

**Better solutions.
Fewer disasters.
Safer world.**



Chinandega

**Nicaragua National Disaster Preparedness Baseline Assessment
Department Profile**

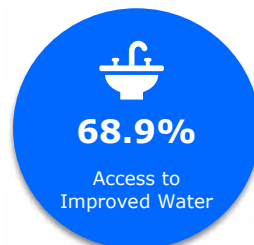
Department: Chinandega



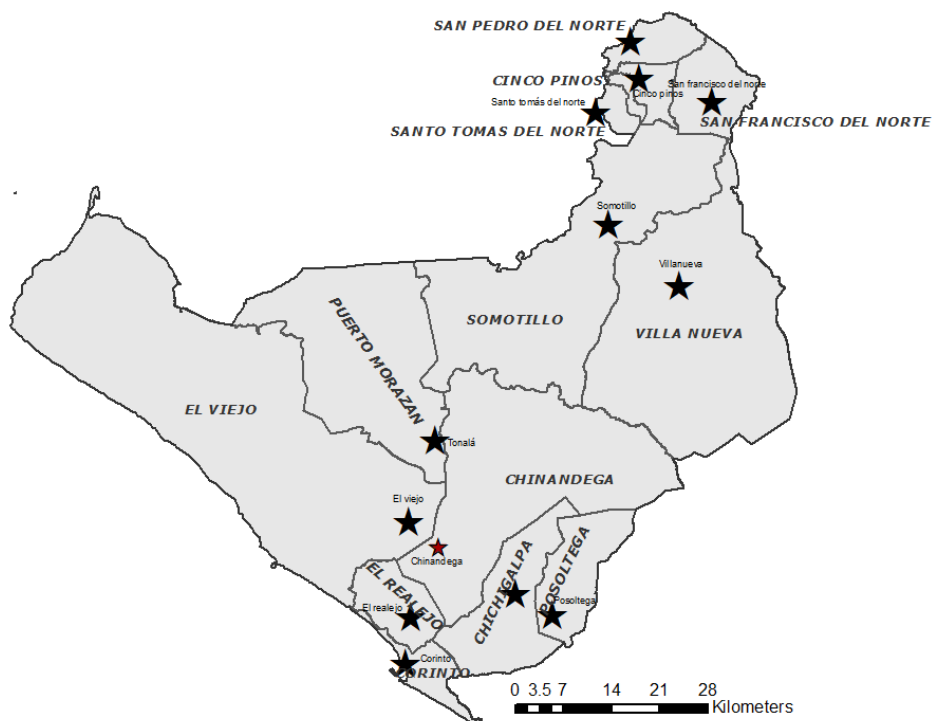
Department Capital: Chinandega

Area: 4,822 km²

Chinandega is a northwestern province located on the border with Honduras. Chinandega is primarily an agricultural department and is home to the country's largest sugar mills and rum factory.



Municipality	Population
San Pedro del Norte	5,146
San Francisco del Norte	7,340
Cinco Pinos	7,262
Santo Tomás del Norte	8,332
El Viejo	87,783
Puerto Morazán	16,152
Somotillo	33,223
Villanueva	28,400
Chinandega	133,808
El Realejo	10,008
Corinto	18,351
Chichigalpa	46,787
Posoltega	19,167



**Multi-Hazard Risk Rank:
High (7 of 17)**

**Lack of Resilience Rank:
Low (12 of 17)**

RVA Component Scores

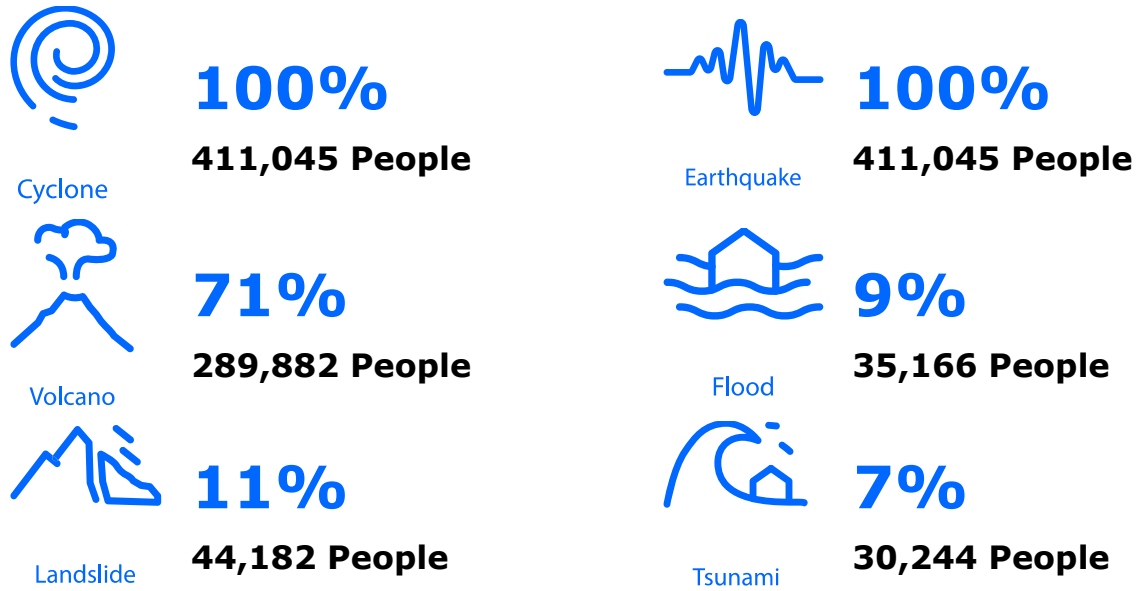
Table 1. Department scores and ranks (compared across departments) for each index

Multi-Hazard Risk		Lack of Resilience		Multi-Hazard Exposure		Vulnerability		Coping Capacity	
High		Low		Very High		Low		High	
Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)
0.494	7	0.376	12	0.729	3	0.329	11	0.577	6

Multi-Hazard Exposure (MHE)

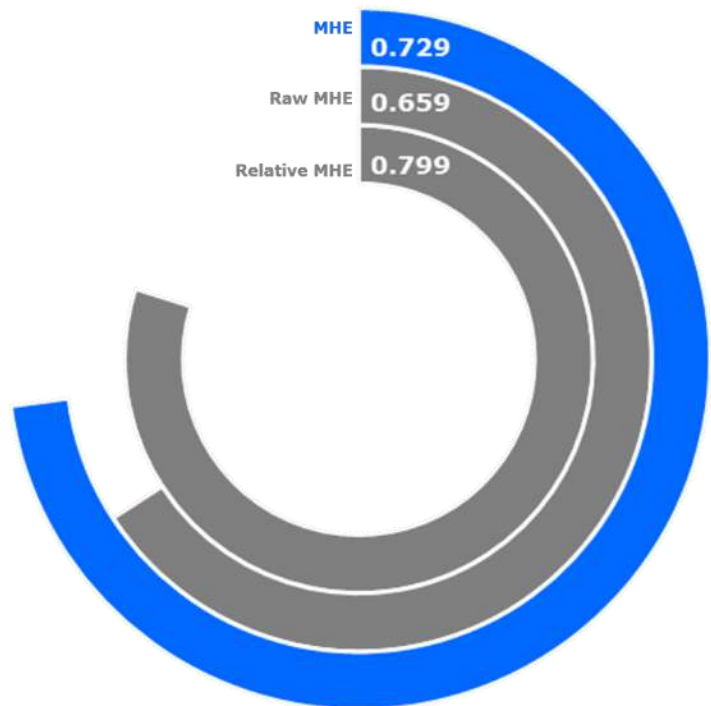
Multi-Hazard Exposure¹ Rank: 3 of 17 Departments (Score: 0.729)

Table 2. Estimated ambient population² exposed to each hazard



San Cristobal Volcano

The Department of Chinandega contains the highest, as well as one of the most active, volcanos in Nicaragua. San Cristobal Volcano, also known as El Viego, frequently experiences minor to mid-level eruptions. INETER monitors activity at San Cristobal routinely, and the Department of Chinandega is prepared for a major evacuation in the event of a significant eruption.



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

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

Vulnerability (V)

Vulnerability³ Rank: 11 of 17 Departments (Score: 0.329) Vulnerability in Chinandega is primarily driven by Vulnerable Health Status and Population Pressures. The bar chart on the right indicates the socioeconomic themes contributing to the department's overall Vulnerability score.

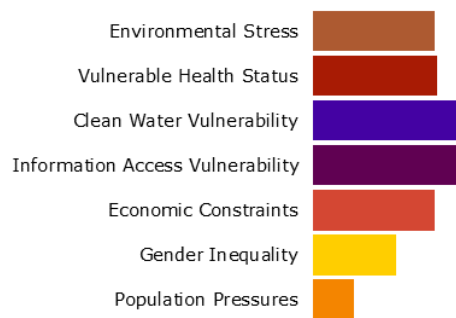









Table 3. Component scores for each vulnerability sub-component

	Environmental Stress	13.4% Province at Drought Risk	32.1% Erosion Risk	85.7 Livestock per km ²			
	Vulnerable Health Status	11.7 Infant Mortality Rate	10.4 Maternal Mortality Rate	71.9 yrs Average Life Expectancy	1.9% Acute Malnutrition (Children <5)	1.9% Population Disabled	
	Clean Water Vulnerability	68.9% Households with Access to Improved Water	29.3% Households with Access to Flush Toilets				
	Information Access Vulnerability	19.6% Illiteracy	5.9 yrs Average Years of Schooling	88.3% Primary School Enrollment	95.7% Households without Internet	20.7% Households without TV	63.1% Households without Radio
	Economic Constraints	56.8 Economic Dependency Ratio	68.2% Population in Poverty				
	Gender Inequality	42.3% Female Seats in Government	1.19 Female to Male Secondary Education Enrollment	0.34 Female to Male Labor Ratio			
	Population Pressures	1.33% Average Annual Population Change	2.08% Average Annual Urban Population Change				

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

Coping Capacity (CC)

Coping Capacity⁴ Rank: 6 of 17 Departments (Score: 0.577) Chinandega exhibits weaker Coping Capacity in the areas of Health Care and Communications Infrastructure. The bar chart on the right indicates the socioeconomic themes contributing to the department's overall Coping Capacity score.

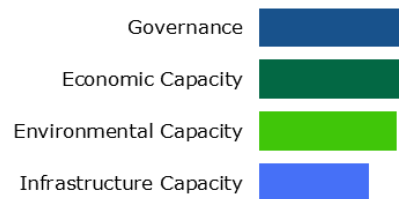


Table 4. Component scores for each coping capacity sub-component

	Economic Capacity	11.4% Households that Receive Remittances	82.1% Employment Rate (Male)	53.9% Employment Rate (Female)	14.5% Population in Highest Welfare Quintile	\$2,358 Annual Nominal Global Revenue per Capita	
	Governance	89.9% Crime Complaints Cleared	896.3 Crime Rate per 100k Persons	64.1% Households without Garbage Collection	68.6% Voter Participation (2016 Election)		
	Environmental Capacity	33.0% Protected or Reforested Land					
	Infrastructure Capacity						
	Health Care Capacity		8.8 Hospital Beds per 10,000 Persons	14.9 Nurses per 10,000 Persons	8.4 Physicians per 10,000 Persons	20.5 km Average Distance to Nearest Hospital	82.4% Children Completed Immunization Schedule
	Communications Capacity		9.1% Households with Access to Fixed Phone Line	71.2% Households with Access to Mobile Phone			
	Transportation Capacity		36.2 km Average Distance to Nearest Port or Airport	0.30 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.

Lack of Resilience (LR)

Lack of Resilience⁵ Rank: 12 of 17 Departments (Score: 0.376)

Chinandega's score and ranking are due to low Vulnerability combined with high Coping Capacity scores.

Table 5. The three thematic areas with the weakest relative scores



Communications Infrastructure



Health Care Capacity



Transportation Infrastructure

Multi-Hazard Risk (MHR)

Multi-Hazard Risk⁶ Rank: 7 of 17 Departments (Score: 0.494)

Chinandega's score and ranking are due to very high Multi-Hazard Exposure combined with low Vulnerability and high Coping Capacity scores.

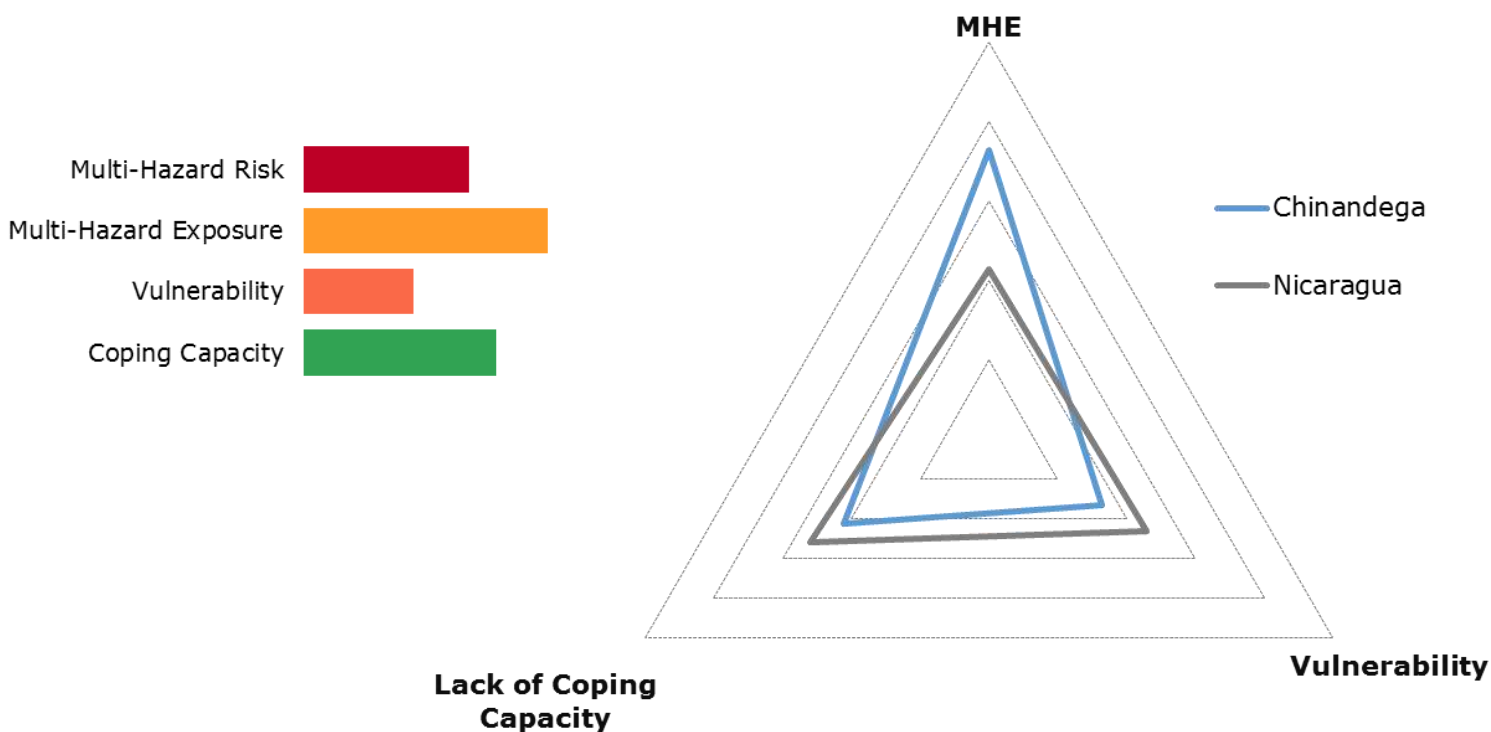


Figure 1. Department Multi-Hazard Risk component scores compared to overall average country scores

⁵ **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 socioeconomic conditions.

⁶ **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



Very low population pressures

Ranked 15 of 17 departments, limited population change allows disaster managers to form accurate evacuation, sheltering, and resource plans.



High overall governance

Ranked 2 of 17 departments, high governance could facilitate the implementation of disaster management initiatives into departmental and municipal communities.

Recommendations

01

Invest in infrastructure

Similar to Matagalpa, limited infrastructure inhibits the capacity to communicate and exchange information, in addition to limiting the physical distribution of goods and services, and restricting access to health care in Chinandega. Health-care, transportation and communication infrastructures require upgrading and investment to increase connectivity and welfare in the department. Focused investments in these areas will increase coping capacity and resilience.

02

Institutionalize multi-hazard planning and education

Multi-Hazard Risk in Chinandega is driven primarily by exposure. Develop a departmental multi-hazard mitigation plan to acknowledge exposure to multiple hazards. Engage the public in this process to promote an understanding of multi-hazard risk.



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