.

Include a DRR standard module in the primary education curriculum

5.

Integrate epidemic and pandemic preparedness into the teacher training curriculum and school's education programs

# RODRIGUES ISLAND

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## KEY RECOMMENDATIONS INCLUDE:

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1.

Capacitate the National Meteorological Service to deliver localized forecast, including agro-meteorological advisory

2.

Strengthen information sharing between NDRRMC and RDRRMC on hazard profiling, risk assessment and mapping

Rodrigues experiences the same hazards as the main island, however, threats from tsunamis, droughts, and cyclones are more elevated. Its population is proportionally more vulnerable to disasters with lower capacities to manage disaster risk.

The Rodrigues Commission of Environment is well positioned to reduce disaster risk reduction and climate change adaptation on the island through its interventions in

agriculture, environment, fisheries, forestry, marine parks, coastal zone management and solid waste management.

The newly established Rodrigues Disaster Risk Reduction and Management Centre (RDRRMC) is coordinating the disaster response activities on the island with limited human capacities.

3.

Train Rodrigues Commission of Environment and RDRRMC in GIS mapping applied to disaster management

4.

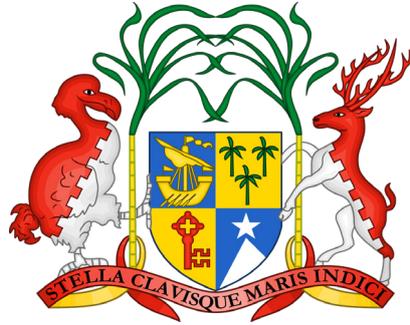
Position one Platoon of the newly created Disaster Response Unit (DRU) in Rodrigues Island in order to enhance the disaster response capacity on the island

5.

Create a centrally held reserve stock of relief supplies for more than 1% of population

6.

Capacitate the local epidemiology unit including laboratory equipment for early detection and control of biological risk



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