

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



# Matagalpa

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

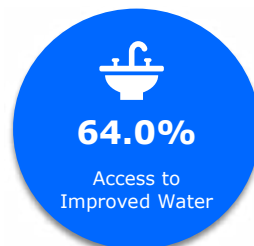
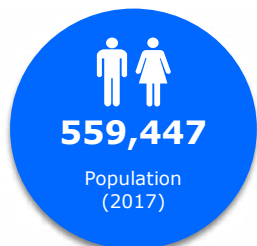
## Department: Matagalpa



Department Capital: Matagalpa

Area: 6,804 km<sup>2</sup>

Matagalpa is located in central Nicaragua and is the second-largest department in population size. It is one of the most mountainous departments and the most diversified in terms of production of goods.



Municipality	Population
Rancho Grande	39,054
Río Blanco	35,454
El Tuma-La Dalia	72,700
San Isidro	19,760
Sébaco	37,097
Matagalpa	155,835
San Ramón	38,201
Matiguás	47,239
Muy Muy	16,857
Esquipulas	18,095
San Dionisio	18,637
Terrabona	14,349
Ciudad Darío	46,169



**Multi-Hazard Risk Rank:  
High (6 of 17)**

**Lack of Resilience Rank:  
High (5 of 17)**

### RVA Component Scores

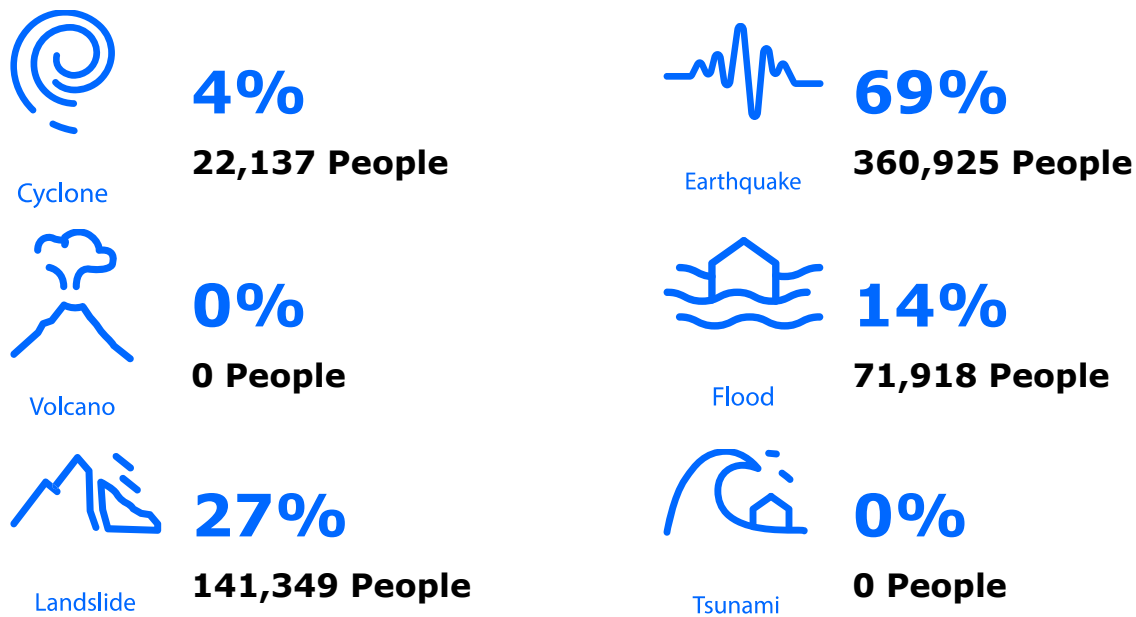
Table 1. Department scores and ranks (compared across departments) for each index

Multi-Hazard Risk		Lack of Resilience		Multi-Hazard Exposure		Vulnerability		Coping Capacity	
High		High		Medium		Medium		Very Low	
Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)
0.495	6	0.572	5	0.341	8	0.512	7	0.369	15

## Multi-Hazard Exposure (MHE)

**Multi-Hazard Exposure<sup>1</sup> Rank: 8 of 17 Departments (Score: 0.341)**

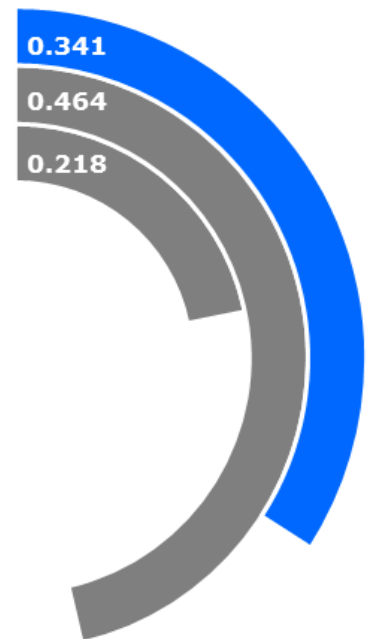
Table 2. Estimated ambient population<sup>2</sup> exposed to each hazard



### Early Warning in Matagalpa

Matagalpa designed and recently instituted a Joint Early Warning System (EWS) for flood risk management. Through automated tools and equipment, the EWS was designed to provide information in real time in order to effectively “alert and communicate to the population about the possible occurrence of phenomenon possibly causing natural disasters, principally flooding in the city of Managua.” The EWS is operated and monitored by local community organizations and is a strong example of the positive outcomes of community engagement in disaster management.

*Operation of the EWS in the City of Matagalpa, Nicaragua (January 2016)*



<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: 7 of 17 Departments

(Score: 0.512) Vulnerability in Matagalpa is primarily driven by Population Pressures and Economic Constraints. The bar chart on the right indicates the socioeconomic themes contributing to the department's overall Vulnerability score.

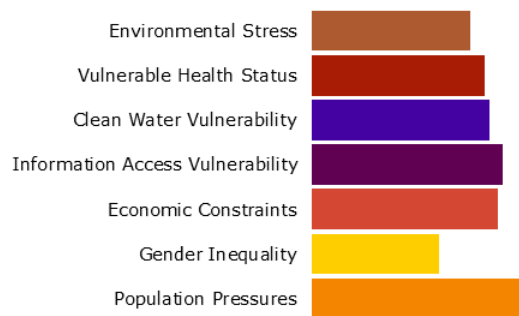









Table 3. Component scores for each vulnerability sub-component

	<b>Environmental Stress</b>	<b>30.1%</b> Province at Drought Risk	<b>40.6%</b> Erosion Risk	<b>86.3</b> Livestock per km <sup>2</sup>		
	<b>Vulnerable Health Status</b>	<b>16.1</b> Infant Mortality Rate	<b>24.6</b> Maternal Mortality Rate	<b>67.9 yrs</b> Average Life Expectancy	<b>1.2%</b> Acute Malnutrition (Children <5)	<b>1.3%</b> Population Disabled
	<b>Clean Water Vulnerability</b>	<b>64%</b> Households with Access to Improved Water	<b>24.4%</b> Households with Access to Flush Toilets			
	<b>Information Access Vulnerability</b>	<b>32.3%</b> Illiteracy	<b>4.95 yrs</b> Average Years of Schooling	<b>84.5%</b> Primary School Enrollment	<b>94.6%</b> Households without Internet	<b>36.8%</b> Households without TV <b>45.8%</b> Households without Radio
	<b>Economic Constraints</b>	<b>63.6</b> Economic Dependency Ratio	<b>74.4%</b> Population in Poverty			
	<b>Gender Inequality</b>	<b>46.2%</b> Female Seats in Government	<b>1.19</b> Female to Male Secondary Education Enrollment	<b>0.49</b> Female to Male Labor Ratio		
	<b>Population Pressures</b>	<b>2.56%</b> Average Annual Population Change	<b>3.38%</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: 15 of 17 Departments (Score: 0.369)** Matagalpa exhibits weaker Coping Capacity in the areas of Infrastructure and Governance. The bar chart on the right indicates the socioeconomic themes contributing to the department's overall Coping Capacity score.

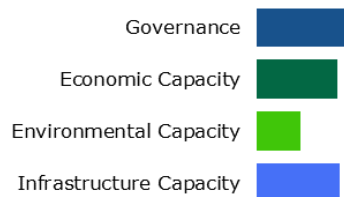









Table 4. Component scores for each coping capacity sub-component

	<b>Economic Capacity</b>	<b>5.2%</b> Households that Receive Remittances	<b>87.9%</b> Employment Rate (Male)	<b>44.7%</b> Employment Rate (Female)	<b>15.3%</b> Population in Highest Welfare Quintile	<b>\$637.7</b> Annual Nominal Global Revenue per Capita	
	<b>Governance</b>	<b>88.4%</b> Crime Complaints Cleared	<b>1469.7</b> Crime Rate per 100k Persons	<b>71.2%</b> Households without Garbage Collection	<b>57%</b> Voter Participation (2016 Election)		
	<b>Environmental Capacity</b>	<b>13.1%</b> Protected or Reforested Land					
	<b>Infrastructure Capacity</b>						
	<b>Health Care Capacity</b>		<b>5.8</b> Hospital Beds per 10,000 Persons	<b>7.8</b> Nurses per 10,000 Persons	<b>5.8</b> Physicians per 10,000 Persons	<b>18.8 km</b> Average Distance to Nearest Hospital	<b>82.9%</b> Children Completed Immunization Schedule
	<b>Communications Capacity</b>		<b>10.6%</b> Households with Access to Fixed Phone Line	<b>68.5%</b> Households with Access to Mobile Phone			
	<b>Transportation Capacity</b>		<b>76.7 km</b> Average Distance to Nearest Port or Airport	<b>0.43 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: 5 of 17 Departments (Score: 0.572)**

Matagalpa'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



**Population Pressures**



**Economic Capacity**



**Infrastructure Capacity**

## Multi-Hazard Risk (MHR)

**Multi-Hazard Risk<sup>6</sup> Rank: 6 of 17 Departments (Score: 0.495)**

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

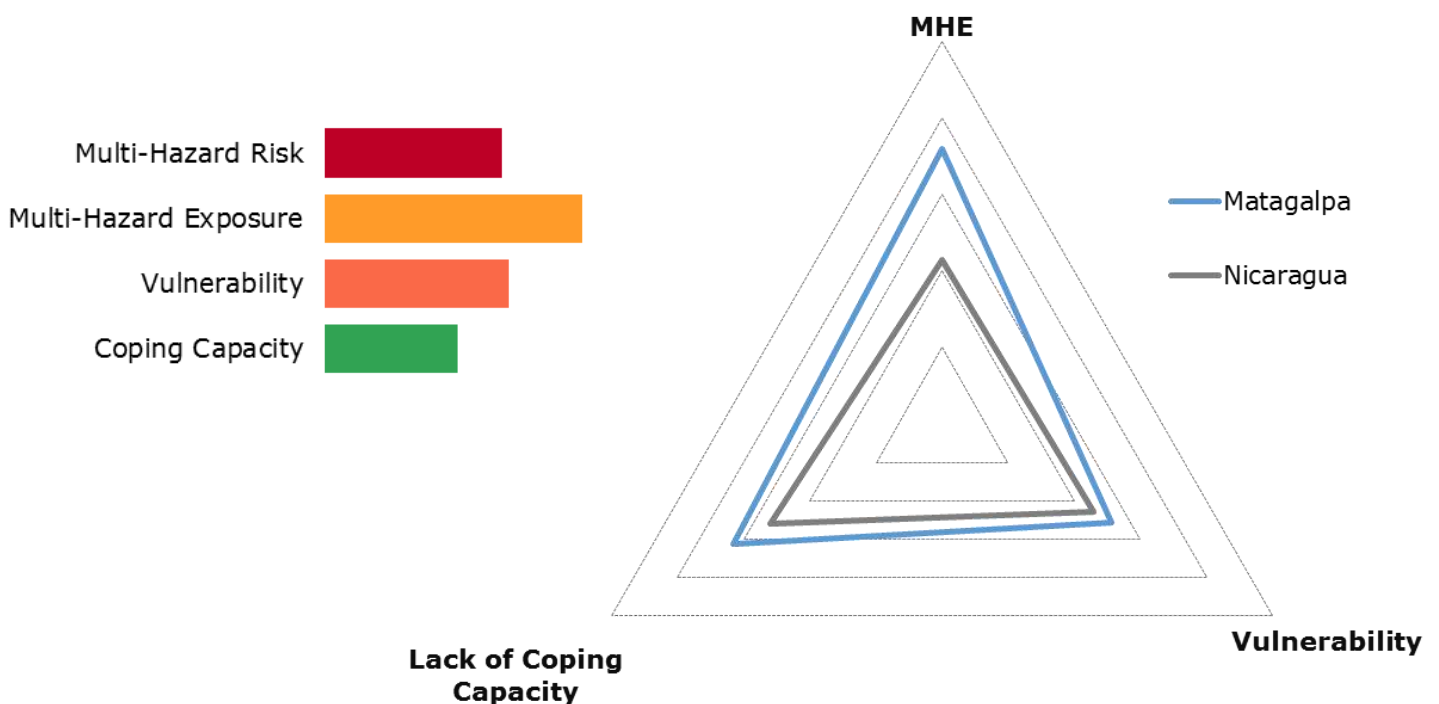


Figure 1. Department Multi-Hazard Risk component scores compared to overall average country scores

<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



### Relatively low gender inequality

Driven by relative gender parity in government representation and secondary education enrollment. 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

## Recommendations

01

### Plan for a growing population

As recommended for departments with similar vulnerability profiles, ensure that local economies, resources, and infrastructure can adequately support the growing population. Anticipate areas where additional growth is likely and estimate the resources necessary for sustainable growth.

02

### Increase economic capacity

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

03

### Invest in infrastructure

Limited infrastructure inhibits the capacity to communicate and exchange information, in addition to limiting the physical distribution of goods and services in Matagalpa. Increased access to health care and preventative medicine will improve health status and quality of life. 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.



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