MADAGASCAR

NATIONAL DISASTER PREPAREDNESS BASELINE ASSESSMENT

A DATA-DRIVEN TOOL FOR ASSESSING RISK AND BUILDING LASTING RESILIENCE

PDC | GLOBAL

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- Ministry of Public Health (MSANP)
- Ministry of Transport
- Ministry of Water, Sanitation, and Hygiene (MEAH)
- National Gendarmerie
- National Police
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- National Hydrological Service (SHN)
- United Nations Children's Fund (UNICEF)
- United Nations Disaster Risk Reduction (UNDRR)
- United Nations Office for the Coordination of Humanitarian Affairs (OCHA)
- United Nations Resident Coordinator
- University of Antananarivo
- World Food Programme (WFP)
- World Meteorological Organization (WMO)

LIST OF ABBREVIATIONS

AfDB: African Development Bank

APEAM: Professional Association of Insurance Companies in Madagascar

BIANCO: Independent Anti-Corruption Bureau

BNGRC: National Office for Disaster and Risk Management

CADRI: Capacity for Disaster Reduction Initiative

CASEF: Madagascar Agriculture Rural Growth and Land Management Project

CCGRC: Communal Committee for Disaster and Risk Management

CDGRC: District Committee for Disaster and Risk Management

CDM: Comprehensive Disaster Management

CERF: United Nations' Central Emergency Response Fund

CNGRC: National Committee for Disaster and Risk Management

COG: Continuity of Government

COOP: Continuity of Operations

COP: Common operating picture

CRGRC: Regional Committee for Disaster and Risk Management

CSBF: Commission for the Supervision of Banking and Finance

CSO: Civil Society Organization

DM: Disaster management

DMA: Disaster Management Analysis (of the NDPBA program)

DRF: Disaster Risk Financing

DRM: Disaster Risk Management

DRR: Disaster risk reduction

DRRM: Disaster risk reduction and management

DTP: Diphtheria-tetanus-pertussis

EMDAT: International Disaster Database

EOC: Emergency Operations Center

EW4ALL: Early Warnings for All

EWS: Early Warning System

FAO: Food and Agriculture Organization

FEWS NET: Famine Early Warning Systems Network

FTM: Foiben-Taosarintanin'I Madagasikara

GDP: Gross domestic product

GFDRR: Global Facility for Disaster Risk Reduction (of the World Bank)

GIFMM: Interagency Group on Mixed Migration Flows

GIS: Geographic Information Systems

GNDR: Global Network of Civil Society Organizations for Disaster Reduction

GP: Guiding Principle (of Sendai Framework)

GPSS: Global Program for Safer Schools

GSL: Logistics Sector Group

GSMA: Global Systems for Mobile Communication Association

HFA: Hyogo Framework for Action

HiB: Haemophilus influenzae type b

IADB: Inter-American Development Bank

ICT: Information and Communications Technology

ICRC: International Committee of the Red Cross

IDB: Inter-American Development Bank

IFRC: International Federation of the Red Cross and Red Crescent Societies

INSTAT: National Institute of Statistics

iGOPP: Index of Governance and Public Policy

IOM: International Organization for Migration

ITU: International Telecommunication Union

LEWS: Landslide Early Warning System

M4H: Mobile for Humanitarian

MAEP: Ministry of Agriculture and Livestock

MapAction: Mapping Action

MATSF: Territorial Planning and Land Services

MEF: Ministry of Economy and Finance

MFI: Microfinance Institution

MHE: Multi-Hazard Exposure

MHEWS: Multi-hazard early warning systems

MMR: Measles, Mumps and Rubella

MSNA: Needs Assessment Multisectoral

NDPBA: National Disaster Preparedness Baseline Assessment (of PDC)

LIST OF ABBREVIATIONS

NDRMF: National Disaster Risk Management Fund

NEOC: National Emergency Operations Centre

NGO: Non-Governmental Organization

OEA: Organization of American States

OECD: Organization for Economic Cooperation and Development

PAC: Colombian Civil Air Patrol

PDC: Pacific Disaster Center

PFA: Priority for Action (of Sendai Framework)

PNGRC: Madagascar's National Disaster Risk Management Policy

PNLCC: National Program to Combat Climate Change

PoA: Africa's Program of Action

REACH: Resource Center for Humanitarian and Conflict Analysis

RRT: Rapid Response Team

RSU: Simple Social Register

RVA: Risk and Vulnerability Assessment (of the NDPBA program)

SCJ: Security Coexistence and Justice

SD: Sustainable Development

SDG: Sustainable Development Goal

SFDRR: Sendai Framework for Disaster Risk Reduction

SLC: Local Consultation Structure

SMS: Short Message Service text messaging

SOP: Standard Operating Procedure

SWM: Solid Waste Management

T&E: Training and Education

UN: United Nations

UN OCHA: UN Office for the Coordination of Humanitarian Affairs

UNDP: UN Development Programme

UNDRR: UN Office for Disaster Risk Reduction

UNESCO: United Nations Educational, Scientific, and Cultural Organization

UNHCR: UN High Commissioner for Refugees

UNOSAT: United Nations Satellite Centre

USAID: United States Agency for International Development

USD: United States Dollar

VAM: Vulnerability Analysis and Mapping

VIAMO: Via Mobile

WASH: Water, Sanitation, and Hygiene

WFP: World Food Programme

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NDPBA

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Pacific Disaster Center (PDC) completed the Madagascar National Disaster Preparedness Baseline Assessment (NDPBA) in partnership with the Bureau National de Gestion des Risques et des Catastrophes (BNGRC) and the support of in-country stakeholders. The NDPBA examines the country's unique hazard profile, cultural characteristics, geographical and geopolitical context, historical events, and other factors that could impact, both positively and negatively, the ability to manage disasters. Recommendations, at both strategic and tactical levels, are developed based on the findings of the assessment and are aligned with the United Nations Development Goals and the Sendai Framework for Disaster Risk Reduction 2015-2030.

The assessment consists of two components: the Risk and Vulnerability Assessment (RVA) and the Disaster Management Analysis (DMA). The RVA considers multi-hazard exposure, social-economic vulnerabilities, and coping capacities. The DMA takes a qualitative approach to assess six thematic areas including enabling environment; institutional arrangements; disaster governance mechanisms; capabilities and resources; capacity development; and communication and information management. The DMA results are used to contextualize the RVA findings, providing a comprehensive understanding of the current disaster management landscape. PDC worked in partnership with BNGRC to integrate national priorities and stakeholder feedback throughout every step of the process, leveraging assessment findings to build recommendations and a Disaster Risk Reduction 5-Year Action Plan that allows for better targeted use of limited resources and identification of additional funding opportunities.

While the NDPBA was being conducted, the impact of multiple tropical cyclones, flood and wild/bushfire events, drought conditions in the most vulnerable parts of the island, locust infestation, and a dangerous malaria outbreak added to the complexities of the country's disaster risk environment. These events presented both challenges and opportunities for understanding and actively observing the capabilities of the Malagasy disaster management structure. The observations, as well as the lessons identified in this complex, multi-hazard environment, informed the RVA and DMA portions of the report, which are summarized immediately below and in the overall national and subnational recommendations.

The RVA results underline Madagascar's exposure to numerous hazards, with tropical cyclones, flooding, landslides, extreme heat, malaria, and susceptibility to locusts contributing to a significant number of people, buildings, natural resources, and critical infrastructure at risk. Exposure to these hazards, as well as others included in the assessment, highlights the importance of implementing preparedness strategies and risk reduction initiatives. The assessment also identifies vulnerabilities and coping capacities related to current socio-economic conditions and available resources that can be leveraged to support all phases of disaster management. RVA Indicators show that overcoming

challenges related to household access to clean water and sanitation, economic constraints, and access to information provides opportunities to reduce vulnerability across the country. In addition, improving access to health care services, transportation, and energy capacity can bolster Madagascar's coping capacity and disaster response capabilities. Endeavors to address these challenges, paired with efforts to mitigate the identified vulnerabilities, will strengthen the nation's overall resilience to disasters.

The DMA results found that Madagascar's Disaster Risk Management (DRM) system remains severely under-resourced. The BNGRC and local authorities often lack the funding, staffing, and logistical capacity needed to maintain readiness or implement preparedness and risk reduction measures. Communication and coordination systems require investment to support collaboration across national and international partners and strengthen community resilience. Data systems are fragmented, and although risk mapping and early warning tools exist, they are not fully integrated or regularly updated, limiting effective, evidence-based decision-making during emergencies.

A significant barrier to effective disaster response is weak infrastructure. Widespread deficits in electricity, water supply, healthcare, telecommunications, and transportation undermine emergency operations and increase vulnerability. Addressing these infrastructure gaps is critical for improving preparedness and building resilience at all levels.

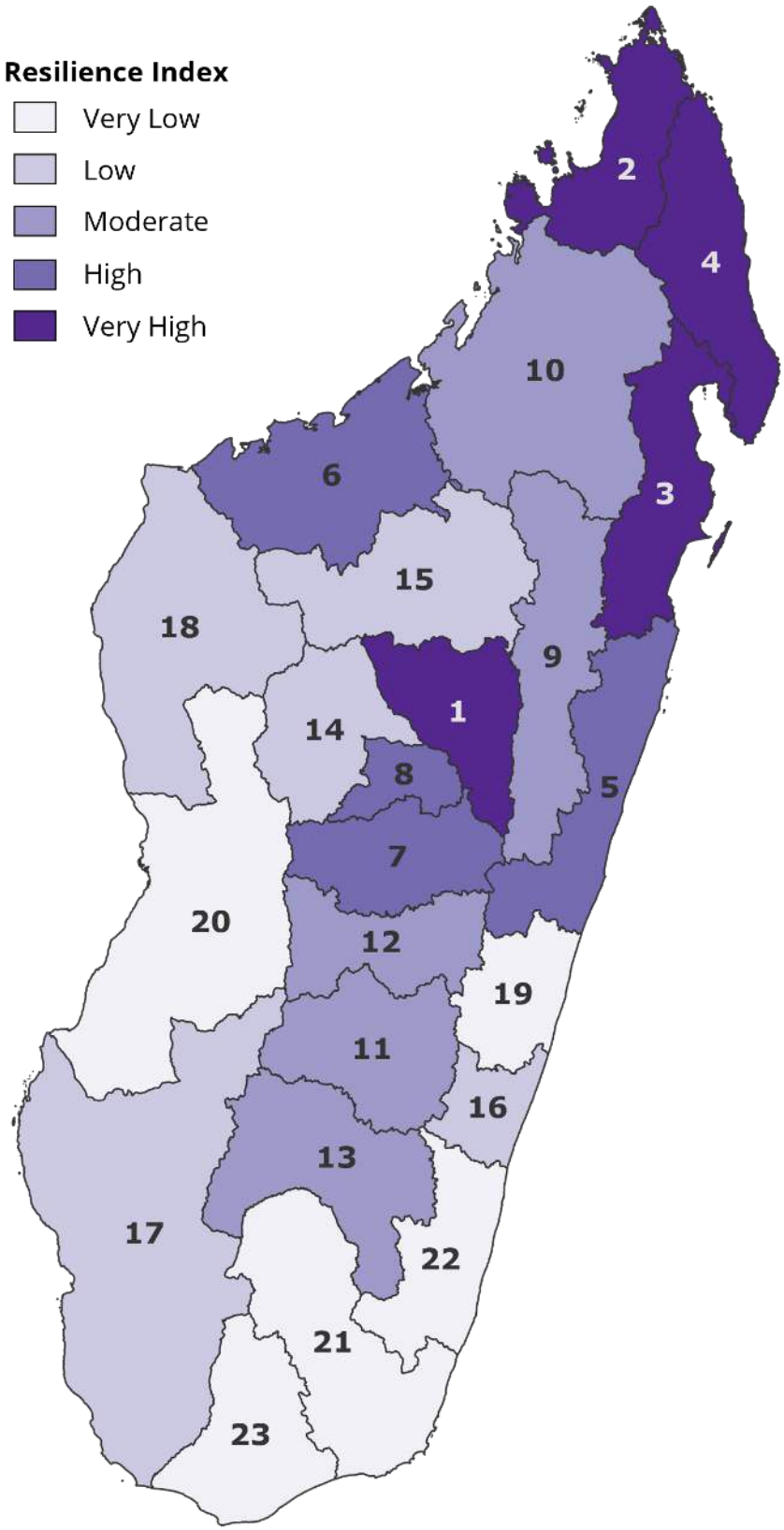
The NDPBA provides Madagascar with the scientific evidence and essential data for disaster risk monitoring and decision-making. To access all findings, recommendations, and data (tabular and spatial), developed for this analysis, please visit PDC's DisasterAWARE platform at https://disasteraware.pdc.org/. The Final Report can also be accessed at www.pdc.org.

SUMMARY OF FINDINGS

RESILIENCE BY REGION

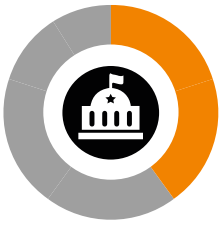
RANK	REGION	SCORE	RANK	REGION	SCORE
1	Analamanga	0.863	13	Ihorombe	0.433
2	Diana	0.686	14	Bongolava	0.409
3	Analanjirofo	0.555	15	Betsiboka	0.380
4	Sava	0.550	16	Fitovinany	0.343
5	Atsinanana	0.545	17	Atsimo Andrefana	0.340
6	Boeny	0.534	18	Melaky	0.326
7	Vakinankaratra	0.531	19	Vatovavy	0.322
8	Itasy	0.524	20	Menabe	0.313
9	Alaotra Mangoro	0.522	21	Anosy	0.304
10	Sofia	0.457	22	Atsimo Atsinanana	0.228
11	Haute Matsiatra	0.447	23	Androy	0.205
12	Amoron'i Mania	0.439			

Very Low Low Moderate High Very High


Resilience Index
Very Low
Low
Moderate
High
Very High
2
4
10
6
3
15
18
9
1
14
8
5
7
20
12
19
11
16
13
17
22
21
23

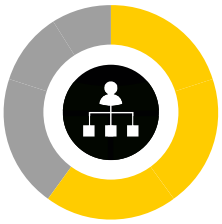
DISASTER MANAGEMENT ANALYSIS RESULTS

DISASTER MANAGEMENT ANALYSIS THEME AND SUBTHEMES



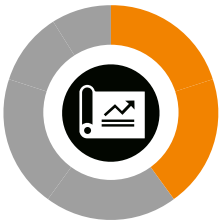
A. Enabling Environment

Legal Instruments
Financial Resources
Strategies
Public Confidence and Political Support
Attitudes and Experience



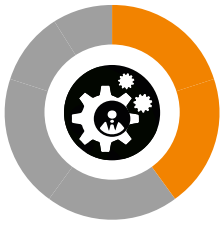
B. Institutional Arrangements

Organizational Structures
Leadership Arrangements
Mechanisms for Stakeholder Engagement



C. Disaster Governance Mechanisms

Plans and Processes
Command, Control, and Coordination Systems
Emergency Operations Centers

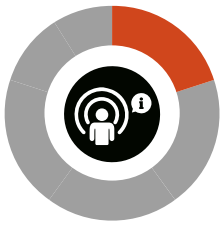


D. Capabilities and Resources

Dedicated Facilities and Equipment
Human Resources
Inventory of Commodities and Supplies
Targeted Functional Capabilities

E. Capacity Development

Capacity Development Plans and Strategies
Training and Education Programs and Facilities
Monitoring and Evaluation Processes and Systems



F. Communication and Information Management

Hazard and Risk Analysis Systems
Monitoring and Notifications
Disaster Assessment
Information Collection and Management
Media and Public Affairs

Limited or No Capacity
Early Capacity Development
Achievement with Significant Limitation
Substantial Progress with Some Limitation
Advanced Capacity

RECOMMENDATIONS

These recommendations are included in greater detail in the body of the report. We hope that the Government of Madagascar and key development and disaster management partners will leverage the results of this comprehensive assessment to enable a more robust and sustainable disaster risk reduction effort in Madagascar, which will contribute to saving lives and property.

IN LIGHT OF OUR FINDINGS, PDC MAKES THE FOLLOWING RECOMMENDATIONS:

1 Expand hazard and risk mapping for subnational and local areas, especially where concentrations of informal housing settlements are in hazard zones, to facilitate resilience-building measures and planning efforts.

2 Strengthen all-hazards monitoring, communications systems, and data translation into comprehensive multi-hazard early warning systems (MHEWS) and capabilities.

3 Promote comprehensive strategies to monitor, address, and mitigate the impacts of tropical cyclones, floods, extreme heat, landslides, and wildfires.

4 Develop a disaster-informed urban planning strategy to focus on disaster risk reduction (DRR) and resilience-building measures for informal housing settlements in disaster-prone areas.

5 Strengthen disaster preparedness for vulnerable populations.

6 Promote evidence-based decision-making and knowledge sharing by creating a centralized national repository that stores all communal disaster management, land use, and water management plans.

7 Promote participatory community-level approaches to disaster risk management.

8 Conduct a thorough review of building codes, development regulations, and land use policies, and implement updated measures to prevent further expansion into hazard-prone areas, especially informal settlements, to improve disaster outcomes.

9 Assess and ensure that emergency communications are accessible and actionable in rural areas.

10 Adopt a comprehensive strategy to increase infrastructure capacities in both urban and rural areas.

11 Maximize the long-term impact of the World Bank National Water Project in Madagascar by strengthening local governance and community engagement to ensure sustainable access to water.

12 Evaluate all overland transport infrastructure for its resilience to extreme heat and extreme precipitation events, in accordance with Madagascar's National Infrastructure Resilience Roadmap.

13 Adopt a comprehensive strategy to increase infrastructure capacities in vulnerable and isolated communities.

14 Evaluate and modernize energy infrastructure for security and sustainability.

15 Strengthen emergency response services' capacity to effectively and efficiently meet the community's needs and provide timely delivery of life-saving assistance.

16 Allocate and prioritize funds to meet the expanding needs of BNGRC.

17 Reassess progress made toward DRR and resilience goals.

NDPBA

COUNTRY BACKGROUND AND OVERVIEW

The large island nation is part of the 20 countries of the East African sub-region, as defined by the United Nations.

GEOGRAPHY

587,401 km²
Total area (226,797 mi²)

5,501 km²
Water area (2,123 mi²)

5,600 km
Coastline (3,480 mi)

21.3%
Forest Area (% of land area) (2022)

70.3%
Agricultural Area (% of land area) (2022)

Neighboring Countries

- Mozambique
- Comoros
- Mauritius
- Seychelles
- Tanzania

Administrative Divisions

- 6 Provinces
- 23 Regions
- 119 Districts
- 1500 Communes

DEMOGRAPHICS

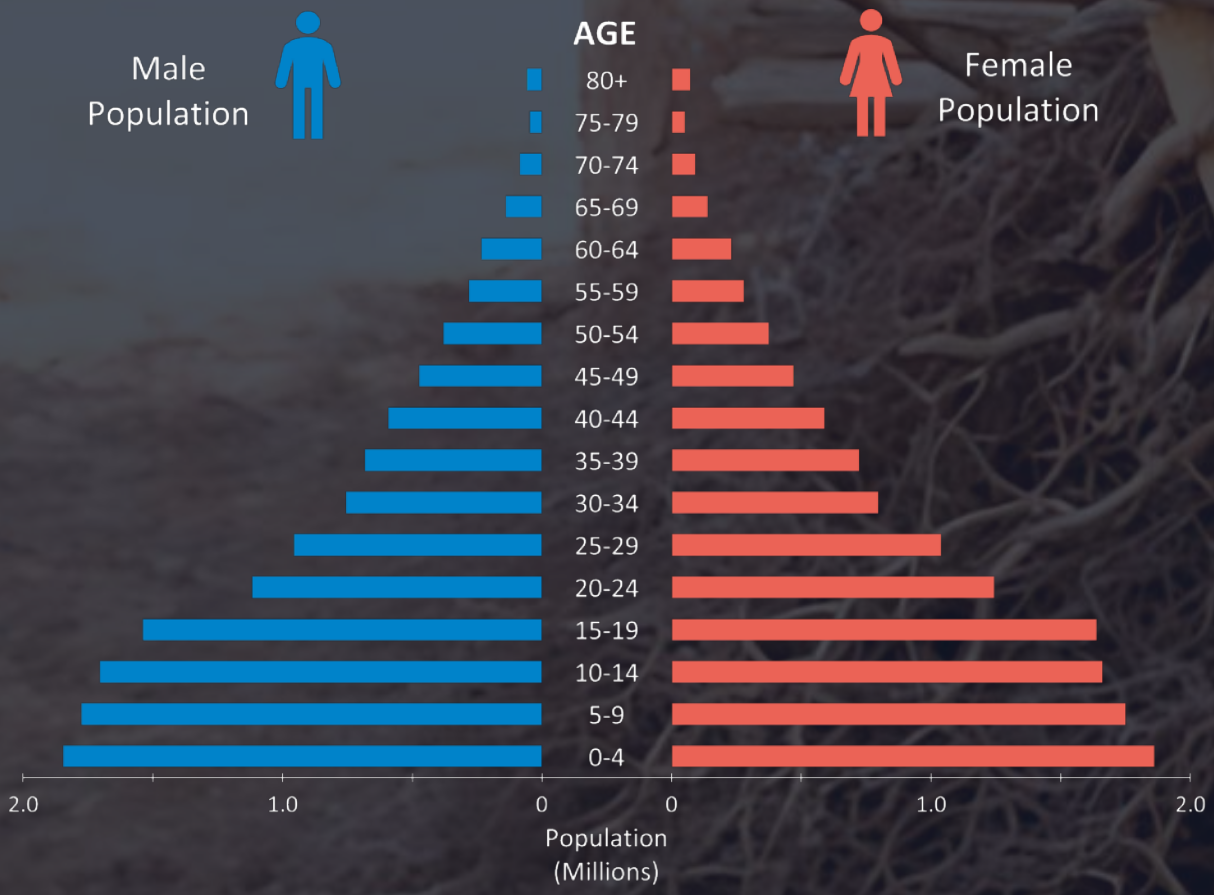
25,674,196
Total Population (2018 Census)

43.4 per km²
Population Density (112.4 per mi²)

4,942,902
Urban Population

20,731,294
Rural Population

3.01%
Average Annual Population Growth (1993-2018)



Healthcare Access

0.25
Number of Qualified Health Professionals (doctors, nurses, and midwives) per 1,000 people

0.3
Hospital Beds (per 1,000 persons)

47
Infant Mortality Rate (per 1,000 live births) (2021)

408
Maternal Mortality Rate (per 100,000 live births) (2018)

48.5%
Basic Immunization Coverage (children under age 2) (2021)

26.4%
Prevalence of Malnutrition (children under age 5) (2018)

Water, Sanitation, and Hygiene (Wash) Access

45%
Household Access to Drinking Water (2021)

13.1%
Household Access to Improved Latrines (2021)

81.3%
Contamination of Household Water (with E. coli) (2018)

31.8%
Time to Gather Household Water (greater than 30 minutes) (2018)

Access to Information

76.7%
Adult Literacy Rate (persons aged 15 and over)

70.6%
Net Primary School Enrollment Rate (2021)

44.2%
Primary School Completion Rate (2021)

10.9%
Upper Secondary Education Attainment (2021)

13.3%
Population Using the Internet (2018)

36.1%
Households with a Mobile Phone (2021)

45%
Household Access to Electricity (2021)

ECONOMY

GDP and Macroeconomics

49,453.22 Billion Ariary
Current GDP (at 2020 purchaser prices)

– 7.1%
Real GDP Growth (annual percent change) (2020)

5.81%
Inflation Rate (2021) (2021)

6.6%
Unemployment Rate (2021)

77%
Poverty Rate (2021)

83.2%
Agricultural Households (2018)

Major Exports (2021)

- Vanilla
- Cloves
- Unwrought nickel
- Titanium
- Cobalt
- Textiles

Major Imports (2021)

- Refined petroleum
- Rice
- Palm oil
- Sugar
- Fabric
- Sulphur

Economic Sectors (% of GDP)

47.08%
Services (2022)

21.89%
Agriculture (2022)

21.74%
Industry (2022)

KEY INFRASTRUCTURE

Logistics and Transportation

1
Large Airport
Ivato International Airport

22
Medium Airports

69
Small Airports/Airstrips

2
Small Seaports

26
Very Small Seaports

570,050 km
Mapped Roadway

2,408
Bridges

Emergency Services

141
Hospitals

513
Clinics

220
Police Stations

12
Fire Stations

Other Key Infrastructure

2,134
Schools

93
Colleges and Universities

26
Dams

13
Power Plants

DISASTER MANAGEMENT

Major Capacity Improvements/Milestones (past 10 years):

- Legal instruments for DM/DRR:
  - Law No. 2015-031 of December 4, 2015, relating to the National Policy for Risk and Disaster Management.
  - Decree No. 2019 - 1954 establishing the terms of application of Law No. 2015 - 031 of February 12, 2016, relating to the National Policy for Risk and Disaster Management 2016-02-12
  - Decree No 2019-1957 of October 2019, 16 regulating Law No. 2015-031 of February 12, 2016, on National Disaster Risk Management.
  - Decree No 2019-1949 of October 16, 2019, establishing the organization, functioning, and role of the CPGU.
  - Decree No. 2019-1958 of October 16, 2019, establishing the organization, functioning, and role of the BNGRC.
  - Decree No. 2022–298 amending and supplementing certain provisions of Decree No. 2019–1958 of October 16, 2019, establishing the organization, operation, and responsibilities of the National Office for Risk and Disaster Management.
  - Law on Urban Planning and Housing (LUH) – Loi n° 2015-052
  - Law on the Orientation of Spatial Planning (LOAT) – Loi n° 2015-051
- The public University of Antananarivo offers a master's degree in Disaster Risk Management (DRM).
- Pioneering the Global Methodology for Infrastructure Resilience Review: Developed by the UN Office for Disaster Risk Reduction (UNDRR) and the Coalition for Disaster Resilient Infrastructure (CDRI).
- Emergency Operations Centers (COUs) Expansion (2018)
  - Development of regional and district-level COUs.
  - Training on the Incident Command System (ICS) was introduced in pilot regions.
- Disaster Law Workshop & IFRC Pre-Disaster Agreement (2023)
  - BNGRC co-hosted a disaster law workshop with the Malagasy Red Cross and the IFRC.
  - Signed pre-disaster agreement to formalize humanitarian cooperation.

Recent Major Disaster Impacts (2015-2025) – EM-DAT CRED

Year	Type	Deaths	Persons Affected	Losses US$ (Adjusted)
2015	Tropical Storm ‘Chedza’	89	174,007	$46.3 million
2015	Flash Flood	26	24,000	
2015	Tropical Storm ‘Fundi’	6	8,430	$12.9 million
2016-2017	Drought		1,140,000	
2017	Tropical Cyclone ‘Enawo’	81	434,253	$24.9 million
2017	Plague Outbreak	207	2,384	
2017-2018	Drought		1,260,000	
2018	Tropical Cyclone ‘Ava’	73	161,318	
2018	Tropical Storm ‘Eliakim’	21	50,872	
2018	Measles Outbreak		98,415	
2019	Flood	9		
2019	Tropical Cyclone ‘Idai’	3	1,100	
2019	Tropical Cyclone ‘Belna’	5	20,293	$29.8 million
2020	Flood	40	106,846	
2020	Tropical Cyclone ‘Herold’	4	3,200	
2020-2024	Drought		1,680,000	
2021	Tropical Cyclone ‘Eloise’	2	1,000	
2021	Flood	1	1,400	
2022	Flood	34	62,114	
2022	Tropical Storm ‘Ana’	55	131,555	
2022	Tropical Cyclone ‘Batsirai’	92	112,115	
2022	Tropical Storm ‘Dumako’	14	9,900	
2022	Tropical Cyclone ‘Emnati’	15	169,000	$16.7 million
2022	Tropical Cyclone ‘Gombe’	2	900	
2022	Tropical Storm ‘Jasmine’	12	4,800	
2023	Tropical Cyclone ‘Cheneso’	53	90,870	$20 million
2023	Tropical Cyclone ‘Freddy’	17	299,000	
2024	Tropical Cyclone ‘Alvaro’	10	25,837	
2024	Tropical Cyclone ‘Gamane’	22	89,469	
2025	Tropical Cyclone ‘Dikeledi’	3	7,028	
2025	Tropical Storm ‘Honde’	4	50,254	
2025	Tropical Cyclone ‘Jude’	1	15,000	
2025	Tropical Cyclone ‘Chido’		135,838	

THE RVA

RISK AND VULNERABILITY ASSESSMENT RESULTS

RISK AND VULNERABILITY

ASSESSMENT RESULTS

Provided in this section are the Risk and Vulnerability Assessment (RVA) results conducted by the Pacific Disaster Center as part of the Madagascar National Disaster Preparedness Baseline Assessment. For more information about PDC's NDPBA Methodology, please visit: https://www.pdc.org/wp-content/uploads/NDPBA-Data-Sharing-Guide-English-Screen.pdf

MADAGASCAR

COMPONENTS OF RISK

Multi-hazard Exposure **Vulnerability** **Coping Capacity**

THE RVA

MULTI-HAZARD EXPOSURE

MULTI-HAZARD EXPOSURE

The following hazards were assessed by PDC as part of the National Disaster Preparedness Baseline Assessment:

Global Multi-Hazard Exposure Rank (PDC Global RVA)

40 OUT OF 216 COUNTRIES / TERRITORIES ASSESSED

Multi-Hazard Exposure within East Africa

2 OUT OF 20 COUNTRIES / TERRITORIES ASSESSED

MADAGASCAR HAZARD ZONES

SEA LEVEL RISE

<1% Population Exposed

18,286 Raw Population Exposure

<1% Built Environment Exposed

3% Critical Infrastructure Exposed

COASTAL FLOODING

<1% Population Exposed

80,264 Raw Population Exposure

1% Built Environment Exposed

6% Critical Infrastructure Exposed

RIVERINE FLOODING

7% Population Exposed

1,846,280 Raw Population Exposure

10% Built Environment Exposed

17% Critical Infrastructure Exposed

TSUNAMI

1% Population Exposed

208,477 Raw Population Exposure

1% Built Environment Exposed

5% Critical Infrastructure Exposed

TROPICAL CYCLONE WIND

100% Population Exposed

27,647,000 Raw Population Exposure

100% Built Environment Exposed

100% Critical Infrastructure Exposed

EARTHQUAKE

6% Population Exposed

1,763,100 Raw Population Exposure

9% Built Environment Exposed

12% Critical Infrastructure Exposed

LANDSLIDE

40% Population Exposed

10,911,272 Raw Population Exposure

36% Built Environment Exposed

36% Critical Infrastructure Exposed

EXTREME HEAT

12% Population Exposed

3,389,080 Raw Population Exposure

31% Built Environment Exposed

34% Critical Infrastructure Exposed

WILDFIRE

2% Population Exposed

606,240 Raw Population Exposure

3% Built Environment Exposed

4% Critical Infrastructure Exposed

MALARIA

22% Population Exposed

5,954,634 Raw Population Exposure

39% Built Environment Exposed

36% Critical Infrastructure Exposed

LOCUST

47% Cropland Exposed

Madagascar: Sea Level Rise (2050) Hazard Exposure

POTENTIAL POPULATION EXPOSURE

18,286 (<1%)

People exposed to sea level rise by 2050

POTENTIAL BUILT ENVIRONMENT EXPOSURE

28,358 (<1%)

Buildings exposed to sea level rise by 2050

CRITICAL INFRASTRUCTURE AND ASSETS EXPOSED

0 (0%) Airports	**9** (32%) Seaports	**0** (0%) National EOC	**0** (0%) Hospitals	**0** (0%) Health Centers	**2** (<1%) Schools
0 (0%) Power Plants	**0** (0%) Dams	**140** (1%) Bridges	**461 km** (<1%) Roads		

Madagascar: Coastal Flooding (2050) Hazard Exposure

POTENTIAL POPULATION EXPOSURE

80,264 (<1%)

People exposed to coastal flooding by 2050

POTENTIAL BUILT ENVIRONMENT EXPOSURE

127,895 (1%)

Buildings exposed to coastal flooding by 2050

CRITICAL INFRASTRUCTURE AND ASSETS EXPOSED

1 (1%)
Airports

16 (57%)
Seaports

0 (0%)
National EOC

2 (1%)
Hospitals

1 (<1%)
Health Centers

19 (1%)
Schools

0 (0%)
Power Plants

0 (0%)
Dams

301 (3%)
Bridges

2,189 km (<1%)
Roads

Madagascar: Riverine Flooding Hazard Exposure

POTENTIAL POPULATION EXPOSURE

1,846,280 (7%)

People exposed to riverine flooding

POTENTIAL BUILT ENVIRONMENT EXPOSURE

1,279,940 (10%)

Buildings exposed to riverine flooding

CRITICAL INFRASTRUCTURE AND ASSETS EXPOSED

18 (19%) Airports

4 (14%) Seaports

0 (0%) National EOC

22 (16%) Hospitals

83 (16%) Health Centers

269 (13%) Schools

4 (31%) Power Plants

9 (35%) Dams

2,116 (22%) Bridges

39,311 km (7%) Roads

4,968 km2 (15%) Cropland

Madagascar: Tsunami Hazard Exposure

POTENTIAL POPULATION EXPOSURE

208,477 (1%)

People exposed to tsunami

POTENTIAL BUILT ENVIRONMENT EXPOSURE

109,576 (1%)

Buildings exposed to tsunami

CRITICAL INFRASTRUCTURE AND ASSETS EXPOSED

3 (3%)
Airports

11 (39%)
Seaports

0 (0%)
National EOC

2 (1%)
Hospitals

8 (2%)
Health Centers

21 (1%)
Schools

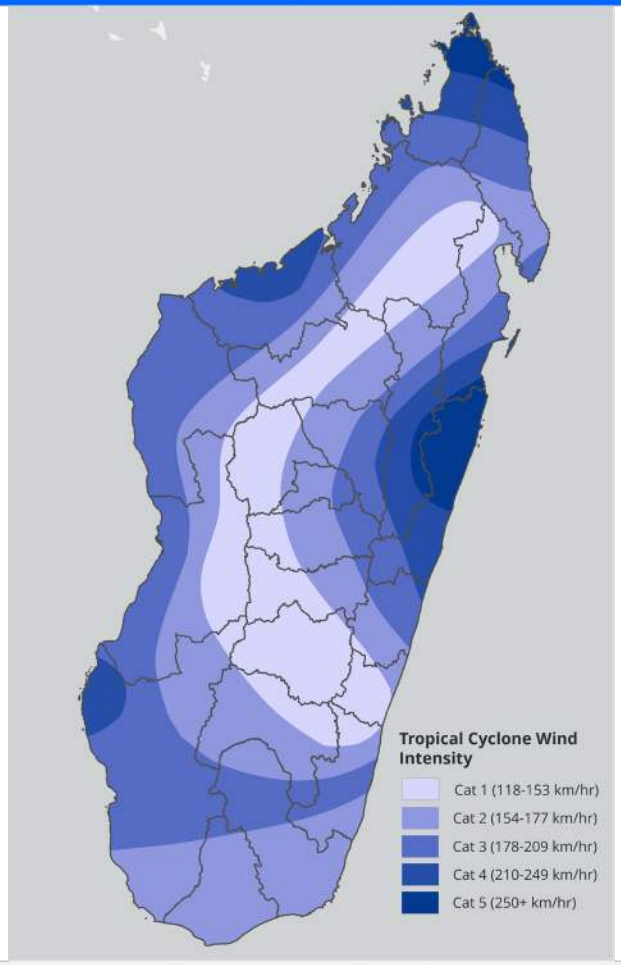
0 (0%)
Power Plants

0 (0%)
Dams

353 (4%)
Bridges

7,210 km (1%)
Roads

Madagascar: Tropical Cyclone Winds Hazard Exposure



POTENTIAL POPULATION EXPOSURE

27.65 million (100%)

People exposed to tropical cyclone winds (all categories)

POTENTIAL BUILT ENVIRONMENT EXPOSURE

12,378,862 (100%)

Buildings exposed to tropical cyclone winds (all categories)

CRITICAL INFRASTRUCTURE AND ASSETS EXPOSED

93 (100%) Airports

28 (100%) Seaports

1 (100%) National EOC

141 (100%) Hospitals

513 (100%) Health Centers

2,134 (100%) Schools

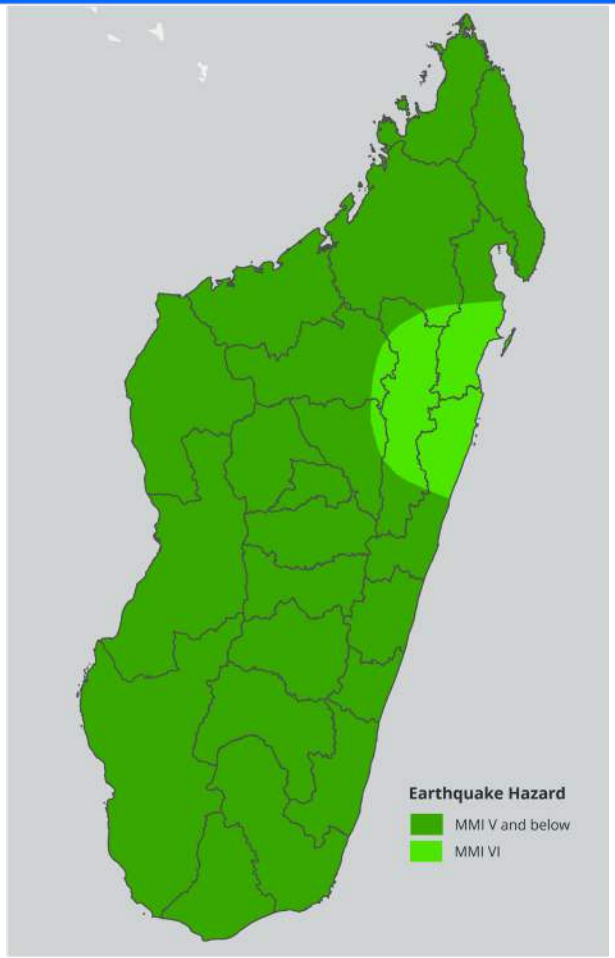
13 (100%) Power Plants

26 (100%) Dams

9,793 (100%) Bridges

570,050 km (100%) Roads

Madagascar: Earthquake Hazard Exposure



POTENTIAL POPULATION EXPOSURE

1,763,100 (6%)

People exposed to earthquake (MMI VI)

POTENTIAL BUILT ENVIRONMENT EXPOSURE

1,108,401 (9%)

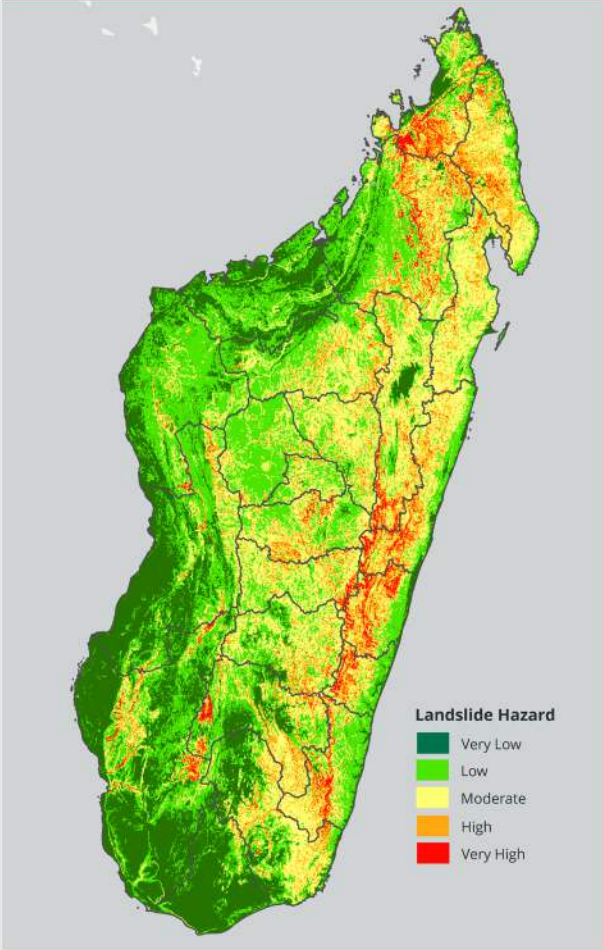
Buildings exposed to earthquake (MMI VI)

CRITICAL INFRASTRUCTURE AND ASSETS EXPOSED

6 (6%)	**4** (14%)	**0** (0%)	**17** (12%)	**21** (4%)	**104** (5%)
Airports	Seaports	National EOC	Hospitals	Health Centers	Schools

3 (23%)	**10** (39%)	**924** (9%)	**23,378 km** (4%)
Power Plants	Dams	Bridges	Roads

Madagascar: Landslide Hazard Exposure



POTENTIAL POPULATION EXPOSURE

10,911,272 (40%)

People exposed to landslide (moderate, high, very high)

POTENTIAL BUILT ENVIRONMENT EXPOSURE

4,392,651 (36%)

Buildings exposed to landslide (moderate, high, very high)

CRITICAL INFRASTRUCTURE AND ASSETS EXPOSED

4 (4%) Airports

2 (7%) Seaports

1 (100%) National EOC

31 (22%) Hospitals

166 (32%) Health Centers

670 (31%) Schools

7 (54%) Power Plants

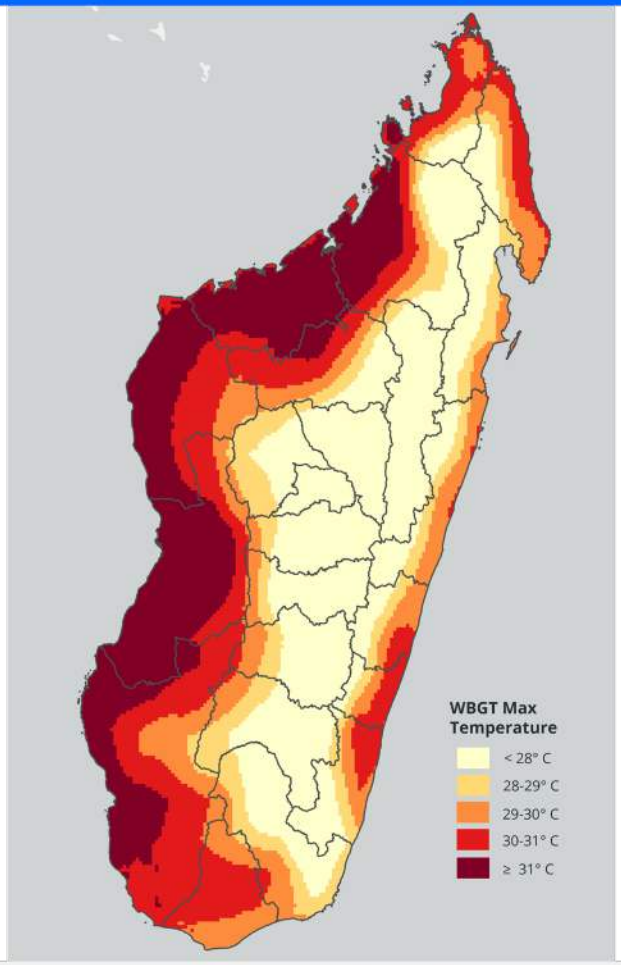
7 (27%) Dams

3,962 (41%) Bridges

285,846 km (50%) Roads

8,548 km² (25%) Cropland

Madagascar: Extreme Heat Hazard Exposure



POTENTIAL POPULATION EXPOSURE

3,389,080 (12%)

People exposed to extreme heat (wet bulb globe temperature of 30° C and above)

POTENTIAL BUILT ENVIRONMENT EXPOSURE

3,783,686 (31%)

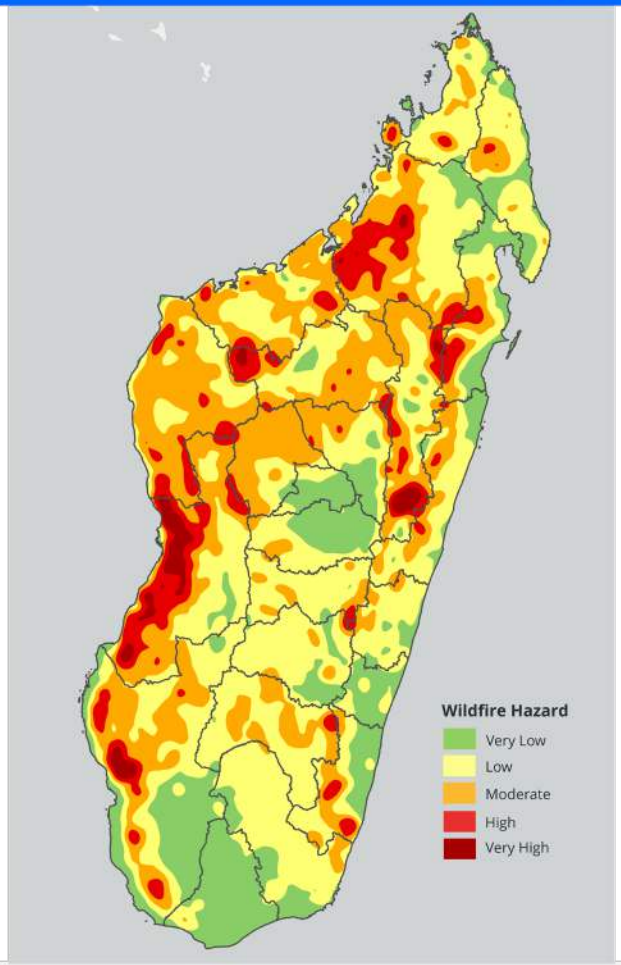
Buildings exposed to extreme heat (wet bulb globe temperature of 30° C and above)

CRITICAL INFRASTRUCTURE AND ASSETS EXPOSED

56 (60%)	**20** (71%)	**0** (0%)	**47** (33%)	**170** (33%)	**703** (33%)
Airports	Seaports	National EOC	Hospitals	Health Centers	Schools

3 (23%)	**8** (31%)	**2,009** (21%)	**154,620 km** (27%)	**53,060 km²** (33%)	**12,849 km²** (38%)
Power Plants	Dams	Bridges	Roads	Forest	Cropland

Madagascar: Wildfire Hazard Exposure



POTENTIAL POPULATION EXPOSURE

606,240 (2%)

People exposed to wildfire (high, very high)

POTENTIAL BUILT ENVIRONMENT EXPOSURE

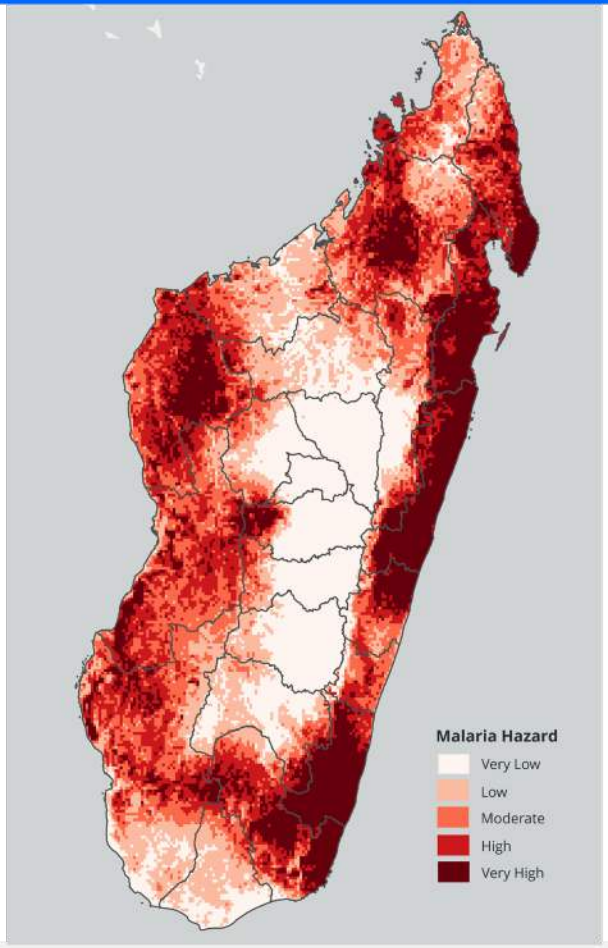
421,644 (3%)

Buildings exposed to wildfire (high, very high)

CRITICAL INFRASTRUCTURE AND ASSETS EXPOSED

5 (5%) Airports	**0** (0%) Seaports	**0** (0%) National EOC	**4** (3%) Hospitals	**6** (1%) Health Centers	**43** (2%) Schools
0 (0%) Power Plants	**1** (4%) Dams	**405** (4%) Bridges	**20,068 km** (4%) Roads	**19,207 km²** (12%) Forest	**3,142 km²** (9%) Cropland

Madagascar: Malaria Hazard Exposure



POTENTIAL POPULATION EXPOSURE

5,954,634 (22%)

People exposed to malaria (high, very high)

POTENTIAL BUILT ENVIRONMENT EXPOSURE

4,837,394 (39%)

Buildings exposed to malaria (high, very high)

MALARIA CASES AND INTERVENTIONS

200 (cases per 1,000)
Incidence rate among population at risk, 2023.

72.6%
Increase in malaria cases since 2000.

26.3%
Proportion of healthcare resources specifically targeting malaria management, 2021.

66.8 (per 100 persons)
Proportion of the population with access to an ITN, 2022.

36.9 (per 100 cases)
Proportion of malaria cases receiving effective antimalarial treatment, 2022.

CRITICAL INFRASTRUCTURE AND ASSETS EXPOSED

30 (32%)
Airports

14 (50%)
Seaports

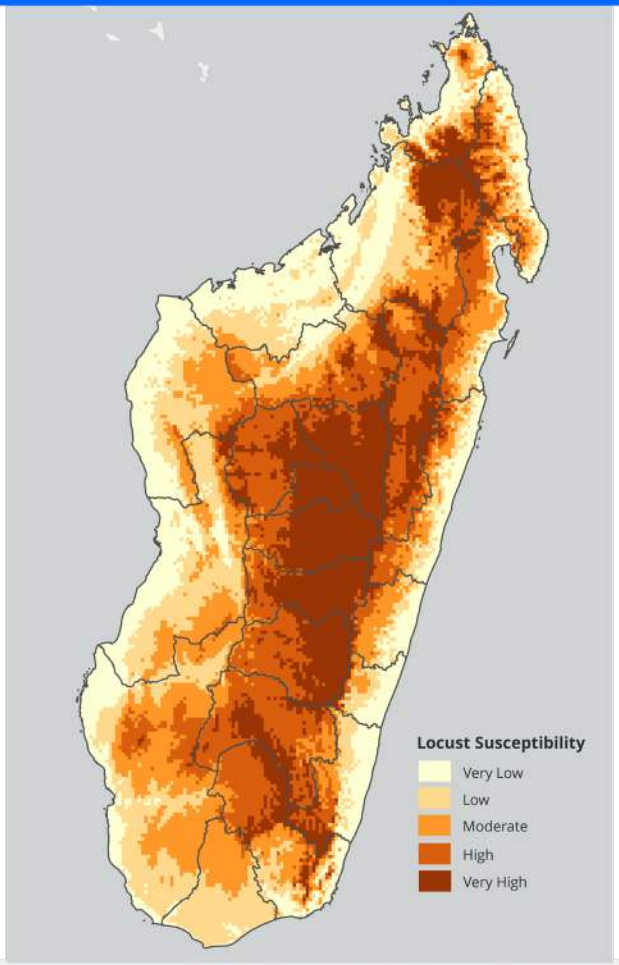
32 (23%)
Hospitals

201 (39%)
Health Centers

732 (34%)
Schools

Madagascar: Locust Susceptibility Exposure

PDC | GLOBAL



POTENTIAL CROPLAND EXPOSURE

16,101 km² (47%)

Cropland exposed to locust infestation (high, very high)

2012 / 2013 LOCUST PLAGUE

- National disaster declared 27 Nov 2012.
- Threatened livelihoods of 13 million people, 9 million of whom earn a living from agriculture.
- Nearly two-thirds of the country infested.
- Losses to rice crops ranged from 10% to 40% across 17 regions of the country.
- Exacerbated by the optimal locust breeding conditions left in the wake of Cyclone Haruna (Feb 2013).

AGRICULTURE SECTOR AND FOOD SECURITY IN MADAGASCAR

83.2%
Agricultural households, 2018
11.7% Urban
88.3% Rural

21.89%
Agriculture contribution to GDP, 2022

20.6%
Households experiencing food insecurity, 2021

26.4%
Prevalence of malnutrition (children under age 5), 2018

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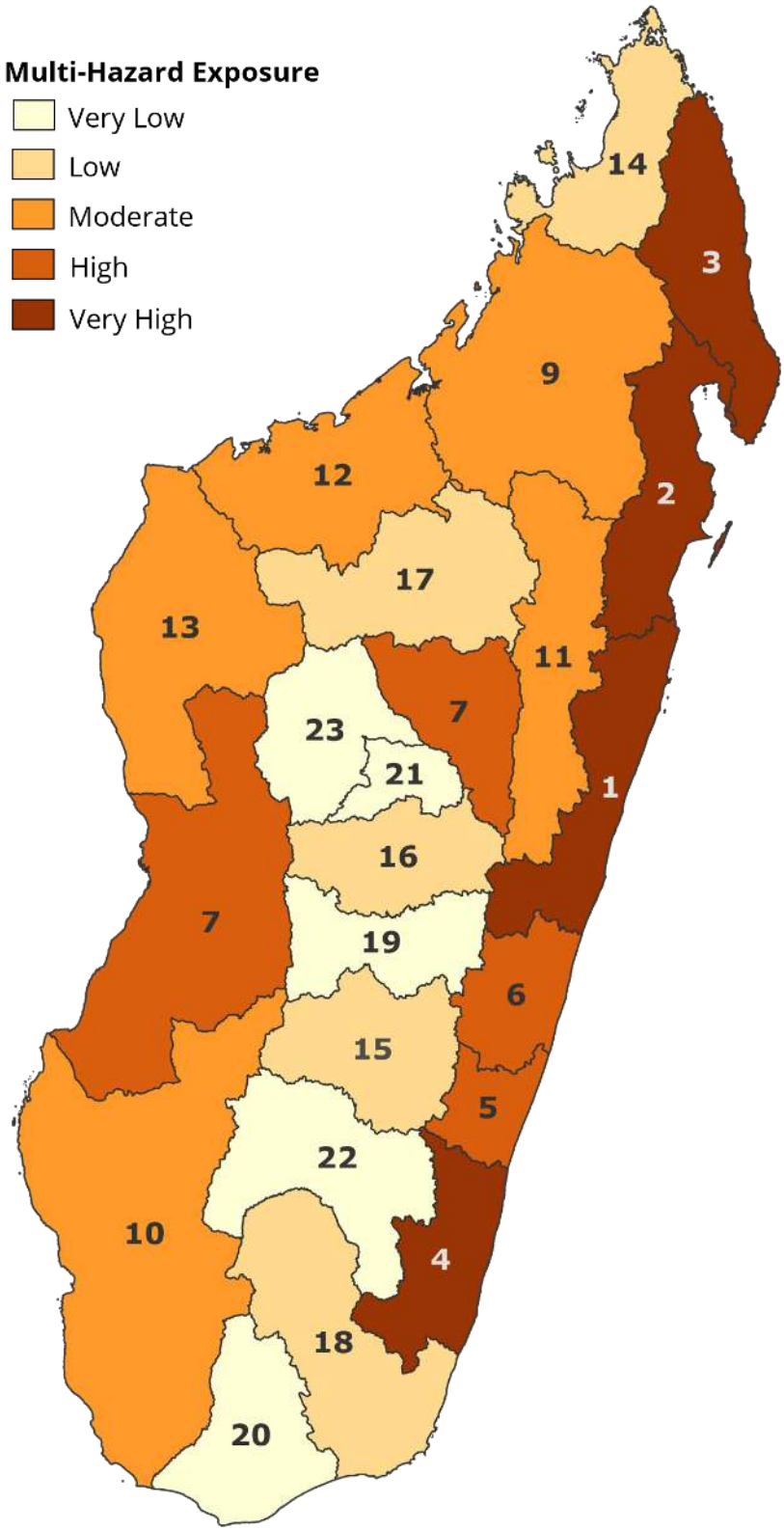
MULTI-HAZARD EXPOSURE BY REGION

RANK	REGION	SCORE	RANK	REGION	SCORE
1	Atsinanana	0.722	13	Melaky	0.397
2	Analanjirofo	0.687	14	Diana	0.391
3	Sava	0.618	15	Haute Matsiatra	0.240
4	Atsimo Atsinanana	0.541	16	Vakinankaratra	0.238
5	Fitovinany	0.507	17	Betsiboka	0.207
6	Vatovavy	0.503	18	Anosy	0.203
7	Analamanga	0.497	19	Amoron'i Mania	0.176
7	Menabe	0.497	20	Androy	0.154
9	Sofia	0.492	21	Itasy	0.117
10	Atsimo Andrefana	0.465	22	Ihorombe	0.039
11	Alaotra Mangoro	0.440	23	Bongolava	0.005
12	Boeny	0.406			

Very Low Low Moderate High Very High


Multi-Hazard Exposure
Very Low
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Very High
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THE RVA

VULNERABILITY

VULNERABILITY

Vulnerability measures the physical, environmental, social, and economic conditions and processes that increase susceptibility of communities and systems to the damaging effects of hazards. Vulnerability data is designed to capture the multi-dimensional nature of poverty, the inequality in access to resources, and the ability of a given area to adequately support the population. In coordination with stakeholders, the following indicators were selected to measure vulnerability subcomponents in the country. Breaking down each vulnerability subcomponent to the indicator level allows users to identify the key drivers of vulnerability to support risk reduction efforts and policy decisions.

Global Vulnerability Rank (PDC Global RVA)

42 OUT OF 204 COUNTRIES / TERRITORIES ASSESSED

Vulnerability within East Africa

16 OUT OF 18 COUNTRIES / TERRITORIES ASSESSED

VULNERABILITY SUBCOMPONENTS AND INDICATORS

Information Access Vulnerability
Net Primary School Enrollment
Secondary School Attendance
Literacy Rate
Household Access to Internet
Household Access to Television
Household Access to Radio
Household Access to Computer

Gender Disparity
Gender Parity in Literacy
Gender Parity in Home Ownership
Gender Parity in Land Ownership

Clean Water Access Vulnerability
Household Access to Drinking Water
Household Access to Improved Latrines
Contamination of Household Water (E. Coli)
Time Required to Gather Water per Household

Vulnerable Health Status
Infant Mortality Rate
Maternal Mortality Ratio
Prevalence of Child Wasting
Food Insecurity

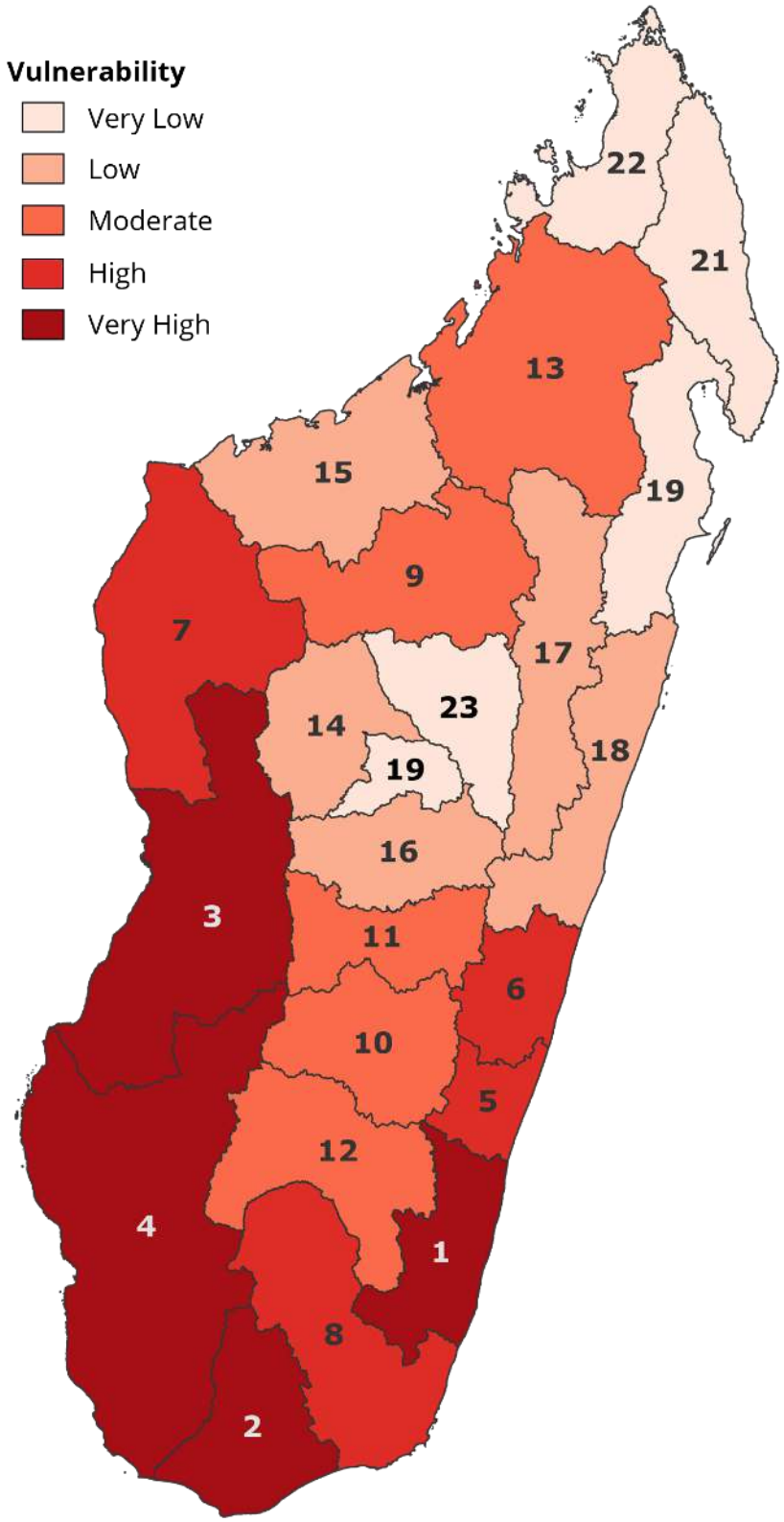
Economic Constraints
Economic Dependency Ratio
Unemployment Rate
Youth Unemployment Rate
Extreme Poverty Rate (Income-based)
Multidimensional Poverty Index
Lowest Wealth Quintile

Housing Vulnerability
Housing Deficit
Households with Earthen Floors
Household Overcrowding

VULNERABILITY BY REGION

RANK	REGION	SCORE	RANK	REGION	SCORE
1	Atsimo Atsinanana	0.774	13	Sofia	0.463
2	Androy	0.760	14	Bongolava	0.456
3	Menabe	0.701	15	Boeny	0.409
4	Atsimo Andrefana	0.685	16	Vakinankaratra	0.390
5	Fitovinany	0.670	17	Alaotra Mangoro	0.377
6	Vatovavy	0.666	18	Atsinanana	0.352
7	Melaky	0.652	19	Analanjirofo	0.346
8	Anosy	0.636	19	Itasy	0.346
9	Betsiboka	0.519	21	Sava	0.327
10	Haute Matsiatra	0.491	22	Diana	0.213
11	Amoron'i Mania	0.488	23	Analamanga	0.111
12	Ihorombe	0.478			

Very Low Low Moderate High Very High


Vulnerability
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THE RVA

COPING CAPACITY

COPING CAPACITY

Coping Capacity measures the systems, means, and abilities of people and societies to absorb and respond to disruptions in normal function.

Global Coping Capacity Rank (PDC Global RVA)

182 OUT OF 198 COUNTRIES / TERRITORIES ASSESSED

Coping Capacity within East Africa

14 OUT OF 18 COUNTRIES / TERRITORIES ASSESSED

COPING CAPACITY SUBCOMPONENTS AND INDICATORS

Economic Capacity
Highest Wealth Quintile
Average Monthly Wage
Average Household Savings

Transportation Capacity
Road Density
Average Distance to Airport
Average Distance to Seaport

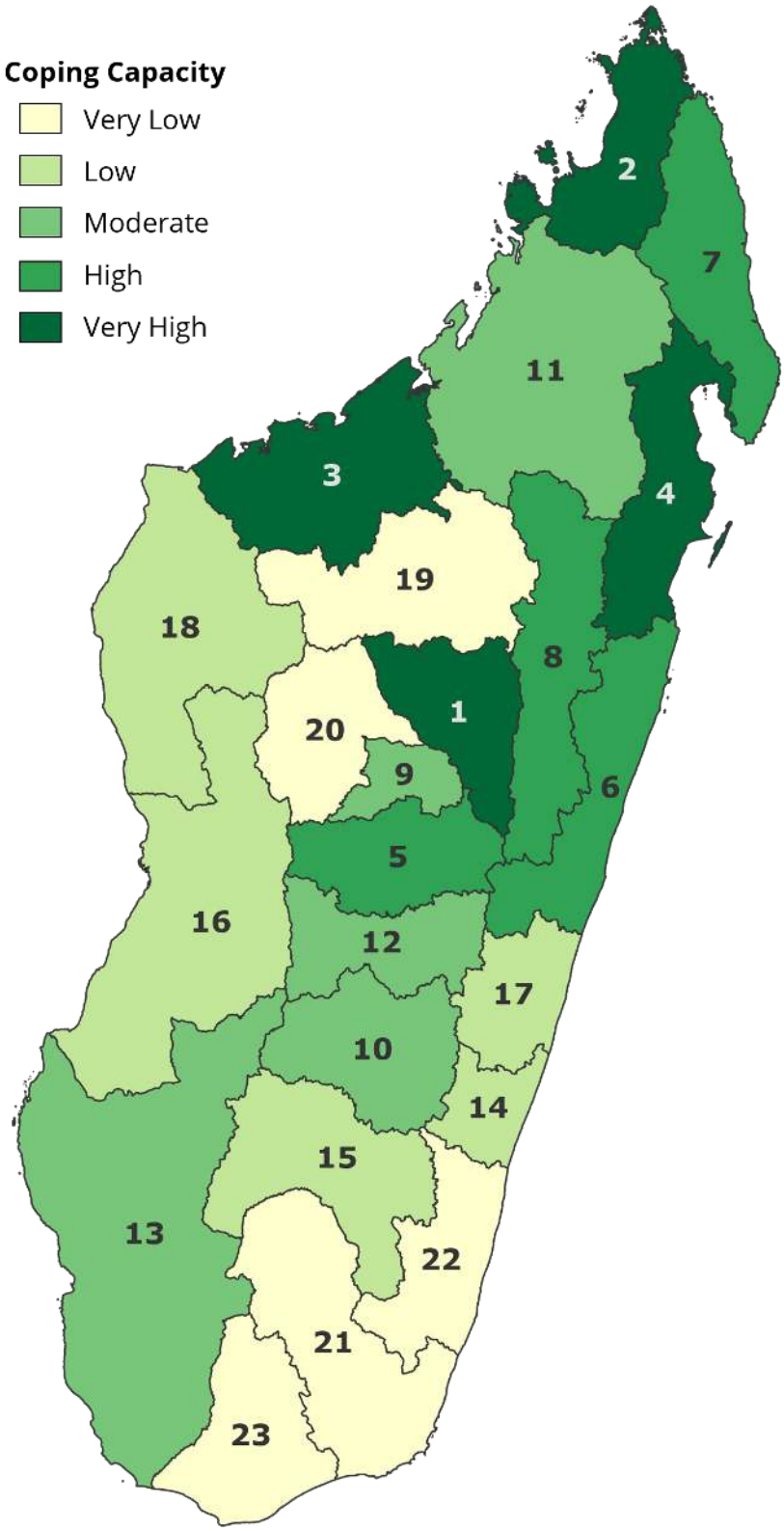
Energy and Communications Capacity
Household Access to Electricity
Population with Mobile Phones

Health Care and Emergency Services Capacity
Average Distance to Hospital
Health Insurance Coverage
Vaccination Rate
Health Care Personnel per 10,000 Persons
Average Health Investment per Capita

COPING CAPACITY BY REGION

RANK	REGION	SCORE	RANK	REGION	SCORE
1	Analamanga	0.838	13	Atsimo Andrefana	0.365
2	Diana	0.584	14	Fitovinany	0.356
3	Boeny	0.477	15	Ihorombe	0.344
4	Analanjirofo	0.455	16	Menabe	0.326
5	Vakinankaratra	0.452	17	Vatovavy	0.310
6	Atsinanana	0.441	18	Melaky	0.304
7	Sava	0.427	19	Betsiboka	0.278
8	Alaotra Mangoro	0.421	20	Bongolava	0.274
9	Itasy	0.393	21	Anosy	0.244
10	Haute Matsiatra	0.385	22	Atsimo Atsinanana	0.231
11	Sofia	0.378	23	Androy	0.171
12	Amoron'i Mania	0.366			

Very Low Low Moderate High Very High


Coping Capacity
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THE RVA

RESILIENCE

RESILIENCE

Resilience in Madagascar was calculated by averaging Vulnerability and Coping Capacity. Results are displayed in forthcoming pages, while the main drivers of resilience are provided in the detailed subnational profiles.

Global Resilience Rank (PDC Global RVA)

187 OUT OF 194 COUNTRIES / TERRITORIES ASSESSED

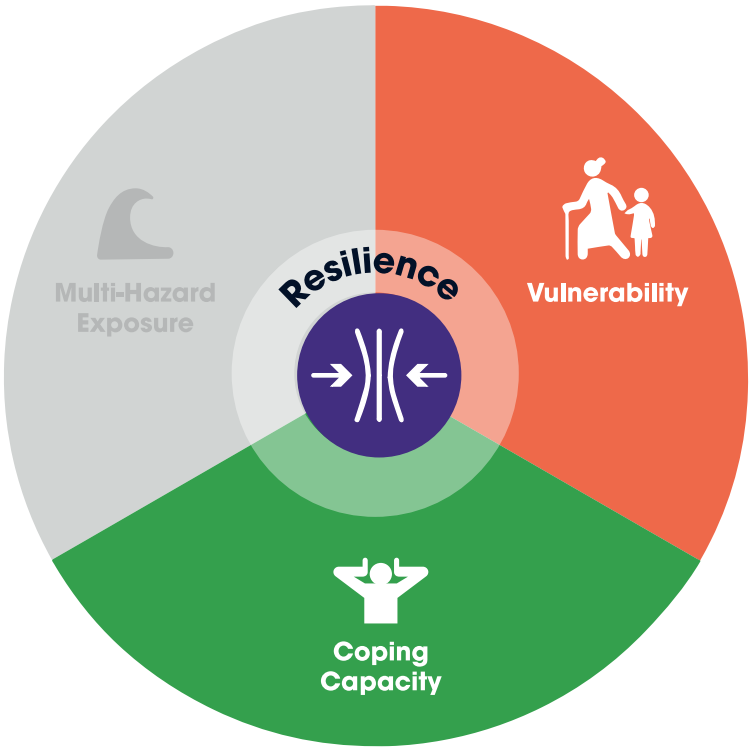
Resilience Rank within East Africa

11 OUT OF 18 COUNTRIES / TERRITORIES ASSESSED

RESILIENCE COMPONENTS

Vulnerability

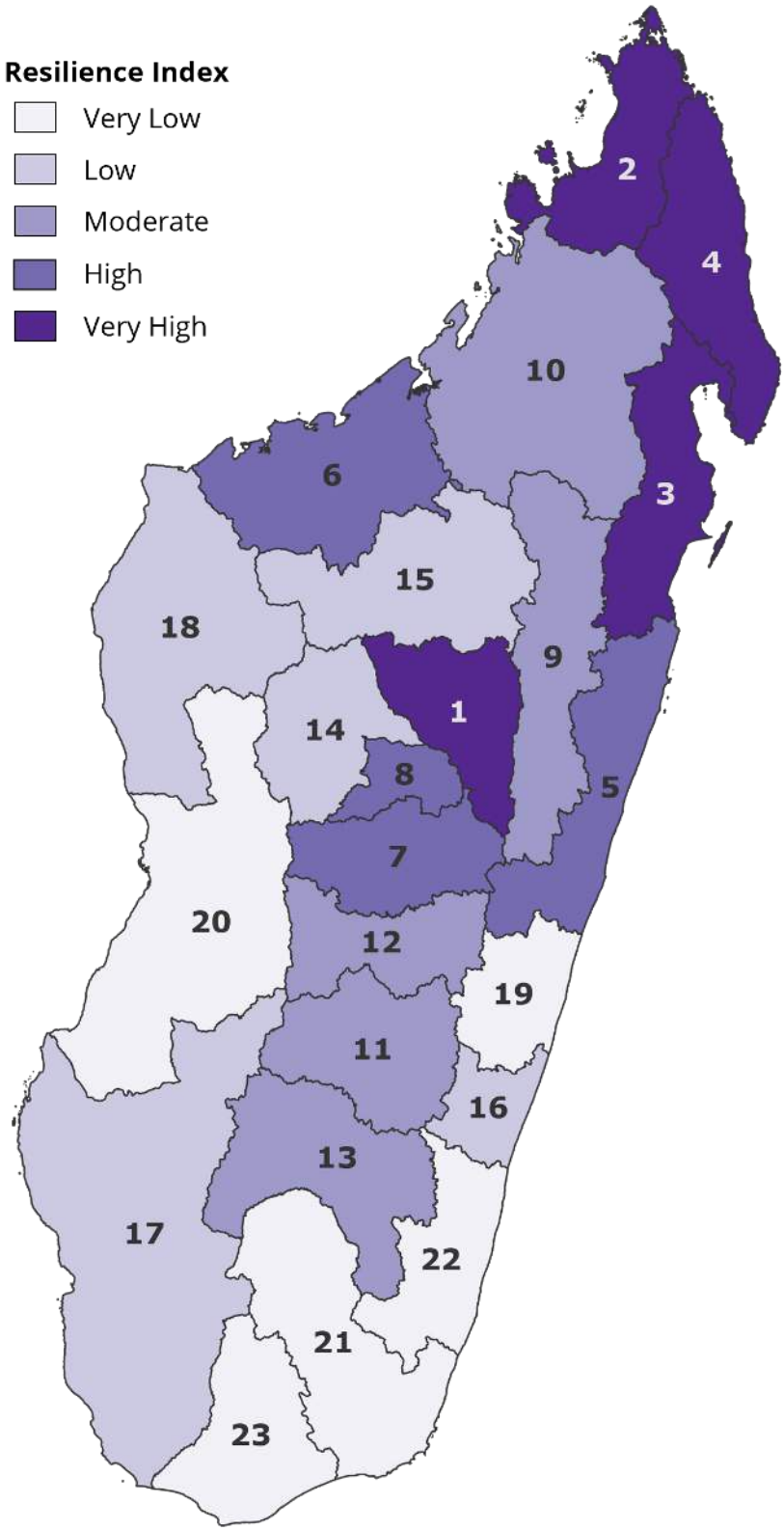
Coping Capacity



RESILIENCE BY REGION

RANK	REGION	SCORE	RANK	REGION	SCORE
1	Analamanga	0.863	13	Ihorombe	0.433
2	Diana	0.686	14	Bongolava	0.409
3	Analanjirofo	0.555	15	Betsiboka	0.380
4	Sava	0.550	16	Fitovinany	0.343
5	Atsinanana	0.545	17	Atsimo Andrefana	0.340
6	Boeny	0.534	18	Melaky	0.326
7	Vakinankaratra	0.531	19	Vatovavy	0.322
8	Itasy	0.524	20	Menabe	0.313
9	Alaotra Mangoro	0.522	21	Anosy	0.304
10	Sofia	0.457	22	Atsimo Atsinanana	0.228
11	Haute Matsiatra	0.447	23	Androy	0.205
12	Amoron'i Mania	0.439			

Very Low Low Moderate High Very High


Resilience Index
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THE RVA

MULTI-HAZARD RISK

MULTI-HAZARD RISK

Multi-hazard risk combines hazard exposure, susceptibility to impact, and the relative ability to absorb negative disaster impacts to provide a collective measure of how each region may be affected by hazards and disasters as a whole over time. Analyzing risk information throughout all phases of disaster management – mitigation, preparedness, response, recovery – improves operations and promotes efficient resource allocation.

Multi-hazard risk was calculated by averaging multi-hazard exposure, vulnerability, and coping capacity. Results are displayed below, while additional detailed analysis of risk is provided in the subnational profiles report.

Global Multi-Hazard Risk Rank (PDC Global RVA)

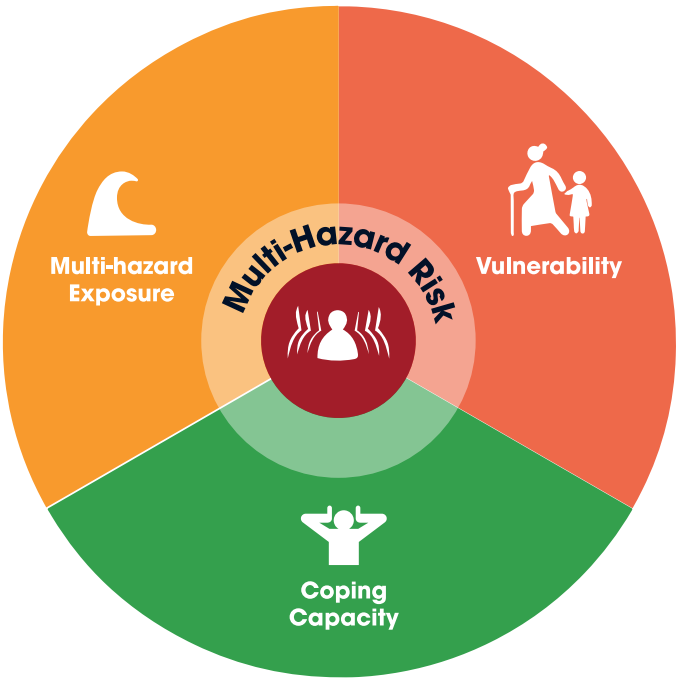
7 OUT OF 193 COUNTRIES / TERRITORIES ASSESSED

Multi-Hazard Risk Rank within East Africa

2 OUT OF 18 COUNTRIES / TERRITORIES ASSESSED

MULTI-HAZARD RISK COMPONENTS

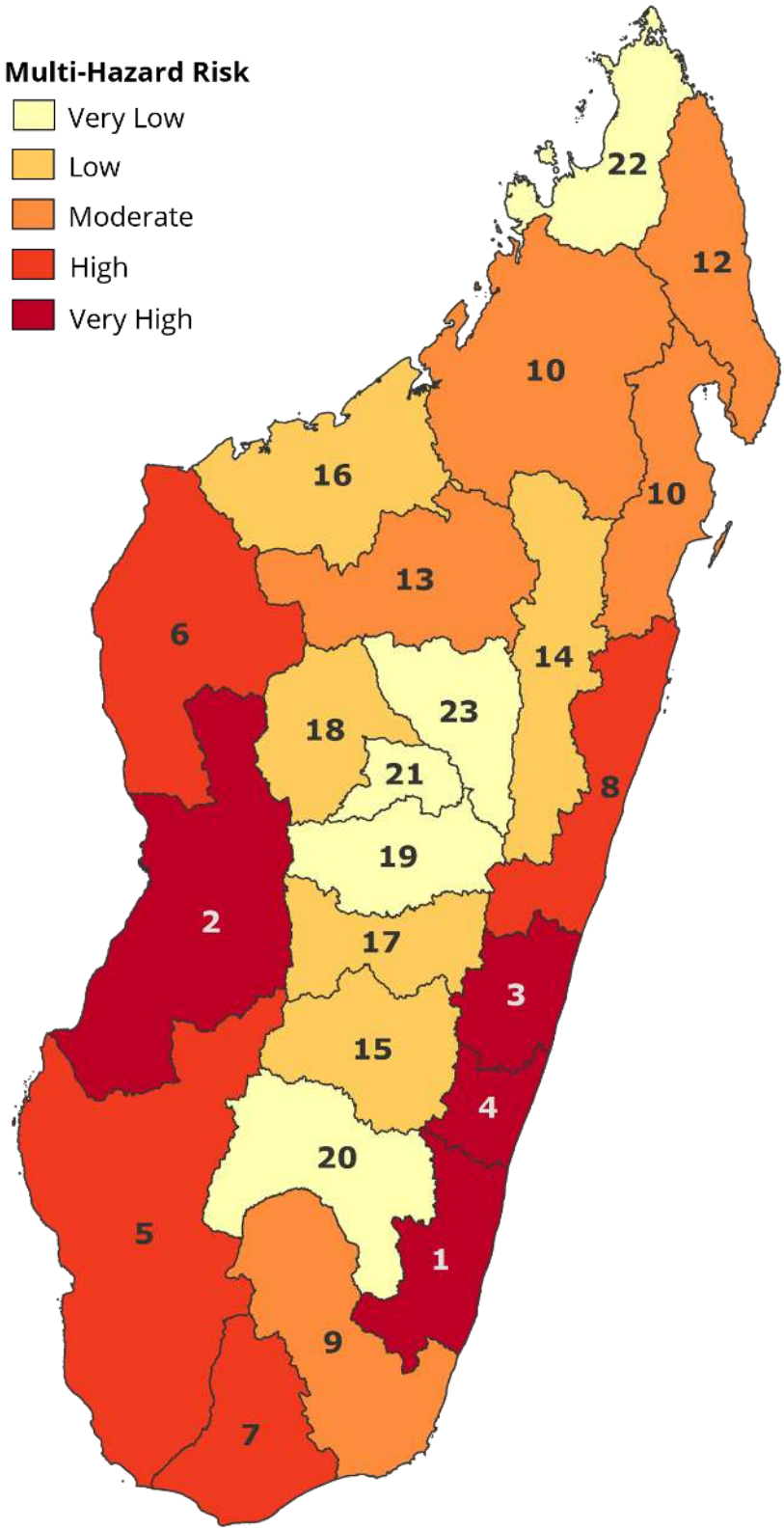
Multi-Hazard Exposure | **Vulnerability** | **Coping Capacity**



MULTI-HAZARD RISK BY REGION

RANK	REGION	SCORE	RANK	REGION	SCORE
1	Atsimo Atsinanana	0.695	13	Betsiboka	0.483
2	Menabe	0.624	14	Alaotra Mangoro	0.465
3	Vatovavy	0.620	15	Haute Matsiatra	0.449
4	Fitovinany	0.607	16	Boeny	0.446
5	Atsimo Andrefana	0.595	17	Amoron`i Mania	0.433
6	Melaky	0.582	18	Bongolava	0.396
7	Androy	0.581	19	Vakinankaratra	0.392
8	Atsinanana	0.544	20	Ihorombe	0.391
9	Anosy	0.532	21	Itasy	0.357
10	Analanjirofo	0.526	22	Diana	0.340
10	Sofia	0.526	23	Analamanga	0.257
12	Sava	0.506			

Very Low Low Moderate High Very High


Multi-Hazard Risk
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THE DMA

DISASTER MANAGEMENT ANALYSIS

SUMMARY OF FINDINGS

DISASTER MANAGEMENT ANALYSIS

This section provides the results of the Disaster Management Analysis (DMA) conducted as part of the Madagascar National Disaster Preparedness Baseline Assessment. The recommendations presented in this analysis support opportunities to enable more effective prioritization of risk-reduction and resilience-building initiatives and investments.

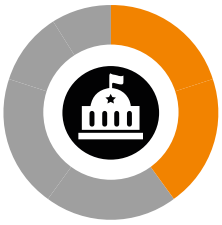
Considering a spectrum of operational achievements and challenges, the DMA examined six core disaster management themes: Enabling Environment; Institutional Arrangements; Disaster Governance Mechanisms; Capabilities and Resources; Capacity Development; and Communication and Information Management.

DISASTER MANAGEMENT ANALYSIS RESULTS

STATUS

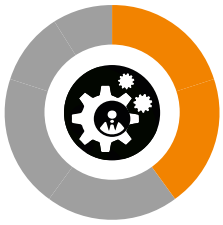
Limited or No Capacity — Advanced Capacity

DISASTER MANAGEMENT ANALYSIS THEME AND SUBTHEMES



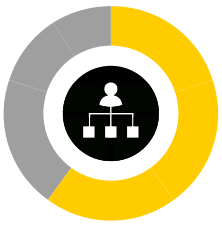
A. Enabling Environment

Legal Instruments
Financial Resources
Strategies
Public Confidence and Political Support
Attitudes and Experience



D. Capabilities and Resources

Dedicated Facilities and Equipment
Human Resources
Inventory of Commodities and Supplies
Targeted Functional Capabilities

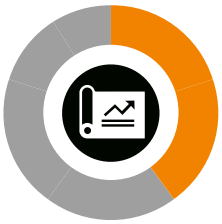


B. Institutional Arrangements

Organizational Structures
Leadership Arrangements
Mechanisms for Stakeholder Engagement

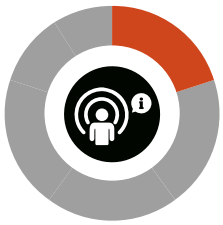
E. Capacity Development

Capacity Development Plans and Strategies
Training and Education Programs and Facilities
Monitoring and Evaluation Processes and Systems



C. Disaster Governance Mechanisms

Plans and Processes
Command, Control, and Coordination Systems
Emergency Operations Centers



F. Communication and Information Management

Hazard and Risk Analysis Systems
Monitoring and Notifications
Disaster Assessment
Information Collection and Management
Media and Public Affairs

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

DISASTER MANAGEMENT ANALYSIS RESULTS

Madagascar's disaster management system is anchored by the Bureau National de Gestion des Risques et des Catastrophes (BNGRC), the central coordinating authority responsible for disaster risk management (DRM) in the country. The National Disaster Risk and Catastrophe Management System (SNGRC) operates within a legal and institutional framework guided by the 2015 National Disaster Risk Management Policy and the 2016 National DRM Strategy, which emphasize decentralization, prevention, and integration of DRM into development planning. However, despite notable progress, Madagascar continues to face critical structural and operational challenges that thwart its ability to respond effectively to the country's high levels of disaster risk.

BNGRC functions well as the national focal point for DRM, facilitating coordination between ministries, humanitarian partners, and regional authorities. It plays a key role in preparedness, early warning dissemination, and emergency response coordination. Madagascar maintains strong working relationships with development partners, including the World Bank, UN agencies, the Red Cross movement, and various NGOs. These collaborations have supported capacity-building initiatives, risk mapping, emergency logistics, and early warning systems.

The SNGRC, in keeping with the DRM strategy, promotes decentralized response through regional

and local disaster risk management platforms. However, many local disaster platforms lack the training, funding, and tools to operationalize DRM plans. Community-based risk reduction initiatives are sporadic and often reliant on external support. There is a need for strengthened information sharing mechanisms between the BNGRC, Regional DRM Committees (CRGRC), District DRM Committees (CDGRC), and Communal DRM Committees (CCGRC) to conduct and incorporate risk assessments into disaster risk reduction efforts. These efforts will bring decision-making closer to communities, which is crucial in a country with diverse local risks and limited infrastructure.

Despite strategic commitments, the DRM system remains severely under-resourced. BNGRC and local authorities often lack funding, personnel, and logistical support to maintain readiness or implement preparedness and risk reduction measures effectively. Investment is needed in overall enhanced capacity building to ensure timely communication and coordination mechanisms, improving cross-collaboration among national and international partners, and promoting community resilience-building activities. In addition, fragmented data and information systems hinder progress. While risk mapping and early warning systems exist, they are not fully integrated across sectors or routinely updated. Weak information management prevents effective evidence-based planning, monitoring, and coordination during disasters.

There is room for improvement in the integration of disaster risk reduction (DRR) into development planning. DRR is not consistently mainstreamed across sectors such as agriculture, water, health, and urban development. As a result, vulnerability remains high, particularly in informal settlements and rural areas. Another chronic challenge remains in weak infrastructure: lack of reliable electricity, water, health care, telecommunications, transport infrastructure, and vast informal settlements cripple efforts during an emergency. We hope that Madagascar can leverage the risk and vulnerability assessment results in this report, in concert with the recommendations for infrastructure resilience from UNDRR and CADRI, to evaluate and improve disparities in local infrastructure capacities.

Madagascar has made strategic progress in structuring its disaster management system but faces persistent operational and financial hurdles. Strengthening local capacity, securing sustainable funding, and improving coordination remain essential to achieving national resilience goals.

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THE DMA

ENABLING ENVIRONMENT

ENABLING ENVIRONMENT

Findings indicate Madagascar's Enabling Environment shows early capacity development.

A country's legal, institutional, financial, and social instruments enable disaster management structures, authorities, processes, and capabilities. These rules, laws, policies, and other instruments allow capacity to develop and to achieve a compelling risk reduction vision. Characterization of an enabling environment encompasses a range of issues, from the existence and applicability of legislation to disaster management stakeholders' attitudes and experiences. The DMA analyzed the following sub-themes that characterize the enabling environment of Madagascar: Legal Instruments; Financial Resources; Strategies; Public Confidence and Political Support; and Attitudes and Experiences.

ENABLING ENVIRONMENT

FINANCIAL RESOURCES

FINDINGS

Madagascar established a disaster risk financing strategy in 2017, which includes funding sources for relief such as macro insurance and contingency credits. However, the level of available assistance and the insurance strategies are currently insufficient to address the disaster relief needs of Madagascar's low-income and vulnerable populations.

The Malagasy parliament passed an updated insurance law in 2020 that transferred the supervision of inclusive insurance from the Ministry of Economy and Finance (MEF) to the Commission for the Supervision of Banking and Finance (CSBF). This realignment allows more autonomous regulation of inclusive insurance while expanding options and disaster assistance programs and streamlining the funding process. However, challenges persist in securing adequate insurance options and subsequent funding.

RECOMMENDATIONS

To support Madagascar in meeting disaster relief funding requirements:

- Strengthen the CSBF's capacity to implement regulatory guidelines and develop innovative, inclusive insurance options.
  - Establish educational programs to expand the subject matter expertise of current employees.
  - Look to similar countries that have adopted innovative insurance schemes/options to implement in Madagascar.
- Expand Law No.2020-005 to ensure specific provisions for operationalizing microinsurance.
  - Outline regulatory guidelines and implementation plans.
  - Include incentives for the insurance sector that focus on developing and advancing insurance options nationwide.
- Identify a full-time secretariat position for the Professional Association of Insurance Companies in Madagascar (APEAM) focusing on expanding inclusive insurance and microinsurance options.
- Consider financial options with health mutuals and microfinance institutions (MFIs) to provide health and credit life coverage to low-income households.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, B, C, D, E

Guiding Principles
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

SDGs
11, 13

Objectives outlined in Africa's PoA
(a), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

ENABLING ENVIRONMENT

FINANCIAL RESOURCES

FINDINGS

Madagascar has established a National Disaster Risk Management Policy and a National Contingency Fund, which is mobilized by the National Office for Disaster and Risk Management (BNGRC) for disaster relief. This includes a Catastrophe Deferred Drawdown Option, World Bank crisis funding, and the United Nations' Central Emergency Response Fund (CERF) to optimize reconstruction and recovery efforts. As these options are implemented, it is essential to ensure that the Disaster Prevention and Emergency Management Unit (CPGU), BNGRC, CRGRCs, CDGRCs, and CCGRCs receive appropriate funding and allocation to meet Madagascar's disaster management (DM) and disaster risk reduction (DRR) needs.

RECOMMENDATIONS

To support Madagascar in meeting DM and DRR financing requirements:

- Increase annual funding allocations to the National Contingency Fund.
  - Establish concrete budgetary arrangements for available and predetermined annual regional, district, and commune-level funding for DM and DRR needs.
- Strengthen knowledge-sharing, prioritize rapid mobilization of financial resources, and improve coordination of DM and DRR activities down to the commune level.
- Optimize funding disbursement through more effective collaboration with local governments.
  - Leverage existing partnerships with the Ministry of Economy and Finance (MEF) and local authorities to establish pre-identified disbursement mechanisms and tools across regional, district, and commune levels.
  - Establish and maintain accessible and relevant data and information-sharing strategies to ensure partners are equipped to support coordinated and timely action.
  - Explore microloan programs to help facilitate a rapid economic recovery at the local level, particularly for vulnerable households and small businesses.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, B, C, D, E

Guiding Principles
(a), (b), (c), (e), (f), (g), (h), (i), (j), (k), (m)

SDGs
11, 13, 17

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

ENABLING ENVIRONMENT

FINANCIAL RESOURCES

FINDINGS

Madagascar's National Disaster Risk Management Policy (PNGRC) outlines the funding allocation process through its National Contingency Fund for Disaster Risk Management (DRM) and Disaster Risk Financing (DRF). This provides a roadmap for annual budget allocations and financial resources for the Provinces, Regions, Districts, and Communes under the National Office for Disaster and Risk Management (BNGRC). However, limited technical and resource capacity at all government levels has prevented DRF from being employed to its full potential.

This challenge is compounded by the BNGRC's limited role in the local-level DRM and DRF agenda and the allocation of available central funding mechanisms to implement measures. An established cost-sharing process at all government levels would empower the BNGRC to administer budget allocations and better support subnational capacity development. The National Contingency Fund for DRM and DRF should also be explicitly designated for anticipatory risk initiatives.

RECOMMENDATIONS

To support Madagascar in meeting essential DM funding requirements, the following activities are recommended:

- Increase the required annual sectoral contribution to the National Contingency Fund to ensure effective and equitable utilization across all levels of government.
- Create a cross-agency platform to implement consistent, reliable, and sustainable DRF capacity and strengthen collaboration among key stakeholders.
  - Implement a unified strategy involving the Ministry of Economy and Finance (MEF), CNGRC, BNGRC, CPGU, the Ministry of Agriculture and Livestock (MAEP), and the National Institute of Statistics (INSTAT).
- Consider conducting assessments that align identified risks with financing needs.
  - Include risk modeling with financial requirements to improve the relevance of the DRF strategy and support more effective allocation of scarce resources.
- Strengthen the DRF strategy by translating plans into implementation actions with clear mechanisms for effective coordination across all levels of government.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, B, C, D, E

Guiding Principles
(a), (b), (c), (e), (f), (g), (h), (i), (j), (k), (m)

SDGs
11, 13, 17

Objectives outlined in Africa's PoA
(a), (b), (c), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

ENABLING ENVIRONMENT

FINANCIAL RESOURCES

FINDINGS

Greater financial support is essential for BNGRC to lead and sustain effective disaster preparedness, response, and resilience initiatives.

In directing adequate funding to support BNGRC, the country is simultaneously investing in overall capacity building for timely communication and coordination mechanisms, improving cross-collaboration among national and international partners, and promoting community resilience-building activities.

The committed investments and funding will enable the nation to anticipate disasters better, respond to them more effectively, and recover more quickly. This financial commitment is essential for protecting lives and vital assets in Madagascar. Increased funding to the BNGRC will support national sustainable development goals (SDGs), facilitate economic growth, and contribute to reducing poverty, ultimately improving the well-being of the Malagasy people.

RECOMMENDATIONS

To support BNGRC in meeting its mission requirements effectively, the following activities are recommended:

- Allocate and prioritize funds to meet the specific needs of BNGRC.
  - Include funding avenues for equipment, infrastructure, training, and capacity building.
  - Focus on strengthening logistics and redundancies to ensure uninterrupted support of humanitarian activities and deliver disaster relief supplies during an emergency response.
- Develop clear project proposals demonstrating alignment, funding, and planning with national development goals and international agendas for DRR and SDGs
  - Focus efforts on predicting future impacts of hazards and developing resilient infrastructure.
- Strengthen avenues for sharing information and mechanisms for conducting and incorporating mapping and risk assessments into national DRR and SDG efforts, with a focus on district and commune levels.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action

1, 2, 4

Global Targets

A, B, C, D

Guiding Principles

(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

SDGs

6, 7, 11, 13, 14, 15, 16

Objectives outlined in Africa's PoA

(a), (b), (c), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

ENABLING ENVIRONMENT

CONFIDENCE AND SUPPORT

FINDINGS

Public confidence in government institutions in Madagascar is extremely low, reflecting widespread distrust in state structures. This lack of trust is part of a broader pattern of institutional fragility marked by centralized authority, limited transparency, and persistent perceptions of corruption.

Despite ongoing challenges, BNGRC remains actively engaged with stakeholders. They have worked with international partners to strengthen early warning systems and advance disaster risk reduction efforts. BNGRC has also participated in capacity-building programs and international knowledge exchanges to enhance its operational capabilities.

Additionally, BNGRC has taken steps to strengthen legal frameworks and coordination for disaster response. In 2023, they co-organized a Disaster Law workshop with the Malagasy Red Cross and IFRC, culminating in a pre-disaster agreement to enhance preparedness and response efforts.

RECOMMENDATIONS

To improve public perception in DM, the following activities are recommended:

- Enhance coordination with anti-corruption institutions
  - Formalize cooperation with BIANCO (Independent Anti-Corruption Bureau) to report, investigate, and resolve suspected irregularities in disaster-related operations.
  - Use BIANCO's support to conduct periodic integrity risk assessments of BNGRC processes.
- Promote community engagement and feedback
  - Involve local residents in disaster planning through workshops and training sessions.
  - Collaborate with NGOs and trusted community groups to strengthen DM efforts.
  - Highlight past successes of BNGRC and focus on future initiatives.
- Continue efforts to enhance transparency, engage the community, and effectively communicate to strengthen public confidence in BNGRC's operations.
- Align these practices with PNLCC Objective 3, which promotes transparency in public administration.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action

1, 2, 3, 4

Global Targets

A, B, D, E

Guiding Principles

(a), (b), (d), (e), (f), (g), (h), (i), (j), (k)

SDGs

4, 9, 10, 11, 13, 16

Objectives outlined in Africa's PoA

(a), (b), (c), (d)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

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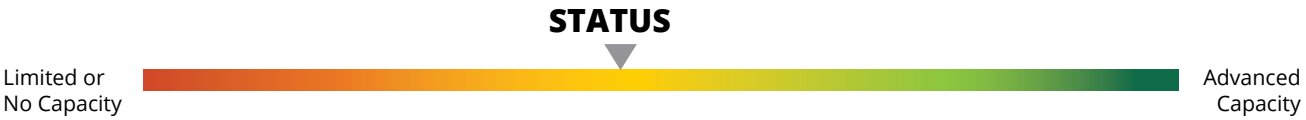
THE DMA

INSTITUTIONAL ARRANGEMENTS

INSTITUTIONAL ARRANGEMENTS

Findings indicate Madagascar's Institutional Arrangements show achievement with significant limitations.



SUBTHEME STATUS

Organizational Structures

Leadership Arrangements

Mechanisms for Stakeholder Engagement

The organizational and institutional structures through which disaster management capacity develops are indications of Madagascar's institutional arrangements. Examining the organization and composition of diverse agencies and individuals that constitute a nation's disaster management capacity—detailing the relationships and collaboration between them—reveals tangible opportunities for increased effectiveness. The DMA examined the existing disaster management Organizational Structures, Leadership Arrangements, and Mechanisms for Stakeholder Engagement.

INSTITUTIONAL ARRANGEMENTS

ORGANIZATIONAL STRUCTURES

FINDINGS

Due to Madagascar's large size, the geographic isolation of many communities, and limited transportation infrastructure, centralized disaster response based in Antananarivo is often too slow to address urgent needs.

Recent cyclone seasons have demonstrated that delays in logistics, assessments, and initial life-saving actions often worsen disaster impacts, particularly in remote and vulnerable regions such as Atsimo-Andrefana, Anosy, and Vatovavy.

Madagascar's disaster management (DM) system is overly centralized, with operational authority concentrated in the national capital. Local structures, including Regional (CRGRC), District (CDGRC), and Commune (CCGRC) Disaster Risk Reduction and Management (DRM) Committees, exist in theory. Still, they lack sufficient resources, authority, training, and autonomy to act effectively when disasters strike.

Establishing robust, self-sufficient, and well-prepared local DM structures will save lives, accelerate recovery, and alleviate the immense strain faced by BNGRC and national authorities.

RECOMMENDATIONS

To decentralize DM in Madagascar, the following activities are recommended:

- Preposition essential emergency supplies regionally
  - Stockpile emergency relief items at secure, regional warehouses near hazard-prone areas.
  - Assign stock management responsibility to CRGRCs and CDGRCs with BNGRC oversight.
- Mandate and support localized disaster preparedness planning
  - Require local DRM plans with regular updates that include hazard mapping, evacuation routes, and stock inventories.
  - Provide technical assistance to CRGRCs and CDGRCs to draft and exercise these plans.
- Promote community engagement and preparedness
  - Develop community awareness campaigns tailored to local contexts.
  - Build and maintain volunteer emergency teams at the fokontany level with basic training.
- Establish and train regional and district Rapid Response Teams (RRTs)
  - Form and train RRTs in search and rescue, first aid, emergency assessments, and logistics.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action

2, 3, 4

Global Targets

A, B, C, E

Guiding Principles

(a), (b), (d), (e), (f), (g), (h), (i), (j)

SDGs

8, 9, 10, 11, 13, 16

Objectives outlined in Africa's PoA

(c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

INSTITUTIONAL ARRANGEMENTS

MECHANISMS FOR STAKEHOLDER ENGAGEMENT

FINDINGS

Strengthened cross-sectoral ministerial planning efforts between the National Committee for Disaster Risk Management (CNGRC) and the National Bureau of Disaster Risk Management (BNGRC) are recommended. Stronger alignment between national disaster management (DM) and disaster risk reduction (DRR) objectives will inform more targeted allocation of scarce resources. Harmonizing DM and DRR initiatives would also prevent duplication of efforts and promote effective ministerial coordination and collaboration.

Targeted efforts towards strengthening capacity, advancing policy development, promoting advocacy, and initiating activities to promote leadership, guidance, and direction will enhance Madagascar's preparedness and resilience. This integrated approach will support the appropriate allocation of limited resources and facilitate planning strategies across ministries, cultivating a more unified and synergistic approach to DM and DRR.

RECOMMENDATIONS

To support Madagascar and a strategic approach to DM and DRR, the following activities are recommended:

- Establish a working group, anchored in BNGRC, that involves key ministries:
  - Include CNGRC, MEF, Environment and Sustainable Development, Public Health, Agriculture and Livestock, Public Works, Energy and Hydrocarbons, Interior and Decentralization, Territorial Planning and Land Services (MATSF).
  - Harmonize DM and DRR initiatives to prevent duplication of efforts.
  - Strengthen and promote policy alignment to advocate for the DM and DRR agenda.
- Identify avenues for information-sharing and establish communication standards.
- Implement joint training and capacity-building programs for better ministerial coordination and collaboration.
  - Promote facilitation and exchange of best practices and resources.
  - Partner with universities (University of Antananarivo) and technical agencies (UNDP Madagascar) to improve partner collaboration and coordination.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 4

Global Targets
A, B, E, F

Guiding Principles
(a), (b), (c), (d), (e), (h)

SDGs
13, 16, 17

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

INSTITUTIONAL ARRANGEMENTS

MECHANISMS FOR STAKEHOLDER ENGAGEMENT

FINDINGS

Madagascar engages the public in disaster management (DM) through community-based approaches like the "Views from the Frontline" initiative (GNDR)[1], incorporating local perspectives into planning. While public participation mechanisms exist, limited resources and uneven local capacity create disparities in implementation across regions. A structured engagement process, supported by targeted investments and capacity building, would strengthen public involvement and promote a more consistent participatory platform countrywide.

A community-based DM planning approach, including neighborhood training and educational opportunities focused on shelter logistics, evacuation routes, and personal preparedness, will empower residents to develop effective risk-prevention measures. Leveraging indigenous knowledge and resources in disaster planning will further improve neighborhood resilience.

Further, strengthening the participation of CSOs and private sector actors in the Local Consultation Structures (SLCs) is important for establishing broad participation.

RECOMMENDATIONS

To support the decentralization of DM in Madagascar, the following activities are recommended:

- Strengthen and expand SLCs throughout communes to facilitate dialogue on DM priorities and as a mechanism for the public to provide input on DM preparedness and planning.
  - Provide consistent support and resources to establish functional SLCs across all communes.
  - Use common communication platforms for information sharing to coordinate strategies and response efforts better.
- Encourage community-driven resilience programs that consider local and indigenous needs/vulnerabilities.
- Provide incentives, funding, and resources to support stakeholders and assist in expanding capacity-building initiatives.
  - Leverage national financial instruments to invest in local strategies and bolster community response and recovery capacity.
- Engage communes in DM training and exercises that include evacuation protocols, shelter logistics, and community preparedness measures to strengthen local resilience.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
2, 3, 4

Global Targets
A, B, C, E

Guiding Principles
(a), (b), (d), (e), (f), (g), (h), (i), (j)

SDGs
8, 9, 10, 11, 13, 16

Objectives outlined in Africa's PoA
(b), (c), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

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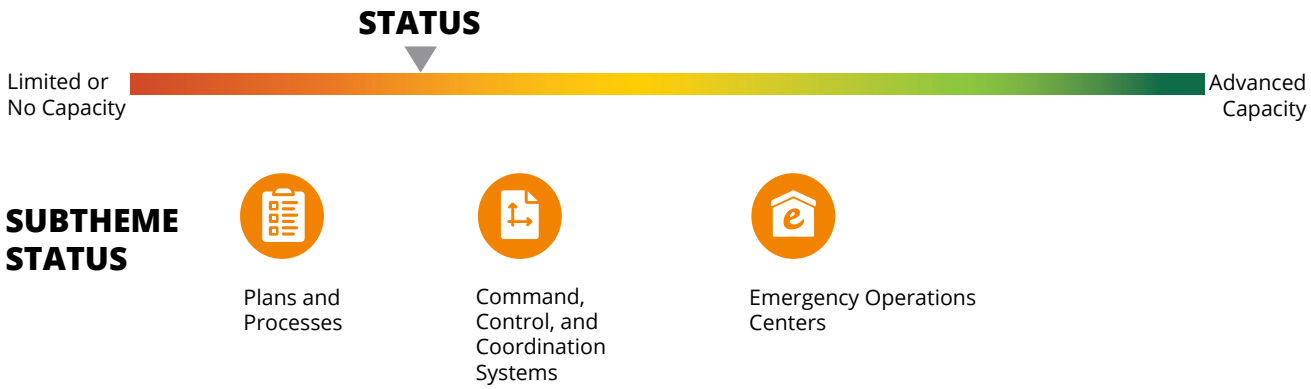
THE DMA

DISASTER GOVERNANCE MECHANISMS

DISASTER GOVERNANCE MECHANISMS

Madagascar's Disaster Governance Mechanisms show early capacity development.



The effectiveness of all disaster management phases, including disaster preparedness, hazard mitigation, response, and recovery, is dependent on establishing and documenting such mechanisms. Disaster management efforts are most effective when guided by standard, formalized systems and procedures that dictate how and by whom activities are conducted. The DMA analyzed the following sub-themes that characterize the disaster governance mechanisms of Madagascar: Plans and Processes; Command, Control, and Coordination Systems; and Emergency Operations Centers.

DISASTER GOVERNANCE MECHANISMS

PLANS AND PROCESSES

FINDINGS

Informal settlements are particularly vulnerable to the dangers and hardships caused by disasters, due to their limited access to basic resources and facilities. When disaster strikes, these conditions are compounded, with devastating humanitarian consequences.

Urban expansion into settlements makes it increasingly costly for cities to provide basic services, such as extending water/sanitation/drainage networks, increasing SWM collection, etc.

Programs to retrofit infrastructure in vulnerable and hazard-prone areas would provide life-saving benefits and long-term economic savings. Sustainable land-use practices, water management systems such as rainwater catchments, and WASH programs and services would also make these communities less vulnerable to disaster.

It is crucial to incorporate WASH and infrastructure improvements in informal settlements and vulnerable areas to reduce the burden these communities face, especially those in high-hazard-prone regions.

RECOMMENDATIONS

To support Madagascar in its strategic DRR efforts, the following activities are recommended:

- Develop a comprehensive strategy to focus on disaster risk reduction (DRR) and resilience-building measures for informal housing settlements in disaster-prone areas.
- Promote collaboration between the Disaster Prevention and Emergency Management Unit (CPGU), BNGRC, CRGRCs, CDGRCs, and CCGRCs, the Ministry of Land Use Planning and Land Services (MATSF), the Ministry of Planning, Housing, and Public Works, the Ministry of Water, Sanitation, and Hygiene, and the Ministry of Environment and Sustainable Development.
- Continue to engage international, national, and local key stakeholders in planning for vulnerable and displaced populations.
- Lobby for more financial support for Capacity for Disaster Reduction Initiative (CADRI) projects to ensure successful implementation and sustainability.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 4

Global Targets
A, B, C, D

Guiding Principles
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

SDGs
6, 7, 11, 13, 14, 15, 16

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

DISASTER GOVERNANCE MECHANISMS

PLANS AND PROCESSES

FINDINGS

Outdated and unenforced building codes, development regulations, and land use policies, especially in urban and informal settlements, undermine processes at every phase of disaster management in Madagascar.

Implementing and enforcing updated policy measures that prevent construction and occupancy in areas prone to disasters is essential to reducing the vulnerability of informal settlements and their capacity to withstand disasters.

In addition, emphasis on incentives and funding subsidies for retrofitting housing options can help mitigate environmental and safety hazards caused by unplanned urban sprawl and improve the resilience of cities.

RECOMMENDATIONS

To support Madagascar in its disaster risk reduction efforts, the following activities are recommended:

- Update, implement, and enforce policies to regulate urban expansion and informal settlements that include:
  - Building codes
  - Development regulations
  - Land use controls
  - Environmental preservation measures
- Develop programs for retrofitting existing residential infrastructure to promote sustainable urban development.
  - Conduct assessments to better understand existing housing shortages and affordability issues to implement low-income and sustainable development strategies.
- Enlist the Ministries of Public Sector, Public Health, Public Works, Environment and Sustainable Development, Interior and Decentralization, Territorial Planning and Land Services.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action

1, 2, 3, 4

Global Targets

A, B, C, D, E

Guiding Principles

(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

SDGs

9, 11, 13

Objectives outlined in Africa's PoA

(b), (c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

DISASTER GOVERNANCE MECHANISMS

PLANS AND PROCESSES

FINDINGS

Regional disaster management (DM) planning initiatives have provided a foundation for strengthening Madagascar's preparedness capabilities. The Sava region, which is particularly at risk of cyclones and flooding, has updated DM plans across four districts to better mitigate the impacts of these hazards. However, many other regional plans have not been revised since 2013 and may no longer accurately reflect the current risk landscape or incorporate advancements made in DM over the past decade.

To maintain the momentum of nationwide planning improvements, all regional DM plans need updates. Integrating advancements in early warning systems, implementing community-based preparedness measures, and ensuring alignment with existing disaster management laws and policies will provide a methodical and coordinated approach to disaster management planning.

A revision of regional plans, along with identifying resource gaps, will strengthen preparedness across all levels of government and contribute to a more resilient Madagascar.

RECOMMENDATIONS

To support regional DM plan updates, the following activities are recommended:

- Prioritize plan revisions based on regions' exposure to high-risk hazards and population vulnerability.
  - Form a working group, led by BNGRC, that includes CRGRC authorities and relevant sectoral ministries to ensure alignment of regional DM with national plans and policies.
  - Draw on updated plans from the Sava region as a model to inform the process and build on existing momentum.
- Ensure revised plans integrate climate resilience and early warning components.
  - Incorporate regional guidance, such as the 9-3-0 hotline for early warning system protocols, climate-resilient infrastructure investments, and community preparedness programs.
- Engage international partners (UNDRR, AfDB, World Bank) to provide technical guidance and funding support for plan updates and capacity-building activities.
  - Leverage funding for training and exercising of updated regional plans.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, B, C, D, E, F

Guiding Principles
(a), (b), (e), (f), (h), (i), (j), (k), (m)

SDGs
7, 8, 9, 10, 11, 13, 15

Objectives outlined in Africa's PoA
(a), (b), (c), (d)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

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THE DMA

CAPABILITIES AND RESOURCES

CAPABILITIES AND RESOURCES

Madagascar's current Capabilities and Resources show early capacity development.

SUBTHEME STATUS

The nature and extent of skills, knowledge, supplies, resources, equipment, facilities, and other capacity components dedicated to meeting disaster management needs indicate Madagascar's overall capabilities and resources. The DMA examined the source and size of surge capacities available in times of disaster and a broad array of disaster-focused functional capabilities like search and rescue, sanitation, and security. For this analysis, the following sub-themes were reviewed: Dedicated Facilities and Equipment; Human Resources; Inventory of Commodities and Supplies; and Targeted Functional Capabilities

CAPABILITIES AND RESOURCES

HUMAN RESOURCES

FINDING

The National Office for Disaster and Risk Management (BNGRC) plays an important role in protecting lives, property, and natural resources in the face of increasing challenges. To fulfill BNGRC's mandate effectively, they require additional staffing, particularly in technical capacities.

A properly staffed BNGRC is necessary to support evidence-based decision-making that strengthens risk analysis and guides effective prevention and response strategies, while enabling meaningful evaluation of data analytics.

Securing additional resources to support the recruitment of technical personnel for BNGRC will improve operational readiness and enable BNGRC to continue leveraging critical investments in community safety and resilience.

RECOMMENDATIONS

To support Madagascar in reducing risk and increasing resilience, the following activities are recommended:

- Acquire additional technical staffing within the BNGRC and CRGRCs to augment existing capacity and enable the proficient execution of mandated requirements.
- Identify and allocate funding and resources dedicated to facilitating the recruitment and hiring of additional DM personnel.
- Ensure DM capabilities include specialized expertise crucial for contributing to evidence-based decision-making.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, C, D, E, G

Guiding Principles
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

SDGs
11, 13, 16

Objectives outlined in Africa's PoA
(b), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

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THE DMA

CAPACITY DEVELOPMENT

CAPACITY DEVELOPMENT

Madagascar's Capacity Development shows limited capacity.

SUBTHEME STATUS

CD Plans and Strategies

Training and Education Programs & Facilities

Monitoring and Evaluation Processes and Systems

Madagascar's ability to advance disaster management strategies that achieve risk reduction and resilience goals ultimately depends on its ability to support capacity development. From training and education that supports the advancement of knowledge and skills to the institutionalization of appropriate attitudes and cultures, capacity development requires the continuous advancement of assessments, strategic plans, programs, facilities, and many other sub-themes. The DMA looks at resources and opportunities for all stakeholders and all sectors, from individuals and special-needs groups to government responders. Sub-themes examined include Capacity Development Plans and Strategies; Training and Education Programs and Facilities; and Capacity Development Monitoring and Evaluation.

CAPACITY DEVELOPMENT

Plans and Strategies

FINDINGS

Strengthening emergency response capacity in Madagascar will ensure faster delivery of life-saving aid and resources to better serve communities.

A key gap within emergency response in Madagascar is the shortage of fire stations, which serve as vital hubs for response and recovery. The lack of facilities, resources, and equipment in hazard-prone areas delays response times and impedes the delivery of essential items. To strengthen logistical coordination during disasters, it is equally important to utilize up-to-date mapping capabilities that enable effective resource tracking and gap identification, leading to a responsive deployment of aid and assets.

Addressing these challenges through continuing to build on and improve current logistical programs—supported by additional fire stations positioned to serve as strategic transfer points for relief supplies—can improve overall response operations and community resilience.

RECOMMENDATIONS

To support Madagascar in emergency response capacity:

- Advocate for constructing fire stations to serve communities better.
  - Increase budget allocations from BNGRC to augment essential community services.
  - Identify inventory supply and logistics gaps to target for funding.
  - Expand educational opportunities and recruitment strategies for firefighting personnel to address staffing shortages.
- ✓ Continue to improve mapping capabilities and integrate fire stations into the Logistics Sector Group (GSL) to strengthen response coordination.
- ✓ Expand and maintain pre-positioned National Stockpiles.
  - Develop an inventory of supplies and identify gaps to target for funding to acquire additional resources.
- ✓ Include the health sector in planning to anticipate the healthcare needs of exposed populations during disasters.
- ✓ Model proven frameworks, such as the Colombian Civil Air Patrol (PAC) concept, to access specialized health resources in remote and vulnerable regions.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, C, D, F

Guiding Principles
(a), (b), (c), (d), (e), (f), (h), (j), (l), (m)

SDGs
3, 11, 17

Objectives outlined in Africa's PoA
(b), (c), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

CAPACITY DEVELOPMENT

Plans and Strategies

FINDINGS

Urban and rural informal settlements are often in high-hazard locations with limited access to resources and facilities. When disaster strikes, these conditions are compounded, with devastating humanitarian consequences.

Programs to retrofit infrastructure in vulnerable and hazard-prone areas would provide life-saving benefits and long-term economic savings. Sustainable land-use practices, water management systems such as rainwater catchments, and WASH programs and services would also make these communities less vulnerable to disaster.

It is essential to incorporate WASH and infrastructure improvements in informal settlements and vulnerable areas to reduce the burden faced by these communities, especially those located in high-hazard-prone regions.

RECOMMENDATIONS

To strengthen informal settlement capacity and capabilities, the following activities are recommended:

- Improve water and sanitation infrastructure, focusing on piped water, toilet facilities, and wastewater containment and treatment to reduce the burden of water collection, decrease exposure to disease, and increase resilience.
  - Strengthen collaboration with humanitarian agencies while promoting long-term recovery and resilience through essential services, capacity-building initiatives, and data-driven strategies.
  - Consider integrating a 'Roofs to Reefs' approach to address water security through sustainable watershed management, from upland catchments to coastal zones.
  - Ensure adequate funding resources to support ongoing WASH projects and shelter considerations in communities affected by natural hazards.
- Improve housing conditions by retrofitting existing infrastructure.
- Strengthen cooperation with CRGRCs, CDGRCs, and CCGRCs.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, B, C, D, E, F, G

Guiding Principles
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (l), (m)

SDGs
5, 6, 9, 10, 11, 13, 15, 16, 17

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

CAPACITY DEVELOPMENT

Plans and Strategies

FINDINGS

Madagascar's agricultural sector is highly vulnerable to climatic hazards, including cyclones, droughts, floods, and pest outbreaks. National strategies like the Madagascar Annual Country Report and Country Strategic Plan (2024), Agricultural Development Strategy (2025), and Madagascar Agriculture Rural Growth and Land Management Project (CASEF) have promoted land reform and sustainable practices. However, additional targeted disaster management (DM) and disaster risk reduction (DRR) actions are needed to protect rural livelihoods and food systems.

Existing systems, such as the Famine Early Warning Systems Network (FEWS NET), provide foundational risk information and food security monitoring that can be enhanced and more widely integrated into sectoral planning. By improving early warning systems, building local capacity, and reducing financial vulnerability, these recommendations complement Madagascar's existing food security architecture, including FEWS NET.

RECOMMENDATIONS

To strengthen DRR in the agriculture sector, the following activities are recommended:

- Work with the World Food Programme and the Food and Agriculture Organization to ensure the continuation of the Famine Early Warning Systems Network (FEWS NET).
- Create agricultural risk maps and localized DRR plans
  - Support local governments in producing detailed agricultural hazard and exposure maps and use to inform communal development, land-use plans, and emergency preparedness.
  - Apply participatory mapping methods and leverage open-source GIS platforms.
- Establish community-based seed banks and input reserves
  - Set up local reserves of climate-resilient seeds and essential agricultural inputs.
  - Link reserves with community DRR committees and cooperatives.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, B, C, D, E, F

Guiding Principles
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l)

SDGs
2, 9, 11, 13, 13, 15, 17

Objectives outlined in Africa's PoA
(a), (c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

CAPACITY DEVELOPMENT

Plans and Strategies

FINDINGS

Improving health outcomes in Madagascar requires the coordination of primary healthcare services, particularly across remote and underserved fokontany. Limited access to basic maternity, pediatric, and emergency care remains a vulnerability exacerbated during disasters. Integrating collaborative and scalable healthcare service models throughout the country would reduce disease, prevent deaths, and provide sustainable continuity of care in rural districts.

Successful models already in use could offer solutions. WHO's mobile clinics and prepositioned warehouses, Medair's rapid humanitarian aid during disasters, and the Enhance Community Health (ECH) model's trained and salaried Community Health Workers have each strengthened access and preparedness throughout Madagascar. Likewise, international examples like Colombia's Civil Air Patrol (PAC) connects isolated communities to volunteer health specialists. Together, these approaches have a proven foundation. Scaling and adapting service models to Madagascar's geography and access challenges, could provide needed coverage and disaster resilience across rural fokontany.

RECOMMENDATIONS

To strengthen the health sector the following activities are recommended:

- Scale up WHO mobile clinics and expand on the WHO model, permanently integrating them into district health services to deliver on-site maternity, pediatric, and basic medical care.
  - Leverage existing WHO prepositioned warehouses and the World Food Programme warehouses as district-level hubs for distributing and storing medicines, vaccines, and emergency supplies.
- Partner with Medair to expand basic healthcare services and establish mobile emergency health units to fill urgent care gaps in districts lacking functional facilities.
- Expand the ECH model by recruiting, training, and compensating CHWs in underserved fokontany.
- Consider international models, such as PAC, to deploy mobile medical teams to geographically isolated communities.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
2, 3, 4

Global Targets
A, C, D

Guiding Principles
(a), (b), (c), (d), (e), (h), (j), (k)

SDGs
3, 11, 16

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

CAPACITY DEVELOPMENT

TRAINING AND EDUCATION

FINDINGS

BNGRC has made significant progress in conducting national-level exercises in coordination with international partners. However, there remains a need to expand training and preparedness capacity at the local level.

A training and education (T&E) initiative focused on the CRGRCs, CDGRCs, and CCGRCs would empower local disaster management (DM) to take a more active role in preparedness and response. It would also help identify operational gaps and improve coordination, leading to stronger community engagement and resilience during disasters.

RECOMMENDATIONS

To support BNGRC, the following activities are recommended:

- Identify staff within BNGRC to manage a local T&E initiative focused on capacity-building for CRGRCs, CDGRCs, and CCGRCs.
  - Increase simulation and scenario-based exercises among response agencies to enhance collaboration and capacity building across communities.
- Create a master training schedule and oversee communication channels and social media platforms to increase visibility, facilitate information sharing, and optimize collaboration.
- Implement a digital record management system accessible to all participating agencies to track T&E schedules, participants, evaluations, and lessons learned for both review and real-time updates.
- Ensure a standardized T&E reporting framework for consistent data collection, encompassing key metrics, observations, and feedback mechanisms for formal performance evaluations and after-action reporting.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action

1, 2, 3, 4

Global Targets

A, B, C, D, F

Guiding Principles

(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m)

SDGs

4, 11, 16, 17

Objectives outlined in Africa's PoA

(a), (c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

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THE DMA

COMMUNICATION AND INFORMATION MANAGEMENT

COMMUNICATION AND INFORMATION MANAGEMENT

Madagascar's Communication and Information Management capacity shows limited capacity.

Disaster management is a risk-based endeavor, and as such, the capacity of stakeholders to generate, manage, and share risk and incident-related information is critical. This analysis looked at the systems, processes, and procedures established in Madagascar to inform pre- and post-disaster activities: Hazard and Risk Analysis Systems; Monitoring and Notification; Disaster Assessment; Information Collection, Management, and Distribution; and Media and Public Affairs.

COMMUNICATION AND INFORMATION MANAGEMENT

Hazard and Risk Analysis

FINDINGS

Urban settlements are experiencing unplanned and uncontrolled expansion. As a result, inadequate infrastructure and limited access to basic services have increased their vulnerability to natural disasters.

The size and dynamic nature of informal settlements require updated risk assessments to allocate resources more effectively and implement targeted disaster management (DM) strategies that mitigate further hardships. DM can design interventions that strengthen community resilience by integrating current data on vulnerabilities and addressing identified resource gaps in planning initiatives.

RECOMMENDATIONS

To support DM the following activities are recommended:

- Conduct comprehensive and updated hazard exposure and risk assessments for informal settlements.
  - Consider population density, infrastructure quality, and exposure to high-hazard zones to identify needs, resource allocation, and DM strategies.
- Involve fokontany residents in the DM planning process to ensure their unique needs and knowledge are considered.
  - Include local and indigenous knowledge
- Implement specialized DM preparedness and response training and resources for residents in informal settlements.
  - Include workshops on DRR, create and train on evacuation plans, and maintain community-based support networks to assist and strengthen efforts.
- Identify the locations of vulnerable populations/informal settlements that require additional time or assistance for evacuation.
  - Identify locations where hazards may impact ingress and egress routes.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action

1, 2, 3, 4

Global Targets

A, B, C, D, E, G

Guiding Principles

(a), (b), (c), (e), (f), (h), (i), (j), (k)

SDGs

5, 8, 9, 10, 11, 13, 16, 17

Objectives outlined in Africa's PoA

(b), (c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

COMMUNICATION AND INFORMATION MANAGEMENT

Hazard and Risk Analysis

FINDINGS

The lack of formal housing, outdated land use plans, and a rapidly growing urban population contribute to the expansion of informal settlements. The rise in urbanization has increased the vulnerability of populations, already living in extreme poverty to natural disasters. This creates complex challenges for disaster management (DM), especially in densely populated and underserved areas.

Despite ongoing challenges, the Madagascar Agriculture Rural Growth and Land Management Project (CASEF) has made improvements in land tenure and promoted agricultural productivity in rural regions. By issuing land certificates and reducing the cost of land documentation, CASEF has expanded access to land for farmers. Simultaneously, the project has promoted sustainable practices and introduced innovative agricultural solutions, helping farmers increase their incomes. This project presents a robust model for replicating similar reforms nationwide, alleviating the strains of poverty, and enhancing the resilience of both rural and urban communities.

RECOMMENDATIONS

To support Madagascar in reducing risk and increasing resilience, the following activities are recommended:

- Utilize hazard exposure data from risk assessments to drive land use and development plan updates that reflect current community resources and needs.
- Consider replicating successful models like the CASEF project across regions. To improve rural livelihoods, focus on expanding land certification, reducing documentation costs, and promoting sustainable agricultural practices.
- Utilize risk and vulnerability data from this NDPBA to support sustainable development and land-use planning.
  - Leverage RVA resources to drive sector-based community plan updates, including hazard mapping for population exposures, critical infrastructure locations, and evacuation/shelter identification.
- Update urban land use plans to improve community resilience.
  - Facilitate the sharing of plans among DM stakeholders to promote plan integration, allocate limited resources, and enhance collaboration and decision-making processes.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action

1, 2, 3, 4

Global Targets

A, B, C, D, E

Guiding Principles

(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

SDGs

5, 9, 10, 11, 13, 16

Objectives outlined in Africa's PoA

(a), (b), (c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

COMMUNICATION AND INFORMATION MANAGEMENT

MONITORING AND NOTIFICATION

FINDINGS

Landslide Early Warning Systems (LEWS) represents a groundbreaking approach to disaster risk reduction, especially in vulnerable informal settlements. The innovative implementation of LEWS in Medellín, Colombia, is a pioneering test case demonstrating how technology, community engagement, and environmental resilience can converge to address pressing safety concerns.

The system's low-cost, open-source design, complete with accessible manuals and designs, ensures its replicability in other high-risk areas worldwide. The system's novel approach of combining advanced technology with community participation further enhances its appeal as a model for disaster-prone regions

The LEWS case study[1] exemplifies a model for community-centered disaster preparedness. By involving residents in hazard mapping, sensor installation, and evacuation planning, the system fosters trust and ownership among stakeholders. This integration transforms a technical tool into a socially embedded framework, where local knowledge enhances system functionality and acceptance.

RECOMMENDATIONS

To support Madagascar in reducing risk and increasing resilience, the following activities are recommended:

- Investing in LEWS monitoring and communications technology, expanding coverage and targeted infrastructure, and translating data into comprehensive EWS capabilities.
- Hire subject-matter experts for installation and expansion of the LEWS model to similar areas, stakeholders, and researchers who want to modify, use, and replicate the system.
- Customize LEWS to meet the specific demographic needs of communities and establish marked evacuation routes throughout high-risk neighborhoods.
- Promote community engagement by involving members in the planning, involving members in LEWS's planning, training, and decision-making processes of LEWS, fostering ownership and resilience at the local level.
- Conduct regular evaluations of the notification processes and LEWS to identify areas for improvement and ongoing effectiveness.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, B, C, D, E

Guiding Principles
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

SDGs
2, 3, 6, 11, 13, 14, 15

Objectives outlined in Africa's PoA
(b), (c), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

COMMUNICATION AND INFORMATION MANAGEMENT

MONITORING AND NOTIFICATION

FINDINGS

Strengthening multi-hazard early warning systems (MHEWS) requires continued investment in advanced communication technologies and the expansion of services to underserved and rural areas. Partnerships with organizations like the International Telecommunication Union (ITU) and Global System for Mobile Communications Association (GSMA) can improve connectivity and support the development of national alert systems that deliver timely public warnings. Collaborations with GSMA's Mobile for Humanitarian Innovation (MH4) programme, along with the continued expansion of platforms like VIAMO and the 9-3-0 hotline, can further extend the reach and effectiveness of mobile-enabled services.

Implementing tailored, localized solutions that prioritize targeted alerts and multi-hazard coverage will better address the demographic needs of diverse communities. Additionally, Incorporating MHEWS into evacuation planning—particularly for marginalized and rural groups--will ensure equitable access to life-saving information.

RECOMMENDATIONS

To strengthen MHEWS capabilities, the following activities are recommended:

- Continue to invest in advanced communication technology to address challenges in accessibility.
  - Enlist the ITU and GSMA for technical support and potential grant funding.
  - Partner with GSMA's MH4 programme to support and improve mobile-enabled services.
- Leverage existing MHEWS platforms to establish a unified communication system that effectively reaches all demographics and delivers targeted messaging to vulnerable and diverse populations.
  - Continue to expand the VIAMO platform and accessibility of the 9-3-0 hotline.
  - Integrate geo-referenced data from the Simple Social Register (RSU) to expand EWS reach and capabilities.
  - Build on the JP Early Warning Anticipatory System for droughts to support rapid decision-making and expand its scope to cover all hazards.
- Utilize MHEWS to guide evacuation planning for egress/ingress routes and ensure communities are prepared for disasters.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action

1, 2, 3, 4

Global Targets

A, B, C, D, G

Guiding Principles

(a), (b), (c), (f), (g), (h), (i), (j)

SDGs

9, 10, 11, 13,15, 17

Objectives outlined in Africa's PoA

(b), (c), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

COMMUNICATION AND INFORMATION MANAGEMENT

INFORMATION COLLECTION AND MANAGEMENT

FINDINGS

Currently, fragmented information and a lack of coordination across regions and districts create significant gaps in disaster management (DM) and disaster risk reduction (DRR) planning efforts. An up-to-date and formal digital learning platform can serve as a consistent resource that breaks down institutional silos and encourages open communication among subnational and local stakeholders.

This collaborative approach enables the identification of common risks, the sharing of best practices, and the development of comprehensive strategies focused on addressing community vulnerabilities. Providing stakeholders with access to reliable and standardized information promotes informed and tailored decision-making, leading to a more resilient community that can withstand and recover from disasters.

RECOMMENDATIONS

To support DM and DRR collaborative planning, the following activities are recommended:

- Build a centralized national repository to consolidate and maintain all regional and district-level DM, DRR, land use, and water management plans.
  - Establish standardized data protocols, regular information exchange schedules, and ensure accessibility to all stakeholders.
- Develop and implement a formal framework for collaborative DM and DRR planning to ensure the centralized repository is used consistently and effectively across regions, districts, and ministries.
- Promote data sharing among government entities, NGOs, and academia to strengthen coordination with regional and international stakeholders.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, B, C, D, E, F

Guiding Principles
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (l), (m)

SDGs
5, 6, 7, 9, 11, 13, 14, 15, 16, 17

Objectives outlined in Africa's PoA
(a), (b), (c), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

COMMUNICATION AND INFORMATION MANAGEMENT

INFORMATION COLLECTION AND MANAGEMENT

FINDINGS

Madagascar's BNGRC has made significant strides in developing digital platforms for disaster management (DM). In collaboration with the World Food Programme (WFP) and the Sectoral Logistics Group mechanisms focusing on capacity and logistics tracking have been established. Pilot programs in high-priority regions have paved the way for broader countrywide implementation.

Despite these advancements, challenges persist with consistent countrywide implementation, coordination inefficiencies, and a lack of real-time data for rapid intervention. These issues lead to delays in timely and effective emergency response.

In today's digital landscape, centralized information hubs serve as valuable tools for DM, enabling users to monitor resources, coordinate strategies, and communicate critical emergency messaging to the public. When implemented effectively, these platforms improve decision-making and strengthen community resilience.

RECOMMENDATIONS

To support BNGRC in meeting its mission requirements:

- Continue coordination with the World Food Programme (WFP) and the Sectoral Logistics Group with a focus on improving capacity and logistics tracking.
- Establish clear protocols and communication channels among DM stakeholders to ensure cohesive platform use and efficient disaster response.
- Develop and implement a schedule for maintaining platforms, updating documents, and adding new materials.
- Increase investments in infrastructure and technology to support the scalability and sustainability of digital platforms.
- Ensure coordination with key DM ministerial stakeholders, NGOs, CRGRCs, CDGRCs, and CCGRCs.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, B, C, D, E

Guiding Principles
(a), (b), (c), (e), (f), (h), (i), (j), (k)

SDGs
5, 8, 9, 10, 11, 13, 16, 17

Objectives outlined in Africa's PoA
(a), (b), (c), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

COMMUNICATION AND INFORMATION MANAGEMENT

INFORMATION COLLECTION AND MANAGEMENT

FINDINGS

BNGRC accesses GIS data through partnerships with organizations such as MapAction, REACH, UNOSAT, the Logistics Sector Group, Foiben-Taosarintanin'I Madagasikara (FTM) and dozens of humanitarian international organizations active throughout the country.

However, challenges such as inconsistent data quality, limited interoperability between systems, and a lack of standardized data-sharing protocols create roadblocks in accessing and utilizing data efficiently during disasters.

Consolidating tools from these key GIS data partnerships, along with the NDPBA, can better support critical infrastructure identification and exposure analysis overlays. This integration will provide BNGRC and stakeholders with a comprehensive Common Operational Picture in near real-time, delivering the information necessary to prepare for, respond to, and recover from disasters.

RECOMMENDATIONS

To support BNGRC in meeting its mission requirements:

- Utilize GIS-based mapping systems to assist risk and vulnerability assessments in DM and DRR planning.
  - Capitalize on local and indigenous knowledge in hazard and risk assessments.
  - Incorporate elements from platforms and initiatives such as MapAction, REACH, WFP/VAM, FEWS Net, Logistics Sector Group, UNDRR, and UNDP Madagascar.
- Integrate key outputs from the NDPBA and RVA into national and subnational contingency planning, early warning dissemination, and risk communication tools.
- Continue advancing BNGRC's digital platform to support near real-time data integration and ensure accuracy and interoperability with existing systems used by key DM partners.
- Generate local hazard and risk maps to facilitate data-driven and scenario-based training and exercises.
- Continue to develop, adopt, and implement standardized data-sharing protocols and guidelines across agencies.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, B, C, D, E

Guiding Principles
(a), (b), (c), (e), (f), (h), (i), (j), (k)

SDGs
5, 8, 9, 10, 11, 13, 16, 17

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

COMMUNICATION AND INFORMATION MANAGEMENT

MEDIA AND PUBLIC AFFAIRS

FINDINGS

Opportunities for gathering input are essential to promoting public participation in disaster management (DM). Methods such as town hall meetings, focus groups, and surveys are valuable platforms for collecting feedback. Incorporating this input into BNGRC, CRGRC, CDGRC, and CCGRC planning will lead to a more comprehensive approach to improving DM preparedness and recovery efforts.

In addition, prioritizing consistent communication of critical DM information will strengthen the effectiveness of local organizations, community emergency response teams, and volunteer brigades. Adopting a whole-of-society approach to engagement and transparency for joint DM initiatives will ensure the sustainability of national and local efforts to improve community resilience to disasters.

RECOMMENDATIONS

To support national and local level DM the following activities are recommended:

- Develop a public engagement action plan that identifies means of gathering knowledge from the public and sharing DM information with them.
  - Implement regular opportunities for community input, such as town hall meetings and surveys, to gather feedback that informs DM planning and increases public participation.
- Establish and sustain consistent communication and knowledge-sharing between BNGRC, CRGRC, CDGRC, CCGRC, community groups, neighborhood watch or planning groups, community emergency response teams, and volunteer brigades.
  - Offer trainings/workshops and incorporate them into national/local T&E programs.
- Coordinate joint initiatives with local stakeholders and non-governmental agencies to contribute to disaster planning and informed decision-making processes.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
2, 4

Global Targets
A, B, E

Guiding Principles
(a), (b), (c), (d), (e), (f), (h), (i), (j)

SDGs
5, 11, 13, 16

Objectives outlined in Africa's PoA
(a), (b), (c)

Limited or No Capacity | Early Capacity Development | Achievement with Significant Limitation | Substantial Progress with Some Limitation | Advanced Capacity

THE NDPBA

COMMENDATIONS FOR BEST PRACTICES

COMMENDATIONS FOR BEST PRACTICES

BEST PRACTICES COMMENDATION

Reforestation for Resilience: Initiatives to Restore Madagascar's Forests

Once rich in dense and diverse forests and ecosystems, Madagascar has lost nearly 90% of its original forest cover due to widespread deforestation. Threats such as tavy (slash-and-burn), logging, and charcoal production continue to deplete the nation's biodiversity. In response, growing coalitions are leading powerful and coordinated efforts to restore environments while improving community resilience.

Madagascar's habitat restoration is accelerating through nature-based strategies that combine woodland recovery, sustainable land use, and community-driven engagement. Wildlife Madagascar's Strategic Plan 2025-2030 anchors these efforts with reforestation hubs and field sites that support ecological regeneration. The upcoming years will serve as a critical springboard for implementing the Wildlife Madagascar plan and set the stage for advancing restored ecosystems and communities that thrive together.

Complementary initiatives such as the Bristol Zoo Project empower conservation by expanding habitats for endangered species while delivering sustainable resources that benefit both the wildlife and local communities. Just One Tree is reviving necessary mangrove transitional zones and recreating environments with renewed biodiversity, while Green Again Madagascar's sustainable agricultural practices are restoring nutrient-depleted soils using locally sourced materials, supporting local livelihoods.

Across the country, grassroots efforts are revitalizing fragile ecosystems. These collective accomplishments not only incorporate local knowledge and effective action but also provide employment opportunities. They are a force capable of reshaping Madagascar's future toward that of sustainability, renewal, and resilience.

SENDAI FRAMEWORK, SDGS, AND AFRICA'S PROGRAM OF ACTION

Priorities for Action
1, 2, 3, 4

Global Targets
A, B, D, E, F

Guiding Principles
(a), (b), (c), (d), (f), (g), (h), (i), (j), (k),

SDGs
3, 6, 7, 9, 11,13,15, 16, 17

Objectives outlined in Africa's PoA
(a), (d), (e)

THE NDPBA

NATIONAL RECOMMENDATIONS

THE NDPBA NATIONAL RECOMMENDATIONS

1 EXPAND HAZARD AND RISK MAPPING FOR SUBNATIONAL AND LOCAL AREAS, ESPECIALLY WHERE CONCENTRATIONS OF INFORMAL HOUSING SETTLEMENTS ARE IN HAZARD ZONES, TO FACILITATE RESILIENCE-BUILDING MEASURES AND PLANNING EFFORTS.

- Implement a GIS-based data management system to utilize and leverage a common operating picture that supports identification of high-risk areas, priority needs, resource tracking, and disaster impacts to promote response and recovery capacity development.
    - Promote a centralized, multi-agency information system for data sharing and transparency to ensure that the best and latest information is available to all stakeholders. Consider use of DisasterAWARE Pro as an interim solution.
    - Incorporate GIS-based data, research, and mapping into preparedness and disaster risk reduction plans.
    - Strengthen sharing and information mechanisms between BNGRC, Regional DRM Committees (CRGRC), District DRM Committees (CDGRC), and Communal DRM Committees (CCGRC) to conduct and incorporate risk assessments into disaster risk reduction efforts.
    - Consider potential impacts on critical infrastructure and agricultural production.
- Develop hazard zones for man-made hazards, including oil spills (both offshore and on land), mining-related accidents, and water contamination, to anticipate potential impacts on population and environmental health, and support evidence-based mitigation efforts.
- Refine and customize hazard modeling to anticipate and address the needs of local communities and vulnerable populations, ensuring that local disaster management plans incorporate hazard exposure assessments.
- Map informal settlements and include vulnerability data, such as access to WASH, electricity, internet, and transportation infrastructure.
- Match hazard locations with essential ingress and egress transportation infrastructure.
- Utilize the NDPBA results to guide further advancements to multi-hazard mapping and anticipatory risk and vulnerability assessment to contextualize and prioritize disaster risk reduction at the national and subnational levels.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
2, 3, 6, 11, 13, 14, 15

Global Target(s)
A, B, C, D, E, G

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j)

NATIONAL RECOMMENDATIONS

2 STRENGTHEN ALL-HAZARDS MONITORING, COMMUNICATIONS SYSTEMS, AND DATA TRANSLATION INTO COMPREHENSIVE MULTI-HAZARD EARLY WARNING SYSTEMS (MHEWS) AND CAPABILITIES.

- Leverage existing MHEWS platforms to establish a unified communication system that effectively reaches all demographics and delivers targeted messaging to vulnerable and diverse populations.
    - Continue to expand the VIAMO platform and accessibility of the 9-3-0 hotline.
    - Integrate geo-referenced data from the Simple Social Register (RSU) to expand EWS reach and capabilities.
    - Maintain and expand on the Joint Programme Early Warning Anticipatory System for droughts to support rapid decision-making and expand its scope to cover all hazards. Ensure collaboration with stakeholders:
        - FAO (Food and Agriculture Organization)
        - UNDP (United Nations Development Programme)
        - UNICEF (United Nations Children's Fund)
        - WFP (World Food Programme) with MDG govt agencies:
        - Madagascar General Directorate of Meteorology, National GRC Office, and Prevention and Emergency Management Support Unit
    - Enlist the International Telecommunication Union (ITU) and the Global System for Mobile Communications Association (GSMA) for technical support and possible grant funding.
- Partner with GSMA's Mobile for Humanitarian Innovation (M4H) programme to support and improve penetration of life-saving mobile-enabled services for preparedness, response, and recovery, especially in underserved areas.
- Collaborate with GSMA for assistance in securing public-private partnerships to enhance the reach of early warning systems, as part of its mandate to support the United Nations Early Warnings for All (EW4All) Initiative.
- Support the expansion of UNICEF's utilization of the socio-economic, geo-referenced demographic data (available in the Single Social Register) to further reach vulnerable populations with EWS.
- Include considerations for targeted messaging for diverse parts of the affected populations, such as the elderly, women and girls, children and youth, indigenous people, and persons with disabilities.
- Identify and map locations of vulnerable populations/informal settlements that may need additional time or assistance for evacuation.
- Work with the World Food Programme and the Food and Agriculture Organization to ensure the continuation of the Famine Early Warning Systems Network (FEWS NET).

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
6, 9, 10, 11, 13

Global Target(s)
A, B, C, D, E, G

Objectives outlined in Africa's PoA
(b), (c), (e)

Guiding Principle(s) 4.4)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

NATIONAL RECOMMENDATIONS

3 PROMOTE COMPREHENSIVE STRATEGIES TO MONITOR, ADDRESS, AND MITIGATE THE IMPACTS OF TROPICAL CYCLONES, FLOODS, EXTREME HEAT, LANDSLIDES, AND WILDFIRES.

- Develop staff training, in coordination with other government agencies and academic institutions, to enhance data collection and analysis capabilities, including hazard mapping and modeling to build a cadre of experienced disaster management analysts.
- Utilize NASA's Digital Elevation/Terrain Model (DEM) to increase the accuracy and precision of flood mapping and monitor shoreline changes.
    - NASA's data are openly available without restriction; an Earthdata Login is required to download data and to use some tools with full functionality.
    - Training and tutorials are available on the website.
- Leverage local communities' knowledge of local hazards, including their observations, experiences, and mitigation efforts, to enhance preparedness and evacuation planning.
    - Engage Communal DRM Committees (CCGRCs) to identify community leaders with such knowledge.
    - Incorporate this knowledge into planning, exercise, and response operations.
- Provide incentives for homeowners, residents, businesses, and industry to implement hazard mitigation measures. Include non-structural enhancements that improve drainage, reduce soil erosion, and protect vegetated slopes.
- Strengthen protections for low-lying coastal environments by implementing strategies to reduce erosion, coastal inundation, saltwater intrusion, and coastline retreat.
    - Work with the Global Mangrove Alliance's (GMA) coalition on its community-led initiatives in Madagascar.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3

SDGs
2, 3, 6, 11, 13, 14, 15

Global Target(s)
A, B, C, D, E

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

NATIONAL RECOMMENDATIONS

4 DEVELOP A DISASTER-INFORMED URBAN PLANNING STRATEGY TO FOCUS ON DISASTER RISK REDUCTION (DRR) AND RESILIENCE-BUILDING MEASURES FOR INFORMAL HOUSING SETTLEMENTS IN DISASTER-PRONE AREAS.

- Institutionalize policies for integrated development and land use planning that consider hazard exposure and vulnerability of local populations.
- Model the Roofs to Reefs Programme in Barbados, which connects housing, water management, land use, biodiversity, and marine conservation into a single national resilience strategy:
    - Promotes retrofitting and rebuilding homes to withstand hurricanes and flooding.
    - Promotes renewable energy integration (e.g., solar rooftops).
    - Supports reforestation, wetland restoration, mangrove protection, and coral reef rehabilitation.
    - Emphasizes nature-based solutions to reduce erosion, buffer storm surge, and improve fisheries' resilience.
    - Manages drainage, runoff, and watershed health through sustainable land-use practices.
    - Invests in green infrastructure (bioswales, rainwater harvesting, permeable surfaces).
- Monitor social, cultural, demographic, and economic data to assess and anticipate local changes in vulnerability and resource constraints that could lead to conflict or increased risk.
- Ensure that mass care and emergency service resources are regularly reviewed and realigned to support areas of high vulnerability and low coping capacity.
- Engage Communal DRM Committees (CCGRCs) in pre-disaster planning to identify challenges and proactive solutions.
    - Include NGOs and civil society groups trusted in informal communities.
    - Establish neighborhood focal points or evacuation leaders in informal areas.
    - Include expert local knowledge.
- Establish formal arrangements to help disaster-affected populations with transportation needs related to evacuation and sheltering.
    - Conduct transportation asset mapping (e.g., buses, boats, community trucks, private vehicles).
    - Draft MOUs with transport providers (e.g., school buses, military, NGOs, private bus companies).
- Collaborate among BNGRC, Regional, District, and Communal DRM Committees (CRGRC, CDGRC, CCGRC) to ensure disaster management (DM) plans consider the complexities and potential cascading impacts during emergencies in densely populated communities and urban areas.
- Work with the Ministries of Planning, Housing, and Public Works, Environment and Sustainable Development, Land Use Planning and Land Services, and international organizations such as IOM, UNHCR, UNDP, and UN-Habitat to integrate cross-agency planning and response support for vulnerable populations.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 4

SDGs
6, 7, 11, 13, 14, 15, 16

Global Target(s)
A, B, C, D

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

5

STRENGTHEN DISASTER PREPAREDNESS FOR VULNERABLE POPULATIONS.

- Leverage the NDPBA risk and vulnerability assessment results to identify and evaluate disparities in access to housing, education, health status, clean water and sanitation that may exacerbate susceptibility to disaster impacts.
- Focus on expanding comprehensive, multi-hazard early warning capabilities in poor and isolated communities, including strategies that do not require continuous external power, such as solar-powered sirens and radios, visual alerts, and community-based systems.
- Prioritize disaster warehouse placement and emergency response, evacuation, mass care, and resource delivery strategies in proximity to vulnerable areas with frequent exposure to hazards.
    - Consider accessibility, supply lines, staging areas, evacuation routes, and potential food and shelter requirements to anticipate needs and pre-position resources.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
4, 7, 8, 9, 10, 11, 13, 15

Global Target(s)
A, B, C, D, E, F

Objectives outlined in Africa's PoA
(a), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

NATIONAL RECOMMENDATIONS

6 PROMOTE EVIDENCE-BASED DECISION-MAKING AND KNOWLEDGE SHARING BY CREATING A CENTRALIZED NATIONAL REPOSITORY THAT STORES ALL COMMUNAL DISASTER MANAGEMENT, LAND USE, AND WATER MANAGEMENT PLANS.

- Identify a primary mechanism or office in the BNGRC or the CPGU for maintaining disaster management data.
- Encourage data sharing among government entities, NGOs, and academia to strengthen coordination with regional and international stakeholders.
- Synchronize DM and DRR plans from the local to national level to maintain critical services and support preparedness, response, and recovery operations to enhance national resilience.
    - Conduct a simulation exercise: A coordinated response drill to practice real-time coordination using synchronized plans.
- Develop and implement targeted public campaigns to promote resources, ensuring the public knows where to find trusted information.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
5, 6, 7, 9, 11, 13, 14, 15, 16, 17

Global Target(s)
A, B, C, D, E, F

Objectives outlined in Africa's PoA
(a), (b), (c), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m)

7

PROMOTE PARTICIPATORY COMMUNITY-LEVEL APPROACHES TO DISASTER RISK MANAGEMENT.

- Engage community leaders with local/traditional knowledge in risk assessment, planning, mitigation, and response efforts.
- Actively engage representatives from vulnerable groups, including indigenous and ethnic minorities, rural women and children, conflict-affected populations, displaced persons, and isolated or impoverished communities, to support specific needs assessment during all phases of disaster management.
- Develop subnational plans that recognize local vulnerable populations and proactively anticipate barriers to food security, health care, transportation, emergency services, energy, and clean water before, during, and after disasters.
- Socialize hazard maps and risk assessment results with community leaders to enable validation with local experiences, challenges, and capacities.
    - Promote vertical sharing of risk information, from the community to national levels, to continuously refine and improve risk assessment.
- Develop, train, and exercise community emergency response teams to help develop rapid response capabilities, support disaster communications, and educate residents about potential local hazards and how to prepare for them.
- Develop, refine, and exercise evacuation plans to ensure whole-community engagement and resilience.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
1, 3, 5, 6, 9, 10, 11, 13, 15, 16, 17

Global Target(s)
A, B, C, D, E, F, G

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m)

NATIONAL RECOMMENDATIONS

8 CONDUCT A THOROUGH REVIEW OF BUILDING CODES, DEVELOPMENT REGULATIONS, AND LAND USE POLICIES, AND IMPLEMENT UPDATED MEASURES TO PREVENT FURTHER EXPANSION INTO HAZARD-PRONE AREAS, ESPECIALLY INFORMAL SETTLEMENTS, TO IMPROVE DISASTER OUTCOMES.

- Enlist the Ministries of Planning, Housing, and Public Works, Environment and Sustainable Development, Land Use Planning and Land Services, and international organizations such as IOM, UNHCR, UNDP, and UN-Habitat.
- In keeping with the recommendations for infrastructure resilience from UNDRR and CADRI, establish a digital database management system for infrastructure resilience within the PNRRC to digitize construction standards, monitoring, and control, and proactively use the collected data.
- Adopt and enforce policies that regulate urban expansion and informal settlements that include
    - Updated building codes
    - Development regulations
    - Land use controls
    - Environmental preservation measures.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
1, 3, 6, 9, 10, 11, 13, 15

Global Target(s)
B, C, D, E

Objectives outlined in Africa's PoA
(b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (e), (f), (g), (h), (i), (j)

NATIONAL RECOMMENDATIONS

9

ASSESS AND ENSURE THAT EMERGENCY COMMUNICATIONS ARE ACCESSIBLE AND ACTIONABLE IN RURAL AREAS.

- Identify gaps in education, literacy, and access to information mediums (including the internet, television, and radio) and prioritize investments that ensure vulnerable households can receive and understand critical information, such as hazard warnings, through diverse communication channels.
- Test emergency messaging systems in isolated and rural communities. Consider alternative methods of communication that do not rely heavily on household access to technology.
    - Assess community awareness and public response to emergency messaging to evaluate the effectiveness of communications.
- Implement community outreach and education programs focused on hazard awareness, disaster preparedness, and health and safety practices to build community resilience.
    - Model the Bangladesh Cyclone Preparedness Programme (CPP), a joint Government and Red Crescent Society initiative.
    - 76,000+ community volunteers trained in early warning, first aid, and evacuation.
    - Reduced cyclone and flood fatalities due to community-led evacuations and rapid response.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3

SDGs
4, 5, 9, 11, 13

Global Target(s)
B, C, D, E, G

Objectives outlined in Africa's PoA
(b), (c), (e)

Guiding Principle(s)
(a), (b), (c), (d), (f), (g), (h), (i), (j)

NATIONAL RECOMMENDATIONS

10

ADOPT A COMPREHENSIVE STRATEGY TO INCREASE INFRASTRUCTURE CAPACITIES IN BOTH URBAN AND RURAL AREAS.

- Continue efforts to expand access to telecommunications services in areas with poor penetration of information and communications technology (ICT) to facilitate the timely dissemination and receipt of information.
- Support quality improvements and expansion of the transportation network. Increases in transportation capacity facilitate expansion of other infrastructure (water, energy, ICT), support sustainable economic growth through greater accessibility of goods and services, and improve response times and access to emergency services.
- Increase energy capacity through infrastructure expansion in areas with limited access to electricity or other energy sources.
- In coordination with the Sectoral Logistics Group map out physical and human emergency service resources to determine underserved areas.
    - Prioritize investment or re-allocation in areas that exhibit high frequency and exposure to hazard events, and low resilience.
- Leverage the risk and vulnerability assessment results in concert with the recommendations for infrastructure resilience from UNDRR and CADRI to evaluate disparities in local infrastructure capacities, including transportation, energy, communications, emergency services, and health care.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
6, 7, 8, 9, 10, 11, 12, 13, 17

Global Target(s)
A, B, C, D, E, G

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j)

NATIONAL RECOMMENDATIONS

11

MAXIMIZE THE LONG-TERM IMPACT OF THE WORLD BANK NATIONAL WATER PROJECT IN MADAGASCAR BY STRENGTHENING LOCAL GOVERNANCE AND COMMUNITY ENGAGEMENT TO ENSURE SUSTAINABLE ACCESS TO WATER.

- Support local governance structures by providing technical support to municipal councils and water management committees for effective oversight:
    - Provide tools and training on municipal water asset inventories, condition assessments, and lifecycle maintenance.
    - Provide digital tools for tracking breakdowns, monitoring service continuity, and preventive maintenance.
- Promote community participation and transparency
    - Establish community feedback tools, including mobile platforms like Taarifa (Open Source), a free, smartphone-based Information and communication technology platform utilized in Uganda and Zimbabwe to help citizens engage with their local governments in monitoring and reporting service delivery issues to improve public services such as flood management, trash collection, and sanitation.
    - Build trust through participatory planning involving broad community access, grievance redress systems, and public information campaigns.
- Link to mitigation and conservation
    - Integrate water infrastructure plans with national and municipal mitigation strategies.
    - Encourage community-based water conservation and risk reduction practices.
- Enhance JIRAMA's financial and operational accountability
    - Modernize billing and collection systems to reduce non-revenue water.
    - Support the implementation of performance audits and transparent reporting mechanisms.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
6, 7, 8, 9, 10, 11, 12, 13, 17

Global Target(s)
A, B, C, D, E, G

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j)

NATIONAL RECOMMENDATIONS

12

EVALUATE ALL OVERLAND TRANSPORT INFRASTRUCTURE FOR ITS RESILIENCE TO EXTREME HEAT AND EXTREME PRECIPITATION EVENTS, IN ACCORDANCE WITH MADAGASCAR'S NATIONAL INFRASTRUCTURE RESILIENCE ROADMAP.

- Implement regularly scheduled structural integrity audits
    - Prioritize assessments of roads, bridges, and railways in areas exposed to hazards.
    - Evaluate the durability of construction materials under projected thermal stress and hydrological conditions, including heatwaves and saturation from heavy rainfall.
- Inspect and upgrade drainage systems
    - Create a schedule inspection plan and assess the adequacy of drainage and stormwater management infrastructure under both current and future rainfall intensities.
    - Identify blockages, capacity gaps, and maintenance shortfalls that heighten flood risk.
- Overlay hazard data with infrastructure maps
    - Integrate GIS hazard layers (e.g., floodplains, urban heat islands, landslide-prone areas) with national transport inventories to identify vulnerable segments.
    - Coordinate with BNGRC's CERVO and the CPGU to ensure data integration into the national risk database.
    - Use DisasterAWARE to support mapping requirements.
- Pilot retrofitting projects
    - Launch pilot projects in vulnerable corridors using climate-adaptive materials such as heat-resistant asphalt, permeable pavement, and raised or reinforced embankments.
    - Document engineering, financial, and institutional lessons learned to inform national investment planning.
    - Retrofit high-risk transport segments with materials and techniques tailored to Madagascar's topography and climate outlook.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
6, 7, 8, 9, 10, 11, 12, 13, 17

Global Target(s)
A, B, C, D, E, G

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j)

NATIONAL RECOMMENDATIONS

13

ADOPT A COMPREHENSIVE STRATEGY TO INCREASE INFRASTRUCTURE CAPACITIES IN VULNERABLE AND ISOLATED COMMUNITIES.

- Work with national and subnational government entities, NGOs, private hospitals and clinics, and non-traditional partners to expand the availability of skilled medical staff and resources.
- Support quality improvements and expansion of the transportation network. Increases in transportation capacity facilitate expansion of other infrastructure (water, energy, ICT) support sustainable economic growth through greater accessibility of goods and services and improve response times and access to emergency services.
- Increase energy capacity through infrastructure expansion in areas with limited access to electricity or other energy sources. Increased access to electricity will facilitate access to information.
- Increase investment in improved water and sanitation infrastructure including wastewater containment and treatment to increase access to clean water capacities, reduce exposure to disease, and increase resilience.
- Evaluate barriers to food production and supply chains to increase connectivity, improve storage and transportation, and reduce post-harvest losses that threaten food security.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
6, 7, 8, 9, 10, 11, 12, 13, 17

Global Target(s)
A, B, C, D, E, G

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j)

NATIONAL RECOMMENDATIONS

14

EVALUATE AND MODERNIZE ENERGY INFRASTRUCTURE FOR SECURITY AND SUSTAINABILITY.

- Map the current state of existing energy infrastructure in keeping with the recommendations for infrastructure resilience from UNDRR and CADRI.
    - Use the data to assess the vulnerability and resilience of energy infrastructure systems to identify the most at-risk areas and prioritize interventions.
- Modernize and upgrade existing hydropower infrastructure to boost efficiency and reduce losses.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
6, 7, 8, 9, 10, 11, 12, 13, 17

Global Target(s)
A, B, C, D, E, G

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j)

NATIONAL RECOMMENDATIONS

15

STRENGTHEN EMERGENCY RESPONSE SERVICES' CAPACITY TO EFFECTIVELY AND EFFICIENTLY MEET THE COMMUNITY'S NEEDS AND PROVIDE TIMELY DELIVERY OF LIFE-SAVING ASSISTANCE.

- Advocate for constructing fire stations to accommodate the immediate communities they serve.
- Leverage and augment current fire station capacity and equipment needs through national and international partnerships.
- Scale up WHO mobile clinics and expand on the WHO model, permanently integrating them into district health services to deliver on-site maternity, pediatric, and basic medical care.
    - Leverage existing WHO prepositioned warehouses and the World Food Program warehouses as district-level hubs for distributing and storing medicines, vaccines, and emergency supplies.
- Expand the *Enhance Community Health* (ECH) model by recruiting, training, and compensating *Community Health Workers* (CHWs) in underserved fokontany.
- Partner with Medair to expand basic healthcare services and establish mobile emergency health units to fill urgent care gaps in districts lacking functional facilities.
    - Consider international models, such as the Colombian Civil Air Patrol (PAC) concept, to deliver specialized health resources in remote and vulnerable regions.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
3, 11, 17

Global Target(s)
A, B, C, D, F

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (h), (j), (l), (m)

NATIONAL RECOMMENDATIONS

16

ALLOCATE AND PRIORITIZE FUNDS TO MEET THE EXPANDING NEEDS OF BNGRC.

- Invest in overall enhanced capacity building to ensure timely communication and coordination mechanisms, improving cross-collaboration among national and international partners, and promoting community resilience-building activities.
- Include funding avenues for equipment, infrastructure, training, and capacity building.
- Expand training and preparedness capacity at the local level.
    - Create a training and education (T&E) initiative focused on the CRGRCs, CDGRCs, and CCGRCs to empower local disaster management (DM) to take a more active role in preparedness and response.
    - Identify staff from the BNGRC to manage local T&E initiatives focused on capacity-building for CRGRCs, CDGRCs, and CCGRCs.
    - Increase simulation and scenario-based exercises among response agencies to enhance collaboration and capacity building across communities.
    - Create a master training schedule and oversee communication channels and social media platforms to increase visibility, facilitate information sharing, and optimize collaboration.
    - Implement a digital record management system accessible to all participating agencies to track T&E schedules, participants, evaluations, and lessons learned for both review and real-time updates.
    - Ensure a standardized T&E reporting framework for consistent data collection, encompassing key metrics, observations, and feedback mechanisms for formal performance evaluations and after-action reporting.
- Focus on strengthening logistics and redundancies to ensure uninterrupted support for humanitarian activities and deliver disaster relief supplies during emergency response.
- Plan for interventions based on predicted future impacts of hazards.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
3, 11, 13, 17

Global Target(s)
A, B, C, D, E

Objectives outlined in Africa's PoA
(a), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)

NATIONAL RECOMMENDATIONS

17

REASSESS PROGRESS MADE TOWARD DRR AND RESILIENCE GOALS.

- Update the NDPBA at 3–5-year intervals, including the RVA and DMA analyses, to track progress toward reducing vulnerabilities, increasing coping capacities, and building disaster management capabilities to support Madagascar's Disaster Risk Reduction and Sustainable Development Goals for a more resilient nation.

SENDAI FRAMEWORK

Priorities for Action
1, 2, 3, 4

SDGs
6, 7, 11, 13, 14, 15, 16

Global Target(s)
A, B, C, D, E, F, G

Objectives outlined in Africa's PoA
(a), (b), (c), (d), (e)

Guiding Principle(s)
(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (m)

5-YEAR PLAN

MADAGASCAR NATIONAL RECOMMENDATIONS

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5

RECOMMENDATION 1

Expand hazard and risk mapping for subnational and local areas, especially where concentrations of informal housing settlements are in hazard zones, to facilitate resilience-building measures and planning efforts.

RECOMMENDATION 2

Strengthen all-hazards monitoring, communications systems, and data translation into comprehensive multi-hazard early warning systems (MHEWS) and capabilities.

RECOMMENDATION 3

Promote comprehensive strategies to monitor, address, and mitigate the impacts of tropical cyclones, floods, extreme heat, landslides, and wildfires.

RECOMMENDATION 4

Develop a disaster-informed urban planning strategy to focus on disaster risk reduction (DRR) and resilience-building measures for informal housing settlements in disaster-prone areas.

RECOMMENDATION 5

Strengthen disaster preparedness for vulnerable populations.

RECOMMENDATION 6

Promote evidence-based decision-making and knowledge sharing by creating a centralized national repository that stores all communal disaster management, land use, and water management plans.

RECOMMENDATION 7

Promote participatory community-level approaches to disaster risk management.

RECOMMENDATION 8

Conduct a thorough review of building codes, development regulations, and land use policies, and implement updated measures to prevent further expansion into hazard-prone areas, especially informal settlements, to improve disaster outcomes.

5-YEAR PLAN

MADAGASCAR NATIONAL RECOMMENDATIONS

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
	RECOMMENDATION 9 Assess and ensure that emergency communications are accessible and actionable in rural areas.			
	RECOMMENDATION 10 Adopt a comprehensive strategy to increase infrastructure capacities in both urban and rural areas.			
	RECOMMENDATION 11 Maximize the long-term impact of the World Bank National Water Project in Madagascar by strengthening local governance and community engagement to ensure sustainable access to water.			
	RECOMMENDATION 12 Evaluate all overland transport infrastructure for its resilience to extreme heat and extreme precipitation events, in accordance with Madagascar's National Infrastructure Resilience Roadmap.			
	RECOMMENDATION 13 Adopt a comprehensive strategy to increase infrastructure capacities in vulnerable and isolated communities.			
	RECOMMENDATION 14 Evaluate and modernize energy infrastructure for security and sustainability.			
	RECOMMENDATION 15 Strengthen emergency response services' capacity to effectively and efficiently meet the community's needs and provide timely delivery of life-saving assistance.			
RECOMMENDATION 16 Allocate and prioritize funds to meet the expanding needs of BNGRC.				
			RECOMMENDATION 17 Reassess progress made toward DRR and resilience goals.	

NDPBA

MADAGASCAR REGIONAL RISK PROFILES

SUBNATIONAL ASSESSMENT RESULTS

REGIONAL RISK PROFILES

The subnational report, summarized for each department, offers a more detailed understanding of municipal-level risk in Madagascar. These are provided separately from this report (linked below), and include drivers of vulnerability, coping capacity, and resilience; a comparison of each department within overall country; and strategic, data-driven, actionable recommendations.

Download Here:
https://www.pdc.org/wp-content/uploads/NDPBA-COL-Department-Profiles-Merged-Final.pdf

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