

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



Managua

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

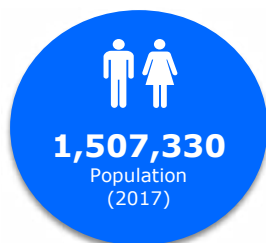
Department: Managua



Department Capital: Managua

Area: 3,465 km²

Managua is located in western Nicaragua on the southwestern shore of Lake Managua. It includes Nicaragua's capital city of Managua and is the economic, political, educational, and cultural center of the nation.



Municipality	Population
San Francisco Libre	11,109
Tipitapa	144,700
Mateare	52,679
Villa El Carmen	36,035
Ciudad Sandino	102,383
Managua	1,057,296
Ticuantepe	38,874
El Crucero	15,488
San Rafael del Sur	48,766



**Multi-Hazard Risk Rank:
High (4 of 17)**

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

RVA Component Scores

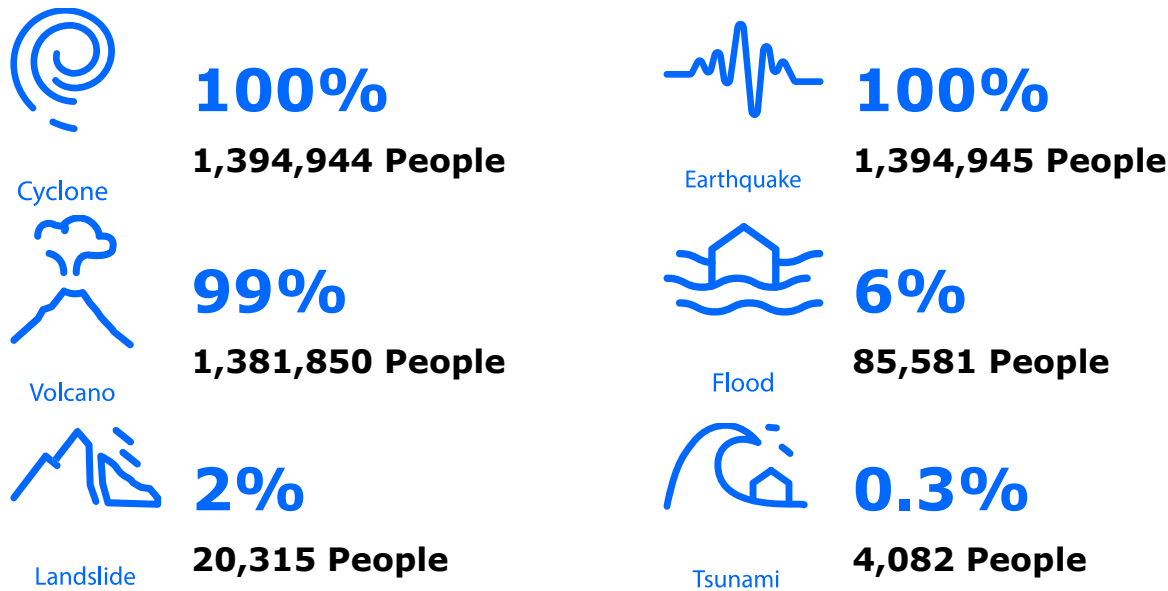
Table 1. Department scores and ranks (compared across departments) for each index

Multi-Hazard Risk		Lack of Resilience		Multi-Hazard Exposure		Vulnerability		Coping Capacity	
High		Very Low		Very High		Very Low		High	
Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)	Score	Rank (of 17)
0.515	4	0.314	17	0.915	1	0.221	17	0.592	5

Multi-Hazard Exposure (MHE)

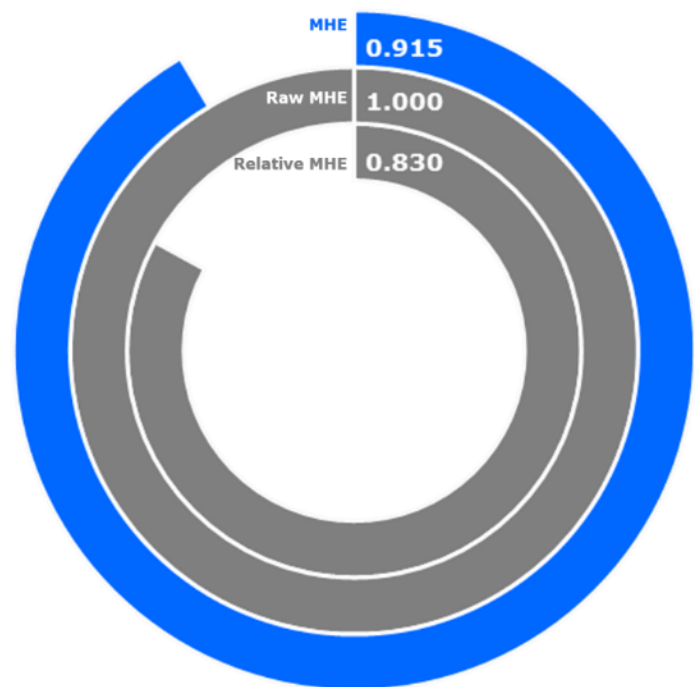
Multi-Hazard Exposure¹ Rank: 1 of 17 Departments (Score: 0.915)

Table 2. Estimated ambient population² exposed to each hazard



More Ambulances for Managua

According to interviews with the Nicaraguan Red Cross, the population in Managua increases from 1.6 million to 2.5 million during daylight hours. This rise in human numbers puts a strain on emergency resources, particularly ambulances. Managua has 12 ambulances designated for emergency response, falling short of the minimum estimated number of 25 ambulances needed to meet the standard of 1 ambulance per every 100,000 people. Although the Ministry of Health has 25 ambulances, only 15 are usable and these are dedicated to the transportation of patients between hospitals. This is just one example of a resource shortfall for an effective disaster-management system.



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: 17 of 17 Departments (Score: 0.221) Vulnerability in Managua is primarily driven by Environmental Stress. The bar chart on the right indicates the socioeconomic themes contributing to the department's overall Vulnerability score.

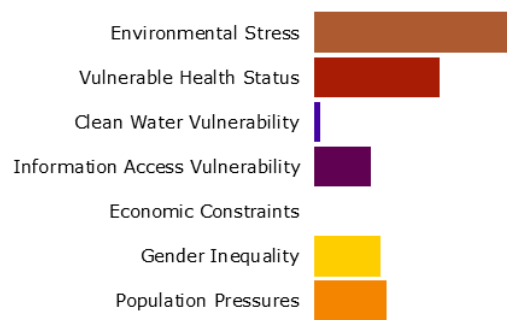









Table 3. Component scores for each vulnerability sub-component

	Environmental Stress	100% Province at Drought Risk	27.8% Erosion Risk	81.1 Livestock per km ²			
	Vulnerable Health Status	15.7 Infant Mortality Rate	12.8 Maternal Mortality Rate	77.3 Average Life Expectancy	2.6% Acute Malnutrition (Children < 5)	1.8% Population Disabled	
	Clean Water Vulnerability	90.5% Households with Access to Improved Water	61.6% Households with Access to Flush Toilets				
	Information Access Vulnerability	10.0% Illiteracy	7.4 yrs Average Years of Schooling	86.6% Primary School Enrollment	89.9% Households without Internet	8.5% Households without TV	63.2% Households without Radio
	Economic Constraints	49.2 Economic Dependency Ratio	48.7% Population in Poverty				
	Gender Inequality	32.1% Female Seats in Government	1.27 Female to Male Secondary Education Enrollment	0.19 Female to Male Labor Ratio			
	Population Pressures	1.75% Average Annual Population Change	2.05% 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: 5 of 17 Departments (Score: 0.592) Managua 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.

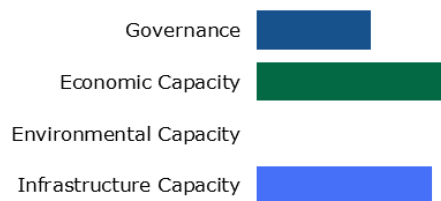









Table 4. Component scores for each coping capacity sub-component

	Economic Capacity	10.4% Households that Receive Remittances	79.7% Employment Rate (Male)	64.6% Employment Rate (Female)	36.8% Population in Highest Welfare Quintile	\$5,994 Annual Nominal Global Revenue per Capita	
	Governance	87.8% Crime Complaints Cleared	2400.1 Crime Rate per 100k Persons	29.3% Households without Garbage Collection	72.1% Voter Participation (2016 Election)		
	Environmental Capacity	3.9% Protected or Reforested Land					
	Infrastructure Capacity						
	Health Care Capacity		11.1 Hospital Beds per 10,000 Persons	13.8 Nurses per 10,000 Persons	12.4 Physicians per 10,000 Persons	16.8 km Average Distance to Nearest Hospital	77.7% Children Completed Immunization Schedule
	Communications Capacity		29.6% Households with Access to Fixed Phone Line	85.4% Households with Access to Mobile Phone			
	Transportation Capacity		15.3 km Average Distance to Nearest Port or Airport	0.43 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: 17 of 17 Departments (Score: 0.314)

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

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



Environmental Stress



Environmental Capacity



Governance

Multi-Hazard Risk (MHR)

Multi-Hazard Risk⁶ Rank: 4 of 17 Departments (Score: 0.515)

Managua's Multi-Hazard Risk score and ranking are driven primarily by very high Multi-Hazard Exposure combined with very low Vulnerability and high Coping Capacity scores.

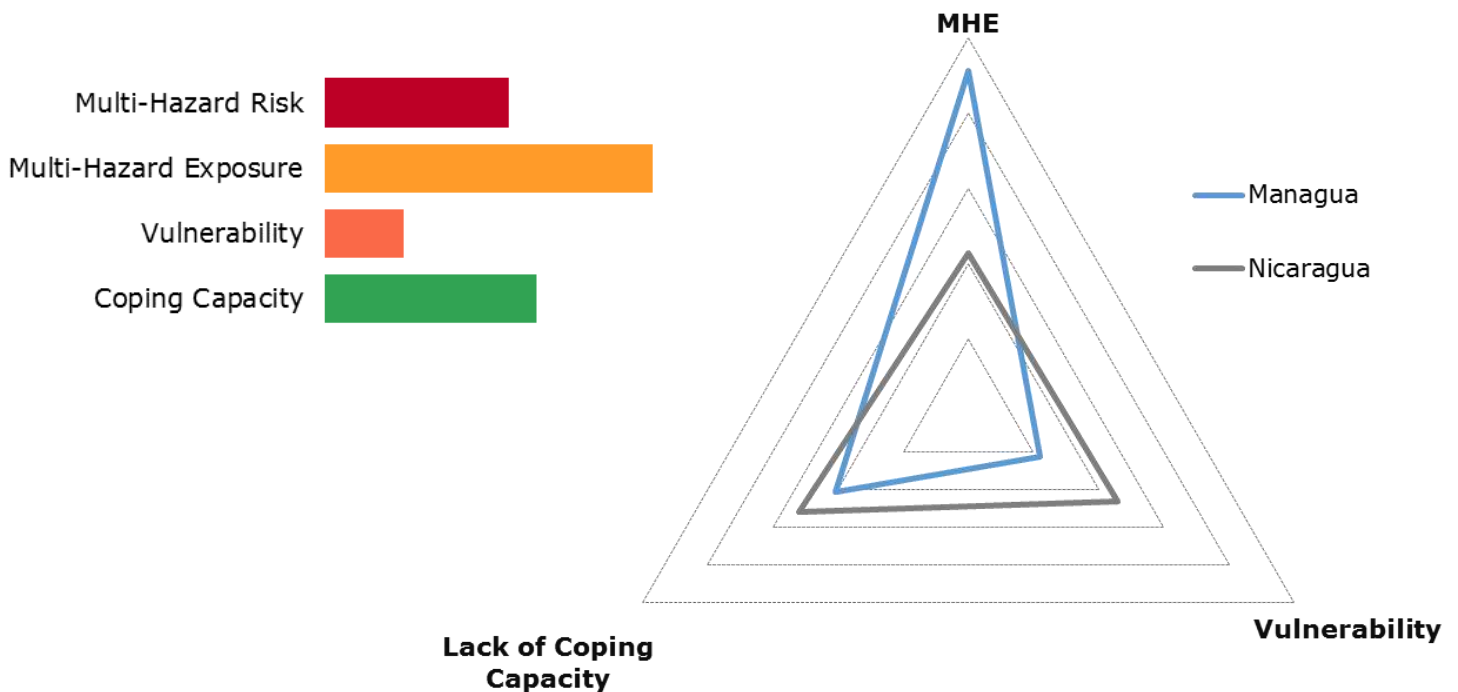


Figure 1. Department Multi-Hazard Risk component scores compared to overall average country scores

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



Lowest overall vulnerability

Ranked 17 of 17 departments, low overall vulnerability indicates that Managua department is less susceptible to the negative impacts of a disaster and will likely recover faster after an event.



Lowest economic constraints, clean water vulnerability, and information access vulnerability

Ranked 17 of 17 departments in each subcomponent, indicating a highly resilient population.



Highest communications capacity

Ranked 1 of 17 departments, well developed communication networks facilitate the coordinated action among local, departmental, and national actors.

Recommendations

01

Institutionalize multi-hazard planning and education

Multi-Hazard Risk in Managua 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.

02

Invest in public safety and crime prevention

Provide additional support for local police, firefighters, and emergency medical resources to improve public safety and decrease crime rates.

03

Reduce environmental stress

Invest in drought- and erosion-mitigation projects to reduce environmental stress and degradation.



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