

Better solutions.
Fewer disasters.
Safer world.



San Cristóbal

Dominican Republic National Disaster Preparedness
Baseline Assessment
Province Profile

Findings: Risk and Vulnerability Assessment (RVA)

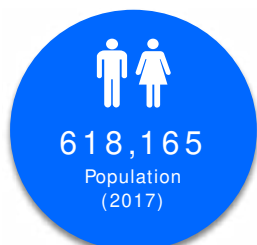
Province: San Cristóbal

Province Capital: San Cristóbal



Area: 1,388 km²

San Cristóbal is located in the south-central part of the country near the national capital. Main contributions to the economy include industry, agriculture, port activities and tourism.



Municipality	Population
San Cristóbal	252,469
Sabana Grande De Palanque	16,776
Bajos De Haina	134,705
Cambita Garabitos	33,683
Villa Altagracia	91,446
Yaguate	45,908
San Gregorio De Nigua	32,831
Los Cacaos	10,347



**Multi-Hazard Risk Rank:
Very Low (28 of 32)**

**Lack of Resilience Rank:
Low (25 of 32)**

RVA Component Scores

Table 1. Province Scores and Ranks (compared across Provinces) for each Index

Multi-Hazard Risk		Lack of Resilience		Multi-Hazard Exposure		Vulnerability		Coping Capacity	
Very Low		Low		Medium		Very Low		Medium	
Score	Rank (of 32)	Score	Rank (of 32)	Score	Rank (of 32)	Score	Rank (of 32)	Score	Rank (of 32)
0.451	28	0.437	25	0.478	20	0.338	27	0.463	17

Multi-Hazard Exposure (MHE)

Multi-Hazard Exposure¹ Rank: 20 of 32 Provinces (Score: 0.478)

Table 2. Estimated ambient population² exposed to each hazard



Cyclone

100%

647,479 People



Earthquake

18%

116,801 People



Landslide

77%

500,298 People



Flood

20%

128,283 People



Tsunami

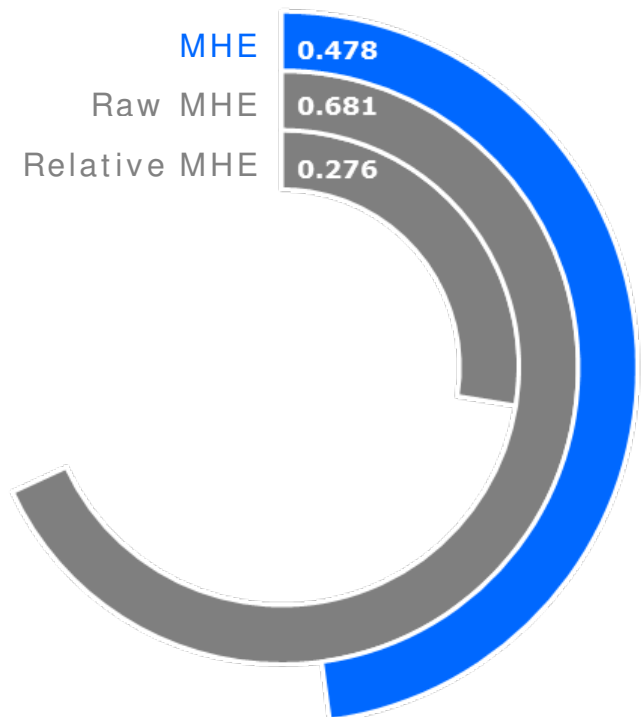
8%

51,612 People

Case Study: Community Protection in San Cristóbal

Over a one-year period, a pilot program was instituted in the Province of San Cristóbal to establish community-based protection brigades, designed to address threats of abuse and lack of access to essential services for vulnerable populations affected by disasters. The riverside urban barrios of San Cristóbal experience “poverty and a lack of adequate land planning”, resulting in “extreme risk of being washed away when the next hurricane, tropical storm or flash flood takes place.” As such, efforts were made to train and organize communities to form “specialized protection brigades” responsible for DRR and community protection.

“Integrating protection into disaster risk preparedness in the Dominican Republic” – Andrea Verdeja, October 2016



¹ Multi-Hazard Exposure: Average exposure of the population to hazards.

² Ambient Population: 24-hour average estimate of the population in each province. Ambient population typically differs from census population.

Findings: Risk and Vulnerability Assessment (RVA)

Vulnerability (V)

Vulnerability³ Rank: 27 of 32 Provinces (Score: 0.338) Vulnerability in San Cristóbal is influenced by Population Pressures and Clean Water Vulnerability. The bar chart on the right indicates the socioeconomic themes contributing to the Province's overall Vulnerability score.

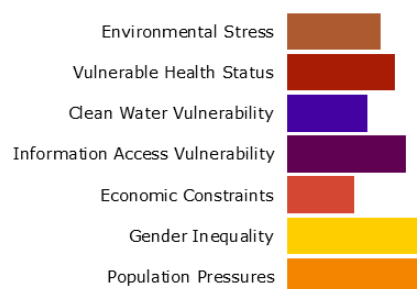









Table 3. Component Scores for each Vulnerability Sub-component

	Environmental Stress	12% Province Susceptible to Drought	-1.1% Average Annual Forest Change				
	Vulnerable Health Status	17.1 Infant Mortality Rate	88.0 Maternal Mortality Rate	10.1 Chronic Malnutrition	6.8% Population Disabled		
	Clean Water Vulnerability	15.7% Households without Access to Improved Water	6.0% Households without Access to Flush Toilets				
	Information Access Vulnerability	12.1% Illiteracy	89.8% Primary School Enrollment	91.0% Households without Internet	20.2% Households without TV	55.0% Households without Radio	6.6 Average years of Schooling
	Economic Constraints	58.1 Economic Dependency Ratio	35.9% Population in Poverty	26.6% CEP Beneficiaries			
	Gender Inequality	37.3% Female Seats in Government	1.1 Female to Male Years of Schooling	0.39 Female to Male Labor Ratio			
	Population Pressures	1.1% Average Annual Population Change	1.0% Average Annual Urban Population Change				

³ Vulnerability: The socioeconomic conditions that are associated with the susceptibility to disruptions in a country's normal functions.

Findings: Risk and Vulnerability Assessment (RVA)

Coping Capacity (CC)

Coping Capacity⁴ Rank: 17 of 32 Provinces (Score: 0.463) The thematic areas with the weakest relative scores are Environmental Capacity, Economic Capacity, and Health Care Capacity. The bar chart on the right indicates the socioeconomic themes contributing to the province's overall Coping Capacity score.

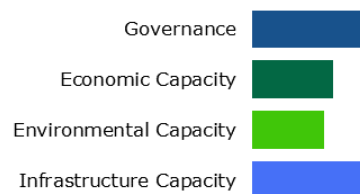


Table 4. Component Scores for each Coping Capacity Sub-component

	Economic Capacity	1.02 Debt to Service Ratio	91.9% Employment Rate (Male)	RD\$ 20,106 Average Annual Income per Capita			
	Governance	76.4% Registered Voter Participation (2016 Election)	19.5 Homicide Rate per 100k persons	68.6% Households with Garbage Collection			
	Environmental Capacity	22.0% Protected or Reforested Land					
	Infrastructure Capacity						
	Health Care Capacity		7.9 Hospital Beds per 10,000 Persons	12.6 Nurses per 10,000 Persons	12.2 Physicians per 10,000 Persons	3.2 km Average Distance to Nearest Hospital	0.88 Vaccination Index ⁵
	Communications Capacity		17.3% Households with Access to Fixed Phone Line	77.8% Households with Access to Mobile Phone			
	Transportation Capacity		22.7 km Average Distance to Nearest Port or Airport	0.74 km Total Length of Road per km ² (area)			

⁴ Coping Capacity: The systems, means, and abilities of a country to absorb and respond to events that could potentially disrupt normal function.

⁵ Vaccination Coverage Index: Coverage of DPT (diphtheria, pertussis, and tetanus), Polio, Tuberculosis, and Measles vaccinations. Index values range from 0 to 1, with 1 indicating higher coverage.

Lack of Resilience (LR)

Lack of Resilience⁶ Rank: 25 of 32 Provinces (Score: 0.437)

San Cristóbal's score and ranking are due to very low Vulnerability combined with moderate Coping Capacity scores. San Cristóbal ranks 27th in Vulnerability and 17th in Coping Capacity.

Table 5. The 3 Thematic areas with the Weakest Relative Scores



Environmental Capacity



Economic Capacity



Health Care Infrastructure Capacity

Multi-Hazard Risk (MHR)

Multi-Hazard Risk⁷ Rank: 28 of 32 Provinces (Score: 0.451)

San Cristóbal's score and ranking are due to low Multi-Hazard Exposure combined with very low Vulnerability and moderate Coping Capacity.

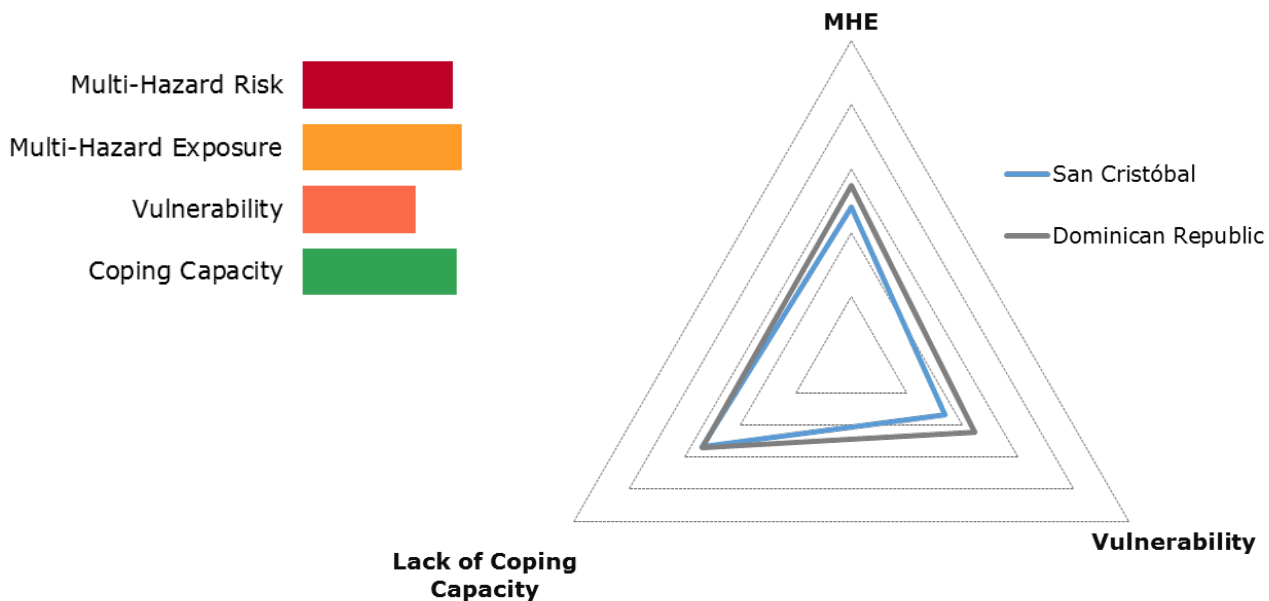


Figure 1. Province Multi-Hazard Risk Component Scores Compared to Overall Average Country Scores

⁶ Lack of Resilience: The susceptibility to impact from the short-term inability to absorb, respond to, and recover from disruptions to a country's normal function. This index provides a hazard-independent look at current socio-economic conditions.

⁷ Multi-Hazard Risk: The likelihood of losses or disruptions to a country's normal function due to interaction between multi-hazard exposure, socioeconomic vulnerability, and coping capacity.

Successes



High information access

High information access indicates that the population has an increased ability to access and comprehend disaster-related information before, during, and after events.



Low gender inequality

Ranked 26 of 32 provinces, low gender inequality indicates that vulnerable populations are more likely to have their needs met under 'normal' conditions and may be less susceptible during times of disaster.



High transportation capacity

Ranked 9 of 32 provinces, well developed transportation networks facilitate the movement of goods and services, decreasing wait times for response and relief supplies.

Recommendations

01

Increase economic capacity

Encourage business development and education programs to increase economic opportunities in the region.

02

Increase health education and access

Provide increased access to healthcare services through construction of facilities, incentive programs for doctors and nurses to practice in remote areas, and general health-education programs for the population. Increasing healthcare access facilitates access to vital resources before, during, and after a disaster event.

03

Increase environmental programs

Invest in programs to provide protection for the environment, including protected lands and reforestation projects, to increase the ability of the environment to recover after a disaster.