

Better solutions.
Fewer disasters.
Safer world.



Espailalat

Dominican Republic National Disaster Preparedness
Baseline Assessment
Province Profile

Findings: Risk and Vulnerability Assessment (RVA)

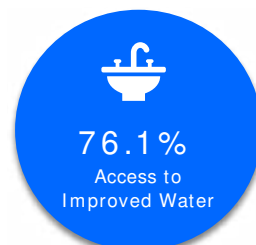
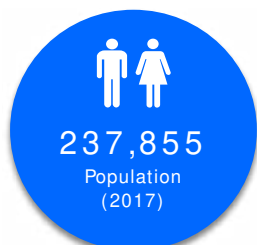
Province: Espaillat

Province Capital: Moca

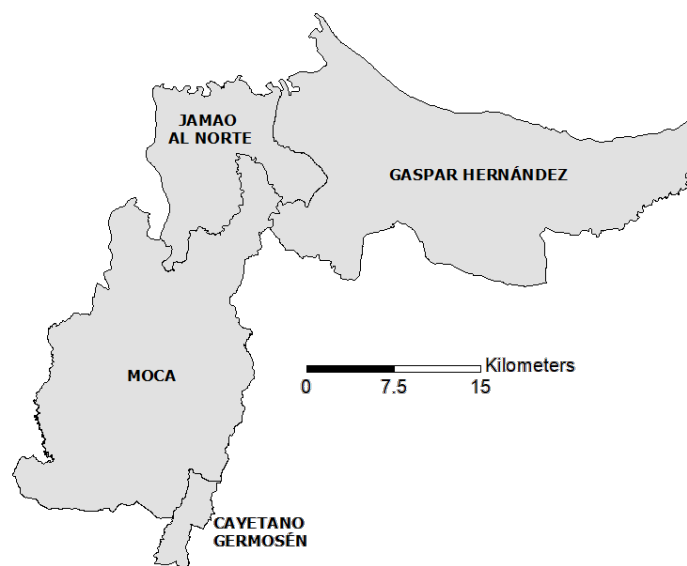


Area: 953 km²

Espaillat is a coastal province located in the North-Central region of the country known for ecotourism and agricultural outputs including yuca, root crops, poultry and swine.



Municipality	Population
Moca	184,027
Cayetano Germosén	7,073
Gaspar Hernandez	38,249
Jamao Al Norte	8,506



**Multi-Hazard Risk Rank:
Very High (5 of 32)**

**Lack of Resilience Rank:
Low (21 of 32)**

RVA Component Scores

Table 1. Province Scores and Ranks (compared across Provinces) for each Index

Multi-Hazard Risk		Lack of Resilience		Multi-Hazard Exposure		Vulnerability		Coping Capacity	
Very High		Low		Very High		Low		Medium	
Score	Rank (of 32)	Score	Rank (of 32)	Score	Rank (of 32)	Score	Rank (of 32)	Score	Rank (of 32)
0.561	5	0.453	21	0.779	5	0.356	24	0.451	20

Multi-Hazard Exposure (MHE)

Multi-Hazard Exposure¹ Rank: 5 of 32 Provinces (Score: 0.779)

Table 2. Estimated ambient population² exposed to each hazard



Cyclone

100%

270,809 People



Earthquake

100%

270,809 People



Landslide

66%

178,840 People



Flood

75%

203,992 People



Tsunami

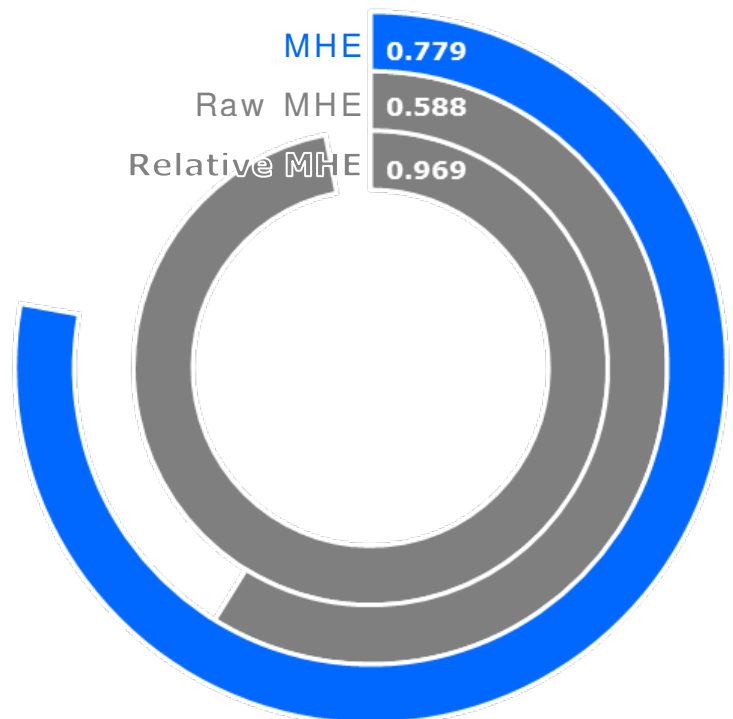
5%

12,582 People

Case Study: A National Flooding Emergency in Espaillat

In November 2016, the Dominican Republic received several weeks of heavy rain, resulting in mass displacement due to extensive flooding and landslides in several provinces. Espaillat was one of the most affected provinces, with the city of Gaspar Hernandez recording 223.5 mm of rainfall in 24 hours. A national emergency was declared for the province by the country's President on November 13th. The province remained on red alert for the duration of November.

"Dominican Republic – 18,000 Remain Displaced by Floods, National Emergency Declared" – Floodlist, 16 November 2016



¹ Multi-Hazard Exposure: Average exposure of the population to hazards.

² Ambient Population: 24-hour average estimate of the population in each province. Ambient population typically differs from census population.

Findings: Risk and Vulnerability Assessment (RVA)

Vulnerability (V)

Vulnerability³ Rank: 24 of 32 Provinces (Score: 0.356) Though Vulnerability in Espailat is relatively low, the index is influenced by moderate scores in Gender Inequality, Population Pressures, and Clean Water Vulnerability. The bar chart on the right indicates the socioeconomic themes contributing to the Province's overall Vulnerability score.

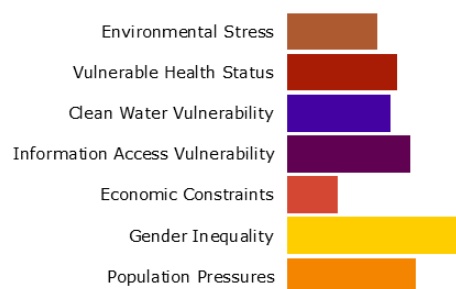









Table 3. Component Scores for each Vulnerability Sub-component

	Environmental Stress	0% Province Susceptible to Drought	-2.6% Average Annual Forest Change				
	Vulnerable Health Status	17.3 Infant Mortality Rate	77.3 Maternal Mortality Rate	10.9 Chronic Malnutrition	6.8% Population Disabled		
	Clean Water Vulnerability	23.9% Households without Access to Improved Water	5.0% Households without Access to Flush Toilets				
	Information Access Vulnerability	13.2% Illiteracy	80.7% Primary School Enrollment	91.1% Households without Internet	17.4% Households without TV	45.4% Households without Radio	6.6 Average years of Schooling
	Economic Constraints	51.5 Economic Dependency Ratio	33.0% Population in Poverty	31.7% CEP Beneficiaries			
	Gender Inequality	37.0% Female Seats in Government	1.1 Female to Male Years of Schooling	0.50 Female to Male Labor Ratio			
	Population Pressures	0.31% Average Annual Population Change	3.0% Average Annual Urban Population Change				

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

Findings: Risk and Vulnerability Assessment (RVA)

Coping Capacity (CC)

Coping Capacity⁴ Rank: 20 of 32 Provinces (Score: 0.451) The thematic areas with the weakest relative scores are Environmental Capacity, Health Care Capacity, and Governance. The bar chart on the right indicates the socioeconomic themes contributing to the province's overall Coping Capacity score.

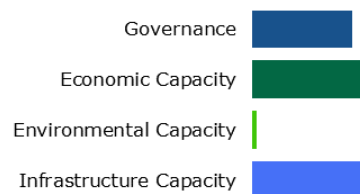


Table 4. Component Scores for each Coping Capacity Sub-component

	Economic Capacity	1.92 Debt to Service Ratio	94.9% Employment Rate (Male)	RD\$ 19,394 Average Annual Income per Capita			
	Governance	75.2% Registered Voter Participation (2016 Election)	22.1 Homicide Rate per 100k persons	65.8% Households with Garbage Collection			
	Environmental Capacity	1.4% Protected or Reforested Land					
	Infrastructure Capacity						
	Health Care Capacity		8.8 Hospital Beds per 10,000 Persons	16.5 Nurses per 10,000 Persons	11.7 Physicians per 10,000 Persons	3.3 km Average Distance to Nearest Hospital	0.30 Vaccination Index ⁵
	Communications Capacity		16.3% Households with Access to Fixed Phone Line	79.9% Households with Access to Mobile Phone			
	Transportation Capacity		24.2 km Average Distance to Nearest Port or Airport	073 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.

⁵ Vaccination Coverage Index: Coverage of DPT (diphtheria, pertussis, and tetanus), Polio, Tuberculosis, and Measles vaccinations. Index values range from 0 to 1, with 1 indicating higher coverage.

Lack of Resilience (LR)

Lack of Resilience⁶ Rank: 21 of 32 Provinces (Score: 0.453)

Espailat's score and ranking are due to low Vulnerability combined with low Coping Capacity scores. Espailat 24th in Vulnerability and 20th in Coping Capacity.

Table 5. The 3 Thematic areas with the Weakest Relative Scores



Environmental Capacity



Health Care Infrastructure Capacity



Governance

Multi-Hazard Risk (MHR)

Multi-Hazard Risk⁷ Rank: 5 of 32 Provinces (Score: 0.561)

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

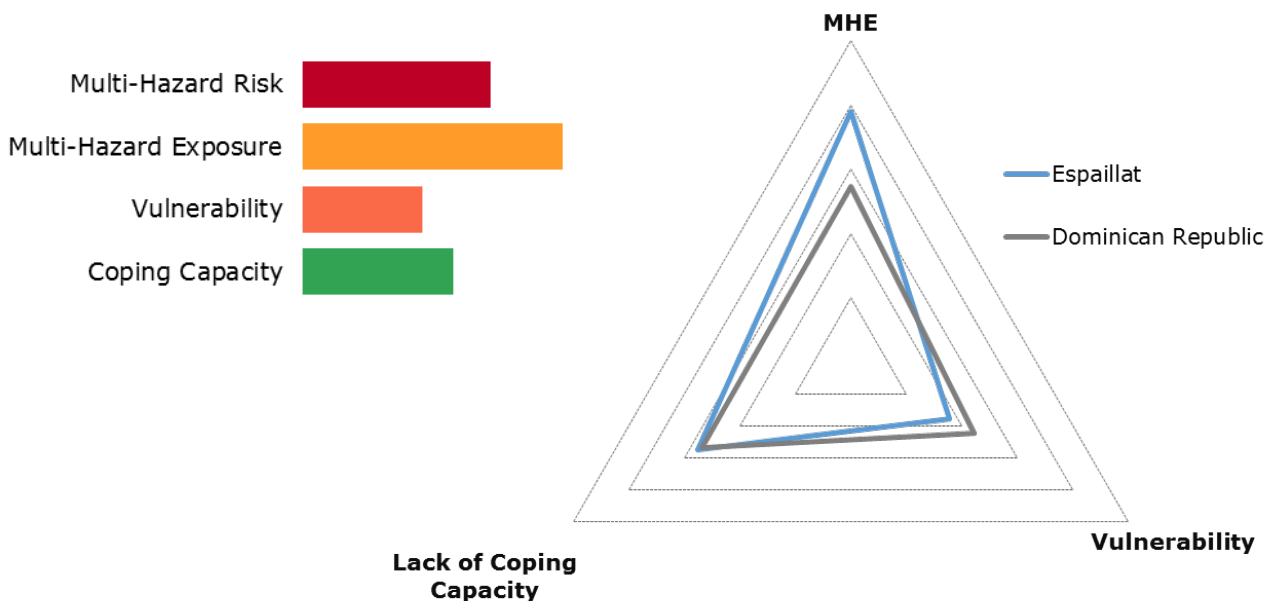


Figure 1. Province Multi-Hazard Risk Component Scores Compared to Overall Average Country Scores

⁶ 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 socio-economic conditions.

⁷ 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



High economic capacity

Ranked 10 of 32 provinces, high economic capacity indicates that Espailat may be able to invest in additional mitigation and preparedness measures at the local and community level.



Low economic constraints

Ranked 27 of 32 provinces, low economic constraints indicate that Espailat may be able to invest in additional mitigation and preparedness measures at the local and community level.

Recommendations

01

Improve environmental capacity

Invest in protected areas to reduce environmental stress and degradation.

02

Build health care capacity

Focus investments to increase access to health care and preventative medicine, as well as transportation to improve connectivity and ensure that health services can be reached by the entire population.

03

Improve governance

Provide additional support for local police, firefighters, and emergency medical resources to improve public safety and reduce crime rates. In addition, seek partnerships with the private sector to increase the provision of services, such as garbage collection.