

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



# Boaco

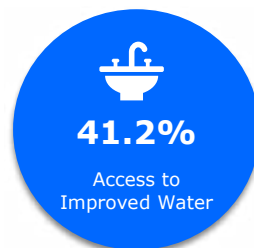
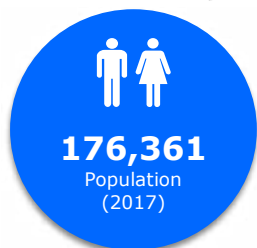
**Nicaragua National Disaster Preparedness Baseline Assessment  
Department Profile**

## Department: Boaco

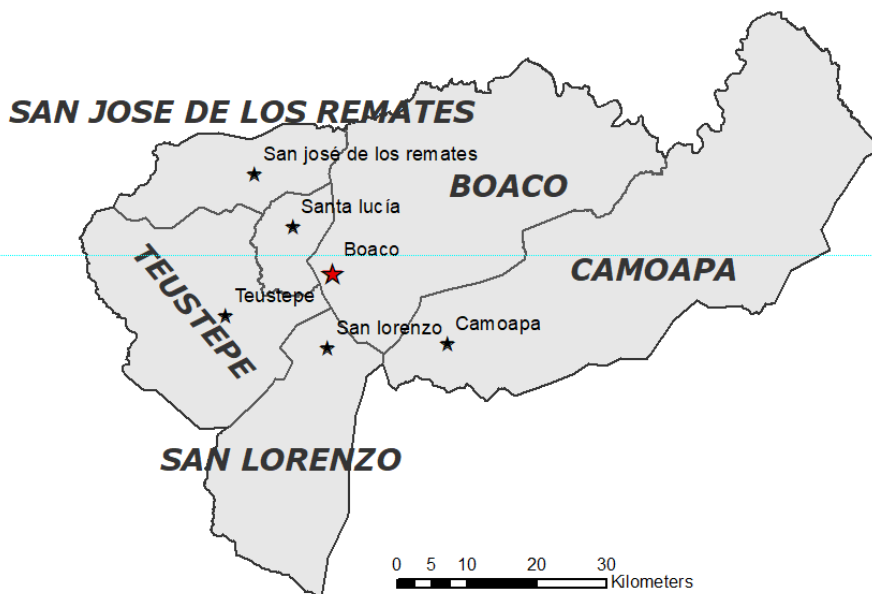
Department Capital: Boaco

Area: 4,177 km<sup>2</sup>

Located in central Nicaragua, Boaco features the mountain Monolito de Quizaltepe, as well as thriving agriculture, cattle, and craft industries.



Municipality	Population
San José de los Remates	8,447
Boaco	61,051
Camoapa	39,533
Santa Lucía	9,060
Teustepe	32,027
San Lorenzo	26,243



**Multi-Hazard Risk Rank:  
Low (13 of 17)**

**Lack of Resilience Rank:  
Medium (8 of 17)**

## RVA Component Scores

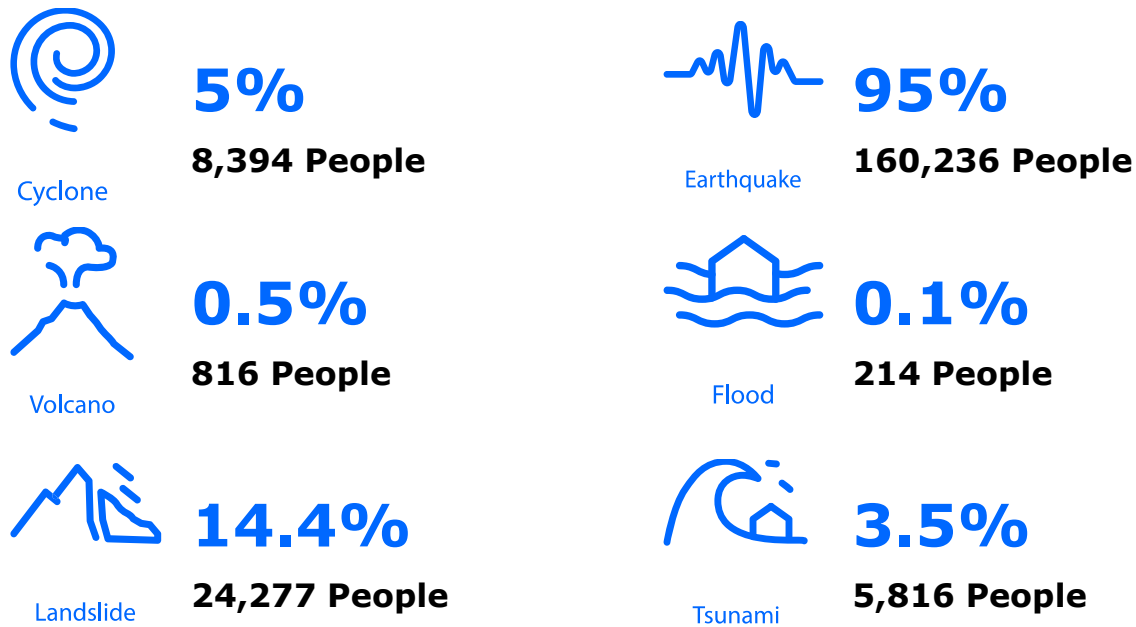
Table 1. Department scores and ranks (compared across departments) for each index

Multi-Hazard Risk		Lack of Resilience		Multi-Hazard Exposure		Vulnerability		Coping Capacity	
Low		Medium		Low		Medium		Very Low	
Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)
0.437	13	0.555	8	0.199	13	0.492	8	0.382	14

## Multi-Hazard Exposure (MHE)

Multi-Hazard Exposure<sup>1</sup> Rank: 13 of 17 Departments (Score: 0.199)

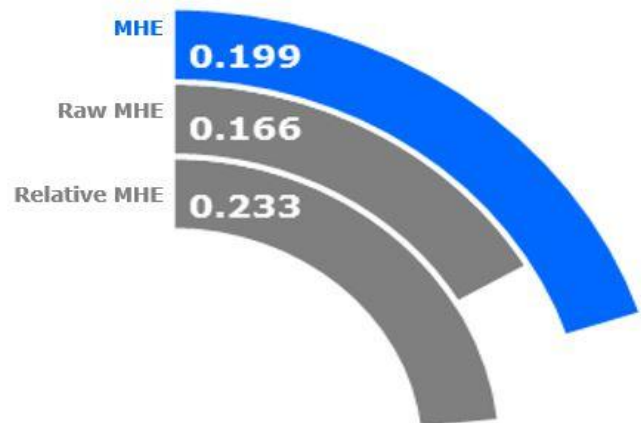
Table 2. Estimated ambient population<sup>2</sup> exposed to each hazard



### Case Study: Clean Water, Sanitation & Education

El Porvenir (NGO in Nicaragua) is working to enhance the resilience of women and young children through integrated clean water projects. El Porvenir works with local communities to ensure that Boaco's watershed remains protected and sustainable. The organization is also working with schools to teach children basic health, clean water, and water management practices.

<https://www.ngoaidmap.org/projects/17857>



<sup>1</sup> Multi-Hazard Exposure: Average exposure of the population to hazards.

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

## Vulnerability (V)

**Vulnerability<sup>3</sup> Rank: 8 of 17 Departments (Score: 0.492)** Vulnerability in Boaco is primarily driven by Gender Inequality, Economic Constraints, and Clean Water Vulnerability. The bar chart on the right indicates the socioeconomic themes contributing to the department's overall Vulnerability score.

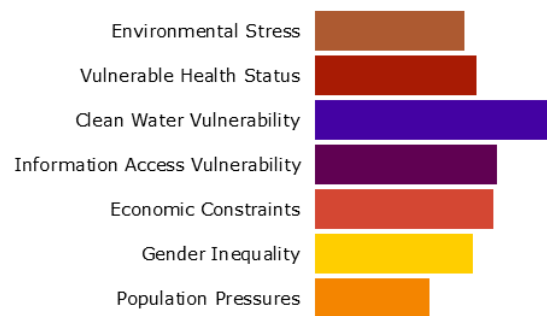









Table 3. Component scores for each vulnerability sub-component

	<b>Environmental Stress</b>	<b>45.2%</b> Province at Drought Risk	<b>11.5%</b> Erosion Risk	<b>101.0</b> Livestock per km <sup>2</sup>			
	<b>Vulnerable Health Status</b>	<b>12.0</b> Infant Mortality Rate	<b>49.1</b> Maternal Mortality Rate	<b>74.5</b> Average Life Expectancy	<b>1.6%</b> Acute Malnutrition (Children < 5)	<b>3.5%</b> Population Disabled	
	<b>Clean Water Vulnerability</b>	<b>41.2%</b> Households with Access to Improved Water	<b>20.1%</b> Households with Access to Flush Toilets				
	<b>Information Access Vulnerability</b>	<b>34.8%</b> Illiteracy	<b>4.8 yrs</b> Average Years of Schooling	<b>88.1%</b> Primary School Enrollment	<b>95.0%</b> Households without Internet	<b>34.7%</b> Households without TV	<b>42.1%</b> Households without Radio
	<b>Economic Constraints</b>	<b>61.1</b> Economic Dependency Ratio	<b>75.9%</b> Population in Poverty				
	<b>Gender Inequality</b>	<b>41.7%</b> Female Seats in Government	<b>1.09</b> Female to Male Secondary Education Enrollment	<b>0.53</b> Female to Male Labor Ratio			
	<b>Population Pressures</b>	<b>1.86%</b> Average Annual Population Change	<b>2.63%</b> Average Annual Urban Population Change				

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

## Coping Capacity (CC)

**Coping Capacity<sup>4</sup> Rank: 14 of 17 Departments (Score: 0.382)** Boaco exhibits weaker Coping Capacity in the areas of Environmental Capacity and Governance. The bar chart on the right indicates the socioeconomic themes contributing to the department's overall Coping Capacity score.

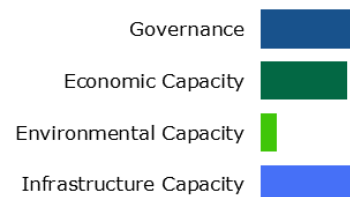









Table 4. Component scores for each coping capacity sub-component

	<b>Economic Capacity</b>	<b>6.6%</b> Households that Receive Remittances	<b>93.2%</b> Employment Rate (Male)	<b>43.4%</b> Employment Rate (Female)	<b>15.3%</b> Population in Highest Welfare Quintile	<b>\$261.8</b> Annual Nominal Global Revenue per Capita	
	<b>Governance</b>	<b>88.0%</b> Crime Complaints Cleared	<b>1018.6</b> Crime Rate per 100k Persons	<b>81.3%</b> Households without Garbage Collection	<b>47.0%</b> Voter Participation (2016 Election)		
	<b>Environmental Capacity</b>	<b>7.4%</b> Protected or Reforested Land					
	<b>Infrastructure Capacity</b>						
	<b>Health Care Capacity</b>		<b>9.0</b> Hospital Beds per 10,000 Persons	<b>12.3</b> Nurses per 10,000 Persons	<b>7.8</b> Physicians per 10,000 Persons	<b>22.3 km</b> Average Distance to Nearest Hospital	<b>86.6%</b> Children Completed Immunization Schedule
	<b>Communications Capacity</b>		<b>9.8%</b> Households with Access to Fixed Phone Line	<b>72.7%</b> Households with Access to Mobile Phone			
	<b>Transportation Capacity</b>		<b>58.3 km</b> Average Distance to Nearest Port or Airport	<b>0.29 km</b> Total Length of Road per km <sup>2</sup> (area)			

<sup>4</sup> 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 Resilience<sup>5</sup> Rank: 8 of 17 Departments (Score: 0.555)**

Boaco's score and ranking are due to medium Vulnerability combined with very low Coping Capacity scores.

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



**Clean Water  
Vulnerability**



**Economic  
Capacity**



**Governance**

## Multi-Hazard Risk (MHR)

**Multi-Hazard Risk<sup>6</sup> Rank: 13 of 17 Departments (Score: 0.437)**

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

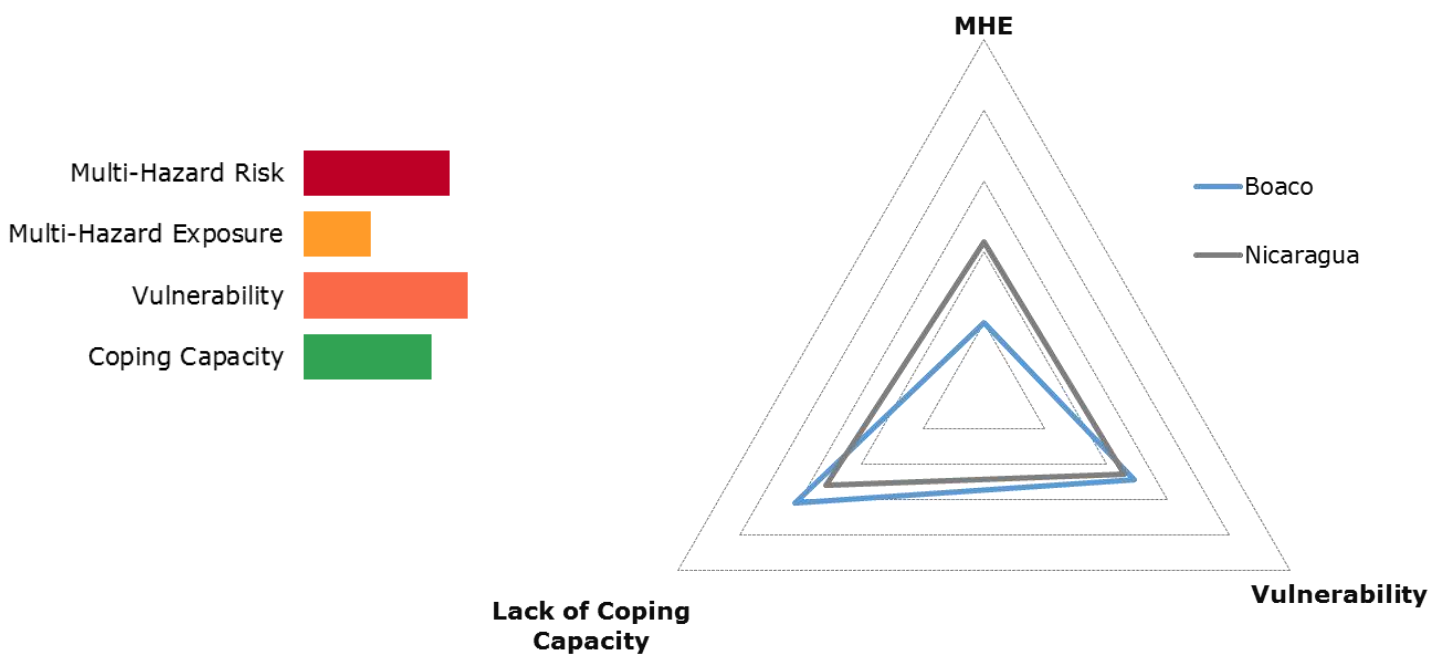


Figure 1. Department Multi-Hazard Risk component scores compared to overall average country scores

<sup>5</sup> **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.

<sup>6</sup> **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



### Low population pressures

Ranked 11 of 17 departments, limited population change allows disaster managers to form accurate evacuation, sheltering, and resource plans.

## Recommendations

01

### Reduce clean water vulnerability

Invest in public water and sewer infrastructure to ensure equitable access to safe, clean drinking water and sanitation.

02

### Increase economic capacity

Foster small-business development and invest in business education and human capital to raise economic stability.

03

### Improve governance

Provide additional support for local police, firefighters, and emergency medical resources to improve public safety and increase crime clearance rates. In addition, promote civic engagement and voter participation in local and national elections to improve public voice and accountability. Finally, seek partnerships with the private sector to increase the provision of services, such as garbage collection.



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