EXCESS RAINFALL
COUNTRY RISK PROFILE

Haiti

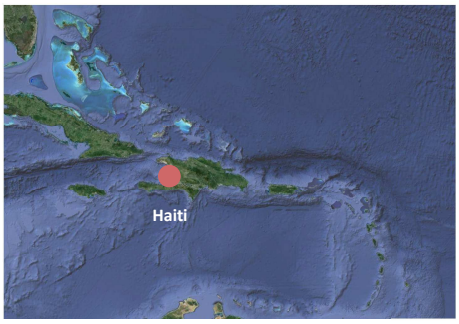
Overview of the Country

Population
10,572,029

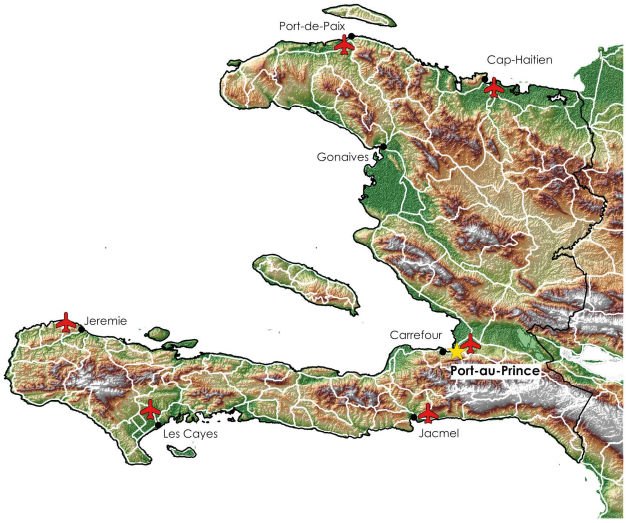
GDP USD
8.713 billion

GDP capita USD
824

Total Built Exposure USD (Replacement value)
38.730 billion



The Republic of Haiti is located on the western part of the island of Hispaniola, which it shares with the Dominican Republic, in the Greater Antilles archipelago of the Caribbean.

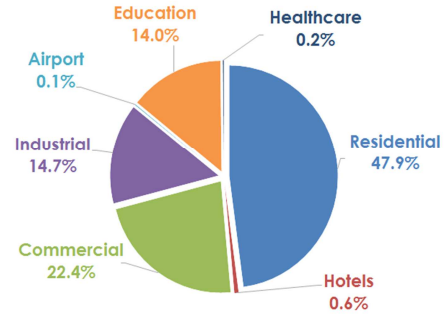


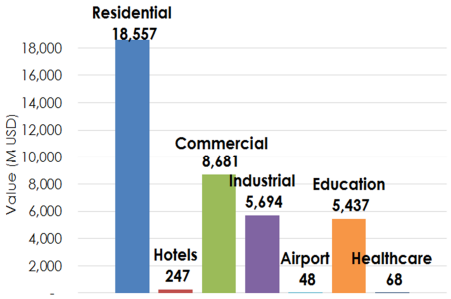
Exposure

The exposure database provides count, replacement cost and vulnerability classification of different building classes and infrastructure assets at a 1km^2 granularity.

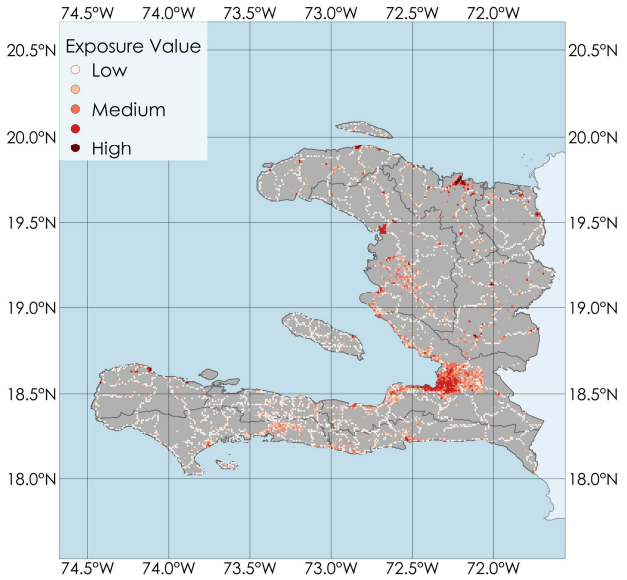
The map shows the spatial distribution of the assets exposed to natural hazards. The representation is in terms of Replacement Value (in M USD).

The graphs show the breakdown of the value of the assets at risk by occupancy class.





Distribution of assets at risk



CCRIF SPC
The Caribbean Catastrophe Risk Insurance Facility

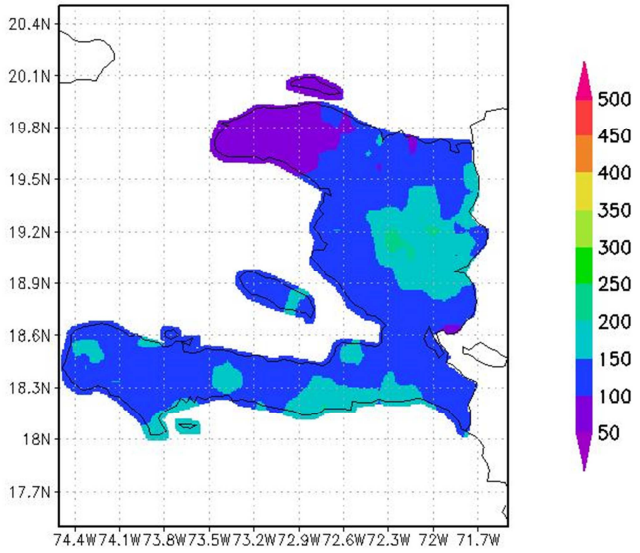
Haiti

Hazard

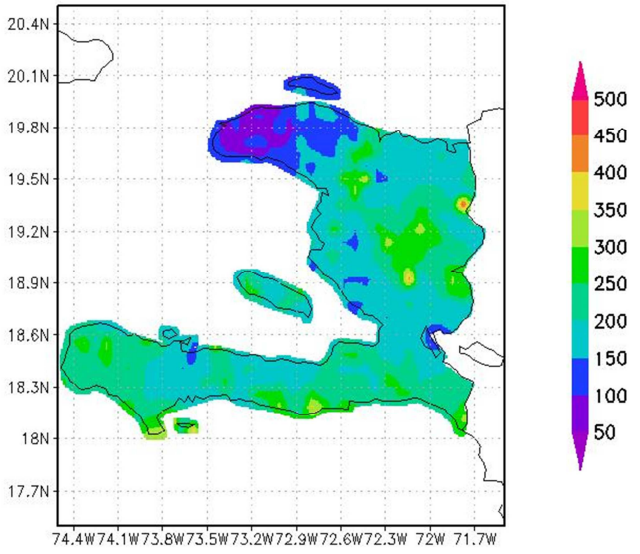
Average frequency of XSR events

The hazard module of the excess rainfall model provides estimates of precipitation on a daily basis. These estimates are derived in near real time by a combination of both climatic-meteorological models and a satellite-based precipitation model.

The maps show the amount of daily rainfall that is expected to be observed in the country, on average, once every 5 and 25 years, respectively.

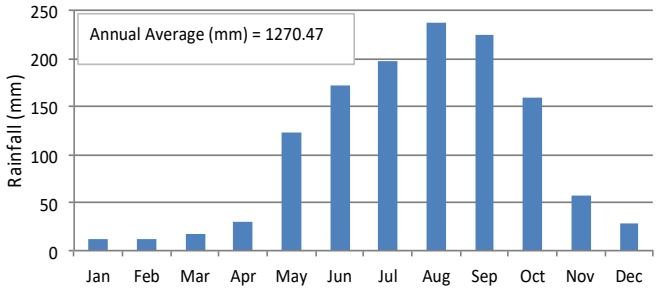


Hazard maps with return period 5 years, for the country.



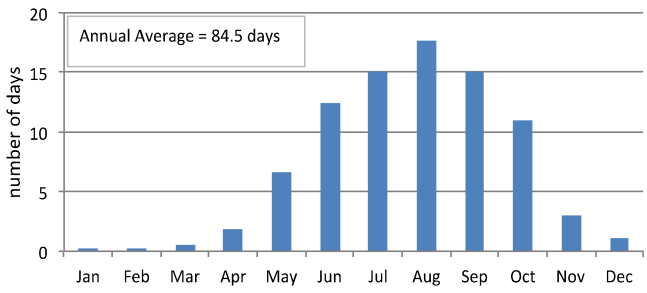
Hazard maps with return period 25 years, for the country.

Average Monthly Rainfall Jan 1998 to Dec 2015



The graph shows the values of average monthly rainfall and the annual average rainfall in Haiti for the period 1998-2015. Excess rainfall events are expected to occur almost exclusively during the wet season (between May and October).

Distribution of extreme events within the year



The graph shows the monthly average number of days with extreme precipitation (over 50 mm/d at least at one location) in Haiti for the period 1998-2015.

Haiti

Vulnerability

Vulnerability analyses are conducted to identify the consequences for the built environment when an excess rainfall event occurs. The model makes use of relationships between the amount of rainfall and the loss to the exposed assets.

Consequences of high-intensity rainfall

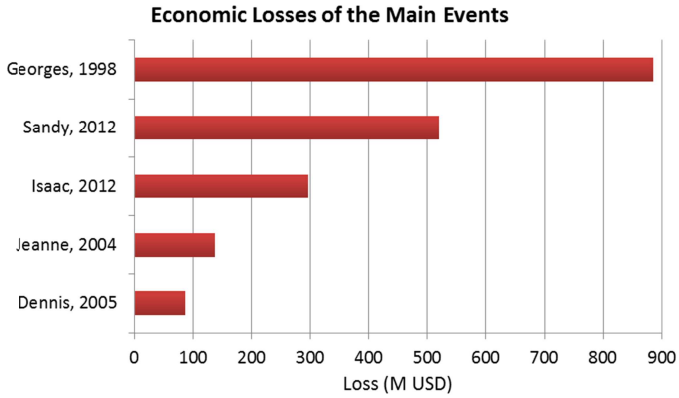
Historical Losses

Historical economic losses

During the period from 1998 to 2015 forty-four significant excess rainfall events struck Haiti: twenty-six were caused by tropical cyclones and eighteen from non-convective storms. The table presents the seven events with the highest reported losses.

The most destructive event was Hurricane Georges in 1998 which caused 209 fatalities. The overall reported losses in Haiti for this event ranged between US$800 and US$1000 million with a mean of about US$900 million.

Event	Start Date	End Date	Hurricane Category	Number of Fatalities	Losses (M USD)
Sandy, 2012	22/10	31/10	HU2	70	500
Isaac, 2012	21/08	01/09	TS	20	300
Wilma, 2005	15/10	25/10	TD	12	1
Dennis, 2005	04/07	13/07	HU2	40	90
Jeanne, 2004	13/09	01/10	TS	2896	150
Michelle, 2001	30/10	05/11	HU1	1	0.1
Georges, 1998	15/09	01/10	HU1	209	900



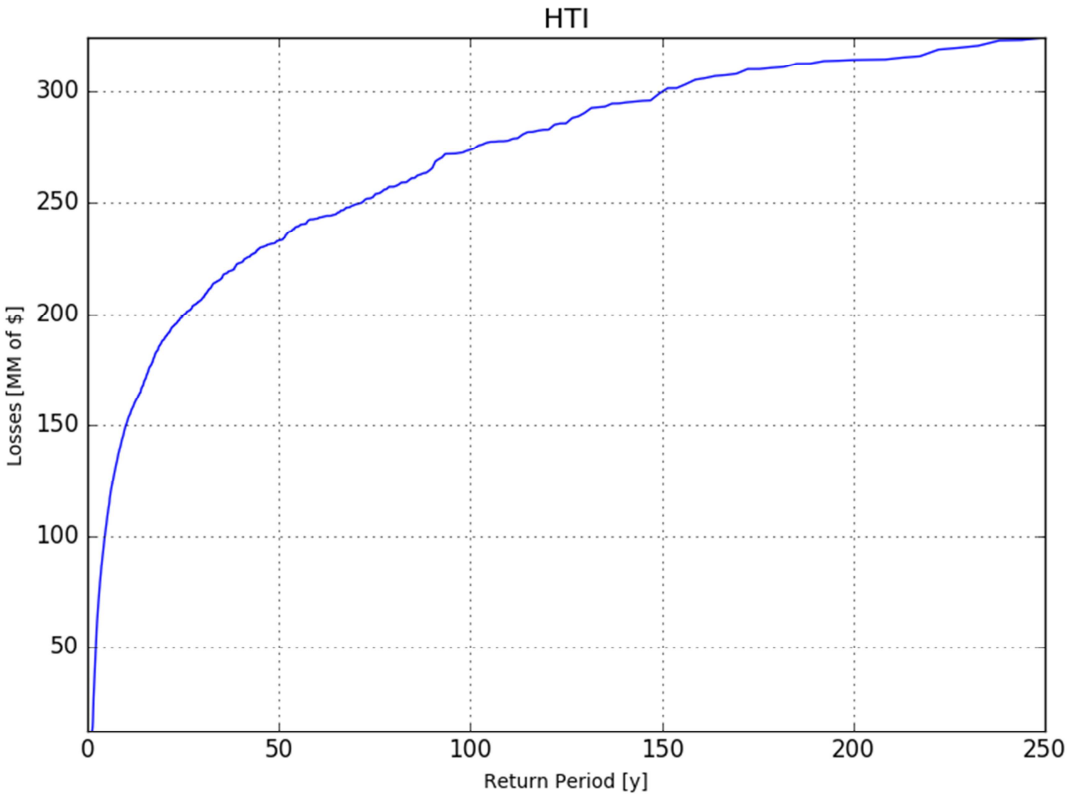
Saffir-Simpson hurricane wind scale

Category	Tropical Depression	Tropical Storm	Hurricane 1	Hurricane 2	Hurricane 3	Hurricane 4	Hurricane 5
Winds (1 min sustained winds)	≤ 38 mph	39–73 mph	74–95 mph	96–110 mph	111–129 mph	130–156 mph	≥ 157 mph
Central Pressure	> 980 mbar	> 980 mbar	980-994 mbar	965–979 mbar	945–964 mbar	920–944 mbar	< 920 mbar

Risk

Potential losses

Based on the statistics of the historical storms and losses generated, the future excess rainfall risk in Haiti was estimated using probabilistic techniques. The graph shows the rainfall-induced losses to public buildings that are expected to occur with return periods ranging from 5 to 100 years. The table below shows also the long-term average annual loss due to excess rainfall events.



Return Period	Loss (USD)
5	75,828,877
10	149,475,832
25	199,393,716
50	233,014,724
Average Annual Loss	60,669,615
St.Dev. Annual Loss	63,482,711