



TRINIDAD AND TOBAGO

PENAL-DEBE

NDPBA MUNICIPALITIES PROFILE

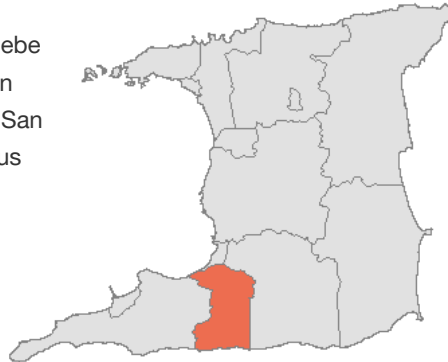
TRINIDAD AND TOBAGO PENAL-DEBE



CAPITAL: PENAL

Area: 246 km²

Located in south central Trinidad, the Municipality of Penal-Debe is the sixth most populous municipality/regional corporation in the country. Penal-Debe is bordered by the Gulf of Paria and San Fernando to the north, Princes Town to the east, the Columbus Channel to the south, and Siparia to the west. Geographic features include a varied topography that spans higher elevations and steep slopes associated with the southern range in the south, to low-lying hills in the north, including wetlands and beaches. Land use is predominantly agricultural, including fisheries and forestry. Primary economic drivers are retail and distribution, and personal service sectors.



RISK AND VULNERABILITY COMPONENT SCORE



MULTI-HAZARD RISK (MHR) - Low
Score: 0.469 • Rank: 10/15



RESILIENCE (R) - Low
Score: 0.506 • Rank: 8/15



MULTI-HAZARD EXPOSURE (MHE) - Moderate
Score: 0.420 • Rank: 9/15



VULNERABILITY (V) - Low
Score: 0.398 • Rank: 11/15



COPING CAPACITY (CC) - Very Low
Score: 0.411 • Rank: 15/15



Population (2011 Census)
89,392



Population in Poverty
12.0%



Population with less than a secondary education
29.9%



Access to improved water
95.0% households



Infant mortality rate (per 1,000 live births)
59

*For more information on data and components please visit: <https://bit.ly/2LqVoUO>



MULTI-HAZARD EXPOSURE (MHE)

RANK: 9 / 15 MUNICIPALITIES
SCORE: 0.420



MHE
0.420

Raw MHE
0.384

Relative MHE
0.456

ESTIMATED POPULATION AND CAPITAL EXPOSED TO EACH HAZARD:



Earthquake

100.0%

91,110

\$4.4 Billion



Flood

97.5%

88,803

\$4.4 Billion



Landslide

30.3%

27,632

\$1.3 Billion



Coastal Flood

11.5%

10,510

\$574.9 Million



Tropical Cyclone Winds

100.0%

91,110

\$4.4 Billion



Wildfire

7.2%

6,569

\$244.2 Million




VULNERABILITY (V)

RANK: 11 / 15 MUNICIPALITIES ASSESSED
SCORE: 0.398

Vulnerability in Penal-Debe is primarily driven by Gender Inequality and Environmental Stress. The bar charts indicate the socioeconomic themes contributing to the overall Vulnerability score.




Environmental Stress

0  1 **SCORE: 0.581** **RANK: 3/15 MUNICIPALITIES ASSESSED**

0.4% Households affected by deforestation	32% Households affected by drainage issues	22.4% Households affected by flooding	2.11% Households affected by sewage issues	4.6% Households affected by soil erosion	2.3% Households affected by solid waste issues	2.5% Households affected by wastewater issues	2.3% Households affected by water contamination
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Vulnerable Health Status

0  1 **SCORE: 0.503** **RANK: 2/15 MUNICIPALITIES ASSESSED**

23.3% Persons with chronic illness	58.6 Infant mortality rate (per 1k live births)	4.6% Persons with long-standing disability	0.1% Population in collective living quarters	1.12 Chikungunya cases per 10k	0.22 Dengue cases per 10k	5.26 Zika cases per 10k	0.89 Leptospirosis cases per 10k
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Clean Water Vulnerability

0  1 **SCORE: 0.477** **RANK: 7/15 MUNICIPALITIES ASSESSED**

95.0% Households with access to improved water	10.9% Households with inadequate toilet facilities
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Information Access Vulnerability

0  1 **SCORE: 0.321** **RANK: 10/15 MUNICIPALITIES ASSESSED**

29.9% Population with less than secondary education	67.7% Households with no Internet	6.8% Households with no TV	17.3% Households with radio
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Economic Constraints

0  1 **SCORE: 0.068** **RANK: 15/15 MUNICIPALITIES ASSESSED**

37.6 Age dependency ratio	37.6% Households with no vehicle	8.3% Population with unmet housing need	12.0% Poverty rate
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Gender Inequality

0  1 **SCORE: 0.585** **RANK: 6/15 MUNICIPALITIES ASSESSED**

0.61

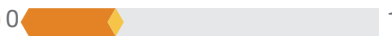
Female to male labor participants

0.96

Female to male secondary education attainment



Population Pressures

0  1 **SCORE: 0.252** **RANK: 12/15 MUNICIPALITIES ASSESSED**

0.6%

Average annual population change

8.5

Net migration rate



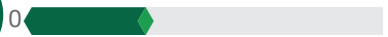
COPING CAPACITY (CC)

RANK: 15 / 15 MUNICIPALITIES ASSESSED
SCORE: 0.411

Penal-Debe exhibits weaker Coping Capacity in the areas of Communications Capacity and Economic Capacity. The bar charts indicate the socioeconomic themes contributing to the overall Coping Capacity score.




Economic Capacity

0  1 **SCORE: 0.331** **RANK: 11/15 MUNICIPALITIES ASSESSED**

42.7% Labor force participation rate	\$6,368 Annual household income per capita (USD)	0.7 Financial institutions per 10k persons
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Governance

0  1 **SCORE: 0.599** **RANK: 8/15 MUNICIPALITIES ASSESSED**

38.9 Serious crimes reported per 10k persons	44.9% Voter participation	6.4% Households with unmet need for refuse collection
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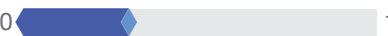
Environmental Capacity

0  1 **SCORE: 0.403** **RANK: 7/15 MUNICIPALITIES ASSESSED**

19.4%
Protected areas (sq km)



Infrastructure Capacity

0  1 **SCORE: 0.306** **RANK: 13/15 MUNICIPALITIES ASSESSED**



Health Care Capacity

SCORE: 0.205 **RANK: 12/15 MUNICIPALITIES ASSESSED**

0.3 Health care facilities (per 10k persons)	11.0 Average distance to hospital (km)	12.4% Population with private health insurance
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Transportation Capacity

SCORE: 0.383 **RANK: 11/15 MUNICIPALITIES ASSESSED**

4.7 Road density (km per sq. km)	14.9 Average distance to nearest port (km)
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Communications Capacity

SCORE: 0.234 **RANK: 15/15 MUNICIPALITIES ASSESSED**

86.4% Population using mobile phones	5.3 Mobile and wireless infrastructure (per 10k persons)
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Emergency Services Capacity

SCORE: 0.400 **RANK: 13/15 MUNICIPALITIES ASSESSED**

6.8 Average distance to fire station (km)	3.2 Average distance to police station (km)	3.3 Emergency shelters (per 10k persons)
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RESILIENCE (R)

RANK: 8 / 15 MUNICIPALITIES ASSESSED
SCORE: 0.506

Penal-Debe's score and ranking are due to Low Vulnerability combined with Very Low Coping Capacity scores.

Below are the four thematic areas with the weakest relative scores:



Gender Inequality



Environmental Stress



Communications Capacity



Economic Capacity



HAZARD-SPECIFIC RISK (HSR)



Earthquake

RANK: 7 / 15 MUNICIPALITIES ASSESSED
SCORE: 0.331



Coastal Flood

RANK: 8 / 15 MUNICIPALITIES ASSESSED
SCORE: 0.214



Flood

RANK: 5 / 15 MUNICIPALITIES ASSESSED
SCORE: 0.329



Landslide

RANK: 11 / 15 MUNICIPALITIES ASSESSED
SCORE: 0.134



Wildfire

RANK: 9 / 15 MUNICIPALITIES ASSESSED
SCORE: 0.076



Tropical Cyclone Winds

RANK: 7 / 15 MUNICIPALITIES ASSESSED
SCORE: 0.331



MULTI-HAZARD RISK (MHR)

10 / 15

RANK WITHIN MUNICIPALITIES
Score: 0.469



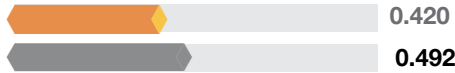
Penal-Debe's score and ranking are due to Moderate Multi-hazard Exposure combined with Low Vulnerability and Very Low Coping Capacity scores.



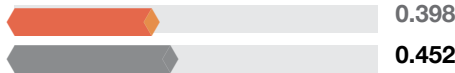
Multi-hazard risk component scores compared to overall average country scores:



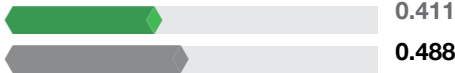
Multi-Hazard Exposure



Vulnerability



Coping Capacity



PENAL-DEBE RECOMMENDATIONS

1

Gender Inequality

Penal-Debe ranks 6th for overall Gender Inequality, driven by the 5th highest gender disparity regarding Female to Male Labor Ratio and 8th highest disparity for Female to Male Secondary Enrollment. Only 38% of women age 15 and older participate in the labor force.

Promote workforce opportunities for women that include quality, affordable childcare to boost economic participation and reduce economic dependency.

2

Environmental Stress

Penal-Debe ranks 3rd for overall Environmental Stress. Findings show that issues related to Flooding, Sewerage, Wastewater and Drainage were among the highest in the country for households living in this municipality. A third of all households reported having issues related to poor Drainage. Much of the regional corporation is low-lying and defined by six rivers, the largest being the Oropouche River. The Oropouche Basin experiences severe flooding during heavy rainfall events, according to the Penal-Debe Local Area Economic Profile, which also confirms the challenges related to drainage, storm water and wastewater management.

Engage public and private stakeholders and government agencies in the development and implementation of a comprehensive storm water management plan to reduce flooding and environmental impacts on human health and infrastructure.

Invest in water infrastructure improvements and enhanced water management practices to protect water supplies from contamination during heavy rainfall and flood events. Secure funding to improve sanitation and sewerage infrastructure and services to reduce environmental impacts resulting from flooding.

PENAL-DEBE RECOMMENDATIONS

3

Communications Capacity

Penal-Debe has the lowest Communications Capacity ranking in Trinidad and Tobago due to a relatively low density of Mobile and Wireless Infrastructure, and Mobile Phone Use.

As mobile and wireless technology is increasingly used to disseminate hazard alert and warning messages, invest in infrastructure enhancements to support broader use and reliability of mobile and wireless devices, with a focus on increasing communications capacity in rural areas.

4

Economic Capacity

Penal-Debe has the 5th lowest Economic Capacity score in the country, driven by the 5th lowest Labor Force Participation rate (43%) and less than one Financial Institution for every 10,000 persons.

Continue to advance partnerships with government and NGOs such as the Ministry of Labour and Small Enterprise Development, the National Entrepreneurship Development Company, Micro-Enterprise Loan Facility and other programs to foster local economic development.

Continue efforts to provide access to vocational, technical and entrepreneurial training programs geared toward labor market needs to increase economic opportunities and household incomes.

**Better solutions.
Fewer disasters.**

Safer world.

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