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Duarte

Dominican Republic National Disaster Preparedness
Baseline Assessment
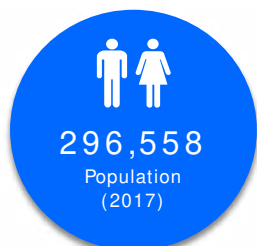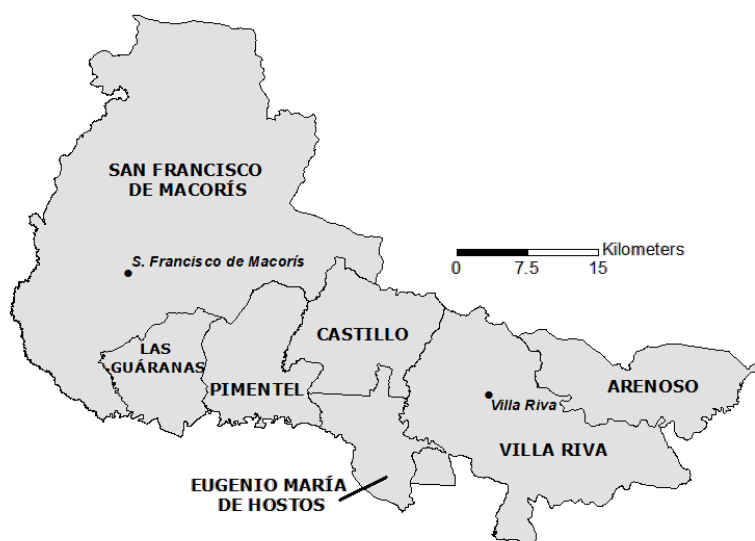Province Profile

Province: Duarte

Province Capital: San Francisco de Macorís

Area: 1,861 km^2

Duarte is located in the central north of the country and is an important agricultural producer of cacao and rice.

296,558 Population (2017)	41.7% Population in Poverty	13.9% Illiterate Population	14.2 Infant Mortality Rate	74.5% Access to Improved Water

Municipality	Population
San Francisco De Macorís	192,669
Arenoso	14,396
Castillo	16,086
Pimentel	18,293
Villa Riva	34,469
Las Guaranás	15,015
Eugenio Maria De Hostos	5,630

Multi-Hazard Risk Rank:
Very High (1 of 32)

Lack of Resilience Rank:
Medium (19 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		Medium		Very High		Low		Low	
Score	Rank (of 32)	Score	Rank (of 32)	Score	Rank (of 32)	Score	Rank (of 32)	Score	Rank (of 32)
0.588	1	0.487	19	0.792	4	0.395	22	0.422	24

Multi-Hazard Exposure (MHE)

Multi-Hazard Exposure[1] Rank: 4 of 32 Provinces (Score: 0.792)

Table 2. Estimated ambient population[2] exposed to each hazard

Cyclone
100%
341,759 People

Earthquake
100%
341,759 People

Landslide
64%
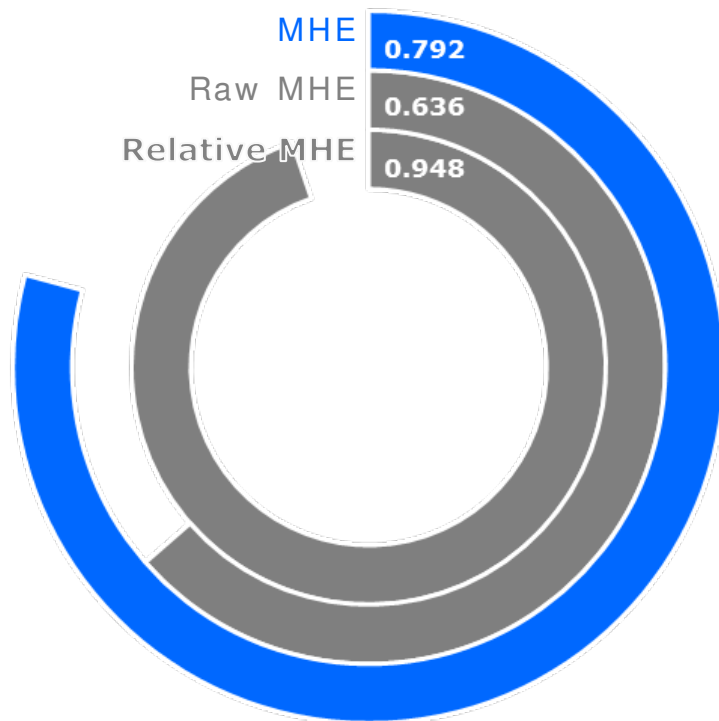218,764 People

Flood
78%
267,178 People

Tsunami
0%
0 People

Case Study: Cacao Enterprises in Duarte

Rich in cacao, the Duarte province has been hard hit by extreme weather events in the past two years. Major flooding, landslides, and storm impacts have significantly lowered cacao production and quality with delayed and shortened harvest seasons. Cacao producers in the province are working to increase their resilience to hazards through environmentally conscientious growing practices, trainings, microfinance loans, and local partnerships.

"*Origin Report: Öko Caribe, Dominican Republic*" – *Uncommon Cacao, 23 May 2018*

MHE 0.792
Raw MHE 0.636
Relative MHE 0.948

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[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.

Vulnerability (V)

Vulnerability[3] Rank: 22 of 32 Provinces (Score: 0.395) Though Vulnerability in Duarte is relatively low, the province ranks highest in the country in Gender Inequality. The bar chart on the right indicates the socioeconomic themes contributing to the Province's overall Vulnerability score.
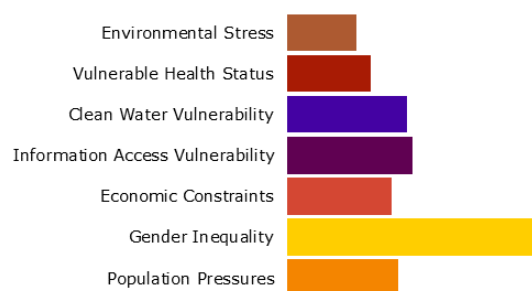
Environmental Stress
Vulnerable Health Status
Clean Water Vulnerability
Information Access Vulnerability
Economic Constraints
Gender Inequality
Population Pressures

Table 3. Component Scores for each Vulnerability Sub-component

Environmental Stress	0% Province Susceptible to Drought	-0.6% Average Annual Forest Change				
Vulnerable Health Status	14.2 Infant Mortality Rate	59.1 Maternal Mortality Rate	8.9 Chronic Malnutrition	7.3% Population Disabled		
Clean Water Vulnerability	25.5% Households without Access to Improved Water	6.6% Households without Access to Flush Toilets				
Information Access Vulnerability	13.9% Illiteracy	84.8% Primary School Enrollment	91.2% Households without Internet	21.0% Households without TV	49.1% Households without Radio	6.6 Average years of Schooling
Economic Constraints	53.8 Economic Dependency Ratio	41.7% Population in Poverty	41.9% CEP Beneficiaries			
Gender Inequality	34.5% Female Seats in Government	1.2 Female to Male Years of Schooling	0.52 Female to Male Labor Ratio			
Population Pressures	0.29% Average Annual Population Change	2.0% Average Annual Urban Population Change				

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

Coping Capacity (CC)

Coping Capacity[4] Rank: 24 of 32 Provinces (Score: 0.422) The thematic areas with the weakest relative scores are Environmental Capacity and Governance. The bar chart on the right indicates the socioeconomic themes contributing to the province's overall Coping Capacity score.
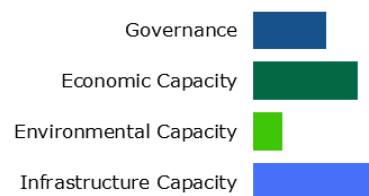
Governance	
Economic Capacity	
Environmental Capacity	
Infrastructure Capacity	

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

Economic Capacity	0.99 Debt to Service Ratio	92.8% Employment Rate (Male)	RD$ 21,874 Average Annual Income per Capita		
Governance	71.5% Registered Voter Participation (2016 Election)	23.8 Homicide Rate per 100k persons	62.2% Households with Garbage Collection		
Environmental Capacity	9.0% Protected or Reforested Land				
Infrastructure Capacity					
Health Care Capacity	13.5 Hospital Beds per 10,000 Persons	29.6 Nurses per 10,000 Persons	21.9 Physicians per 10,000 Persons	2.8 km Average Distance to Nearest Hospital	0.5 Vaccination Index[5]
Communications Capacity	19.1% Households with Access to Fixed Phone Line	77.0% Households with Access to Mobile Phone			
Transportation Capacity	33.2 km Average Distance to Nearest Port or Airport	0.61 km Total Length of Road per km^2 (area)			

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[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 Resilience[6] Rank: 19 of 32 Provinces (Score: 0.487)

Duarte's score and ranking are due to low Vulnerability combined with low Coping Capacity scores. Duarte ranks 22nd in Vulnerability and 24th in Coping Capacity.

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

Gender Inequality

Governance

Environmental Capacity

Multi-Hazard Risk (MHR)

Multi-Hazard Risk[7] Rank: 1 of 32 Provinces (Score: 0.588)

Duarte's score and ranking are driven by a combination of very high Multi-Hazard Exposure, low Vulnerability, and low Coping Capacity scores.
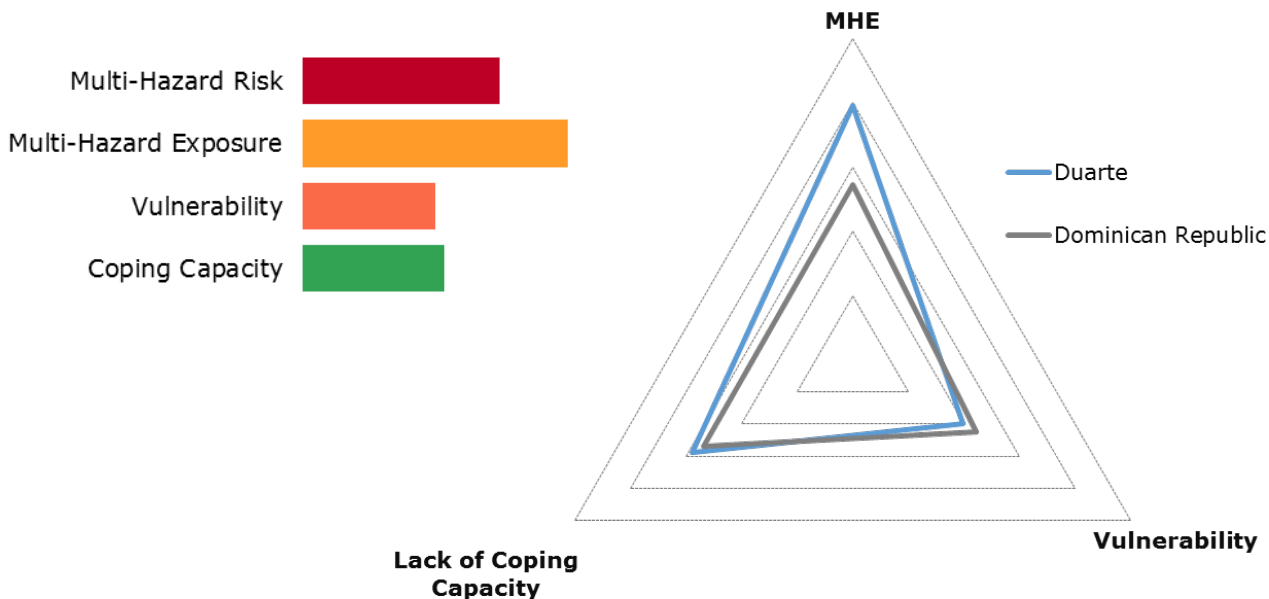

Figure 1. Province Multi-Hazard Risk Component Scores Compared to Overall Average Country Scores

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[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

Low vulnerable health status
Ranked 27 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 environmental stress
Ranked 28 of 32 provinces, low environmental stress indicates that natural resources and agriculture will be more resilient to the effects of a disaster and may recover faster.

High health care capacity
Ranked 6 of 32 provinces, high health care capacity indicates that the population will have access to healthcare services before, during, and after a disaster.

Recommendations

01
Promote gender equality
Support equal-educational enrollment at all levels; access to the labor market, wages, and credit; and political representation to reduce vulnerability.

02
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.

03
Improve environmental capacity
Invest in protected areas to reduce environmental stress and degradation.