

Better solutions.
Fewer disasters.
Safer world.



Guatemala: Sololá

Image: Google

National Disaster Preparedness Baseline Assessment –
Department Profile

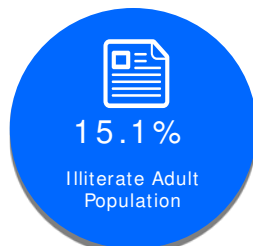
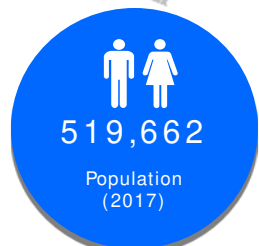
Department: Sololá



Department Capital: Sololá

Area: 1,061 km²

Sololá is located in western Guatemala. Lake Atitlán, known as one of the most beautiful lakes in the world, is located in the department and is Guatemala's most popular tourist attraction.



Municipality

Sololá
Nahualá
Santa Catalina Ixtahuacán
Santiago Atitlán
San Lucas Tolimán
Santa Lucía Utatlán
Panajachel
San Andres Semetabaj
San Antonio Palopó
San Juan La Laguna
San Pedro La Laguna
Santa Clara La Laguna
Santa Cruz La Laguna
San Pablo La Laguna
Concepción
Santa Catarina Palopó
San José Chacayá
San Marcos La Laguna
Santa María Visitación

Population

149,951
71,785
53,322
52,046
33,986
26,944
20,387
14,649
14,289
12,247
12,210
11,189
9,027
8,174
7,809
7,363
5,871
5,546
2,868



- 1) SANTA MARÍA VISITACIÓN
- 2) SANTA CLARALA LAGUNA
- 3) SANTA PABLO LA LAGUNA
- 4) SANTA MARCOS LA LAGUNA
- 5) SANTA CRUZ LA LAGUNA
- 6) SAN JOSÉ CHACAYÁ
- 7) PANAJACHEL
- 8) SANTA CATARIN PALAPÓ

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

Lack of Resilience Rank:
Low (17 of 22)

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		Moderate		High	
Score	Rank (of 22)	Score	Rank (of 22)	Score	Rank (of 22)	Score	Rank (of 22)	Score	Rank (of 22)
0.560	7	0.486	17	0.709	3	0.488	10	0.515	6

NDPBA Guatemala Report: Department Profile

Multi-Hazard Exposure (MHE)

Multi-Hazard Exposure¹ Rank: 3 of 22 Departments (Score: 0.709)

Table 40. Estimated ambient population² exposed to each hazard



100%

401,820 People

Cyclone



100%

401,820 People

Earthquake



100%

401,820 People

Volcano



4%

14,672 People

Flood



23%

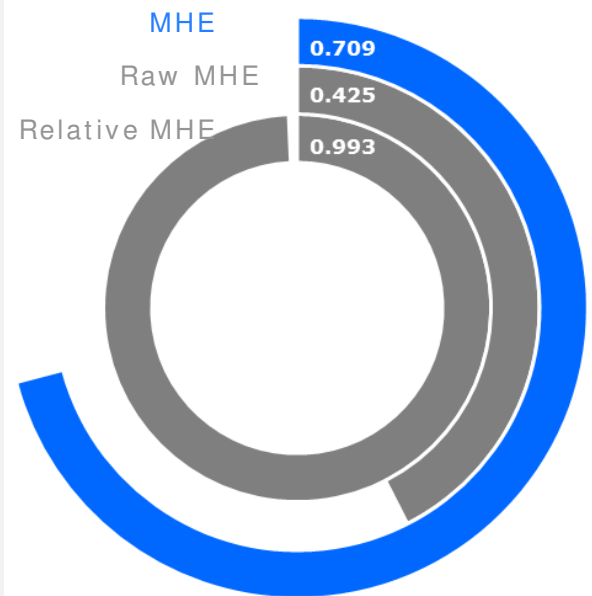
94,349 People

Landslide

Trócaire began working with AMI (Integrated Medical Attention) San Lucas, a local NGO based in the department of Sololá, in 2009 on disaster preparedness and response in one of Guatemala's most high-risk regions. The communities of Sololá have endured multiple natural disasters, including Hurricane Stan in 2005, Ágata in 2010, the 12A storm of 2011, and the earthquake of November 2012, which caused massive landslides and the destruction of many homes.

Trócaire and AMI San Lucas have supported the community of Paquip, Sololá, in the formation, training, and accreditation of its COLRED (Local Coordinator for the Reduction of Disasters). The COLRED has 10 members, three of whom are women. Each member has a specific responsibility, for example: coordinator of the refuge, first aid, search and rescue leader. Members have participated in first aid and search and rescue trainings, and have been provided with equipment, such as helmets, radios, flashlights, a stretcher, and first-aid kits.

<https://www.trocaire.org/sites/default/files/pdfs/whatwedo/trocaire-guatemala-disaster-risk-reduction.pdf>



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.

NDPBA Guatemala Report: Department Profile

Vulnerability (V)

Vulnerability³ Rank: 10 of 22 Departments (Score: 0.488) Vulnerability in Sololá is primarily driven by Information Access Vulnerability and Population Pressures. The bar chart on the right indicates the socioeconomic themes contributing to the department's overall Vulnerability score.

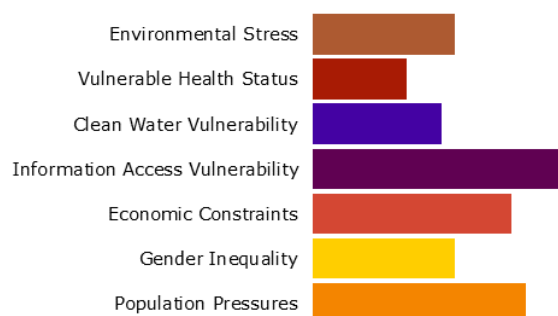









Table 21. Component scores for each Vulnerability sub-component

	Environmental Stress	44.1% Province at Drought Risk	-0.2% Annual Forest Change					
	Vulnerable Health Status	22 Infant Mortality Rate	21.1 Maternal Mortality Ratio	0.0% Acute Malnutrition	5.7% Population Disabled	5.4 TB Incidence	4.4 Dengue Prevalence	16.2 Malaria Prevalence
	Clean Water Vulnerability	97.1% Households with Access to Improved Water	38.4% Households with Access to Improved Sanitation					
	Information Access Vulnerability	15.1% Adult Illiteracy	4.8 Average Years of Schooling	66.8% Primary School Enrollment	3.4% Households with Internet	46.7% Households with Cable TV	75.8% Households with Radio	96.5% Speak Indigenous Language
	Economic Constraints	0.94 Economic Dependency Ratio	80.9% Population in Poverty	0.40 GINI Coefficient				
	Gender Inequality	0.0% Female Seats in Congress	0.04 Ratio of Female to Male Secondary Education Enrollment	0.03 Ratio of Female to Male Economic Activity				
	Population Pressures	4.6% Average Annual Population Change	0.9% Average Annual Urban Population Change	54.9% Food Insecurity				

³ **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 Capacity⁴ Rank: 6 of 22 Departments (Score: 0.515) Sololá displays a high level of Coping Capacity, which is attributable to high Governance and Environmental Capacity. The bar chart on the right indicates the socioeconomic themes contributing to the department's overall Coping Capacity score.

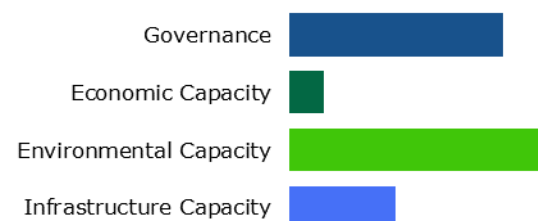









Table 3. Component scores for each Coping Capacity sub-component

	Governance	78.9 Crime Victims per 100K	33.9% Households with Garbage Collection				
	Economic Capacity	\$259.1 Remittances per Capita (USD)	6.6 Businesses per 1,000 Persons	7,074.9 GDP per Capita (Quetzales)			
	Environmental Capacity	78.2% Protected Land	5.2% Reforested Area				
	Infrastructure Capacity						
	Health Care Capacity		1.7 Hospital Beds per 10,000 Persons	2.2 Nurses per 10,000 Persons	3.3 Physicians per 10,000 Persons	13.8 km Average Distance to Nearest Hospital	81.9% Children Completed Immunization Schedule
	Communications Capacity		3.3% Households with Access to Fixed Phone Line	72.6% Households with Access to Mobile Phone	98.3% Households with Access to Electricity		
	Transportation Capacity		16.8 km Average Distance to Nearest Port or Airport	48.7 km Total Length of Road per 100 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.

NDPBA Guatemala Report: Department Profile

Lack of Resilience (LR)

Lack of Resilience⁵ Rank: 17 of 22 Departments (Score: 0.486)

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

Table 4. The 3 thematic areas with the weakest relative scores



Information
Access
Vulnerability



Population
Pressures



Health Care
Capacity

Multi-Hazard Risk (MHR)

Multi-Hazard Risk⁶ Rank: 7 of 22 Departments (Score: 0.560)

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

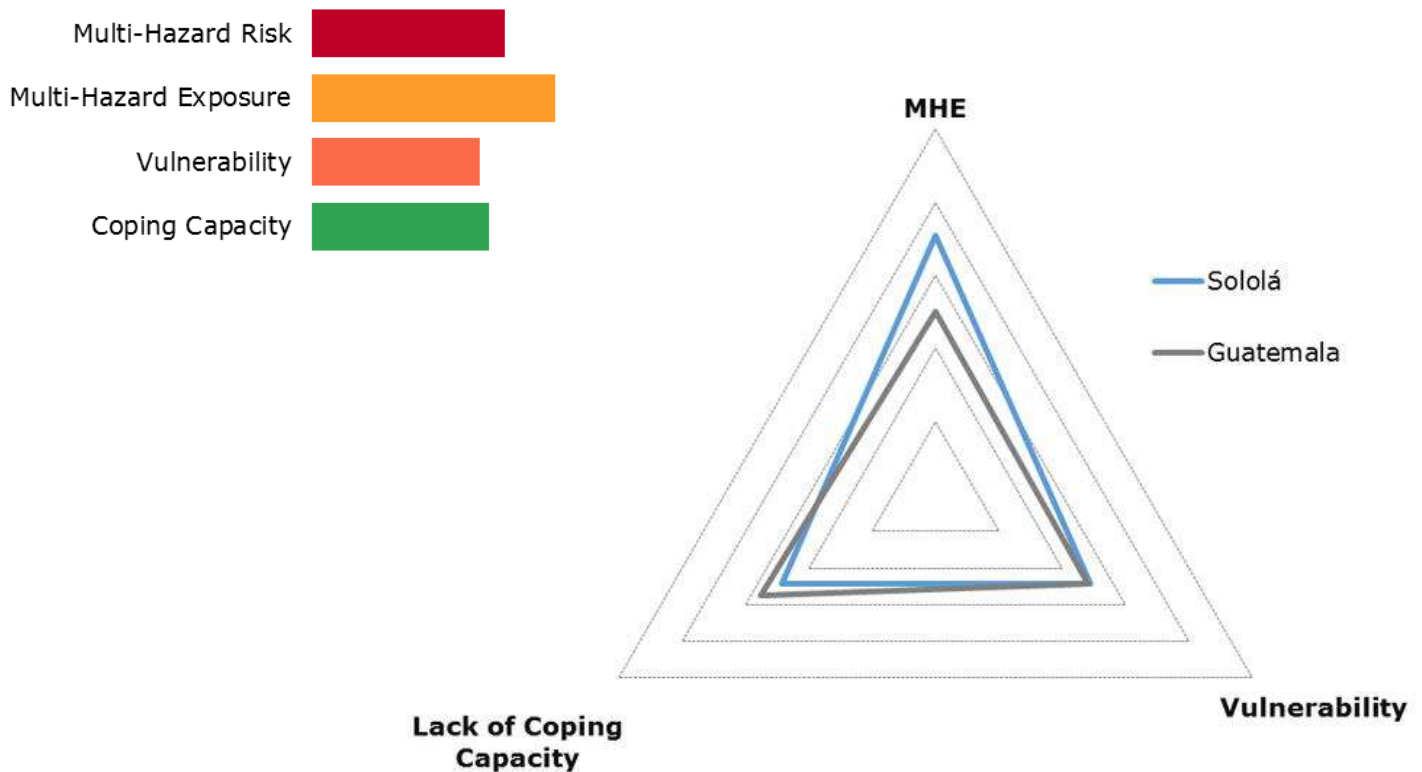


Figure 1. Department Multi-Hazard Risk component scores compared to overall average country scores

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



Highest overall governance

Ranked 1 of 22 departments, high governance could facilitate the implementation of disaster management initiatives into departmental and municipal communities.



Highest environmental capacity

Ranked 1 of 22 departments, high environmental capacity indicates that natural resources and agriculture will be more resilient to the effects of a disaster and may recover faster.



Lowest vulnerable health status

Ranked 22 of 22 departments, low health vulnerability could indicate a population that will be more resilient to the negative health impacts associated with major disaster events.

Recommendations

01

Invest in communication infrastructure

Invest in communication infrastructure to support coordinated action among local, municipal, and regional actors.

02

Increase health education and access

Provide increased access to healthcare services through construction of facilities, incentive programs for doctors and nurses to practice in remote areas, and general health-education programs for the population. Increasing healthcare access facilitates access to vital resources before, during, and after a disaster event.

03

Reduce population pressure

Rapid population changes are difficult to plan for, and can destabilize social, economic, and environmental systems. Analyze trends in the department to determine potential population changes and increase the update frequency of plans and SOPS to accommodate the changes.



Better solutions.
Fewer disasters.
Safer world.

NDPBA Guatemala Report
1305 N. Holocono Street, Suite 2
Kihei, Hawaii, 96753
Phone: (808) 891-0525 | Fax: (808) 891-0526
ndpba@pdc.org | www.pdc.org

© 2018 Pacific Disaster Center