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# Guatemala: San Marcos

National Disaster Preparedness Baseline Assessment –  
Department Profile

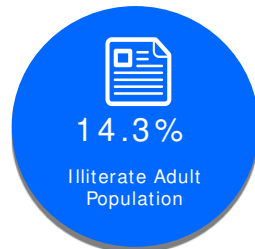
Department: San Marcos



Department Capital: San Marcos

Area: 2,397 km<sup>2</sup>

San Marcos is located in northwest Guatemala, bordering the Pacific Ocean to the west and Mexico to the north. The extreme range in altitude from the coast to the Tajumulco volcano – the highest peak in Central America – results in a large variety of crops, including apples, bananas, beans, cacao, coffee, maize, oats, plantains, rice, and potatoes.



Municipality	Population
Malacatán	123,926
Tacaná	83,988
San Pedro Sacatepéquez	74,611
Comitancillo	70,758
Tajumulco	64,880
Concepción Tutuapa	63,454
San Pablo	61,765
San Marcos	60,383
Ocós	50,835
El Tumbador	44,667
Ayutla	43,602
Nuevo Progreso	42,498
Catarina	40,165
San Miguel Ixtahuacán	39,997
Tejutla	35,827
Ixchiguán	33,372
Pajapita	28,545
El Quetzal	25,697
San Antonio Sacatepéquez	23,055
San José Ojetenam	21,398
Sipacapa	20,588
El Rodeo	18,395
San Cristóbal Cucho	18,013
Sibinal	17,750
San Rafael Pie de La Cuesta	16,986
La Reforma	15,944



Multi-Hazard Risk Rank: High (5 of 22)      Lack of Resilience Rank: High (7 of 22)

RVA Component Scores

Table 19. Department scores and ranks (compared across departments) for each index

Multi-Hazard Risk		Lack of Resilience		Multi-Hazard Exposure		Vulnerability		Coping Capacity	
High		High		Moderate		High		Low	
Score	Rank (of 22)	Score	Rank (of 22)	Score	Rank (of 22)	Score	Rank (of 22)	Score	Rank (of 22)
0.576	5	0.565	7	0.598	10	0.519	8	0.389	18

# NDPBA Guatemala Report: Department Profile

## Multi-Hazard Exposure (MHE)

Multi-Hazard Exposure<sup>1</sup> Rank: 10 of 22 Departments (Score: 0.598)

Table 302. Estimated ambient population<sup>2</sup> exposed to each hazard



100%

1,041,378 People

Cyclone



100%

1,041,378 People

Earthquake



1.6%

16,662 People

Volcano



8%

79,607 People

Flood



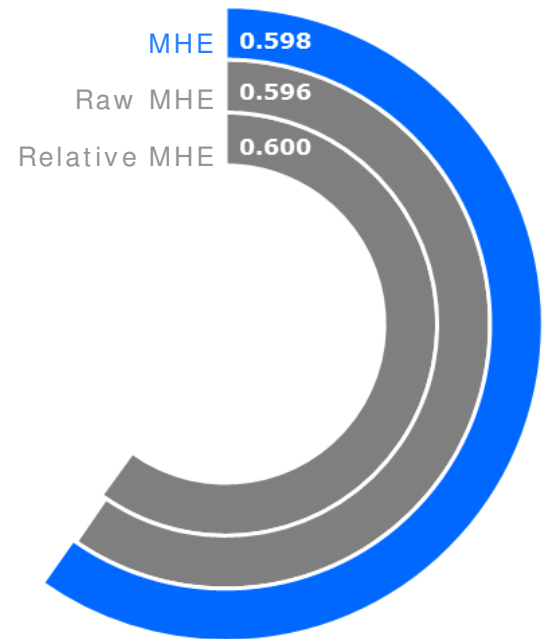
17%

180,963 People

Landslide

### Magnitude 7.4 Earthquake

In November 2012, a 7.4M earthquake struck off the coast of Guatemala, causing shaking as far away as Mexico City and San Salvador. In San Marcos, one of the hardest hit areas, over 30 houses collapsed, communications were severed, and landslides blocked main transportation routes in and out of the town. Additionally, a school collapsed, injuring eight people. It was the worst earthquake to hit Guatemala since 1976.



<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.

# NDPBA Guatemala Report: Department Profile

## Vulnerability (V)

Vulnerability<sup>3</sup> Rank: 8 of 22 Departments (Score: 0.519) Vulnerability in San Marcos is primarily driven by Economic Constraints, Clean Water Access Vulnerability, and Gender Inequality. The bar chart on the right indicates the socioeconomic themes contributing to the department's overall Vulnerability score.

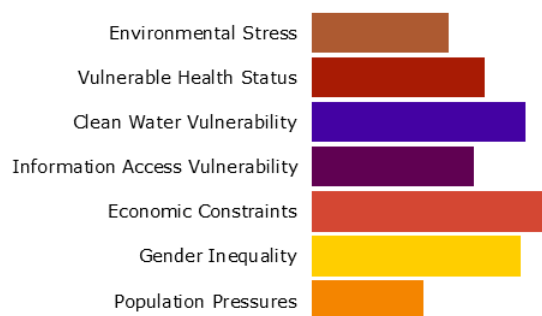









Table 31. Component scores for each Vulnerability sub-component

	<b>Environmental Stress</b>	42.0% Province at Drought Risk	-0.16% Annual Forest Change					
	<b>Vulnerable Health Status</b>	29 Infant Mortality Rate	157.9 Maternal Mortality Ratio	0.7% Acute Malnutrition	1.2% Population Disabled	22.4 TB Incidence	17.5 Dengue Prevalence	7.0 Malaria Prevalence
	<b>Clean Water Vulnerability</b>	73% Households with Access to Improved Water	35.6% Households with Access to Improved Sanitation					
	<b>Information Access Vulnerability</b>	14.3% Adult Illiteracy	5.0 Average Years of Schooling	87.4% Primary School Enrollment	4.4% Households with Internet	26.0% Households with Cable TV	77.5% Households with Radio	30.3% Speak Indigenous Language
	<b>Economic Constraints</b>	0.81 Economic Dependency Ratio	60.2% Population in Poverty	0.61 GINI Coefficient				
	<b>Gender Inequality</b>	11.1% Female Seats in Congress	.537 Ratio of Female to Male Secondary Education Enrollment	0.196 Ratio of Female to Male Economic Activity				
	<b>Population Pressures</b>	3.2% Average Annual Population Change	2.21% Average Annual Urban Population Change	35.4% Food Insecurity				

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

## NDPBA Guatemala Report: Department Profile

### Coping Capacity (CC)

Coping Capacity<sup>4</sup> Rank: 18 of 22 Departments (Score: 0.389) San Marcos displays a low level of Coping Capacity, which is attributable to Economic Capacity and Environmental Capacity. The bar chart on the right indicates the socioeconomic themes contributing to the department's overall Coping Capacity score.

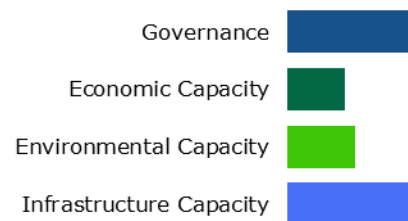









Table 42. Component scores for each Coping Capacity sub-component

	<b>Governance</b>	<b>96.8</b> Crime Victims per 100K	<b>11.8%</b> Households with Garbage Collection				
	<b>Economic Capacity</b>	<b>\$523.1</b> Remittances per Capita (USD)	<b>5.7</b> Businesses per 1,000 Persons	<b>6,282</b> GDP per Capita (Quetzales)			
	<b>Environmental Capacity</b>	<b>3.6%</b> Protected Land	<b>1.7%</b> Reforested Area				
	<b>Infrastructure Capacity</b>						
	<b>Health Care Capacity</b>	<b>13.9</b> Hospital Beds per 10,000 Persons	<b>2.3</b> Nurses per 10,000 Persons	<b>2.9</b> Physicians per 10,000 Persons	<b>20.4 km</b> Average Distance to Nearest Hospital	<b>91.7%</b> Children Completed Immunization Schedule	
	<b>Communications Capacity</b>	<b>7.0%</b> Households with Access to Fixed Phone Line	<b>75.6%</b> Households with Access to Mobile Phone	<b>96.4%</b> Households with Access to Electricity			
	<b>Transportation Capacity</b>	<b>22.6 km</b> Average Distance to Nearest Port or Airport	<b>33.9 km</b> Total Length of Road per 100 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.

## NDPBA Guatemala Report: Department Profile

### Lack of Resilience (LR)

Lack of Resilience<sup>5</sup> Rank: 7 of 22 Departments (Score: 0.565)

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

Table 53. The 3 thematic areas with the weakest relative scores



Economic  
Constraints



Economic  
Capacity



Clean Water  
Vulnerability

### Multi-Hazard Risk (MHR)

Multi-Hazard Risk<sup>6</sup> Rank: 5 of 22 Departments (Score: 0.576)

San Marcos' score and ranking are due to high Vulnerability, moderate Multi-Hazard Exposure combined with low Coping Capacity scores.

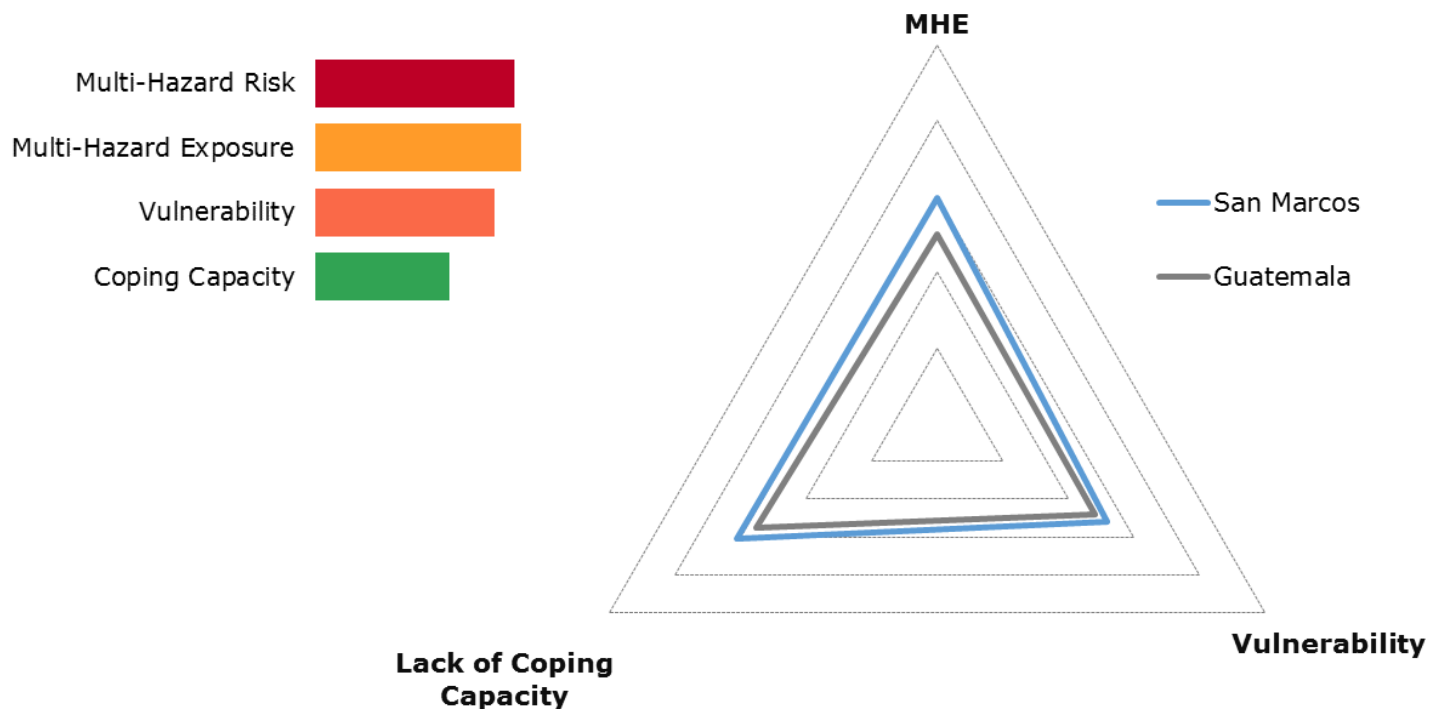


Figure 1. Department Multi-Hazard Risk component scores compared to overall average country scores

<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 16 of 22 departments, limited population change allows disaster managers to form accurate evacuation, sheltering, and resource plans.

## Recommendations

01

### Invest in business development

Provide education and opportunities for business development, increasing economic capacity.

02

### Increase water and sanitation services

Invest in public water and waste facilities to increase water quality and access and reduce the spread of disease.



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