



**NDPBA**

# **CABO VERDE MUNICIPAL RISK PROFILES**

**SUBNATIONAL ASSESSMENT RESULTS**





**CABO VERDE**

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# **BOA VISTA**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE BOA VISTA



## ISLAND: BOA VISTA

Area: 631 km<sup>2</sup>

Boa Vista (beautiful view) municipality encompasses the entire island of Boa Vista, part of the Barlavento Islands group and the easternmost and third-largest island of Cabo Verde after Santo Antão and Santiago. It is closest to the African continent with 450 km distance to Senegal. The capital, Sal Rei is on the north-western part of the island. Terrain is generally flat with a desert (Deserto de Viana) and dune fields. The highest point of the island is 387 m. It is a tourist island with the longest beaches of Cabo Verde, some of which are nesting areas for sea turtles and birds. Boa Vista has two main hydrographic basins. Concelho da Boa Vista consists of two parishes subdivided into nine population zones. While most of the population lives in Sal Rei, Boa Vista is the least-densely populated island in the archipelago. The international airport opened in 2007 has allowed tourism, the primary economic driver, to flourish. Many residents work in the hotels, tourist shops, and as taxi drivers. While there is no municipal sewage system, hotels have their own wastewater treatment plants. Healthcare capacity is limited in Boa Vista, as there is just one hospital with around 30 beds.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Very Low**  
Score: 0.343 • Rank: 20/22



**RESILIENCE (R) - Very High**  
Score: 0.602 • Rank: 4/22



**MULTI-HAZARD EXPOSURE (MHE) - Very Low**  
Score: 0.232 • Rank: 19/22



**VULNERABILITY (V) - Low**  
Score: 0.417 • Rank: 15/22



**COPING CAPACITY (CC) - Very High**  
Score: 0.621 • Rank: 3/22



Population (2020 projected)  
**19,879**



Infant mortality rate  
(per 1,000 live births)  
**12.2**



Poverty rate  
**3.7%**



Population with access  
to improved water  
**70.7%**

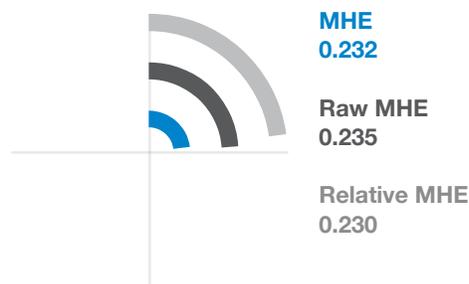


Average years of schooling  
**7.2**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 19 / 22 MUNICIPALITIES  
SCORE: 0.232



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**99.9%**

**19,013**

**\$36.2 Million**

**Critical Infrastructure Exposed:  
100.0%**



Flood

**1.4%**

**262**

-

**Critical Infrastructure Exposed:  
11.0%**



Earthquake Induced Landslide

**0.1%**

**19**

**\$12,100**

**Critical Infrastructure Exposed:  
21.0%**



Precipitation Induced Landslide

**0.0%**

**7**

-

**Critical Infrastructure Exposed:  
33.0%**



Volcano

**0.0%**

**0**

-

**Critical Infrastructure Exposed:  
0.0%**



Forest Fire

**6.2%**

**1,172**

-

**Critical Infrastructure Exposed:  
17.0%**



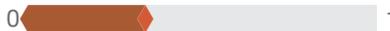
## VULNERABILITY (V)

**RANK: 15 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.417**

Vulnerability in Boa Vista is primarily driven by Population Pressures and Vulnerable Health Status. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.342** **RANK: 9/22 MUNICIPALITIES ASSESSED**

<b>0.18</b> Livestock Density per Hectare	<b>0.0%</b> Households Using Firewood as Cooking Fuel	<b>82.4%</b> Loss in Tree Cover (2001 to 2020)
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### Vulnerable Health Status

0  1 **SCORE: 0.622** **RANK: 5/22 MUNICIPALITIES ASSESSED**

<b>12.2</b> Infant Mortality Rate (per 1,000 live births)	<b>12.2%</b> Disabled Population	<b>56.0</b> TB Prevalence per 100k Persons	<b>39.5</b> HIV Incidence per 100K Persons
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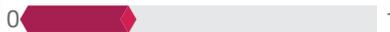
### Clean Water Vulnerability

0  1 **SCORE: 0.476** **RANK: 8/22 MUNICIPALITIES ASSESSED**

<b>14.9</b> Average Time to Collect Water for Household Use	<b>84.4%</b> Households with Access to Wastewater Services	<b>70.7%</b> Population with Access to Improved Water
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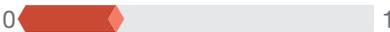
### Information Access Vulnerability

0  1 **SCORE: 0.293** **RANK: 20/22 MUNICIPALITIES ASSESSED**

<b>97.1%</b> Adult Literacy Rate	<b>7.2</b> Average Years of Schooling	<b>90.0%</b> Households with Television	<b>50.7%</b> Households with radio	<b>61.7%</b> Households with Internet access
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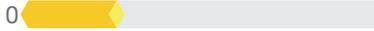
### Economic Constraints

0  1 **SCORE: 0.264** **RANK: 21/22 MUNICIPALITIES ASSESSED**

<b>0.38</b> Age dependency ratio	<b>0.37</b> Gini index	<b>9.2%</b> Unemployment Rate	<b>3.7%</b> Poverty rate	<b>9.6%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.258** **RANK: 21/22 MUNICIPALITIES ASSESSED**

**38.5%**  
Female Seats  
Municipal City  
Council

**0.91**  
Female to male labor  
participants

**1.14**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.667** **RANK: 2/22 MUNICIPALITIES ASSESSED**

**11.70%**  
Average annual  
population  
change

**84.7**  
Net Migration  
Rate (per 1,000  
persons)

**15.66**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 3 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.621**

Boa Vista exhibits weaker Coping Capacity in the areas of Emergency Service Capacity and Health Care Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.776** **RANK: 1/22 MUNICIPALITIES ASSESSED**

**75.82%** **2.52** **265,406**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.660** **RANK: 7/22 MUNICIPALITIES ASSESSED**

**100%** **342.8** **62.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0.390** **RANK: 9/22 MUNICIPALITIES ASSESSED**

**1.78%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.504** **RANK: 11/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.397** **RANK: 14/22 MUNICIPALITIES ASSESSED**

**3.22** **7.72** **100.0%** **0**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.477** **RANK: 16/22 MUNICIPALITIES ASSESSED**

**0.67** **5.83**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.714** **RANK: 1/22 MUNICIPALITIES ASSESSED**

**18.1%** **85.9%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.936** **RANK: 1/22 MUNICIPALITIES ASSESSED**

**97.0%** **96.6%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.000** **RANK: 22/22 MUNICIPALITIES ASSESSED**

**72.44** **55.18** **1.51**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 4 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.602**

Boa Vista's score and ranking are due to Low Vulnerability combined with Very High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Population Pressures



Vulnerable Health Status



Emergency Service Capacity



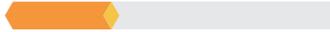
Health Care Capacity



## HAZARD-SPECIFIC RISK (HSR)



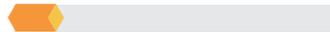
**Drought**



**RANK: 14 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.287**



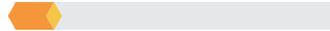
**Flood**



**RANK: 8 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.117**



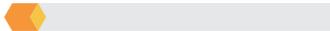
**Earthquake Induced Landslide**



**RANK: 13/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.111**



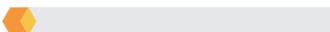
**Precipitation Induced Landslide**



**RANK: 16/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.075**



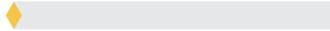
**Forest Fire**



**RANK: 20 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.053**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**20 / 22**

RANK WITHIN MUNICIPALITIES

Score: 0.343



Boa Vista's score and ranking are due to Very Low Multi-hazard Exposure combined with Low Vulnerability and Very High Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

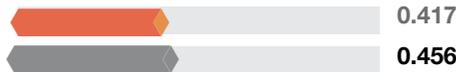
BOA VISTA SCORE  
COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## BOA VISTA RECOMMENDATIONS

# 1

### Population Pressures

Ranking 2nd for overall Population Pressures, Boa Vista has the highest net migration rate (84.7 per 1,000 persons) and the highest average annual population change (11.7%) between 2010 and 2020.

Boa Vista is the least densely populated municipality in Cabo Verde, but population is increasing rapidly. Actively monitor population growth and strengthen short- and long-term development planning through multi-stakeholder engagement. Increase oversight in planning processes to anticipate the needs of the growing population and encourage equitable distribution of services and infrastructure – including housing, transportation, health care, water, and energy.

Boa Vista is susceptible to multiple hazards, including drought, forest fires, and floods. Enforce building codes and environmental protections to ensure sustainable development. Conduct hazard exposure assessments to mitigate potential adverse impacts on the population, economy, and environment.

# 2

### Vulnerable Health Status

Ranking 5th for overall Vulnerable Health Status, Boa Vista has the highest tuberculosis (TB) prevalence (56 per 100,000 persons) in the country. In addition, the infant mortality rate is 12.23 deaths per 1,000 live births, HIV incidence is 39.5 per 100,000 persons, and 12% of the population is disabled.

Increase investments in community health education and outreach, including best practices for reducing communicable disease transmission, promoting reproductive health, and expanding education and delivery of pre- and ante-natal care for pregnant women. Additionally, ensure that WASH infrastructure meets the needs of the expanding population to help mitigate the impact of communicable diseases.

Ensure that disaster management, evacuation, and shelter plans include special considerations for people with chronic conditions, disabilities, and mobility challenges. Consider additional precautions needed to prevent transmission of COVID-19 among vulnerable populations in shelters

## BOA VISTA RECOMMENDATIONS

### 3

#### Emergency Service Capacity

Though Boa Vista ranks very high in its overall Coping Capacity and Resilience, the municipality has the lowest relative ranking for Emergency Services Capacity in Cabo Verde. Findings show that Boa Vista has the greatest average distance to hospitals (72.44 km) and police stations (55.18 km) from populated areas, and the fewest number of firefighters (1.51 per 10,000 persons).

Population pressures in Boa Vista necessitate expansion of emergency service capacities in the municipality to meet the needs of a growing population. Work to increase training and employment opportunities in health care, police force, and fire services in the municipality. Simultaneously, engage community training programs to develop strong community emergency response teams (CERTs) to increase emergency service capacity. Engage with international donors to procure firefighting equipment and ensure that firefighters are thoroughly trained in its function and use.

Ensure that training and exercises are regularly conducted in Boa Vista to assess preparedness for prevalent hazards likely to affect the municipality. Include all municipal stakeholders (police, fire services, regional disaster management, health sector, and community members) in the process, and use lessons learned to inform disaster planning.

### 4

#### Health Care Capacity

Boa Vista ranks 9th lowest for overall Health Care Capacity, driven by a lack of available hospital services and relatively limited numbers of health care personnel per 10,000 persons (3.22 physicians and 7.72 nurses per 10,000).

The population in Boa Vista is growing, and so will the need to expand health care capacity in the municipality. With limited access to healthcare, limited hospital beds and medical staff, the municipality is not equipped to handle disease outbreaks and mass casualty events.

Partner with private hospitals and NGOs to increase the number of hospital beds and medical staff available in the case of an emergency. Ensure that access to care is equitable and continues to expand to keep up with the demands of the growing population, while also reducing existing vulnerable health status.

**Better solutions.  
Fewer disasters.**

# Safer world.

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**CABO VERDE**  
**BRAVA**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE BRAVA

## ISLAND: BRAVA

Area: 63 km<sup>2</sup>

The Concelho de Brava is the only municipality on Brava Island, the southernmost and smallest inhabited island of Cabo Verde. The entire island is a stratovolcano with the highest point, Monte Fontainhas, at 976 meters. While it has no documented historical eruptions, low-intensity seismic activity occurs somewhat frequently. Terrain varies, with high peaks contrasting with deep valleys. Brava Island is closest to volcanically active Fogo Island (16 km or 10 miles to the east). Since the island is mountainous, the climate is arid along the coast and semi-arid in the interior. In general, Brava is more humid and greener than the other islands. Main economic drivers are fishing and some agriculture including coffee, potatoes, corn, bananas, and sugar cane. Commerce is centered in Nova Cintra where there is an established grocery retail trade and well-stocked mini-markets.



## RISK AND VULNERABILITY COMPONENT SCORE



### MULTI-HAZARD RISK (MHR) - Very High

Score: 0.520 • Rank: 4/22



### RESILIENCE (R) - Moderate

Score: 0.505 • Rank: 12/22



### MULTI-HAZARD EXPOSURE (MHE) - Very High

Score: 0.570 • Rank: 2/22



### VULNERABILITY (V) - Moderate

Score: 0.441 • Rank: 12/22



### COPING CAPACITY (CC) - Moderate

Score: 0.451 • Rank: 12/22



Population (2020 projected)

**5,405**



Infant mortality rate  
(per 1,000 live births)

**20.2**



Poverty rate

**35.7%**



Population with access  
to improved water

**98.5%**



Average years of schooling

**6.6**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 2 / 22 MUNICIPALITIES  
SCORE: 0.570



MHE  
0.570

Raw MHE  
0.335

Relative MHE  
0.804

### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**100.0%**

5,053

\$86.7 Million

Critical Infrastructure Exposed:  
100.0%



Flood

**0.1%**

4

-

Critical Infrastructure Exposed:  
20.0%



Earthquake Induced Landslide

**4.0%**

201

-

Critical Infrastructure Exposed:  
34.0%



Precipitation Induced Landslide

**1.0%**

52

-

Critical Infrastructure Exposed:  
22.0%



Volcano

**83.6%**

4,223

\$79.1 Million

Critical Infrastructure Exposed:  
65.0%



Forest Fire

**8.1%**

411

\$79.1 Million

Critical Infrastructure Exposed:  
15.0%



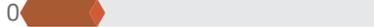
## VULNERABILITY (V)

**RANK: 12 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.441**

Vulnerability in Brava is primarily driven by Vulnerable Health Status and Economic Constraints. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.202** **RANK: 18/22 MUNICIPALITIES ASSESSED**

<b>0.45</b> Livestock Density per Hectare	<b>0.9%</b> Households Using Firewood as Cooking Fuel	<b>6.6%</b> Loss in Tree Cover (2001 to 2020)
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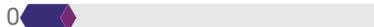
### Vulnerable Health Status

0  1 **SCORE: 0.713** **RANK: 1/22 MUNICIPALITIES ASSESSED**

<b>20.2</b> Infant Mortality Rate (per 1,000 live births)	<b>17.5%</b> Disabled Population	<b>0.0</b> TB Prevalence per 100k Persons	<b>199.2</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.117** **RANK: 20/22 MUNICIPALITIES ASSESSED**

<b>10.1</b> Average Time to Collect Water for Household Use	<b>93.7%</b> Households with Access to Wastewater Services	<b>98.5%</b> Population with Access to Improved Water
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### Information Access Vulnerability

0  1 **SCORE: 0.513** **RANK: 13/22 MUNICIPALITIES ASSESSED**

<b>86.7%</b> Adult Literacy Rate	<b>6.6</b> Average Years of Schooling	<b>88.3%</b> Households with Television	<b>42.0%</b> Households with radio	<b>55.7%</b> Households with Internet access
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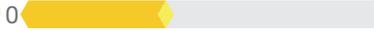
### Economic Constraints

0  1 **SCORE: 0.702** **RANK: 3/22 MUNICIPALITIES ASSESSED**

<b>0.54</b> Age dependency ratio	<b>0.41</b> Gini index	<b>14.8%</b> Unemployment Rate	<b>35.7%</b> Poverty rate	<b>4.0%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.401** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**46.2%**  
Female Seats  
Municipal City  
Council

**0.5**  
Female to male labor  
participants

**1.03**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.440** **RANK: 14/22 MUNICIPALITIES ASSESSED**

**-0.98%**  
Average annual  
population  
change

**-38.03**  
Net Migration  
Rate (per 1,000  
persons)

**21.79**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 12 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.451**

Brava exhibits weaker Coping Capacity in the areas of Governance and Economic Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0  1 **SCORE: 0.452** **RANK: 10/22 MUNICIPALITIES ASSESSED**

**43.16%** **7.4** **125,869**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



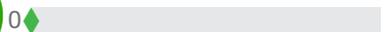
## Governance

0  1 **SCORE: 0.431** **RANK: 21/22 MUNICIPALITIES ASSESSED**

**86%** **539.76** **61.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0  1 **SCORE: 0** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**0.00%**  
Protected Area



## Infrastructure Capacity

0  1 **SCORE: 0.620** **RANK: 8/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.533** **RANK: 8/22 MUNICIPALITIES ASSESSED**

**3.55** **17.74** **100.0%** **0**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.719** **RANK: 2/22 MUNICIPALITIES ASSESSED**

**2.48** **4.12**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.465** **RANK: 9/22 MUNICIPALITIES ASSESSED**

**20.4%** **67.8%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.922** **RANK: 2/22 MUNICIPALITIES ASSESSED**

**96.0%** **98.2%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.464** **RANK: 21/22 MUNICIPALITIES ASSESSED**

**23.29** **23.49** **29.60**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 12 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.505**

Brava's score and ranking are due to Moderate Vulnerability combined with Moderate Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Vulnerable Health Status



Economic Constraints



Governance



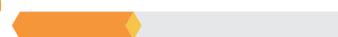
Economic Capacity



## HAZARD-SPECIFIC RISK (HSR)



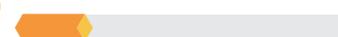
**Drought**



**RANK: 7 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.332**



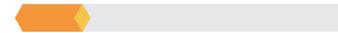
**Flood**



**RANK: 4 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.181**



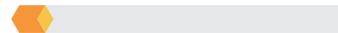
**Earthquake Induced Landslide**



**RANK: 10/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.174**



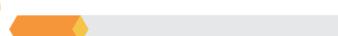
**Precipitation Induced Landslide**



**RANK: 15/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.076**



**Forest Fire**



**RANK: 12 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.185**



**Volcano**



**RANK: 3/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.459**



## MULTI-HAZARD RISK (MHR)

**4 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.520



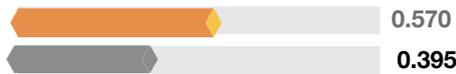
Brava's score and ranking are due to Very High Multi-hazard Exposure combined with Moderate Vulnerability and Moderate Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

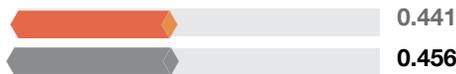
BRAVA SCORE  
COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## BRAVA RECOMMENDATIONS

### 1

#### Vulnerable Health Status

Brava has the highest overall Vulnerable Health Status ranking in the country, driven by the highest percentage of disabled persons (17.5%), the highest incidence of HIV (199.2 per 100,000 persons), and the 2nd highest infant mortality rate (20.2 deaths per 1,000 live births).

Increase investments in community health education and outreach, including best practices for reducing communicable disease transmission, promoting reproductive health, and expanding education and delivery of pre- and ante-natal care for pregnant women. Additionally, ensure that WASH infrastructure meets the needs of the vulnerable populations to help mitigate the impact of communicable diseases.

Ensure that disaster management, evacuation, and shelter plans include special considerations for people with chronic conditions, disabilities, and mobility challenges. Communities with vulnerable health status are more susceptible to the negative health impacts of disasters. Brava ranks 4th highest in the country in overall Multi-hazard Risk. Brava is highly exposed to both flood and volcanic hazards, necessitating close coordination between disaster management and public health officials for disaster plans. Consider additional precautions needed to prevent transmission of COVID-19 among vulnerable populations in shelters.

### 2

#### Economic Constraints

Ranking 3rd highest for overall Economic Constraints, only 4% of households in Brava own a vehicle and the municipality has the 5th highest unemployment (14.8%) in the country. Based on available hazard information, Brava ranks 2nd highest in the country in overall Multi-hazard Exposure, with significant exposure to floods and volcanic hazards. Economic constraints are exacerbated and perpetuated by the negative consequences of repeated hazard exposure.

Families without a vehicle will be challenged to evacuate to safety when disasters strike. Identify vulnerable communities' transportation challenges and include strategies to support evacuation in municipal disaster plans.

Support government programs to assist in new business and employment opportunities, linked to national and municipal sustainable development goals to diversify livelihoods, and promote equitable distribution of property and economic assets in Brava. Create public policies guaranteeing equal opportunity and fair wages for all. Focusing on sustainable economic opportunities will help to decrease long-term reliance on social benefits.

## BRAVA RECOMMENDATIONS

# 3

### Governance

Brava has the 2nd lowest overall Governance ranking in Cabo Verde, with the highest crime rate (540 per 10,000 persons) and the 5th lowest voter participation rate in local elections (61%) relative to other municipalities.

In addition to fostering growth in employment opportunities, reduce the crime burden by strengthening support for public security through increased law enforcement and surveillance, youth education and personal safety programs, as well as community support programs for ex-criminals.

Focus on building civic participation at the community-level to increase public voice and accountability, building trust in government. Encourage public participation in local disaster management, including public committees, community emergency response teams, and exercises.

# 4

### Economic Capacity

While Brava ranks 10th highest for overall Economic Capacity, it has the 5th lowest economic activity rate in the country (only 43% of the population aged 15 and over are active in the workforce) and the 10th lowest average annual expenditures per capita (125,869 CVE). Given Brava's economic constraints, low labor participation and reduced expenditures per capita may reduce economic protection and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

Brava's economy is driven primarily by agriculture and fishing. Continue to support environmental protections and invest in infrastructure enhancements to encourage formalization and expansion of artisanal fishing and small farms. Increase access to credit for small business owners to foster local economic development.

Increase access to vocational, technical, and entrepreneurial training to diversify the local economy and directly support labor market needs in the municipality. Expanding local economic opportunities will bolster labor participation and employment, supporting increased household incomes.

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**CABO VERDE**  
**MAIO**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE MAIO

## ISLAND: MAIO

Area: 275 km<sup>2</sup>

The Concelho do Maio, comprised of five civil parishes, is the only municipality on the island of Maio, the easternmost island of the Sotavento group. Located south of Boa Vista and east of Santiago, about 20% of the island is forested and 28% is a protected area. The island has hilly landscapes, limestone valleys, and sandy beaches. The largest urban center, Porto Inglês (or Villa do Maio), is close to the Maio Airport that operates flights to and from Praia. The harbor is navigable for larger ships. Main economic drivers are agriculture and grazing. Sweet potatoes, cassava, papaya, fig, coconut, and tamarind are cultivated year-round. However, water scarcity due to drought makes it difficult to maintain consistent outputs and locust infestations constitute a major risk factor. Fishing is another activity that yields tuna, sailfish, and other species. Maio's economy is also supported by remittances from expatriates who send money to their relatives on the island.



## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Very Low**  
Score: 0.317 • Rank: 22/22



**RESILIENCE (R) - High**  
Score: 0.598 • Rank: 5/22



**MULTI-HAZARD EXPOSURE (MHE) - Very Low**  
Score: 0.147 • Rank: 22/22



**VULNERABILITY (V) - Very Low**  
Score: 0.365 • Rank: 19/22



**COPING CAPACITY (CC) - High**  
Score: 0.560 • Rank: 6/22



Population (2020 projected)  
**7,525**



Infant mortality rate  
(per 1,000 live births)  
**0.0**



Poverty rate  
**26.2%**



Population with access  
to improved water  
**98.0%**



Average years of schooling  
**6.9**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 22 / 22 MUNICIPALITIES

SCORE: 0.147



MHE  
0.147

Raw MHE  
0.173

Relative MHE  
0.121

### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**99.9%**

**6,779**

**\$50.3 Million**

Critical Infrastructure Exposed:

**100.0%**



Flood

**0.2%**

**14**

**\$4.8 Million**

Critical Infrastructure Exposed:

**2.0%**



Earthquake Induced Landslide

**0.0%**

**0**

-

Critical Infrastructure Exposed:

**0.0%**



Precipitation Induced Landslide

**0.0%**

**0**

-

Critical Infrastructure Exposed:

**0.0%**



Volcano

**0.0%**

**0**

-

Critical Infrastructure Exposed:

**0.0%**



Forest Fire

**2.4%**

**163**

**\$6.4 Million**

Critical Infrastructure Exposed:

**1.0%**



## VULNERABILITY (V)

**RANK: 19 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.365**

Vulnerability in Maio is primarily driven by Gender Inequality and Economic Constraints. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



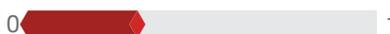
### Environmental Stress

0  1 **SCORE: 0.395** **RANK: 8/22 MUNICIPALITIES ASSESSED**

<b>0.48</b> Livestock Density per Hectare	<b>22.7%</b> Households Using Firewood as Cooking Fuel	<b>25.0%</b> Loss in Tree Cover (2001 to 2020)
--	---	---



### Vulnerable Health Status

0  1 **SCORE: 0.319** **RANK: 21/22 MUNICIPALITIES ASSESSED**

<b>0.0</b> Infant Mortality Rate (per 1,000 live births)	<b>8.1%</b> Disabled Population	<b>42.0</b> TB Prevalence per 100k Persons	<b>27.7</b> HIV Incidence per 100K Persons
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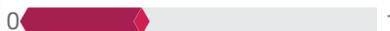
### Clean Water Vulnerability

0  1 **SCORE: 0.060** **RANK: 22/22 MUNICIPALITIES ASSESSED**

<b>7.9</b> Average Time to Collect Water for Household Use	<b>97.5%</b> Households with Access to Wastewater Services	<b>98.0%</b> Population with Access to Improved Water
---	--	--



### Information Access Vulnerability

0  1 **SCORE: 0.331** **RANK: 19/22 MUNICIPALITIES ASSESSED**

<b>87.6%</b> Adult Literacy Rate	<b>6.9</b> Average Years of Schooling	<b>89.9%</b> Households with Television	<b>66.1%</b> Households with radio	<b>69.4%</b> Households with Internet access
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### Economic Constraints

0  1 **SCORE: 0.476** **RANK: 13/22 MUNICIPALITIES ASSESSED**

<b>0.51</b> Age dependency ratio	<b>0.37</b> Gini index	<b>9.0%</b> Unemployment Rate	<b>26.2%</b> Poverty rate	<b>8.1%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.705** **RANK: 3/22 MUNICIPALITIES ASSESSED**

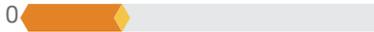
**38.5%**  
Female Seats  
Municipal City  
Council

**0.67**  
Female to male labor  
participants

**1.2**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.273** **RANK: 21/22 MUNICIPALITIES ASSESSED**

**0.82%**  
Average annual  
population  
change

**-6.76**  
Net Migration  
Rate (per 1,000  
persons)

**20.75**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 6 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.560**

Maio exhibits weaker Coping Capacity in the areas of Communications Capacity and Economic Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.493** **RANK: 7/22 MUNICIPALITIES ASSESSED**

**45.33%** **6.64** **151,527**  
Economic Activity Rate Financial Service Locations per 10k Persons Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.617** **RANK: 11/22 MUNICIPALITIES ASSESSED**

**96%** **377.28** **62.0%**  
Population Properly Disposing Waste Crimes Reported per 10k persons Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0.375** **RANK: 10/22 MUNICIPALITIES ASSESSED**

**1.58%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.633** **RANK: 7/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.516** **RANK: 9/22 MUNICIPALITIES ASSESSED**

**2.84** **9.95** **88.1%** **1.33**  
Physicians per 10k Persons Nurses per 10k Persons Pct Under 1yr Fully Vaccinated Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.602** **RANK: 10/22 MUNICIPALITIES ASSESSED**

**1.40** **4.21**  
Road density (km per sq. km) Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.415** **RANK: 10/22 MUNICIPALITIES ASSESSED**

**23.8%** **62.8%**  
Households with Fixed Phones Population with Mobile Phone



## Energy Capacity

**SCORE: 0.727** **RANK: 8/22 MUNICIPALITIES ASSESSED**

**96.5%** **70.3%**  
Households with Access to Electricity Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.903** **RANK: 1/22 MUNICIPALITIES ASSESSED**

**4.28** **4.55** **31.89**  
Average Distance to Hospital (km) Average Distance to Police Station (km) Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 5 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.598**

Maio's score and ranking are due to Very Low Vulnerability combined with High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Gender Inequality**



**Economic Constraints**



**Communications Capacity**



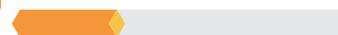
**Economic Capacity**



## HAZARD-SPECIFIC RISK (HSR)



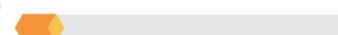
**Drought**



**RANK: 15 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.283**



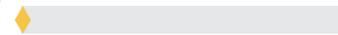
**Flood**



**RANK: 14 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.097**



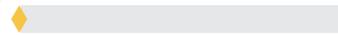
**Earthquake Induced Landslide**



**RANK: 21/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.000**



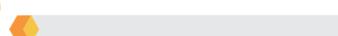
**Precipitation Induced Landslide**



**RANK: 21/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.000**



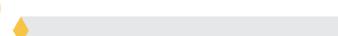
**Forest Fire**



**RANK: 21 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.041**



**Volcano**



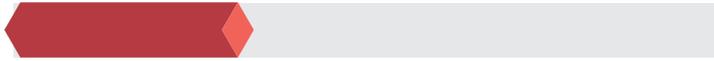
**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

22 / 22

RANK WITHIN MUNICIPALITIES  
Score: 0.317



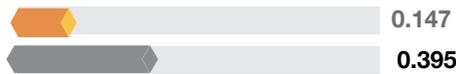
Maio's score and ranking are due to Very Low Multi-hazard Exposure combined with Very Low Vulnerability and High Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

MAIO SCORE  
COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## MAIO RECOMMENDATIONS

# 1

### Gender Inequality

Maio ranks 3rd highest for overall Gender Inequality in Cabo Verde. While a greater proportion of females than males attend secondary school (1.2 ratio of females to males), females comprise just 38.5% of municipal council seats, and the ratio of female to male participation in the labor force is 0.67.

Design and implement intervention strategies to promote and sustain engagement of both male and female students in secondary-level education and reduce dropout rates. Promote development and empowerment of young people through social support structures and employment opportunities including diverse school-to-work programs and leadership academies.

Boost labor participation by promoting workforce opportunities for women that include provisions for family support, such as quality, affordable childcare. Support equal pay for equal work to foster economic growth, reduce economic dependency, and decrease economic constraints.

# 2

### Economic Constraints

Maio ranks 13th for overall Economic Constraints, with just 8% of households owning a vehicle, a 26% poverty rate, and 9% unemployment.

Families without a vehicle will be challenged to evacuate to safety when disasters strike. Identify vulnerable communities' transportation challenges and include strategies to support evacuation in municipal disaster plans. Assess disaster response and recovery plans to ensure that economically vulnerable populations are identified, as poor populations are often more likely to be severely impacted by disasters and have slower recovery times.

Support government programs to assist in developing new business and employment opportunities, linked to national and municipal sustainable development goals to diversify livelihoods, and promote equitable distribution of property and economic assets in Maio. Create public policies guaranteeing equal opportunity and fair wages for all. Focusing on sustainable economic opportunities will help to decrease long-term reliance on social assistance.

## MAIO RECOMMENDATIONS

### 3

#### Communications Capacity

While Maio ranks 10th for overall Communications Capacity, just 62.8% of the population has mobile phones and 23.8% of households have a fixed phone. Limited communications capacity exacerbates information access vulnerability and hinders the ability of government agencies to share critical information during disasters.

Boost Communications Capacity and overall resilience through the expansion of infrastructure to ensure coverage, accessibility, and reliability of communications during disasters. Encourage telecommunication infrastructure development at a sustainable pace and implement risk reduction measures in all infrastructure enhancements to protect against hazard impacts. Create communications plans to share critical information with the public during disasters, leveraging multimodal communication strategies (radio, internet, television, fixed- and mobile telephone).

### 4

#### Economic Capacity

Maio's overall Economic Capacity ranking is constrained by having the 6th lowest economic activity rate (45% of persons aged 15 and over are active in the workforce) in the country. Given Maio's economic constraints, low labor participation may reduce economic protection and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

Maio's economy is driven primarily by agriculture and fishing. Household incomes are also supported by foreign remittances. Continue to support environmental protections while investing in infrastructure enhancements to encourage formalization and expansion of artisanal fishing and small farms. Increase access to credit for small business owners to foster local economic development.

Increase access to vocational, technical, and entrepreneurial training to directly support labor market needs and diversify the municipal economy. Expanding local economic opportunities will reduce reliance on external remittances and bolster labor participation.

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**CABO VERDE**

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# **MOSTEIROS**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE MOSTEIOS



## ISLAND: FOGO

Area: 89 km<sup>2</sup>

Mosteiros is situated in the northeastern corner of the volcanic Fogo Island where the stratovolcano Pico de Fogo sits. It is one of three municipalities on Fogo bordered by the municipality of São Filipe to the west, and by the municipality of Santa Catarina do Fogo to the south. Mosteiros occupies about 18% of the island's land area and has about 26% of the island's population. It is about 35 to 50 km from the island's capital, São Filipe. Due to rich volcanic soils, and good micro-climates, agriculture is the main economic activity followed by fishing. Income from emigrants have facilitated urban expansion and some tourist activity exists. Coffee cultivation is one of the main agricultural crops along with vine and cotton cultivation. Wine and textiles are the main exports. The municipality of Mosteiros was established in 1991 and consists of one civil parish, Nossa Senhora da Ajuda, and further subdivided into smaller settlements. In 2014, Mosteiros sustained damages from an eruption of the Pico de Fogo volcano that lasted more than 50 days.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Moderate**  
Score: 0.490 • Rank: 11/22



**RESILIENCE (R) - Moderate**  
Score: 0.506 • Rank: 11/22



**MULTI-HAZARD EXPOSURE (MHE) - High**  
Score: 0.483 • Rank: 6/22



**VULNERABILITY (V) - Moderate**  
Score: 0.444 • Rank: 11/22



**COPING CAPACITY (CC) - Moderate**  
Score: 0.456 • Rank: 11/22



Population (2020 projected)  
**9,243**



Infant mortality rate  
(per 1,000 live births)  
**10.5**



Poverty rate  
**30.6%**



Population with access  
to improved water  
**87.9%**



Average years of schooling  
**6.9**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 6 / 22 MUNICIPALITIES  
SCORE: 0.483



MHE  
0.483

Raw MHE  
0.317

Relative MHE  
0.649

### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**92.9%**

**8,700**

**\$100.6 Million**

**Critical Infrastructure Exposed:  
92.0%**



Flood

**0.0%**

**0**

-

**Critical Infrastructure Exposed:  
0.0%**



Earthquake Induced Landslide

**2.1%**

**198**

-

**Critical Infrastructure Exposed:  
13.0%**



Precipitation Induced Landslide

**11.9%**

**1,115**

-

**Critical Infrastructure Exposed:  
8.0%**



Volcano

**76.3%**

**7,139**

**\$100.6 Million**

**Critical Infrastructure Exposed:  
92.0%**



Forest Fire

**23.4%**

**2,189**

**\$872,800**

**Critical Infrastructure Exposed:  
17.0%**



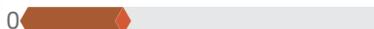
## VULNERABILITY (V)

**RANK: 11 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.444**

Vulnerability in Mosteiros is primarily driven by Gender Inequality and Information Access Vulnerability. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



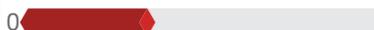
### Environmental Stress

0  1 **SCORE: 0.277** **RANK: 14/22 MUNICIPALITIES ASSESSED**

<b>0.47</b> Livestock Density per Hectare	<b>25.7%</b> Households Using Firewood as Cooking Fuel	<b>1.8%</b> Loss in Tree Cover (2001 to 2020)
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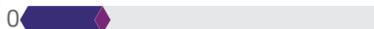
### Vulnerable Health Status

0  1 **SCORE: 0.348** **RANK: 20/22 MUNICIPALITIES ASSESSED**

<b>10.5</b> Infant Mortality Rate (per 1,000 live births)	<b>6.9%</b> Disabled Population	<b>32.0</b> TB Prevalence per 100k Persons	<b>21.5</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.217** **RANK: 16/22 MUNICIPALITIES ASSESSED**

<b>6.8</b> Average Time to Collect Water for Household Use	<b>89.5%</b> Households with Access to Wastewater Services	<b>87.9%</b> Population with Access to Improved Water
---	--	--



### Information Access Vulnerability

0  1 **SCORE: 0.543** **RANK: 12/22 MUNICIPALITIES ASSESSED**

<b>85.9%</b> Adult Literacy Rate	<b>6.9</b> Average Years of Schooling	<b>74.0%</b> Households with Television	<b>35.9%</b> Households with radio	<b>87.4%</b> Households with Internet access
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### Economic Constraints

0  1 **SCORE: 0.467** **RANK: 14/22 MUNICIPALITIES ASSESSED**

<b>0.57</b> Age dependency ratio	<b>0.34</b> Gini index	<b>7.3%</b> Unemployment Rate	<b>30.6%</b> Poverty rate	<b>9.6%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.767** **RANK: 2/22 MUNICIPALITIES ASSESSED**

**38.5%**  
Female Seats  
Municipal City  
Council

**0.45**  
Female to male labor  
participants

**1.13**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.488** **RANK: 11/22 MUNICIPALITIES ASSESSED**

**-0.30%**  
Average annual  
population  
change

**-51.87**  
Net Migration  
Rate (per 1,000  
persons)

**24.93**  
Youth Bulge



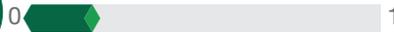
# COPING CAPACITY (CC)

**RANK: 11 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.456**

Mosteiros exhibits weaker Coping Capacity in the areas of Economic Capacity and Transportation Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0  1 **SCORE: 0.178** **RANK: 19/22 MUNICIPALITIES ASSESSED**

**49.92%** **0** **119,798**  
 Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0  1 **SCORE: 0.605** **RANK: 12/22 MUNICIPALITIES ASSESSED**

**74%** **325.22** **66.9%**  
 Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



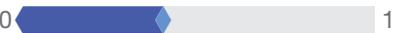
## Environmental Capacity

0  1 **SCORE: 0.982** **RANK: 2/22 MUNICIPALITIES ASSESSED**

**28.39%**  
 Protected Area



## Infrastructure Capacity

0  1 **SCORE: 0.409** **RANK: 16/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.331** **RANK: 16/22 MUNICIPALITIES ASSESSED**

**3.21** **8.57** **91.4%** **0**  
 Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.327** **RANK: 21/22 MUNICIPALITIES ASSESSED**

**0.97** **22.51**  
 Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.414** **RANK: 11/22 MUNICIPALITIES ASSESSED**

**18.9%** **65.5%**  
 Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.470** **RANK: 14/22 MUNICIPALITIES ASSESSED**

**86.8%** **69.2%**  
 Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.501** **RANK: 20/22 MUNICIPALITIES ASSESSED**

**24.03** **4.06** **21.64**  
 Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 11 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.506**

Mosteiros's score and ranking are due to Moderate Vulnerability combined with Moderate Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Gender Inequality**



**Information Access Vulnerability**



**Economic Capacity**



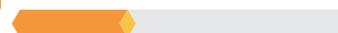
**Transportation Capacity**



## HAZARD-SPECIFIC RISK (HSR)



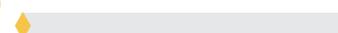
**Drought**



**RANK: 9 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.314**



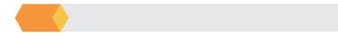
**Flood**



**RANK: 22 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.000**



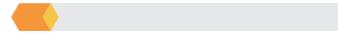
**Earthquake Induced Landslide**



**RANK: 14/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.110**



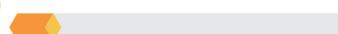
**Precipitation Induced Landslide**



**RANK: 13/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.092**



**Forest Fire**



**RANK: 17 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.105**



**Volcano**



**RANK: 2/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.461**



## MULTI-HAZARD RISK (MHR)

**11 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.490



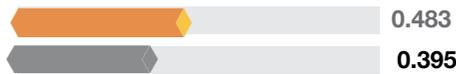
Mosteiros's score and ranking are due to High Multi-hazard Exposure combined with Moderate Vulnerability and Moderate Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

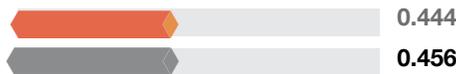
**MOSTEIROS SCORE**  
 **COUNTRY SCORE**



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## MOSTEIROS RECOMMENDATIONS

# 1

### Gender Inequality

Mosteiros has the 2nd highest ranking for overall Gender Inequality in the country driven by the lowest ratio of females to males participating in the labor force (0.45) and the 4th lowest proportion of females to males holding municipal council seats in local government.

Promote development and empowerment of young people through social support structures and employment opportunities including diverse school-to-work programs and leadership academies.

Boost labor participation by promoting workforce opportunities for women that include provisions for family support, such as quality, affordable childcare. Support equal pay for equal work to foster economic growth, reduce economic dependency, and decrease economic constraints.

# 2

### Information Access Vulnerability

Ranking 12th highest for overall Information Access Vulnerability, Mosteiros has the 5th lowest average years of schooling (6.9 years) in the country, and one of the lowest percentages of households with no TV (74%).

Focus efforts on providing programs to increase school attendance and completion of secondary education. Work with communities to better understand the underlying factors that represent barriers to education and literacy. In particular, poverty and gender inequalities may also drive disparities in the municipality.

Implement community outreach and education programs focused on hazard awareness, disaster preparedness, and health and safety practices to build community resilience. Include information and resources for audiences requiring special considerations such as the very young, elderly, and disabled populations. Boost public-private collaboration and coordination to ensure that hazard warning information is accessible and disseminated as broadly as possible through multiple communications channels

## MOSTEIROS RECOMMENDATIONS

### 3

#### Economic Capacity

Mosteiros has the 4th lowest Economic Capacity score relative to other municipalities in Cabo Verde. This score is driven by a lack of financial service locations per 10,000 persons and the 8th lowest average annual expenditures per capita (119,798 CVE). These shortcomings to economic capacity may reduce economic protection in Mosteiros and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

While Mosteiros' economy is driven primarily by agriculture, recent urban expansion has led to development of tourism in the municipality. Like many other municipalities in Cabo Verde, incomes and expenditures in Mosteiros are supported by remittances. Continue to support sustainable urban development in the municipality, ensuring that infrastructure enhancements do not contribute to environmental stress or increase hazard exposure. Expand financial services to increase access to credit for small businesses and foster local economic development.

Increase access to vocational, technical, and entrepreneurial training to directly support labor market needs, diversify the municipal economy, and supply skilled labor needed to advance sustainable development. Expanding local economic opportunities will reduce reliance on external remittances and increase household incomes.

### 4

#### Transportation Capacity

Findings show that Mosteiros has the second lowest overall Transportation Capacity in the country, with the 3rd lowest road density (.97 km per sq km) and the 5th greatest average distance to a port or airport facility (22.5 km).

Mosteiros ranks 6th highest in Cabo Verde for overall Multi-hazard Exposure, with significant exposure to drought, volcanic hazards, and forest fires. Limited transportation networks hamper timely evacuations and delay response and recovery activities. Damaged roads, seaports and airports can further postpone delivery and transport of much needed relief supplies and delay recovery processes.

Secure investments for continued expansion and maintenance of transportation networks, particularly in underserved areas to meet increasing demand and improve response times and access to emergency services. Explore public-private partnerships to maintain the quality of existing transportation infrastructure. By bolstering transportation capacity, Mosteiros will have the added benefit of supporting sustainable economic growth through greater accessibility of goods and services. Protect investments and service provision by implementing mitigation strategies (e.g., erosion prevention) to reduce hazard impacts. Evacuation routes and emergency response plans should be adapted as construction and maintenance is planned and implemented.

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**CABO VERDE**

**PAUL**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE PAUL



## ISLAND: SANTO ANTAO

Area: 54 km<sup>2</sup>

Paul is located on the northeast coast of the island of Santo Antão. It is one of three municipalities in Santo Antão which is the westernmost and second-largest island of Cabo Verde, and the largest of the Barlavento Islands group. The other two municipalities are Porto Novo and Ribeira Grande. Paul is the greenest municipality in the region with a beautiful landscape and rural culture yet faces development challenges related to infrastructure services (e.g., water and wastewater, solid waste disposal) and urban planning. Farming and livestock are the two main economic drivers. Subsistence farming includes maize, beans, sweet potatoes in high grounds, and sugar cane, bananas, and vegetables in the valleys. Periodic droughts impact Paul’s agriculture, resulting in low agricultural yields. Brandy and honey are the two main export products of the municipality.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Very Low**  
Score: 0.377 • Rank: 18/22



**RESILIENCE (R) - Moderate**  
Score: 0.516 • Rank: 10/22



**MULTI-HAZARD EXPOSURE (MHE) - Very Low**  
Score: 0.162 • Rank: 20/22



**VULNERABILITY (V) - High**  
Score: 0.498 • Rank: 6/22



**COPING CAPACITY (CC) - High**  
Score: 0.530 • Rank: 7/22



Population (2020 projected)  
**5,382**



Infant mortality rate  
(per 1,000 live births)  
**0.0**



Poverty rate  
**44.5%**



Population with access  
to improved water  
**94.7%**



Average years of schooling  
**6.6**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 20 / 22 MUNICIPALITIES

SCORE: 0.162



MHE  
0.162

Raw MHE  
0.214

Relative MHE  
0.110

### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**5.8%**

326

\$25.4 Million

Critical Infrastructure Exposed:

19.0%



Flood

**3.2%**

179

-

Critical Infrastructure Exposed:

3.0%



Earthquake Induced Landslide

**11.5%**

641

-

Critical Infrastructure Exposed:

30.0%



Precipitation Induced Landslide

**36.7%**

2,053

\$25.4 Million

Critical Infrastructure Exposed:

50.0%



Volcano

**0.0%**

0

-

Critical Infrastructure Exposed:

0.0%



Forest Fire

**32.3%**

1,807

\$75.1 Million

Critical Infrastructure Exposed:

3.0%



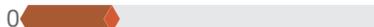
## VULNERABILITY (V)

**RANK: 6 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.498**

Vulnerability in Paul is primarily driven by Economic Constraints and Information Access Vulnerability. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.244** **RANK: 16/22 MUNICIPALITIES ASSESSED**

<b>0.49</b> Livestock Density per Hectare	<b>27.1%</b> Households Using Firewood as Cooking Fuel	<b>0.3%</b> Loss in Tree Cover (2001 to 2020)
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### Vulnerable Health Status

0  1 **SCORE: 0.541** **RANK: 7/22 MUNICIPALITIES ASSESSED**

<b>0.0</b> Infant Mortality Rate (per 1,000 live births)	<b>13.3%</b> Disabled Population	<b>53.0</b> TB Prevalence per 100k Persons	<b>70.8</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.442** **RANK: 10/22 MUNICIPALITIES ASSESSED**

<b>18.0</b> Average Time to Collect Water for Household Use	<b>77.2%</b> Households with Access to Wastewater Services	<b>94.7%</b> Population with Access to Improved Water
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### Information Access Vulnerability

0  1 **SCORE: 0.627** **RANK: 6/22 MUNICIPALITIES ASSESSED**

<b>77.1%</b> Adult Literacy Rate	<b>6.6</b> Average Years of Schooling	<b>75.6%</b> Households with Television	<b>59.1%</b> Households with radio	<b>63.4%</b> Households with Internet access
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### Economic Constraints

0  1 **SCORE: 0.687** **RANK: 4/22 MUNICIPALITIES ASSESSED**

<b>0.56</b> Age dependency ratio	<b>0.43</b> Gini index	<b>6.9%</b> Unemployment Rate	<b>44.5%</b> Poverty rate	<b>5.3%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.578** **RANK: 6/22 MUNICIPALITIES ASSESSED**

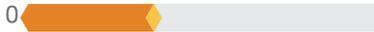
**38.5%**  
Female Seats  
Municipal City  
Council

**0.65**  
Female to male labor  
participants

**1.22**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.366** **RANK: 20/22 MUNICIPALITIES ASSESSED**

**-2.31%**  
Average annual  
population  
change

**-19.29**  
Net Migration  
Rate (per 1,000  
persons)

**19.46**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 7 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.530**

Paul exhibits weaker Coping Capacity in the areas of Communications Capacity and Health Care Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0  1 **SCORE: 0.475** **RANK: 9/22 MUNICIPALITIES ASSESSED**

**49.42%** **7.43** **111,176**  
Economic Activity Rate Financial Service Locations per 10k Persons Avg Annual Expenditures per Capita CVE



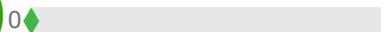
## Governance

0  1 **SCORE: 0.729** **RANK: 3/22 MUNICIPALITIES ASSESSED**

**67%** **189.48** **72.0%**  
Population Properly Disposing Waste Crimes Reported per 10k persons Voter Participation Rate in Local Elections



## Environmental Capacity

0  1 **SCORE: 0** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**0.00%**  
Protected Area



## Infrastructure Capacity

0  1 **SCORE: 0.562** **RANK: 9/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.450** **RANK: 11/22 MUNICIPALITIES ASSESSED**

**3.37** **13.47** **97.3%** **0**  
Physicians per 10k Persons Nurses per 10k Persons Pct Under 1yr Fully Vaccinated Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.634** **RANK: 7/22 MUNICIPALITIES ASSESSED**

**2.82** **13.84**  
Road density (km per sq. km) Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.381** **RANK: 12/22 MUNICIPALITIES ASSESSED**

**20.8%** **62.4%**  
Households with Fixed Phones Population with Mobile Phone



## Energy Capacity

**SCORE: 0.653** **RANK: 9/22 MUNICIPALITIES ASSESSED**

**93.7%** **70.0%**  
Households with Access to Electricity Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.694** **RANK: 6/22 MUNICIPALITIES ASSESSED**

**7.97** **4.06** **14.86**  
Average Distance to Hospital (km) Average Distance to Police Station (km) Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 10 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.516**

Paul's score and ranking are due to High Vulnerability combined with High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Economic Constraints**



**Information Access Vulnerability**



**Communications Capacity**



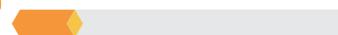
**Health Care Capacity**



## HAZARD-SPECIFIC RISK (HSR)



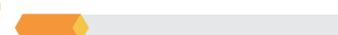
**Drought**



**RANK: 22 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.160**



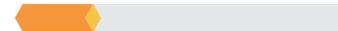
**Flood**



**RANK: 6 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.169**



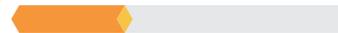
**Earthquake Induced Landslide**



**RANK: 7/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.205**



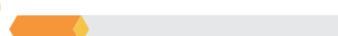
**Precipitation Induced Landslide**



**RANK: 3/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.308**



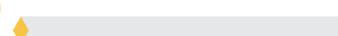
**Forest Fire**



**RANK: 11 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.186**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**18 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.377

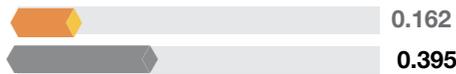


Paul's score and ranking are due to Very Low Multi-hazard Exposure combined with High Vulnerability and High Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## PAUL RECOMMENDATIONS

### 1

#### Economic Constraints

Paul ranks 4th highest for overall Economic Constraints, driven by the 3rd highest income inequality (Gini coefficient of 0.43), only 5.3% of households owning a vehicle, and nearly 45% of the population living in poverty. Families without a vehicle will be challenged to evacuate to safety when disasters strike. Identify vulnerable communities' transportation challenges and include strategies to support evacuation in municipal disaster plans. Assess disaster response and recovery plans to ensure that economically vulnerable populations are identified, as poor populations are often more likely to be severely impacted by disasters and have slower recovery times.

Economic constraints in Paul are closely linked to Information Access Vulnerability and vice versa. Removing economic barriers to education, and ensuring equitable access to schools, educational resources, and information technology will reduce vulnerability in the municipality.

Develop short- and long-term strategies to address and alleviate poverty. Short-term strategies may include public assistance programs that specifically address unsatisfied basic needs (i.e., food, water, housing, education). Over the long term, support government programs to assist in new business and employment opportunities. Linked economic development to national and municipal sustainable development goals to diversify livelihoods and promote equitable distribution of property and economic assets in Paul. Create public policies guaranteeing equal opportunity and fair wages for all. Focusing on sustainable economic opportunities will help to decrease long-term reliance on social assistance.

### 2

#### Information Access Vulnerability

Ranking 6th highest for overall Information Access Vulnerability, Paul ranks highest for adult illiteracy (77.1 %), and 3rd lowest for average years of schooling (6.6 years). Paul has some of the lowest percentages of households with access to television (75.6%) and internet services (63.4%).

Focus efforts on providing programs to increase school attendance and completion of secondary education. Work with communities to better understand the underlying factors that represent barriers to education and literacy. For example, economic constraints may contribute to disparities in information access.

Implement community outreach and education programs focused on hazard awareness, disaster preparedness, and health and safety practices to build community resilience. Include information and resources for audiences requiring special considerations such as the very young, elderly, and disabled populations. Boost public-private collaboration and coordination to ensure that hazard warning information is accessible and disseminated as broadly as possible through multiple communications channels.

## PAUL RECOMMENDATIONS

### 3

#### Communications Capacity

Paul's overall Communications Capacity ranking is constrained by having the 7th lowest percentage of the population with mobile phones (62%) and approximately 21% of households with fixed phones. Limited communications capacity exacerbates information access vulnerability and hinders the ability of government agencies to share critical information during disasters.

Boost Communications Capacity and overall resilience through the expansion of infrastructure to ensure coverage, accessibility, and reliability of communications during disasters. Encourage telecommunications infrastructure development at a sustainable pace and implement risk reduction measures in all infrastructure enhancements to protect against hazard impacts. Create communications plans to share critical information with the public during disasters, leveraging multimodal communication strategies (radio, internet, television, fixed- and mobile telephone).

### 4

#### Health Care Capacity

Paul's overall Health Care Capacity ranking is constrained by its lack of hospital services and limited numbers of health care personnel (3.37 physicians and 13.5 nurses) per 10,000 persons. Paul has one public healthcare center, albeit with limited capacity. This hospital unit does not have a laboratory or radiology service, so patients are referred to the Regional Hospital of Ribeira Grande.

With limited access to healthcare, and limited hospital beds and medical staff, the municipality is not equipped to handle disease outbreaks or mass casualty events. Paul is susceptible to landslide, forest fire, flood, and drought. Ensuring that the health care system can meet the needs of vulnerable and exposed populations is vital to protect lives.

In light of existing economic constraints, expanded partnerships with NGOs, private sector, and regional and international donor agencies may be needed to expand health care infrastructure, hospital capabilities, and skilled medical staff in the municipality. Incentivizing employment in the health care sector, especially in vulnerable rural communities, will enhance equitable access to health care in Paul. While encouraging long-term expansion of the health care system, support underserved communities by developing a program for visiting medical practitioners to increase access to preventive and acute care in the municipality.

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**CABO VERDE**

# **PORTO NOVO**

**NDPBA MUNICIPAL PROFILE**

# CABO VERDE PORTO NOVO



## ISLAND: SANTO ANTÃO

Area: 564 km<sup>2</sup>

The municipality of Porto Novo makes up the southern portion of Santo Antão Island and hosts the tallest mountain on the island (Topo de Coroa) with an elevation of 1,979 m. It is the largest of three municipalities on Santo Antão, with Ribeira Grande to the north, and Paul to the east. Like Paul, Porto Novo has a sloping topography that makes it prone to flooding given its poor rainwater drainage system. Development is mostly concentrated on the backwaters and away from streams. Farming and livestock are the two main economic drivers of Porto Novo, and recent modernization of the seaport has brought more commercial opportunities to the municipality. Traditional fishing is another economic income source. Purchasing power, however, remains low due to low economic activity.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - High**  
Score: 0.513 • Rank: 5/22



**RESILIENCE (R) - Low**  
Score: 0.503 • Rank: 13/22



**MULTI-HAZARD EXPOSURE (MHE) - High**  
Score: 0.545 • Rank: 4/22



**VULNERABILITY (V) - Low**  
Score: 0.436 • Rank: 14/22



**COPING CAPACITY (CC) - Low**  
Score: 0.442 • Rank: 13/22



Population (2020 projected)  
**16,832**



Infant mortality rate  
(per 1,000 live births)  
**0.0**



Poverty rate  
**37.5%**



Population with access  
to improved water  
**94.5%**

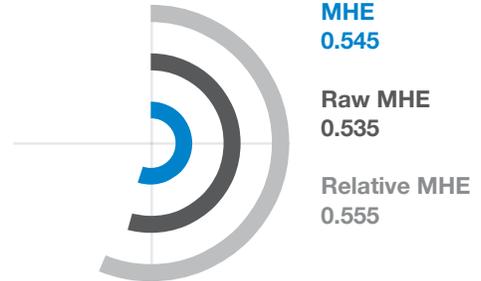


Average years of schooling  
**7**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 4 / 22 MUNICIPALITIES  
SCORE: 0.545



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**99.9%**

**18,077**

**\$142.6 Million**

Critical Infrastructure Exposed:  
**100.0%**



Flood

**1.0%**

**175**

-

Critical Infrastructure Exposed:  
**3.0%**



Earthquake Induced Landslide

**23.5%**

**4,255**

**\$79.1 Million**

Critical Infrastructure Exposed:  
**47.0%**



Precipitation Induced Landslide

**20.3%**

**3,675**

**\$61.9 Million**

Critical Infrastructure Exposed:  
**39.0%**



Volcano

**4.7%**

**844**

**\$20.4 Million**

Critical Infrastructure Exposed:  
**11.0%**



Forest Fire

**10.5%**

**1,905**

**\$15.8 Million**

Critical Infrastructure Exposed:  
**3.0%**



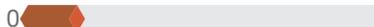
## VULNERABILITY (V)

**RANK: 14 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.436**

Vulnerability in Porto Novo is primarily driven by Gender Inequality and Economic Constraints. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



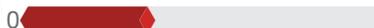
### Environmental Stress

0  1 **SCORE: 0.143** **RANK: 19/22 MUNICIPALITIES ASSESSED**

<b>0.36</b> Livestock Density per Hectare	<b>21.2%</b> Households Using Firewood as Cooking Fuel	<b>0.0%</b> Loss in Tree Cover (2001 to 2020)
--	---	--



### Vulnerable Health Status

0  1 **SCORE: 0.348** **RANK: 19/22 MUNICIPALITIES ASSESSED**

<b>0.0</b> Infant Mortality Rate (per 1,000 live births)	<b>17.4%</b> Disabled Population	<b>5.9</b> TB Prevalence per 100k Persons	<b>17.6</b> HIV Incidence per 100K Persons
---	--	--	---



### Clean Water Vulnerability

0  1 **SCORE: 0.449** **RANK: 9/22 MUNICIPALITIES ASSESSED**

<b>16.9</b> Average Time to Collect Water for Household Use	<b>74.8%</b> Households with Access to Wastewater Services	<b>94.5%</b> Population with Access to Improved Water
--	--	--



### Information Access Vulnerability

0  1 **SCORE: 0.456** **RANK: 15/22 MUNICIPALITIES ASSESSED**

<b>84.3%</b> Adult Literacy Rate	<b>7.0</b> Average Years of Schooling	<b>78.8%</b> Households with Television	<b>61.5%</b> Households with radio	<b>73.2%</b> Households with Internet access
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### Economic Constraints

0  1 **SCORE: 0.598** **RANK: 8/22 MUNICIPALITIES ASSESSED**

<b>0.50</b> Age dependency ratio	<b>0.43</b> Gini index	<b>10.2%</b> Unemployment Rate	<b>37.5%</b> Poverty rate	<b>10.2%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.675** **RANK: 4/22 MUNICIPALITIES ASSESSED**

**35.3%**  
Female Seats  
Municipal City  
Council

**0.67**  
Female to male labor  
participants

**1.17**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.381** **RANK: 17/22 MUNICIPALITIES ASSESSED**

**-0.66%**  
Average annual  
population  
change

**-17.75**  
Net Migration  
Rate (per 1,000  
persons)

**24.16**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 13 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.442**

Porto Novo exhibits weaker Coping Capacity in the areas of Economic Capacity and Health Care Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.232** **RANK: 15/22 MUNICIPALITIES ASSESSED**

**40.61%** **2.97** **123,665**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.689** **RANK: 5/22 MUNICIPALITIES ASSESSED**

**79%** **260.72** **68.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**0.00%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.553** **RANK: 10/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.352** **RANK: 15/22 MUNICIPALITIES ASSESSED**

**2.89** **9.24** **78.2%** **0.59**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.519** **RANK: 14/22 MUNICIPALITIES ASSESSED**

**1.63** **13.54**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.520** **RANK: 8/22 MUNICIPALITIES ASSESSED**

**20.2%** **71.4%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.625** **RANK: 11/22 MUNICIPALITIES ASSESSED**

**91.1%** **75.2%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.751** **RANK: 3/22 MUNICIPALITIES ASSESSED**

**12.71** **12.92** **35.65**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 13 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.503**

Porto Novo's score and ranking are due to Low Vulnerability combined with Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Gender Inequality**



**Economic Constraints**



**Economic Capacity**



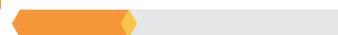
**Health Care Capacity**



## HAZARD-SPECIFIC RISK (HSR)



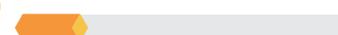
**Drought**



**RANK: 8 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.318**



**Flood**



**RANK: 7 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.167**



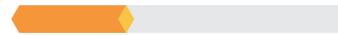
**Earthquake Induced Landslide**



**RANK: 1/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.488**



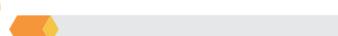
**Precipitation Induced Landslide**



**RANK: 2/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.313**



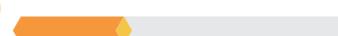
**Forest Fire**



**RANK: 18 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.097**



**Volcano**



**RANK: 5/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.300**



## MULTI-HAZARD RISK (MHR)

**5 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.513



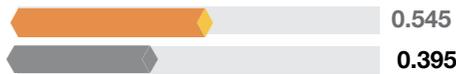
Porto Novo's score and ranking are due to High Multi-hazard Exposure combined with Low Vulnerability and Low Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

PORTO NOVO SCORE  
 COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## PORTO NOVO RECOMMENDATIONS

# 1

### Gender Inequality

Porto Novo ranks 4th highest for overall Gender Inequality, the 4th greatest distance from parity in secondary education enrollment (1.17 females to males), and the 6th lowest proportion of females holding city council seats (35.3%) in municipal government office.

Design and implement intervention strategies to promote and sustain engagement of both male and female students in secondary-level education and reduce dropout rates. Promote development and empowerment of young people through social support structures and employment opportunities including diverse school-to-work programs and leadership academies.

Boost labor participation by promoting workforce opportunities for women that include provisions for family support, such as quality, affordable childcare. Support equal pay for equal work to foster economic growth, reduce economic dependency, and decrease economic constraints.

# 2

### Economic Constraints

Ranking 8th highest for overall Economic Constraints, Porto Novo has the 2nd highest income inequality (Gini coefficient of 0.43) and the 7th highest poverty rate (37.5%).

Assess disaster response and recovery plans to ensure that economically vulnerable populations are identified, as poor populations are often more likely to be severely impacted by disasters and have slower recovery times.

Develop short- and long-term strategies to address and alleviate poverty. Short-term strategies may include public assistance programs that specifically address unsatisfied basic needs (i.e., food, water, housing, education). Over the long term, support government programs to assist in new business and employment opportunities, linked to national and municipal sustainable development goals to diversify livelihoods, and promote equitable distribution of property and economic assets in Porto Novo. Create public policies guaranteeing equal opportunity and fair wages for all. Focusing on sustainable economic opportunities will help to decrease long-term reliance on social assistance.

## PORTO NOVO RECOMMENDATIONS

### 3

#### Economic Capacity

Porto Novo has the 8th lowest overall ranking among municipalities for Economic Capacity, with the 2nd lowest economic activity rate in the country (just under 41% of persons aged 15 and over are active in the workforce). Economic Capacity is further constrained in Porto Novo with average annual expenditures of 123,665 CVE per capita. Given Porto Novo's economic constraints, low labor participation and reduced expenditures per capita may reduce economic protection and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

While recent modernization of the municipality's seaport has led to an increase in commercial opportunities, Porto Novo's economy is driven primarily by agriculture and animal husbandry. Continue to support environmental protections while investing in infrastructure enhancements to encourage formalization and expansion of small farms and artisanal fishing practices. Increase access to credit for small business owners to foster local economic development.

Increase access to vocational, technical, and entrepreneurial training to diversify the local economy and directly support labor market needs in the municipality. Expanding local economic opportunities will bolster labor participation and employment, supporting increased household incomes.

### 4

#### Health Care Capacity

Porto Novo has the 8th lowest overall Health Care Capacity ranking driven by the 2nd lowest vaccination rate for children under age one (78%) and limited numbers of health care personnel (2.89 physicians and 9.24 nurses) per 10,000 persons.

Low vaccination coverage demonstrates the potential for disease outbreaks and the need to increase utilization of medical services in the municipality. Support vaccination campaigns, particularly in vulnerable and remote communities where health care access is limited. Ensure that travel distances to health services are equitable for vulnerable communities.

Porto Novo ranks 4th highest in the country in overall Multi-Hazard Exposure, with higher susceptibility to landslides and volcanic hazards. Ensuring that health care capacity can meet the needs of the population, including the potential for mass casualty events, is vital to protect lives in the event of a disaster. Given the limitations in economic capacity, expanded partnerships with NGOs, private sector, and regional and international donor agencies may be needed to expand health care infrastructure, hospital capabilities, and skilled medical staff in the municipality.

**Better solutions.  
Fewer disasters.**

# Safer world.

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**CABO VERDE**  
**PRAIA**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE PRAIA



## ISLAND: SANTIAGO

Area: 103 km<sup>2</sup>

Praia (beach) is located in the southern tip of Santiago Island, the biggest island of Cabo Verde and part of the Sotavento or Leeward Islands group. Praia is one of nine municipalities on the island, bordered by Ribeira Grande de Santiago municipality to its west, São Domingos to the north, and the Atlantic Ocean to its south. Since the country's independence in 1975, Santiago Island and its capital city Praia have seen extraordinary development with the population doubling since that year. Praia city carries the same name as its municipality. It is the epicenter of the government and economic activities of Cabo Verde and houses almost one-third of the country's population. The Praia International Airport which was expanded in 2005 is located just 3 km from the city center. Praia is home to the University of Cabo Verde (Uni-CV), Cabo Verde's flagship university. Due to drought and problems associated with poor settlement practices, Praia lacks green space. The stone extraction and processing industry is prominent due to the active construction sector driven by strong investment in infrastructure in the capital. Emerging industries include prescription drug production and export (mainly to Africa), food export, and maritime transport to Europe and Africa.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Moderate**  
Score: 0.461 • Rank: 12/22



**RESILIENCE (R) - High**  
Score: 0.588 • Rank: 6/22



**MULTI-HAZARD EXPOSURE (MHE) - Very High**  
Score: 0.560 • Rank: 3/22



**VULNERABILITY (V) - Very Low**  
Score: 0.335 • Rank: 21/22



**COPING CAPACITY (CC) - Moderate**  
Score: 0.511 • Rank: 9/22



Population (2020 projected)  
**170,236**



Infant mortality rate  
(per 1,000 live births)  
**12.0**



Poverty rate  
**13.6%**



Population with access  
to improved water  
**89.2%**

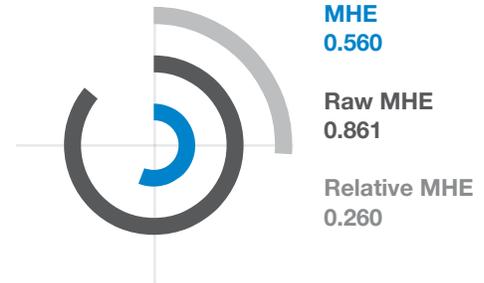


Average years of schooling  
**8.7**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 3 / 22 MUNICIPALITIES  
SCORE: 0.560



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**100.0%**

**164,942**

**\$1.8 Billion**

Critical Infrastructure Exposed:  
**100.0%**



Flood

**3.6%**

**5,930**

-

Critical Infrastructure Exposed:  
**24.0%**



Earthquake Induced Landslide

**0.2%**

**332**

-

Critical Infrastructure Exposed:  
**0.0%**



Precipitation Induced Landslide

**0.4%**

**727**

-

Critical Infrastructure Exposed:  
**0.0%**



Volcano

**0.0%**

**0**

-

Critical Infrastructure Exposed:  
**0.0%**



Forest Fire

**30.6%**

**50,450**

**\$291.9 Million**

Critical Infrastructure Exposed:  
**27.0%**



## VULNERABILITY (V)

**RANK: 21 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.335**

Vulnerability in Praia is primarily driven by Vulnerable Health Status and Economic Constraints. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.330** **RANK: 12/22 MUNICIPALITIES ASSESSED**

<b>1.53</b> Livestock Density per Hectare	<b>4.9%</b> Households Using Firewood as Cooking Fuel	<b>0.7%</b> Loss in Tree Cover (2001 to 2020)
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### Vulnerable Health Status

0  1 **SCORE: 0.651** **RANK: 4/22 MUNICIPALITIES ASSESSED**

<b>12.0</b> Infant Mortality Rate (per 1,000 live births)	<b>9.2%</b> Disabled Population	<b>52.0</b> TB Prevalence per 100k Persons	<b>166.4</b> HIV Incidence per 100K Persons
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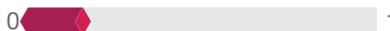
### Clean Water Vulnerability

0  1 **SCORE: 0.196** **RANK: 19/22 MUNICIPALITIES ASSESSED**

<b>6.0</b> Average Time to Collect Water for Household Use	<b>89.5%</b> Households with Access to Wastewater Services	<b>89.2%</b> Population with Access to Improved Water
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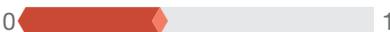
### Information Access Vulnerability

0  1 **SCORE: 0.160** **RANK: 22/22 MUNICIPALITIES ASSESSED**

<b>90.7%</b> Adult Literacy Rate	<b>8.7</b> Average Years of Schooling	<b>89.3%</b> Households with Television	<b>49.3%</b> Households with radio	<b>88.9%</b> Households with Internet access
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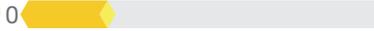
### Economic Constraints

0  1 **SCORE: 0.392** **RANK: 19/22 MUNICIPALITIES ASSESSED**

<b>0.45</b> Age dependency ratio	<b>0.43</b> Gini index	<b>16.0%</b> Unemployment Rate	<b>13.6%</b> Poverty rate	<b>20.7%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.231** **RANK: 22/22 MUNICIPALITIES ASSESSED**

<b>47.6%</b> Female Seats Municipal City Council	<b>-</b> Female to male labor participants	<b>1.09</b> Parity in Secondary Education Enrollment
---	--	--



### Population Pressures

0  1 **SCORE: 0.387** **RANK: 16/22 MUNICIPALITIES ASSESSED**

<b>2.92%</b> Average annual population change	<b>-6.05</b> Net Migration Rate (per 1,000 persons)	<b>22.22</b> Youth Bulge
--	--	-----------------------------



# COPING CAPACITY (CC)

**RANK: 9 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.511**

Praia exhibits weaker Coping Capacity in the areas of Governance and Economic Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0  1 **SCORE: 0.529** **RANK: 5/22 MUNICIPALITIES ASSESSED**

**60.24%** **2.06** **207,485**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



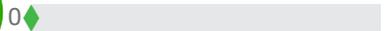
## Governance

0  1 **SCORE: 0.431** **RANK: 20/22 MUNICIPALITIES ASSESSED**

**94%** **382.65** **44.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0  1 **SCORE: 0** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**0.00%**  
Protected Area



## Infrastructure Capacity

0  1 **SCORE: 0.744** **RANK: 1/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.651** **RANK: 5/22 MUNICIPALITIES ASSESSED**

**11.98** **15.27** **93.9%** **0.06**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 1.000** **RANK: 1/22 MUNICIPALITIES ASSESSED**

**6.25** **3.31**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.576** **RANK: 6/22 MUNICIPALITIES ASSESSED**

**18.8%** **76.0%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.811** **RANK: 6/22 MUNICIPALITIES ASSESSED**

**93.2%** **92.9%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.681** **RANK: 8/22 MUNICIPALITIES ASSESSED**

**2.92** **2.13** **3.23**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 6 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.588**

Praia's score and ranking are due to Very Low Vulnerability combined with Moderate Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Vulnerable Health Status



Economic Constraints



Governance



Economic Capacity



## HAZARD-SPECIFIC RISK (HSR)



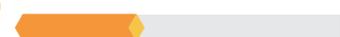
**Drought**



**RANK: 6 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.355**



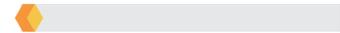
**Flood**



**RANK: 2 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.332**



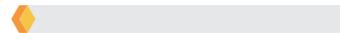
**Earthquake Induced Landslide**



**RANK: 18/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.036**



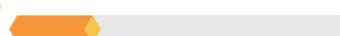
**Precipitation Induced Landslide**



**RANK: 19/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.024**



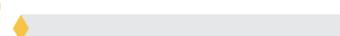
**Forest Fire**



**RANK: 9 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.220**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**12 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.461

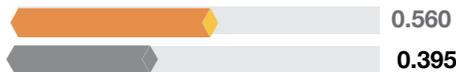


Praia's score and ranking are due to Very High Multi-hazard Exposure combined with Very Low Vulnerability and Moderate Coping Capacity scores.

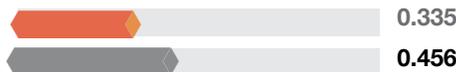
### Multi-hazard risk component scores compared to overall average country scores:



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## PRAIA RECOMMENDATIONS

### 1

#### Vulnerable Health Status

Praia ranks 4th highest for overall Vulnerable Health Status driven by the 2nd highest incidence of HIV (166.4 per 100,000 persons) and 4th highest prevalence of tuberculosis (52 cases per 100,000 persons).

Increase investments in community health education and outreach, including best practices for reducing communicable disease transmission. Additionally, ensure that WASH infrastructure meets the needs of vulnerable populations to help mitigate the impact of communicable diseases. Take steps to evaluate and safeguard existing infrastructure from hazard impacts, including droughts and floods, which regularly affect the population of Praia.

Ensure that disaster management, evacuation, and shelter plans include special considerations for people with pre-existing health conditions. Communities with vulnerable health status are more susceptible to the negative health impacts of disasters. Praia ranks 3rd highest in the country in overall Multi-hazard Exposure. The population of Praia is highly exposed to both droughts and floods, necessitating close coordination between disaster management and public health officials for disaster plans. Consider additional precautions necessary to prevent transmission of COVID-19 among vulnerable populations in shelters. Reducing disparities in health status will also help to alleviate economic constraints, which contribute to Praia's overall vulnerability.

### 2

#### Economic Constraints

Despite Praia's 4th lowest overall Economic Constraints ranking and highest percentage of households owning vehicles (21%), the municipality has the 3rd highest unemployment rate in the country (16%) and has the 5th highest income disparity in the country (Gini coefficient of 0.43).

Assess disaster response and recovery plans to ensure that economically vulnerable populations are identified, as poor populations and people living in informal settlements are more likely to be severely impacted by disasters and have slower recovery times. Identify low-income settlement areas and poorly constructed housing units that may be more susceptible to hazard impacts. Enforce building codes to increase the resilience of the built environment in Praia.

Support government programs to assist in new business and employment opportunities, linked to national and municipal sustainable development goals to diversify livelihoods, and promote equitable distribution of property and economic assets in Praia. Create public policies guaranteeing equal opportunity and fair wages for all. Focusing on sustainable economic opportunities will help to ensure that populations' basic needs are satisfied, decreasing long-term reliance on social benefits.

## PRAIA RECOMMENDATIONS

---

# 3

### Governance

Praia has the 3rd lowest ranking for overall Governance, with the lowest voter participation rate in local elections (44%), and the 4th highest crime rate (383 crimes reported per 10,000 persons) in the country.

Focus on building civic participation at the community-level to increase public voice and accountability, building trust in government. Encourage public participation in local disaster management, including public committees, community emergency response teams, and exercises.

In addition to fostering growth in employment opportunities, reduce the crime burden by strengthening support for public security through increased law enforcement and surveillance, youth education and personal safety programs, and community support programs for ex-criminals.

# 4

### Economic Capacity

While Praia ranks 5th highest for overall Economic Capacity in Cabo Verde, it has just two financial service locations per 10,000 persons. Additionally, findings show that income disparities and unemployment drive economic constraints in the municipality, despite it being the economic center of the country.

Continue to support sustainable urban development in the municipality, ensuring that infrastructure enhancements do not contribute to environmental stress or increase hazard exposure. Expand financial services to increase access to credit for small businesses and foster local economic development. Promote public-private partnerships and municipal contingency funds to ensure financial liquidity during disasters.

Increase access to vocational, technical, and entrepreneurial training to directly support labor market needs, diversify the municipal economy, and supply skilled labor needed to advance sustainable development. Expanding local economic opportunities will help to reduce income inequalities and increase household incomes.

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**CABO VERDE**

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# **RIBEIRA BRAVA**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE

## RIBEIRA BRAVA



### ISLAND: SAO NICOLAU

Area: 225 km<sup>2</sup>

One of two municipalities on the island of São Nicolau, Ribeira Brava occupies the eastern two-thirds of the island's territory. Ribeira Brava was established in 2005 along with Tarrafal de São Nicolau, when the island was divided into two municipalities. It is made up of two parishes: Nossa Senhora do Rosário and Nossa Senhora da Lapa. The capital city with the same name houses the diocese of Cabo Verde. The highest mountain, Monte Gordo, is situated in Ribeira Brava with an elevation of 1304 meters. Ribeira Brava through its varied terrain is attractive for mountain tourism, as well as historical and cultural tourism. The Monte do Alto das Cabaças Nature Reserve is one of the main tourist attractions with native flora and species. Black sand beaches also attract tourists. Agriculture, livestock, and fishing are the main economic drivers followed by tourism. Despite the challenges stemming from drought, sloping terrain, and small farmlands, new agricultural practices have helped increase agricultural yield especially in the production of sugarcane, bananas, and root vegetables. Industry is limited to carpentry, mechanical repairs, bakeries, and brandy shops.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Very Low**  
Score: 0.361 • Rank: 19/22



**RESILIENCE (R) - Very High**  
Score: 0.640 • Rank: 2/22



**MULTI-HAZARD EXPOSURE (MHE) - Low**  
Score: 0.363 • Rank: 15/22



**VULNERABILITY (V) - Very Low**  
Score: 0.398 • Rank: 18/22



**COPING CAPACITY (CC) - Very High**  
Score: 0.678 • Rank: 1/22



Population (2020 projected)  
**6,836**



Infant mortality rate  
(per 1,000 live births)  
**10.0**



Poverty rate  
**24.5%**



Population with access  
to improved water  
**94.9%**

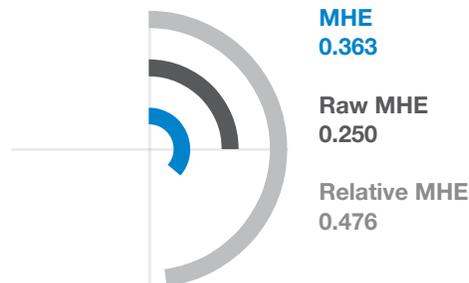


Average years of schooling  
**6.4**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 15 / 22 MUNICIPALITIES  
SCORE: 0.363



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**100.0%**

6,361

\$46.6 Million

Critical Infrastructure Exposed:  
100.0%



Flood

**1.1%**

69

-

Critical Infrastructure Exposed:  
10.0%



Earthquake Induced Landslide

**13.2%**

841

\$27.6 Million

Critical Infrastructure Exposed:  
4.0%



Precipitation Induced Landslide

**1.1%**

71

\$23.8 Million

Critical Infrastructure Exposed:  
3.0%



Volcano

**0.0%**

0

-

Critical Infrastructure Exposed:  
0.0%



Forest Fire

**30.8%**

1,957

\$28.7 Million

Critical Infrastructure Exposed:  
14.0%



## VULNERABILITY (V)

**RANK: 18 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.398**

Vulnerability in Ribeira Brava is primarily driven by Gender Inequality and Economic Constraints. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0 1 **SCORE: 0.128** **RANK: 20/22 MUNICIPALITIES ASSESSED**

<b>0.27</b> Livestock Density per Hectare	<b>5.6%</b> Households Using Firewood as Cooking Fuel	<b>1.0%</b> Loss in Tree Cover (2001 to 2020)
--	--	--



### Vulnerable Health Status

0 1 **SCORE: 0.414** **RANK: 16/22 MUNICIPALITIES ASSESSED**

<b>10.0</b> Infant Mortality Rate (per 1,000 live births)	<b>11.3%</b> Disabled Population	<b>–</b> TB Prevalence per 100k Persons	<b>28.7</b> HIV Incidence per 100K Persons
--	--	--	---



### Clean Water Vulnerability

0 1 **SCORE: 0.300** **RANK: 12/22 MUNICIPALITIES ASSESSED**

<b>15.0</b> Average Time to Collect Water for Household Use	<b>87.5%</b> Households with Access to Wastewater Services	<b>94.9%</b> Population with Access to Improved Water
--	--	--



### Information Access Vulnerability

0 1 **SCORE: 0.362** **RANK: 17/22 MUNICIPALITIES ASSESSED**

<b>89.6%</b> Adult Literacy Rate	<b>6.4</b> Average Years of Schooling	<b>85.5%</b> Households with Television	<b>72.7%</b> Households with radio	<b>70.2%</b> Households with Internet access
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### Economic Constraints

0 1 **SCORE: 0.418** **RANK: 18/22 MUNICIPALITIES ASSESSED**

<b>0.53</b> Age dependency ratio	<b>0.40</b> Gini index	<b>7.0%</b> Unemployment Rate	<b>24.5%</b> Poverty rate	<b>15.8%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.798** **RANK: 1/22 MUNICIPALITIES ASSESSED**

**53.9%**  
Female Seats  
Municipal City  
Council

**0.47**  
Female to male labor  
participants

**1.22**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.369** **RANK: 18/22 MUNICIPALITIES ASSESSED**

**-0.98%**  
Average annual  
population  
change

**-22.3**  
Net Migration  
Rate (per 1,000  
persons)

**21.59**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 1 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.678**

Ribeira Brava exhibits weaker Coping Capacity in the areas of Economic Capacity and Transportation Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.612** **RANK: 3/22 MUNICIPALITIES ASSESSED**

**56.70%** **7.31** **145,262**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.779** **RANK: 2/22 MUNICIPALITIES ASSESSED**

**91%** **192.39** **66.3%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0.392** **RANK: 8/22 MUNICIPALITIES ASSESSED**

**1.81%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.738** **RANK: 2/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.701** **RANK: 3/22 MUNICIPALITIES ASSESSED**

**2.81** **16.88** **98.0%** **1.46**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.654** **RANK: 4/22 MUNICIPALITIES ASSESSED**

**2.14** **6.81**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.705** **RANK: 2/22 MUNICIPALITIES ASSESSED**

**55.5%** **67.0%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.825** **RANK: 5/22 MUNICIPALITIES ASSESSED**

**95.2%** **87.9%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.808** **RANK: 2/22 MUNICIPALITIES ASSESSED**

**4.54** **4.74** **21.94**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 2 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.640**

Ribeira Brava's score and ranking are due to Very Low Vulnerability combined with Very High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Gender Inequality



Economic Constraints



Economic Capacity



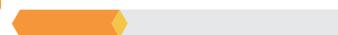
Transportation Capacity



## HAZARD-SPECIFIC RISK (HSR)



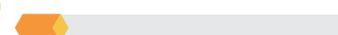
**Drought**



**RANK: 13 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.291**



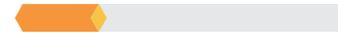
**Flood**



**RANK: 9 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.110**



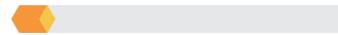
**Earthquake Induced Landslide**



**RANK: 5/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.221**



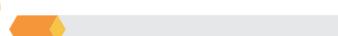
**Precipitation Induced Landslide**



**RANK: 14/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.082**



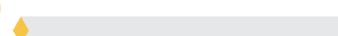
**Forest Fire**



**RANK: 16 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.118**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

19 / 22

RANK WITHIN MUNICIPALITIES  
Score: 0.361



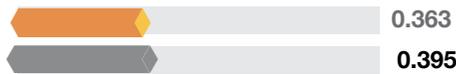
Ribeira Brava's score and ranking are due to Low Multi-hazard Exposure combined with Very Low Vulnerability and Very High Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

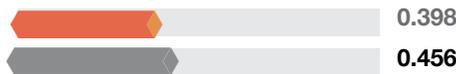
RIBEIRA BRAVA SCORE  
COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## RIBEIRA BRAVA RECOMMENDATIONS

# 1

### Gender Inequality

Ranking highest for overall Gender Inequality, Ribeira Brava parallels the municipality of Paul with the greatest distance to parity in secondary education (1.22 females to males enrolled). Despite a greater number of females attending higher levels of education, the ratio of females to males participating in the labor force (0.47) is 3rd lowest.

Design and implement intervention strategies to promote and sustain engagement of both male and female students in secondary-level education and reduce dropout rates. Promote development and empowerment of young people through social support structures and employment opportunities including diverse school-to-work programs and leadership academies.

Boost labor participation by promoting workforce opportunities for women that include provisions for family support, such as quality, affordable childcare. Support equal pay for equal work to foster economic growth, reduce economic dependency, and decrease economic constraints.

# 2

### Economic Constraints

While Ribeira Brava ranks 5th lowest ranking for overall Economic Constraints, with a comparatively high percentage of vehicle ownership (16%), and the 5th lowest unemployment rate (7%), findings show that the municipality has the 8th greatest income disparity in Cabo Verde (Gini coefficient of 0.4).

Focus on reducing income inequalities by supporting government programs to assist in new business and employment opportunities. Link economic development to national and municipal sustainable development goals to diversify livelihoods and promote equitable distribution of property and economic assets in the municipality. Create public policies guaranteeing equal opportunity and fair wages for all. Focusing on sustainable economic opportunities will help to decrease long-term reliance on social benefits.

Assess disaster response and recovery plans to ensure that economically vulnerable populations are identified, as poor populations are more likely to be severely impacted by disasters and have slower recovery times.

## RIBEIRA BRAVA RECOMMENDATIONS

### 3

#### Economic Capacity

While Ribeira Brava ranks 3rd highest for overall Economic Capacity, opportunities exist to increase economic resilience. The economic activity rate in the municipality is 56.7% (ranks 6th) and average annual expenditures per capita of 145,262 CVE (ranks 7th highest), however, income disparities increase economic constraints for segments of the municipal population.

Ribeira Brava's economy is driven primarily by agriculture and fishing, followed by tourism. Continue to support sustainable development and economic diversification in the municipality, ensuring that infrastructure enhancements do not contribute to environmental stress or increase hazard exposure. Promote public-private partnerships and the establishment of municipal contingency funds to ensure financial liquidity during disasters.

Increase access to vocational, technical, and entrepreneurial training to diversify the local economy and directly support labor market needs in the municipality. Expanding local economic opportunities will bolster labor participation and employment, supporting increased household incomes.

### 4

#### Transportation Capacity

Though Ribeira Brava ranks 4th highest in overall Transportation Capacity, further improvements to the road network can increase resilience. The municipality ranks 11th lowest in road density, with 2.14 km per sq km.

Findings show that Ribeira Brava has significant exposure to drought, forest fires, and landslides. Improvements and regular maintenance of road networks support timely evacuations and response and recovery activities.

Secure investments for continued expansion and maintenance of transportation networks, particularly in underserved areas to meet increasing demand and improve response times and access to emergency services. Explore public-private partnerships to maintain the quality of existing transportation infrastructure. By bolstering transportation capacity, Ribeira Brava will have the added benefit of supporting sustainable economic growth through greater accessibility of goods and services. Protect investments and service provision by implementing mitigation strategies (e.g., erosion prevention) to reduce hazard impacts. Evacuation routes and emergency response plans should be adapted as construction and maintenance is planned and implemented.

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**CABO VERDE**

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# **RIBEIRA GRANDE**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE

## RIBEIRA GRANDE



### ISLAND: SANTO ANTAO

Area: 167 km<sup>2</sup>

The municipality of Ribeira Grande is located in the northern part of Santo Antão Island, the westernmost and second-largest island of Cabo Verde, and the largest of the Barlavento Islands group. Ribeira Grande borders the municipalities of Porto Novo to the south and Paul to the southeast and occupies approximately 21% of the island's land area. Ribeira Grande is characterized by deep valleys and well-defined hydrographic basins and takes its name from the Ribeira Grande Valley. While the diverse landscape, including the Moroços Natural Park, presents a rich tourism potential, the main economic activities are limited forms of agriculture, livestock, and fishing. The steep topography presents challenges to development, especially with regard to infrastructure, housing, irrigation, and transportation. Private sector investment remains limited with a low concentration of capital and the low valuation of human resources.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Low**  
Score: 0.447 • Rank: 14/22



**RESILIENCE (R) - Moderate**  
Score: 0.558 • Rank: 9/22



**MULTI-HAZARD EXPOSURE (MHE) - High**  
Score: 0.458 • Rank: 7/22



**VULNERABILITY (V) - Low**  
Score: 0.406 • Rank: 16/22



**COPING CAPACITY (CC) - High**  
Score: 0.521 • Rank: 8/22



Population (2020 projected)  
**15,444**



Infant mortality rate  
(per 1,000 live births)  
**19.8**



Poverty rate  
**25.9%**



Population with access  
to improved water  
**97.1%**

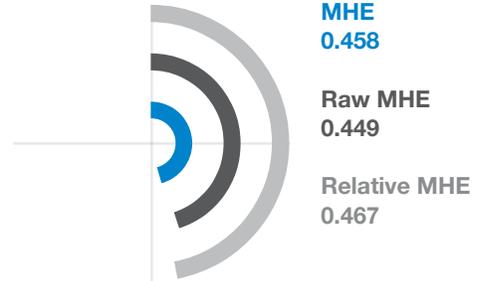


Average years of schooling  
**7.2**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 7 / 22 MUNICIPALITIES  
SCORE: 0.458



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**84.5%**

**13,294**

**\$127.4 Million**

**Critical Infrastructure Exposed:  
94.0%**



Flood

**6.6%**

**1,033**

-

**Critical Infrastructure Exposed:  
10.0%**



Earthquake Induced Landslide

**9.9%**

**1,557**

**\$28.1 Million**

**Critical Infrastructure Exposed:  
22.0%**



Precipitation Induced Landslide

**37.1%**

**5,844**

**\$44.9 Million**

**Critical Infrastructure Exposed:  
37.0%**



Volcano

**0.0%**

**0**

-

**Critical Infrastructure Exposed:  
0.0%**



Forest Fire

**23.5%**

**3,702**

**\$147.6 Million**

**Critical Infrastructure Exposed:  
20.0%**



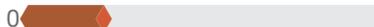
## VULNERABILITY (V)

**RANK: 16 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.406**

Vulnerability in Ribeira Grande is primarily driven by Information Access Vulnerability and Economic Constraints. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.221** **RANK: 17/22 MUNICIPALITIES ASSESSED**

<b>0.46</b> Livestock Density per Hectare	<b>26.2%</b> Households Using Firewood as Cooking Fuel	<b>0.1%</b> Loss in Tree Cover (2001 to 2020)
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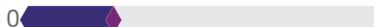
### Vulnerable Health Status

0  1 **SCORE: 0.438** **RANK: 12/22 MUNICIPALITIES ASSESSED**

<b>19.8</b> Infant Mortality Rate (per 1,000 live births)	<b>11.6%</b> Disabled Population	<b>25.0</b> TB Prevalence per 100k Persons	<b>0.0</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.249** **RANK: 15/22 MUNICIPALITIES ASSESSED**

<b>14.5</b> Average Time to Collect Water for Household Use	<b>89.3%</b> Households with Access to Wastewater Services	<b>97.1%</b> Population with Access to Improved Water
--	--	--



### Information Access Vulnerability

0  1 **SCORE: 0.622** **RANK: 7/22 MUNICIPALITIES ASSESSED**

<b>83.0%</b> Adult Literacy Rate	<b>7.2</b> Average Years of Schooling	<b>78.2%</b> Households with Television	<b>58.0%</b> Households with radio	<b>24.1%</b> Households with Internet access
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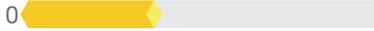
### Economic Constraints

0  1 **SCORE: 0.537** **RANK: 11/22 MUNICIPALITIES ASSESSED**

<b>0.56</b> Age dependency ratio	<b>0.39</b> Gini index	<b>9.3%</b> Unemployment Rate	<b>25.9%</b> Poverty rate	<b>8.7%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.367** **RANK: 14/22 MUNICIPALITIES ASSESSED**

**41.2%**  
Female Seats  
Municipal City  
Council

**0.63**  
Female to male labor  
participants

**1.07**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.405** **RANK: 15/22 MUNICIPALITIES ASSESSED**

**-1.82%**  
Average annual  
population  
change

**-18.48**  
Net Migration  
Rate (per 1,000  
persons)

**22.07**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 8 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.521**

Ribeira Grande exhibits weaker Coping Capacity in the areas of Economic Capacity and Transportation Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.414** **RANK: 11/22 MUNICIPALITIES ASSESSED**

**41.09%** **5.83** **148,448**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.634** **RANK: 10/22 MUNICIPALITIES ASSESSED**

**65%** **228.89** **66.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**0.00%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.690** **RANK: 4/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.825** **RANK: 1/22 MUNICIPALITIES ASSESSED**

**8.40** **21.59** **99.5%** **0.65**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.610** **RANK: 8/22 MUNICIPALITIES ASSESSED**

**3.02** **17.31**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.624** **RANK: 5/22 MUNICIPALITIES ASSESSED**

**44.4%** **66.2%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.649** **RANK: 10/22 MUNICIPALITIES ASSESSED**

**93.3%** **70.8%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.743** **RANK: 5/22 MUNICIPALITIES ASSESSED**

**6.71** **6.05** **19.43**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 9 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.558**

Ribeira Grande's score and ranking are due to Low Vulnerability combined with High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Information  
Access  
Vulnerability



Economic  
Constraints



Economic Capacity



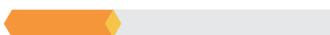
Transportation  
Capacity



## HAZARD-SPECIFIC RISK (HSR)



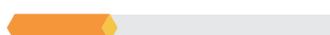
**Drought**



**RANK: 12 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.296**



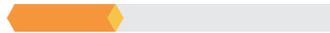
**Flood**



**RANK: 3 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.277**



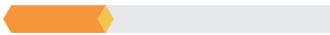
**Earthquake Induced  
Landslide**



**RANK: 2/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.294**



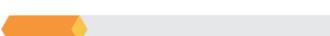
**Precipitation Induced  
Landslide**



**RANK: 5/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.276**



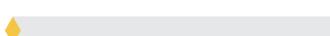
**Forest Fire**



**RANK: 10 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.205**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

14 / 22

RANK WITHIN MUNICIPALITIES  
Score: 0.447



Ribeira Grande's score and ranking are due to High Multi-hazard Exposure combined with Low Vulnerability and High Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

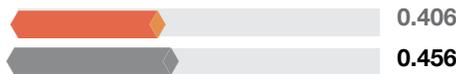
RIBEIRA GRANDE SCORE  
COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## RIBEIRA GRANDE RECOMMENDATIONS

# 1

### Information Access Vulnerability

Ranking 7th highest for overall Information Access Vulnerability, Ribeira Grande has the lowest percentage of households with access to the internet (24%). 83% of the adult population is literate, and 78.2% of households have a television.

Implement community outreach and education programs focused on hazard awareness, disaster preparedness, and health and safety practices to build community resilience. Include information and resources for audiences requiring special considerations such as the very young, elderly, and disabled populations. Boost public-private collaboration and coordination to ensure that hazard warning information is accessible and disseminated as broadly as possible through multiple communications channels.

Work with communities to better understand the underlying factors that represent barriers to education and literacy. Focus efforts on providing programs to increase school attendance and completion of secondary education. Address disparities in information access resulting from related economic constraints.

# 2

### Economic Constraints

Ranking 11th highest for Economic Constraints, Ribeira Grande's score is driven by having the 5th highest age dependency ratio. More than half of the population (0.56) is under the age of 15 and over 64 years of age and therefore dependent upon the working age population (ages 15 to 64).

Strengthen collaboration between social service entities, private sector organizations and NGOs to coordinate poverty reduction efforts and delivery of services. Strengthen social assistance programs that provide benefits for elderly, low income, and single-parent households.

Assess disaster response and recovery plans to ensure that economically vulnerable and dependent populations are identified, as poor populations are more likely to be severely impacted by disasters and have slower recovery times. In addition, elderly populations and families with young children may need additional support to accommodate special needs during evacuation and in shelters.

## RIBEIRA GRANDE RECOMMENDATIONS

### 3

#### Economic Capacity

Ribeira Grande's overall Economic Capacity ranking is constrained by having the 3rd lowest economic activity rate in the country, with just over 41% of persons over the age of 15 being active in the workforce. Given Ribeira Grande's economic constraints, low labor participation may reduce economic protection and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

While Ribeira Grande's economy is driven primarily by agriculture and fishing, the diverse landscape presents potential to develop tourism. Private sector investments in the municipality are relatively low. Invest in human capital by increasing access to vocational, technical, and entrepreneurial training to diversify the local economy and directly support labor market needs in the municipality. Expanding local economic opportunities will bolster labor participation and employment, supporting increased household incomes.

Continue to support environmental protections while investing in infrastructure enhancements to encourage and expand tourism in the municipality. Ensure that new development is sustainable and does not contribute to environmental stress or increase hazard exposure.

### 4

#### Transportation Capacity

While Ribeira Grande has the 3rd highest road density in the country, it has the 9th greatest average distance to a port or airport facility in the country (over 17 km).

Ribeira Grande ranks 7th highest in Cabo Verde for overall Multi-hazard Exposure, with significant exposure to drought, forest fires, landslides, and flooding. Limited transportation networks hamper timely evacuations and delay response and recovery activities. Damaged roads, seaports and airports can further postpone delivery and transport of much needed relief supplies and delay recovery processes.

Secure investments for continued expansion and maintenance of transportation networks. Explore public-private partnerships to improve and maintain the quality of existing transportation infrastructure and increase connectivity between islands and municipalities. By bolstering transportation capacity, Ribeira Grande will have the added benefit of supporting sustainable economic growth through greater accessibility of goods and services. Protect investments and service provision by implementing mitigation strategies (e.g., storm water drainage, erosion prevention) to reduce hazard impacts. Evacuation routes and emergency response plans should be adapted as construction and maintenance are planned and implemented.

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Fewer disasters.**

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**CABO VERDE**

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# **RIBEIRA GRANDE DE SANTIAGO**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE

## RIBEIRA GRANDE DE SANTIAGO

### ISLAND: SANTIAGO

Area: 137 km<sup>2</sup>

The municipality of Ribeira Grande de Santiago is located on the southwestern part of Santiago Island and was established in 2005. The municipality is better known through its capital city, Cidade Velha (or Cidade de Santiago) considered the cradle of the Cabo Verdean nation since it is one of the oldest settlements in the Sub-Saharan African Region going back to the 15th century. Cidade Velha is also one of the World Heritage Sites designated by UNESCO and houses the oldest Catholic church in West Africa. Today agriculture, livestock, and fishing are the main economic activities of this municipality. While both irrigated and rainfed methods are used, agricultural supply falls short of the market demands due to low rainfall, soil erosion, steep slopes, stony terrain, short supply of water due to lack of infrastructure (boreholes, galleries, dams), and other factors. The raising of livestock, mainly pigs, goats, cattle, and poultry, is the basis of livelihood for most families. Fishing is still in artisanal forms requiring more investment for larger fishing vessels, ice production, and storage for better yield. Also, artisanal production in the form of sweets, juices, jewelry, bone and woodwork, and embroidery especially through women's cooperatives provides subsistence to communities. The municipality has recently installed a local EOC through SNPC-B and the city council.



## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - High**  
Score: 0.501 • Rank: 7/22



**RESILIENCE (R) - Low**  
Score: 0.449 • Rank: 17/22



**MULTI-HAZARD EXPOSURE (MHE) - Low**  
Score: 0.400 • Rank: 12/22



**VULNERABILITY (V) - High**  
Score: 0.488 • Rank: 8/22



**COPING CAPACITY (CC) - Very Low**  
Score: 0.386 • Rank: 18/22



Population (2020 projected)  
**8,556**



Infant mortality rate  
(per 1,000 live births)  
**13.1**



Poverty rate  
**29.7%**



Population with access  
to improved water  
**75.1%**

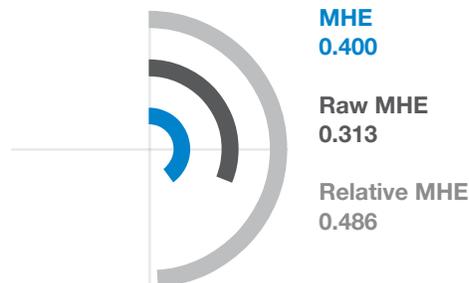


Average years of schooling  
**7**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 12 / 22 MUNICIPALITIES  
SCORE: 0.400



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**99.8%**

**12,713**

**\$73 Million**

**Critical Infrastructure Exposed:**  
**100.0%**



Flood

**1.1%**

**140**

-

**Critical Infrastructure Exposed:**  
**3.0%**



Earthquake Induced Landslide

**1.8%**

**229**

-

**Critical Infrastructure Exposed:**  
**13.0%**



Precipitation Induced Landslide

**6.2%**

**786**

**\$26.7 Million**

**Critical Infrastructure Exposed:**  
**13.0%**



Volcano

**0.0%**

**0**

-

**Critical Infrastructure Exposed:**  
**0.0%**



Forest Fire

**73.3%**

**9,331**

**\$70.2 Million**

**Critical Infrastructure Exposed:**  
**43.0%**



## VULNERABILITY (V)

**RANK: 8 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.488**

Vulnerability in Ribeira Grande De Santiago is primarily driven by Clean Water Access Vulnerability and Information Access Vulnerability. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.416** **RANK: 6/22 MUNICIPALITIES ASSESSED**

<b>0.73</b> Livestock Density per Hectare	<b>44.9%</b> Households Using Firewood as Cooking Fuel	<b>1.8%</b> Loss in Tree Cover (2001 to 2020)
--	---	--



### Vulnerable Health Status

0  1 **SCORE: 0.419** **RANK: 15/22 MUNICIPALITIES ASSESSED**

<b>13.1</b> Infant Mortality Rate (per 1,000 live births)	<b>11.5%</b> Disabled Population	<b>-</b> TB Prevalence per 100k Persons	<b>11.8</b> HIV Incidence per 100K Persons
--	--	--	---



### Clean Water Vulnerability

0  1 **SCORE: 0.742** **RANK: 3/22 MUNICIPALITIES ASSESSED**

<b>21.7</b> Average Time to Collect Water for Household Use	<b>64.3%</b> Households with Access to Wastewater Services	<b>75.1%</b> Population with Access to Improved Water
--	--	--



### Information Access Vulnerability

0  1 **SCORE: 0.622** **RANK: 8/22 MUNICIPALITIES ASSESSED**

<b>79.7%</b> Adult Literacy Rate	<b>7.0</b> Average Years of Schooling	<b>81.6%</b> Households with Television	<b>24.1%</b> Households with radio	<b>73.1%</b> Households with Internet access
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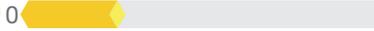
### Economic Constraints

0  1 **SCORE: 0.430** **RANK: 17/22 MUNICIPALITIES ASSESSED**

<b>0.53</b> Age dependency ratio	<b>0.33</b> Gini index	<b>6.7%</b> Unemployment Rate	<b>29.7%</b> Poverty rate	<b>7.1%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.260** **RANK: 20/22 MUNICIPALITIES ASSESSED**

**53.9%**  
Female Seats  
Municipal City  
Council

**0.83**  
Female to male labor  
participants

**1.1**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.526** **RANK: 6/22 MUNICIPALITIES ASSESSED**

**0.28%**  
Average annual  
population  
change

**-44.2**  
Net Migration  
Rate (per 1,000  
persons)

**28.25**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 18 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.386**

Ribeira Grande De Santiago exhibits weaker Coping Capacity in the areas of Health Care Capacity and Economic Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.243** **RANK: 14/22 MUNICIPALITIES ASSESSED**

**53.25%** **1.17** **113,072**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.671** **RANK: 6/22 MUNICIPALITIES ASSESSED**

**37%** **117.8** **74.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**0.00%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.372** **RANK: 20/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.067** **RANK: 22/22 MUNICIPALITIES ASSESSED**

**1.19** **7.06** **71.8%** **0**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.481** **RANK: 15/22 MUNICIPALITIES ASSESSED**

**1.42** **14.67**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.319** **RANK: 15/22 MUNICIPALITIES ASSESSED**

**14.3%** **62.7%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.447** **RANK: 16/22 MUNICIPALITIES ASSESSED**

**90.1%** **54.8%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.545** **RANK: 19/22 MUNICIPALITIES ASSESSED**

**12.52** **5.09** **7.01**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 17 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.449**

Ribeira Grande De Santiago's score and ranking are due to High Vulnerability combined with Very Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Clean Water Access Vulnerability**



**Information Access Vulnerability**



**Health Care Capacity**



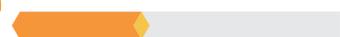
**Economic Capacity**



## HAZARD-SPECIFIC RISK (HSR)



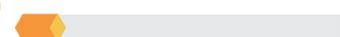
**Drought**



**RANK: 5 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.355**



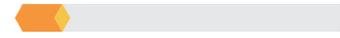
**Flood**



**RANK: 11 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.102**



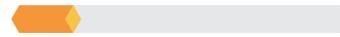
**Earthquake Induced Landslide**



**RANK: 12/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.115**



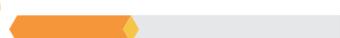
**Precipitation Induced Landslide**



**RANK: 10/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.158**



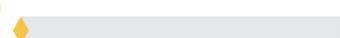
**Forest Fire**



**RANK: 3 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.332**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**7 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.501

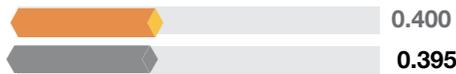


Ribeira Grande De Santiago's score and ranking are due to Low Multi-hazard Exposure combined with High Vulnerability and Very Low Coping Capacity scores.

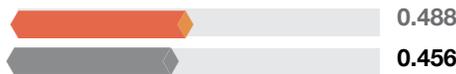
### Multi-hazard risk component scores compared to overall average country scores:



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## RIBEIRA GRANDE DE SANTIAGO RECOMMENDATIONS

1

### Clean Water Access Vulnerability

Ribeira Grande De Santiago has the 3rd highest Clean Water Access Vulnerability in Cabo Verde with the 3rd lowest percentage of households with access to improved wastewater systems (just 64.3% have access to improved sanitation). While 75% of the population has access to an improved water source, households on average require 22 minutes to travel to a main water source, collect water and return home.

Within the municipality and across the nation, chronic drought conditions threaten water security. With support from NGOs, regional, and international partners, prioritize investments to improve and extend safe and reliable water delivery and wastewater treatment systems within the municipality. Even in areas with improved sanitation infrastructure, severe drought conditions significantly increase the concentration of downstream contaminants. Increasing access to improved water and sanitation has positive cascading effects on public and environmental health, quality of life, economic opportunities, and gender equality by safeguarding water supplies and reducing time needed to gather water.

Continue efforts to reduce the high cost of water services, especially in poor and vulnerable communities.

2

### Information Access Vulnerability

Ranking 8th for overall Information Access Vulnerability, Ribeira Grande De Santiago has the second highest illiteracy rate in the country. Just 79.7% of the adult population is literate. Other drivers include limited household access to radio (24% of households), and average years of schooling (7 years).

Focus efforts on providing programs to increase school attendance and completion of secondary education. Work with communities to better understand the underlying factors that present barriers to education and literacy.

Implement community outreach and education programs focused on hazard awareness, disaster preparedness, and health and safety practices to build community resilience. Include information and resources for audiences requiring special considerations such as the very young, elderly, and disabled populations. Boost public-private collaboration and coordination to ensure that hazard warning information is disseminated as broadly as possible through multiple communications channels.

## RIBEIRA GRANDE DE SANTIAGO RECOMMENDATIONS

### 3

#### Health Care Capacity

Ribeira Grande De Santiago has the lowest overall Health Care Capacity ranking in the country, with no hospital services, the lowest vaccination rate for children under one year of age (71.8%), and limited numbers of health care personnel (1.19 physicians and 7.06 nurses) per 10,000 persons.

Low vaccination coverage demonstrates the potential for disease outbreaks and the need to increase utilization of medical services in the municipality. Support vaccination campaigns, particularly in vulnerable and remote communities where health care access is limited. Work to assess and remove barriers to health care access. Ensure that travel distances to health services are equitable for vulnerable communities.

Expand health care capacity to meet the routine and emergency needs of the population, including the potential for mass casualty events. Given the limitations in economic capacity, expanded partnerships with NGOs, private sector, regional hospital systems, and international donor agencies may be needed to expand health care infrastructure, hospital capabilities, and skilled medical staff in the municipality. While encouraging long-term expansion of the health care system, support underserved communities by developing a program for visiting medical practitioners to increase access to preventive and acute care in the municipality.

### 4

#### Economic Capacity

Ribeira Grande De Santiago's 9th lowest overall ranking for Economic Capacity is driven by having the 7th lowest average annual expenditures (113,072 CVE) per capita and just over one (1.17) financial service location per 10,000 persons. Given Ribeira Grande De Santiago's overall vulnerability (8th highest in Cabo Verde), low expenditures per capita and limited financial services may reduce economic protection and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

Ribeira Grande De Santiago's economy is driven primarily by agriculture and fishing. However, agricultural production is hampered by drought, clean water access vulnerability, transport and storage shortages, and limitations in training, technical assistance, and access to credit. Continue to support environmental protections and invest in infrastructure enhancements to encourage modernization of agricultural practices. Support local farmers with education and training related to climate adaptation and drought-resistant production. Increase access to credit for small business owners to foster local economic development.

Increase access to vocational, technical, and entrepreneurial training to diversify the local economy and directly support labor market needs in the municipality. Expanding local economic opportunities will bolster labor participation and employment, supporting increased household incomes.

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**CABO VERDE**

**SAL**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE SAL



## ISLAND: SAL

Area: 220 km<sup>2</sup>

The island of Sal (salt) with the same name as its only municipality is located in the northeast of the archipelago, with Boa Vista as a neighbor to the south and São Nicolau to the west. It is part of the Barlavento (Windward) Islands group. The municipality has one parish: Nossa Senhora das Dores. Dry and sunny, the island is made up of deserts, dry valleys, and sandy beaches and is mostly flat with the highest elevation being Monte Grande at 403 meters. Because of its topography, Sal is one of the more vulnerable islands to climate change impacts. For many years, as its name implies, Sal was a center for salt mining, with salt extraction as the main driver of the island economy, however with the depletion of salt reserves, the population has turned to other forms of economic activity, especially tourism and related sectors such as construction and airport operations. An international airport helps draw tourists to the island. The island's main city and commercial center, Espargos, attracts visitors with its cafes, restaurants, banks, and retail stores. Other cities like Palmeira and Santa Maria offering diving activities, long sandy beaches, and luxury accommodations. Surfing is also popular, especially in the winter months from November to March.

## RISK AND VULNERABILITY COMPONENT SCORE



### MULTI-HAZARD RISK (MHR) - Very Low

Score: 0.322 • Rank: 21/22



### RESILIENCE (R) - Very High

Score: 0.640 • Rank: 1/22



### MULTI-HAZARD EXPOSURE (MHE) - Very Low

Score: 0.248 • Rank: 18/22



### VULNERABILITY (V) - Very Low

Score: 0.328 • Rank: 22/22



### COPING CAPACITY (CC) - Very High

Score: 0.609 • Rank: 4/22



Population (2020 projected)

**41,121**



Infant mortality rate  
(per 1,000 live births)

**16.6**



Poverty rate

**10.0%**



Population with access  
to improved water

**97.0%**



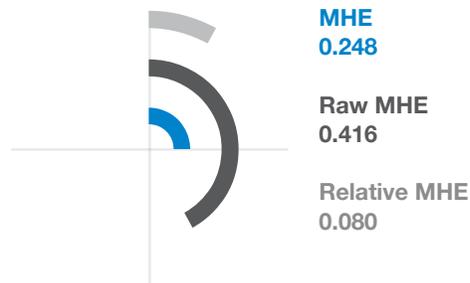
Average years of schooling

**7.7**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 18 / 22 MUNICIPALITIES  
SCORE: 0.248



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**99.9%**

**43,059**

**\$231.9 Million**

**Critical Infrastructure Exposed:**  
**100.0%**



Flood

**0.1%**

**51**

-

**Critical Infrastructure Exposed:**  
**1.0%**



Earthquake Induced Landslide

**0.0%**

**0**

-

**Critical Infrastructure Exposed:**  
**0.0%**



Precipitation Induced Landslide

**0.0%**

**0**

-

**Critical Infrastructure Exposed:**  
**0.0%**



Volcano

**0.0%**

**0**

-

**Critical Infrastructure Exposed:**  
**0.0%**



Forest Fire

**0.1%**

**48**

-

**Critical Infrastructure Exposed:**  
**0.0%**



## VULNERABILITY (V)

**RANK: 22 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.328**

Vulnerability in Sal is primarily driven by Vulnerable Health Status and Population Pressures. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0 1 **SCORE: 0.000** **RANK: 22/22 MUNICIPALITIES ASSESSED**

<b>0.13</b> Livestock Density per Hectare	<b>0.0%</b> Households Using Firewood as Cooking Fuel	<b>0.0%</b> Loss in Tree Cover (2001 to 2020)
--	--	--



### Vulnerable Health Status

0 1 **SCORE: 0.546** **RANK: 6/22 MUNICIPALITIES ASSESSED**

<b>16.6</b> Infant Mortality Rate (per 1,000 live births)	<b>10.4%</b> Disabled Population	<b>24.0</b> TB Prevalence per 100k Persons	<b>94.1</b> HIV Incidence per 100K Persons
--	--	---	---



### Clean Water Vulnerability

0 1 **SCORE: 0.213** **RANK: 17/22 MUNICIPALITIES ASSESSED**

<b>14.2</b> Average Time to Collect Water for Household Use	<b>92.8%</b> Households with Access to Wastewater Services	<b>97.0%</b> Population with Access to Improved Water
--	--	--



### Information Access Vulnerability

0 1 **SCORE: 0.341** **RANK: 18/22 MUNICIPALITIES ASSESSED**

<b>93.7%</b> Adult Literacy Rate	<b>7.7</b> Average Years of Schooling	<b>88.9%</b> Households with Television	<b>45.0%</b> Households with radio	<b>53.7%</b> Households with Internet access
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### Economic Constraints

0 1 **SCORE: 0.257** **RANK: 22/22 MUNICIPALITIES ASSESSED**

<b>0.45</b> Age dependency ratio	<b>0.38</b> Gini index	<b>4.1%</b> Unemployment Rate	<b>10.0%</b> Poverty rate	<b>13.4%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.417** **RANK: 12/22 MUNICIPALITIES ASSESSED**

**35.3%**  
Female Seats  
Municipal City  
Council

**0.94**  
Female to male labor  
participants

**1.13**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.525** **RANK: 7/22 MUNICIPALITIES ASSESSED**

**5.95%**  
Average annual  
population  
change

**44.26**  
Net Migration  
Rate (per 1,000  
persons)

**19**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 4 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.609**

Sal exhibits weaker Coping Capacity in the areas of Health Care Capacity and Emergency Service Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0  1 **SCORE: 0.721** **RANK: 2/22 MUNICIPALITIES ASSESSED**

**65.27%** **5.11** **216,853**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



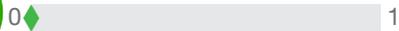
## Governance

0  1 **SCORE: 0.656** **RANK: 8/22 MUNICIPALITIES ASSESSED**

**97%** **262.01** **56.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0  1 **SCORE: 0** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**0.00%**  
Protected Area



## Infrastructure Capacity

0  1 **SCORE: 0.653** **RANK: 6/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.397** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**4.24** **6.52** **88.7%** **0.24**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.683** **RANK: 3/22 MUNICIPALITIES ASSESSED**

**2.61** **8.12**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.695** **RANK: 3/22 MUNICIPALITIES ASSESSED**

**15.3%** **86.7%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.869** **RANK: 4/22 MUNICIPALITIES ASSESSED**

**93.8%** **98.7%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.621** **RANK: 14/22 MUNICIPALITIES ASSESSED**

**8.31** **1.87** **5.84**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 1 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.640**

Sal's score and ranking are due to Very Low Vulnerability combined with Very High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Vulnerable Health Status**



**Population Pressures**



**Health Care Capacity**



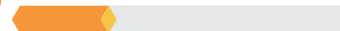
**Emergency Service Capacity**



## HAZARD-SPECIFIC RISK (HSR)



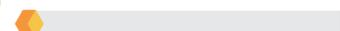
**Drought**



**RANK: 17 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.259**



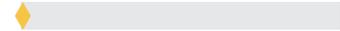
**Flood**



**RANK: 20 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.038**



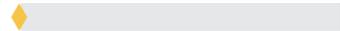
**Earthquake Induced Landslide**



**RANK: 21/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.000**



**Precipitation Induced Landslide**



**RANK: 21/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.000**



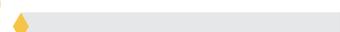
**Forest Fire**



**RANK: 22 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.000**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**21 / 22**

RANK WITHIN MUNICIPALITIES

Score: 0.322



Sal's score and ranking are due to Very Low Multi-hazard Exposure combined with Very Low Vulnerability and Very High Coping Capacity scores.

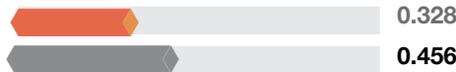
### Multi-hazard risk component scores compared to overall average country scores:



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## SAL RECOMMENDATIONS

### 1

#### Vulnerable Health Status

While Sal ranks lowest in the country in overall Vulnerability, findings show that the municipality ranks 6th highest for overall Vulnerable Health Status.

Vulnerable Health Status is driven by the 4th highest incidence of HIV (94.1 per 100,000 persons) and the 7th highest infant mortality rate (17 deaths per 1,000 live births) among municipalities in Cabo Verde.

Increase investments in community health education and outreach, including best practices for reducing communicable disease transmission, promoting reproductive health, and expanding education and delivery of pre- and ante-natal care for pregnant women. Additionally, ensure that WASH infrastructure meets the needs of the expanding population to help mitigate the impact of communicable diseases.

Ensure that disaster management, evacuation, and shelter plans include special considerations for people with chronic conditions and pre-existing health needs. Communities with vulnerable health status are more susceptible to the negative health impacts of disasters. Consider additional precautions needed to prevent transmission of COVID-19 among vulnerable populations in shelters.

### 2

#### Population Pressures

Ranking 7th highest for overall Population Pressures, Sal has seen an average annual population growth of nearly 6% between 2010 and 2020, the 2nd highest in the country, along with a 44.26 per 1,000 persons net migration rate.

Actively monitor population growth and strengthen short- and long-term development planning through multi-stakeholder engagement. Increase oversight in planning processes to anticipate the needs of the growing population and encourage equitable distribution of services and infrastructure – including housing, transportation, health care, water, and energy. Sustainable development practices will help to address underlying vulnerabilities (i.e., Vulnerable Health Status) and reduce the potential for resource conflicts.

Sal is susceptible to multiple hazards, including drought, forest fires, and floods. Enforce building codes and environmental protections to ensure sustainable development. Conduct hazard exposure assessments to mitigate potential adverse impacts on the population, economy, and environment.

## SAL RECOMMENDATIONS

### 3

#### Health Care Capacity

While Sal ranks highest in the country in overall Resilience, findings show that the municipality ranks 10th lowest in Health Care Capacity, driven by the limited number of nurses (6.52) per 10,000 persons, and the 7th lowest vaccination rate (88.7% of children under one year) in the country.

Sal's population is growing, and so will the need to expand health care capacity in the municipality. Partner with private hospitals and NGOs to increase the number of medical staff available in the case of an emergency. Ensure that access to care is equitable and continues to expand to keep up with the demands of the growing population, while also reducing existing vulnerable health status.

Low vaccination coverage demonstrates the potential for disease outbreaks and the need to increase utilization of medical services in the municipality. Support vaccination campaigns, particularly in vulnerable and remote communities where health care access is limited. Ensure that travel distances to health services are equitable for vulnerable communities

### 4

#### Emergency Service Capacity

Sal has the 9th lowest Emergency Services Capacity ranking in the country constrained by the number of firefighters per 10,000 persons (just under 6), and an average distance to a hospital of more than 8 kilometers from the nearest populated area.

The combination of population pressures and vulnerable health status in Sal necessitates expansion of emergency service capacities in the municipality to meet the needs of a growing population. Work to increase training and employment opportunities in health care and fire services in the municipality. Simultaneously, engage community training programs to develop strong community emergency response teams (CERTs) to increase emergency service capacity. Engage with international donors to procure firefighting equipment and ensure that firefighters are thoroughly trained in its function and use.

Ensure that training and exercises are regularly conducted in Sal to assess preparedness for prevalent hazards likely to affect the municipality. Include all municipal stakeholders (police, fire services, regional disaster management, health sector, and community members) in the process, and use lessons learned to inform disaster planning.

**Better solutions.  
Fewer disasters.**

# Safer world.

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**CABO VERDE**

# **SANTA CATARINA**

**NDPBA MUNICIPAL PROFILE**

# CABO VERDE SANTA CATARINA



## ISLAND: SANTIAGO

Area: 243 km<sup>2</sup>

The municipality of Santa Catarina is located on the western part of Santiago Island and surrounded by the municipalities of Tarrafal to the north, São Miguel to the northeast, Santa Cruz to the east, São Salvador do Mundo to the southeast, and Ribeira Grande de Santiago to the south. Santa Catarina is made up of one parish of the same name subdivided into numerous settlements. Assomada, its capital city, is 36 km north of Praia, the country's capital. The municipality has rugged terrain characterized by steep slopes that border river valleys, rocky peaks, and volcanic cones, and includes portions of the mountainous nature parks of Serra Malagueta and Serra do Picos de Antónia. Santa Catarina is the third-largest municipality in Cabo Verde yet remains predominantly rural with the exception of Assomada. Main economic activities are agriculture, livestock, and tourism with related sectors including food processing, construction, retail and wholesale stores, and hospitality services including hotels and restaurants. Santiago Norte Regional Hospital (Dr. Santa Rita Vieira) is located in Santa Catarina, serving the island and surrounding municipalities. The municipality is also home to Santiago University, one of the major providers of higher education in the country.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - High**  
Score: 0.499 • Rank: 8/22



**RESILIENCE (R) - Low**  
Score: 0.457 • Rank: 15/22



**MULTI-HAZARD EXPOSURE (MHE) - Moderate**  
Score: 0.413 • Rank: 10/22



**VULNERABILITY (V) - Moderate**  
Score: 0.485 • Rank: 9/22



**COPING CAPACITY (CC) - Low**  
Score: 0.400 • Rank: 17/22



Population (2020 projected)  
**47,181**



Infant mortality rate  
(per 1,000 live births)  
**15.9**



Poverty rate  
**28.3%**



Population with access  
to improved water  
**68.4%**



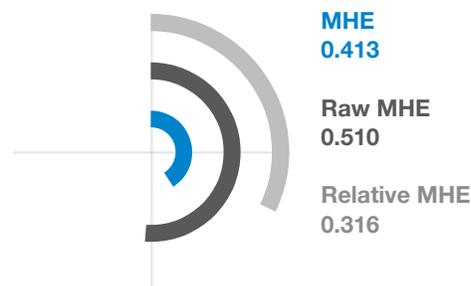
Average years of schooling  
**8.1**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 10 / 22 MUNICIPALITIES

SCORE: 0.413



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**60.5%**

**28,737**

**\$354.3 Million**

**Critical Infrastructure Exposed:**

**49.0%**



Flood

**0.4%**

**210**

-

**Critical Infrastructure Exposed:**

**0.0%**



Earthquake Induced Landslide

**2.8%**

**1,308**

-

**Critical Infrastructure Exposed:**

**0.0%**



Precipitation Induced Landslide

**19.7%**

**9,358**

**\$148.3 Million**

**Critical Infrastructure Exposed:**

**20.0%**



Volcano

**0.0%**

**0**

-

**Critical Infrastructure Exposed:**

**0.0%**



Forest Fire

**63.2%**

**29,974**

**\$226.9 Million**

**Critical Infrastructure Exposed:**

**23.0%**



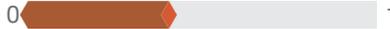
## VULNERABILITY (V)

**RANK: 9 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.485**

Vulnerability in Santa Catarina is primarily driven by Clean Water Access Vulnerability and Information Access Vulnerability. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.411** **RANK: 7/22 MUNICIPALITIES ASSESSED**

<b>0.90</b> Livestock Density per Hectare	<b>43.5%</b> Households Using Firewood as Cooking Fuel	<b>0.6%</b> Loss in Tree Cover (2001 to 2020)
--	---	--



### Vulnerable Health Status

0  1 **SCORE: 0.431** **RANK: 14/22 MUNICIPALITIES ASSESSED**

<b>15.9</b> Infant Mortality Rate (per 1,000 live births)	<b>9.7%</b> Disabled Population	<b>7.3</b> TB Prevalence per 100k Persons	<b>77.7</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.632** **RANK: 6/22 MUNICIPALITIES ASSESSED**

<b>19.2</b> Average Time to Collect Water for Household Use	<b>75.4%</b> Households with Access to Wastewater Services	<b>68.4%</b> Population with Access to Improved Water
--	--	--



### Information Access Vulnerability

0  1 **SCORE: 0.606** **RANK: 9/22 MUNICIPALITIES ASSESSED**

<b>86.1%</b> Adult Literacy Rate	<b>8.1</b> Average Years of Schooling	<b>83.3%</b> Households with Television	<b>20.5%</b> Households with radio	<b>27.5%</b> Households with Internet access
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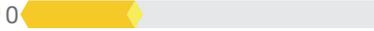
### Economic Constraints

0  1 **SCORE: 0.497** **RANK: 12/22 MUNICIPALITIES ASSESSED**

<b>0.48</b> Age dependency ratio	<b>0.38</b> Gini index	<b>14.5%</b> Unemployment Rate	<b>28.3%</b> Poverty rate	<b>11.4%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.311** **RANK: 18/22 MUNICIPALITIES ASSESSED**

**38.1%**  
Female Seats  
Municipal City  
Council

**0.83**  
Female to male labor  
participants

**1.01**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.509** **RANK: 10/22 MUNICIPALITIES ASSESSED**

**0.90%**  
Average annual  
population  
change

**-25.31**  
Net Migration  
Rate (per 1,000  
persons)

**27.57**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 17 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.400**

Santa Catarina exhibits weaker Coping Capacity in the areas of Economic Capacity and Transportation Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.212** **RANK: 16/22 MUNICIPALITIES ASSESSED**

**45.41%** **0.85** **136,304**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.513** **RANK: 17/22 MUNICIPALITIES ASSESSED**

**33%** **163.81** **63.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0.347** **RANK: 11/22 MUNICIPALITIES ASSESSED**

**1.25%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.493** **RANK: 12/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.637** **RANK: 6/22 MUNICIPALITIES ASSESSED**

**7.25** **12.96** **100.0%** **0.21**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.360** **RANK: 19/22 MUNICIPALITIES ASSESSED**

**1.95** **29.96**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.365** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**8.2%** **70.5%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.453** **RANK: 15/22 MUNICIPALITIES ASSESSED**

**90.1%** **55.6%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.651** **RANK: 11/22 MUNICIPALITIES ASSESSED**

**4.44** **4.70** **4.45**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 15 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.457**

Santa Catarina's score and ranking are due to Moderate Vulnerability combined with Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Clean Water  
Access  
Vulnerability



Information Access  
Vulnerability



Economic Capacity



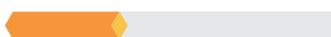
Transportation  
Capacity



## HAZARD-SPECIFIC RISK (HSR)



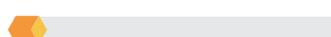
**Drought**



**RANK: 10 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.311**



**Flood**



**RANK: 16 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.067**



**Earthquake Induced  
Landslide**



**RANK: 15/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.092**



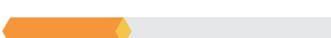
**Precipitation Induced  
Landslide**



**RANK: 4/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.306**



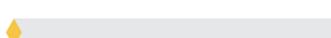
**Forest Fire**



**RANK: 4 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.331**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**8 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.499



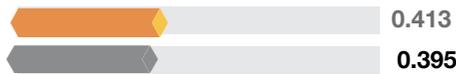
Santa Catarina's score and ranking are due to Moderate Multi-hazard Exposure combined with Moderate Vulnerability and Low Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

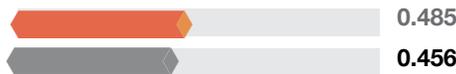
SANTA CATARINA SCORE  
 COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## SANTA CATARINA RECOMMENDATIONS

# 1

### Clean Water Access Vulnerability

Santa Catarina ranks 6th highest for overall Clean Water Access Vulnerability. Just 68% of the population has access to improved water and 74% of households have access to wastewater systems. Household members on average require 19 minutes to travel to a main water source, collect water and return home. Illegal and unregulated settlements such as those comprising parts of Assomada lack basic water and sanitation, increasing susceptibility of an already-vulnerable segment of the population.

Within the municipality and across the nation, chronic drought conditions threaten water security. With support from NGOs, regional, and international partners, prioritize investments to improve and extend safe and reliable water delivery and wastewater treatment systems within the municipality. Even in areas with improved sanitation infrastructure, severe drought conditions significantly increase the concentration of downstream contaminants. Increasing access to improved water and sanitation has positive cascading effects on public and environmental health, quality of life, economic opportunities, and gender equality by safeguarding water supplies and reducing time needed to gather water.

Continue efforts to reduce the high cost of water services, especially in poor and vulnerable communities.

# 2

### Information Access Vulnerability

Santa Catarina ranks 9th highest for overall Information Access Vulnerability. Findings reveal information access constraints, with just 20% of households having radios and 27.5% with internet access.

Implement community outreach and education programs focused on hazard awareness, disaster preparedness, and health and safety practices to build community resilience. Include information and resources for audiences requiring special considerations such as the very young, elderly, and disabled populations.

Boost public-private collaboration and coordination to ensure that vulnerable households have the access and the ability to receive information and ensure that hazard warning information is disseminated as broadly as possible through multiple communications channels.

## SANTA CATARINA RECOMMENDATIONS

### 3

#### Economic Capacity

RVA findings show Santa Catarina ranks 7th lowest for overall Economic Capacity, with the 7th lowest relative scores for both the economic activity rate (just over 45%) and the number of financial service locations (0.85 per 10,000 persons). Given Santa Catarina's overall vulnerability (9th highest in Cabo Verde), low labor participation and limited financial services may reduce economic protection and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

Santa Catarina's economy is driven primarily by agriculture and tourism. Continue to support environmental protections and invest in infrastructure enhancements (particularly water and sanitation) to encourage formalization and expansion of existing enterprises. Expand financial services to increase access to credit for small businesses and foster local economic development.

Increase access to vocational, technical, and entrepreneurial training to diversify the local economy and directly support labor market needs in the municipality. Expanding local economic opportunities will bolster labor participation and employment, supporting increased household incomes.

### 4

#### Transportation Capacity

Santa Catarina has the 4th lowest overall ranking for Transportation Capacity, with the 3rd greatest average distance to a port or airport facility (30 km) and a road density of 1.95 km per square km.

Santa Catarina ranks 10th highest in Cabo Verde for overall Multi-hazard Exposure, with significant exposure to drought, forest fires, and precipitation-induced landslides. Limited transportation networks hamper timely evacuations and delay response and recovery activities. Damaged roads, seaports and airports can further postpone delivery and transport of much needed relief supplies and delay recovery processes.

Secure investments for continued expansion and maintenance of transportation networks, particularly in underserved areas to meet increasing demand and improve response times and access to emergency services. Explore public-private partnerships to maintain the quality of existing transportation infrastructure and increase connectivity between islands and municipalities. By bolstering transportation capacity, Santa Catarina will have the added benefit of supporting sustainable economic growth through greater accessibility of goods and services. Protect investments and service provision by implementing mitigation strategies (e.g., storm water drainage, erosion prevention) to reduce hazard impacts. Evacuation routes and emergency response plans should be adapted as construction and maintenance is planned and implemented.

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**CABO VERDE**

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# **SANTA CATARINA DO FOGO**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE

## SANTA CATARINA DO FOGO

### ISLAND: FOGO

Area: 153 km<sup>2</sup>

The municipality of Santa Catarina do Fogo is situated in the central and southeastern part of the volcanic Fogo Island. It is one of three municipalities on Fogo along with São Filipe, and Mosteiros. Santa Catarina do Fogo occupies about 32% of the island's land area and houses 14% of its population. The northwestern part of the municipality is within Fogo Natural Park that houses the Pico de Fogo volcano and its crater. Its main city is Cova Figueira. Cova Figueira is about 35 to 50 km from the island's capital, São Filipe. The island in general has a moderately dry tropical climate and a semi-arid mild tropical climate on the slopes. Drought is much less observed on Fogo due to the moisture gained from the clouds on the mountain. Santa Catarina de Fogo is a predominantly rural municipality with agriculture being the main economic activity. Cã das Caldeiras is one of the most privileged areas of the municipality with vine cultivation and exports wines. Santa Catarina do Fogo Municipality was established in 2005 and consists of one civil parish and further subdivided into smaller settlements. While improvements have been made to water and wastewater systems, the City of Cova Figueira has yet to have a modern wastewater treatment and disposal system.



## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Low**  
Score: 0.460 • Rank: 13/22



**RESILIENCE (R) - High**  
Score: 0.573 • Rank: 8/22



**MULTI-HAZARD EXPOSURE (MHE) - High**  
Score: 0.526 • Rank: 5/22



**VULNERABILITY (V) - Low**  
Score: 0.438 • Rank: 13/22



**COPING CAPACITY (CC) - High**  
Score: 0.585 • Rank: 5/22



Population (2020 projected)  
**5,206**



Infant mortality rate  
(per 1,000 live births)  
**18.9**



Poverty rate  
**23.7%**



Population with access  
to improved water  
**93.9%**



Average years of schooling  
**6.9**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 5 / 22 MUNICIPALITIES  
SCORE: 0.526



MHE  
0.526

Raw MHE  
0.264

Relative MHE  
0.789

### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**100.0%**

**8,470**

**\$29.9 Million**

Critical Infrastructure Exposed:  
**100.0%**



Flood

**0.2%**

**17**

-

Critical Infrastructure Exposed:  
**4.0%**



Earthquake Induced Landslide

**1.2%**

**101**

-

Critical Infrastructure Exposed:  
**0.0%**



Precipitation Induced Landslide

**7.7%**

**651**

-

Critical Infrastructure Exposed:  
**0.0%**



Volcano

**99.8%**

**8,456**

**\$29.9 Million**

Critical Infrastructure Exposed:  
**100.0%**



Forest Fire

**38.4%**

**3,250**

**\$8.6 Million**

Critical Infrastructure Exposed:  
**25.0%**



## VULNERABILITY (V)

**RANK: 13 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.438**

Vulnerability in Santa Catarina Do Fogo is primarily driven by Information Access Vulnerability and Population Pressures. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0 1 **SCORE: 0.259** **RANK: 15/22 MUNICIPALITIES ASSESSED**

<b>0.41</b> Livestock Density per Hectare	<b>35.3%</b> Households Using Firewood as Cooking Fuel	<b>0.1%</b> Loss in Tree Cover (2001 to 2020)
--	---	--



### Vulnerable Health Status

0 1 **SCORE: 0.392** **RANK: 17/22 MUNICIPALITIES ASSESSED**

<b>18.9</b> Infant Mortality Rate (per 1,000 live births)	<b>7.2%</b> Disabled Population	<b>–</b> TB Prevalence per 100k Persons	<b>19.1</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0 1 **SCORE: 0.112** **RANK: 21/22 MUNICIPALITIES ASSESSED**

<b>4.6</b> Average Time to Collect Water for Household Use	<b>92.2%</b> Households with Access to Wastewater Services	<b>93.9%</b> Population with Access to Improved Water
---	--	--



### Information Access Vulnerability

0 1 **SCORE: 0.739** **RANK: 1/22 MUNICIPALITIES ASSESSED**

<b>84.3%</b> Adult Literacy Rate	<b>6.9</b> Average Years of Schooling	<b>66.3%</b> Households with Television	<b>22.9%</b> Households with radio	<b>66.3%</b> Households with Internet access
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### Economic Constraints

0 1 **SCORE: 0.445** **RANK: 16/22 MUNICIPALITIES ASSESSED**

<b>0.63</b> Age dependency ratio	<b>0.35</b> Gini index	<b>3.2%</b> Unemployment Rate	<b>23.7%</b> Poverty rate	<b>10.5%</b> Households owning a vehicle
---	---------------------------	-------------------------------------	------------------------------	--



### Gender Inequality

0  1 **SCORE: 0.543** **RANK: 7/22 MUNICIPALITIES ASSESSED**

**46.2%**  
Female Seats  
Municipal City  
Council

**0.46**  
Female to male labor  
participants

**1.13**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.577** **RANK: 4/22 MUNICIPALITIES ASSESSED**

**-0.18%**  
Average annual  
population  
change

**-51.14**  
Net Migration  
Rate (per 1,000  
persons)

**30.59**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 5 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.585**

Santa Catarina Do Fogo exhibits weaker Coping Capacity in the areas of Health Care Capacity and Communications Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0  1 **SCORE: 0.573** **RANK: 4/22 MUNICIPALITIES ASSESSED**

**62.08%** **5.76** **135,615**  
Economic Activity Rate Financial Service Locations per 10k Persons Avg Annual Expenditures per Capita CVE



## Governance

0  1 **SCORE: 0.644** **RANK: 9/22 MUNICIPALITIES ASSESSED**

**63%** **296.3** **73.9%**  
Population Properly Disposing Waste Crimes Reported per 10k persons Voter Participation Rate in Local Elections



## Environmental Capacity

0  1 **SCORE: 1.000** **RANK: 1/22 MUNICIPALITIES ASSESSED**

**29.99%**  
Protected Area



## Infrastructure Capacity

0  1 **SCORE: 0.399** **RANK: 18/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.207** **RANK: 20/22 MUNICIPALITIES ASSESSED**

**1.90** **1.90** **91.7%** **0**  
Physicians per 10k Persons Nurses per 10k Persons Pct Under 1yr Fully Vaccinated Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.331** **RANK: 20/22 MUNICIPALITIES ASSESSED**

**0.64** **17.61**  
Road density (km per sq. km) Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.330** **RANK: 14/22 MUNICIPALITIES ASSESSED**

**17.8%** **61.1%**  
Households with Fixed Phones Population with Mobile Phone



## Energy Capacity

**SCORE: 0.480** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**90.3%** **58.5%**  
Households with Access to Electricity Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.650** **RANK: 12/22 MUNICIPALITIES ASSESSED**

**19.51** **16.01** **38.42**  
Average Distance to Hospital (km) Average Distance to Police Station (km) Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 8 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.573**

Santa Catarina Do Fogo's score and ranking are due to Low Vulnerability combined with High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Information Access Vulnerability**



**Population Pressures**



**Health Care Capacity**



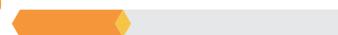
**Communications Capacity**



## HAZARD-SPECIFIC RISK (HSR)



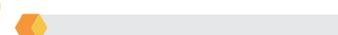
**Drought**



**RANK: 11 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.301**



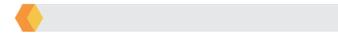
**Flood**



**RANK: 19 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.048**



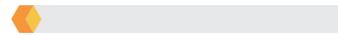
**Earthquake Induced Landslide**



**RANK: 17/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.036**



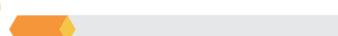
**Precipitation Induced Landslide**



**RANK: 18/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.042**



**Forest Fire**



**RANK: 15 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.147**



**Volcano**



**RANK: 4/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.405**



## MULTI-HAZARD RISK (MHR)

**13 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.460



Santa Catarina Do Fogo's score and ranking are due to High Multi-hazard Exposure combined with Low Vulnerability and High Coping Capacity scores.

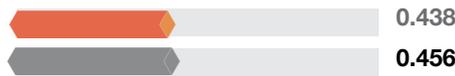
### Multi-hazard risk component scores compared to overall average country scores:



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## SANTA CATARINA DO FOGO RECOMMENDATIONS

### 1

#### Information Access Vulnerability

Santa Catarina Do Fogo has the highest overall Information Access Vulnerability in Cabo Verde, with the lowest percentage of households with a television (66.3%) and the 2nd lowest percentage with radio access (23%). Average years of schooling for the municipality is 6.9 years, and 84% of the adult population is literate.

Focus efforts on providing programs to increase school attendance and completion of secondary education. Given the population pressures in the municipality, work with communities to better understand the underlying factors that represent barriers to education and literacy.

Implement community outreach and education programs focused on hazard awareness, disaster preparedness, and health and safety practices to build community resilience. Include information and resources for audiences requiring special considerations such as the very young, elderly, and disabled populations. Boost public-private collaboration and coordination to ensure that hazard warning information is accessible and disseminated as broadly as possible through multiple communications channels.

### 2

#### Population Pressures

Ranking 4th highest overall for Population Pressures, Santa Catarina Do Fogo has the highest youth bulge in the country, with 30.6% of the adult population between the ages of 15 and 24. The municipality has a net migration rate of -51.14 per 1,000 persons.

High rates of emigration from the municipality can leave gaps in social support systems and contribute to a loss of intellectual capital and skilled labor, affecting the economy and its growth potential. Combined with the youth bulge, decreases in economic opportunities and employment have the potential to become a source of social and political instability in the municipality.

Strengthen economic planning efforts to identify vulnerabilities related to the changing population. Implement programs and support systems to identify gainful employment opportunities for youth residing in the municipality, including vocational, technical, and entrepreneurial training programs. Ensuring productive employment in a youth bulge, when economic dependency is low, tends to increase per capita income, yielding a demographic dividend. Combined with services to alleviate poverty, enhanced policing in areas susceptible to criminal activity will reduce population pressures in Santa Catarina Do Fogo

## SANTA CATARINA DO FOGO RECOMMENDATIONS

### 3

#### Health Care Capacity

While Santa Catarina Do Fogo ranks 5th highest in the country in overall Coping Capacity, findings show that the municipality ranks 3rd lowest for Health Care Capacity, with no available hospital services and the lowest number of nurses (1.9 per 10,000 persons relative to other municipalities in the country.

Santa Catarina de Fogo ranks 5th highest in overall Multi-hazard Exposure in Cabo Verde and has the 2nd highest exposure to volcanic hazards. The municipality was affected by the 2014 Pico de Fogo volcanic eruption, which lasted more than 50 days. The lack of skilled care and hospital services represents a limitation in meeting emergent medical needs.

Given Santa Catarina Do Fogo's population pressures, driven primarily by emigration combined with youth bulge, the health sector represents an opportunity for expansion, employment, and economic development in the municipality. Investment in hospital infrastructure and incentives for health sector employment will increase health care capacity while also growing economic opportunities for young people in Santa Catarina Do Fogo. While encouraging long-term expansion of the health care system, support underserved communities by developing a program for visiting medical practitioners to increase access to preventive and acute care in the municipality

### 4

#### Communications Capacity

Santa Catarina Do Fogo has the 9th lowest ranking for overall Communications Capacity, driven by the 4th lowest percentage of the population with mobile phones (61%), and fewer than 18% of households with fixed phones. Limited communications capacity exacerbates information access vulnerability and hinders the ability of government agencies to share critical information during disasters.

Boost Communications Capacity and overall resilience through the expansion of infrastructure to ensure coverage, accessibility, and reliability of communications during disasters. Encourage telecommunications infrastructure development at a sustainable pace and implement risk reduction measures in all infrastructure enhancements to protect against hazard impacts. Create communications plans to share critical information with the public during disasters, leveraging multimodal communication strategies (radio, internet, television, fixed- and mobile telephone).

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**CABO VERDE**

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# **SANTA CRUZ**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE SANTA CRUZ



## ISLAND: SANTIAGO

Area: 112 km<sup>2</sup>

The municipality of Santa Cruz is located on the eastern part of Santiago Island and consists of one parish subdivided into three administrative zones: North, Central, and South with a municipal headquarters and a municipal delegation in each, to better serve local communities.

Santa Cruz houses close to 10% of the Santiago Island population with the most populated areas being the City of Pedra Badejo and the localities of Achada Fazenda and Canelo among its many settlements. Santa Cruz has a topography characterized by hills, streams, and caves.

Like most municipalities on the island, the main types of economic activities are agriculture, livestock, and tourism. Santa Cruz has the nation's largest banana plantations; however, drought, limited groundwater, and soil salinization have had shrinking effects on production. Agricultural and livestock products have largely been sold informally, however with the emergence of mini-markets in the municipality competition has allowed for better commercialization. Many coastal communities rely on artisanal fishing for their main economic activity. Due to its landscape and natural habitat Santa Cruz is an attractive spot for tourists.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - High**  
Score: 0.508 • Rank: 6/22



**RESILIENCE (R) - Very Low**  
Score: 0.385 • Rank: 21/22



**MULTI-HAZARD EXPOSURE (MHE) - Low**  
Score: 0.292 • Rank: 17/22



**VULNERABILITY (V) - Very High**  
Score: 0.573 • Rank: 3/22



**COPING CAPACITY (CC) - Very Low**  
Score: 0.342 • Rank: 21/22



Population (2020 projected)  
**25,917**



Infant mortality rate  
(per 1,000 live births)  
**17.5**



Poverty rate  
**44.6%**



Population with access  
to improved water  
**81.8%**



Average years of schooling  
**7.4**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 17 / 22 MUNICIPALITIES  
SCORE: 0.292



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**95.0%**

**23,462**

**\$166.5 Million**

**Critical Infrastructure Exposed:**  
**100.0%**



Flood

**2.2%**

**552**

**\$26.3 Million**

**Critical Infrastructure Exposed:**  
**4.0%**



Earthquake Induced Landslide

**0.8%**

**200**

-

**Critical Infrastructure Exposed:**  
**0.0%**



Precipitation Induced Landslide

**4.2%**

**1,040**

-

**Critical Infrastructure Exposed:**  
**0.0%**



Volcano

**0.0%**

**0**

-

**Critical Infrastructure Exposed:**  
**0.0%**



Forest Fire

**44.0%**

**10,862**

**\$52.7 Million**

**Critical Infrastructure Exposed:**  
**0.0%**



## VULNERABILITY (V)

**RANK: 3 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.573**

Vulnerability in Santa Cruz is primarily driven by Information Access Vulnerability and Economic Constraints. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.564** **RANK: 4/22 MUNICIPALITIES ASSESSED**

<b>1.40</b> Livestock Density per Hectare	<b>36.6%</b> Households Using Firewood as Cooking Fuel	<b>10.7%</b> Loss in Tree Cover (2001 to 2020)
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### Vulnerable Health Status

0  1 **SCORE: 0.439** **RANK: 11/22 MUNICIPALITIES ASSESSED**

<b>17.5</b> Infant Mortality Rate (per 1,000 live births)	<b>9.7%</b> Disabled Population	<b>21.0</b> TB Prevalence per 100k Persons	<b>23.0</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.585** **RANK: 7/22 MUNICIPALITIES ASSESSED**

<b>12.3</b> Average Time to Collect Water for Household Use	<b>62.4%</b> Households with Access to Wastewater Services	<b>81.8%</b> Population with Access to Improved Water
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### Information Access Vulnerability

0  1 **SCORE: 0.737** **RANK: 2/22 MUNICIPALITIES ASSESSED**

<b>85.6%</b> Adult Literacy Rate	<b>7.4</b> Average Years of Schooling	<b>69.7%</b> Households with Television	<b>24.2%</b> Households with radio	<b>38.2%</b> Households with Internet access
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### Economic Constraints

0  1 **SCORE: 0.711** **RANK: 2/22 MUNICIPALITIES ASSESSED**

<b>0.53</b> Age dependency ratio	<b>0.36</b> Gini index	<b>21.6%</b> Unemployment Rate	<b>44.6%</b> Poverty rate	<b>6.6%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.448** **RANK: 11/22 MUNICIPALITIES ASSESSED**

**47.1%**  
Female Seats  
Municipal City  
Council

**0.61**  
Female to male labor  
participants

**1.13**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.524** **RANK: 8/22 MUNICIPALITIES ASSESSED**

**-0.26%**  
Average annual  
population  
change

**-39.3**  
Net Migration  
Rate (per 1,000  
persons)

**29.25**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 21 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.342**

Santa Cruz exhibits weaker Coping Capacity in the areas of Communications Capacity and Economic Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.115** **RANK: 20/22 MUNICIPALITIES ASSESSED**

**49.20%** **0** **97,147**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.501** **RANK: 18/22 MUNICIPALITIES ASSESSED**

**51%** **361.32** **70.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0.562** **RANK: 5/22 MUNICIPALITIES ASSESSED**

**5.33%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.337** **RANK: 22/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.329** **RANK: 17/22 MUNICIPALITIES ASSESSED**

**1.90** **5.71** **100.0%** **0**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.475** **RANK: 17/22 MUNICIPALITIES ASSESSED**

**2.17** **22.18**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.051** **RANK: 22/22 MUNICIPALITIES ASSESSED**

**5.0%** **54.8%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.232** **RANK: 21/22 MUNICIPALITIES ASSESSED**

**79.4%** **62.7%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.597** **RANK: 17/22 MUNICIPALITIES ASSESSED**

**10.16** **3.63** **7.72**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 21 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.385**

Santa Cruz's score and ranking are due to Very High Vulnerability combined with Very Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Information  
Access  
Vulnerability



Economic  
Constraints



Communications  
Capacity



Economic Capacity



## HAZARD-SPECIFIC RISK (HSR)



**Drought**



**RANK: 3 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.410**



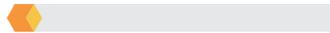
**Flood**



**RANK: 1 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.373**



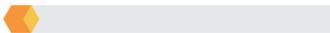
**Earthquake Induced  
Landslide**



**RANK: 16/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.056**



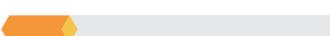
**Precipitation Induced  
Landslide**



**RANK: 17/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.059**



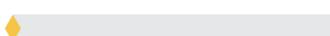
**Forest Fire**



**RANK: 13 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.176**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**6 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.508



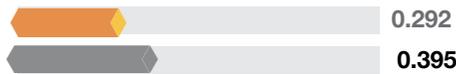
Santa Cruz's score and ranking are due to Low Multi-hazard Exposure combined with Very High Vulnerability and Very Low Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

SANTA CRUZ SCORE  
 COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## SANTA CRUZ RECOMMENDATIONS

# 1

### Information Access Vulnerability

Santa Cruz has the 2nd highest Information Access Vulnerability ranking in the country, driven by some of the lowest rankings in the country for household access to internet (38%), access to radio (24%), and access to television (70%).

Implement community outreach and education programs focused on hazard awareness, disaster preparedness, and health and safety practices to build community resilience. Include information and resources for audiences requiring special considerations such as the very young, elderly, and disabled populations.

Boost public-private collaboration and coordination to promote dissemination of hazard warning information as broadly as possible through multiple communications channels. In partnership with social service agencies, identify and equip vulnerable households with the means to receive hazard alerts and warnings.

# 2

### Economic Constraints

With the 2nd highest ranking for overall Economic Constraints, Santa Cruz has the highest unemployment rate in the country (21.64%), and the 4th highest poverty rate (44.6%). In addition, just 6.6% of households own a vehicle. Families without a vehicle will be challenged to evacuate to safety when disasters strike. Identify vulnerable communities' transportation challenges and include strategies to support evacuation in municipal disaster plans. Assess disaster response and recovery plans to ensure that economically vulnerable populations are identified, as poor populations are often more likely to be severely impacted by disasters and have slower recovery times.

Economic constraints in Santa Cruz are closely linked to Information Access Vulnerability and vice versa. Removing economic barriers to education, and ensuring equitable access to schools, educational resources, and information technology will reduce vulnerability in the municipality.

Develop short- and long-term strategies to address and alleviate poverty. Short-term strategies may include public assistance programs that specifically address unsatisfied basic needs (i.e., food, water, housing, education). Over the long term, support government programs to assist in new business and employment opportunities linked to national and municipal sustainable development goals to diversify livelihoods and promote equitable distribution of property and economic assets in Santa Cruz. Create public policies guaranteeing equal opportunity and fair wages for all. Focusing on sustainable economic opportunities will help to decrease long-term reliance on social assistance.

## SANTA CRUZ RECOMMENDATIONS

### 3

#### Communications Capacity

Santa Cruz has the lowest overall Communications Capacity ranking in Cabo Verde relative to other municipalities, with the lowest percentage of population with mobile phones (54.8%), and just 5% of households having fixed phones. Limited communications capacity exacerbates information access vulnerability and hinders the ability of government agencies to share critical information during disasters.

Boost Communications Capacity and overall resilience through the expansion of infrastructure to ensure coverage, accessibility, and reliability of communications during disasters. Encourage telecommunications infrastructure development at a sustainable pace and implement risk reduction measures in all infrastructure enhancements to protect against hazard impacts. Create communications plans to share critical information with the public during disasters, leveraging multimodal communication strategies (radio, internet, television, fixed- and mobile telephone).

### 4

#### Economic Capacity

Santa Cruz ranks 3rd lowest for overall Economic Capacity, with the second lowest average annual expenditures (97,147 CVE) per capita and no financial service locations per 10,000 persons. In addition, just 49% of persons aged 15 and over are active in the workforce. Given Santa Cruz's economic constraints, limited economic capacity reduces economic protection and inhibits the municipality's ability to quickly mobilize financial assets during a disaster.

Santa Cruz's economy is driven primarily by agriculture and tourism. Recent investments in agricultural training and modernization, including drip irrigation, hydroponics, and water retention, have helped to address concerns regarding the impact of water scarcity on agricultural production. Continue to support environmental protections and invest in infrastructure enhancements to encourage resilience in agriculture. Expand financial services to increase access to credit for small businesses and foster local economic development.

Continue to support expansion of tourism in the municipality. Cabo Verde's Tourism Board and Santa Cruz City Council have identified a number of potential tourist villages in the municipality to leverage its capabilities. The Coastal Urban Development Plan covers the eastern part of the municipality and is intended to allow for better allocation of land and sustainable development practices. Expanding local economic opportunities will bolster labor participation and employment, supporting increased household incomes.

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**CABO VERDE**

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# **SAO DOMINGOS**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE SAO DOMINGOS



## ISLAND: SANTIAGO

Area: 148 km<sup>2</sup>

The municipality of São Domingos is located in the southeastern part of Santiago Island. Established in 1994, the municipality of São Domingos consists of two parishes: Nossa Senhora da Luz and São Nicolau Tolentino. The Rui Vaz and Serra de Pico de Antónia mountains, part of a national park, comprise one of the most important mountain ecosystems in Cabo Verde with abundant rainfall (in a rainy year) and mild temperatures. Mountains dominate the western border of the municipality where steep slopes and lack of rainwater runoff do not allow for large-scale agricultural activity. However, eastern, and central parts of the municipality are predominantly farmland where the higher water table helps maintain soil moisture. Thus, agriculture (maize, beans, sweet potatoes, potatoes, and cassava) is the main economic activity. While both livestock and fishing are important means of subsistence, they remain in traditional form. São Domingos is a popular weekend getaway for families residing in Praia. Two markets, in Milho Branco and in Vila da Várzea da Igreja, offer commercial outlets for agricultural and artisanal products. A vocational training institute (IEFP) contributes to employment and professional training in the municipality.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Moderate**  
Score: 0.496 • Rank: 10/22



**RESILIENCE (R) - Very Low**  
Score: 0.425 • Rank: 19/22



**MULTI-HAZARD EXPOSURE (MHE) - Low**  
Score: 0.339 • Rank: 16/22



**VULNERABILITY (V) - High**  
Score: 0.509 • Rank: 5/22



**COPING CAPACITY (CC) - Very Low**  
Score: 0.359 • Rank: 20/22



Population (2020 projected)  
**14,198**



Infant mortality rate  
(per 1,000 live births)  
**10.9**



Poverty rate  
**35.4%**



Population with access  
to improved water  
**53.6%**



Average years of schooling  
**7.4**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 16 / 22 MUNICIPALITIES

SCORE: 0.339



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**87.0%**

**12,004**

**\$181.6 Million**

**Critical Infrastructure Exposed:**

**100.0%**



Flood

**1.3%**

**184**

-

**Critical Infrastructure Exposed:**

**0.0%**



Earthquake Induced Landslide

**0.1%**

**17**

-

**Critical Infrastructure Exposed:**

**0.0%**



Precipitation Induced Landslide

**7.4%**

**1,026**

**\$39.6 Million**

**Critical Infrastructure Exposed:**

**17.0%**



Volcano

**0.0%**

**0**

-

**Critical Infrastructure Exposed:**

**0.0%**



Forest Fire

**48.5%**

**6,695**

**\$90.3 Million**

**Critical Infrastructure Exposed:**

**33.0%**



## VULNERABILITY (V)

**RANK: 5 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.509**

Vulnerability in Sao Domingos is primarily driven by Clean Water Access Vulnerability and Environmental Stress. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.541** **RANK: 5/22 MUNICIPALITIES ASSESSED**

<b>0.84</b> Livestock Density per Hectare	<b>48.4%</b> Households Using Firewood as Cooking Fuel	<b>13.4%</b> Loss in Tree Cover (2001 to 2020)
--	---	---



### Vulnerable Health Status

0  1 **SCORE: 0.436** **RANK: 13/22 MUNICIPALITIES ASSESSED**

<b>10.9</b> Infant Mortality Rate (per 1,000 live births)	<b>12.8%</b> Disabled Population	<b>14.0</b> TB Prevalence per 100k Persons	<b>42.4</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.717** **RANK: 4/22 MUNICIPALITIES ASSESSED**

<b>21.6</b> Average Time to Collect Water for Household Use	<b>76.1%</b> Households with Access to Wastewater Services	<b>53.6%</b> Population with Access to Improved Water
--	--	--



### Information Access Vulnerability

0  1 **SCORE: 0.483** **RANK: 14/22 MUNICIPALITIES ASSESSED**

<b>89.3%</b> Adult Literacy Rate	<b>7.4</b> Average Years of Schooling	<b>81.0%</b> Households with Television	<b>32.3%</b> Households with radio	<b>67.7%</b> Households with Internet access
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### Economic Constraints

0  1 **SCORE: 0.454** **RANK: 15/22 MUNICIPALITIES ASSESSED**

<b>0.54</b> Age dependency ratio	<b>0.35</b> Gini index	<b>8.1%</b> Unemployment Rate	<b>35.4%</b> Poverty rate	<b>11.8%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.474** **RANK: 10/22 MUNICIPALITIES ASSESSED**

**35.3%**  
Female Seats  
Municipal City  
Council

**0.66**  
Female to male labor  
participants

**1.02**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.457** **RANK: 12/22 MUNICIPALITIES ASSESSED**

**0.28%**  
Average annual  
population  
change

**-21.73**  
Net Migration  
Rate (per 1,000  
persons)

**29.4**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 20 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.359**

Sao Domingos exhibits weaker Coping Capacity in the areas of Economic Capacity and Communications Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.189** **RANK: 18/22 MUNICIPALITIES ASSESSED**

**50.82%** **0.7** **108,481**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.580** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**52%** **308.48** **73.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**0.00%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.429** **RANK: 14/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.284** **RANK: 19/22 MUNICIPALITIES ASSESSED**

**1.42** **5.69** **97.1%** **0**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.602** **RANK: 9/22 MUNICIPALITIES ASSESSED**

**2.21** **11.75**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.259** **RANK: 17/22 MUNICIPALITIES ASSESSED**

**9.5%** **62.7%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.444** **RANK: 17/22 MUNICIPALITIES ASSESSED**

**91.4%** **49.9%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.554** **RANK: 18/22 MUNICIPALITIES ASSESSED**

**13.04** **4.28** **8.45**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 19 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.425**

Sao Domingos's score and ranking are due to High Vulnerability combined with Very Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Clean Water Access Vulnerability**



**Environmental Stress**



**Economic Capacity**



**Communications Capacity**



## HAZARD-SPECIFIC RISK (HSR)



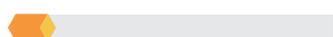
**Drought**



**RANK: 4 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.388**



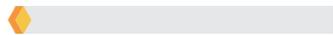
**Flood**



**RANK: 15 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.093**



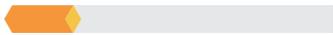
**Earthquake Induced Landslide**



**RANK: 20/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.022**



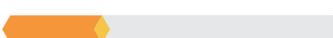
**Precipitation Induced Landslide**



**RANK: 9/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.178**



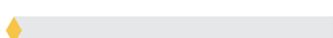
**Forest Fire**



**RANK: 6 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.268**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**10 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.496



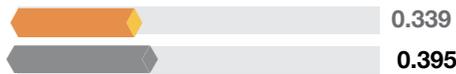
Sao Domingos's score and ranking are due to Low Multi-hazard Exposure combined with High Vulnerability and Very Low Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

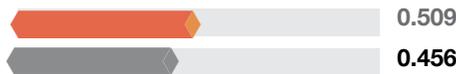
 SAO DOMINGOS SCORE  
COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## SAO DOMINGOS RECOMMENDATIONS

# 1

### Clean Water Access Vulnerability

Sao Domingos rank 4th highest for overall Clean Water Access Vulnerability. Just 53.6% of the population has access to wastewater systems, the 2nd lowest percentage in Cabo Verde. 76% of households have access to improved water sources. On average, it takes household members 22 minutes to travel to a main water source, collect water and return home.

Within the municipality and across the nation, chronic drought conditions threaten water security. With support from NGOs, regional, and international partners, prioritize investments to improve and extend safe and reliable water delivery and wastewater treatment systems within the municipality. Even in areas with improved sanitation infrastructure, severe drought conditions significantly increase the concentration of downstream contaminants. Increasing access to improved water and sanitation has positive cascading effects on public and environmental health, quality of life, economic opportunities, and gender equality by safeguarding water supplies and reducing time needed to gather water.

Continue efforts to reduce the high cost of water services, especially in poor and vulnerable communities.

# 2

### Environmental Stress

Ranking 5th highest for overall Environmental Stress, Sao Domingos has the 4th highest percentage loss in tree cover (13.38%), compounded by nearly half of households (48.4%) using firewood as a primary cooking fuel. Livestock density ranks 8th highest (0.84 per hectare).

Existing environmental stress combined with climate change may contribute to land degradation, food insecurity and increased frequency, intensity, and susceptibility to natural hazards. Develop sustainable energy and forest land management strategies to reduce reliance on firewood as a primary cooking fuel. Support reforestation programs to maintain and increase tree cover, which acts as a natural buffer against negative hazard impacts. Monitor agricultural practices and develop incentives for sustainable livestock production.

Given Sao Domingos' significant exposure to drought, forest fire, and landslides, provide educational training to both private and public entities to promote hazard awareness and sustainable development to monitor, manage, and reduce environmental stress.

## SAO DOMINGOS RECOMMENDATIONS

### 3

#### Economic Capacity

Ranking 5th lowest for overall Economic Capacity, Sao Domingos has the 4th lowest average annual expenditures per capita (108,481 CVE) and less than one (0.7) financial service location per 10,000 persons. Given Sao Domingos' overall vulnerability (5th highest in Cabo Verde), low expenditures per capita and limited financial services may reduce economic protection and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

Sao Domingos' economy is driven primarily by agriculture. Continue to support environmental protections and invest in infrastructure enhancements (particularly water and sanitation) to encourage formalization and expansion existing enterprises. Ensure that new development is sustainable and does not contribute to environmental stress or increased hazard exposure. Expand financial services to increase access to credit for small businesses and foster local economic development.

Increase access to vocational, technical, and entrepreneurial training to diversify the local economy and directly support labor market needs in the municipality. Expanding local economic opportunities will bolster labor participation and employment, supporting increased household incomes.

### 4

#### Communications Capacity

Sao Domingos ranks 6th lowest for Communications Capacity relative to other municipalities, with just 9.5% of households having a fixed phone and 62.7% of the population with mobile phones. Limited communications capacity exacerbates information access vulnerability and hinders the ability of government agencies to share critical information during disasters.

Boost Communications Capacity and overall resilience through the expansion of infrastructure to ensure coverage, accessibility, and reliability of communications during disasters. Encourage telecommunication infrastructure development at a sustainable pace and implement risk reduction measures in all infrastructure enhancements to protect against hazard impacts. Create communications plans to share critical information with the public during disasters, leveraging multimodal communication strategies (radio, internet, television, fixed- and mobile telephone).

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**CABO VERDE**

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# **SAO FILIPE**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE SAO FILIPE



## ISLAND: FOGO

Area: 229 km<sup>2</sup>

The municipality of São Filipe comprises much of the western half of the island of Fogo. It is one of three municipalities on Fogo along with Mosteiros, and Santa Catarina do Fogo. São Filipe occupies about 49% of the island's land area and has about 60% of its population.

São Filipe is one of the warmest places in Cabo Verde with temperatures up to 34 °C in September. The municipality of São Filipe was established in 1992 and consists of two civil parishes, Nossa Senhora da Conceição and São Lourenço, and further subdivided into smaller settlements. About 70% of the population lives in rural areas and rely on agriculture, livestock, and fishing for their livelihoods. Many expatriates residing in the United States, Portugal, and Angola also contribute to economic development through remittances. São Filipe has a domestic airport and a port, Port of Vale de Cavaleiros, with ferry connections to the Brava and Santiago islands. São Filipe has a regional hospital that serves both Fogo and Brava islands and houses the Regional Command of the National Police of the Islands of Fogo and Brava.

## RISK AND VULNERABILITY COMPONENT SCORE



### MULTI-HAZARD RISK (MHR) - Very High

Score: 0.623 • Rank: 1/22



### RESILIENCE (R) - Very Low

Score: 0.439 • Rank: 18/22



### MULTI-HAZARD EXPOSURE (MHE) - Very High

Score: 0.748 • Rank: 1/22



### VULNERABILITY (V) - Very High

Score: 0.533 • Rank: 4/22



### COPING CAPACITY (CC) - Low

Score: 0.411 • Rank: 14/22



Population (2020 projected)

**20,366**



Infant mortality rate  
(per 1,000 live births)

**18.5**



Poverty rate

**46.2%**



Population with access  
to improved water

**80.7%**



Average years of schooling

**7.1**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 1 / 22 MUNICIPALITIES  
SCORE: 0.748



MHE  
0.748

Raw MHE  
0.712

Relative MHE  
0.784

### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**99.5%**

**17,358**

**\$347.6 Million**

Critical Infrastructure Exposed:  
100.0%



Flood

**0.2%**

**40**

-

Critical Infrastructure Exposed:  
1.0%



Earthquake Induced Landslide

**0.8%**

**135**

**\$573,000**

Critical Infrastructure Exposed:  
29.0%



Precipitation Induced Landslide

**5.6%**

**984**

**\$3.8 Million**

Critical Infrastructure Exposed:  
1.0%



Volcano

**94.3%**

**16,446**

**\$337.8 Million**

Critical Infrastructure Exposed:  
99.0%



Forest Fire

**32.4%**

**5,655**

**\$15.4 Million**

Critical Infrastructure Exposed:  
37.0%



## VULNERABILITY (V)

**RANK: 4 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.533**

Vulnerability in Sao Filipe is primarily driven by Information Access Vulnerability and Economic Constraints. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.338** **RANK: 10/22 MUNICIPALITIES ASSESSED**

<b>0.83</b> Livestock Density per Hectare	<b>36.5%</b> Households Using Firewood as Cooking Fuel	<b>0.1%</b> Loss in Tree Cover (2001 to 2020)
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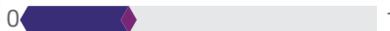
### Vulnerable Health Status

0  1 **SCORE: 0.658** **RANK: 3/22 MUNICIPALITIES ASSESSED**

<b>18.5</b> Infant Mortality Rate (per 1,000 live births)	<b>11.7%</b> Disabled Population	<b>39.0</b> TB Prevalence per 100k Persons	<b>91.8</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.294** **RANK: 13/22 MUNICIPALITIES ASSESSED**

<b>7.4</b> Average Time to Collect Water for Household Use	<b>86.8%</b> Households with Access to Wastewater Services	<b>80.7%</b> Population with Access to Improved Water
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### Information Access Vulnerability

0  1 **SCORE: 0.664** **RANK: 4/22 MUNICIPALITIES ASSESSED**

<b>82.5%</b> Adult Literacy Rate	<b>7.1</b> Average Years of Schooling	<b>66.8%</b> Households with Television	<b>32.9%</b> Households with radio	<b>77.2%</b> Households with Internet access
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### Economic Constraints

0  1 **SCORE: 0.659** **RANK: 6/22 MUNICIPALITIES ASSESSED**

<b>0.56</b> Age dependency ratio	<b>0.43</b> Gini index	<b>10.5%</b> Unemployment Rate	<b>46.2%</b> Poverty rate	<b>12.3%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.601** **RANK: 5/22 MUNICIPALITIES ASSESSED**

**35.3%**  
Female Seats  
Municipal City  
Council

**0.65**  
Female to male labor  
participants

**1.08**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.519** **RANK: 9/22 MUNICIPALITIES ASSESSED**

**-0.85%**  
Average annual  
population  
change

**-37.71**  
Net Migration  
Rate (per 1,000  
persons)

**25.83**  
Youth Bulge



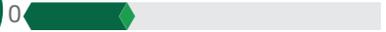
# COPING CAPACITY (CC)

**RANK: 14 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.411**

Sao Filipe exhibits weaker Coping Capacity in the areas of Communications Capacity and Economic Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0  1 **SCORE: 0.279** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**53.97%** **1.96** **111,129**  
Economic Activity Rate Financial Service Locations per 10k Persons Avg Annual Expenditures per Capita CVE



## Governance

0  1 **SCORE: 0.391** **RANK: 22/22 MUNICIPALITIES ASSESSED**

**59%** **451.01** **62.0%**  
Population Properly Disposing Waste Crimes Reported per 10k persons Voter Participation Rate in Local Elections



## Environmental Capacity

0  1 **SCORE: 0.662** **RANK: 3/22 MUNICIPALITIES ASSESSED**

**8.69%**  
Protected Area



## Infrastructure Capacity

0  1 **SCORE: 0.481** **RANK: 13/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.707** **RANK: 2/22 MUNICIPALITIES ASSESSED**

**7.14** **15.23** **100.0%** **0.49**  
Physicians per 10k Persons Nurses per 10k Persons Pct Under 1yr Fully Vaccinated Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.529** **RANK: 12/22 MUNICIPALITIES ASSESSED**

**1.05** **6.47**  
Road density (km per sq. km) Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.249** **RANK: 18/22 MUNICIPALITIES ASSESSED**

**12.9%** **59.5%**  
Households with Fixed Phones Population with Mobile Phone



## Energy Capacity

**SCORE: 0.301** **RANK: 19/22 MUNICIPALITIES ASSESSED**

**82.9%** **59.9%**  
Households with Access to Electricity Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.619** **RANK: 15/22 MUNICIPALITIES ASSESSED**

**7.98** **7.26** **8.84**  
Average Distance to Hospital (km) Average Distance to Police Station (km) Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 18 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.439**

Sao Filipe's score and ranking are due to Very High Vulnerability combined with Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Information  
Access  
Vulnerability



Economic  
Constraints



Communications  
Capacity



Economic Capacity



## HAZARD-SPECIFIC RISK (HSR)



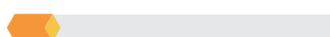
**Drought**



**RANK: 1 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.459**



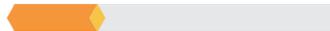
**Flood**



**RANK: 10 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.110**



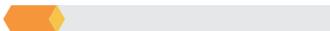
**Earthquake Induced  
Landslide**



**RANK: 4/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.241**



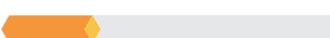
**Precipitation Induced  
Landslide**



**RANK: 11/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.133**



**Forest Fire**



**RANK: 8 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.243**



**Volcano**



**RANK: 1/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.561**



## MULTI-HAZARD RISK (MHR)

1 / 22

RANK WITHIN MUNICIPALITIES  
Score: 0.623



Sao Filipe's score and ranking are due to Very High Multi-hazard Exposure combined with Very High Vulnerability and Low Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

SAO FILIPE SCORE  
COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## SAO FILIPE RECOMMENDATIONS

### 1

#### Information Access Vulnerability

Sao Filipe ranks 4th highest for overall Information Access Vulnerability. Findings show constraints with regard to household access to television (67% with access) and radio (33%). In addition, the municipality has the 6th highest rate of illiteracy in the country with an adult literacy rate of 82.5%.

Focus efforts on providing programs to increase school attendance and completion of secondary education. Work with communities to better understand the underlying factors that represent barriers to education and literacy. Economic constraints, in particular, may drive disparities in the municipality.

Implement community outreach and education programs focused on hazard awareness, disaster preparedness, and health and safety practices to build community resilience. Include information and resources for audiences requiring special considerations such as the very young, elderly, and disabled populations. Boost public-private collaboration and coordination to ensure that hazard warning information is accessible and disseminated as broadly as possible through multiple communications channels.

### 2

#### Economic Constraints

With the 6th highest overall Economic Constraints ranking, Sao Filipe has the second highest poverty rate in the country (46.2%) and the 5th highest age dependency ratio. More than half of the population (0.56) is under the age of 15 and/or over 64 years of age and therefore dependent upon the working age population (ages 15 to 64). Sao Filipe also has the 4th highest income inequality (Gini coefficient of 0.43). Based on available hazard information, Sao Filipe has the highest overall Multi-hazard Exposure in Cabo Verde, with significant exposure to volcanic hazards and drought. Economic constraints are exacerbated and perpetuated by the negative consequences of repeated hazard exposure.

Assess disaster response and recovery plans to ensure that economically vulnerable and dependent populations are identified, as poor populations are more likely to be severely impacted by disasters and have slower recovery times. In addition, elderly populations and families with young children may need additional support to accommodate special needs during evacuation and in shelters.

Strengthen collaboration between social service entities, private sector organizations and NGOs to coordinate poverty reduction efforts and delivery of services. Strengthen social assistance programs that provide benefits for elderly, low income, and single-parent households. Economic constraints in Sao Filipe are closely linked to Information Access Vulnerability and vice versa. Removing economic barriers to education, and ensuring equitable access to schools, educational resources, and information technology will reduce vulnerability in the municipality.

## SAO FILIPE RECOMMENDATIONS

### 3

#### Communications Capacity

Sao Filipe ranks 5th lowest for overall Communications Capacity, with the 3rd lowest percentage (59.5%) of the population having mobile phones, and 13% of households with fixed phones. Limited communications capacity exacerbates information access vulnerability and hinders the ability of government agencies to share critical information during disasters.

Boost Communications Capacity and overall resilience through the expansion of infrastructure to ensure coverage, accessibility, and reliability of communications during disasters. Encourage telecommunications infrastructure development at a sustainable pace and implement risk reduction measures in all infrastructure enhancements to protect against hazard impacts. Create communications plans to share critical information with the public during disasters, leveraging multimodal communication strategies (radio, internet, television, fixed- and mobile telephone).

### 4

#### Economic Capacity

Ranking 9th lowest for overall Economic Capacity, Sao Filipe has the 5th lowest average annual expenditures (111,129 CVE) per capita and just 1.96 financial service locations per 10,000 persons. Given the very high overall multi-hazard risk in Sao Filipe (highest in Cabo Verde), limitations in economic capacity reduce economic protection and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

Sao Filipe's economy is driven primarily by agriculture and fishing. Household incomes are also supported by foreign remittances. Continue to support environmental protections and invest in infrastructure enhancements to encourage formalization and expansion of artisanal fishing and small farms. Ensure that new development is sustainable and does not contribute to environmental stress or increased hazard exposure. Expand financial services to increase access to credit for small businesses and foster local economic development.

Increase access to vocational, technical, and entrepreneurial training to directly support labor market needs and diversify the municipal economy. Expanding local economic opportunities will reduce reliance on external remittances and bolster household incomes.

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**CABO VERDE**

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# **SAO LOURENCO DOS ORGAOS**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE

## SÃO LOURENÇO DOS ÓRGÃOS

### ISLAND: SANTIAGO

Area: 37 km<sup>2</sup>

The municipality of São Lourenço dos Órgãos is located in the center of the island of Santiago and is mountainous with deep valleys and no coastline. The highest point is Pico de Antónia (1,392 m), from where the streams of Longueira, Covoada and Pico de Antónia originate, which are tributaries of the Ribeira Seca valley. Established in 2005, São Lourenço dos Órgãos consists of one parish subdivided into numerous settlements. São Lourenço is a rural municipality with the main economic activities being agriculture (corn and beans) and livestock. Brandy making is a municipal tradition that provides permanent jobs in the industry, including sales and exports. In the city center of João Teves, there are administrative services and bar/restaurant amenities. Pico de Antónia provides mountain tourism potential since it is the highest elevation on Santiago Island and the third-highest elevation in the country. The São Jorge Botanical Garden is another ecological and mountain tourism attraction. The strategic location of its being at the center of the island with easy access to other municipalities as well as having the Barragem de Poilão dam, position the municipality with development potential.



## RISK AND VULNERABILITY COMPONENT SCORE



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

Score: 0.413 • Rank: 16/22



### RESILIENCE (R) - Low

Score: 0.455 • Rank: 16/22



### MULTI-HAZARD EXPOSURE (MHE) - Very Low

Score: 0.148 • Rank: 21/22



### VULNERABILITY (V) - High

Score: 0.493 • Rank: 7/22



### COPING CAPACITY (CC) - Low

Score: 0.403 • Rank: 16/22



Population (2020 projected)

**6,913**



Infant mortality rate  
(per 1,000 live births)

**0.0**



Poverty rate

**38.1%**



Population with access  
to improved water

**62.3%**



Average years of schooling

**7.5**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 21 / 22 MUNICIPALITIES

SCORE: 0.148



MHE  
0.148

Raw MHE  
0.147

Relative MHE  
0.149

### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**39.3%**

**3,010**

-

Critical Infrastructure Exposed:

0.0%



Flood

**0.0%**

**1**

-

Critical Infrastructure Exposed:

0.0%



Earthquake Induced Landslide

**0.5%**

**37**

-

Critical Infrastructure Exposed:

0.0%



Precipitation Induced Landslide

**25.8%**

**1,981**

**\$51.2 Million**

Critical Infrastructure Exposed:

33.0%



Volcano

**0.0%**

**0**

-

Critical Infrastructure Exposed:

0.0%



Forest Fire

**68.4%**

**5,245**

**\$134.1 Million**

Critical Infrastructure Exposed:

33.0%



## VULNERABILITY (V)

**RANK: 7 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.493**

Vulnerability in Sao Lourenco Dos Orgaos is primarily driven by Clean Water Access Vulnerability and Environmental Stress. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



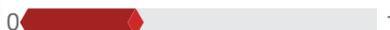
### Environmental Stress

0  1 **SCORE: 0.600** **RANK: 3/22 MUNICIPALITIES ASSESSED**

<b>1.32</b> Livestock Density per Hectare	<b>59.1%</b> Households Using Firewood as Cooking Fuel	<b>2.6%</b> Loss in Tree Cover (2001 to 2020)
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### Vulnerable Health Status

0  1 **SCORE: 0.314** **RANK: 22/22 MUNICIPALITIES ASSESSED**

<b>0.0</b> Infant Mortality Rate (per 1,000 live births)	<b>12.6%</b> Disabled Population	<b>–</b> TB Prevalence per 100k Persons	<b>28.6</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.690** **RANK: 5/22 MUNICIPALITIES ASSESSED**

<b>21.6</b> Average Time to Collect Water for Household Use	<b>75.7%</b> Households with Access to Wastewater Services	<b>62.3%</b> Population with Access to Improved Water
--	--	--



### Information Access Vulnerability

0  1 **SCORE: 0.390** **RANK: 16/22 MUNICIPALITIES ASSESSED**

<b>88.7%</b> Adult Literacy Rate	<b>7.5</b> Average Years of Schooling	<b>84.4%</b> Households with Television	<b>50.5%</b> Households with radio	<b>65.1%</b> Households with Internet access
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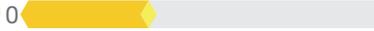
### Economic Constraints

0  1 **SCORE: 0.575** **RANK: 9/22 MUNICIPALITIES ASSESSED**

<b>0.54</b> Age dependency ratio	<b>0.36</b> Gini index	<b>11.2%</b> Unemployment Rate	<b>38.1%</b> Poverty rate	<b>6.6%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.351** **RANK: 16/22 MUNICIPALITIES ASSESSED**

**38.5%**  
Female Seats  
Municipal City  
Council

**0.79**  
Female to male labor  
participants

**1.04**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.534** **RANK: 5/22 MUNICIPALITIES ASSESSED**

**-0.64%**  
Average annual  
population  
change

**-32.35**  
Net Migration  
Rate (per 1,000  
persons)

**28.36**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 16 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.403**

Sao Lourenco Dos Orgaos exhibits weaker Coping Capacity in the areas of Economic Capacity and Communications Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.060** **RANK: 21/22 MUNICIPALITIES ASSESSED**

**41.30%** **0** **103,341**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.725** **RANK: 4/22 MUNICIPALITIES ASSESSED**

**47%** **167.38** **79.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0.476** **RANK: 7/22 MUNICIPALITIES ASSESSED**

**3.23%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.400** **RANK: 17/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.327** **RANK: 18/22 MUNICIPALITIES ASSESSED**

**1.41** **7.06** **100.0%** **0**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.527** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**2.30** **18.82**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.120** **RANK: 21/22 MUNICIPALITIES ASSESSED**

**2.7%** **61.8%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.395** **RANK: 18/22 MUNICIPALITIES ASSESSED**

**92.4%** **39.9%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.628** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**11.85** **2.08** **13.02**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 16 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.455**

Sao Lourenco Dos Orgaos's score and ranking are due to High Vulnerability combined with Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Clean Water  
Access  
Vulnerability



Environmental  
Stress



Economic Capacity



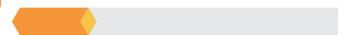
Communications  
Capacity



## HAZARD-SPECIFIC RISK (HSR)



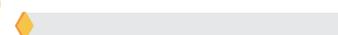
**Drought**



**RANK: 21 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.200**



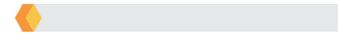
**Flood**



**RANK: 21 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.009**



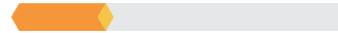
**Earthquake Induced  
Landslide**



**RANK: 19/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.032**



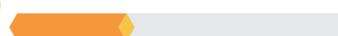
**Precipitation Induced  
Landslide**



**RANK: 6/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.253**



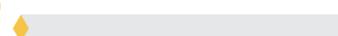
**Forest Fire**



**RANK: 5 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.319**



**Volcano**



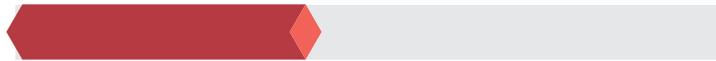
**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**16 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.413

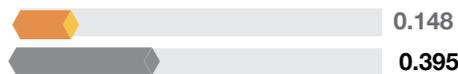


Sao Lourenco Dos Orgaos's score and ranking are due to Very Low Multi-hazard Exposure combined with High Vulnerability and Low Coping Capacity scores.

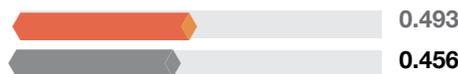
### Multi-hazard risk component scores compared to overall average country scores:



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## SAO LOURENCO DOS ORGAOS RECOMMENDATIONS

# 1

### Clean Water Access Vulnerability

Sao Lourenco Dos Orgaos has the 5th highest overall Clean Water Access Vulnerability ranking, driven by the 3rd lowest access to wastewater systems (just 62.3% of the population has access). In addition, households require an average of 22 minutes to travel to a main water source, collect water and return home. 75.7% of households have access to an improved water source.

Within the municipality and across the nation, chronic drought conditions threaten water security. With support from NGOs, regional, and international partners, prioritize investments to improve and extend safe and reliable water delivery and wastewater treatment systems within the municipality. Even in areas with improved sanitation infrastructure, severe drought conditions significantly increase the concentration of downstream contaminants. Increasing access to improved water and sanitation has positive cascading effects on public and environmental health, quality of life, economic opportunities, and gender equality by safeguarding water supplies and reducing time needed to gather water.

Continue efforts to reduce the high cost of water services, especially in poor and vulnerable communities.

# 2

### Environmental Stress

Ranking 3rd highest for overall Environmental Stress, nearly 60% of households use firewood as their primary cooking fuel, contributing to the nearly 3% loss in tree cover in the municipality over a 20-year period. Sao Lourenco Dos Orgaos has the 4th highest livestock density in the country (1.32 per hectare).

Existing environmental stress combined with climate change may contribute to land degradation, food insecurity and increased frequency, intensity, and susceptibility to natural hazards. Develop sustainable energy and forest land management strategies to reduce reliance on firewood as a primary cooking fuel. Support reforestation programs to maintain and increase tree cover, which acts as a natural buffer against negative hazard impacts. Monitor agricultural practices and develop incentives for sustainable livestock production.

Given Sao Lourenco Dos Orgaos' significant exposure to drought, forest fire, and landslides, provide educational training to both private and public entities to promote hazard awareness and sustainable development to monitor, manage, and reduce environmental stress

## SAO LOURENCO DOS ORGAOS RECOMMENDATIONS

### 3

#### Economic Capacity

With the 2nd lowest ranking for overall Economic Capacity, Sao Lourenco Dos Orgaos has no financial service locations per 10,000 persons, the 3rd lowest average annual expenditures (103,341 CVE) per capita, and the 4th lowest economic activity rate with just 41.3% of those aged 15 and over participating in the workforce. Given Sao Lourenco Dos Orgaos' overall vulnerability (7th highest in Cabo Verde), limitations in economic capacity reduce economic protection and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

Sao Lourenco Dos Orgaos' economy is driven primarily by agriculture. Continue to support environmental protections while investing in infrastructure enhancements (particularly water and sanitation) to encourage formalization and expansion of existing enterprises. Ensure that new development is sustainable and does not contribute to environmental stress or increased hazard exposure. Expand financial services to increase access to credit for small businesses and foster local economic development.

Increase access to vocational, technical, and entrepreneurial training to diversify the local economy and directly support labor market needs in the municipality. Expanding local economic opportunities will bolster labor participation and employment, supporting increased household incomes.

### 4

#### Communications Capacity

Sao Lourenco Dos Orgaos has the 2nd lowest ranking for overall Communications Capacity, with the fewest percentage of households having a fixed phone (2.7%) and approximately 62% of the population owning a mobile phone. Limited communications capacity exacerbates information access vulnerability and hinders the ability of government agencies to share critical information during disasters.

Boost Communications Capacity and overall resilience through the expansion of infrastructure to ensure coverage, accessibility, and reliability of communications during disasters. Encourage telecommunications infrastructure development at a sustainable pace and implement risk reduction measures in all infrastructure enhancements to protect against hazard impacts. Create communications plans to share critical information with the public during disasters, leveraging multimodal communication strategies (radio, internet, television, fixed- and mobile telephone).

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**CABO VERDE**

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# **SAO MIGUEL**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE SAO MIGUEL



## ISLAND: SANTIAGO

Area: 77 km<sup>2</sup>

The municipality of São Miguel is located on the northeastern part of the island of Santiago and bordered by three municipalities, Tarrafal to the north, Santa Cruz to the south, and Santa Catarina to the west, with which it shares some common infrastructure. To the east is the Atlantic Ocean. Due to its terrain, the economy is based on agriculture using irrigation along streams and rainfed systems that produce maize, beans, sweet potatoes, and manioc. However, irregular rainfall results in yields that are low and inconsistent. Livestock and fishing are also income-generating activities of the municipal population, although fishing remains limited to family practice due to a lack of basic infrastructure to support the industry. Production of brandy, sugar cane honey, cheese, liqueurs, and confectionery as well as small carpentry, metal welding shops, autobody shops, and mechanics subsectors are also observed. Environmental degradation is a major issue particularly in the city of Calheta where sand extraction has depleted the coast and presents harmful effects to sea turtles. A national protection plan has been issued to tackle this problem.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Very High**  
Score: 0.550 • Rank: 3/22



**RESILIENCE (R) - Very Low**  
Score: 0.389 • Rank: 20/22



**MULTI-HAZARD EXPOSURE (MHE) - Moderate**  
Score: 0.428 • Rank: 8/22



**VULNERABILITY (V) - Very High**  
Score: 0.601 • Rank: 2/22



**COPING CAPACITY (CC) - Very Low**  
Score: 0.378 • Rank: 19/22



Population (2020 projected)  
**13,779**



Infant mortality rate  
(per 1,000 live births)  
**11.2**



Poverty rate  
**30.9%**



Population with access  
to improved water  
**65.3%**

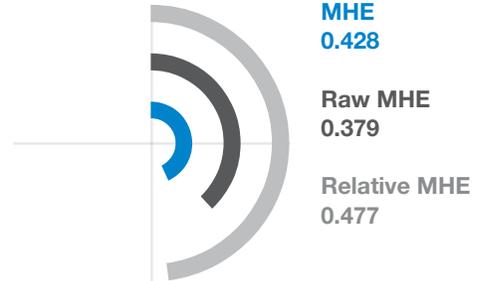


Average years of schooling  
**7.5**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 8 / 22 MUNICIPALITIES  
SCORE: 0.428



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**89.5%**

**12,569**

**\$172.8 Million**

**Critical Infrastructure Exposed:**  
**97.0%**



Flood

**1.9%**

**268**

-

**Critical Infrastructure Exposed:**  
**5.0%**



Earthquake Induced Landslide

**3.4%**

**479**

**\$34.5 Million**

**Critical Infrastructure Exposed:**  
**0.0%**



Precipitation Induced Landslide

**13.3%**

**1,865**

**\$75.8 Million**

**Critical Infrastructure Exposed:**  
**0.0%**



Volcano

**0.0%**

**0**

-

**Critical Infrastructure Exposed:**  
**0.0%**



Forest Fire

**50.9%**

**7,151**

**\$85.4 Million**

**Critical Infrastructure Exposed:**  
**65.0%**



## VULNERABILITY (V)

**RANK: 2 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.601**

Vulnerability in Sao Miguel is primarily driven by Clean Water Access Vulnerability and Population Pressures. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.638** **RANK: 1/22 MUNICIPALITIES ASSESSED**

<b>1.26</b> Livestock Density per Hectare	<b>67.4%</b> Households Using Firewood as Cooking Fuel	<b>3.2%</b> Loss in Tree Cover (2001 to 2020)
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### Vulnerable Health Status

0  1 **SCORE: 0.475** **RANK: 10/22 MUNICIPALITIES ASSESSED**

<b>11.2</b> Infant Mortality Rate (per 1,000 live births)	<b>6.4%</b> Disabled Population	<b>42.0</b> TB Prevalence per 100k Persons	<b>92.1</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.881** **RANK: 1/22 MUNICIPALITIES ASSESSED**

<b>26.3</b> Average Time to Collect Water for Household Use	<b>61.2%</b> Households with Access to Wastewater Services	<b>65.3%</b> Population with Access to Improved Water
--	--	--



### Information Access Vulnerability

0  1 **SCORE: 0.663** **RANK: 5/22 MUNICIPALITIES ASSESSED**

<b>81.1%</b> Adult Literacy Rate	<b>7.5</b> Average Years of Schooling	<b>67.8%</b> Households with Television	<b>37.8%</b> Households with radio	<b>62.5%</b> Households with Internet access
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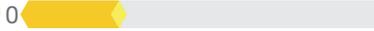
### Economic Constraints

0  1 **SCORE: 0.605** **RANK: 7/22 MUNICIPALITIES ASSESSED**

<b>0.56</b> Age dependency ratio	<b>0.36</b> Gini index	<b>14.8%</b> Unemployment Rate	<b>30.9%</b> Poverty rate	<b>5.9%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.265** **RANK: 19/22 MUNICIPALITIES ASSESSED**

**47.1%**  
Female Seats  
Municipal City  
Council

**0.77**  
Female to male labor  
participants

**1.04**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.681** **RANK: 1/22 MUNICIPALITIES ASSESSED**

**-1.19%**  
Average annual  
population  
change

**-52.47**  
Net Migration  
Rate (per 1,000  
persons)

**29.26**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 19 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.378**

Sao Miguel exhibits weaker Coping Capacity in the areas of Energy Capacity and Communications Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.200** **RANK: 17/22 MUNICIPALITIES ASSESSED**

**45.95%** **0.73** **131,365**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.517** **RANK: 16/22 MUNICIPALITIES ASSESSED**

**43%** **177.75** **60.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0.597** **RANK: 4/22 MUNICIPALITIES ASSESSED**

**6.39%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.345** **RANK: 21/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.509** **RANK: 10/22 MUNICIPALITIES ASSESSED**

**2.76** **5.52** **100.0%** **0.73**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.378** **RANK: 18/22 MUNICIPALITIES ASSESSED**

**2.58** **33.62**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.146** **RANK: 20/22 MUNICIPALITIES ASSESSED**

**6.2%** **59.0%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.082** **RANK: 22/22 MUNICIPALITIES ASSESSED**

**82.6%** **31.6%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.608** **RANK: 16/22 MUNICIPALITIES ASSESSED**

**4.37** **10.62** **3.63**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 20 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.389**

Sao Miguel's score and ranking are due to Very High Vulnerability combined with Very Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Clean Water Access Vulnerability**



**Population Pressures**



**Energy Capacity**



**Communications Capacity**



## HAZARD-SPECIFIC RISK (HSR)



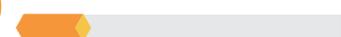
**Drought**



**RANK: 16 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.274**



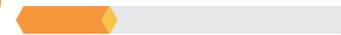
**Flood**



**RANK: 5 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.173**



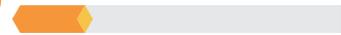
**Earthquake Induced Landslide**



**RANK: 3/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.250**



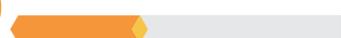
**Precipitation Induced Landslide**



**RANK: 8/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.189**



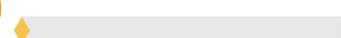
**Forest Fire**



**RANK: 2 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.355**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**3 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.550



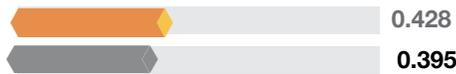
Sao Miguel's score and ranking are due to Moderate Multi-hazard Exposure combined with Very High Vulnerability and Very Low Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

SAO MIGUEL SCORE  
COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## SAO MIGUEL RECOMMENDATIONS

1

### Clean Water Access Vulnerability

Sao Miguel has the highest relative Clean Water Access Vulnerability score in Cabo Verde, driven by significant constraints in household access to an improved water source. The municipality has the lowest percentage of households with access (61.2%), and households take on average, 26.3 minutes to travel to a main water source, collect water and return home. In addition, just 65.3% of the population has access to improved wastewater systems.

Within the municipality and across the nation, chronic drought conditions threaten water security. With support from NGOs, regional, and international partners, prioritize investments to improve and extend safe and reliable water delivery and wastewater treatment systems within the municipality. Even in areas with improved sanitation infrastructure, severe drought conditions significantly increase the concentration of downstream contaminants. Increasing access to improved water and sanitation has positive cascading effects on public and environmental health, quality of life, economic opportunities, and gender equality by safeguarding water supplies and reducing time needed to gather water.

Continue efforts to reduce the high cost of water services, especially in poor and vulnerable communities.

2

### Population Pressures

Sao Miguel has the highest relative ranking for overall Population Pressures, driven by a net migration rate of -52.47 per 1,000 persons, and a youth bulge of 29.26%. The municipality has seen an average annual decline in population of -1.2% between 2010 and 2020.

High rates of emigration from the municipality can leave gaps in social support systems and contribute to a loss of intellectual capital and skilled labor, affecting the economy and its growth potential. Combined with the youth bulge, decreases in economic opportunities and employment have the potential to become a source of social and political instability in the municipality.

Strengthen economic planning efforts to identify vulnerabilities related to the changing population. Implement programs and support systems to identify gainful employment opportunities for youth residing in the municipality, including vocational, technical, and entrepreneurial training programs. Ensuring productive employment in a youth bulge, when economic dependency is low, tends to increase per capita income, yielding a demographic dividend. Combined with services to alleviate poverty, enhanced policing in areas susceptible to criminal activity will reduce population pressures in Sao Miguel.

## SAO MIGUEL RECOMMENDATIONS

### 3

#### Energy Capacity

Sao Miguel has the lowest overall Energy Capacity relative to other municipalities in the country with the lowest percentage of households having access to gas for cooking fuel (31.6%) and 82.6% of households having access to electricity.

Focus development programs on increasing energy capacity by establishing sustainable power generation in underserved communities and extending the existing transmission and distribution network. Continue to expand private-public partnerships to ensure energy expansion projects provide affordable and equitable access across the municipality.

Power and gas lines should be carefully engineered to be resilient against impacts from natural hazards, with backup mechanisms to increase safety and redundancy in the energy network.

### 4

#### Communications Capacity

Sao Miguel has the 3rd lowest ranking for overall Communications Capacity in Cabo Verde, driven by the 2nd lowest percentage of mobile phone ownership (59%) and the 4th lowest percentage of households with a fixed phone (6.2%). Limited communications capacity exacerbates information access vulnerability and hinders the ability of government agencies to share critical information during disasters.

Boost Communications Capacity and overall resilience through the expansion of infrastructure to ensure coverage, accessibility, and reliability of communications during disasters. Encourage telecommunications infrastructure development at a sustainable pace and implement risk reduction measures in all infrastructure enhancements to protect against hazard impacts. Create communications plans to share critical information with the public during disasters, leveraging multimodal communication strategies (radio, internet, television, fixed- and mobile telephone).

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Fewer disasters.**

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**CABO VERDE**

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# **SAO SALVADOR DO MUNDO**

---

**NDPBA MUNICIPAL PROFILE**

# CABO VERDE SAO SALVADOR DO

## MUNDO

Area: 27 km<sup>2</sup>



The municipality of São Salvador do Mundo is located in the center of the island of Santiago. The municipality is mountainous with deep valleys and has no coastline. Established in 2005, São Salvador do Mundo Municipality consists of one parish that is subdivided into numerous settlements. São Salvador do Mundo is a rural municipality with the main economic activities being agriculture and livestock. The valleys and slopes of the Picos Watershed provide a favorable climate for agriculture potential. Almost 95% of agricultural land is cultivated under a rainfed regime. Brandy making and iron smelting are other economic activities along with a retail sector established in the Achada Igreja area. Livestock farming (goats and pigs) is very prominent in the municipality due to its proximity to Assomada, in Santa Catarina, where there is a livestock market. While a tourism potential exists in São Salvador do Mundo, very limited tourist infrastructure exists with only a few restaurants and a couple of hotels mainly in Achada Igreja.

### RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Very High**  
Score: 0.576 • Rank: 2/22



**RESILIENCE (R) - Very Low**  
Score: 0.336 • Rank: 22/22



**MULTI-HAZARD EXPOSURE (MHE) - Low**  
Score: 0.400 • Rank: 13/22



**VULNERABILITY (V) - Very High**  
Score: 0.609 • Rank: 1/22



**COPING CAPACITY (CC) - Very Low**  
Score: 0.280 • Rank: 22/22



Population (2020 projected)  
**8,596**



Infant mortality rate  
(per 1,000 live births)  
**23.7**



Poverty rate  
**44.8%**



Population with access  
to improved water  
**31.9%**

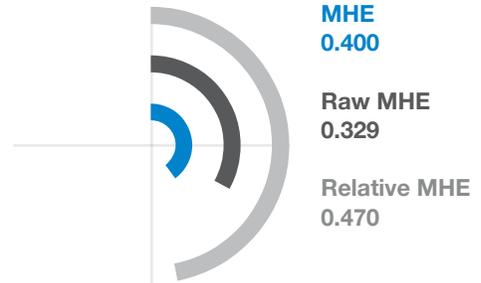


Average years of schooling  
**7.3**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 13 / 22 MUNICIPALITIES  
SCORE: 0.400



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**0.2%**

**10**

-

**Critical Infrastructure Exposed:**  
**33.0%**



Flood

**0.5%**

**32**

-

**Critical Infrastructure Exposed:**  
**0.0%**



Earthquake Induced Landslide

**3.7%**

**246**

-

**Critical Infrastructure Exposed:**  
**33.0%**



Precipitation Induced Landslide

**74.1%**

**4,981**

**\$458.7 Million**

**Critical Infrastructure Exposed:**  
**50.0%**



Volcano

**0.0%**

**0**

-

**Critical Infrastructure Exposed:**  
**0.0%**



Forest Fire

**87.0%**

**5,850**

**\$458.7 Million**

**Critical Infrastructure Exposed:**  
**50.0%**



## VULNERABILITY (V)

**RANK: 1 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.609**

Vulnerability in Sao Salvador Do Mundo is primarily driven by Clean Water Access Vulnerability and Economic Constraints. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.610** **RANK: 2/22 MUNICIPALITIES ASSESSED**

<b>2.10</b> Livestock Density per Hectare	<b>56.0%</b> Households Using Firewood as Cooking Fuel	<b>0.0%</b> Loss in Tree Cover (2001 to 2020)
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### Vulnerable Health Status

0  1 **SCORE: 0.539** **RANK: 8/22 MUNICIPALITIES ASSESSED**

<b>23.7</b> Infant Mortality Rate (per 1,000 live births)	<b>8.6%</b> Disabled Population	<b>–</b> TB Prevalence per 100k Persons	<b>34.8</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.827** **RANK: 2/22 MUNICIPALITIES ASSESSED**

<b>22.6</b> Average Time to Collect Water for Household Use	<b>73.0%</b> Households with Access to Wastewater Services	<b>31.9%</b> Population with Access to Improved Water
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### Information Access Vulnerability

0  1 **SCORE: 0.577** **RANK: 10/22 MUNICIPALITIES ASSESSED**

<b>81.6%</b> Adult Literacy Rate	<b>7.3</b> Average Years of Schooling	<b>80.3%</b> Households with Television	<b>27.5%</b> Households with radio	<b>72.6%</b> Households with Internet access
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### Economic Constraints

0  1 **SCORE: 0.718** **RANK: 1/22 MUNICIPALITIES ASSESSED**

<b>0.59</b> Age dependency ratio	<b>0.32</b> Gini index	<b>20.2%</b> Unemployment Rate	<b>44.8%</b> Poverty rate	<b>3.5%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.531** **RANK: 8/22 MUNICIPALITIES ASSESSED**

**38.5%**  
Female Seats  
Municipal City  
Council

**0.64**  
Female to male labor  
participants

**1.08**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.457** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**-0.09%**  
Average annual  
population  
change

**-37.34**  
Net Migration  
Rate (per 1,000  
persons)

**29.73**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 22 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.280**

Sao Salvador Do Mundo exhibits weaker Coping Capacity in the areas of Economic Capacity and Health Care Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.000** **RANK: 22/22 MUNICIPALITIES ASSESSED**

**38.69%** **0** **89,691**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.520** **RANK: 15/22 MUNICIPALITIES ASSESSED**

**25%** **170.53** **68.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**0.00%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.413** **RANK: 15/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.094** **RANK: 21/22 MUNICIPALITIES ASSESSED**

**1.16** **4.63** **78.5%** **0**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.575** **RANK: 11/22 MUNICIPALITIES ASSESSED**

**3.51** **23.63**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.149** **RANK: 19/22 MUNICIPALITIES ASSESSED**

**3.9%** **61.8%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.587** **RANK: 12/22 MUNICIPALITIES ASSESSED**

**98.9%** **43.3%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.662** **RANK: 10/22 MUNICIPALITIES ASSESSED**

**6.93** **2.04** **8.14**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 22 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.336**

Sao Salvador Do Mundo's score and ranking are due to Very High Vulnerability combined with Very Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Clean Water Access Vulnerability



Economic Constraints



Economic Capacity



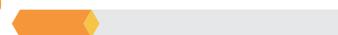
Health Care Capacity



## HAZARD-SPECIFIC RISK (HSR)



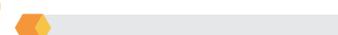
**Drought**



**RANK: 20 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.209**



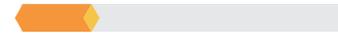
**Flood**



**RANK: 18 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.059**



**Earthquake Induced Landslide**



**RANK: 9/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.200**



**Precipitation Induced Landslide**



**RANK: 1/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.556**



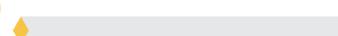
**Forest Fire**



**RANK: 1 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.502**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**2 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.576



Sao Salvador Do Mundo's score and ranking are due to Low Multi-hazard Exposure combined with Very High Vulnerability and Very Low Coping Capacity scores.

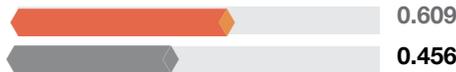
### Multi-hazard risk component scores compared to overall average country scores:



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## SAO SALVADOR DO MUNDO RECOMMENDATIONS

### 1

#### Clean Water Access Vulnerability

Sao Salvador Do Mundo has the 2nd lowest ranking for overall Clean Water Vulnerability, with the lowest percentage of the population having access to wastewater systems (32%) in the country. Additionally, households in the municipality have constraints related to access to improved water. Just 73% of households have access, and on average, it takes 23 minutes for household members to travel to a main water source, collect water and return home.

Within the municipality and across the nation, chronic drought conditions threaten water security. With support from NGOs, regional, and international partners, prioritize investments to improve and extend safe and reliable water delivery and wastewater treatment systems within the municipality. Even in areas with improved sanitation infrastructure, severe drought conditions significantly increase the concentration of downstream contaminants. Increasing access to improved water and sanitation has positive cascading effects on public and environmental health, quality of life, economic opportunities, and gender equality by safeguarding water supplies and reducing time needed to gather water.

Continue efforts to reduce the high cost of water services, especially in poor and vulnerable communities.

### 2

#### Economic Constraints

RVA findings show that Sao Salvador Do Mundo has the highest Economic Constraints in Cabo Verde. The municipality has the 2nd highest age dependency ratio (0.59), the 2nd highest rate of unemployment (20.2%), the 3rd highest poverty rate (45%), and few households own a vehicle (3.5%).

Families without a vehicle will be challenged to evacuate to safety when disasters strike. Identify vulnerable communities' transportation challenges and include strategies to support evacuation in municipal disaster plans. In addition, assess disaster response and recovery plans to ensure that economically vulnerable and dependent populations are identified, as poor populations are more likely to be severely impacted by disasters and have slower recovery times. Elderly populations and families with young children may need additional support to accommodate special needs during evacuation and in shelters.

Strengthen collaboration between social service entities, private sector organizations and NGOs to coordinate poverty reduction efforts and delivery of services. Strengthen social assistance programs that provide benefits for elderly, low income, and single-parent households. Provide incentives for new development to include affordable and low-income housing to reduce the propensity for informal settlement.

## SAO SALVADOR DO MUNDO RECOMMENDATIONS

### 3

#### Economic Capacity

Sao Salvador Do Mundo has the lowest ranking for overall Economic Capacity in Cabo Verde with the lowest economic activity rate in the country (only 38.69% of those 15 and older are active in the workforce), no financial service locations per 10,000 persons, and the lowest average annual expenditures (89,691 CVE) per capita. Given Sao Salvador Do Mundo's low overall resilience (lowest in Cabo Verde), limitations in economic capacity reduce economic protection and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

Sao Salvador Do Mundo's economy is driven primarily by agriculture. Continue to support environmental protections while investing in infrastructure enhancements (particularly water and sanitation) to encourage formalization and expansion of existing enterprises. Continue to assess potential to expand tourism to the municipality. Ensure that new development is sustainable and does not contribute to environmental stress or increased hazard exposure. Expand financial services to increase access to credit for small businesses and foster local economic development.

Increase access to vocational, technical, and entrepreneurial training to diversify the local economy and directly support labor market needs in the municipality. Expanding local economic opportunities will bolster labor participation and employment, supporting increased household incomes.

### 4

#### Health Care Capacity

Ranking 2nd lowest for overall Health Care Capacity, RVA findings show that Sao Salvador Do Mundo has no access to hospital services, very limited numbers of physicians (1.16) and nurses (4.63) per 10,000 persons, and one of the lowest vaccination rates (78.5%) for children under one year of age relative to other municipalities in Cabo Verde.

Low vaccination coverage demonstrates the potential for disease outbreaks and the need to increase utilization of medical services in the municipality. Support vaccination campaigns, particularly in vulnerable and remote communities where health care access is limited. Work to assess and remove barriers to health care access. Ensure that travel distances to health services are equitable for vulnerable communities.

Ensuring that health care capacity can meet the needs of the population, including the potential for mass casualty events, is vital to protect lives in the event of a disaster. Given the limitations in economic capacity, expanded partnerships with NGOs, private sector, regional hospital systems, and international donor agencies may be needed to expand health care infrastructure, hospital capabilities, and skilled medical staff in the municipality. While long-term enhancements to health care infrastructure and skilled medical care are developed, support underserved communities by developing a program for visiting medical practitioners to increase access to preventive and acute care in the municipality.

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**CABO VERDE**

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# **SAO VICENTE**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE

## SAO VICENTE



### ISLAND: SAO VICENTE

Area: 227 km<sup>2</sup>

The municipality of São Vicente shares the same name as the island on which it is located and lies in the northern part of the Cabo Verdean archipelago, between the islands of Santo Antão and São Nicolau. Its capital, the city of Mindelo, is home to 93% of the population. This makes the island one of the most densely populated in the country. Since Cabo Verde's independence, with heavy investment from the government, the island's economy has expanded with many companies and factories as well as an international airport (Cesária Évora). Commerce, fishing, livestock, and the hospitality industry are primary economic drivers, making São Vicente the second largest contributor to the national GDP after Praia. The municipality's poultry farms supply the entire archipelago with eggs. São Vicente has the most developed industrial sector in Cabo Verde where a variety of products are manufactured including bakery, pasta, soft drinks, cereal, coffee grinding, soap, as well as metallurgical industry, shipbuilding, and construction. The city of Mindelo is home to four higher education institutions including the University of Mindelo, Lusófona University of Cabo Verde, Higher Institute of Economic and Business Sciences, and University Institute of Art, Technology, and Culture.

## RISK AND VULNERABILITY COMPONENT SCORE



**MULTI-HAZARD RISK (MHR) - Low**  
Score: 0.420 • Rank: 15/22



**RESILIENCE (R) - High**  
Score: 0.574 • Rank: 7/22



**MULTI-HAZARD EXPOSURE (MHE) - Moderate**  
Score: 0.407 • Rank: 11/22



**VULNERABILITY (V) - Very Low**  
Score: 0.359 • Rank: 20/22



**COPING CAPACITY (CC) - Moderate**  
Score: 0.508 • Rank: 10/22



Population (2020 projected)  
**84,964**



Infant mortality rate  
(per 1,000 live births)  
**15.3**



Poverty rate  
**16.3%**



Population with access  
to improved water  
**95.0%**



Average years of schooling  
**7.9**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 11 / 22 MUNICIPALITIES  
SCORE: 0.407



MHE  
0.407

Raw MHE  
0.665

Relative MHE  
0.150

### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**100.0%**

**82,414**

**\$1.2 Billion**

Critical Infrastructure Exposed:  
**100.0%**



Flood

**2.0%**

**1,620**

-

Critical Infrastructure Exposed:  
**0.0%**



Earthquake Induced Landslide

**1.6%**

**1,339**

**\$13.2 Million**

Critical Infrastructure Exposed:  
**20.0%**



Precipitation Induced Landslide

**0.0%**

**13**

-

Critical Infrastructure Exposed:  
**0.0%**



Volcano

**0.0%**

**0**

-

Critical Infrastructure Exposed:  
**0.0%**



Forest Fire

**4.9%**

**4,047**

**\$3.3 Million**

Critical Infrastructure Exposed:  
**11.0%**



## VULNERABILITY (V)

**RANK: 20 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.359**

Vulnerability in Sao Vicente is primarily driven by Vulnerable Health Status and Economic Constraints. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0 1 **SCORE: 0.282** **RANK: 13/22 MUNICIPALITIES ASSESSED**

<b>0.40</b> Livestock Density per Hectare	<b>1.7%</b> Households Using Firewood as Cooking Fuel	<b>26.4%</b> Loss in Tree Cover (2001 to 2020)
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### Vulnerable Health Status

0 1 **SCORE: 0.684** **RANK: 2/22 MUNICIPALITIES ASSESSED**

<b>15.3</b> Infant Mortality Rate (per 1,000 live births)	<b>12.6%</b> Disabled Population	<b>54.0</b> TB Prevalence per 100k Persons	<b>63.5</b> HIV Incidence per 100k Persons
--	--	---	---



### Clean Water Vulnerability

0 1 **SCORE: 0.199** **RANK: 18/22 MUNICIPALITIES ASSESSED**

<b>10.5</b> Average Time to Collect Water for Household Use	<b>91.1%</b> Households with Access to Wastewater Services	<b>95.0%</b> Population with Access to Improved Water
--	--	--



### Information Access Vulnerability

0 1 **SCORE: 0.288** **RANK: 21/22 MUNICIPALITIES ASSESSED**

<b>90.6%</b> Adult Literacy Rate	<b>7.9</b> Average Years of Schooling	<b>83.4%</b> Households with Television	<b>66.8%</b> Households with radio	<b>63.7%</b> Households with Internet access
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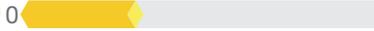
### Economic Constraints

0 1 **SCORE: 0.379** **RANK: 20/22 MUNICIPALITIES ASSESSED**

<b>0.44</b> Age dependency ratio	<b>0.40</b> Gini index	<b>10.2%</b> Unemployment Rate	<b>16.3%</b> Poverty rate	<b>12.7%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.312** **RANK: 17/22 MUNICIPALITIES ASSESSED**

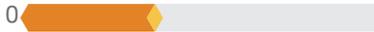
**47.6%**  
Female Seats  
Municipal City  
Council

**0.81**  
Female to male labor  
participants

**1.15**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.369** **RANK: 19/22 MUNICIPALITIES ASSESSED**

**1.16%**  
Average annual  
population  
change

**-20.69**  
Net Migration  
Rate (per 1,000  
persons)

**21.39**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 10 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.508**

Sao Vicente exhibits weaker Coping Capacity in the areas of Economic Capacity and Governance. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0  1 **SCORE: 0.496** **RANK: 6/22 MUNICIPALITIES ASSESSED**

**60.23%** **1.88** **192,180**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



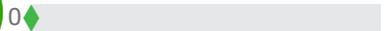
## Governance

0  1 **SCORE: 0.501** **RANK: 19/22 MUNICIPALITIES ASSESSED**

**98%** **474.2** **57.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0  1 **SCORE: 0** **RANK: 13/22 MUNICIPALITIES ASSESSED**

**0.00%**  
Protected Area



## Infrastructure Capacity

0  1 **SCORE: 0.695** **RANK: 3/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.696** **RANK: 4/22 MUNICIPALITIES ASSESSED**

**12.58** **20.64** **88.3%** **0.12**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.646** **RANK: 6/22 MUNICIPALITIES ASSESSED**

**1.77** **4.24**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.661** **RANK: 4/22 MUNICIPALITIES ASSESSED**

**30.8%** **74.7%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.801** **RANK: 7/22 MUNICIPALITIES ASSESSED**

**92.3%** **94.7%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.671** **RANK: 9/22 MUNICIPALITIES ASSESSED**

**3.68** **3.58** **4.47**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 7 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.574**

Sao Vicente's score and ranking are due to Very Low Vulnerability combined with Moderate Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Vulnerable Health Status**



**Economic Constraints**



**Economic Capacity**



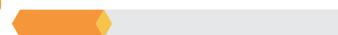
**Governance**



## HAZARD-SPECIFIC RISK (HSR)



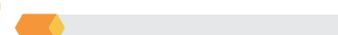
**Drought**



**RANK: 19 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.245**



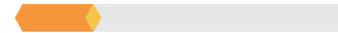
**Flood**



**RANK: 13 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.099**



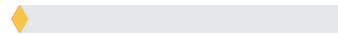
**Earthquake Induced Landslide**



**RANK: 6/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.206**



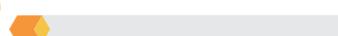
**Precipitation Induced Landslide**



**RANK: 20/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.004**



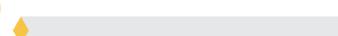
**Forest Fire**



**RANK: 19 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.072**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

**15 / 22**

RANK WITHIN MUNICIPALITIES  
Score: 0.420



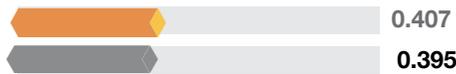
Sao Vicente's score and ranking are due to Moderate Multi-hazard Exposure combined with Very Low Vulnerability and Moderate Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

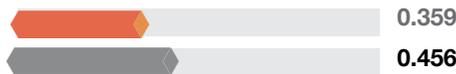
SAO VICENTE SCORE  
COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## SAO VICENTE RECOMMENDATIONS

# 1

### Vulnerable Health Status

Sao Vicente has the 2nd highest Vulnerable Health Status ranking in the country, driven by the 2nd highest prevalence of tuberculosis (54 cases per 100,000 persons). Other contributors to Vulnerable Health Status include a 12.62% disabled population, an infant mortality rate of 15.32, and an HIV incidence rate of 63.5 per 100,000 persons.

Increase investments in community health education and outreach, including best practices for reducing communicable disease transmission, promoting reproductive health, and expanding education and delivery of pre- and ante-natal care for pregnant women. Additionally, ensure that WASH infrastructure meets the needs of vulnerable populations to help mitigate the impact of communicable diseases.

Ensure that disaster management, evacuation, and shelter plans include special considerations for people with chronic conditions, disabilities, and mobility challenges. Consider additional precautions needed to prevent transmission of COVID-19 among vulnerable populations in shelters.

# 2

### Economic Constraints

While Sao Vicente ranks 3rd lowest for overall Economic Constraints, resilience could be enhanced by reducing inequalities in the distribution of income/wealth, and the unemployment rate (10.21%).

Focus on reducing unemployment and income inequalities by supporting government programs to assist in new business and employment opportunities in the municipality. Link economic development to national and municipal sustainable development goals to diversify livelihoods and promote equitable distribution of property and economic assets in the municipality. Create public policies guaranteeing equal opportunity and fair wages for all. Focusing on sustainable economic opportunities will help to decrease long-term reliance on social benefits.

## SAO VICENTE RECOMMENDATIONS

### 3

#### Economic Capacity

Commerce, fishing, livestock, and the hospitality industry are primary economic drivers, making Sao Vicente the second largest contributor to the national GDP after Praia. The municipality has a well-developed industrial sector and is also home to many companies including ENAPOR, ENACOL, Vivo Energy, and ELECTRA which offer permanent employment opportunities. While Sao Vicente represents a broad range of economic opportunities, findings show that the municipality has fewer than two (1.88) financial service locations per 10,000 persons.

Expand financial services to increase access to credit for small businesses and continue to foster local economic development. Ensure that new development is sustainable and does not contribute to environmental stress or increased hazard exposure. Promote public-private partnerships and establish and/or strengthen municipal contingency funds to ensure financial liquidity during disasters.

### 4

#### Governance

Sao Vicente has the 4th lowest Governance ranking relative to other municipalities in Cabo Verde, with the 2nd highest crime rate in the country (474.2 per 10,000 persons) and the 3rd lowest voter participation rate (57%).

In addition to fostering growth in employment opportunities, reduce the crime burden by strengthening support for public security through increased law enforcement and surveillance, youth education and personal safety programs, as well as community support programs for ex-criminals.

Focus on building civic participation at the community-level to increase public voice and accountability, building trust in government. Encourage public participation in local disaster management, including public committees, community emergency response teams, and exercises.

**Better solutions.  
Fewer disasters.**

# Safer world.

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**CABO VERDE**

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# **TARRAFAL**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE TARRAFAL



## ISLAND: SANTIAGO

Area: 121 km<sup>2</sup>

The municipality of Tarrafal is located in the northern tip of Santiago Island. The municipalities of Santa Catarina and São Miguel lie to Tarrafal's south. Tarrafal consists of one parish, Santo Amaro Abade, subdivided into 19 settlements. Agriculture, livestock, and fishing are income-generating activities of the municipal population. Tarrafal has the highest numbers of sheep on Santiago Island. Livestock farming is a complementary and integrated activity in agriculture as is the case throughout Santiago Island. Artisanal fishing with small boats yields fish that are marketed domestically. Industrial activity is limited in Tarrafal but includes some small private enterprises such as carpentry and metal shops, bakeries, block shipyards, auto mechanics, and auto-body repair shops. While the diverse landscape, flora, and fauna especially in the Serra Malagueta Nature Park, and the existence of hotels and restaurants provide room for tourism, Tarrafal remains less developed in this sector than the Boa Vista and Sal islands.

## RISK AND VULNERABILITY COMPONENT SCORE



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

Score: 0.498 • Rank: 9/22



### RESILIENCE (R) - Low

Score: 0.463 • Rank: 14/22



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

Score: 0.422 • Rank: 9/22



### VULNERABILITY (V) - Moderate

Score: 0.478 • Rank: 10/22



### COPING CAPACITY (CC) - Low

Score: 0.404 • Rank: 15/22



Population (2020 projected)

**18,085**



Infant mortality rate  
(per 1,000 live births)

**2.8**



Poverty rate

**26.8%**



Population with access  
to improved water

**90.7%**



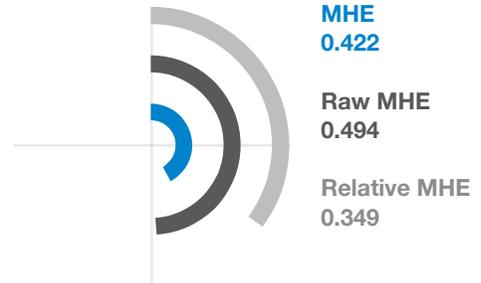
Average years of schooling

**6.9**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 9 / 22 MUNICIPALITIES  
SCORE: 0.422



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**95.9%**

**17,985**

**\$133.1 Million**

**Critical Infrastructure Exposed:**  
**100.0%**



Flood

**0.3%**

**53**

-

**Critical Infrastructure Exposed:**  
**3.0%**



Earthquake Induced Landslide

**2.2%**

**418**

-

**Critical Infrastructure Exposed:**  
**3.0%**



Precipitation Induced Landslide

**10.7%**

**2,009**

**\$84.2 Million**

**Critical Infrastructure Exposed:**  
**4.0%**



Volcano

**0.0%**

**0**

-

**Critical Infrastructure Exposed:**  
**0.0%**



Forest Fire

**52.1%**

**9,780**

**\$54.9 Million**

**Critical Infrastructure Exposed:**  
**18.0%**



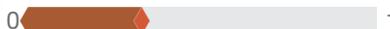
## VULNERABILITY (V)

**RANK: 10 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.478**

Vulnerability in Tarrafal is primarily driven by Information Access Vulnerability and Population Pressures. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0  1 **SCORE: 0.331** **RANK: 11/22 MUNICIPALITIES ASSESSED**

<b>1.02</b> Livestock Density per Hectare	<b>36.5%</b> Households Using Firewood as Cooking Fuel	<b>0.0%</b> Loss in Tree Cover (2001 to 2020)
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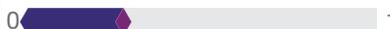
### Vulnerable Health Status

0  1 **SCORE: 0.528** **RANK: 9/22 MUNICIPALITIES ASSESSED**

<b>2.8</b> Infant Mortality Rate (per 1,000 live births)	<b>15.1%</b> Disabled Population	<b>28.0</b> TB Prevalence per 100k Persons	<b>99.1</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0  1 **SCORE: 0.278** **RANK: 14/22 MUNICIPALITIES ASSESSED**

<b>5.3</b> Average Time to Collect Water for Household Use	<b>78.2%</b> Households with Access to Wastewater Services	<b>90.7%</b> Population with Access to Improved Water
---	--	--



### Information Access Vulnerability

0  1 **SCORE: 0.681** **RANK: 3/22 MUNICIPALITIES ASSESSED**

<b>82.9%</b> Adult Literacy Rate	<b>6.9</b> Average Years of Schooling	<b>68.4%</b> Households with Television	<b>34.7%</b> Households with radio	<b>69.1%</b> Households with Internet access
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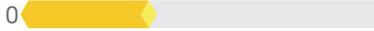
### Economic Constraints

0  1 **SCORE: 0.565** **RANK: 10/22 MUNICIPALITIES ASSESSED**

<b>0.54</b> Age dependency ratio	<b>0.37</b> Gini index	<b>9.5%</b> Unemployment Rate	<b>26.8%</b> Poverty rate	<b>2.5%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.352** **RANK: 15/22 MUNICIPALITIES ASSESSED**

**35.3%**  
Female Seats  
Municipal City  
Council

**0.91**  
Female to male labor  
participants

**0.99**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.607** **RANK: 3/22 MUNICIPALITIES ASSESSED**

**-0.26%**  
Average annual  
population  
change

**-69**  
Net Migration  
Rate (per 1,000  
persons)

**27.4**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 15 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.404**

Tarrafal exhibits weaker Coping Capacity in the areas of Transportation Capacity and Energy Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0 1 **SCORE: 0.344** **RANK: 12/22 MUNICIPALITIES ASSESSED**

**52.35%** **2.21** **141,532**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0 1 **SCORE: 0.558** **RANK: 14/22 MUNICIPALITIES ASSESSED**

**54%** **274.61** **67.0%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0 1 **SCORE: 0.218** **RANK: 12/22 MUNICIPALITIES ASSESSED**

**0.31%**  
Protected Area



## Infrastructure Capacity

0 1 **SCORE: 0.372** **RANK: 19/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.403** **RANK: 12/22 MUNICIPALITIES ASSESSED**

**2.19** **6.57** **90.9%** **0.55**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.226** **RANK: 22/22 MUNICIPALITIES ASSESSED**

**2.46** **45.55**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.276** **RANK: 16/22 MUNICIPALITIES ASSESSED**

**9.8%** **63.5%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.273** **RANK: 20/22 MUNICIPALITIES ASSESSED**

**81.4%** **61.4%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.681** **RANK: 7/22 MUNICIPALITIES ASSESSED**

**3.54** **3.84** **5.53**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 14 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.463**

Tarrafal's score and ranking are due to Moderate Vulnerability combined with Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Information  
Access  
Vulnerability**



**Population  
Pressures**



**Transportation  
Capacity**



**Energy Capacity**



## HAZARD-SPECIFIC RISK (HSR)



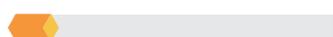
**Drought**



**RANK: 2 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.457**



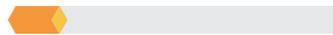
**Flood**



**RANK: 12 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.102**



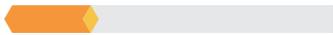
**Earthquake Induced  
Landslide**



**RANK: 11/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.127**



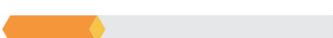
**Precipitation Induced  
Landslide**



**RANK: 7/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.229**



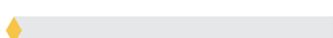
**Forest Fire**



**RANK: 7 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.254**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

9 / 22

RANK WITHIN MUNICIPALITIES  
Score: 0.498



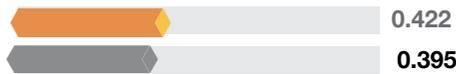
Tarrafal's score and ranking are due to Moderate Multi-hazard Exposure combined with Moderate Vulnerability and Low Coping Capacity scores.

### Multi-hazard risk component scores compared to overall average country scores:

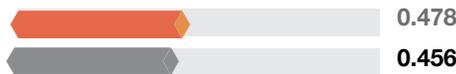
TARRAFAL SCORE  
COUNTRY SCORE



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## TARRAFAL RECOMMENDATIONS

### 1

#### Information Access Vulnerability

Tarrafal ranks 3rd highest for overall Information Access Vulnerability, with the 4th lowest percentage of households with television access (68.4%) and the 5th lowest average years of schooling (6.9 years).

Focus efforts on providing programs to increase school attendance and completion of secondary education. Work with communities to better understand the underlying factors that represent barriers to education. Economic constraints, in particular, may contribute to disparities in the municipality.

Implement community outreach and education programs focused on hazard awareness, disaster preparedness, and health and safety practices to build community resilience. Include information and resources for audiences requiring special considerations such as the very young, elderly, and disabled populations. Boost public-private collaboration and coordination to ensure that hazard warning information is accessible and disseminated as broadly as possible through multiple communications channels.

### 2

#### Population Pressures

Ranking 3rd highest for overall Population Pressures, Tarrafal has a net migration rate of -69 per 1,000 persons. A declining population can leave gaps in social support systems and contribute to a loss of intellectual capital and skilled labor, affecting the economy and its growth potential.

Strengthen planning efforts to identify vulnerabilities related to the changing population and implement programs and support systems to address them, which may include vocational, technical, or entrepreneurial training programs, services to alleviate poverty, and enhanced policing in areas susceptible to criminal activity.

## TARRAFAL RECOMMENDATIONS

### 3

#### Transportation Capacity

Tarrafal has the lowest overall Transportation Capacity in the country, driven by an average distance to port facility of nearly 46 km, the greatest among all municipalities. Road density in Tarrafal is 2.46 km.

Tarrafal ranks 9th highest in Cabo Verde for overall Multi-hazard Exposure, with significant exposure to drought and forest fires. Limited transportation networks hamper timely evacuations and delay response and recovery activities. Damaged roads, seaports and airports can further postpone delivery and transport of much needed relief supplies and delay recovery processes.

Secure investments for continued expansion and maintenance of transportation networks, particularly in underserved areas to meet transportation needs and improve response times and access to emergency services. Explore public-private partnerships to maintain the quality of existing transportation infrastructure and increase connectivity between islands and municipalities. By bolstering transportation capacity, Tarrafal will have the added benefit of supporting sustainable economic growth through greater accessibility of goods and services. Protect investments and service provision by implementing mitigation strategies (e.g., storm water drainage, erosion prevention) to reduce hazard impacts. Evacuation routes and emergency response plans should be adapted as construction and maintenance is planned and implemented.

### 4

#### Energy Capacity

With the 3rd lowest Energy Capacity ranking in Cabo Verde, Tarrafal has the 2nd lowest percentage of households with electricity access (81.4%). 61.4% of households have access to gas fuel for cooking purposes.

Focus development programs on increasing energy capacity by establishing sustainable power generation in underserved communities and extending the existing transmission and distribution network. Continue to expand private-public partnerships to ensure energy expansion projects provide affordable and equitable access across the municipality.

Power and gas lines should be carefully engineered to be resilient against impacts from natural hazards, with backup mechanisms to increase safety and redundancy in the energy network.

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**CABO VERDE**

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# **TARRAFAL DE SAO NICOLAU**

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**NDPBA MUNICIPAL PROFILE**

# CABO VERDE TARRAFAL DE SAO NICOLAU

## ISLAND: SAO NICOLAU

Area: 120 km<sup>2</sup>

Occupying the western third of the island of São Nicolau, the municipality of Tarrafal de São Nicolau shares the island with the municipality of Ribeira Brava. Established in 2005, the municipality has one civil parish: São Francisco de Assis. Tarrafal de São Nicolau through its diverse climatic strata ranging from arid to humid is attractive for tourism, however, the sector is less developed than on other islands. The Monte Gordo Nature Park with its native flora and species is the primary tourist attraction. Sandy beaches are also popular. However, like Ribeira Brava, fishing, agriculture, and livestock and are the main economic drivers in the municipality. Irrigated and rainfed agricultural methods are practiced. Industry is limited to fish processing, mechanical repairs, and bakery shops. The fish processing/canning factory bolsters the economy through direct and indirect employment, however limited storage capacity and infrastructure impede development in this area. Hospital services are provided to the municipal population by the São Nicolau Hospital in the neighboring municipality of Ribeira Brava.



## RISK AND VULNERABILITY COMPONENT SCORE



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

Score: 0.381 • Rank: 17/22



### RESILIENCE (R) - Very High

Score: 0.627 • Rank: 3/22



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

Score: 0.398 • Rank: 14/22



### VULNERABILITY (V) - Low

Score: 0.404 • Rank: 17/22



### COPING CAPACITY (CC) - Very High

Score: 0.659 • Rank: 2/22



Population (2020 projected)

**5,195**



Infant mortality rate  
(per 1,000 live births)

**0.0**



Poverty rate

**50.8%**



Population with access  
to improved water

**97.2%**



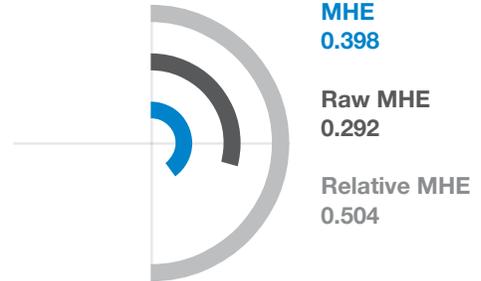
Average years of schooling

**6.3**



## MULTI-HAZARD EXPOSURE (MHE)

RANK: 14 / 22 MUNICIPALITIES  
SCORE: 0.398



### ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Drought

**100.0%**

5,171

\$119.3 Million

Critical Infrastructure Exposed:  
100.0%



Flood

**0.6%**

33

-

Critical Infrastructure Exposed:  
4.0%



Earthquake Induced Landslide

**5.7%**

296

\$91 Million

Critical Infrastructure Exposed:  
1.0%



Precipitation Induced Landslide

**1.8%**

93

\$87.4 Million

Critical Infrastructure Exposed:  
0.0%



Volcano

**0.0%**

0

-

Critical Infrastructure Exposed:  
0.0%



Forest Fire

**27.0%**

1,397

\$98 Million

Critical Infrastructure Exposed:  
6.0%



## VULNERABILITY (V)

**RANK: 17 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.404**

Vulnerability in Tarrafal De Sao Nicolau is primarily driven by Economic Constraints and Information Access Vulnerability. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.



### Environmental Stress

0 1 **SCORE: 0.039** **RANK: 21/22 MUNICIPALITIES ASSESSED**

<b>0.22</b> Livestock Density per Hectare	<b>4.8%</b> Households Using Firewood as Cooking Fuel	<b>0.0%</b> Loss in Tree Cover (2001 to 2020)
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### Vulnerable Health Status

0 1 **SCORE: 0.352** **RANK: 18/22 MUNICIPALITIES ASSESSED**

<b>0.0</b> Infant Mortality Rate (per 1,000 live births)	<b>9.0%</b> Disabled Population	<b>41.0</b> TB Prevalence per 100k Persons	<b>38.3</b> HIV Incidence per 100K Persons
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### Clean Water Vulnerability

0 1 **SCORE: 0.441** **RANK: 11/22 MUNICIPALITIES ASSESSED**

<b>26.9</b> Average Time to Collect Water for Household Use	<b>88.4%</b> Households with Access to Wastewater Services	<b>97.2%</b> Population with Access to Improved Water
--	--	--



### Information Access Vulnerability

0 1 **SCORE: 0.563** **RANK: 11/22 MUNICIPALITIES ASSESSED**

<b>80.6%</b> Adult Literacy Rate	<b>6.3</b> Average Years of Schooling	<b>86.0%</b> Households with Television	<b>44.6%</b> Households with radio	<b>70.5%</b> Households with Internet access
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### Economic Constraints

0 1 **SCORE: 0.683** **RANK: 5/22 MUNICIPALITIES ASSESSED**

<b>0.55</b> Age dependency ratio	<b>0.46</b> Gini index	<b>7.4%</b> Unemployment Rate	<b>50.8%</b> Poverty rate	<b>11.5%</b> Households owning a vehicle
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### Gender Inequality

0  1 **SCORE: 0.524** **RANK: 9/22 MUNICIPALITIES ASSESSED**

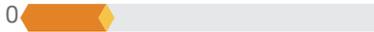
**53.9%**  
Female Seats  
Municipal City  
Council

**0.61**  
Female to male labor  
participants

**1.14**  
Parity in Secondary  
Education Enrollment



### Population Pressures

0  1 **SCORE: 0.228** **RANK: 22/22 MUNICIPALITIES ASSESSED**

**-0.08%**  
Average annual  
population  
change

**-21**  
Net Migration  
Rate (per 1,000  
persons)

**23.05**  
Youth Bulge



# COPING CAPACITY (CC)

**RANK: 2 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.659**

Tarrafal De Sao Nicolau exhibits weaker Coping Capacity in the areas of Economic Capacity and Communications Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.



## Economic Capacity

0  1 **SCORE: 0.482** **RANK: 8/22 MUNICIPALITIES ASSESSED**

**46.41%** **7.7** **120,478**  
Economic Activity Rate    Financial Service Locations per 10k Persons    Avg Annual Expenditures per Capita CVE



## Governance

0  1 **SCORE: 0.845** **RANK: 1/22 MUNICIPALITIES ASSESSED**

**98%** **224.27** **72.5%**  
Population Properly Disposing Waste    Crimes Reported per 10k persons    Voter Participation Rate in Local Elections



## Environmental Capacity

0  1 **SCORE: 0.561** **RANK: 6/22 MUNICIPALITIES ASSESSED**

**5.29%**  
Protected Area



## Infrastructure Capacity

0  1 **SCORE: 0.682** **RANK: 5/22 MUNICIPALITIES ASSESSED**



## Health Care Capacity

**SCORE: 0.578** **RANK: 7/22 MUNICIPALITIES ASSESSED**

**3.82** **11.47** **85.1%** **1.92**  
Physicians per 10k Persons    Nurses per 10k Persons    Pct Under 1yr Fully Vaccinated    Hospitals per 10k persons



## Transportation Capacity

**SCORE: 0.652** **RANK: 5/22 MUNICIPALITIES ASSESSED**

**1.81** **3.95**  
Road density (km per sq. km)    Average Distance to Port Facility (km)



## Communications Capacity

**SCORE: 0.553** **RANK: 7/22 MUNICIPALITIES ASSESSED**

**39.8%** **63.7%**  
Households with Fixed Phones    Population with Mobile Phone



## Energy Capacity

**SCORE: 0.874** **RANK: 3/22 MUNICIPALITIES ASSESSED**

**95.7%** **92.8%**  
Households with Access to Electricity    Households with Access to Gas



## Emergency Services Capacity

**SCORE: 0.750** **RANK: 4/22 MUNICIPALITIES ASSESSED**

**3.79** **3.68** **13.47**  
Average Distance to Hospital (km)    Average Distance to Police Station (km)    Firefighters per 10,000 Persons



## RESILIENCE (R)

**RANK: 3 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.627**

Tarrafal De Sao Nicolau's score and ranking are due to Low Vulnerability combined with Very High Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



**Economic Constraints**



**Information Access Vulnerability**



**Economic Capacity**



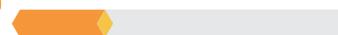
**Communications Capacity**



## HAZARD-SPECIFIC RISK (HSR)



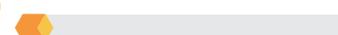
**Drought**



**RANK: 18 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.248**



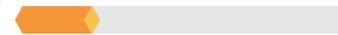
**Flood**



**RANK: 17 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.066**



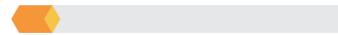
**Earthquake Induced Landslide**



**RANK: 8/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.202**



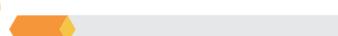
**Precipitation Induced Landslide**



**RANK: 12/22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.097**



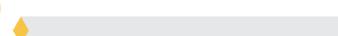
**Forest Fire**



**RANK: 14 / 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0.147**



**Volcano**



**RANK: 6/ 22 MUNICIPALITIES ASSESSED**  
**SCORE: 0**



## MULTI-HAZARD RISK (MHR)

17 / 22

RANK WITHIN MUNICIPALITIES  
Score: 0.381



Tarrafal De Sao Nicolau's score and ranking are due to Low Multi-hazard Exposure combined with Low Vulnerability and Very High Coping Capacity scores.

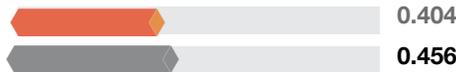
### Multi-hazard risk component scores compared to overall average country scores:



#### Multi-Hazard Exposure



#### Vulnerability



#### Coping Capacity



## TARRAFAL DE SAO NICOLAU RECOMMENDATIONS

### 1

#### Economic Constraints

Ranking 5th highest for overall Economic Constraints, Tarrafal De Sao Nicolau has the highest poverty rate (51%) and the greatest income/wealth disparity (Gini coefficient of 0.46) in the country. Assess disaster response and recovery plans to ensure that economically vulnerable populations are identified, as poor populations are often more likely to be severely impacted by disasters and are slower to recover.

Economic constraints in Tarrafal De Sao Nicolau are closely linked to Information Access Vulnerability and vice versa. Removing economic barriers to education, and ensuring equitable access to schools, educational resources, and information technology will reduce vulnerability in the municipality.

Develop short- and long-term strategies to address and alleviate poverty. Short-term strategies may include public assistance programs that specifically address unsatisfied basic needs (e.g., food, water, housing, education). Over the long term, support government programs to assist in new business and employment opportunities. Link economic development to national and municipal sustainable development goals to diversify livelihoods and promote equitable distribution of property and economic assets in Tarrafal De Sao Nicolau. Create public policies guaranteeing equal opportunity and fair wages for all. Focusing on sustainable economic opportunities will help to decrease long-term reliance on social assistance.

### 2

#### Information Access Vulnerability

Tarrafal De Sao Nicolau has the lowest average years of schooling in the country (6.3 years), and the 3rd highest rate of illiteracy (80.6% of the municipality's population is literate).

Focus efforts on providing programs to increase school attendance and completion of secondary education. Work with communities to better understand the underlying factors that represent barriers to education and literacy. Economic constraints, in particular, may contribute to disparities in the municipality.

Implement community outreach and education programs focused on hazard awareness, disaster preparedness, and health and safety practices to build community resilience. Include information and resources for audiences requiring special considerations such as the very young, elderly, and disabled populations. Boost public-private collaboration and coordination to ensure that hazard warning information is accessible and disseminated as broadly as possible through multiple communications channels

## TARRAFAL DE SAO NICOLAU RECOMMENDATIONS

### 3

#### Economic Capacity

Tarrafal De Sao Nicolau has the 9th lowest rankings for both economic activity rate (46.41%) and average annual expenditures per capita (120,478 CVE). Given Tarrafal De Sao Nicolau's economic constraints, low labor participation and reduced expenditures per capita may reduce economic protection and inhibit the municipality's ability to quickly mobilize financial assets during a disaster.

Like Ribeira Brava, fishing and agriculture are the main economic drivers in Tarrafal De Sao Nicolau, followed by tourism. The tourism sector, however, is less developed than other municipalities. Monte Gordo Nature Park with its native flora and species is a primary attraction. Fish processing bolsters the economy through direct and indirect employment, however limited storage capacity and infrastructure impede development in this area. Continue to support environmental protections and invest in infrastructure enhancements to encourage formalization of the tourism and fish processing industries. Increase access to credit for small business owners to foster local economic development.

Increase access to vocational, technical, and entrepreneurial training to diversify the local economy and directly support labor market needs in the municipality. Expanding local economic opportunities will bolster labor participation and employment, supporting increased household incomes.

### 4

#### Communications Capacity

In Tarrafal De Sao Nicolau, 63.7% of the population has mobile phones and 40% of households have fixed phones. Limited communications capacity exacerbates information access vulnerability and hinders the ability of government agencies to share critical information during disasters.

Boost Communications Capacity and overall resilience through the expansion of infrastructure to ensure coverage, accessibility, and reliability of communications during disasters. Encourage telecommunications infrastructure development at a sustainable pace and implement risk reduction measures in all infrastructure enhancements to protect against hazard impacts. Create communications plans to share critical information with the public during disasters, leveraging multimodal communication strategies (radio, internet, television, fixed- and mobile telephone).

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