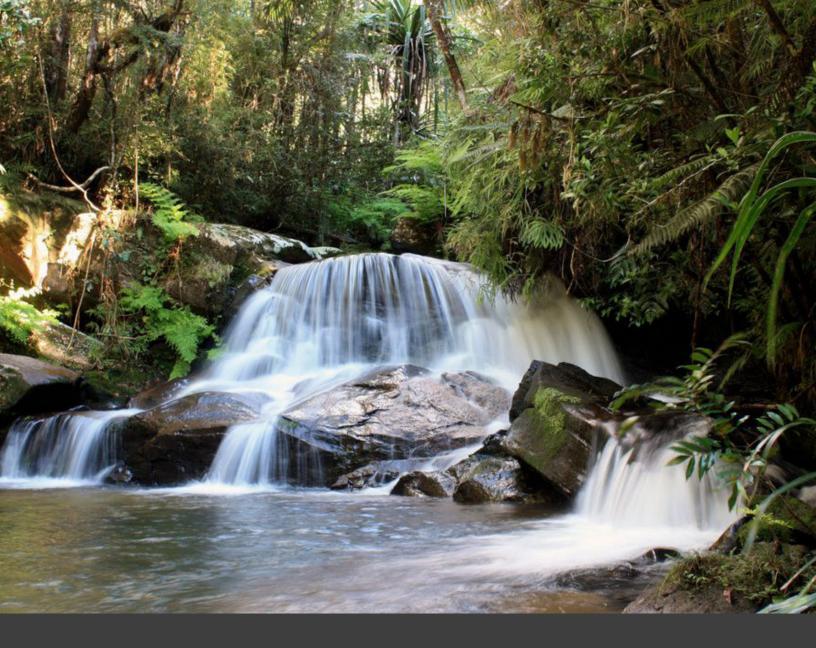


**NDPBA** 

# MADAGASCAR REGIONAL RISK PROFILES

**SUBNATIONAL ASSESSMENT RESULTS** 



MADAGASCAR

## **ALAOTRA MANGORO**

**NDPBA REGION PROFILE** 



### **MADAGASCAR**

### **REGION: ALAOTRA MANGORO**



## RISK AND VULNERABILITY COMPONENT SCORES



### **MULTI-HAZARD RISK (MHR) -**

Low

Score: 0.465 • Rank: 14/23



### **RESILIENCE (R) -**

Moderate

Score: 0.522 • Rank: 9/23



### **MULTI-HAZARD EXPOSURE (MHE) -**

**Moderate** 

Score: 0.440 • Rank: 11/23



### **VULNERABILITY (V) -**

Low

Score: 0.377 • Rank: 17/23



### **COPING CAPACITY (CC) -**

High

Score: 0.421 • Rank: 8/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

1,249,931



**Extreme Poverty Rate** 

56.2%



**Household Access to Drinking** 

Water

41.7%



**Literacy Rate** 

89.4%



**Household Access to Electricity** 

41.7%



### **MULTI-HAZARD EXPOSURE (MHE)**

RANK: 11 / 23 REGIONS

**SCORE: 0.440** 



**MHE** 0.440

**Raw MHE** 0.259

**Relative MHE** 0.620

### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**0%** (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Landslide



Buildings Exposed: 46%

Critical Infrastructure Exposed: 47%



**Coastal Flooding** 



**0%** (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Extreme Heat** 

0% 🚨 (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Riverine Flooding** 



**4%** (23,600)

Buildings Exposed: 4%

Critical Infrastructure Exposed: 4%



Wildfire



Buildings Exposed: 13%

Critical Infrastructure Exposed: 11%



**Tsunami** 



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Malaria

**13% &** (87,300)



Buildings Exposed: 13%

Critical Infrastructure Exposed: 6%



**Tropical Cyclone Wind** 



Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 100%



Earthquake

**92%** (594,000)

Buildings Exposed: 75%

Critical Infrastructure Exposed: 83%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

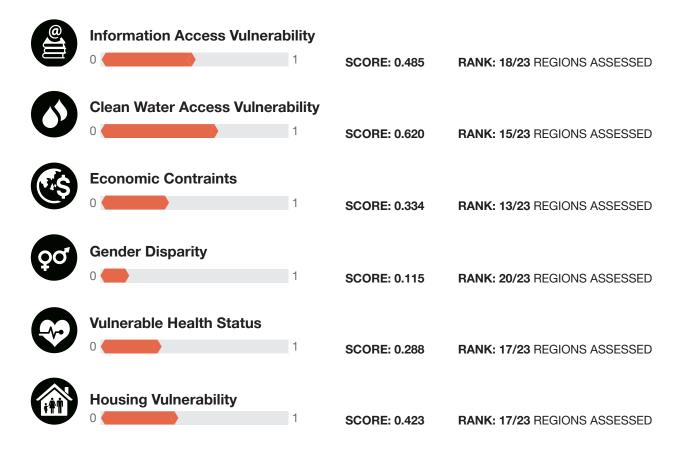


### **VULNERABILITY (V)**

**RANK: 17 / 23 REGIONS ASSESSED** 

**SCORE: 0.377** 

Below is a summary of the regional Vulnerability Assessment within Alaotra Mangoro. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 17 / 23 REGIONS ASSESSED** 

**SCORE: 0.377** 

### **KEY FACTORS INFLUENCING VULNERABILITY**



### **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improve water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



### **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.

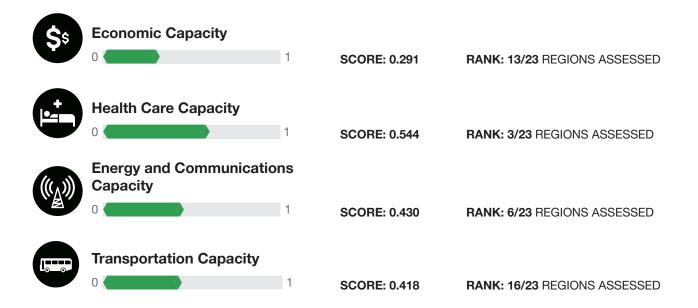


### **COPING CAPACITY (CC)**

**RANK: 8 / 23 REGIONS ASSESSED** 

**SCORE: 0.421** 

Below is a summary of the regional Coping Capacity Assessment within Alaotra Mangoro. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



### **KEY FACTORS INFLUENCING COPING CAPACITY**



### **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



### **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



RANK: 9 / 23 REGIONS ASSESSED

**SCORE: 0.522** 

Key drivers of Resilience within Alaotra Mangoro are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

### **KEY FACTORS INFLUENCING RESILIENCE**



### **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



### **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



### **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



### **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



### **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Coastal Flooding	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Riverine Flooding	RANK: 17 / 23 REGIONS ASSESSED SCORE: 0.190
(G)	Tsunami ♦	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Tropical Cyclone Wind	RANK: 18 / 23 REGIONS ASSESSED SCORE: 0.592
-1/1	Earthquake	RANK: 1 / 23 REGIONS ASSESSED SCORE: 0.680
MÈ	Landslide	RANK: 6 / 23 REGIONS ASSESSED SCORE: 0.553
	Extreme Heat	RANK: 20 / 23 REGIONS ASSESSED SCORE: 0.000
	Wildfire	RANK: 4 / 23 REGIONS ASSESSED SCORE: 0.404
浅	Malaria	RANK: 14 / 23 REGIONS ASSESSED SCORE: 0.204
	Locust	RANK: 4 / 23 REGIONS ASSESSED SCORE: 0.690



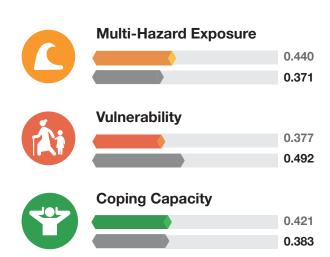
### **MULTI-HAZARD RISK (MHR)**

14 / 23 RANK AMONG REGIONS SCORE: 0.465

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Alaotra Mangoro region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUN compared to overall average country scores:







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MADAGASCAR

## **AMORON'I MANIA**

**NDPBA REGION PROFILE** 



### **MADAGASCAR**

### **REGION: AMORON'I MANIA**



## RISK AND VULNERABILITY COMPONENT SCORES



### **MULTI-HAZARD RISK (MHR) -**

Low

Score: 0.433 • Rank: 17/23



### **RESILIENCE (R)-**

Moderate

Score: 0.439 • Rank: 12/23



### **MULTI-HAZARD EXPOSURE (MHE) -**

**Very Low** 

Score: 0.176 • Rank: 19/23



### **VULNERABILITY (V) -**

Moderate

Score: 0.488 • Rank: 11/23



### **COPING CAPACITY (CC) -**

Moderate

Score: 0.366 • Rank: 12/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

837,116



**Extreme Poverty Rate** 

73.2%



**Household Access to Drinking** 

Water

50.3%



**Literacy Rate** 

84.1%



**Household Access to Electricity** 

50.3%



### **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 19 / 23 REGIONS** 

**SCORE: 0.176** 



**2** 74% (1,020,000)

Critical Infrastructure Exposed: 39%

Critical Infrastructure Exposed: <1%

Buildings Exposed: 64%

Landslide

**Extreme Heat** 

<1% = (14)

Buildings Exposed: <1%

**4%** (54,600)

Buildings Exposed: 2%

**MHE** 0.176

**Raw MHE** 0.139

**Relative MHE** 0.214

### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**9** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Coastal Flooding** 



**9** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Riverine Flooding** 



**1%** (11,400)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 2%



Tsunami



**4** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Malaria

Wildfire

<1% 🖴 (1.410)

Critical Infrastructure Exposed: 2%

Buildings Exposed: 1%

Critical Infrastructure Exposed: 0%



**Tropical Cyclone Wind** 

**100%** (1,380,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 92%



Earthquake



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

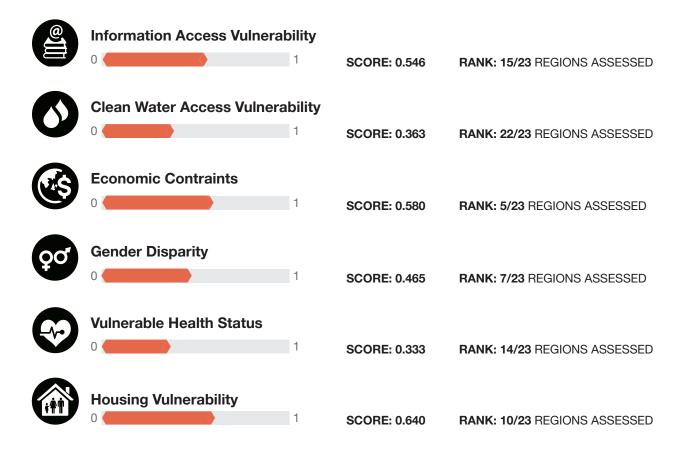


### **VULNERABILITY (V)**

**RANK: 11 / 23 REGIONS ASSESSED** 

**SCORE: 0.488** 

Below is a summary of the regional Vulnerability Assessment within Amoron'i Mania. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 11 / 23 REGIONS ASSESSED** 

**SCORE: 0.488** 

### **KEY FACTORS INFLUENCING VULNERABILITY**



### **Housing Vulnerability**

Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.



### **Economic Constraints**

Economic constraints have individual, household, community, and region-wide influence. Limitations on available financial resources reduce opportunities to invest in mitigation and preparedness measures and limit the ability to facilitate short- and long-term recovery.

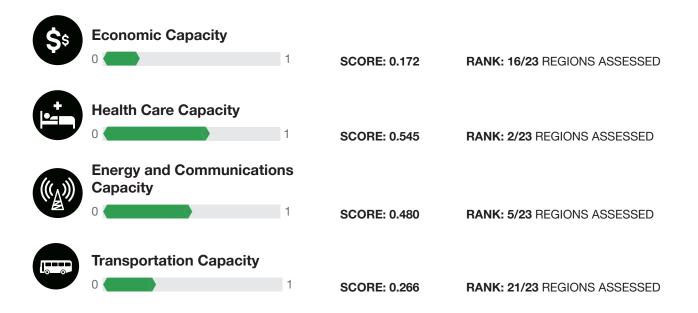


### **COPING CAPACITY (CC)**

**RANK: 12 / 23 REGIONS ASSESSED** 

**SCORE: 0.366** 

Below is a summary of the regional Coping Capacity Assessment within Amoron'i Mania. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



### **KEY FACTORS INFLUENCING COPING CAPACITY**



### **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



### **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



**RANK: 12 / 23 REGIONS ASSESSED** 

**SCORE: 0.439** 

Key drivers of Resilience within Amoron'i Mania are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

### **KEY FACTORS INFLUENCING RESILIENCE**



### **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



### **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



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### **Economic Constraints**

Economic constraints have individual, household, community, and region-wide influence. Limitations on available financial resources reduce opportunities to invest in mitigation and preparedness measures and limit the ability to facilitate short- and long-term recovery.



### **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Coastal Flooding	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Riverine Flooding	RANK: 22 / 23 REGIONS ASSESSED SCORE: 0.084
Ca Ca	Tsunami ♦	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Tropical Cyclone Wind	RANK: 13 / 23 REGIONS ASSESSED SCORE: 0.632
-1/1-	Earthquake	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide	RANK: 2 / 23 REGIONS ASSESSED SCORE: 0.623
	Extreme Heat	RANK: 18 / 23 REGIONS ASSESSED SCORE: 0.013
	Wildfire	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.247
浅	Malaria <mark>(</mark>	RANK: 20 / 23 REGIONS ASSESSED SCORE: 0.034
	Locust	RANK: 3 / 23 REGIONS ASSESSED SCORE: 0.720



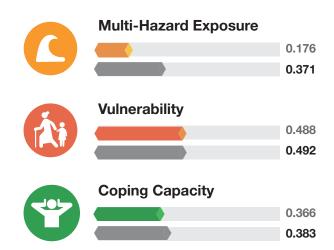
### **MULTI-HAZARD RISK (MHR)**

17 / 23 RANK AMONG REGIONS SCORE: 0.433

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Amoron'i Mania region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores compared to overall average country scores:







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**MADAGASCAR** 

## ANALAMANGA

### **NDPBA REGION PROFILE**



### **MADAGASCAR**

### **REGION: ANALAMANGA**



## RISK AND VULNERABILITY COMPONENT SCORES



### **MULTI-HAZARD RISK (MHR) -**

**Very Low** 

Score: 0.257 • Rank: 23/23



### **RESILIENCE (R)-**

**Very High** 

Score: 0.863 • Rank: 1/23



### **MULTI-HAZARD EXPOSURE (MHE) -**

High

Score: 0.497 • Rank: 7/23



### **VULNERABILITY (V) -**

**Very Low** 

Score: 0.111 • Rank: 23/23



### **COPING CAPACITY (CC) -**

**Very High** 

Score: 0.838 • Rank: 1/23

### **REGION HIGHLIGHTS**



Population (2018 Census)

3,623,925



**Extreme Poverty Rate** 

26.9%



**Household Access to Drinking** 

Water

81.1%



**Literacy Rate** 

97.5%



**Household Access to Electricity** 

81.1%



### **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 7 / 23 REGIONS** 

**SCORE: 0.497** 



**33%** (3,052,000)

Critical Infrastructure Exposed: 52%

Critical Infrastructure Exposed: 0%

Critical Infrastructure Exposed: 1%

Buildings Exposed: 38%

Buildings Exposed: 0%

**4** <1% (2,350)

Buildings Exposed: <1%

Landslide

**Extreme Heat** 

0% 🚨 (0)

#### **MHE** 0.497

**Raw MHE** 0.805

**Relative MHE** 0.189

### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Coastal Flooding** 



**9** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Riverine Flooding** 



**7%** (627,000)

Buildings Exposed: 10%

Critical Infrastructure Exposed: 11%



Tsunami



**4** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Malaria

Wildfire



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Tropical Cyclone Wind** 

**100%** (9,230,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 100%

Earthquake



**4** <1% (22,500)

Buildings Exposed: 2%

Critical Infrastructure Exposed: 2%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

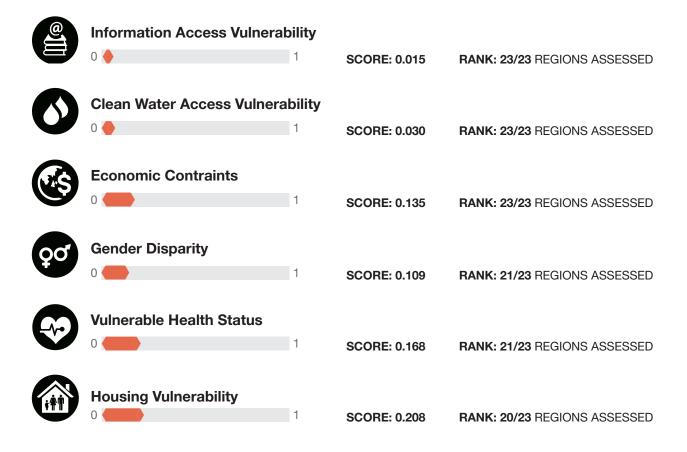


### **VULNERABILITY (V)**

**RANK: 23 / 23 REGIONS ASSESSED** 

**SCORE: 0.111** 

Below is a summary of the regional Vulnerability Assessment within Analamanga. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 23 / 23 REGIONS ASSESSED** 

**SCORE: 0.111** 

### **KEY FACTORS INFLUENCING VULNERABILITY**



### **Housing Vulnerability**

Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.



### **Vulnerable Health Status**

A population with a compromised health status will have a greatly reduced ability to manage short- and long-term disaster outcomes. Improving health is often correlated with decreased susceptibility to injury, disease, and stress associated with disasters. Acute or prolonged vulnerable health status limits the basic capacity of response functions.

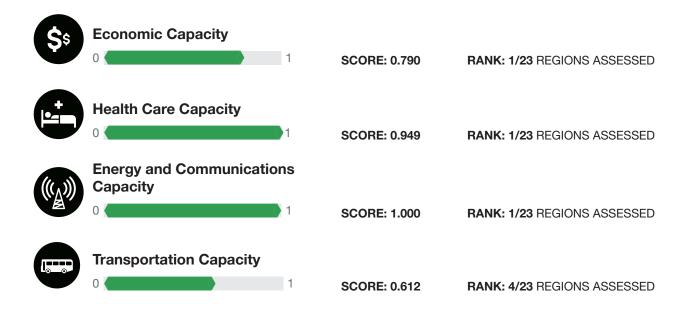


### **COPING CAPACITY (CC)**

**RANK: 1 / 23 REGIONS ASSESSED** 

**SCORE: 0.838** 

Below is a summary of the regional Coping Capacity Assessment within Analamanga. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



### **KEY FACTORS INFLUENCING COPING CAPACITY**



### **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



### **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



**RANK: 1 / 23 REGIONS ASSESSED** 

**SCORE: 0.863** 

Key drivers of Resilience within Analamanga are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

### **KEY FACTORS INFLUENCING RESILIENCE**



### **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



### **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



### **Housing Vulnerability**

Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.



### Vulnerable Health Status

A population with a compromised health status will have a greatly reduced ability to manage short- and long-term disaster outcomes. Improving health is often correlated with decreased susceptibility to injury, disease, and stress associated with disasters. Acute or prolonged vulnerable health status limits the basic capacity of response functions.



### **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Coastal Flooding	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Riverine Flooding	RANK: 13 / 23 REGIONS ASSESSED SCORE: 0.244
(Cá	Tsunami •	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Tropical Cyclone Wind	RANK: 23 / 23 REGIONS ASSESSED SCORE: 0.370
-1/1-	Earthquake (	RANK: 6 / 23 REGIONS ASSESSED SCORE: 0.066
MÈ	Landslide	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.334
	Extreme Heat	RANK: 20 / 23 REGIONS ASSESSED SCORE: 0.000
	Wildfire	RANK: 18 / 23 REGIONS ASSESSED SCORE: 0.045
淡	Malaria ∳	RANK: 22 / 23 REGIONS ASSESSED SCORE: 0.000
	Locust	RANK: 10 / 23 REGIONS ASSESSED SCORE: 0.370



### **MULTI-HAZARD RISK (MHR)**

23 / 23 RANK AMONG REGIONS SCORE: 0.257

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Analamanga region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores compared to overall average country scores:

Multi-Hazard Exposure

0.497
0.371

Vulnerability
0.111
0.492

Coping Capacity

0.838 0.383



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MADAGASCAR •

## ANALANJIROFO

**NDPBA REGION PROFILE** 



### **MADAGASCAR**

### **REGION: ANALANJIROFO**



## RISK AND VULNERABILITY COMPONENT SCORES



### **MULTI-HAZARD RISK (MHR) -**

Moderate

Score: 0.526 • Rank: 10/23



### **RESILIENCE (R)-**

**Very High** 

Score: 0.555 • Rank: 3/23



### **MULTI-HAZARD EXPOSURE (MHE) -**

**Very High** 

Score: 0.687 • Rank: 2/23



### **VULNERABILITY (V) -**

**Very Low** 

Score: 0.346 • Rank: 19/23



### **COPING CAPACITY (CC) -**

**Very High** 

Score: 0.455 • Rank: 4/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

1,150,089



**Extreme Poverty Rate** 

33.2%



**Household Access to Drinking** 

Water

36.1%



**Literacy Rate** 

81.3%



**Household Access to Electricity** 

36.1%



### **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 2 / 23 REGIONS** 

**SCORE: 0.687** 



**MHE** 0.687

**Raw MHE** 0.449

**Relative MHE** 0.926

### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**4 <1%** (294)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 4%



Landslide

**2** 72% (586,000)

Buildings Exposed: 52%

Critical Infrastructure Exposed: 22%



**Coastal Flooding** 



**4 < 1%** (927)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 5%



**Extreme Heat** 

<1% 🚨 (769)

Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



**Riverine Flooding** 



**4 11%** (87,500)

Buildings Exposed: 26%

Critical Infrastructure Exposed: 42%



Wildfire

**17%** (143,000)

Buildings Exposed: 4%

Critical Infrastructure Exposed: 2%



**Tsunami** 



<1% (120)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 5%



Malaria

100% & (817,000)



Buildings Exposed: 99%

Critical Infrastructure Exposed: 100%



**Tropical Cyclone Wind** 



Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 0%



Earthquake

**4** 90% (739,000)

Buildings Exposed: 55%

Critical Infrastructure Exposed: 44%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

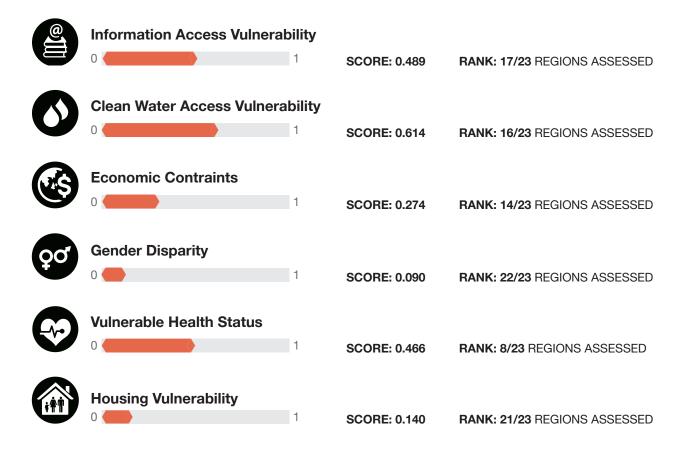


### **VULNERABILITY (V)**

**RANK: 19 / 23 REGIONS ASSESSED** 

**SCORE: 0.346** 

Below is a summary of the regional Vulnerability Assessment within Analanjirofo. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 19 / 23 REGIONS ASSESSED** 

**SCORE: 0.346** 

### **KEY FACTORS INFLUENCING VULNERABILITY**



### **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improve water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



### **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.

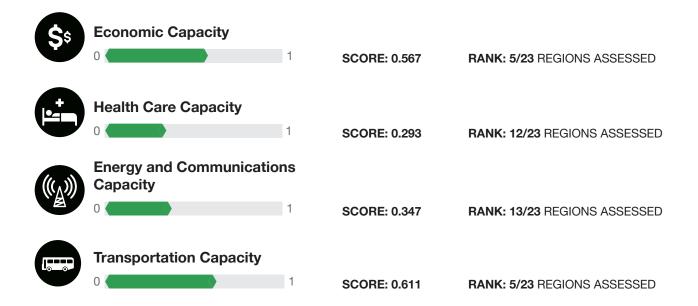


## **COPING CAPACITY (CC)**

**RANK: 4 / 23 REGIONS ASSESSED** 

**SCORE: 0.455** 

Below is a summary of the regional Coping Capacity Assessment within Analanjirofo. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### KEY FACTORS INFLUENCING COPING CAPACITY



## **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



## **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



RANK: 3 / 23 REGIONS ASSESSED

**SCORE: 0.555** 

Key drivers of Resilience within Analanjirofo are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



## **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



## **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



## **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



## **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



## **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 10 / 23 REGIONS ASSESSED SCORE: 0.297
	Coastal Flooding	RANK: 10 / 23 REGIONS ASSESSED SCORE: 0.258
	Riverine Flooding	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.518
CG.	Tsunami	RANK: 9 / 23 REGIONS ASSESSED SCORE: 0.155
	Tropical Cyclone Wind	RANK: 20 / 23 REGIONS ASSESSED SCORE: 0.578
	Earthquake	RANK: 2 / 23 REGIONS ASSESSED SCORE: 0.587
MÈ	Landslide	RANK: 8 / 23 REGIONS ASSESSED SCORE: 0.498
	Extreme Heat	RANK: 17 / 23 REGIONS ASSESSED SCORE: 0.030
	Wildfire  Malaria	RANK: 5 / 23 REGIONS ASSESSED SCORE: 0.373
洲	ivialal la	RANK: 3 / 23 REGIONS ASSESSED SCORE: 0.619
	Locust	RANK: 22 / 23 REGIONS ASSESSED SCORE: 0.035



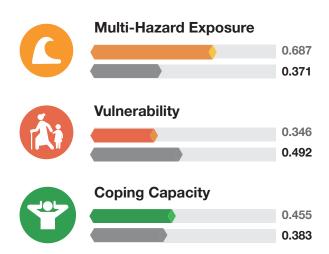
## **MULTI-HAZARD RISK (MHR)**

10 / 23 RANK AMONG REGIONS SCORE: 0.526

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Analanjirofo region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores compared to overall average country scores:







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MADAGASCAR — ANDROY

## **NDPBA REGION PROFILE**



### **MADAGASCAR**

#### **REGION: ANDROY**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

High

Score: 0.581 • Rank: 7/23



#### **RESILIENCE (R)-**

**Very Low** 

Score: 0.205 • Rank: 23/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

**Very Low** 

Score: 0.154 • Rank: 20/23



#### **VULNERABILITY (V) -**

**Very High** 

Score: 0.760 • Rank: 2/23



#### **COPING CAPACITY (CC) -**

**Very Low** 

Score: 0.171 • Rank: 23/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

900,235



**Extreme Poverty Rate** 

90.7%



**Household Access to Drinking** 

Water

23.7%



**Literacy Rate** 

38.1%



**Household Access to Electricity** 

23.7%



#### **MULTI-HAZARD EXPOSURE (MHE)**

RANK: 20 / 23 REGIONS

**SCORE: 0.154** 



**4** 1% (25,900)

Buildings Exposed: 1%

**34% (738,000)** 

Buildings Exposed: 44%

Critical Infrastructure Exposed: 1%

Critical Infrastructure Exposed: 29%

Landslide

**Extreme Heat** 

**MHE** 0.154

**Raw MHE** 0.201

**Relative MHE** 0.107

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**9** 0% (0)

Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



**Coastal Flooding** 



**4** <1% (2)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 0%



**Riverine Flooding** 



**4** <1% (2,310)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 2%



**Tsunami** 



<1% (148)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 0%



Malaria

Wildfire

**4** 0% (0)

(86.300)

Critical Infrastructure Exposed: 0%

Buildings Exposed: 4%

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Tropical Cyclone Wind** 

**100%** (2,180,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 1%



Earthquake



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

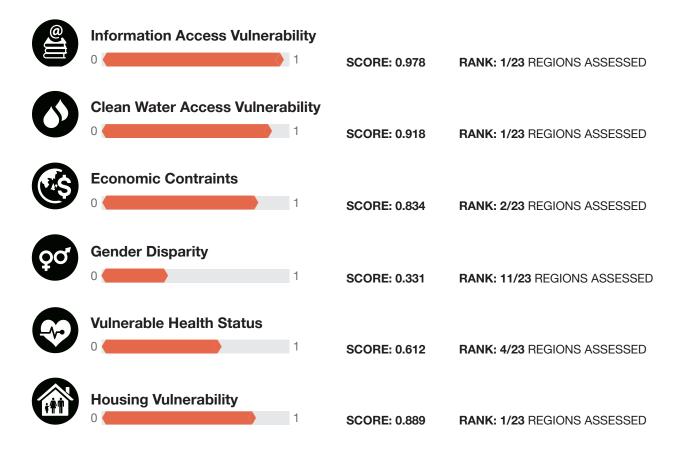


## **VULNERABILITY (V)**

**RANK: 2 / 23 REGIONS ASSESSED** 

**SCORE: 0.760** 

Below is a summary of the regional Vulnerability Assessment within Androy. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 2 / 23 REGIONS ASSESSED** 

**SCORE: 0.760** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



## **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



## **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.

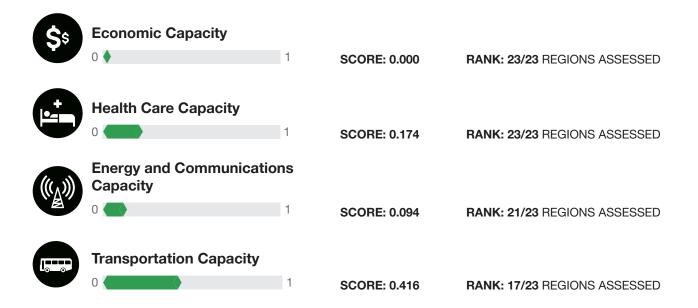


## **COPING CAPACITY (CC)**

**RANK: 23 / 23 REGIONS ASSESSED** 

**SCORE: 0.171** 

Below is a summary of the regional Coping Capacity Assessment within Androy. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### KEY FACTORS INFLUENCING COPING CAPACITY



## **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



## **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



RANK: 23 / 23 REGIONS ASSESSED

**SCORE: 0.205** 

Key drivers of Resilience within Androy are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



## **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



## **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



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## **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 14 / 23 REGIONS ASSESSED SCORE: 0.031
	Coastal Flooding	RANK: 14 / 23 REGIONS ASSESSED SCORE: 0.014
	Riverine Flooding	RANK: 23 / 23 REGIONS ASSESSED SCORE: 0.042
CG.	Tsunami	RANK: 14 / 23 REGIONS ASSESSED SCORE: 0.036
	Tropical Cyclone Wind	RANK: 1 / 23 REGIONS ASSESSED SCORE: 0.774
-1/1	Earthquake ♦	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide •	RANK: 23 / 23 REGIONS ASSESSED SCORE: 0.037
	Extreme Heat	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.592
	Wildfire •	RANK: 19 / 23 REGIONS ASSESSED SCORE: 0.000
浅	Malaria	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.138
	Locust	RANK: 19 / 23 REGIONS ASSESSED SCORE: 0.072



## **MULTI-HAZARD RISK (MHR)**

7 / 23
RANK AMONG REGIONS
SCORE: 0.581

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Androy region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores compared to overall average country scores:

Multi-Hazard Exposure

0.154
0.371

Vulnerability

0.760
0.492

0.171 0.383

**Coping Capacity** 



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MADAGASCAR ANOSY

## **NDPBA REGION PROFILE**



### **MADAGASCAR**

#### **REGION: ANOSY**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

Moderate

Score: 0.532 • Rank: 9/23



#### **RESILIENCE (R)-**

**Very Low** 

Score: 0.304 • Rank: 21/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

Low

Score: 0.203 • Rank: 18/23



#### **VULNERABILITY (V) -**

High

Score: 0.636 • Rank: 8/23



#### **COPING CAPACITY (CC) -**

**Very Low** 

Score: 0.244 • Rank: 21/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

809,051



**Extreme Poverty Rate** 

78.7%



**Household Access to Drinking** 

Water

35.8%



**Literacy Rate** 

44.3%



**Household Access to Electricity** 

35.8%



#### **MULTI-HAZARD EXPOSURE (MHE)**

RANK: 18 / 23 REGIONS

**SCORE: 0.203** 



**46,000 46,000** 

Buildings Exposed: 17%

**5% (13,600)** 

Buildings Exposed: 3%

Buildings Exposed: 0%

Critical Infrastructure Exposed: 8%

Critical Infrastructure Exposed: 1%

Critical Infrastructure Exposed: 0%

Landslide

**Extreme Heat** 

**MHE** 0.203

**Raw MHE** 0.095

**Relative MHE** 0.312

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**4 <1%** (127)

Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



**Coastal Flooding** 



**4** <1% (262)

Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



**Riverine Flooding** 



**2%** (5,480)

Buildings Exposed: 2%

Critical Infrastructure Exposed: 4%



**Tsunami** 



**3%** (7,140)

Buildings Exposed: 2%

Critical Infrastructure Exposed: 22%

Malaria

Wildfire

**2** 0% (0)

**61% (163,000)** 

Buildings Exposed: 68%

Critical Infrastructure Exposed: 76%



**Tropical Cyclone Wind** 

**100%** (268,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 41%



Earthquake



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

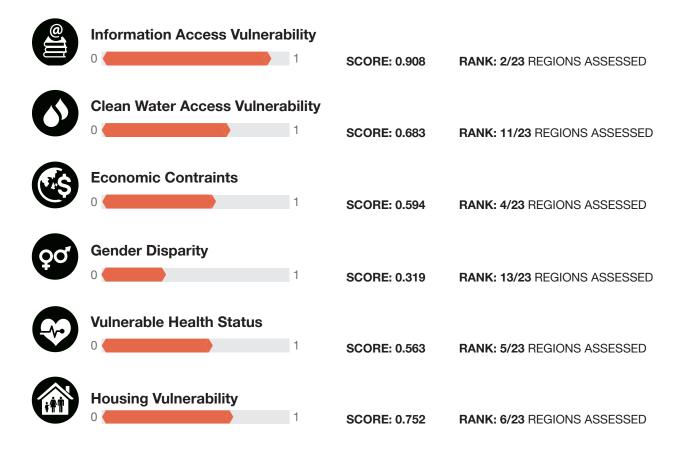


## **VULNERABILITY (V)**

**RANK: 8 / 23 REGIONS ASSESSED** 

**SCORE: 0.636** 

Below is a summary of the regional Vulnerability Assessment within Anosy. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 8 / 23 REGIONS ASSESSED** 

**SCORE: 0.636** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



## **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



## **Housing Vulnerability**

Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.

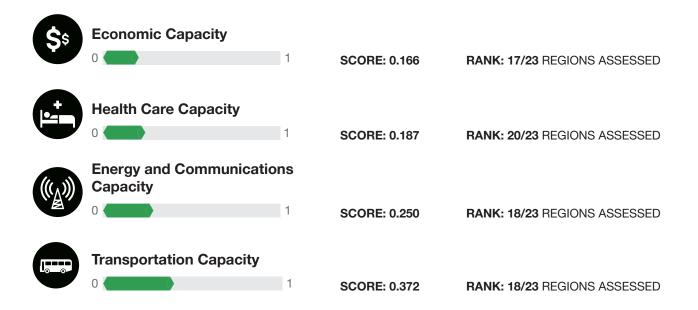


## **COPING CAPACITY (CC)**

**RANK: 21 / 23 REGIONS ASSESSED** 

**SCORE: 0.244** 

Below is a summary of the regional Coping Capacity Assessment within Anosy. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### KEY FACTORS INFLUENCING COPING CAPACITY



## **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



### **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



**RANK: 21 / 23 REGIONS ASSESSED** 

**SCORE: 0.304** 

Key drivers of Resilience within Anosy are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



## **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



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## **Housing Vulnerability**

Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.



## **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 13 / 23 REGIONS ASSESSED SCORE: 0.125
	Coastal Flooding	RANK: 13 / 23 REGIONS ASSESSED SCORE: 0.087
	Riverine Flooding	RANK: 19 / 23 REGIONS ASSESSED SCORE: 0.157
CG.	Tsunami	RANK: 4 / 23 REGIONS ASSESSED SCORE: 0.518
	Tropical Cyclone Wind	RANK: 5 / 23 REGIONS ASSESSED SCORE: 0.698
	Earthquake ♦	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide	RANK: 16 / 23 REGIONS ASSESSED SCORE: 0.318
	Extreme Heat	RANK: 14 / 23 REGIONS ASSESSED SCORE: 0.127
	Wildfire  Malaria	RANK: 19 / 23 REGIONS ASSESSED SCORE: 0.000
洲	ividiai ia	RANK: 4 / 23 REGIONS ASSESSED SCORE: 0.609
	Locust	RANK: 9 / 23 REGIONS ASSESSED SCORE: 0.536



## **MULTI-HAZARD RISK (MHR)**

9 / 23 RANK AMONG REGIONS SCORE: 0.532

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Anosy region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores compared to overall average country scores:

Multi-Hazard Exposure

0.203
0.371

Vulnerability

0.636
0.492

Coping Capacity

0.244
0.383



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**MADAGASCAR** 

# **ATSIMO ANDREFANA**

**NDPBA REGION PROFILE** 



### **MADAGASCAR**

#### **REGION: ATSIMO ANDREFANA**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

High

Score: 0.595 • Rank: 5/23



#### **RESILIENCE (R) -**

Low

Score: 0.340 • Rank: 17/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

Moderate

Score: 0.465 • Rank: 10/23



#### **VULNERABILITY (V) -**

**Very High** 

Score: 0.685 • Rank: 4/23



#### **COPING CAPACITY (CC) -**

Moderate

Score: 0.365 • Rank: 13/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

1,797,894



**Extreme Poverty Rate** 

78.2%



**Household Access to Drinking** 

Water

43.5%



**Literacy Rate** 

46.5%



**Household Access to Electricity** 

43.5%



#### **MULTI-HAZARD EXPOSURE (MHE)**

RANK: 10 / 23 REGIONS

**SCORE: 0.465** 



#### **MHE** 0.465

**Raw MHE** 0.348

**Relative MHE** 0.583

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**4** 1% (2,850)

Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



**Coastal Flooding** 



**2%** (12.600)

Buildings Exposed: 3%

Critical Infrastructure Exposed: 8%



**Riverine Flooding** 



**6%** (33,400)

Buildings Exposed: 12%

Critical Infrastructure Exposed: 20%



**Tsunami** 



**4** 1% (3,170)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 6%



**Tropical Cyclone Wind** 



Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Landslide

**4** 10% (54,600)

Buildings Exposed: 4%

Critical Infrastructure Exposed: 7%



**Extreme Heat** 

**98% (**531,000)

Buildings Exposed: 91%

Critical Infrastructure Exposed: 97%



Wildfire



Buildings Exposed: 3%

Critical Infrastructure Exposed: 3%



Malaria

**21% &** (116,000)



Buildings Exposed: 26%

Critical Infrastructure Exposed: 13%



**100%** (542,000)



Locust

Cropland Exposed: 8%



Earthquake



**90%** (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

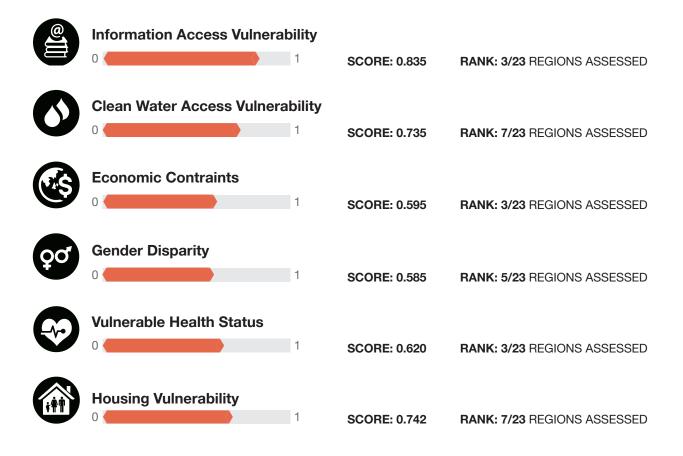


## **VULNERABILITY (V)**

**RANK: 4 / 23 REGIONS ASSESSED** 

**SCORE: 0.685** 

Below is a summary of the regional Vulnerability Assessment within Atsimo Andrefana. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 4 / 23 REGIONS ASSESSED** 

**SCORE: 0.685** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



## **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



## **Housing Vulnerability**

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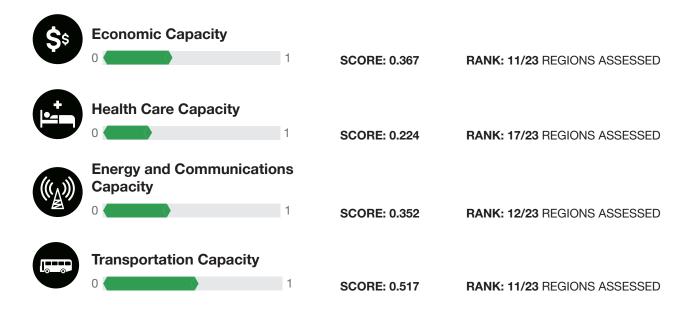


## **COPING CAPACITY (CC)**

**RANK: 13 / 23 REGIONS ASSESSED** 

**SCORE: 0.365** 

Below is a summary of the regional Coping Capacity Assessment within Atsimo Andrefana. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### KEY FACTORS INFLUENCING COPING CAPACITY



## **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



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RANK: 17 / 23 REGIONS ASSESSED

**SCORE: 0.340** 

Key drivers of Resilience within Atsimo Andrefana are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



## **Information Access Vulnerability**

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## Clean Water Access Vulnerability

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



## **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 3 / 23 REGIONS ASSESSED SCORE: 0.507
	Coastal Flooding	RANK: 3 / 23 REGIONS ASSESSED SCORE: 0.572
	Riverine Flooding	RANK: 8 / 23 REGIONS ASSESSED SCORE: 0.443
(C)	Tsunami	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.314
	Tropical Cyclone Wind	RANK: 4 / 23 REGIONS ASSESSED SCORE: 0.713
-1/1-	Earthquake ♦	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide	RANK: 19 / 23 REGIONS ASSESSED SCORE: 0.232
	Extreme Heat	RANK: 1 / 23 REGIONS ASSESSED SCORE: 0.782
	Wildfire	RANK: 6 / 23 REGIONS ASSESSED SCORE: 0.318
浅	Malaria	RANK: 11 / 23 REGIONS ASSESSED SCORE: 0.340
	Locust	RANK: 12 / 23 REGIONS ASSESSED SCORE: 0.229



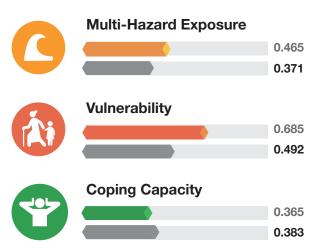
## **MULTI-HAZARD RISK (MHR)**

5 / 23 RANK AMONG REGIONS SCORE: 0.595

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Atsimo Andrefana region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUNTRY SCORE compared to overall average country scores:

ATSIMO ANDREFANA SCORE





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**MADAGASCAR** 

# **ATSIMO ATSINANANA**

**NDPBA REGION PROFILE** 



#### **MADAGASCAR**

#### **REGION: ATSIMO ATSINANANA**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

**Very High** 

Score: 0.695 • Rank: 1/23



#### **RESILIENCE (R)-**

**Very Low** 

Score: 0.228 • Rank: 22/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

**Very High** 

Score: 0.541 • Rank: 4/23



#### **VULNERABILITY (V) -**

**Very High** 

Score: 0.774 • Rank: 1/23



#### **COPING CAPACITY (CC) -**

**Very Low** 

Score: 0.231 • Rank: 22/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

1,030,404



**Extreme Poverty Rate** 

71.6%



**Household Access to Drinking** 

Water

17.7%



**Literacy Rate** 

48.5%



**Household Access to Electricity** 

17.7%



#### **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 4 / 23 REGIONS** 

**SCORE: 0.541** 



**23%** (120,000)

71% 🚨 (363,000)

Buildings Exposed: 42%

Critical Infrastructure Exposed: 18%

Critical Infrastructure Exposed: 46%

Buildings Exposed: 30%

**MHE** 0.541

**Raw MHE** 0.321

**Relative MHE** 0.762

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**4 <1%** (1,200)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 1%



**Coastal Flooding** 



**1%** (3.470)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 1%



**Riverine Flooding** 



**22%** (111,000)

Buildings Exposed: 17%

Critical Infrastructure Exposed: 54%



Wildfire

Landslide

**Extreme Heat** 



Buildings Exposed: 2%

Critical Infrastructure Exposed: 2%



**Tsunami** 



**3%** (16,300)

Buildings Exposed: 2%

Critical Infrastructure Exposed: 5%



Malaria

93% & (480,000)



Buildings Exposed: 95%

Critical Infrastructure Exposed: 92%



**Tropical Cyclone Wind** 

**100%** (514,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 1%



Earthquake



**90%** (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

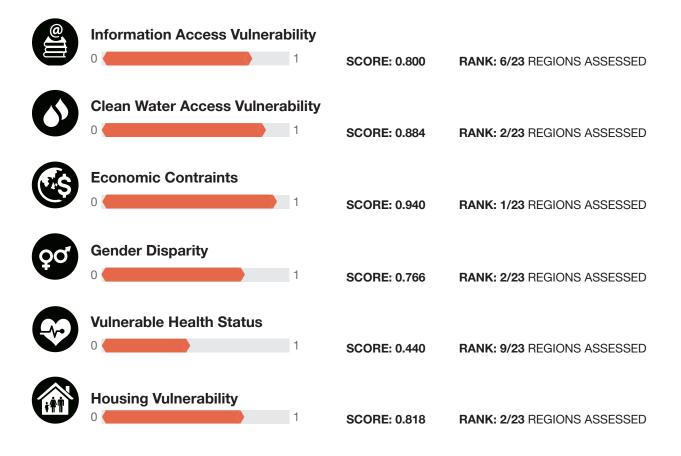


# **VULNERABILITY (V)**

**RANK: 1 / 23 REGIONS ASSESSED** 

**SCORE: 0.774** 

Below is a summary of the regional Vulnerability Assessment within Atsimo Atsinanana. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 1 / 23 REGIONS ASSESSED** 

**SCORE: 0.774** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



#### **Economic Constraints**

Economic constraints have individual, household, community, and region-wide influence. Limitations on available financial resources reduce opportunities to invest in mitigation and preparedness measures and limit the ability to facilitate short- and long-term recovery.



#### **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.

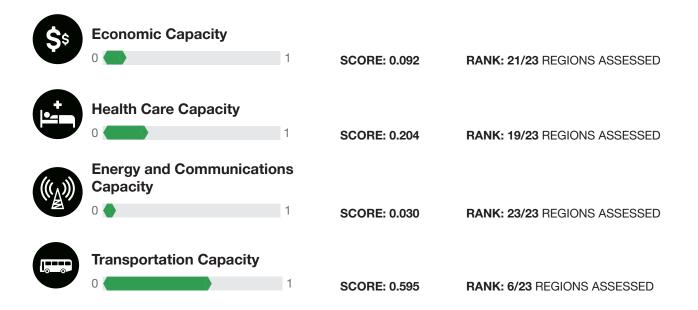


## **COPING CAPACITY (CC)**

**RANK: 22 / 23 REGIONS ASSESSED** 

**SCORE: 0.231** 

Below is a summary of the regional Coping Capacity Assessment within Atsimo Atsinanana. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### **KEY FACTORS INFLUENCING COPING CAPACITY**



#### **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



#### **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



**RANK: 22 / 23 REGIONS ASSESSED** 

**SCORE: 0.228** 

Key drivers of Resilience within Atsimo Atsinanana are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



#### **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



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Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



# **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 9 / 23 REGIONS ASSESSED SCORE: 0.313
	Coastal Flooding	RANK: 10 / 23 REGIONS ASSESSED SCORE: 0.258
	Riverine Flooding	RANK: 1 / 23 REGIONS ASSESSED SCORE: 0.706
(Ca	Tsunami	RANK: 5 / 23 REGIONS ASSESSED SCORE: 0.479
	Tropical Cyclone Wind	RANK: 2 / 23 REGIONS ASSESSED SCORE: 0.756
-Mr	Earthquake ♦	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide	RANK: 11 / 23 REGIONS ASSESSED SCORE: 0.478
	Extreme Heat	RANK: 5 / 23 REGIONS ASSESSED SCORE: 0.610
	Wildfire	RANK: 9 / 23 REGIONS ASSESSED SCORE: 0.211
淡	Malaria	RANK: 1 / 23 REGIONS ASSESSED SCORE: 0.774
	Locust	RANK: 18 / 23 REGIONS ASSESSED SCORE: 0.077



# **MULTI-HAZARD RISK (MHR)**

1 / 23 RANK AMONG REGIONS SCORE: 0.695

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Atsimo Atsinanana region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores compared to overall average country scores:

Multi-Hazard Exposure

0.541
0.371

Vulnerability

0.774
0.492

0.231 0.383

**Coping Capacity** 



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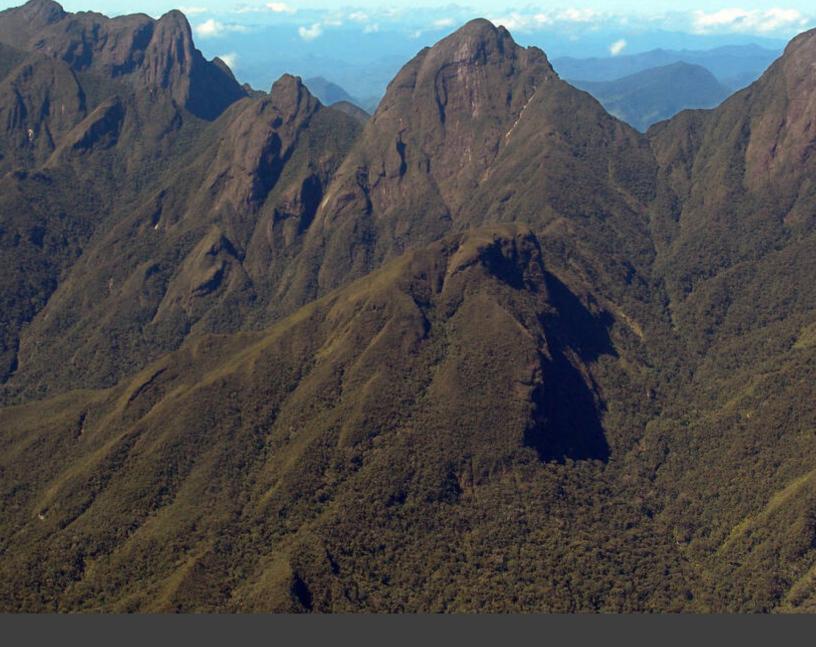
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**MADAGASCAR** 

# **ATSINANANA**

# **NDPBA REGION PROFILE**



#### **MADAGASCAR**

#### **REGION: ATSINANANA**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

High

Score: 0.544 • Rank: 8/23



#### **RESILIENCE (R)-**

High

Score: 0.545 • Rank: 5/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

**Very High** 

Score: 0.722 • Rank: 1/23



#### **VULNERABILITY (V) -**

Low

Score: 0.352 • Rank: 18/23



#### **COPING CAPACITY (CC) -**

High

Score: 0.441 • Rank: 6/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

1,478,472



**Extreme Poverty Rate** 

34.5%



**Household Access to Drinking** 

Water

44.8%



**Literacy Rate** 

81.4%



**Household Access to Electricity** 

44.8%



#### **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 1 / 23 REGIONS** 

**SCORE: 0.722** 

**MHE** 0.722

**Raw MHE** 0.562

**Relative MHE** 0.882

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



Buildings Exposed: <1%

Critical Infrastructure Exposed: 1%



Landslide



Buildings Exposed: 47%

Critical Infrastructure Exposed: 23%



**Coastal Flooding** 



**1%** (10.780)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 1%



**Extreme Heat** 

**2% 4**(44,400)

Buildings Exposed: 12%

Critical Infrastructure Exposed: 21%



**Riverine Flooding** 



**28%** (508,000)

Buildings Exposed: 23%

Critical Infrastructure Exposed: 43%



Wildfire

**4** <1% (2,950)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 1%



**Tsunami** 



**2** 7% (136,009)

Buildings Exposed: 3%

Critical Infrastructure Exposed: 6%



Malaria

99% 🚨 (1,810,000)



Buildings Exposed: 98%

Critical Infrastructure Exposed: 100%



**Tropical Cyclone Wind** 



**100%** (1,820,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 1%



Earthquake

**21%** (388,000)

Buildings Exposed: 46%

Critical Infrastructure Exposed: 63%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

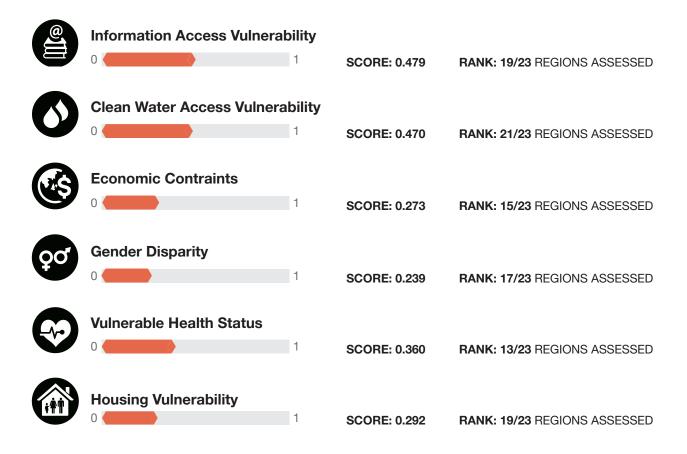


# **VULNERABILITY (V)**

**RANK: 18 / 23 REGIONS ASSESSED** 

**SCORE: 0.352** 

Below is a summary of the regional Vulnerability Assessment within Atsinanana. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 18 / 23 REGIONS ASSESSED** 

**SCORE: 0.352** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



#### **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



#### **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.

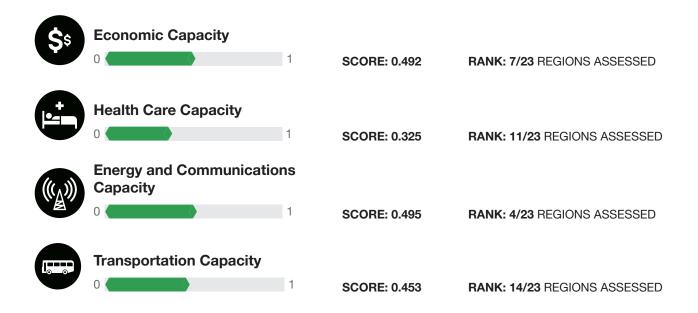


## **COPING CAPACITY (CC)**

**RANK: 6 / 23 REGIONS ASSESSED** 

**SCORE: 0.441** 

Below is a summary of the regional Coping Capacity Assessment within Atsinanana. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### **KEY FACTORS INFLUENCING COPING CAPACITY**



#### **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



#### **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



RANK: 5 / 23 REGIONS ASSESSED

**SCORE: 0.545** 

Key drivers of Resilience within Atsinanana are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



#### **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



#### **Transportation Capacity**

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#### **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.

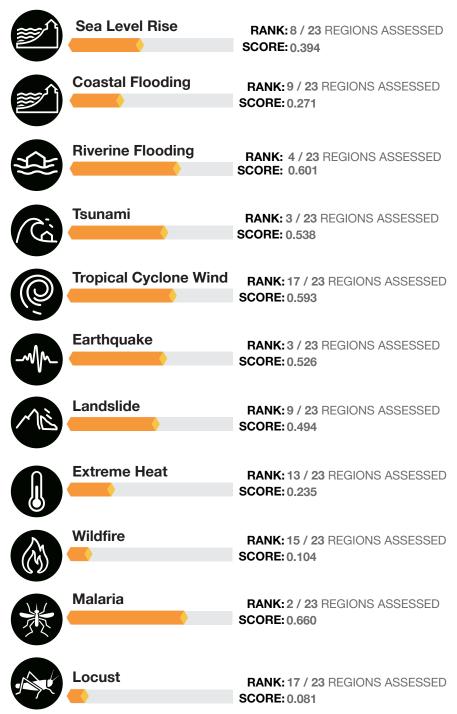


#### **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



# **HAZARD-SPECIFIC RISK (HSR)**





# **MULTI-HAZARD RISK (MHR)**

8 / 23 RANK AMONG REGIONS SCORE: 0.544

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Atsinanana region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores compared to overall average country scores:

Multi-Hazard Exposure

0.722
0.371





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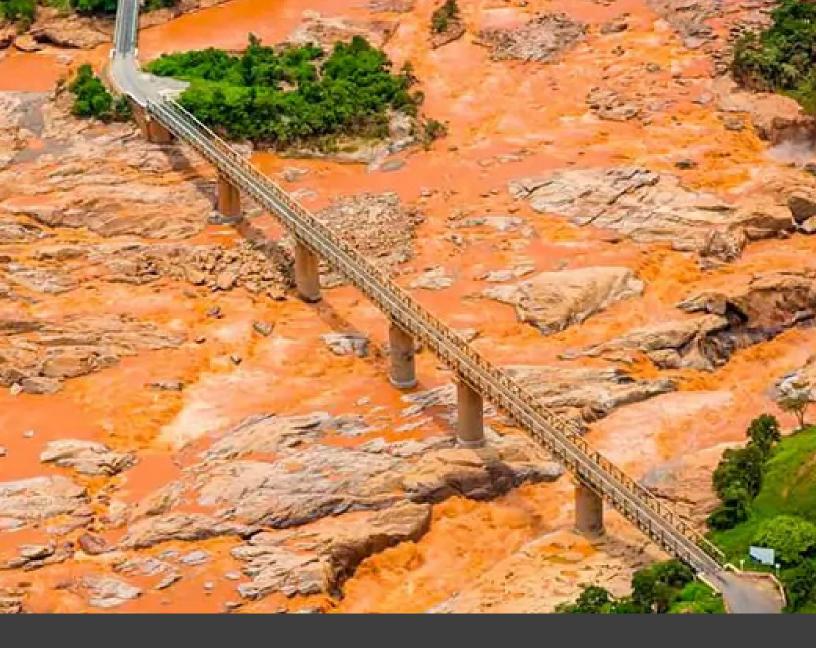
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MADAGASCAR •

# **BETSIBOKA**

**NDPBA REGION PROFILE** 



#### **MADAGASCAR**

#### **REGION: BETSIBOKA**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

Moderate

Score: 0.483 • Rank: 13/23



#### **RESILIENCE (R)-**

Low

Score: 0.380 • Rank: 15/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

Low

Score: 0.207 • Rank: 17/23



#### **VULNERABILITY (V) -**

Moderate

Score: 0.519 • Rank: 9/23



#### **COPING CAPACITY (CC) -**

**Very Low** 

Score: 0.278 • Rank: 19/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

393,278



**Extreme Poverty Rate** 

57.9%



**Household Access to Drinking** 

Water

46.7%



**Literacy Rate** 

71.7%



**Household Access to Electricity** 

46.7%



#### **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 17 / 23 REGIONS** 

**SCORE: 0.207** 



**MHE** 0.207

**Raw MHE** 0.013

**Relative MHE** 0.402

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**9** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Landslide



Buildings Exposed: 16%

Critical Infrastructure Exposed: 19%



**Coastal Flooding** 



**9** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Extreme Heat** 

**67% (61,400)** 

Buildings Exposed: 54%

Critical Infrastructure Exposed: 51%



Riverine Flooding



**4** 13% (11,500)

Buildings Exposed: 10%

Critical Infrastructure Exposed: 24%



Wildfire

**3%** (2,420)

Buildings Exposed: 3%

Critical Infrastructure Exposed: 8%



Tsunami



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Malaria

<1% 🚨 (369)



Buildings Exposed: 2%

Critical Infrastructure Exposed: 0%



**Tropical Cyclone Wind** 



Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 71%



Earthquake

**5%** (4,300)

Buildings Exposed: 7%

Critical Infrastructure Exposed: 15%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

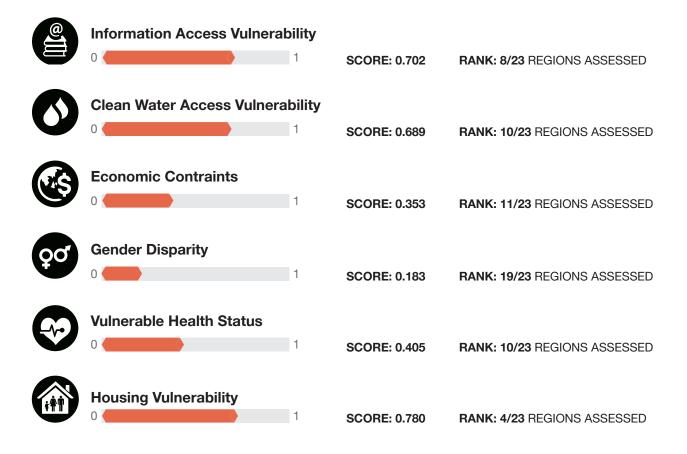


# **VULNERABILITY (V)**

**RANK: 9 / 23 REGIONS ASSESSED** 

**SCORE: 0.519** 

Below is a summary of the regional Vulnerability Assessment within Betsiboka. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 9 / 23 REGIONS ASSESSED** 

**SCORE: 0.519** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



#### **Housing Vulnerability**

Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.



#### **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.

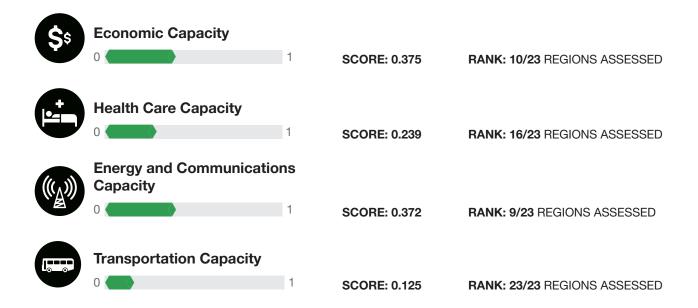


## **COPING CAPACITY (CC)**

RANK: 19 / 23 REGIONS ASSESSED

**SCORE: 0.278** 

Below is a summary of the regional Coping Capacity Assessment within Betsiboka. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### **KEY FACTORS INFLUENCING COPING CAPACITY**



#### **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



#### **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



RANK: 15 / 23 REGIONS ASSESSED

**SCORE: 0.380** 

Key drivers of Resilience within Betsiboka are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



#### **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



#### **Housing Vulnerability**

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# **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Coastal Flooding	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Riverine Flooding	RANK: 9 / 23 REGIONS ASSESSED SCORE: 0.410
Cá.	Tsunami •	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Tropical Cyclone Wind	RANK: 11 / 23 REGIONS ASSESSED SCORE: 0.643
-	Earthquake	RANK: 4 / 23 REGIONS ASSESSED SCORE: 0.234
MÈ	Landslide	RANK: 14 / 23 REGIONS ASSESSED SCORE: 0.343
	Extreme Heat	RANK: 8 / 23 REGIONS ASSESSED SCORE: 0.501
	Wildfire	RANK: 8 / 23 REGIONS ASSESSED SCORE: 0.236
洲	Malaria ()	RANK: 19 / 23 REGIONS ASSESSED SCORE: 0.050
	Locust	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.665



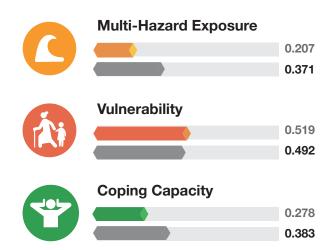
# **MULTI-HAZARD RISK (MHR)**

13 / 23 RANK AMONG REGIONS SCORE: 0.483

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Betsiboka region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUNTRY SCORE compared to overall average country scores:

BETSIBOKA SCORE





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MADAGASCAR BOENY

**NDPBA REGION PROFILE** 



#### **MADAGASCAR**

#### **REGION: BOENY**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

Low

Score: 0.446 • Rank: 16/23



#### **RESILIENCE (R)-**

High

Score: 0.534 • Rank: 6/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

**Moderate** 

Score: 0.406 • Rank: 12/23



#### **VULNERABILITY (V) -**

Low

Score: 0.409 • Rank: 15/23



#### **COPING CAPACITY (CC) -**

**Very High** 

Score: 0.477 • Rank: 3/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

929,312



**Extreme Poverty Rate** 

28.6%



**Household Access to Drinking** 

Water

39.5%



**Literacy Rate** 

72.2%



**Household Access to Electricity** 

39.5%



#### **MULTI-HAZARD EXPOSURE (MHE)**

RANK: 12 / 23 REGIONS

**SCORE: 0.406** 



**MHE** 0.406

**Raw MHE** 0.172

**Relative MHE** 0.639

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**4 <1%** (872)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 3%



Landslide



Buildings Exposed: 3%

Critical Infrastructure Exposed: 2%



**Coastal Flooding** 



**3%** (7.890)

Buildings Exposed: 8%

Critical Infrastructure Exposed: 9%



**Extreme Heat** 

100% 🚨 (243,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Riverine Flooding



**31%** (75,500)

Buildings Exposed: 40%

Critical Infrastructure Exposed: 43%



Wildfire

**3%** (8,210)

Buildings Exposed: 2%

Critical Infrastructure Exposed: 3%



**Tsunami** 



**4 <1%** (14)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 6%



Malaria

**6% (14,500)** 



Buildings Exposed: 4%

Critical Infrastructure Exposed: 1%



**Tropical Cyclone Wind** 



**100%** (243,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 0%



Earthquake



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

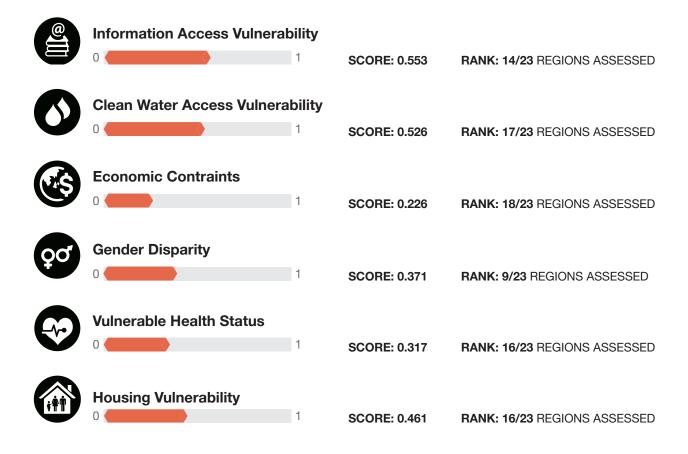


# **VULNERABILITY (V)**

**RANK: 15 / 23 REGIONS ASSESSED** 

**SCORE: 0.409** 

Below is a summary of the regional Vulnerability Assessment within Boeny. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 15 / 23 REGIONS ASSESSED** 

**SCORE: 0.409** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



#### **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



#### **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.

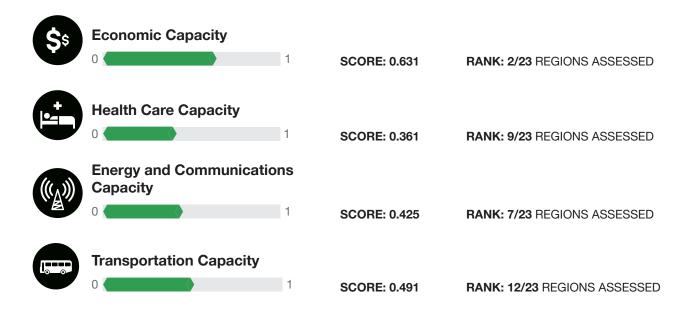


## **COPING CAPACITY (CC)**

**RANK: 3 / 23 REGIONS ASSESSED** 

**SCORE: 0.477** 

Below is a summary of the regional Coping Capacity Assessment within Boeny. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### KEY FACTORS INFLUENCING COPING CAPACITY



#### **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



106

#### **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



RANK: 6 / 23 REGIONS ASSESSED

**SCORE:** 0.534

Key drivers of Resilience within Boeny are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



#### **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



#### **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



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### **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



# **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 4 / 23 REGIONS ASSESSED SCORE: 0.482
	Coastal Flooding	RANK: 4 / 23 REGIONS ASSESSED SCORE: 0.559
	Riverine Flooding	RANK: 2 / 23 REGIONS ASSESSED SCORE: 0.604
(C)	Tsunami	RANK: 8 / 23 REGIONS ASSESSED SCORE: 0.163
	Tropical Cyclone Wind	RANK: 21 / 23 REGIONS ASSESSED SCORE: 0.575
-1/1	Earthquake ♦	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide (	RANK: 22 / 23 REGIONS ASSESSED SCORE: 0.080
	Extreme Heat	RANK: 4 / 23 REGIONS ASSESSED SCORE: 0.618
	Wildfire	RANK: 10 / 23 REGIONS ASSESSED SCORE: 0.182
浅	Malaria	RANK: 17 / 23 REGIONS ASSESSED SCORE: 0.104
	Locust •	RANK: 23 / 23 REGIONS ASSESSED SCORE: 0.000



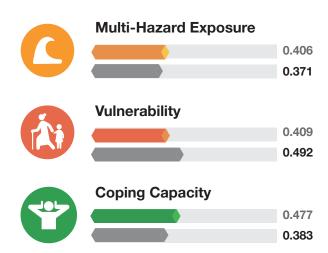
# **MULTI-HAZARD RISK (MHR)**

16 / 23 RANK AMONG REGIONS SCORE: 0.446

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Boeny region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUNTRY SCORE compared to overall average country scores:

BOENY SCORE





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# **BONGOLAVA**

# **NDPBA REGION PROFILE**



## **MADAGASCAR**

### **REGION: BONGOLAVA**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

Low

Score: 0.396 • Rank: 18/23



#### **RESILIENCE (R)-**

Low

Score: 0.409 • Rank: 14/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

**Very Low** 

Score: 0.005 • Rank: 23/23



#### **VULNERABILITY (V) -**

Low

Score: 0.456 • Rank: 14/23



#### **COPING CAPACITY (CC) -**

**Very Low** 

Score: 0.274 • Rank: 20/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

670,993



**Extreme Poverty Rate** 

71.0%



**Household Access to Drinking** 

Water

51.2%



**Literacy Rate** 

86.0%



**Household Access to Electricity** 

51.2%



#### **MULTI-HAZARD EXPOSURE (MHE)**

RANK: 23 / 23 REGIONS

**SCORE: 0.005** 

**MHE** 0.005

**Raw MHE** 0.009

**Relative MHE** 

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Landslide



Buildings Exposed: 10%

Critical Infrastructure Exposed: 8%



**Coastal Flooding** 



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Extreme Heat** 

0% 🚨 (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Riverine Flooding



**3%** (3,970)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 1%



Wildfire



Buildings Exposed: <1%

Critical Infrastructure Exposed: 1%



Tsunami



**4** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Malaria



(2,460)

Buildings Exposed: 2%

Critical Infrastructure Exposed: 1%



**Tropical Cyclone Wind** 



Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 100%



Earthquake



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

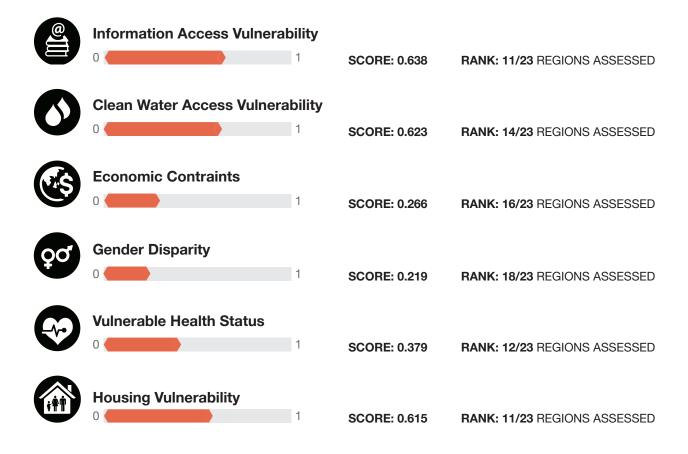


# **VULNERABILITY (V)**

**RANK: 14 / 23 REGIONS ASSESSED** 

**SCORE: 0.456** 

Below is a summary of the regional Vulnerability Assessment within Bongolava. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 14 / 23 REGIONS ASSESSED** 

**SCORE: 0.456** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



# **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.

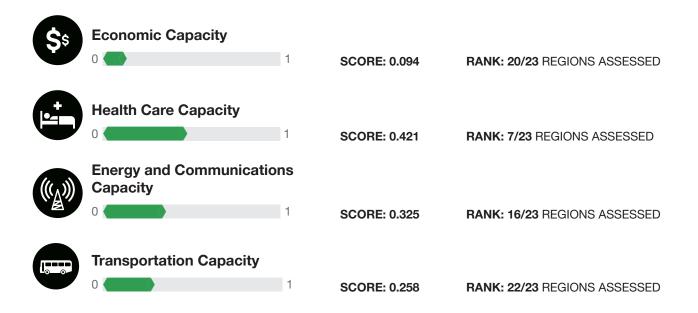


# **COPING CAPACITY (CC)**

**RANK: 20 / 23 REGIONS ASSESSED** 

**SCORE: 0.274** 

Below is a summary of the regional Coping Capacity Assessment within Bongolava. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### **KEY FACTORS INFLUENCING COPING CAPACITY**



# **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



# **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



RANK: 14 / 23 REGIONS ASSESSED

**SCORE: 0.409** 

Key drivers of Resilience within Bongolava are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



# **Economic Capacity**

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# **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



# **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



# **Information Access Vulnerability**

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# **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Coastal Flooding	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Riverine Flooding	RANK: 20 / 23 REGIONS ASSESSED SCORE: 0.099
CG.	Tsunami •	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Tropical Cyclone Wind	RANK: 12 / 23 REGIONS ASSESSED SCORE: 0.634
	Earthquake	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide	RANK: 18 / 23 REGIONS ASSESSED SCORE: 0.233
	Extreme Heat	RANK: 20 / 23 REGIONS ASSESSED SCORE: 0.000
	Wildfire	RANK: 16 / 23 REGIONS ASSESSED SCORE: 0.093
浅	Malaria	RANK: 18 / 23 REGIONS ASSESSED SCORE: 0.075
	Locust	RANK: 1 / 23 REGIONS ASSESSED SCORE: 0.768



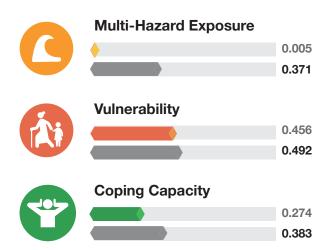
# **MULTI-HAZARD RISK (MHR)**

18 / 23 RANK AMONG REGIONS SCORE: 0.396

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Bongolava region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores compared to overall average country scores:







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MADAGASCAR
DIANA

# **NDPBA REGION PROFILE**



## **MADAGASCAR**

### **REGION: DIANA**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

**Very Low** 

Score: 0.34 • Rank: 22/23



#### **RESILIENCE (R)-**

**Very High** 

Score: 0.686 • Rank: 2/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

low

Score: 0.391 • Rank: 14/23



#### **VULNERABILITY (V) -**

**Very Low** 

Score: 0.213 • Rank: 22/23



#### **COPING CAPACITY (CC) -**

**Very High** 

Score: 0.584 • Rank: 2/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

889,962



**Extreme Poverty Rate** 

32.5%



**Household Access to Drinking** 

Water

55.2%



**Literacy Rate** 

83.2%



**Household Access to Electricity** 

55.2%



#### **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 14 / 23 REGIONS** 

**SCORE: 0.391** 



**26%** (139,000)

**58% (305,000)** 

Buildings Exposed: 70%

Critical Infrastructure Exposed: 22%

Critical Infrastructure Exposed: 80%

Buildings Exposed: 26%

**MHE** 0.391

**Raw MHE** 0.196

**Relative MHE** 0.586

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**4** 1% (3,610)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 8%



**Coastal Flooding** 



**4%** (21,200)

Buildings Exposed: 6%

Critical Infrastructure Exposed: 15%





**Riverine Flooding** 



**9%** (45,900)

Buildings Exposed: 11%

Critical Infrastructure Exposed: 17%



Wildfire

Landslide

**Extreme Heat** 



**4** <1% (994)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 1%



**Tsunami** 



<1% (488)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 5%



Malaria

**23% &** (119,000)



Buildings Exposed: 35%

Critical Infrastructure Exposed: 32%



**Tropical Cyclone Wind** 



**100%** (526,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 2%



Earthquake



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

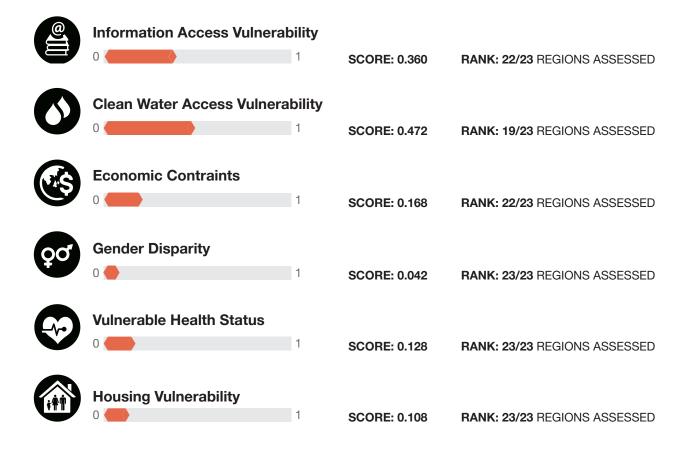


# **VULNERABILITY (V)**

**RANK: 22 / 23 REGIONS ASSESSED** 

**SCORE: 0.213** 

Below is a summary of the regional Vulnerability Assessment within Diana. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 22 / 23 REGIONS ASSESSED** 

**SCORE: 0.213** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improve water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



# **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.

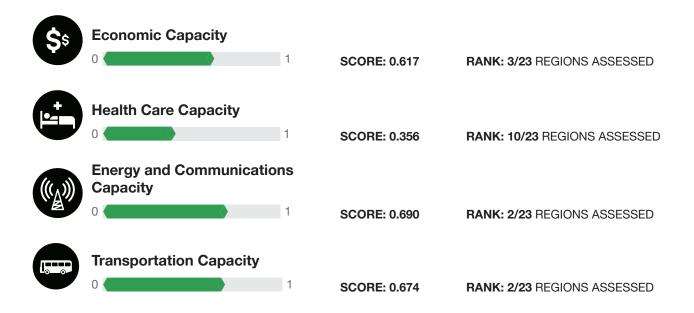


# **COPING CAPACITY (CC)**

**RANK: 2 / 23 REGIONS ASSESSED** 

**SCORE: 0.584** 

Below is a summary of the regional Coping Capacity Assessment within Diana. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### KEY FACTORS INFLUENCING COPING CAPACITY



# **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



# **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



**RANK: 2 / 23 REGIONS ASSESSED** 

**SCORE: 0.686** 

Key drivers of Resilience within Diana are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



# **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



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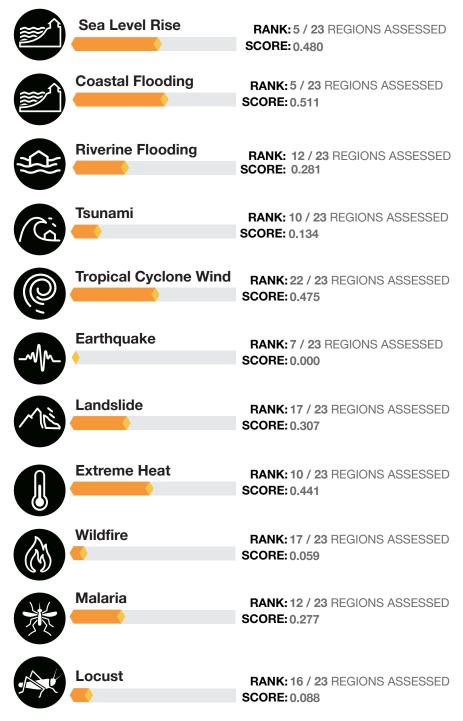


# Information Access Vulnerability

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# **HAZARD-SPECIFIC RISK (HSR)**





# **MULTI-HAZARD RISK (MHR)**

22 / 23 RANK AMONG REGIONS SCORE: 0.34

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Diana region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores compared to overall average country scores:

Multi-Hazard Exposure

0.391
0.371

Vulnerability

0.213
0.492

Coping Capacity

0.584
0.383



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# **FITOVINANY**

# **NDPBA REGION PROFILE**



## **MADAGASCAR**

### **REGION: FITOVINANY**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

**Very High** 

Score: 0.607 • Rank: 4/23



#### **RESILIENCE (R)-**

Low

Score: 0.343 • Rank: 16/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

High

Score: 0.507 • Rank: 5/23



#### **VULNERABILITY (V) -**

High

Score: 0.67 • Rank: 5/23



#### **COPING CAPACITY (CC) -**

Low

Score: 0.356 • Rank: 14/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

734,982



**Extreme Poverty Rate** 

73.9%



**Household Access to Drinking** 

Water

23.3%



**Literacy Rate** 

62.6%



**Household Access to Electricity** 

23.3%



#### **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 5 / 23 REGIONS** 

**SCORE: 0.507** 



#### MHE 0.507

Raw MHE 0.252

Relative MHE 0.762

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



Buildings Exposed: <1%

Critical Infrastructure Exposed: 15%



Landslide

**49%** (213,000)

Buildings Exposed: 56%

Critical Infrastructure Exposed: 31%



**Coastal Flooding** 

**1%** (3,190)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 15%



**Extreme Heat** 

**63% (276,000)** 

Buildings Exposed: 52%

Critical Infrastructure Exposed: 68%



**Riverine Flooding** 

**20%** (87,300)

Buildings Exposed: 15%

Critical Infrastructure Exposed: 47%



Wildfire

**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Tsunami

**28,800** (28,800)

Buildings Exposed: 5%

Critical Infrastructure Exposed: 34%



Malaria

40% 🚨 (176,000)

Buildings Exposed: 43%

Critical Infrastructure Exposed: 18%



**Tropical Cyclone Wind** 

**100%** (439,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 0%



Earthquake

**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

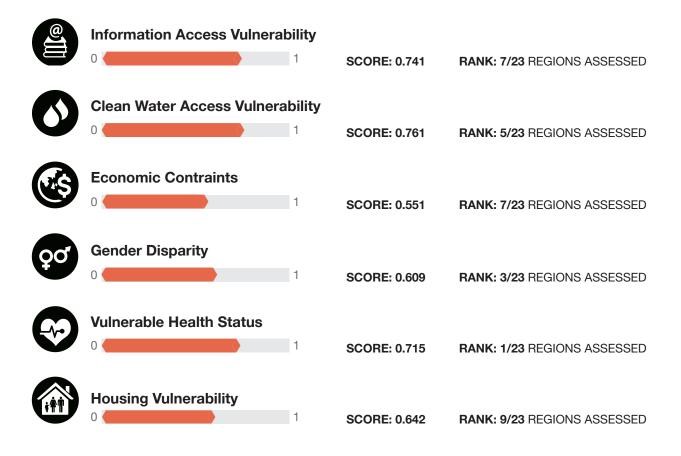


# **VULNERABILITY (V)**

**RANK: 5 / 23 REGIONS ASSESSED** 

**SCORE: 0.67** 

Below is a summary of the regional Vulnerability Assessment within Fitovinany. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 5 / 23 REGIONS ASSESSED** 

**SCORE: 0.67** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improve water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



# **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.

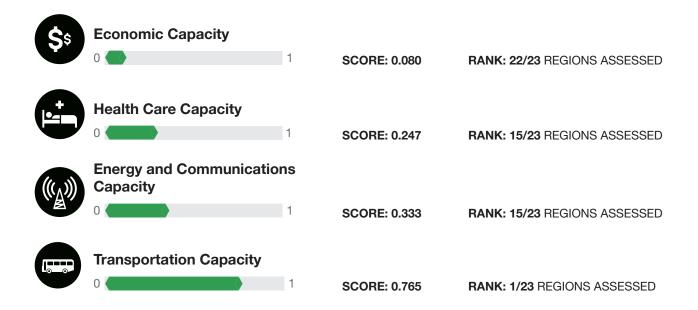


# **COPING CAPACITY (CC)**

RANK: 14 / 23 REGIONS ASSESSED

**SCORE: 0.356** 

Below is a summary of the regional Coping Capacity Assessment within Fitovinany. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### KEY FACTORS INFLUENCING COPING CAPACITY



# **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



# **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



**RANK: 16 / 23 REGIONS ASSESSED** 

**SCORE: 0.343** 

Key drivers of Resilience within Fitovinany are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



# **Economic Capacity**

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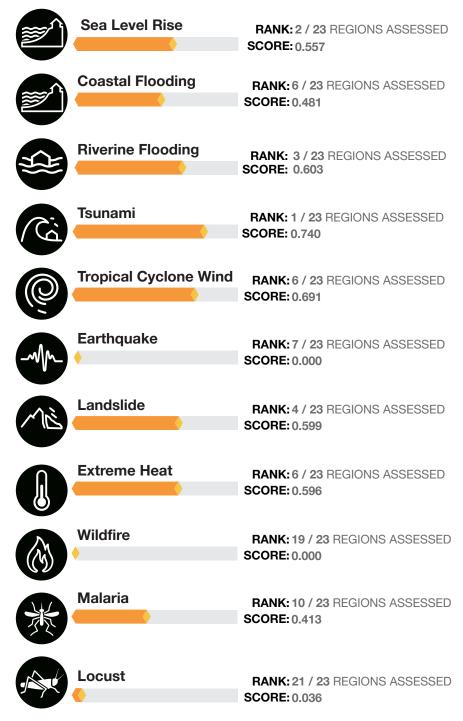


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# **HAZARD-SPECIFIC RISK (HSR)**



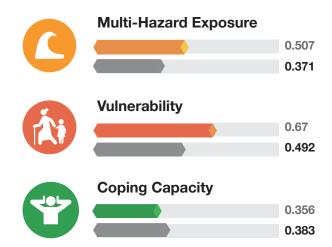


# **MULTI-HAZARD RISK (MHR)**

4 / 23
RANK AMONG REGIONS
SCORE: 0.607

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Fitovinany region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUNTRY SCORE compared to overall average country scores: FITOVINANY SCORE





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MADAGASCAR

# **HAUTE MATSIATRA**

**NDPBA REGION PROFILE** 



## **MADAGASCAR**

### **REGION: HAUTE MATSIATRA**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

Low

Score: 0.449 • Rank: 15/23



#### **RESILIENCE (R)-**

Moderate

Score: 0.447 • Rank: 11/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

Low

Score: 0.24 • Rank: 15/23



#### **VULNERABILITY (V) -**

Moderate

Score: 0.491 • Rank: 10/23



#### **COPING CAPACITY (CC) -**

Moderate

Score: 0.385 • Rank: 10/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

1,444,587



**Extreme Poverty Rate** 

63.7%



**Household Access to Drinking** 

Water

35.8%



**Literacy Rate** 

85.0%



**Household Access to Electricity** 

35.8%



#### **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 15 / 23 REGIONS** 

**SCORE: 0.24** 



**MHE** 0.24

**Raw MHE** 0.29

**Relative MHE** 0.19

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**9** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Landslide



Buildings Exposed: 57%

Critical Infrastructure Exposed: 32%



**Coastal Flooding** 



**9** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Extreme Heat** 

<1% 4 (59)

Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



**Riverine Flooding** 



**4** <**1**% (13,600)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 14%



Wildfire



Buildings Exposed: 1%

Critical Infrastructure Exposed: 1%



Tsunami



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Malaria



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Tropical Cyclone Wind** 



**100%** (3,060,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 99%



Earthquake



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

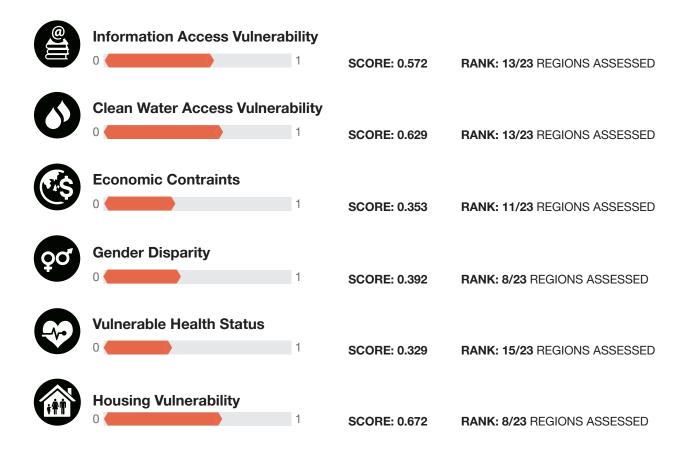


# **VULNERABILITY (V)**

**RANK: 10 / 23 REGIONS ASSESSED** 

**SCORE: 0.491** 

Below is a summary of the regional Vulnerability Assessment within Haute Matsiatra. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





RANK: 10 / 23 REGIONS ASSESSED

**SCORE: 0.491** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



# **Housing Vulnerability**

Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.

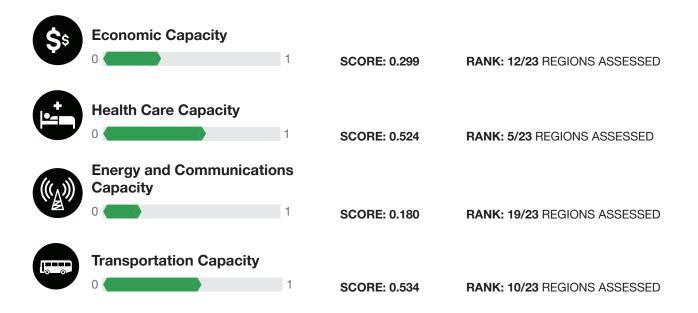


# **COPING CAPACITY (CC)**

**RANK: 10 / 23 REGIONS ASSESSED** 

**SCORE: 0.385** 

Below is a summary of the regional Coping Capacity Assessment within Haute Matsiatra. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### **KEY FACTORS INFLUENCING COPING CAPACITY**



# **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



# **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



**RANK: 11 / 23 REGIONS ASSESSED** 

**SCORE: 0.447** 

Key drivers of Resilience within Haute Matsiatra are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



# **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



# **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



# **Housing Vulnerability**

Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



# **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Coastal Flooding	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Riverine Flooding	RANK: 14 / 23 REGIONS ASSESSED SCORE: 0.219
CG.	Tsunami •	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Tropical Cyclone Wind	RANK: 9 / 23 REGIONS ASSESSED SCORE: 0.653
-1/1-	Earthquake	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide	RANK: 3 / 23 REGIONS ASSESSED SCORE: 0.612
	Extreme Heat	RANK: 16 / 23 REGIONS ASSESSED SCORE: 0.031
	Wildfire	RANK: 12 / 23 REGIONS ASSESSED SCORE: 0.161
浅	Malaria <b>♦</b>	RANK: 22 / 23 REGIONS ASSESSED SCORE: 0.000
	Locust	RANK: 2 / 23 REGIONS ASSESSED SCORE: 0.739



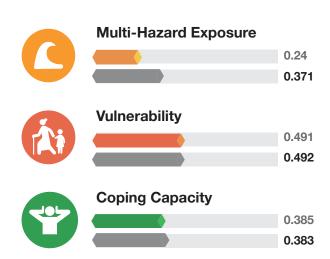
# **MULTI-HAZARD RISK (MHR)**

15 / 23 RANK AMONG REGIONS SCORE: 0.449

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Haute Matsiatra region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores compared to overall average country scores:







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# MADAGASCAR

# **IHOROMBE**

# NDPBA REGION PROFILE



## **MADAGASCAR**

#### **REGION: IHOROMBE**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

**Very Low** 

Score: 0.391 • Rank: 20/23



#### **RESILIENCE (R)-**

Moderate

Score: 0.433 • Rank: 13/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

**Very Low** 

Score: 0.039 • Rank: 22/23



#### **VULNERABILITY (V) -**

Moderate

Score: 0.478 • Rank: 12/23



#### **COPING CAPACITY (CC) -**

Low

Score: 0.344 • Rank: 15/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

417,312



**Extreme Poverty Rate** 

54.1%



**Household Access to Drinking** 

Water

39.7%



**Literacy Rate** 

62.5%



**Household Access to Electricity** 

39.7%



#### **MULTI-HAZARD EXPOSURE (MHE)**

RANK: 22 / 23 REGIONS

**SCORE: 0.039** 



**MHE** 0.039

**Raw MHE** 0.017

**Relative MHE** 0.06

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise

**9** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Landslide

**4 11%** (54,900)

Buildings Exposed: 22%

Critical Infrastructure Exposed: 21%



**Coastal Flooding** 

**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Extreme Heat** 

1% 🚨 (2,710)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 1%



**Riverine Flooding** 

**2%** (11,400)

Buildings Exposed: 3%

Critical Infrastructure Exposed: 4%



Wildfire

**4** <1% (1,440)

Buildings Exposed: 3%

Critical Infrastructure Exposed: 2%



Tsunami

**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Malaria

(15,200)

Buildings Exposed: 7%

Critical Infrastructure Exposed: 0%



**Tropical Cyclone Wind** 

**100%** (512,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 76%



Earthquake

**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

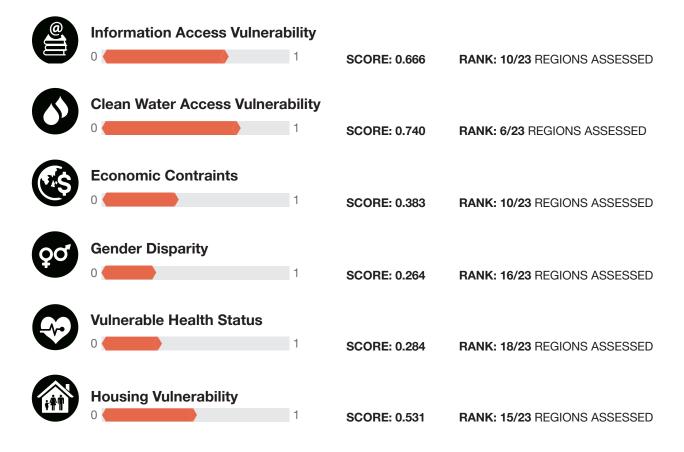


# **VULNERABILITY (V)**

**RANK: 12 / 23 REGIONS ASSESSED** 

**SCORE: 0.478** 

Below is a summary of the regional Vulnerability Assessment within Ihorombe. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 12 / 23 REGIONS ASSESSED** 

**SCORE: 0.478** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improve water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



# **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.

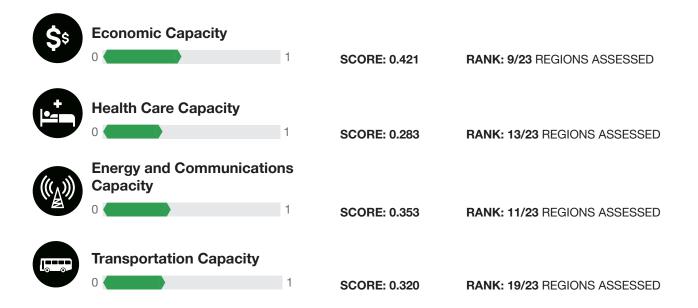


# **COPING CAPACITY (CC)**

**RANK: 15 / 23 REGIONS ASSESSED** 

**SCORE: 0.344** 

Below is a summary of the regional Coping Capacity Assessment within Ihorombe. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### **KEY FACTORS INFLUENCING COPING CAPACITY**



# **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



156

# **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



RANK: 13 / 23 REGIONS ASSESSED

**SCORE: 0.433** 

Key drivers of Resilience within Ihorombe are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



# **Health Care Capacity**

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# **Transportation Capacity**

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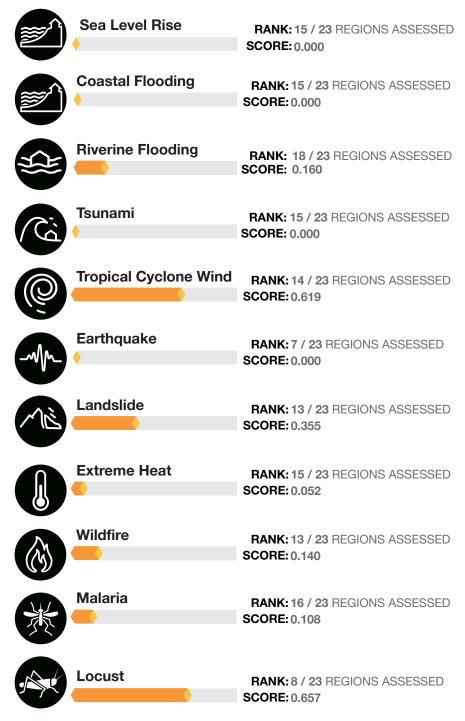


# **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



# **HAZARD-SPECIFIC RISK (HSR)**



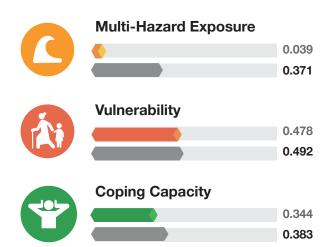


# **MULTI-HAZARD RISK (MHR)**

20 / 23 RANK AMONG REGIONS SCORE: 0.391

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Ihorombe region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUNTRY SCORE compared to overall average country scores:





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**ITASY** 

**NDPBA REGION PROFILE** 



## **MADAGASCAR**

#### **REGION: ITASY**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

**Very Low** 

Score: 0.357 • Rank: 21/23



#### **RESILIENCE (R)-**

High

Score: 0.524 • Rank: 8/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

**Very Low** 

Score: 0.117 • Rank: 21/23



#### **VULNERABILITY (V) -**

**Very Low** 

Score: 0.346 • Rank: 19/23



#### **COPING CAPACITY (CC) -**

Moderate

Score: 0.393 • Rank: 9/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

898,549



**Extreme Poverty Rate** 

63.2%



**Household Access to Drinking** 

Water

59.7%



**Literacy Rate** 

89.0%



**Household Access to Electricity** 

59.7%



#### **MULTI-HAZARD EXPOSURE (MHE)**

RANK: 21 / 23 REGIONS

**SCORE: 0.117** 



MHE 0.117

Raw MHE 0.065

Relative MHE 0.169

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Landslide

**46%** (99,200)

Buildings Exposed: 44%

Critical Infrastructure Exposed: 45%



**Coastal Flooding** 



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Extreme Heat** 

0% 🚨 (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Riverine Flooding** 



Buildings Exposed: 1%

Critical Infrastructure Exposed: 14%



Wildfire



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Tsunami



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Malaria



Buildings Exposed: <1%

Critical Infrastructure Exposed: 0%



**Tropical Cyclone Wind** 

**100%** (215,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 100%



Earthquake



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

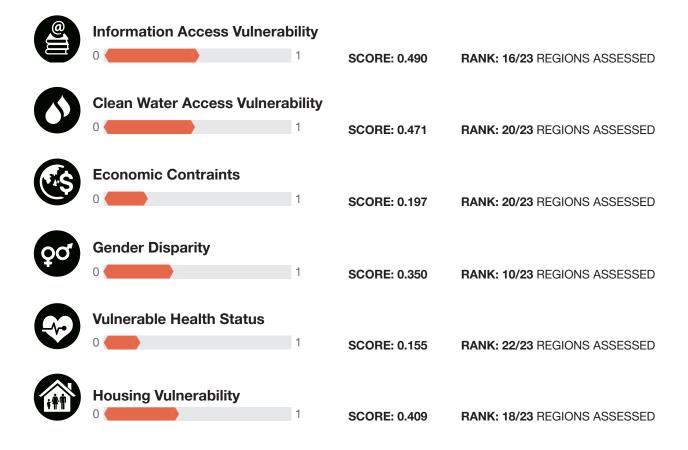


# **VULNERABILITY (V)**

**RANK: 19 / 23 REGIONS ASSESSED** 

**SCORE: 0.346** 

Below is a summary of the regional Vulnerability Assessment within Itasy. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 19 / 23 REGIONS ASSESSED** 

**SCORE: 0.346** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



# **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.

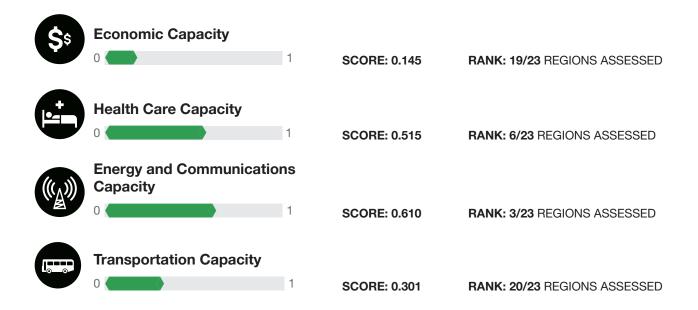


# **COPING CAPACITY (CC)**

**RANK: 9 / 23 REGIONS ASSESSED** 

**SCORE: 0.393** 

Below is a summary of the regional Coping Capacity Assessment within Itasy. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### **KEY FACTORS INFLUENCING COPING CAPACITY**



# **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



# **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



**RANK: 8 / 23 REGIONS ASSESSED** 

**SCORE: 0.524** 

Key drivers of Resilience within Itasy are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



# **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



# **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



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## Health Care Capacity

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



# **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Coastal Flooding	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Riverine Flooding	RANK: 16 / 23 REGIONS ASSESSED SCORE: 0.202
(G	Tsunami •	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Tropical Cyclone Wind	RANK: 19 / 23 REGIONS ASSESSED SCORE: 0.579
-1/1	Earthquake ♦	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.513
	Extreme Heat	RANK: 20 / 23 REGIONS ASSESSED SCORE: 0.000
	Wildfire	RANK: 19 / 23 REGIONS ASSESSED SCORE: 0.000
浅	Malaria <mark>♦</mark>	RANK: 21 / 23 REGIONS ASSESSED SCORE: 0.023
	Locust	RANK: 4 / 23 REGIONS ASSESSED SCORE: 0.690

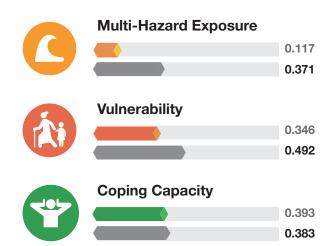


# **MULTI-HAZARD RISK (MHR)**

21 / 23
RANK AMONG REGIONS
SCORE: 0.357

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Itasy region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUNTRY SCORE compared to overall average country scores:





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MADAGASCAR – MELAKY

**NDPBA REGION PROFILE** 



## **MADAGASCAR**

#### **REGION: MELAKY**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

High

Score: 0.582 • Rank: 6/23



#### **RESILIENCE (R) -**

Low

Score: 0.326 • Rank: 18/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

**Moderate** 

Score: 0.397 • Rank: 13/23



#### **VULNERABILITY (V) -**

High

Score: 0.652 • Rank: 7/23



#### **COPING CAPACITY (CC) -**

Low

Score: 0.304 • Rank: 18/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

308,944



**Extreme Poverty Rate** 

39.9%



**Household Access to Drinking** 

Water

21.5%



**Literacy Rate** 

46.7%



**Household Access to Electricity** 

21.5%



#### **MULTI-HAZARD EXPOSURE (MHE)**

RANK: 13 / 23 REGIONS

**SCORE: 0.397** 



**MHE** 0.397

**Raw MHE** 0.062

**Relative MHE** 0.732

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**1%** (2,431)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 1%



Landslide

**2%** (4,619)

Buildings Exposed: 3%

Critical Infrastructure Exposed: 3%



**Coastal Flooding** 



**5%** (11,170)

Buildings Exposed: 3%

Critical Infrastructure Exposed: 18%



**Extreme Heat** 

100% 🚨 (241,000)

Buildings Exposed: 89%

Critical Infrastructure Exposed: 94%



**Riverine Flooding** 



**9%** (22,900)

Buildings Exposed: 12%

Critical Infrastructure Exposed: 14%



Wildfire

**16%** (39,300)

Buildings Exposed: 11%

Critical Infrastructure Exposed: 17%



**Tsunami** 



**4 <1%** (98)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 0%



Malaria

**70% &** (169,000)



Buildings Exposed: 69%

Critical Infrastructure Exposed: 16%



**Tropical Cyclone Wind** 

**100%** (242,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 4%



Earthquake



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

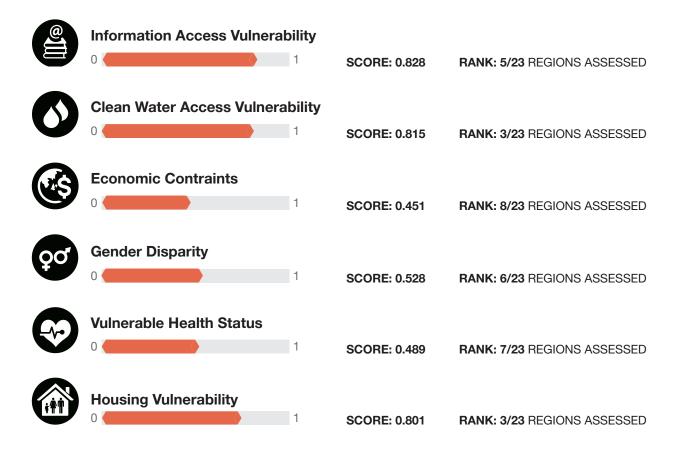


# **VULNERABILITY (V)**

**RANK: 7 / 23 REGIONS ASSESSED** 

**SCORE: 0.652** 

Below is a summary of the regional Vulnerability Assessment within Melaky. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 7 / 23 REGIONS ASSESSED** 

**SCORE: 0.652** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



# **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improve water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.

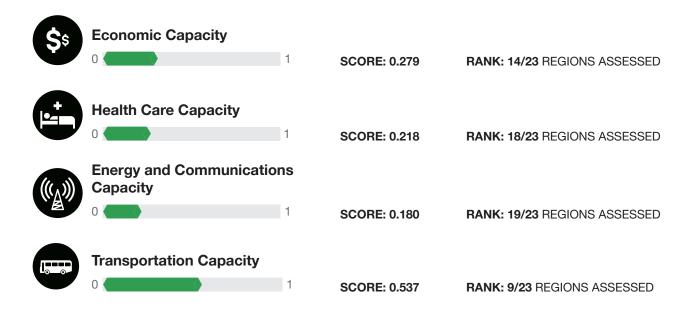


# **COPING CAPACITY (CC)**

**RANK: 18 / 23 REGIONS ASSESSED** 

**SCORE: 0.304** 

Below is a summary of the regional Coping Capacity Assessment within Melaky. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### **KEY FACTORS INFLUENCING COPING CAPACITY**



# **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



# **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



RANK: 18 / 23 REGIONS ASSESSED

**SCORE: 0.326** 

Key drivers of Resilience within Melaky are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



# **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



# **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.

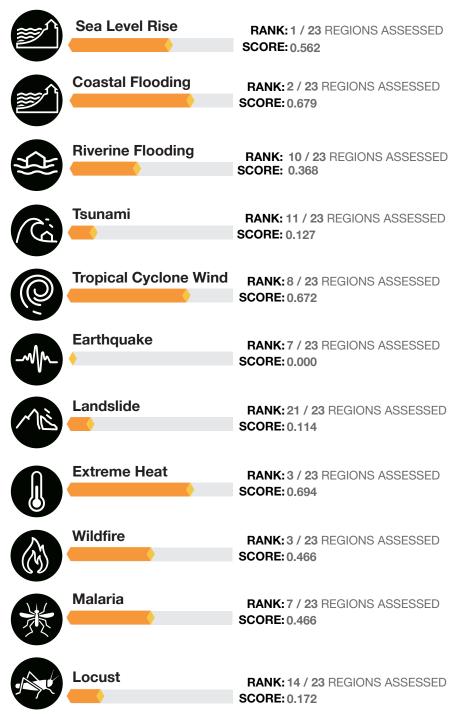


## Housing Vulnerability

Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.



# **HAZARD-SPECIFIC RISK (HSR)**





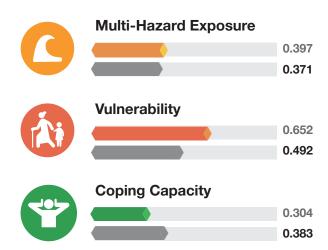
# **MULTI-HAZARD RISK (MHR)**

6 / 23 RANK AMONG REGIONS SCORE: 0.582

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Melaky region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUNTRY SCORE compared to overall average country scores:

MELAKY SCORE





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MADAGASCAR — MENABE

# **NDPBA REGION PROFILE**



## **MADAGASCAR**

## **REGION: MENABE**



# RISK AND VULNERABILITY COMPONENT SCORES



## **MULTI-HAZARD RISK (MHR) -**

**Very High** 

Score: 0.624 • Rank: 2/23



## **RESILIENCE (R)-**

**Very Low** 

Score: 0.313 • Rank: 20/23



## **MULTI-HAZARD EXPOSURE (MHE) -**

High

Score: 0.497 • Rank: 7/23



## **VULNERABILITY (V) -**

**Very High** 

Score: 0.701 • Rank: 3/23



## **COPING CAPACITY (CC) -**

Low

Score: 0.326 • Rank: 16/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

692,463



**Extreme Poverty Rate** 

57.6%



**Household Access to Drinking** 

Water

37.3%



**Literacy Rate** 

53.0%



**Household Access to Electricity** 

37.3%



## **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 7 / 23 REGIONS** 

**SCORE: 0.497** 

**MHE** 0.497

**Raw MHE** 0.119

**Relative MHE** 0.875

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**4 <1%** (619)

Buildings Exposed: 1%

Critical Infrastructure Exposed: <1%



Landslide

**4%** (4,693)

Buildings Exposed: 4%

Critical Infrastructure Exposed: 4%



**Coastal Flooding** 



**5%** (6,170)

Buildings Exposed: 5%

Critical Infrastructure Exposed: 16%



**Extreme Heat** 

98% 🚨 (128,000)

Buildings Exposed: 99%

Critical Infrastructure Exposed: 98%



Riverine Flooding



**25%** (32,800)

Buildings Exposed: 23%

Critical Infrastructure Exposed: 29%



Wildfire

**36%** (46,800)

Buildings Exposed: 35%

Critical Infrastructure Exposed: 45%



**Tsunami** 



**2%** (2,110)

Buildings Exposed: 2%

Critical Infrastructure Exposed: <1%



Malaria

41% (53,400)



Buildings Exposed: 49%

Critical Infrastructure Exposed: 27%



**Tropical Cyclone Wind** 

**100%** (131,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 2%



Earthquake



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

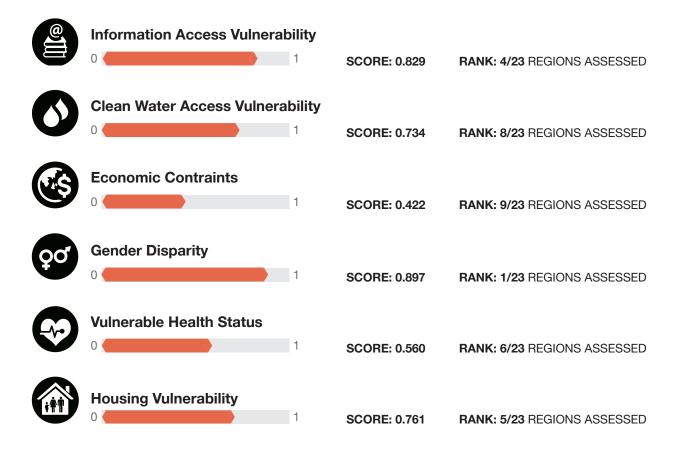


# **VULNERABILITY (V)**

**RANK: 3 / 23 REGIONS ASSESSED** 

**SCORE: 0.701** 

Below is a summary of the regional Vulnerability Assessment within Menabe. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 3 / 23 REGIONS ASSESSED** 

**SCORE: 0.701** 

## **KEY FACTORS INFLUENCING VULNERABILITY**



## **Gender Disparity**

Marginalized populations are less likely to have their needs met under pre-disaster conditions, and therefore become even more susceptible to harm during times of disaster. Increase gender-based inclusion in all phases of DM, ensuring the implementation at subnational and local levels. Courses of action must recognize the role of women in society and support changes to policies and programs to promote gender-parity.



# **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.

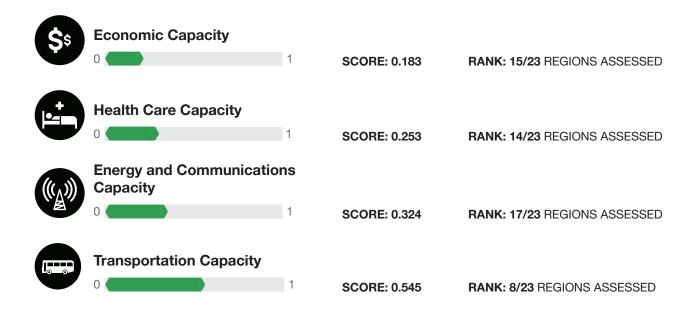


# **COPING CAPACITY (CC)**

**RANK: 16 / 23 REGIONS ASSESSED** 

**SCORE: 0.326** 

Below is a summary of the regional Coping Capacity Assessment within Menabe. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



## KEY FACTORS INFLUENCING COPING CAPACITY



# **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



186

# **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



RANK: 20 / 23 REGIONS ASSESSED

**SCORE: 0.313** 

Key drivers of Resilience within Menabe are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

## **KEY FACTORS INFLUENCING RESILIENCE**



# **Gender Disparity**

Marginalized populations are less likely to have their needs met under pre-disaster conditions, and therefore become even more susceptible to harm during times of disaster. Increase gender-based inclusion in all phases of DM, ensuring the implementation at subnational and local levels. Courses of action must recognize the role of women in society and support changes to policies and programs to promote gender-parity.



# Information Access Vulnerability

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.



# **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



# **Housing Vulnerability**

Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.



# **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 6 / 23 REGIONS ASSESSED SCORE: 0.470
	Coastal Flooding	RANK: 1 / 23 REGIONS ASSESSED SCORE: 0.683
	Riverine Flooding	RANK: 5 / 23 REGIONS ASSESSED SCORE: 0.568
(G)	Tsunami	RANK: 6 / 23 REGIONS ASSESSED SCORE: 0.318
	Tropical Cyclone Wind	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.686
-Mr	Earthquake ♦	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide	RANK: 20 / 23 REGIONS ASSESSED SCORE: 0.162
	Extreme Heat	RANK: 2 / 23 REGIONS ASSESSED SCORE: 0.715
	Wildfire	RANK: 1 / 23 REGIONS ASSESSED SCORE: 0.761
洲	ividiai ia	RANK: 9 / 23 REGIONS ASSESSED SCORE: 0.431
	Locust	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.125



# **MULTI-HAZARD RISK (MHR)**

2 / 23 RANK AMONG REGIONS SCORE: 0.624

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Menabe region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores compared to overall average country scores:

Multi-Hazard Exposure

0.497
0.371

Vulnerability

0.701
0.492

Coping Capacity

0.326

0.383



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**SAVA** 

**NDPBA REGION PROFILE** 



## **MADAGASCAR**

## **REGION: SAVA**



# RISK AND VULNERABILITY COMPONENT SCORES



## **MULTI-HAZARD RISK (MHR) -**

Moderate

Score: 0.506 • Rank: 12/23



## **RESILIENCE (R)-**

**Very High** 

Score: 0.55 • Rank: 4/23



## **MULTI-HAZARD EXPOSURE (MHE) -**

**Very High** 

Score: 0.618 • Rank: 3/23



## **VULNERABILITY (V) -**

**Very Low** 

Score: 0.327 • Rank: 21/23



## **COPING CAPACITY (CC) -**

High

Score: 0.427 • Rank: 7/23

## **REGION HIGHLIGHTS**



Population (2018 Census)

1,123,772



**Extreme Poverty Rate** 

36.3%



**Household Access to Drinking** 

Water

33.7%



**Literacy Rate** 

87.2%



**Household Access to Electricity** 

33.7%



## **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 3 / 23 REGIONS** 

**SCORE: 0.618** 



#### **MHE** 0.618

**Raw MHE** 0.542

**Relative MHE** 0.694

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



Landslide



Buildings Exposed: 52%

Critical Infrastructure Exposed: 38%



**Coastal Flooding** 



Buildings Exposed: 1%

Critical Infrastructure Exposed: 15%



**Extreme Heat** 

20% 4 (90,200)

Buildings Exposed: 45%

Critical Infrastructure Exposed: 55%



**Riverine Flooding** 



Buildings Exposed: 5%

Critical Infrastructure Exposed: 3%



Wildfire



Buildings Exposed: 1%

Critical Infrastructure Exposed: 1%



**Tsunami** 



Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



Malaria

**74%** 📤 (341,000)

Buildings Exposed: 79%

Critical Infrastructure Exposed: 94%



**Tropical Cyclone Wind** 

**100%** (462,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 8%



Earthquake



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

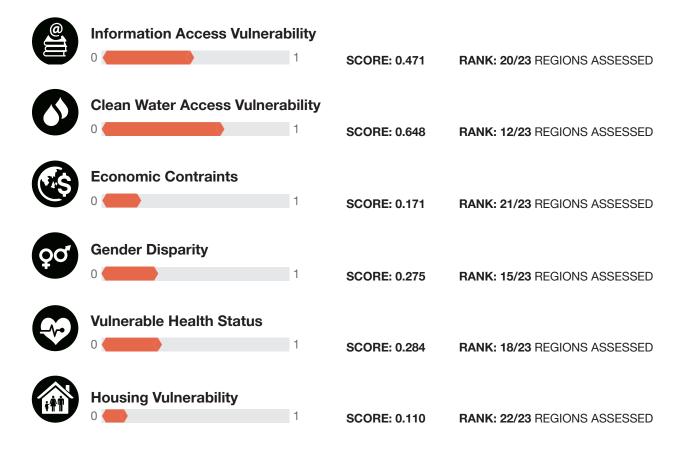


# **VULNERABILITY (V)**

**RANK: 21 / 23 REGIONS ASSESSED** 

**SCORE: 0.327** 

Below is a summary of the regional Vulnerability Assessment within Sava. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 21 / 23 REGIONS ASSESSED** 

**SCORE: 0.327** 

## **KEY FACTORS INFLUENCING VULNERABILITY**



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improve water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



# **Information Access Vulnerability**

The ability to understand hazard and disaster-related information before, during, and after an event is central to acting on that information. If information channels and formats are limited, the groups and individuals exposed to information inclusive of mitigation options, preparedness measures, available resources, and impending hazard events, will likewise be limited. Information access enables the building and diversification of exposed populations' critical skill sets both before and after disasters strike.

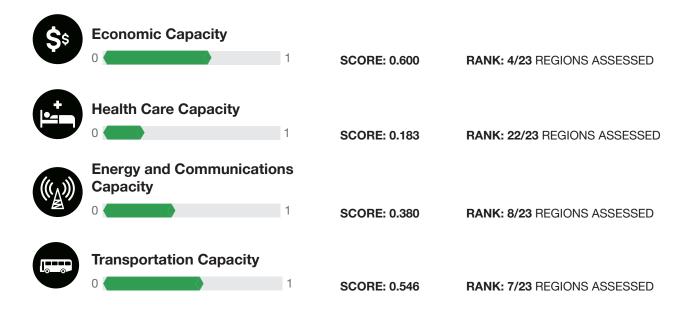


# **COPING CAPACITY (CC)**

**RANK: 7 / 23 REGIONS ASSESSED** 

**SCORE: 0.427** 

Below is a summary of the regional Coping Capacity Assessment within Sava. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



## KEY FACTORS INFLUENCING COPING CAPACITY



# **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



# **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



**RANK: 4 / 23 REGIONS ASSESSED** 

**SCORE: 0.55** 

Key drivers of Resilience within Sava are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

## **KEY FACTORS INFLUENCING RESILIENCE**



# **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



# **Clean Water Access Vulnerability**

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# **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 11 / 23 REGIONS ASSESSED SCORE: 0.289
	Coastal Flooding	RANK: 8 / 23 REGIONS ASSESSED SCORE: 0.383
	Riverine Flooding	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.218
(C)	Tsunami	RANK: 12 / 23 REGIONS ASSESSED SCORE: 0.083
	Tropical Cyclone Wind	RANK: 16 / 23 REGIONS ASSESSED SCORE: 0.603
-1/1	Earthquake ♦	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide	RANK: 5 / 23 REGIONS ASSESSED SCORE: 0.569
	Extreme Heat	RANK: 11 / 23 REGIONS ASSESSED SCORE: 0.435
	Wildfire	RANK: 14 / 23 REGIONS ASSESSED SCORE: 0.113
洲	Malaria	RANK: 5 / 23 REGIONS ASSESSED SCORE: 0.587
	Locust	RANK: 13 / 23 REGIONS ASSESSED SCORE: 0.186

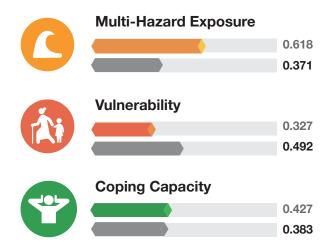


# **MULTI-HAZARD RISK (MHR)**

12 / 23 RANK AMONG REGIONS SCORE: 0.506

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Sava region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUNTRY SCORE compared to overall average country scores: SAVA SCORE





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**NDPBA REGION PROFILE** 



## **MADAGASCAR**

## **REGION: SOFIA**



# RISK AND VULNERABILITY COMPONENT SCORES



## **MULTI-HAZARD RISK (MHR) -**

Moderate

Score: 0.526 • Rank: 10/23



## **RESILIENCE (R)-**

Moderate

Score: 0.457 • Rank: 10/23



## **MULTI-HAZARD EXPOSURE (MHE) -**

Moderate

Score: 0.492 • Rank: 9/23



## **VULNERABILITY (V) -**

Moderate

Score: 0.463 • Rank: 13/23



## **COPING CAPACITY (CC) -**

Moderate

Score: 0.378 • Rank: 11/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

1,507,591



**Extreme Poverty Rate** 

41.6%



**Household Access to Drinking** 

Water

37.6%



**Literacy Rate** 

78.0%



**Household Access to Electricity** 

37.6%



## **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 9 / 23 REGIONS** 

**SCORE: 0.492** 



**MHE** 0.492

**Raw MHE** 0.361

**Relative MHE** 0.623

## **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**4 <1%** (190)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 13%



Landslide

**30%** (263,000)

Buildings Exposed: 28%

Critical Infrastructure Exposed: 28%



**Coastal Flooding** 



**4 <1%** (1,610)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 13%



**Extreme Heat** 

30% 🚨 (261,000)

Buildings Exposed: 49%

Critical Infrastructure Exposed: 54%



**Riverine Flooding** 



**6%** (53,800)

Buildings Exposed: 7%

Critical Infrastructure Exposed: 19%



Wildfire

**17%** (145,000)

Buildings Exposed: 18%

Critical Infrastructure Exposed: 20%



**Tsunami** 



**4 <1%** (13)

Buildings Exposed: <1%

Critical Infrastructure Exposed: 0%



Malaria

**64% (**555,000)



Buildings Exposed: 53%

Critical Infrastructure Exposed: 21%



**Tropical Cyclone Wind** 



Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 17%



Earthquake

**2%** (15,300)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 1%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

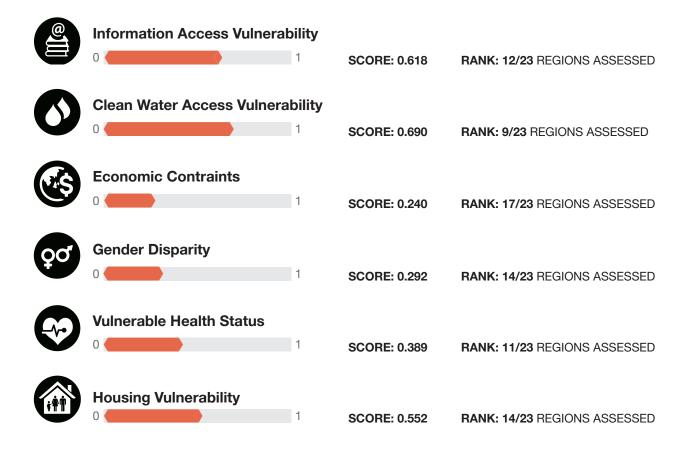


# **VULNERABILITY (V)**

**RANK: 13 / 23 REGIONS ASSESSED** 

**SCORE: 0.463** 

Below is a summary of the regional Vulnerability Assessment within Sofia. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 13 / 23 REGIONS ASSESSED** 

**SCORE: 0.463** 

## **KEY FACTORS INFLUENCING VULNERABILITY**



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



# **Information Access Vulnerability**

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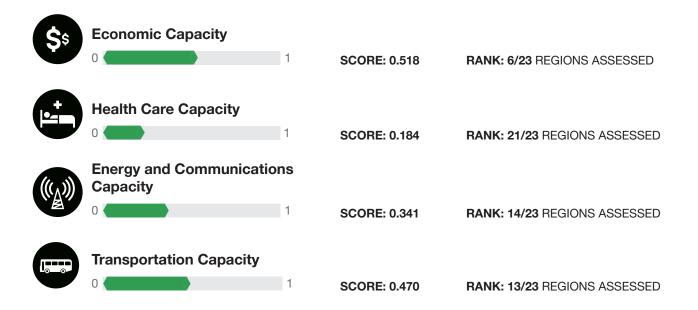


# **COPING CAPACITY (CC)**

**RANK: 11 / 23 REGIONS ASSESSED** 

**SCORE: 0.378** 

Below is a summary of the regional Coping Capacity Assessment within Sofia. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



## KEY FACTORS INFLUENCING COPING CAPACITY



# **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



206

# **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



RANK: 10 / 23 REGIONS ASSESSED

**SCORE: 0.457** 

Key drivers of Resilience within Sofia are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

## **KEY FACTORS INFLUENCING RESILIENCE**



# **Health Care Capacity**

Robust access to skilled caregivers and dedicated facilities for the treatment of injury and disease during non-disaster times greatly enhances the ability of the served population to absorb and manage post-disaster impacts to health, and increases the likelihood that disaster-associated health and medical impacts may be addressed.



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



# **Energy and Communications Capacity**

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# **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.439
	Coastal Flooding	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.405
	Riverine Flooding	RANK: 11 / 23 REGIONS ASSESSED SCORE: 0.360
	Tsunami	RANK: 13 / 23 REGIONS ASSESSED SCORE: 0.042
	Tropical Cyclone Wind	RANK: 10 / 23 REGIONS ASSESSED SCORE: 0.644
-1/1-	Earthquake	RANK: 5 / 23 REGIONS ASSESSED SCORE: 0.091
MÈ	Landslide	RANK: 12 / 23 REGIONS ASSESSED SCORE: 0.456
	Extreme Heat	RANK: 9 / 23 REGIONS ASSESSED SCORE: 0.495
	Wildfire	RANK: 2 / 23 REGIONS ASSESSED SCORE: 0.593
浅	Malaria	RANK: 8 / 23 REGIONS ASSESSED SCORE: 0.460
	Locust	RANK: 11 / 23 REGIONS ASSESSED SCORE: 0.304

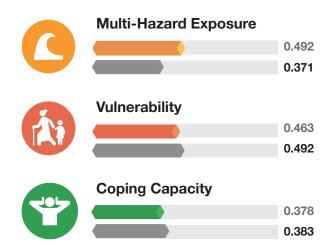


# **MULTI-HAZARD RISK (MHR)**

10 / 23 RANK AMONG REGIONS SCORE: 0.526

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Sofia region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUNTRY SCORE compared to overall average country scores: SOFIA SCORE





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MADAGASCAR

# VAKINANKARATRA

**NDPBA REGION PROFILE** 



## **MADAGASCAR**

## **REGION: VAKINANKARATRA**



# RISK AND VULNERABILITY COMPONENT SCORES



## **MULTI-HAZARD RISK (MHR) -**

**Very Low** 

Score: 0.392 • Rank: 19/23



## **RESILIENCE (R)-**

High

Score: 0.531 • Rank: 7/23



## **MULTI-HAZARD EXPOSURE (MHE) -**

OW

Score: 0.238 • Rank: 16/23



## **VULNERABILITY (V) -**

Low

Score: 0.39 • Rank: 16/23



## **COPING CAPACITY (CC) -**

High

Score: 0.452 • Rank: 5/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

2,079,659



**Extreme Poverty Rate** 

50.1%



**Household Access to Drinking** 

Water

42.3%



**Literacy Rate** 

89.1%



**Household Access to Electricity** 

42.3%



## **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 16 / 23 REGIONS** 

**SCORE: 0.238** 



**MHE** 0.238

**Raw MHE** 0.33

**Relative MHE** 0.147

## **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Landslide

**43%** (1,170,000)

Buildings Exposed: 38%

Critical Infrastructure Exposed: 28%



**Coastal Flooding** 



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



**Extreme Heat** 

<1% = (28)

Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



**Riverine Flooding** 



**4** <1% (13,200)

Buildings Exposed: 1%

Critical Infrastructure Exposed: 2%



Wildfire



Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Tsunami



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%



Malaria

**20% (**536,000)



Buildings Exposed: 4%

Critical Infrastructure Exposed: 10%



**Tropical Cyclone Wind** 

**100%** (2,730,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: 98%



Earthquake



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

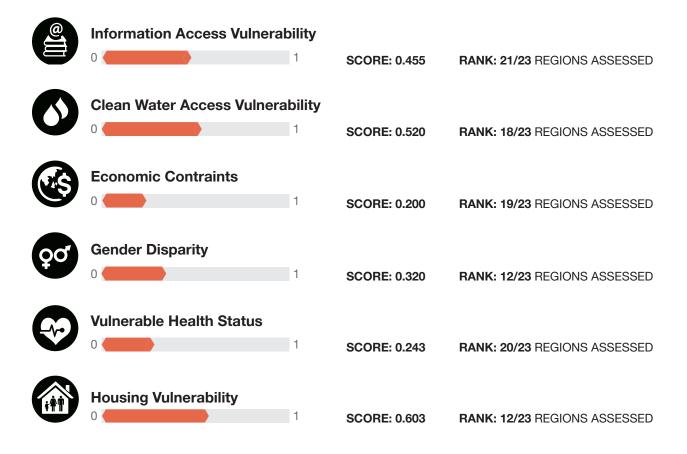


# **VULNERABILITY (V)**

**RANK: 16 / 23 REGIONS ASSESSED** 

**SCORE: 0.39** 

Below is a summary of the regional Vulnerability Assessment within Vakinankaratra. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





RANK: 16 / 23 REGIONS ASSESSED

**SCORE: 0.39** 

## **KEY FACTORS INFLUENCING VULNERABILITY**



# **Housing Vulnerability**

Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.



# **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improved water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.

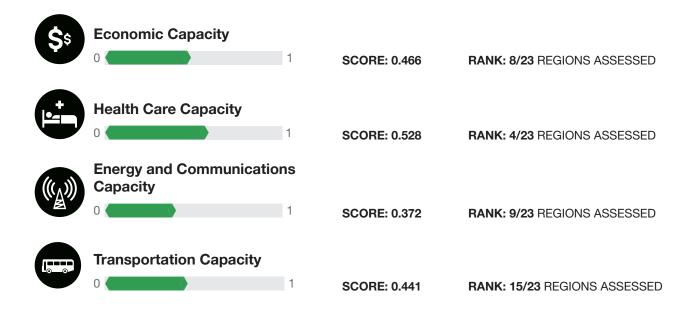


### **COPING CAPACITY (CC)**

**RANK: 5 / 23 REGIONS ASSESSED** 

**SCORE: 0.452** 

Below is a summary of the regional Coping Capacity Assessment within Vakinankaratra. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### **KEY FACTORS INFLUENCING COPING CAPACITY**



#### **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



#### **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



RANK: 7 / 23 REGIONS ASSESSED

**SCORE: 0.531** 

Key drivers of Resilience within Vakinankaratra are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



#### **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



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Populations living in poorly constructed housing, or homes built prior to the enactment of modern building codes, are more susceptible to structural damage and losses due to hazard impacts. In addition, higher density living situations such as crowded households increase susceptibility to negative consequences resulting from hazard exposure.



#### **Transportation Capacity**

Transportation Capacity represents the ability to ensure efficient movement and delivery of resources key to effective humanitarian assistance and disaster relief operations, including the provision of health services.



#### **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



# **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Coastal Flooding	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Riverine Flooding	RANK: 21 / 23 REGIONS ASSESSED SCORE: 0.096
Cá.	Tsunami •	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.000
	Tropical Cyclone Wind	RANK: 15 / 23 REGIONS ASSESSED SCORE: 0.616
	Earthquake ♦	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide	RANK: 9 / 23 REGIONS ASSESSED SCORE: 0.494
	Extreme Heat	RANK: 19 / 23 REGIONS ASSESSED SCORE: 0.005
	Wildfire	RANK: 19 / 23 REGIONS ASSESSED SCORE: 0.000
洲	Malaria	RANK: 13 / 23 REGIONS ASSESSED SCORE: 0.246
	Locust	RANK: 6 / 23 REGIONS ASSESSED SCORE: 0.680

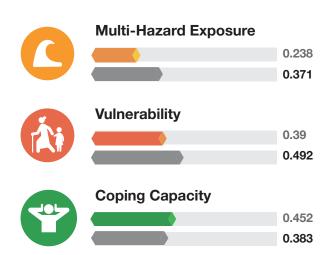


# **MULTI-HAZARD RISK (MHR)**

19 / 23 RANK AMONG REGIONS SCORE: 0.392

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Vakinankaratra region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUNTRY SCORE compared to overall average country scores: VAKINANKARATRA SCORE





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MADAGASCAR

# VATOVAVY

**NDPBA REGION PROFILE** 



#### **MADAGASCAR**

#### **REGION: VATOVAVY**



# RISK AND VULNERABILITY COMPONENT SCORES



#### **MULTI-HAZARD RISK (MHR) -**

**Very High** 

Score: 0.62 • Rank: 3/23



#### **RESILIENCE (R)-**

**Very Low** 

Score: 0.322 • Rank: 19/23



#### **MULTI-HAZARD EXPOSURE (MHE) -**

High

Score: 0.503 • Rank: 6/23



#### **VULNERABILITY (V) -**

High

Score: 0.666 • Rank: 6/23



#### **COPING CAPACITY (CC) -**

Low

Score: 0.31 • Rank: 17/23

#### **REGION HIGHLIGHTS**



Population (2018 Census)

705,675



**Extreme Poverty Rate** 

74.3%



**Household Access to Drinking** 

Water

13.6%



**Literacy Rate** 

62.6%



**Household Access to Electricity** 

13.6%



#### **MULTI-HAZARD EXPOSURE (MHE)**

**RANK: 6 / 23 REGIONS** 

**SCORE: 0.503** 



#### **MHE** 0.503

**Raw MHE** 0.345

**Relative MHE** 0.661

#### **ESTIMATED EXPOSURE TO EACH HAZARD:**



Sea Level Rise



**4 <1%** (109)

Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



Landslide

**416,000 416,000** 

Buildings Exposed: 63%

Critical Infrastructure Exposed: 39%



**Coastal Flooding** 



**4 < 1%** (357)

Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



**Extreme Heat** 

**15% (89,900)** 

Buildings Exposed: 17%

Critical Infrastructure Exposed: 37%



**Riverine Flooding** 



**8%** (46,300)

Buildings Exposed: 11%

Critical Infrastructure Exposed: 41%



Wildfire



Buildings Exposed: <1%

Critical Infrastructure Exposed: <1%



**Tsunami** 



**2%** (14,000)

Buildings Exposed: 3%

Critical Infrastructure Exposed: 36%



Malaria

**71% &** (411,000)



Buildings Exposed: 65%

Critical Infrastructure Exposed: 36%



**Tropical Cyclone Wind** 



**100%** (583,000)

Buildings Exposed: 100%

Critical Infrastructure Exposed: 100%



Locust

Cropland Exposed: <1%



Earthquake



**2** 0% (0)

Buildings Exposed: 0%

Critical Infrastructure Exposed: 0%

NOTE: Population exposure values are estimated using PDC's All-hazard Impact Model (AIM). Values may differ from Census population.

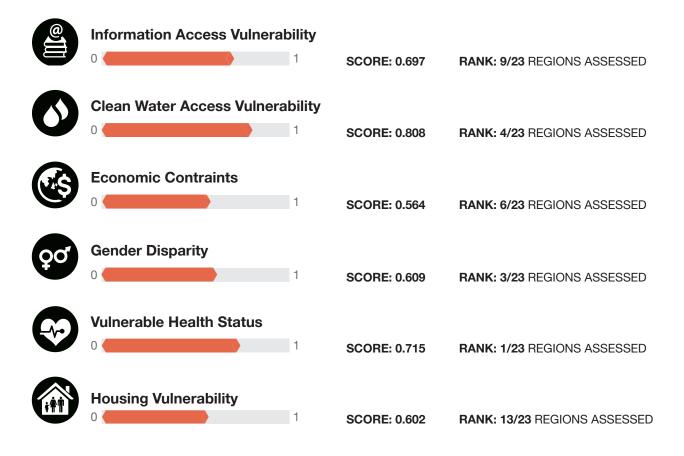


# **VULNERABILITY (V)**

**RANK: 6 / 23 REGIONS ASSESSED** 

**SCORE: 0.666** 

Below is a summary of the regional Vulnerability Assessment within Vatovavy. Detailed region-level results, including all indicators used to assess vulnerability, are available in DisasterAWARE.





**RANK: 6 / 23 REGIONS ASSESSED** 

**SCORE: 0.666** 

#### **KEY FACTORS INFLUENCING VULNERABILITY**



#### **Clean Water Access Vulnerability**

Those without easy or adequate access to water distribution and containment systems face significant demands on daily routines that effectively limit their response and recovery capacity and the ability to maintain livelihoods. Increasing access to improve water and sanitation improves health outcomes and frees up resources to decrease further susceptibility to impacts.



#### **Vulnerable Health Status**

A population with a compromised health status will have a greatly reduced ability to manage short- and long-term disaster outcomes. Improving health is often correlated with decreased susceptibility to injury, disease, and stress associated with disasters. Acute or prolonged vulnerable health status limits the basic capacity of response functions.

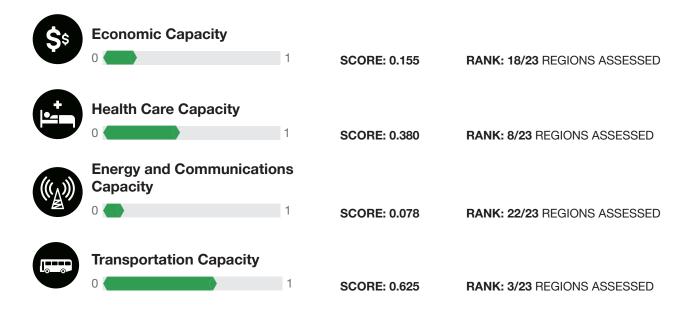


### **COPING CAPACITY (CC)**

RANK: 17 / 23 REGIONS ASSESSED

**SCORE: 0.31** 

Below is a summary of the regional Coping Capacity Assessment within Vatovavy. Detailed region-level results, including all indicators used to assess coping capacity, are available in DisasterAWARE.



#### **KEY FACTORS INFLUENCING COPING CAPACITY**



#### **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



#### **Economic Capacity**

A strong economic foundation provides an indication of a region's ability to absorb economic losses and quickly mobilize financial assets for preparedness, response and recovery activities. Limited economic capacity correlates to disproportionate disaster impacts.



RANK: 19 / 23 REGIONS ASSESSED

**SCORE: 0.322** 

Key drivers of Resilience within Vatovavy are summarized below. Detailed region-level results for the RVA are available in DisasterAWARE.

#### **KEY FACTORS INFLUENCING RESILIENCE**



#### **Energy and Communications Capacity**

Homes, businesses, industry, and government all rely on access to energy resources and communications for continuity of daily activities. Expanding, strengthening, and securing the energy network and increasing the availability of internet services will contribute to economic development, facilitate effective and coordinated communication, and increase the speed of recovery processes in the aftermath of a disaster.



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# **HAZARD-SPECIFIC RISK (HSR)**

	Sea Level Rise	RANK: 12 / 23 REGIONS ASSESSED SCORE: 0.127
	Coastal Flooding	RANK: 12 / 23 REGIONS ASSESSED SCORE: 0.108
	Riverine Flooding	RANK: 6 / 23 REGIONS ASSESSED SCORE: 0.536
CG.	Tsunami	RANK: 2 / 23 REGIONS ASSESSED SCORE: 0.683
	Tropical Cyclone Wind	RANK: 3 / 23 REGIONS ASSESSED SCORE: 0.718
	Earthquake ♦	RANK: 7 / 23 REGIONS ASSESSED SCORE: 0.000
MÈ	Landslide	RANK: 1 / 23 REGIONS ASSESSED SCORE: 0.702
	Extreme Heat	RANK: 12 / 23 REGIONS ASSESSED SCORE: 0.389
	Wildfire  Malaria	RANK: 11 / 23 REGIONS ASSESSED SCORE: 0.177
洲	ivialal la	RANK: 6 / 23 REGIONS ASSESSED SCORE: 0.570
	Locust	RANK: 20 / 23 REGIONS ASSESSED SCORE: 0.052

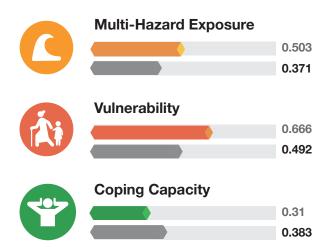


# **MULTI-HAZARD RISK (MHR)**

3 / 23 RANK AMONG REGIONS SCORE: 0.62

The Multi-Hazard Risk score and ranking represent a combination of multi-hazard exposure, vulnerability, and coping capacity. Below is a summary of the Vatovavy region's RVA results. Detailed region-level results for the RVA are available in DisasterAWARE.

Multi-Hazard Risk component scores COUNTRY SCORE compared to overall average country scores: VATOVAVY SCORE





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