

Better solutions.
Fewer disasters.
Safer world.



Puerto Plata

Dominican Republic National Disaster Preparedness
Baseline Assessment
Province Profile

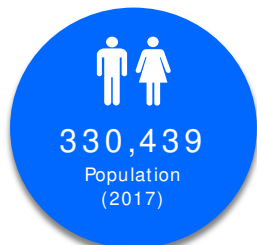
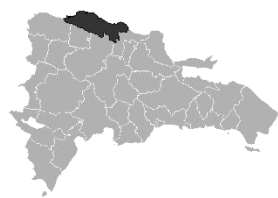
Findings: Risk and Vulnerability Assessment (RVA)

Province: Puerto Plata

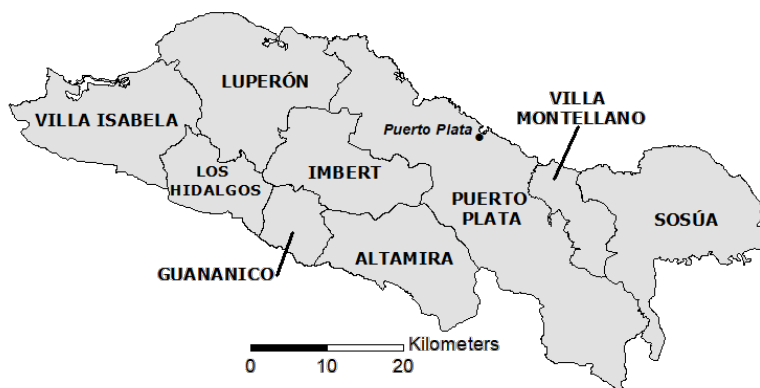
Province Capital: San Felipe de Puerto Plata

Area: 2,048 km²

The northern province of Puerto Plata is known for agribusiness and ecotourism, with coffee and tobacco-growing regions and beaches contributing to the local and national economy.



| Municipality | Population |
|------------------|------------|
| Puerto Plata | 163,137 |
| Altamira | 19,380 |
| Guananico | 6,505 |
| Imbert | 22,666 |
| Los Hidalgos | 12,987 |
| Luperón | 16,911 |
| Sosúa | 50,956 |
| Villa Isabela | 17,637 |
| Villa Montellano | 20,260 |



**Multi-Hazard Risk Rank:
Medium (18 of 32)**

**Lack of Resilience Rank:
Very Low (30 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 | |
|-------------------|--------------|--------------------|--------------|-----------------------|--------------|---------------|--------------|-----------------|--------------|
| Medium | | Very Low | | Very High | | Very Low | | Very High | |
| Score | Rank (of 32) | Score | Rank (of 32) | Score | Rank (of 32) | Score | Rank (of 32) | Score | Rank (of 32) |
| 0.516 | 18 | 0.366 | 30 | 0.815 | 3 | 0.311 | 30 | 0.579 | 3 |

Multi-Hazard Exposure (MHE)

Multi-Hazard Exposure¹ Rank: 3 of 32 Provinces (Score: 0.815)

Table 2. Estimated ambient population² exposed to each hazard



Cyclone

100%

379,762 People



Earthquake

100%

379,762 People



Landslide

63%

240,132 People



Flood

54%

204,277 People



Tsunami

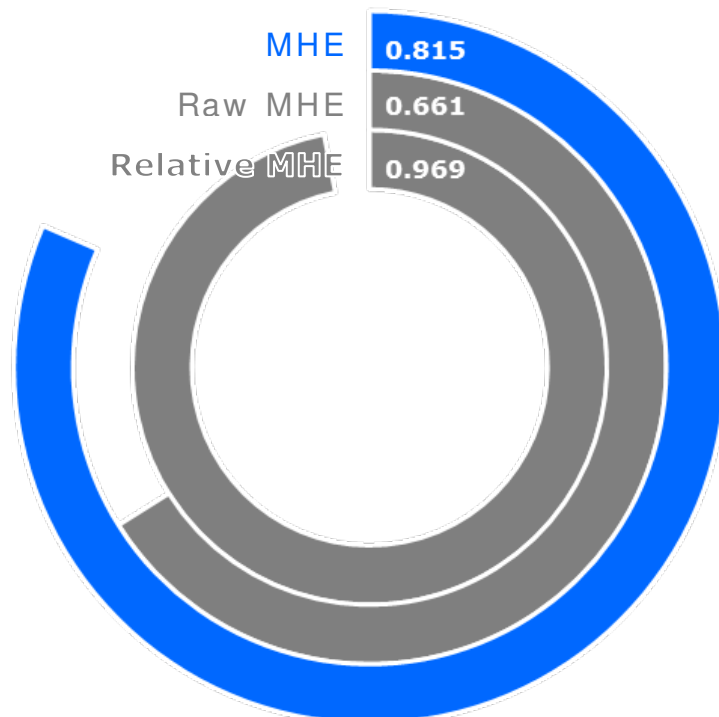
29%

109,905 People

Case Study: Earthquake Resilience in Puerto Plata

With high seismic risk, Puerto Plata has many poor inhabitants exposed to inadequate infrastructure. In order to improve the resilience of the Province, UNDP instituted a project – “Communities Resilient to Earthquakes and Tsunamis in Puerto Plata” – in coordination with CODIA and UASD. Through this program, over “200 master builders and 30 professional engineers and architects” were trained on earthquake-resistant building. In addition, “1,000 families were briefed on how to construct quake-resistant buildings through the distribution of flyers with information on existing national regulations.”

“Dominican Republic: Ready to act when faced with disaster” - UNDP



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: 30 of 32 Provinces (Score: 0.311) Vulnerability is influenced by moderate subcomponent scores in the thematic areas of Gender Inequality, Environmental Stress, and Population Pressures. The bar chart on the right indicates the socioeconomic themes contributing to the Province's overall Vulnerability score.

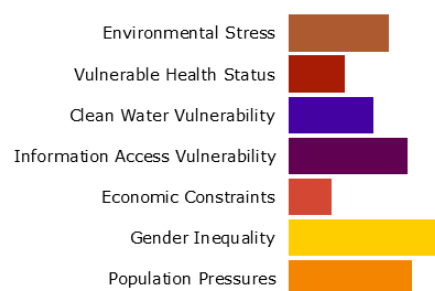









Table 3. Component Scores for each Vulnerability Sub-component

| | | | | | | | |
|---|----------------------------------|--|--|--------------------------------------|--------------------------------|-----------------------------------|-----------------------------------|
|  | Environmental Stress | 7.1% Province Susceptible to Drought | -2.5% Average Annual Forest Change | | | | |
|  | Vulnerable Health Status | 15.7 Infant Mortality Rate | 67.4 Maternal Mortality Rate | 7.8 Chronic Malnutrition | 4.8% Population Disabled | | |
|  | Clean Water Vulnerability | 18.5% Households without Access to Improved Water | 5.1% Households without Access to Flush Toilets | | | | |
|  | Information Access Vulnerability | 14.3% Illiteracy | 88.0% Primary School Enrollment | 87.6% Households without Internet | 26.5% Households without TV | 53.0% Households without Radio | 6.6 Average years of Schooling |
|  | Economic Constraints | 52.9 Economic Dependency Ratio | 35.7% Population in Poverty | 25.2% CEP Beneficiaries | | | |
|  | Gender Inequality | 34.9% Female Seats in Government | 1.1 Female to Male Years of Schooling | 0.45 Female to Male Labor Ratio | | | |
|  | Population Pressures | 0.34% Average Annual Population Change | 2.4% 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: 3 of 32 Provinces (Score: 0.579)
 Puerto Plata has relatively weak scores in the thematic areas of Environmental Capacity and Infrastructure (Health Care Capacity). The bar chart on the right indicates the socioeconomic themes contributing to the province's overall Coping Capacity score.

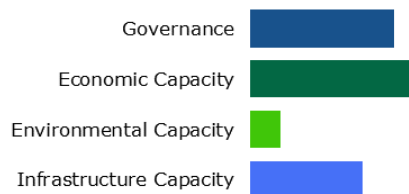









Table 4. Component Scores for each Coping Capacity Sub-component

| | | | | | | | |
|---|--------------------------------|--|---|---|---|---|---|
|  | Economic Capacity | 0.50 Debt to Service Ratio | 91.6% Employment Rate (Male) | RD\$ 30,394 Average Annual Income per Capita | | | |
|  | Governance | 75.1% Registered Voter Participation (2016 Election) | 15.0 Homicide Rate per 100k persons | 73.2% Households with Garbage Collection | | | |
|  | Environmental Capacity | 9.3% Protected or Reforested Land | | | | | |
|  | Infrastructure Capacity | | | | | | |
|  | Health Care Capacity | | 9.5 Hospital Beds per 10,000 Persons | 10.7 Nurses per 10,000 Persons | 9.2 Physicians per 10,000 Persons | 3.2 km Average Distance to Nearest Hospital | 0.76 Vaccination Index ⁵ |
|  | Communications Capacity | | 17.1% Households with Access to Fixed Phone Line | 76.2% Households with Access to Mobile Phone | | | |
|  | Transportation Capacity | | 21.2 km Average Distance to Nearest Port or Airport | 0.55 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: 30 of 32 Provinces (Score: 0.366)

Puerto Plata's score and ranking are due to very low Vulnerability combined with very high Coping Capacity scores. Puerto Plata ranks 30th in Vulnerability and 3rd in Coping Capacity.

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



Environmental Capacity



Health Care Infrastructure Capacity



Environmental Stress

Multi-Hazard Risk (MHR)

Multi-Hazard Risk⁷ Rank: 18 of 32 Provinces (Score: 0.516)

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

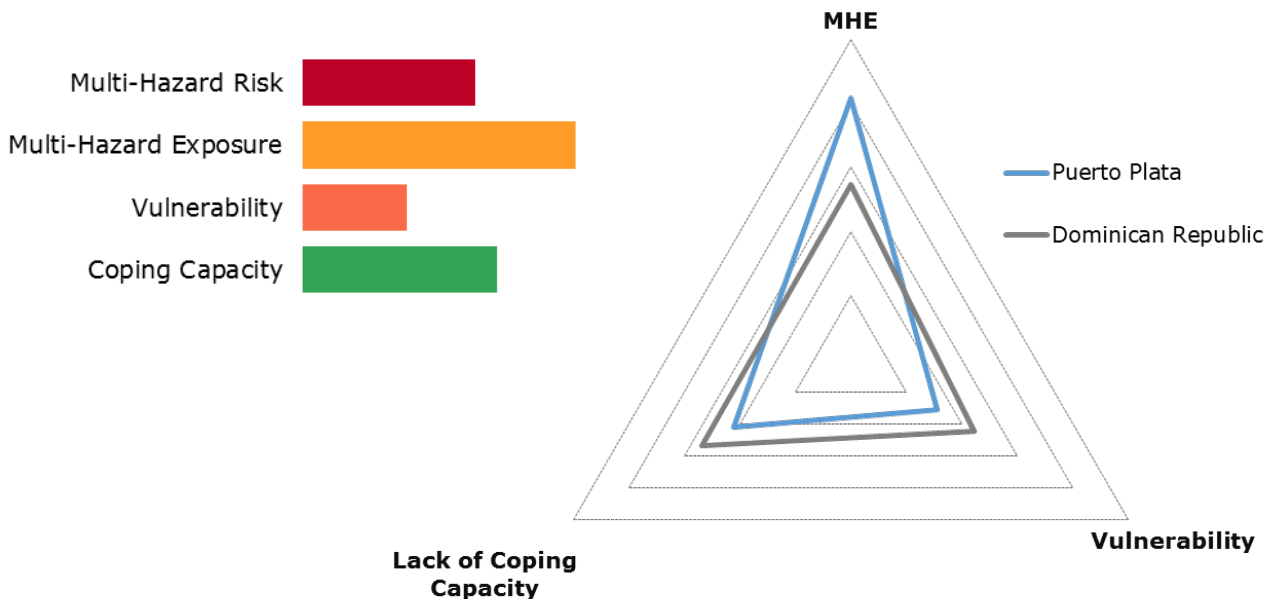


Figure 1. Province Multi-Hazard Risk Component Scores Compared to Overall Average Country Scores

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 overall governance

Ranked 4 of 32 provinces, high governance could facilitate the implementation of disaster management initiatives into provincial and municipal communities.



Low vulnerable health status

Ranked 31 of 32 provinces, low health vulnerability could indicate a population that will be more resilient to the negative health impacts associated with major disaster events.



Low economic constraints

Ranked 28 of 32 provinces, low economic constraints indicate that Puerto Plata may be able to invest in additional mitigation and preparedness measures at the local and community level.

Recommendations

01

Reduce environmental stress

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

02

Increase environmental programs

Invest in programs to provide protection for the environment, including protected lands and reforestation projects, to increase the ability of the environment to recover after a disaster.

03

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.