

MOODY's

The Future of Caribbean Insurability

A British Virgin Islands Case Study



BRITISH VIRGIN ISLANDS



Climate Hazards



Rising
Temperatures



Rising Sea
Levels



Hurricanes

Island Nations Face Growing Climate Risks

The Caribbean islands – renowned for their stunning beaches, mix of cultures, and diverse ecosystems – face a significant and growing threat from the impacts of climate change, and are among the locations with the highest level of catastrophic hazard damage worldwide. Many Caribbean islands have long been subject to the geophysical hazards of earthquakes, volcanic eruptions, and landslides in addition to increasing climatological hazards such as hurricane wind, coastal and inland flood, and extreme storms, droughts, and fires.

As global temperatures increase, sea levels rise, and weather events become more severe, the Caribbean's climate-related risks will intensify. Tourism is one of the Caribbean's major economic sectors, and the sector is particularly vulnerable to climate change impacts, as much of the infrastructure, such as accommodations and tourist attractions are located at sea level along the coast. In response, countries throughout the region are implementing a range of risk reduction and adaptation measures to safeguard their communities, economies, and natural environments. These measures encompass a combination of policy initiatives, technological innovations, and community engagement efforts that collectively aim to build greater resilience.

Raising resilience and lowering risk exposure can help island communities and governments preserve economic growth in the face of climate change. Mapping this path requires integrating climate, hazard exposure, and vulnerability data into advanced catastrophe modeling techniques to assess and prioritize risk reduction investments.

Insurance Helps Manage Climate Risk Impacts

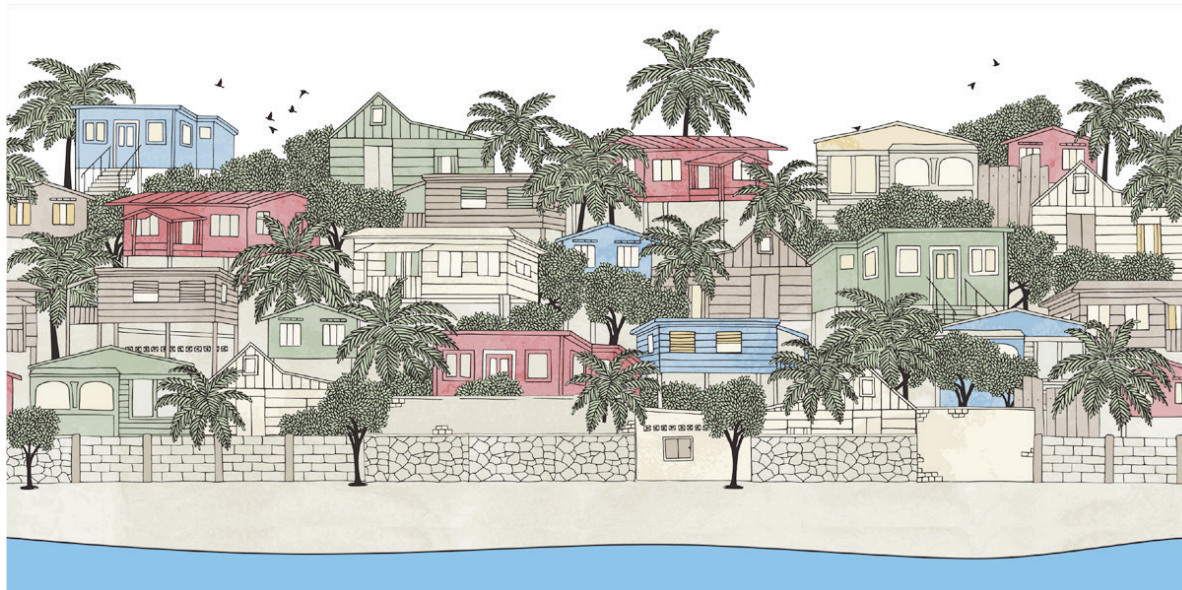
In the complex landscape of climate change adaptation, sustaining affordable insurance will be a critical component of Caribbean nations' efforts to manage the impact of climate risks. The region's vulnerability to hurricanes, floods, and sea-level rise underscores the importance of investments to safeguard households, businesses, and infrastructure.

The availability of property insurance for wind, fire, and flood perils can serve as a lifeline for businesses and homeowners in high-risk areas. In most territories in the Caribbean (but not U.S. territories such

as Puerto Rico and the Virgin Islands), flood is a standard coverage in an insurance policy, unlike many other parts of the world. By providing coverage for damage caused by storm flooding and other perils, insurance not only aids in post-disaster recovery but can also incentivize property owners and businesses to invest in protective risk reduction measures. Increasingly, we can find examples where insurers apply reduced premiums to encourage resilience-building measures such as elevating structures, fortifying foundations, and using storm-resistant materials to safeguard properties.

Coastal defense infrastructure

Seawalls, levees, and storm surge barriers such as coral reefs and mangrove forests



Building Adaptations

Roof: Enhanced roof coverings, stronger connections between structural elements such as hurricane straps or clips

Windows: Impact-resistant windows, hurricane-grade glass

Building Elevation: Elevated built height

Building Foundation: Fortification and storm-resistant material



Looking to 2050: Intensifying Hazards

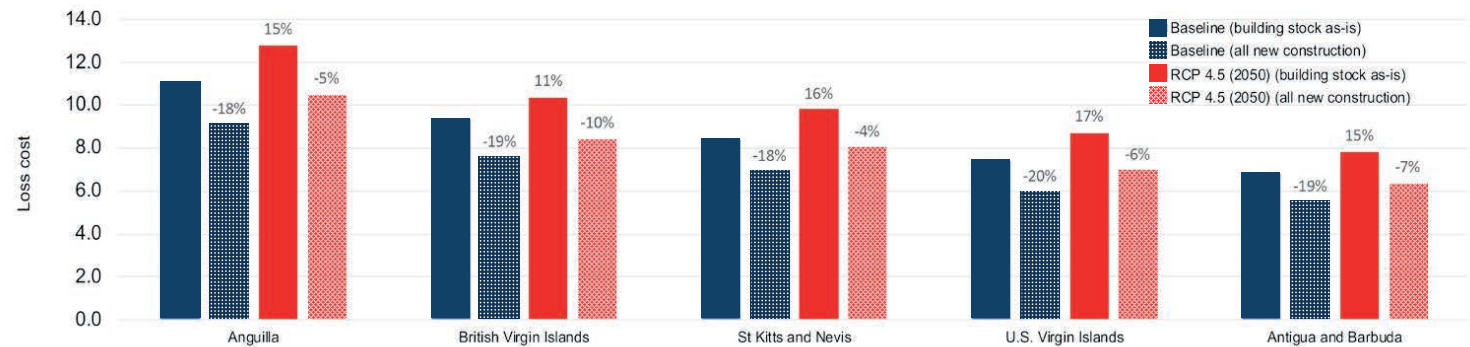
Climate models predict that by 2050 the Caribbean will likely experience more frequent and severe weather events. Sea levels are projected to rise, exacerbating the vulnerability of coastal properties to flooding and erosion. Hurricanes, a recurring threat, could potentially intensify in strength, posing significant risks to both infrastructure and communities. And rainfall patterns are expected to change, leading to increased flood risk when it does rain but also longer dry periods and droughts.

Photo: Buildings sustained structural damage including compromised concrete foundation and basal erosion.



The bar chart shows a selection of the most at-risk countries in the northeastern Caribbean, with their present-day loss costs¹ (the baseline) as blue bars; while the red bars represent expected loss costs in 2050, including for inland and coastal flood, tropical hurricane, and earthquake hazards. The solid bars represent commercial building stock as is, whereas for the dotted bars, we assume all buildings comply with present-day hurricane code, which could include measures that adapt to flood, high winds, and storm surge. This analysis focuses on commercial properties to reflect the increased costs that could be faced by the tourism sector, including hotels, restaurants, and related businesses, and includes the cost of damage to properties, contents and equipment, and loss of revenue due to business interruption and extended shutdowns.

2050 Top Caribbean Commercial Loss Cost by Country



For the most at-risk Caribbean nations with no investment in building upgrades or other adaption measures (solid red bars), the predicted increase in loss cost is uniformly above 10 percent – up to as much as 17 percent in the case of the U.S. Virgin Islands. This modeling indicates that building upgrades alone could lower loss costs from present-day risk values, and it demonstrates the significant impact of investment in risk reduction and resilience-building measures.

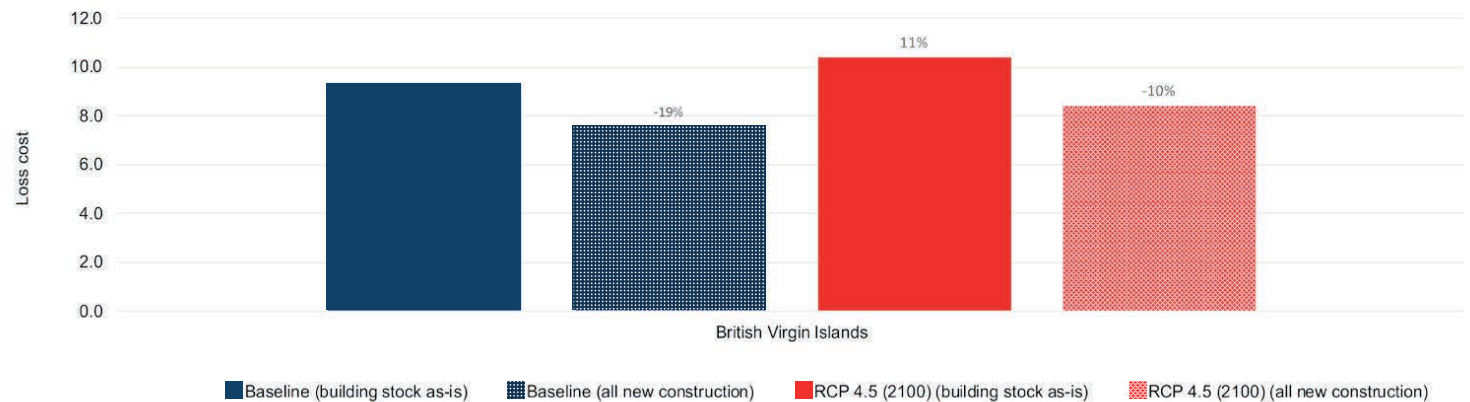
¹Loss cost, also known as pure premium or pure cost, is the total amount an insurer pays to cover claims, including the cost to administer and investigate. Loss cost is a factor when insurance companies calculate premiums for policyholders.



Reaching 2100: Coping with Evolving Climate Change Impacts

Looking out to the end of the century, protective measures that mitigate risk in the built environment have the potential to curb the worst increases in lost costs, with only marginal increases from present-day values. However, taking no action could result in dramatic increases in potential loss costs – by as much as 27 percent in some cases and, as shown below, 19 percent for the British Virgin Islands.

2100 British Virgin Islands Commercial Loss Cost



The potential increase in future loss costs may spur Caribbean nations to prioritize measures and innovative strategies that reduce risk and enhance resilience. Modeling studies, as included here, can help governments, businesses, property owners, and communities analyze and prioritize risk reduction strategies – to demonstrate in financial terms the benefits from such investments in preventing future losses and improving insurability.

Dynamics of Insurability

As the Caribbean grapples with the evolving impacts of climate change, the threat of an insurability threshold becomes increasingly pertinent. An insurability threshold is reached when insurance becomes unavailable, or excessively expensive due to the heightened risk associated with certain events or conditions. In the context of the Caribbean's climate change trajectory, even toward 2050, the question of insurability takes on greater significance as the region contends with loss cost increases upward of 10-17 percent.

Many factors influence the availability and cost of insurance. Premiums reflect the expected frequency and severity of the risk itself, but they also incorporate other factors, such as the costs of both underwriting and claims. Factors such as the current environment of high global inflation – which has pushed up the cost of repairs, materials, and labor – are adding to the costs of claims, and reinsurance capital supply is also becoming more expensive.

Ultimately private insurance can only be sustained where insurers can collect enough to fund their claims. Looking forward in time, we can map what actions will help in risk reduction to compensate for the expected increases in hazard from climate change. Whether by greater risk-sharing or by imposing more stringent building codes, through risk modelling we can help with plans for Caribbean risk trajectories that sustain insurance for the 21st century.





Moody's on Climate

Climate Risk is Business Risk

The foundation of Moody's value is market insight defining our approach to financial quantification of risk and the capabilities to deliver consistent and complete perspective on the interconnected risks impacting your business.

Moody's on Climate encompasses market-tested analytical tools designed for identifying and quantifying the impact of climate risk on global debt markets, credit performance, and financial outcomes.

Our solutions enable understanding of physical climate risks by leveraging decades of real-world data on damages and costs from climate events to inform transparent and robust solutions for modeling risk to real assets and translating it to company and entry-level impacts. We cover transition risk with comprehensive and continuously improving datasets, analytics, and assessments of policy, macroeconomic trends, and company-specific profiles to analyze the impacts of potential future climate scenarios.

Our solutions are developed to seamlessly integrate into the workflows your teams manage across the organization, in which climate data, analytics, and insights should inform strategy and decision-making to future-proof your competitive position in the market.

Learn more at <https://climate.moody's.com/>

Our physical risk capabilities are developed on the foundation of Moody's RMS climate science and modeling expertise. For more than 20 years, Moody's RMS has worked with partners and stakeholders to understand the complexity of modeling physical risks and financial impacts on P&C insurance portfolios and assets. We have extended our understanding of the interconnected and complex dimensions of current risk with globally recognized, forward-looking climate change models and best-available climate science to develop consistent frameworks for assessing future scenarios of risk applicable to enterprise risk management across sectors.

Learn more at <https://www.rms.com/climate-change>

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