

# Coast Haven Brokerage

## Challenge

The acceleration of climate change is **increasing physical and environmental risk in Latin American and Caribbean (LATC) communities**. In LATC, hurricanes and their associated damage regularly threaten the region's tourism and infrastructure sectors. This impacts the insurance and banking sectors that protect and finance physical assets in these areas. Local communities face **unsustainable rate and premium increases** and have few cost-effective prospects for de-risking themselves.

The ecosystem services provided by mangroves are a **largely unprotected positive externality**. Mangroves reduce storm surge, prevent wind damage, lessen erosion, create biodiversity benefits, sequester carbon, and protect coastlines. Mangroves are up to **50x more cost effective than cement seawalls** at protecting coastlines from extreme weather. Protecting and restoring mangroves will provide direct benefits to at-risk communities, physical infrastructure, and the financial institutions that support them.

During storms the presence of mangrove forests can be **tied to reduced property loss between 7%-9% and additionally a 25% reduction in flooded area**. These benefits are positively correlated with storm intensity. The Caribbean region has significantly higher estimated mangrove benefits than the global average.

Key Details	
Investment vehicle	Insurance Instrument
Asset Class	Climate Solutions
Investment Size	\$16.5m
Addressable Market Size	\$1.79B
ROI (6% discount rate)	60%
Time Horizon	10 years
Geography	Caribbean

## Target Geography: Latin America and the Caribbean



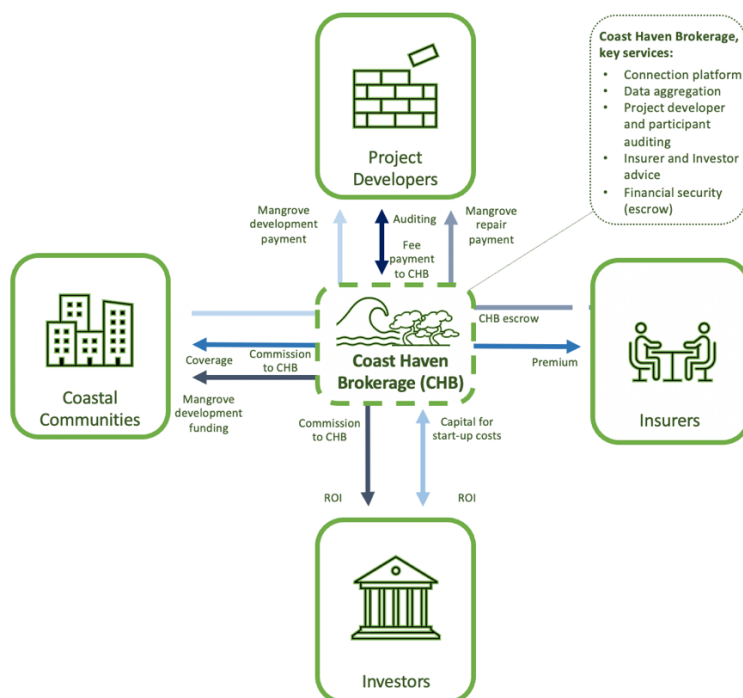
The project will run as a pilot in The Bahamas due to the country's reliance on coastal tourism, low-lying topography, high GDP-per-capita, and high non-life premium coverage. There are currently ~4000 sq km of mangrove forest in the Bahamas. At Year 3 the project will scale to the rest of the Caribbean region (Belize, Cuba, Dominican Republic, S.E. United States, Haiti, Jamaica, Mexico, Puerto Rico, Turks and Cacaos)

## Innovative Solution

Coast Haven Brokerage (CHB) is a **platform-based brokerage** that facilitates the deployment of a new type of **parametric insurance to protect and restore mangrove forests**.

CHB connects beneficiaries of mangroves' ecosystem services (eg. tourism and government sectors) with insurers and investors seeking to deploy "green" capital. Project developers and restoration experts will source projects. The platform **combines a conventional brokerage and investment model with environmental certification and a data-capturing platform**.

Policyholders insure economically productive mangrove assets and when a specific wind speed is reached, this triggers an immediate fixed-rate payment from the insurer to facilitate rapid mangrove regeneration. This ensures near uninterrupted mangrove asset and community protection.

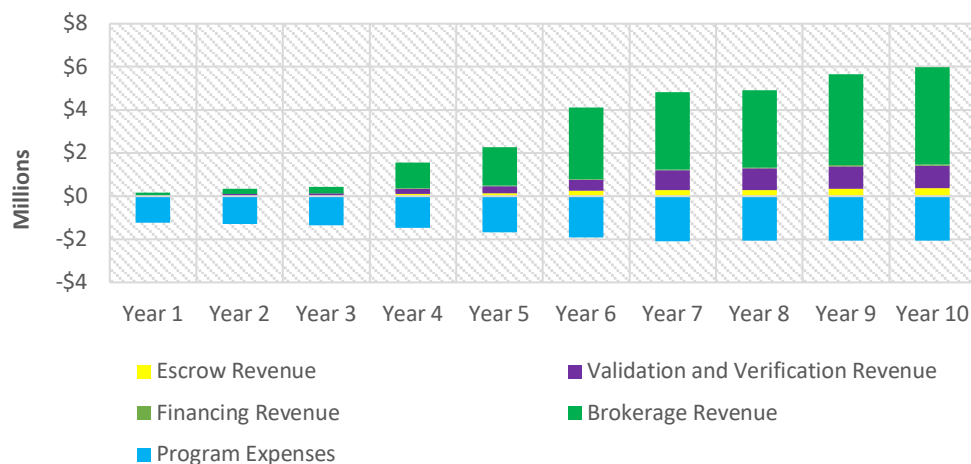


## Operating and Revenue Structure

CHB is as a platform connecting coastal communities, project developers, investors, and insurers

- CHB is a broker between coastal communities and insurance providers (CHB assumes flat commission of 4% of premium)
- CHB certifies restoration plans and audits the results of mangrove restoration (fee-for-service model)
- CHB connects governments and institutional investors (e.g. USAID, Morgan Stanley) with communities seeking financing for mangrove development
- CHB connects financial institutions with opportunities to invest in mangrove restoration

## Cash Flow



### Assumptions

1. Insurance brokerage fee of 10%
2. Financing brokerage fee of \$5,000/project
3. Escrow fee of 1%
4. Per hectare premium of \$300
5. Insurer loss ratio of .8
6. Expected IRR of 5%
7. Total regional mangrove cover of 1.98M hectares
8. Cash flow ignores potential capitalization of data and/or exit
9. Program becomes profitable in year 4

## The Market and Future Growth

CHB's **operating model depends on the acceptance of the financial value of mangrove forests and nature-based solutions** in the fight against climate change. As such we have estimated low market size figures in The Bahamas as an immediate and accessible market and modeled broader regional uptake following proof of concept.

As a platform-based service with physical assets (mangroves) already in place, **CHB's model is highly scalable requiring minimal regulatory changes region to region**. Proof of concept in our original target market, The Bahamas, will allow for **expansion into the wider Caribbean region**, which is currently home to 1,983,671 square hectares of mangrove forests. Further growth is envisaged in the **Southeast Asian market** where the average square km of mangroves protects up to 500 people from storm surges, tidal waves, and typhoons.

Region	Estimated maximum market size in annual Gross Written Premium (USD)*	CHB revenue (USD p.a. - 10% commission)**
Caribbean	\$298m	\$29.8m
Southeast Asia	\$702m	\$70.2m
Global	\$2,142m	\$214m

CHB Revenue Stream	Revenue Source / Customer	Customer Benefits
Broker Commission	Community / Policyholder	Economic protection & growth Carbon credit sales
Monitoring and Audit Fees	Project Developers	Sustainable contracted work
Escrow Servicing/Interest	Insurers	New market for GWP Reduced physical asset risk
Commission	Gov / Institutional Investors	Sustainable investments Regional economic stability Carbon negative investment

\*Assuming a flat premium of \$300 USD per square hectare, and protection of 50% of total current mangroves  
 \*\* Assuming a maximum possible capture of 40% of total market

## Nature-Based Parametric Insurance in Action

In 2018 a Mesoamerican Coastal Zone Trust was created to oversee the conservation of the Mesoamerican Reef. A parametric insurance policy was secured to protect the reef, due to its economic value to local communities. When Hurricane Delta hit in 2000 and breached the pre-determined wind speed threshold of 160kph, an immediate payment of \$800,000 from Hannover Re was triggered. This capital helped to rapidly repair damage to the reef.

Risk	Mitigation Strategy
<b>Governance</b> – access to land	Work primarily with privately owned land as well as local governments looking to reduce municipal loan rates
<b>Environmental</b> – rising sea levels and storm surge sedimentation, erosion	Specialized training will be provided to key project development partners, detailed due diligence conducted on mangrove types and project sites, ongoing monitoring of weather and mangrove health via satellite and in-person inspections
<b>Financial</b> – lack of participation for new product	Concessionary rates will be offered, and consultations held with insurers such as <b>Swiss Re</b> and <b>Axa</b> to provide premium incentives to first movers
<b>Insurer</b> - Need insurers to operate	Key partnerships developed with ESG-leading insurers with fully accredited carbon negative capital deployment
<b>Reputational Risk</b> - independence of platform	Third party auditing by firms such as <b>PWC</b> and <b>Deloitte</b> will ensure continued impartiality is retained

