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Report on Ecosystem-based Adaptation (EbA) and Nature-based Insurance Solutions (NbIS) in the Philippines and Asia



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We also want to acknowledge all interview participants who took the time to be interviewed, thus shaping this report and providing valuable insights on the country's needs in scaling EbA and NbIS.

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I. Executive Summary

This study aims to explore how Ecosystem-Based Adaptation (EbA) and Nature-Based Insurance Solutions (NbIS) can effectively mitigate the impacts of climate-related hazards in the Philippines and in the region. It delves into understanding the policy landscape, examining market practices through case studies, identifying challenges in the sector, and proposing steps to scale EbA and NbIS solutions in the country.

Through one-on-one interviews with 23 individuals, focus group discussions with key partners in the private and regulatory sectors, and a webinar that attracted over 65 participants, we gained valuable insights. However, the study findings reveal a low awareness among local partners in the Philippines, with only 30% of participants being aware of these solutions. Around 80% of participants emphasized the crucial role of government support in scaling these solutions. Despite the low awareness, there is a clear appetite among local and international insurance partners to pilot and potentially scale more Nature-Based Insurance Solutions in the Philippines. It is evident from available data that EbA solutions can significantly reduce financial losses while providing long-term environmental and social benefits. Natural assets like corals and mangroves, in addition to their environmental benefits, hold high economic value that should be considered and valued as assets like grey infrastructure by insurance companies.

The Philippines, along with neighbouring countries like Indonesia, boasts diverse and extensive coral and mangrove assets, which can substantially reduce the impact of storm surges. Investing in nature-based resources is a logical risk management strategy, especially considering that climate change could significantly reduce the Philippines' gross domestic product (GDP).

The Philippines is well-positioned to become a leader in the EbA insurance space, given the availability of funds from national and international agencies, relevant policies, and successful examples of scaling innovative insurance products like microinsurance, which now covers 57 million lives. Proven case studies from countries like Fiji, Hawaii, and Mexico provide a foundation for the Philippines to build on and create a thriving ecosystem for EbA and NbIS.

Leveraging natural assets and creating sustainable revenue streams through carbon offsets, natural capital bonds, and catastrophe bonds will be critical, with government support being essential for ensuring the financial viability of these solutions in the country.

Local players such as insurance associations, development agencies, cooperatives, and insurers should collaborate through technical working groups to expedite piloting and scaling these projects. The goal is to create a playbook to scale these solutions not only in the Philippines but also across Southeast Asia. Policy makers have recognized the importance of tackling climate change and conserving biodiversity, as evidenced by key policies. However, swift implementation remains crucial. Policy makers will also need to act quickly to create incentives for higher private sector participation, considering the high risks associated with these solutions. It will take a joint effort over 2-3 years to create a sustainable solution in the country.



II. Scope of the Study and Snapshot of Key Findings

This study, initiated in Q4 of 2023 in partnership with GIZ, international insurers, cooperatives, subject matter experts, and regulator, aims to share the following insights across (5) key areas:



Assessment of Policy Landscape

Provide a comprehensive assessment of existing policies to identify opportunities for scaling EbA solutions in the country. We engaged individuals in both regulatory and private sectors to understand which policies and laws can be leveraged or further adapted to scale EbA solutions in the Philippines. Our findings surfaced several existing policies with links to EbA that require greater attention from stakeholders to both learn about and identify how they can be put into practice within the insurance industry.



Scoping of Market Practices

Summarize market practices from successful global projects and initiatives to the Philippine context. We interviewed organizations involved in piloting EbA projects globally to understand the requirements for scaling similar solutions. While there were several projects globally, they were limited in scale to fully commercialize into a scalable product locally. Additionally, there was a lack of a comprehensive inventory of projects, limiting the creation of strong investment cases.



Identification of Challenges

Surface challenges include funding, project identification, market development insights, and scalability. Stakeholders from the government, private sector, and development sector highlighted domestic and global challenges in creating and identifying business cases for scaling EbA and NbS solutions. These challenges ranged from high financial risks to insufficient resources, lack of government incentives, and a shortage of technical expertise among professionals in project identification and assessment.



Market Development Insights

Equip stakeholders with actionable insights for navigating the emerging new market. We spoke to cooperatives and local insurers to understand existing market entry points, including international experts on potential avenues for developing this instrument in the region. Similar to how the Philippines scaled Microinsurance, initially deemed too risky, through a multi-stakeholder effort leading to the country having the highest microinsurance penetration in the world, covering over 57 million insured lives (48% of the population).



Scoping of Good Market Practices

Share how good marketing scaling practices from other regions with successful pilots like Mexico's Quintana Roo and Hawaii Reef Insurance and could be leveraged to drive successful projects in the Philippines and the Southeast Asian region.

III. Methodology

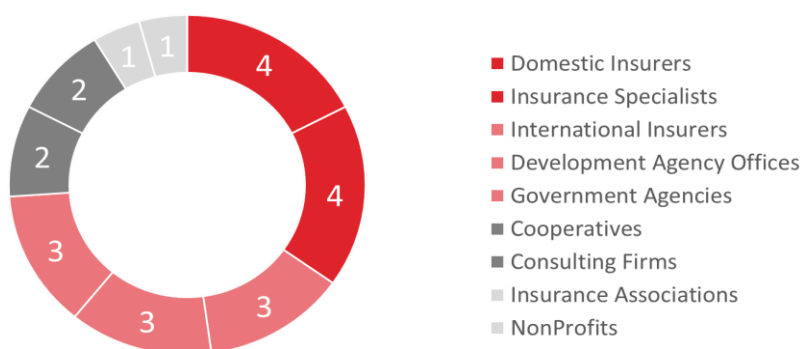
This study employed a rigorous methodology to ensure accuracy and gather insights from a broad and diverse audience. The study was conducted as follows:

1. **Expert Interviews:** We conducted one-on-one interviews with experts across various sectors, including executives in the insurance industry, regulatory bodies, cooperatives, insurance associations, and consultants. A standardized set of questions was used for all participants, with some modifications based on individual expertise. This approach ensured consistency in study results and allowed for comparison across different stakeholders. Our interviewees ranged from organizational leaders to subject matter experts in the field of EbA and NbIS insurance solutions.
2. **Literature Review:** We analysed over 15 published and internal reports, including case studies from various regions, to provide comprehensive insights. These reports were sourced from multinational banks, development agencies, insurance associations, and top consulting firms. Our aim was to build a broad knowledge base while limiting redundancy in existing content.
3. **Focus Group Discussion:** A focus group discussion was conducted, involving around 10 participants from diverse segments of the insurance sector. This session aimed to foster conversations among stakeholders and cover topics ranging from understanding entry points for EbA solutions to challenges in product development.
4. **Webinar:** We organized a webinar that attracted participants from the international insurance and reinsurance industry, cooperatives, and subject matter experts from development agencies. The webinar was attended by over 65 participants, featured presentations on NbIS insurance solutions, successful case studies from around the world, and ongoing pilots in the Philippines. The goal was not only to educate the audience on these innovative solutions but also to gather critical insights on the challenges and necessary cooperation for successful scaling.
5. **Consultant Experience:** Insights from a consultant with over five (5) years of experience in microinsurance and NbIS in the Philippines were also incorporated. The consultant's recommendations, based on various aspects studied, were integrated into this report.

Stakeholder Interview

To ensure we gathered comprehensive insights from diverse stakeholders, we engaged a wide group of participants, including domestic and international insurers, specialists, regulators, cooperatives, consulting firms, and insurance associations. In total, we hosted discussions with 23 individuals, conducting both one-on-one engagements and facilitating a focused group discussion, followed by a webinar which drew in more than 65 participants. The aim of these interviews was to gather insights from individuals and organizations directly influencing this space and spark new ideas for these new solutions.

Figure 1: Chart illustrating the participants contributing to this study



Key Interview Findings



AWARENESS

30% of participants were aware about EbA and NbIS.
20% were actively engaged in directly developing these solutions.



CHALLENGES

80% of participants surfaced government support as crucial for market development.
70% of participants stated funding resources as a barrier to scale EbA solutions.



SUPPORT

70% of participants stated requiring technical training on developing EbA solutions.
60% of participants stated clarity and ease of use in securing government funding.



TOP RECOMMENDATIONS

Cross Governmental Agency support is crucial for creating and scaling EbA solutions.
Identify additional projects to enable scale, attract funding and mitigate risk.

IV. Introduction

As the challenges of climate change accelerate, it is imperative to fortify financial instruments and adaptation strategies. To understand the intricacies of market practices within the risk transfer industry, pinpoint challenges, and highlight investment opportunities that merge EbA and climate and disaster risk finance and insurance (CDRFI), the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, through the Strengthening Disaster Resilience and Risk Mitigation through Ecosystem-based Planning and Adaptation (E4DR) project, is spearheading a study designed to comprehensively assess the policy landscape and regulatory frameworks that support CDRFI and EbA initiatives in the Philippines. The research also aims to scope out Global CDRFI and EbA, with the goal of encouraging both public and private sector stakeholders in the Philippines to embed climate action within their strategic agenda and business operations.

By surfacing successful strategies employed in analogous regions, both public and private sectors in the Philippines can derive guidance for the effective incorporation of climate-focused initiatives into their programs and business portfolios. Through these combined efforts, this research aims to contribute to the broader discourse on climate resilience and sustainable financial practices, fostering a more robust and adaptive framework for the future.

V. Acronyms and Definitions

1. **Nature-based Solutions (NbS)** is defined as the wide range of actions that work with, mimic and enhance nature by securing ecosystem services to help address three central societal challenges:
 - Mitigate and adapt to climate change and build disaster resilience.
 - Protect biodiversity.
 - Ensure human well-being.

Based on the definition of the International Union for Conservation of Nature (IUCN), NbS are actions to address societal challenges through the protection, sustainable management and restoration of ecosystems, benefiting both biodiversity and human well-being.

2. **Ecosystem-based Adaptation (EbA)** is a strategy that harnesses NbS and ecosystem services. According to the IUCN, EbA is a nature-based solution that harnesses biodiversity and ecosystem services to reduce vulnerability and build resilience to climate change, such as the sustainable management of forests, grasslands, and wetlands, that increase the resilience and reduce the vulnerability of people and the environment to climate change. For example, preserving coastal habitats like mangroves enables natural flood defences; reforestation limits desertification and replenishes groundwater supplies during droughts. EbA has the potential for generating economic returns because of the co-benefits that EbA measures generate but requires integration at multiple levels, including national, regional, and local, and involves collaboration between policymakers, communities, and conservation practitioners.
3. **Climate and Disaster Risk Finance and Insurance (CDRFI)** refers to the use of financial instruments, strategies, and insurance mechanisms to manage the risks associated with climate change and natural disasters. The goal of CDRFI is to provide financial protection by limiting the economic and social impact of climate change and natural disaster especially in low-to-middle income countries. CDRFI includes a broad spectrum of key components, including risk modelling, early warning systems, capacity planning, public-private partnerships, regulatory frameworks, catastrophe bonds, etc.

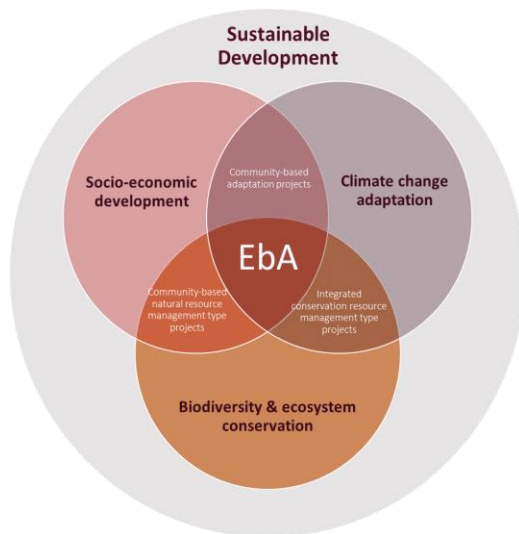
Ecosystem-based adaptation (EbA)

EbA is a nature-based approach to adapting to the impacts of climate change. It focuses on harnessing the power of healthy ecosystems to provide natural solutions that help people, communities, and wildlife become more resilient to climate threats. EbA insurance solutions encompass various types of insurance aimed at strengthening the resilience of natural capital, such as coral reefs and mangroves. These include parametric insurance products, which provide coverage for extreme weather events and natural catastrophes based on predetermined parameters. They enable rapid emergency responses and longer-term reconstruction efforts. Another example is indemnity insurance, which compensates the insured party for the loss or damage of physical assets like infrastructure or EbA green infrastructure. The insured value is calculated based on the market and reconstruction value of the asset, while insurance premiums are determined by the cost of repairing the grey or green asset (example: Reefs) and the likelihood of damages. Indemnity insurance products are typically used for low severity but high frequency events. There are three (3) key benefits of solutions.

EbA strategies often deliver benefits beyond climate change adaptation.

They can support biodiversity conservation, improve livelihoods, and promote sustainable natural resource management.

EbA leverages the natural functions and services provided by healthy ecosystems.



Examples of EbA



Protecting and managing wetlands



Protecting coral reefs



Restoring degraded forests and mangroves

Figure 2: Linkages between EbA and other approaches to sustainable development (UNEP)

EbA solutions designed to work with nature to build resilience and limit financial losses, while providing social benefits to vulnerable communities, include the following solutions:

1. **Ecosystem protection and restoration:** Natural assets like mangroves, forests, and wetlands protect infrastructure and communities from storm surges and soil erosion, while sequestering carbon. Mangroves can store on average 1,000 tons of carbon per hectare in their biomass and underlying soils, while providing protection against floods and storms. UNEP estimates mangroves to be worth at least US\$1.6 billion per year in ecosystem services with a worth of US\$33,000-57,000 per hectare per year. World Bank values mangrove ecosystems between US \$14,000 to \$47,000 per hectare per year. These valuations are influenced by the value mangroves provide in building ecosystem services. Without considering for these services, mangroves are worth less, at around US \$230 per hectare. The real value in mangroves is their ability to store 4,000 tons of carbon dioxide per hectare.

Southeast Asia is home to almost one-third of mangroves globally, with ~20% of the world's mangroves in Indonesia alone.

Among Southeast Asian countries, the Philippines has the largest (2.7 million ha) and most diverse (19 species) seagrass meadows and has the fourth largest mangrove extent (284,798 ha). Indonesia's mangroves account for 20% of the global area and storing 3.14 billion tons of carbon dioxide, which is equivalent to GHG emissions from approximately 2.5 billion passenger vehicles per year. World Bank suggests that Indonesian mangroves are valued between US\$15,000 to almost US\$50,000 per hectare. From an insurance perspective, we can estimate the economic value of mangroves for flood risk reduction by using probabilistic and process-based valuations of the damaged mitigated by mangroves. The benefits can be combined with restoration costs to develop spatially explicit benefit cost ratios, which considers the distribution of the benefits and costs across a geographic area.

2. **Marine (reefs, living shorelines) protection:** Marine assets like coral reefs act as natural barriers that dissipate wave energy during storms and typhoons, thus protecting coastal infrastructure (ports, beaches, small businesses) and community livelihood (fisheries, aquaculture, tourism). Coral capital also plays a crucial role in carbon storage through a process called calcification, which reduces ocean acidification and preserving marine habitats. Coral reefs cover less than 1 percent of the ocean floor square miles yet support 25% of all marine life.

Southeast Asia contains 30% of the world's coral reef, with Indonesian reefs covering 39,000 square km and Philippines covering 26,000 square km. Apart from asset protection, coral reefs are estimated to provide up to \$9.9 trillion/year through ecosystem services and goods, with up to \$36 billion from coral reef tourism. Across Indonesia, Thailand, and Malaysia) alone, the scuba diving industry was estimated to be around \$4.5 billion/year. The total economic value of reef ecosystem services in the Philippines is estimated to be \$4 billion per year. Apart from economic benefits, coral reefs can provide up to \$4 billion of savings in flood protection. Loss of just 1 meter of healthy reef due to climate change induced disasters like Typhoons and Hurricanes and double financial losses, hence dedicated insurance solutions are essential to protect coastal and onshore assets. From an insurance perspective, providing coverage is straightforward considering the reefs reduce wave energy by 97% thus protecting property damage during storm surges. Southeast Asian countries like the Philippines and Indonesia can establish a parametric Coral Protection insurance to guarantee repair of reef systems, like grey infrastructure (buildings, bridges, ports, etc.), thus providing protection benefits for future events. Cooperatives can act as a single purchaser of the insurance product and raise funds through public-private partnerships, government funds, philanthropic sources, in addition to charging members (property owners, local businesses, hotels etc.) a basic annual fee to fund premiums. Tourists could also be levied a "coral tax" or "beach tax" to spread the financial requirements and ensure product sustainability. The parametric insurance policy would provide coverage to a specific geographical area, which defines the Corals included in the policy. Projected costs of restoration would form the basis to calculate the required amount of insurance coverage. A Coral Asset Protection (CAP) product could be bundled with a Mangrove Asset Protection (MAP) product to create a comprehensive coverage for Southeast Asian countries.

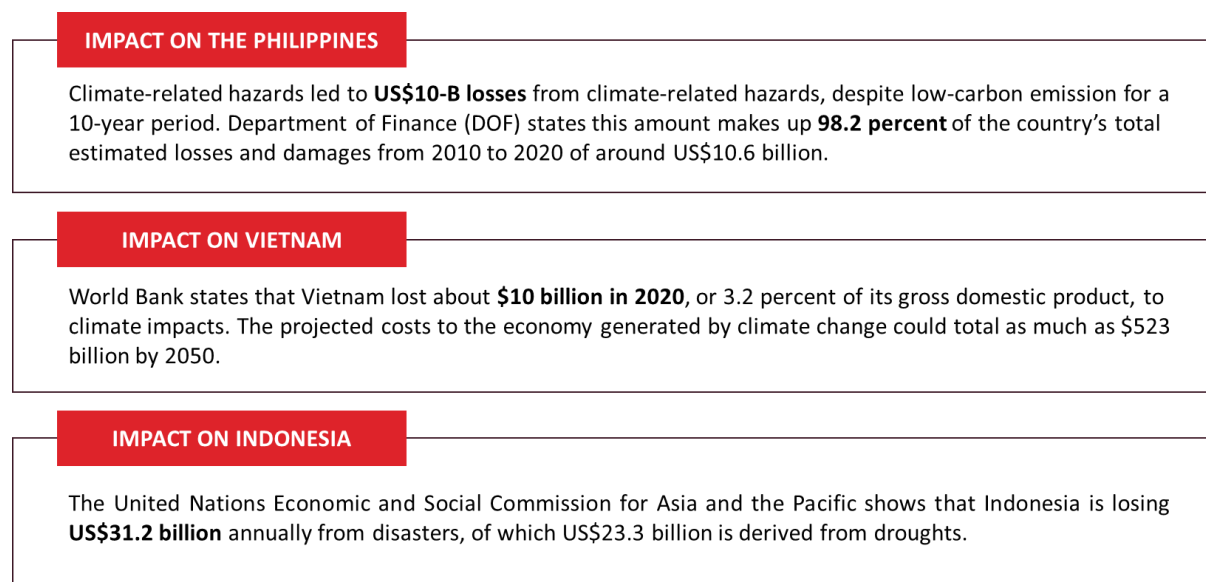
Coral reefs reduce coastal flooding and erosion by dissipating as much as 97% of wave energy.

EbA's impact on reducing risks

The UN estimates that investing just \$6 billion a year in nature-based resources could avoid \$360 billion disaster related losses over the next 15 years. The report states that this \$6 billion represents only 0.1% of the projected expenditure on new infrastructure. This creates a compelling business case for both private and government actors to act, considering the high financial upside of mitigating long term losses.

The 2022 World Risk Index placed the Philippines as the most-disaster prone country in the world. An average of 20 typhoons, compounded by floods and landslides, take back any economic gains made by the country. Without action, climate change will reduce the country's GDP by 13.6% by 2040. The cost of building climate-resilient infrastructure in the Philippines is estimated at 0.7 % of GDP, highlighting that at a country level, the benefits of limiting and avoiding damage far outweighs the investment costs. Several climate actions are expected to directly benefit the private sector, creating \$168 billion in potential opportunities in the next 10 years. This includes opportunities in climate smart cities, clean energy, agroforestry, transportation, and agriculture, which all require asset protection through insurance. Hence from an economic perspective, it is evident that the benefits of limiting and avoiding damage far outweighs the investment costs.

Figure 3: Impact of Climate Change in Southeast Asian Countries



Nature-based Insurance Solutions (NbIS) and its benefits and opportunities

NbIS incorporates actions and measures supported by nature (example: mangrove carbon sequestering), quantifying the value of natural assets (coral reef cover, wetlands, forests) and providing insurance products to maintain/restore natural capital resources. NbIS investments are one of *the most effective adaptation and mitigation tools to offset the impact of climate change induced weather and natural catastrophes, while contributing to income generation activities, community development, and biodiversity preservation*. Philippines insurance companies are uniquely positioned.



Direct benefit from hedging physical risks of around 20 typhoons that enter the region annually, thus reducing actual investment costs through lower pay-outs for claims over time. For example, financing natural storm prevention systems (reef and mangrove covers) could lower the physical risk of flooding in certain areas, thus offset the costs of pay-outs when a typhoon occurs, especially from MSMEs.



High financial upside of reducing impact of Nat-cat events. The Philippines Department of Finance stated the country is expected to lose \$268 billion in the next 50 years, with NEDA reports stating \$73.5 billion worth of planned infrastructure completion by 2028. By reducing the impact of natural hazards, Insurance companies will reduce pay-out costs on physical insurance.



Strong government backing for NbS is evident in several policies, frameworks and roadmaps drafted by the government, emphasizing natural capital protection. As part of COP28, the Philippines joined the World Economic Forum Blue Carbon Action Partnership to preserve coastal ecosystems in the country, representing 700 billion metric tons of sequestered carbon. Together with Indonesia, both countries store nearly 4 trillion tons of blue carbon eco systems, equivalent to 11 trillion barrels of oil. Through strong collaborating with regulators, Insurance companies can lead efforts to lower national financial risks for the country.



High availability of funds to scale NbS initiatives. Currently, there are >\$14 billion pledged and available dollars for several initiatives including agroforestry, mangrove restoration, climate change mitigation, etc. from international, private, and national resources. This allows local insurance players to pilot, launch and scale NbS products with lower financial risks and tapping into readily available local and international technical resources.



Robust international support from multi-lateral banks. As of 2023, the Philippines will all be the beneficiary of a \$600 million funding from the World Bank to help enhance its financial sector, with a focus on developing the catastrophe insurance marketplace. Apart from financial support from the World Bank's IBRD Capital program, local insurance firms can collaborate with global entities such as Swiss Re and Munich Re. Both players, involved in the joint structuring and placement of this fund, can further assist in the development of NbS- focused insurance solutions.



Highly developed microinsurance market. Globally, Philippines has the highest microinsurance outreach (percentage of the population covered), with 57.75 million insured lives (IC report) and premiums growing 14% annually. With high penetration and strong distribution channels, scaling NbS products through distribution channels like microfinance banks, cooperative insurance societies, MBAs and NGOs provide an enabling factor unique to the Philippines. For example, the Cooperative Insurance System of the Philippines (1CISP) insures over 1.2 million individuals. Similarly, pawnshop networks like Cebuana Lhuillier, with extensive physical and digital reach, have the potential to scale NbS products to 30 million customers nationwide, particularly vulnerable communities most affected by climate change.

Insurers are also recognizing the significance of insuring natural ecosystems and are exploring innovative practices in this area. Nature-related opportunities go beyond risk management and can be strategic for innovative insurers. There are several ongoing pilots executed by international insurers like AXA Climate, Swiss Re, Munich Re, Hanover Re, in partnership with governments and international agencies. Homegrown efforts, led by 1CISP in the Philippines in protecting mangroves, combined with international efforts, are encouraging initiatives, showcasing interest from multiple stakeholders in investing in using natural assets to reduce risk. From our research, we've noted that through these pilots, insurers are also creating innovative risk management frameworks, services, and procedures related to the loss of ecosystem services. These range from protection, restoration, community development, public-private partnerships to protect green infrastructure, new risk modelling tools, and in some cases tailored solutions for specific regions.

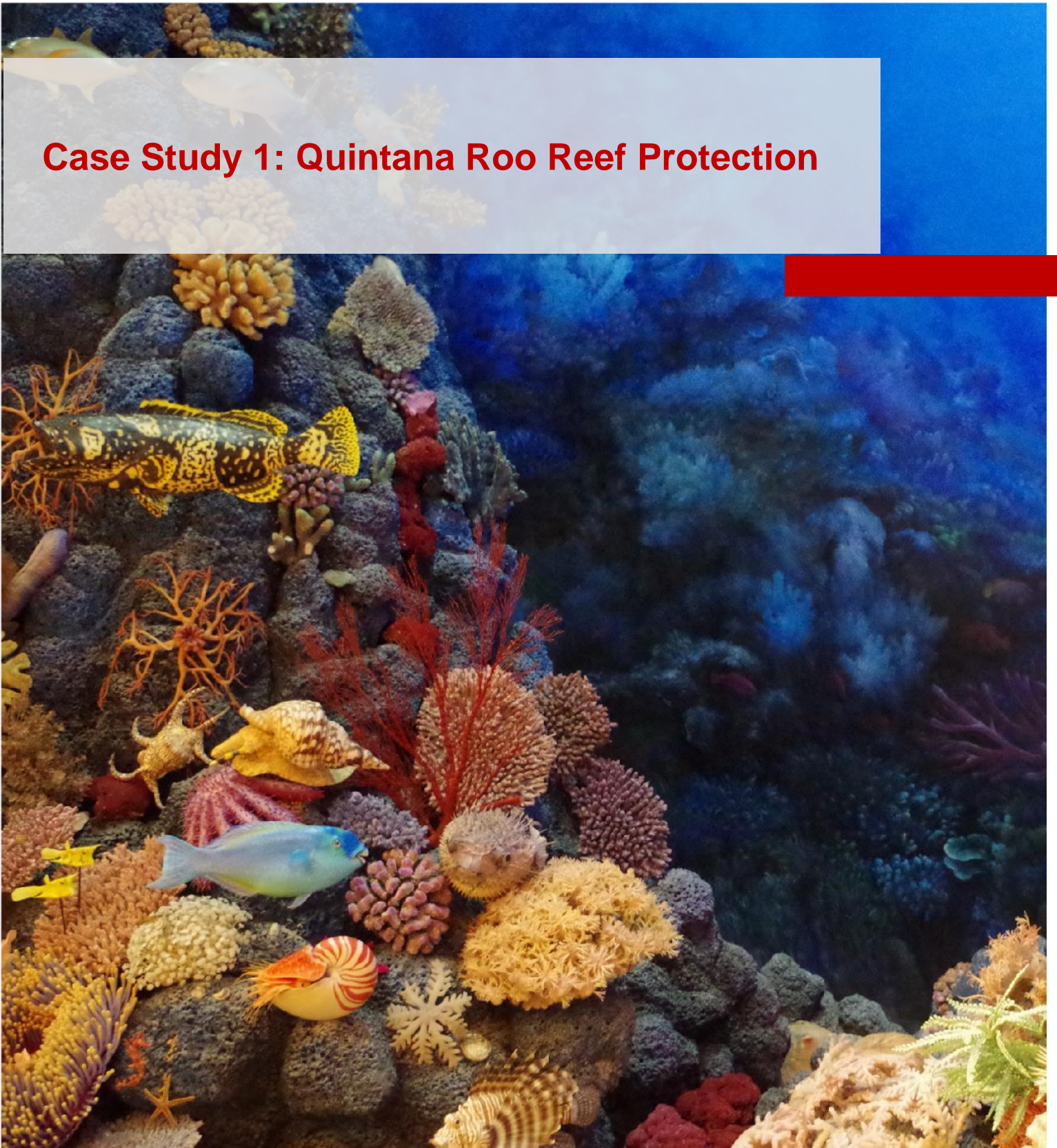
We also observed the use of sophisticated tools like Artificial Intelligence (AI), which can potentially enhance an insurer's entire value chain from data entry to customer support to pricing. For NbIS, AI can serve as a powerful tool in using larger datasets in modelling out risk and predictions, which can expedite valuations of ecosystems, leading to faster go-to-market products and solutions. AI can further drive down overall operating costs for insurers, freeing up more capital to support nature and ecosystem adaptation insurance solutions.

GIZ in the Philippines is currently conducting a pre-feasibility study of insurance solution for marine protected areas (MPAs) against typhoons. Three product ideas and its combination are being studied: 1) MPA physical asset protection targeted to those managing the MPAs, 2) marine habitat protection for those managing the MPAs or other stakeholders who want to support ecosystem restoration, 3) community protection for community groups or business sector that directly depend on a functioning MPA. Public entities (including local government units), private insurance industry, community, and business sector in the tourism value chain are being consulted in the study. Drawing out sustainability mechanisms for funding the MPA insurance premium is a key scope of the study.



vi. **Case Studies**

Case Study 1: Quintana Roo Reef Protection



Case Study 1: Quintana Roo Reef Protection

Swiss Re, in partnership with The Nature Conservancy (TNC), launched the world's first insurance solution to preserve a natural ecosystem. This solution provides a parametric insurance model to maintain Mexico's Quintana Roo reef and the community that depends on it. The parametric insurance is triggered when wind speeds exceed a predefined threshold in the protected area. In the event of a storm, the policy enables the deployment of reef recovery efforts, reducing the economic and ecological impact. The policy covers around 100 miles of coastlines, including several municipalities and towns. This covered area is part of a larger barrier reef that stretches over 600 miles, spanning Mexico, Belize, Guatemala, and Honduras. From an ecological perspective, the reef supports countless species of marine life, providing a vital source of food and income for local communities. Economically, the reef contributes \$6.2 billion in value to tourism and commercial fisheries, categorizing it as a natural asset or a global public good.

Policy and Deployment Structure:

Coastal property owners were engaged by TNC through a local Hotel Association. These owners pay federal taxes for the use of coastal areas via an existing beach lease structure on an annual basis. These fees are collected by the respective municipal governments, and a portion of those are then passed on to a Trust fund created by the State Government of Quintana Roo. This allows the government to leverage their existing tax structure. The funding is passed to the Coastal Management Zone Trust (CMZT), a trust fund founded by the State Government. The CMZT receives different types of funding, including property owner fees, government grants, and philanthropic donations. It is governed by a technical committee formed of government officials, scientific experts, NGOs, hotel association representatives, and TNC. The Trust decides how these funds are best spent to protect the reef and its beaches. There are two entities that support execution efforts:

- **The Insurance companies** provide the parametric product when the policy is triggered. The funds are paid within three weeks, enabling quick execution of reef and beach restoration work. The policy was initially provided by a Local insurer and Swiss Re.
- **The restoration team**, known as the 'Brigade', is made up of divers, tour guides, fishermen, marine biologists, and other scientists, mostly on a volunteer basis. When payments are triggered, the CMZT sends the Brigade out to assess and act on damage to the reef. Restoration activities include reattaching pieces of broken coral to their original structures, collecting fragments to seed new colonies, and clearing debris from beaches.

Results:

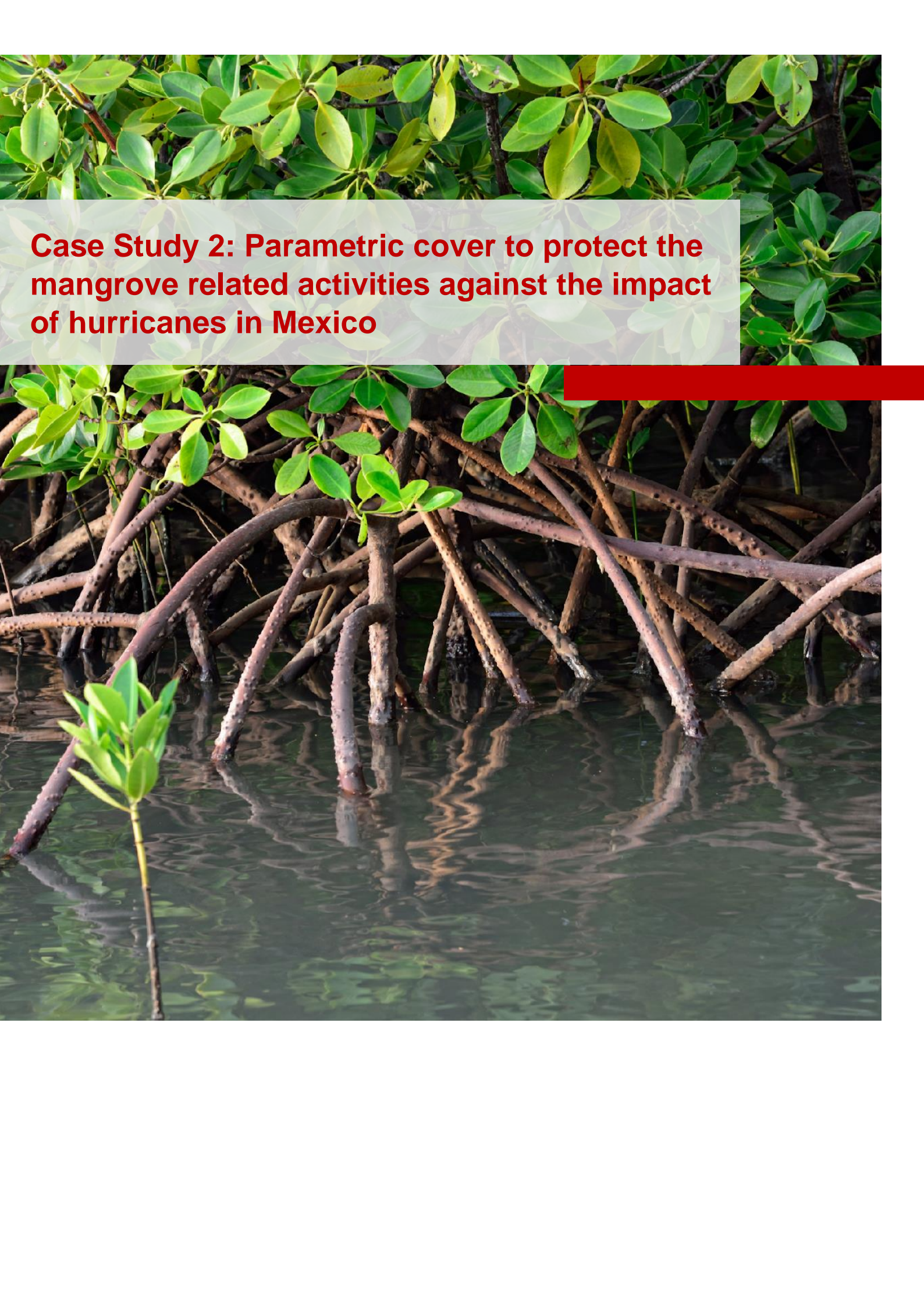
The policy was notably triggered in 2020 when Hurricane Delta hit the covered communities. A \$800,000 payment was deployed, enabling roughly 80 Brigade members to respond to the damage within a week. The team stabilized 1,200 large coral colonies that had been displaced and transplanted 9,000 broken coral fragments. Similar efforts took place on a smaller scale in surround areas. This case study showcases how both private and public capital can be deployed towards large-scale solutions, allowing governments in places vulnerable regions to protect important natural assets, and creating a mechanism for local communities to be directly involved.

Challenges:

Two (2) key challenges emerged with this product:

- The parametric insurance poses basis risk, where the payout may not match the actual losses or assumed costs (it could be more or less). This creates a risk of funding shortfall compared to traditional indemnity insurance, which relies on onsite loss assessments.
- Insurance policies usually last for one year, but multi-year policies are available, necessitating budgeting as a regular expense. Altering the funding structure without an established long-term policy and budget can lead to reduced premiums, resulting in decreased coverage and increased exposure to risk.



A photograph of a mangrove forest. The top half shows dense green foliage with small white flowers. The bottom half shows a complex network of brown, woody prop roots extending into dark, still water. A semi-transparent white box with a red border is overlaid on the top half, containing the title text. A solid red horizontal bar is positioned below the text box.

Case Study 2: Parametric cover to protect the mangrove related activities against the impact of hurricanes in Mexico



Case Study 2: Parametric cover to protect the mangrove related activities against the impact of hurricanes in Mexico

AXA Climate, in partnership with ClimateSeed, has developed an innovative parametric insurance product to protect the community of fishermen responsible for the restoration of San Crisanto mangrove forests against the impacts of hurricanes. In 2002, Hurricane Isidore destroyed 99% of the area's mangrove forests, causing significant flooding and bringing local economic activity to a halt. This necessitated the creation of an insurance product to protect local communities. This insurance guarantee plays a crucial role in facilitating rapid financing for the restoration of damaged mangrove forests and related infrastructure linked to fishing or ecotourism in the event of a natural disaster.

San Crisanto is a community of fishermen comprising approximately 150 Mayan families within the Yucatán Peninsula. Beyond fishing, their economic activity revolves around 800 hectares of mangrove forest, which they restore and conserve. These activities are financed through the sale of carbon credits and the development of ecotourism.

Policy and Deployment Structure:

When a hurricane sweeps through the protected area, compensation of up to \$100,000 is automatically triggered. The amount varies depending on the wind strength and proximity to the protected area. Compensation is sent directly to the policyholder, the local community, to support repair efforts following damages caused by the hurricane. The premium is paid by the community at the beginning of the risk period. An increase in the carbon credit price should allow them to get reimburse at the end of the year. This structure supports the regeneration of a thriving ecosystem while ensuring the sustainability of the associated carbon offsets.

Results:

This project has successfully captured approximately 48,000 tonnes of CO₂ over four reporting periods, while promoting the community-based sustainable development programs and creating new sources of income. This assisted natural regeneration initiative showcases how mangrove forest preservation and restoration projects can evolve into viable offset projects that support both local communities and natural habitats.

Challenge:

While the project was successful in deployment, its scale is limited to a small region and community. This is due to the very small premium for a parametric product, which falls below the usual risk appetite of the insurance companies.



Case Study 3: Coral reef insurance policy for Fiji's Lau Group of islands.



Case Study 3: Coral reef insurance policy for Fiji's Lau Group of islands.

In 2024, the Vatuvara Foundation Fiji, in collaboration with WTW and Fiji-based broker, Insurance Holdings (Pacific) Pte Ltd., partnered with the Pacific Catastrophe Risk Insurance Company (PCRIC) to implement a new parametric insurance solution. This solution is designed to offer rapid pay-outs in the event of tropical cyclone damage to the reef. Coastal ecosystems play a vital role in the livelihoods of South Pacific countries like Fiji, where approximately 90% of the population resides on or near the coast. Coral reefs serve as crucial habitats, nurseries, and food sources for reef fisheries, which are often the primary protein source for local subsistence consumption. Additionally, reefs offer protection from tropical storms and opportunities for tourism.

Policy and Deployment Structure:

The parametric insurance initiative offers up to US\$450,000 in pay-outs for reef restoration and community assistance in the event of cyclones. This policy is designed to protect the coral reef system of the South Pacific Ocean's Lau Group of islands. It supports activities such as reattaching broken corals, debris clean-up, and providing food and water supplies after storm damage occurs. The coverage also includes a protected natural reserve, the local community's home, and a private resort. Apart from enabling rapid reef response activities led by VVF, such as coral reattachment and debris clean-up, the insurance pay-outs will support community assistance efforts, addressing food and water security concerns arising from storm damage. These activities aim to prevent overharvesting and further degradation of Lau's coral reef system during community recovery from cyclones, enhancing both community and reef resilience. The Fijian Government played a pivotal role in enabling this initiative by granting approval to PCRIC to issue this specialized policy. This showcases the importance of government support in enabling the scaling of such solutions.

Results:

The policy was launched in February 2024, so it's still early to provide results. However, it sets a precedent for other island nations, like the Philippines, to invest in similar insurance solutions. Niue, an island nation in the South Pacific Ocean, has already expressed interest in protecting its reefs with a similar insurance protection.

Case Study 4: Hawaii coral reef insurance program



Case Study 4: Hawaii coral reef insurance program

In 2022, The Nature Conservancy piloted a coral reef insurance policy in partnership with Munich Re. Hawaii's reefs protect populated shorelines from ocean swells and storm surges, providing more than \$860 million worth of protection annually. Reefs act as natural barriers buffering the force of waves and safeguarding people, land, and structures. However, reef repair isn't eligible for funding from the Federal Emergency Management Agency, leaving limited to no sustainable resources to repair these vital natural assets.

Policy and Deployment Structure:

This policy is triggered at wind speeds of 50 knots (57 mph) when sufficiently close to reefs, providing pay-outs of up to a maximum of \$2 million to enable rapid reef repair and restoration after storm damage. The insurance policy costs approximately \$100,000 and was underwritten by private funders, including the Bank of America Charitable Foundation and the Howden Group Foundation. It's linked to wind speed rather than damage, allowing the rapid access to funds without waiting for an assessment by the insurance company. The Nature Conservancy will use the collected funds to repair reefs severely affected by storms. The repair process involves collecting fractured reef fragments and reattaching them using cement or epoxy. This work can cost anywhere from \$10,000 to \$1.5 million per hectare, depending on the severity of the damage and whether it's necessary to grow new corals in a nursery to restore the reef.

Results:

In 2024, The Nature Conservancy announced the extension of this reef insurance policy that enhances coverage around the main Hawaiian Islands and increases pay-outs after qualifying storms. The policy, also from Munich Re, now covers 315,000 square kms expanding the total coverage area to approximately 555,100 square kms to capture more storms. It offers equal coverage for reefs across all eight main islands. The maximum pay-out total is \$2 million over the yearlong policy period, with \$1 million available per storm. Additionally, the minimum pay-out has doubled to \$200,000, enabling a more impactful post-storm response. This example showcases a strong use case for the Philippines to build on, considering not only was the policy newly launched, but it was also renewed in subsequent years. It also highlights the importance of government intervention in developing or adapting new policies to allow stakeholders to access funds and government insurance agencies to protect natural assets. Relying solely on foundations and private investors won't be sufficient to create a scalable, long-term solution in the Philippines.



An aerial photograph of a mangrove forest. The water is dark and narrow, winding through the dense green trees. Several traditional wooden boats, some with blue and yellow accents, are visible on the water. The trees are lush and green, with some bare branches visible. A red horizontal bar is positioned below the title text.

Case Study 5: RISCO's Approach to Mangrove Conservation and Community Empowerment

Case Study 5: RISCO's Approach to Mangrove Conservation and Community Empowerment

Since 2019, Restoration Insurance and Financial Services Company (RISCO) has been designing and piloting financial products and programs that leverage the natural risk-reduction properties of mangroves. These initiatives are designed to enhance coastal community resilience while promoting mangrove conservation. RISCO has piloted several in the Philippines and is now looking at piloting in India using a unique business model that provides insurance coverage and fosters financial resilience in coastal communities.

The RISCO Model

The RISCO model is funded through three primary channels: a RISCO insurance product, impact investors, and, where applicable, Blue Carbon Credits. These funds drive community-based restoration efforts aimed at bolstering both coastal and financial resilience. Key components of the RISCO model include:

- **Provision of low interest Loans:** Offering financial support to businesses that contribute to mangrove conservation.
- **Technical Training:** Empowering communities with the skills and knowledge for sustainable practices and ensuring that they are integrated into the supply chain.
- **Investment in Mangrove Restoration:** Direct investment in conservation activities to enhance mangrove ecosystems.

RISCO offers parametric insurance products distributed to coastal stakeholders, including small and medium enterprises (SMEs), communities, villages, and municipal governments. RISCO has a revenue and profit-sharing agreement with the insurer. Revenues from the sale of these insurance policies and from the sale of blue carbon credits are funneled into the RISCO fund (or MFI or Lending Company, based on the regulatory requirements). This fund then invests in community-based mangrove conservation and restoration, reducing damage from extreme weather events and lowering out-of-pocket costs.

Impact investors provide another tier of funding, contributing capital with a conservation mandate in exchange for fixed returns. These funds are used to issue loans to communities for mangrove-supporting businesses and to facilitate technical training and restoration efforts.

This sustainable business model ensures communities achieve financial resilience while protecting natural assets like mangroves, which in turn offer greater protection from weather-related events

The Pilot and results

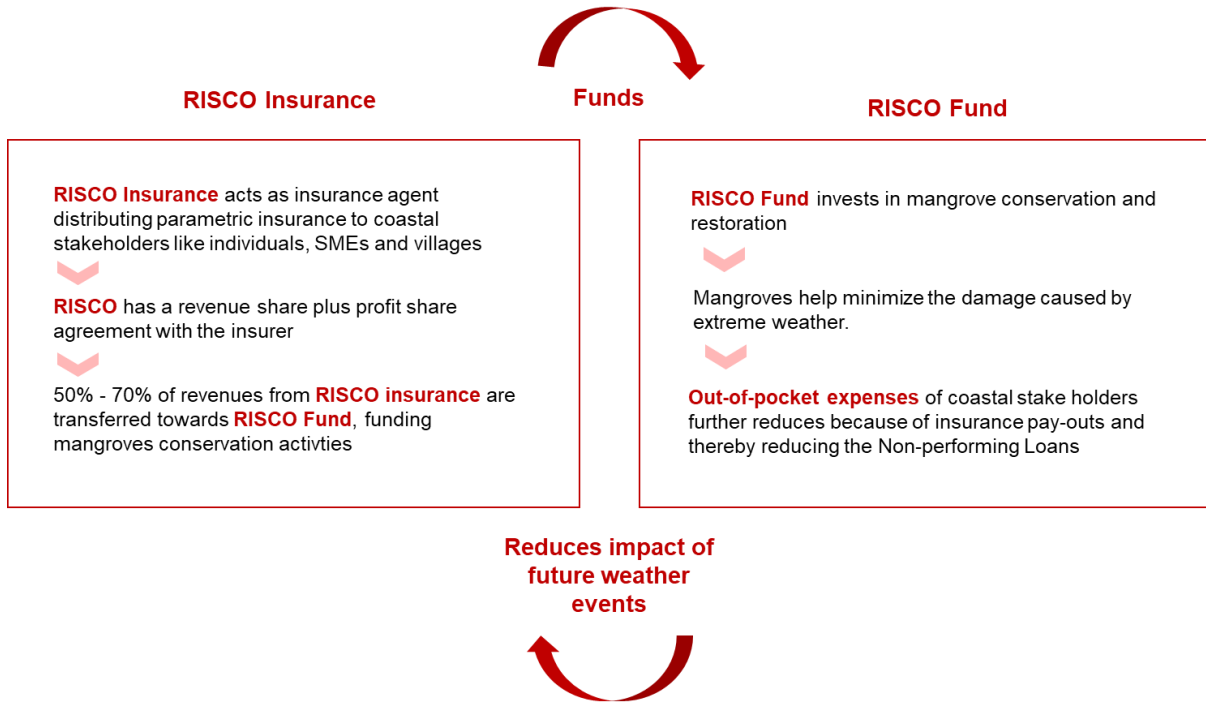
In the Philippines, RISCO Holdings provided a group of 30 female entrepreneurs with the opportunity to launch a seaweed farming business. This included access to both loans and insurance. The women purchased weather-index based insurance for \$10, covering typhoon events with a sum insured of \$200.00. With this insurance in place, they became eligible for financing totaling \$2,000.00 and training from RISCO. RISCO, along with partners, trained the community to ensure effectiveness and supply chain integration. The seaweed farming generated enough revenue to repay the loans, and the community was protected from weather-related extreme losses.



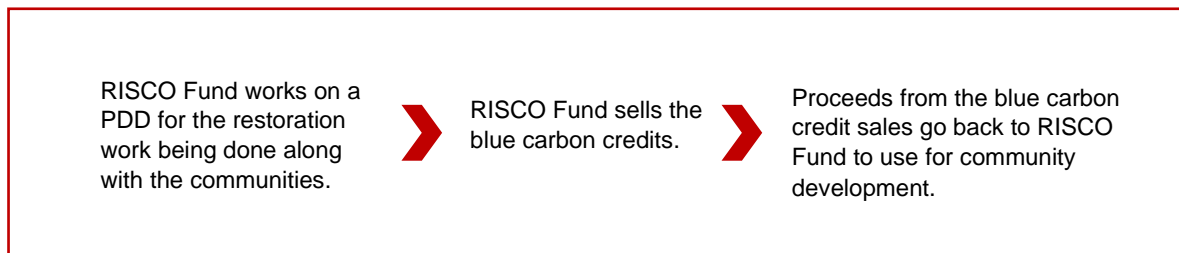
Looking Ahead

In the first three years of its operation, RISCO Insurance plans to add up to USD 50 million in additional capacity to help communities recover from natural catastrophes over the next three years. The program aims to provide training and funding to up to 19,000 people for starting 'mangrove-positive businesses,' making them more financially resilient. Over a decade, the pilot program is expected to provide a cumulative climate benefit of 631,788 tCO2 through avoided emissions and sequestration.

In summary, RISCO's innovative approach not only enhances the financial resilience of coastal communities but also promotes the conservation and restoration of vital mangrove ecosystems, ensuring long-term environmental and economic benefits.

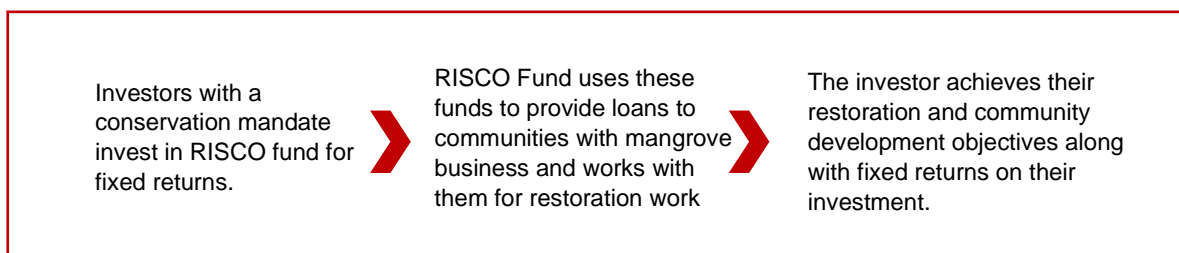


Funding from Blue Carbon Credit Sales:



Blue Carbon Credit Sales help diversify RISCO'S Funding

Funding through Impact Investors:



RISCO Fund acts as a vehicle for community-based restoration

VII. Sustaining Financial Support for Nature-Based Insurance Solutions

Preserving and growing the economic activity of NbS in Southeast Asia is reliant on maintaining a financial resources. These can be secured in the following ways:

Carbon Offsets

Carbon Offsets can be a viable channel to maintain and grow ecosystem assets in the Philippines, through mangrove preservation, reforestation, coastal protection. Once verified by third party certifiers, carbon credits can be traded on carbon markets to organizations that need to meet their emissions reductions target.

Globally, the carbon credit market was valued at \$331.8 billion in 2022 and expected to grow at a CAGR of 31% between 2023 - 2030 expected to increase to \$230 billion in investments. Indonesia, Malaysia, and the Philippines comprise three of the world's 17 megadiverse nation and along with other ASEAN nations hold a quarter of the world's potential for natural climate solutions. While the carbon credit systems are underdeveloped in the Philippines, there is forward momentum with the recent signing of a memorandum of understanding (MOU), which would allow the Philippines to participate in the trading of Certified Emissions Reductions (CER) and Internationally Transferred Mitigation Outcomes (ITMOs) between countries, which include "sovereign carbon credits". The MOU was signed between the Climate Change Commission and Maharlika Carbon Technologies Liability Limited Corporation. Under the agreement, the company will help the Philippine government launch a registry which will link to the United Nations Framework Convention on Climate Change (UNFCCC). Philippines insurers can support and leverage carbon credits in the following ways:

- a. Bring stability to voluntary carbon markets by providing risk cover.
- b. Provide coverage against physical, reputational, and political risk.
- c. Insure the net-zero transition as global investments in decarbonization technologies increase.
- d. Conduct price assessment for offset projects and provide guidance on risk management.
- e. Become institutional investors in long-term carbon removal projects this balancing their term liabilities while meeting their own net-zero goals.
- f. Create new risk transfer solutions for rising physical risks and providing adaptation and resilience service.
- g. Improve the bankability of carbon removal projects by providing compensation for losses in the case of adverse events.

Insurance start-ups and incumbents in the Carbon Credits space:

Founded in 2021, Kita is the world's first insurer of carbon credits. The company's Carbon Purchase Protection Cover protects buyers of forward purchased carbon credits against under-delivery. If your carbon credits underperform, Kita covers the loss.

In February 2023, Ping An launched a parametric insurance product to offset the damage to oceans from ecological changes that affect their ability to absorb CO₂. Ping An created an index to measure the ocean's ability to absorb CO₂. When this ability is impacted by typhoons, algae blooms or other changes in the marine environment, a pay-out is triggered to fund efforts to restore the ocean's carbon sequestration ability.

We2Sure offers Carbon Credit Production Parametric Insurance for Governments, Forestry Management Companies, and Investors in forestry, that compensates on a pre-agreed basis, the amount of physical reduction in carbon sequestration due to forestry natural perils, fire and/or landownership change of use or confiscation.

Oka's insurance solutions preserve carbon credit integrity in the event of invalidation and reversal caused by catastrophic events, fraudulent issuing, and registry removal.

Natural Capital Bonds (NCBs)

Natural Capital or Green/Blue Bonds are fixed income instruments designed specially to fund climate and environmental projects. Borrowers issue these securities to secure financing for projects that will have a positive environmental impact, such as coral or mangrove ecosystem restoration. Investors who purchase these bonds can expect to make a profit as the bond matures. Issuing NCBs allows insurers to access a new investor base that might not have been available otherwise. NCBs can also enhance the insurers' brand due to the positive environmental impact of the bond's objective. As of 2021, the Philippines outstanding amount of green and sustainability focused bonds was \$4.2 billion, with all these bonds having been issued by the private sector.

In 2021, AXA launched its inaugural green bond offering, placing \$1.1 billion of subordinated green bonds due 2041.

In 2023, International Finance Corporation (IFC) agreed to invest \$250 million in a green bond to be issued by Bank of the Philippine Islands (BPI) to accelerate climate finance in the Philippines. These trends showcase a growing interest for both international and national spending on expanding the natural capital bond market. However, institutional investors and local actors have cited limited awareness and resources to underwrite and expand resources in natural capital portfolios. To reduce dependencies on international and multilateral investors, the Philippine Government should also explore expanding municipal bonds. ADBs 2022 report also encourage member countries, including Vietnam, the Philippines, and Indonesia to increase insurance of municipal bonds considering the adequate legal and regulatory frameworks to support issuance, regulation, capacity building, and trading.

The Philippines bond market is limited, with data showing around 6 major bond issuances worth around \$22 million in the last 20 years. However, the proceeds were focused on financing infrastructure (low-cost housing, terminal construction, solid waste facilities, etc.) for municipalities, not on EbA or NbIS focused projects. Apart from offering default risks, Municipal bonds will reduce the execution timelines for critical natural capital projects, while growing the domestic bond market and creating alternative financing channels. Local Government Units (LGUs)/Municipalities in the Philippines are well positioned to identify EbA projects, while ensuring the long-term financial and environmental sustainability of natural assets. However, government support is required to develop secondary bond markets, simplify terms and conditions for bond issuance, and create recognition incentives for LGUs to float bonds vs borrowing from government banks.

The Climate Bonds Initiative (CBI) puts the 2020 green bond issuance figure at \$269.5 billion.

Catastrophe Bonds (Cat-bond)

A catastrophe bond is a high-yield debt instrument that is designed to raise funds for Insurance companies to offset their financial risk in the event of a natural disaster. A cat-bond allows insurance companies to receive funding from the bond only if specific catastrophe event, such as typhoons, droughts, floods occur. Investors can receive an interest rate that is greater than that of most fixed-income securities, thus incentivizing investors strong returns but also enabling portfolio diversification.

The 2023 catastrophe bond market's total return has surpassed 16%, on track to potentially exceed 20% by year-end,

In partnership with the World Bank, the Philippines government sponsored a cat-bond in 2019, providing a \$225 million funding source covering earthquake, typhoon wind, and rainfall protection for 3 years. The bond was listed at the Singapore Stock exchange, ushering a milestone for the Philippines disaster insurance strategy. The bonds were bought by international reinsurers and capital market investors. In 2022, a \$52.5 million pay-out of the bond due to recent typhoon Odette was successfully disbursed, showcasing the pivotal role cat-bonds can play to deliver capital market back insurance like support to regions in a time of recovery. As of June 2023, the Philippine government is not planning to re-enter cat-bond markets and focus on indemnity protection for critical infrastructure (schools, hospitals, ports).

Globally, the cat-bond issuance reached a record of \$15 billion in 2023, up by 8% from 2022. This takes total capital deployed into cat bonds globally to USD 41 billion, showcasing strong investor appetite to favour cat bonds as they offer exposure to peak risk layers, where the risk-return profile currently is attractive, and liquidity

can be provided in the secondary market. Cat-bonds have a solid track record despite above-average global natural catastrophe losses annually in recent years.

Philippines insurers can benefit from cat-bonds in the following ways:

- a. The capital raised through bond issuance lowers their out-of-pocket costs for natural disaster coverage thus creating a cost-effective instrument compared to traditional reinsurance.
- b. Transferring a portion of the financial risk to capital markets reduces exposure to large losses from natural disasters.
- c. Allows insurance companies to stabilize their capital structures by providing an alternative source of funds and avoiding bankruptcy situations.
- d. Enables customization based on risk types, coverage needs, investor profiles and regional needs.
- e. Showcases an insurance company's commitment to innovation and environmental impact, leading to improved reputation and increased competitiveness.

From an insurance perspective, pilots and small-scale initiatives in the Philippines offer a low-risk opportunity for financing. Pilots also lower the barrier to entry by involving a broader group of stakeholders, setting clear expectations for outcomes, methodologies, timelines, and risks. Organizations can explore blended finance instruments, bringing together private, public, and philanthropic capital to scale insurance-related pilot projects.

This study surveyed recent funds pledged or deployed in the Philippines, which can be leveraged for new initiatives. These initiatives are linked to environmental protection and preservation. With various substantial financial resources available, the focus now shifts to identifying practical sources and engaging the necessary stakeholders to secure funding. The following chart displays the latest funding availability along with descriptions of their objectives.

Figure 4: Potential funding resources for pilots in the Philippines.

AGENCIES	YEAR	AMOUNT (USD)	LEADS	DESCRIPTION
Asian Development Bank	2022	250 million	ADB and Philippine Government	Policy-based loan to support the Philippines for adaptation and mitigation
People's Survival Fund	2023	97 million	Local government units (LGUs)	Agroforestry, Mangrove restoration, Capacity Building
Green Climate Fund	2023	39.2 million	FAO and Philippine Government	Climate-resilient agriculture (CRA) practices
Canadian Government	2023	5.3 billion	UNDP and the Philippines Government	Promoting biodiversity conservation, climate change mitigation
Loss and Damage Fund	2024	660 million	UNFCCC	
Special Purpose Funds	2024	8.3 billion	Philippine Government	Climate change adaptation programs

Further details are discussed in section XIII on COP 28 highlights

VIII. Steps to developing and scaling NbS in the Philippines

1. Identify and Assess the Natural Capital/Assets

Determining the value of a natural asset is contingent on the ecosystem services it provides. This includes the economic benefits generated for business, tourism, communities, while lowering the financial risks for governments. Apart from quantifiable metrics, the asset's non-tangible values like culture and biodiversity should also be considered. Economic benefits should be weighed against the cost to repair for creating the optimal financial incentives for insurance providers. Assigning a monetary value to natural assets is complex, often requiring new methodologies and models, different from existing Nat-cat model considerations. The existing insurance models are not adapted to quantify NbS, which may lead to re-insurance undervaluing or overvaluing natural capital. To mitigate mispricing, building frameworks or leveraging existing valuation tools to estimate economic benefits for regional assets is highly recommended.

For insurance companies in the Philippines, the Roadmap to Institutionalize Natural Capital Accounting (NCA), developed by National Economic and Development Authority (NEDA), is a recommended tool for strategic guidance and national implementation. The Philippines has adopted the United Nations System of Environmental-Economic Accounting (UN SEEA) Framework, specifically the Central Framework (CF) and the Ecosystem Accounting (EA) Framework. Since both frameworks align with System of National Accounts (SNA), they offer detailed conceptual and accounting guidance for analysing and evaluating overall economic performance. In linking SEEA CF and EA, the required data are aligned such that data on ecosystems under SEEA EA can be combined with the data from the SEEA CF accounts on environmental pressures, individual resource stocks, and environmental responses to provide a comprehensive picture of the environmental-economic relationship, thus ensuring national and international alignment on standards and methods. Alternatively, local insurers can partner with international players like AXA to leverage the Coastal Risk Index (CRI), an innovative tool that maps current and future flood hazard resulting from climate change and integrates the protective benefits of coastal ecosystems into insurance risk models.

2. Determine Premium Funding

NbS, given their risks and impacts on vulnerable communities, necessitate collaboration among various stakeholders to insure both natural assets and the communities dependent on them. Sustaining cash flows for long-term premium payments and protection requires careful long-term planning and commitments, making a business model that incorporates sustainability essential. The premium needs to be sufficient to cover the expected losses and operational costs of the insurance program. Factors such as the likelihood and severity of risks, the value of the insured asset, and the desired level of coverage all influence the premium calculation. Identifying the source of premium funding is crucial.

In the Philippines, a scalable product is likely to result from a blended finance funding mechanism involving a mix of public, private, philanthropic, and community contributions. Collaboration between various stakeholders is often necessary to secure the funding needed for the premiums. This may involve negotiations and agreements between government agencies, private sector partners, non-profit organizations, and local communities.

3. Identifying Risks

Identifying risks for nature-based insurance solutions involves a comprehensive process. Initially, there's an assessment of environmental risks, which includes understanding the specific threats such as natural disasters, habitat degradation, and climate change impacts. Then, social, and economic risks are evaluated, considering factors like community vulnerability and economic dependencies on natural resources. The analysis extends to reviewing existing insurance coverage to identify gaps that NbS could address. Next, specific risks are identified through detailed assessments, including both current and future scenarios. Risks are then quantified using various methods such as risk modelling tools and historical data analysis. This helps estimate the likelihood and severity of different risks. Risk mapping and prioritization are then conducted to focus efforts on the most vulnerable areas or communities. Stakeholder consultation plays a crucial role throughout, gathering insights and perspectives from local communities, NGOs, government agencies, and insurance experts. Additionally, sensitivity analysis is conducted to understand how changes in various factors

could impact the effectiveness of the insurance solution. Regulatory and legal risks are also considered, ensuring compliance with environmental regulations and legal frameworks governing insurance contracts.

4. Streamline pay-out processes

To ensure timely pay-outs require robust data collection and monitoring systems. These systems utilize various sources like weather stations, satellite imagery, and other monitoring tools to track triggering events. After an event, damage assessment is conducted remotely, enabling swift calculations of pay-outs using predefined formulas and contracts between parties involved. For a nature-based solution, employing a parametric product triggered by specific factors such as wind speed is ideal as it allows rapid pay-outs to minimize downtime and prevent further losses. Additionally, parametric insurance provides predictable coverage based on pre-defined parameters, simplifying the claims process, and allowing for transparent risk assessment, thus keeping operating costs low. The customizable nature of parametric policies allows organizations to tailor coverage to their specific needs, enhancing financial stability and risk management.

5. Leverage Distribution Channels

In the Philippines, distribution channels have successfully facilitated the expansion of microfinance and microinsurance products by effectively reaching both urban and remote areas. These channels not only enable product innovation by providing valuable customer insights but also facilitate widespread education. Established channels, such as microfinance institutions (MFIs), pawnshops, cooperatives, and rural banks, are already present throughout the country, making them ideal for scaling NbIS products to reach more individuals. With increased enrolment, we can anticipate lower premiums, allowing for greater protection of communities and natural assets. For instance, over the past decade, regulatory bodies, development agencies, and the industry stakeholders have collaborated to make the Philippines one of the world's most penetrated markets for microinsurance, with over 45% of the population insured. By leveraging existing channels, similar success can be achieved in growing nature-based insurance solutions across the country.

6. Invest in Capacity Building

Capacity building is essential for the successful implementation of nature-based insurance solutions as it provides the technical expertise, risk assessment capabilities, and innovation needed to address complex environmental challenges. Through capacity building, stakeholders, including insurance professionals, policymakers, and environmental experts, develop the necessary skills and knowledge to design, implement, and manage nature-based insurance products effectively. This includes understanding environmental risks, product design, pricing, risk modelling, monitoring and evaluation. Capacity building also empowers local communities by increasing their understanding of environmental risks and their participation in insurance scheme. Furthermore, it facilitates the development of supportive policy frameworks and regulatory environments, crucial for the long-term sustainability and expansion of nature-based insurance initiatives.

Our research highlights a significant gap in understanding NbS and EbA solutions and recommend the establishment of a technical working group. This group should include representatives from both the government and private sector. Government support is essential for facilitating the promotion of necessary reforms. Given the critical capacity gaps within the industry, it's imperative for the government to take ownership and lead reform measures to further develop this sector. This involves focusing on new frameworks and regulations for NbS and EbA initiatives.

IX. Assessment of the Policy Landscape

The Philippines has been increasingly recognizing the importance of NbS in tackling climate change and conserving biodiversity. While the term "nature-based solutions" might not explicitly be stated in policy documents, the concepts and practices that align with NbS principles are embedded in several Philippine policies and initiatives. Below are a few policies and initiative with linkages to these solutions of the key policies and initiatives:

1. **The Philippine Development Plan (PDP):** The country's national development blueprint emphasizes sustainable natural resource management and the protection of biodiversity. The plan advocates for the restoration of natural systems and the sustainable management of land and water resources.
2. **The Climate Change Act of 2009 (Republic Act No. 9729):** This legislation established the Climate Change Commission and framed the country's action on climate change. The act promotes the adoption of NbS, such as reforestation and mangrove replanting, as strategies for mitigation and adaptation.
3. **The National Climate Change Action Plan (NCCAP):** This plan outlines the country's strategic direction to address the impacts of climate change. It recognizes the role of ecosystems in enhancing resilience and recommends the restoration and conservation of coastal and marine ecosystems, forest ecosystems, and freshwater resources.
4. **The National Greening Program (NGP):** Launched by the Department of Environment and Natural Resources (DENR), this initiative aims to reforest vast areas of the country with native trees. It seeks to reduce carbon emissions, increase forest cover, and restore degraded ecosystems.
5. **The Enhanced National Integrated Protected Areas System Act of 2018 (Republic Act No. 11038 or E-NIPAS Act):** This act strengthens the conservation of protected areas and recognizes the importance of biodiversity in enhancing ecosystem services, including carbon sequestration, flood control, and soil stabilization.
6. **The Sustainable Integrated Area Development (SIAD) Strategy:** This initiative emphasizes integrated and area-based development. It promotes sustainable practices in managing resources, enhancing local economies, and conserving biodiversity.
7. **Coastal and Marine Ecosystem Management Program (CMEMP):** This initiative aims to protect and manage coastal and marine ecosystems. It promotes sustainable fisheries, mangrove reforestation, and the conservation of marine protected areas.

These policies and initiatives reflect the Philippines' commitment to leveraging NbS in addressing climate change, conserving biodiversity, and ensuring sustainable development. However, as with all policies, the success of these initiatives depends on the effective implementation at the local level, sufficient funding, and the engagement of various stakeholders, including local communities.

Implementation Insights

While the Philippines has made significant progress in environmental and climate-related policy formulation, several gaps persist, especially when it comes to fully integrating NbS with disaster risk finance and insurance. Here are some observed gaps, based on information available up to 2021:

1. **Implementation Gap:** Despite having robust policies and laws like the Climate Change Act and the Disaster Risk Reduction and Management Act, challenges arise in their local-level implementation due to capacity constraints, lack of resources, or inadequate understanding. To address this, regulators should enhance the capacity of local institutions through training and resource allocation, enabling effective implementation of national policies at the grassroots level.
2. **National agencies and local governments can only avail from government insurers:** National agencies and LGUs are bound by rules and regulations from the Commission on Audit (COA) and the

Government Procurement Policy Board (GPPB), which prohibit them from procuring or subscribing to private insurance products, including CRFI. This regulatory constraint creates a barrier for private insurance firms seeking to enter the public sector market. Addressing this challenge requires a comprehensive policy shift regarding Disaster Risk Reduction and Climate Change Adaptation (DRR-CCA) insurance packages. New government policies are needed to provide clear guidelines and mechanisms for LGUs to access insurance coverage for DRR-CCA purposes. These policies should ensure alignment with legal and regulatory frameworks while promoting resilience-building efforts at the local level.

This requirement aims to support and strengthen government-owned or controlled insurance companies while ensuring adequate protection for government assets. By mandating government agencies to obtain insurance from these entities, it helps these companies remain viable and competitive in the insurance market. However, it reduces the opportunity for private insurance companies to participate in government contracts, therefore, may result in commercial companies not being able to cover natural assets.

3. **Lack of Comprehensive NbS Framework:** While existing policies touch upon nature conservation and disaster risk reduction, there's no comprehensive framework dedicated to promoting NbS as a primary strategy for resilience and risk reduction. Formulating a dedicated policy framework prioritizing NbS, with insurance as a primary strategy, will provide clear guidelines to develop and scale new ideas.
4. **Fragmented Approach:** Various agencies deal with environmental conservation, disaster risk reduction, and finance, often lacking coordination and resulting in a fragmented approach. To address this, establish coordination mechanisms or platforms where agencies can align efforts, share information, and work together on integrated projects to avoid duplication of effort.
5. **Limited Know-how and Local Capacity:** One main challenge facing the adoption of NbS is the lack of awareness and familiarity with this insurance product. Limited marketing efforts and insufficient education about CRFI contribute to this lack of awareness. Many people and communities are unfamiliar with CRFI, which hinders its uptake and implementation. Addressing this challenge requires robust marketing campaigns and educational programs to raise awareness about the benefits and importance of CRFI in managing climate risks.

Local government units (LGUs) play a crucial role in disaster management and environmental conservation but often lack the capacity, knowledge, and resources to fully integrate NbS into their planning. Provide tailored training programs for LGUs on NbS integration, disaster risk finance, and planning, and encourage local research institutions to study NbS within the local context to provide actionable insights.

6. **Data Gaps:** There's often a lack of accurate, up-to-date data and research on NbS efficacy in specific local contexts, hindering its integration into insurance and financial products. Allocate funds for research on NbS efficacy and create centralized data repositories for easy access and sharing of information.
7. **Financial Constraints:** Limited dedicated funding for NbS initiatives makes it challenging for such initiatives to gain traction. Establish dedicated funds or financial mechanisms for NbS initiatives and leverage international climate finance opportunities, such as the Green Climate Fund, to support NbS projects. Provide guidance on leveraging international funding for insurance and encourage the use of blended finance mechanisms, combining public and private funds, to support projects that merge NbS with risk finance and insurance.
8. **Lack of Incentives:** There are limited incentives for the private sector to invest in NbS or develop related insurance products. Offering tax breaks, grants, or other financial incentives to private entities investing in NbS or developing related insurance products, considering their high exposure to risks.
9. **Insufficient Community Engagement:** Policies are sometimes crafted without adequate consultation and participation from local communities, leading to a lack of buy-in and successful implementation. Prioritizing community engagement in policy development is crucial to ensure the cultural and social acceptability of integrated strategies.

- 10. Inadequate Monitoring and Evaluation:** Mechanisms to monitor and evaluate the effectiveness of policies, especially those related to NbS, are sometimes weak or non-existent. It's crucial to develop standardized tools and metrics to assess NbS initiatives' effectiveness and regularly review and update policies based on feedback and findings. Additionally, ensure that national and regional risk assessments incorporate the protective value of ecosystems, acknowledging the role of NbS in risk reduction.
- 11. Over-reliance on Hard Infrastructure:** Despite NbS benefits, there's still a significant focus on hard infrastructure for disaster risk reduction, overlooking the potential of natural solutions. Prioritize NbS investments where feasible and educate policymakers and stakeholders about the long-term benefits and cost-effectiveness of NbS.

By addressing these gaps with the solutions mentioned above, the Philippines can pave the way for a more integrated, resilient, and sustainable approach to disaster risk management, climate adaptation, and finance.

X. Comparison of Philippines' policy landscape with other Asian countries

The Philippines, due to its location in the Pacific Ring of Fire, faces high vulnerability to natural disasters like typhoons, earthquakes, and volcanic eruptions. When comparing the Philippines to other Asian countries in terms of policy and implementation related to NbS and disaster risk finance and insurance, several observations were identified:

1. **Maturity of Legal Framework:** The Philippines stands out in having a comprehensive legal and policy framework in place. Instruments such as the Climate Change Act (2009) and the Disaster Risk Reduction and Management Act (2010) have set clear mandates for governmental agencies. Compared to many other Asian nations, the Philippines has been proactive in institutionalizing responses to climate change and disaster risks.
2. **Implementation Challenges:** Like many countries, the Philippines faces challenges in the consistent implementation of policies, especially at the grassroots level. Local government units (LGUs) vary widely in capacity, leading to differences in the execution of national policies.
3. **Community Involvement:** The Philippines has a strong culture of community involvement and bayanihan (communal unity). This spirit is often integrated into disaster response and mitigation efforts, which can be more grassroots driven than in some other Asian countries.
4. **Financial Mechanisms:** Based on the FGD and interviews conducted, access to funds for LGUs is hindered by complex procedures, resulting in low utilization of the PSF. Simplifying guidelines and providing capacity building to LGUs is necessary. Despite challenges, the Philippines has made progress in establishing funds like the PSF for financing adaptation projects, whereas some Asian countries are still in the process of setting up similar mechanisms.
5. **Integration of NbS:** The integration of NbS in official policies and strategies is still evolving in the Philippines. While the country recognizes the value of ecosystems for resilience, it is in the same boat as many Asian countries in needing to more explicitly prioritize and fund NbS in disaster risk reduction and finance strategies.
6. **Collaboration with International Entities:** The Philippines actively collaborates with international organizations, NGOs, and bodies to enhance its climate and disaster-related strategies. This has given the country access to global best practices, funds, and expertise.

Countries like Vietnam and Indonesia, which also face significant climate-related challenges, have made strides in NbS and disaster risk financing, each with its unique approach. Vietnam, for example, has invested significantly in mangrove restoration as a buffer against sea-level rise and storm surges. However, the breadth and depth of institutional frameworks in the Philippines, particularly regarding climate change adaptation and disaster risk reduction, are among the most comprehensive in the region. The Philippines, when compared to many of its Asian neighbours, has been proactive and forward-thinking in its policy formulation related to disaster risk and climate change adaptation. The primary challenges lie in consistent and holistic implementation across its many islands and in integrating newer strategies like NbS into the broader framework. However, the country's commitment to tackling these challenges, coupled with its active collaboration at both the community and international levels, positions it as a significant player in regional climate and disaster risk reduction efforts.

XI. Role of Stakeholders

Various stakeholders play crucial roles in policymaking related to the integration of insurance with NbS and EbA. Here is an overview of the roles that different stakeholders, including the Insurance Commission, insurance companies, multilateral organizations, Cooperative Development Authority, insurance associations, cooperatives, and Bangko Sentral ng Pilipinas (BSP) can play in the policy-making process:



Insurance Commission

Role: Regulates and supervises insurance companies.

Recommendations:

- Encourage insurers to utilize current sandbox regulations of the Philippines to pilot innovative approaches such as a carbon market product that can contribute to insurance premiums.
- Establish a working group/task force with the BSP, DENR and NDDRMC to spearhead reforms. Historical evidence (e.g., Philippines approach to microinsurance) underscores the significance of actively engaging relevant agencies, with key officials and decision-makers assuming the role of champions for the agenda.
- Organize training programs and workshops aimed at elevating the expertise of insurance professionals in the realm of EbA and its seamless integration into insurance products.
- Foster awareness among insurers regarding the advantages and hurdles related to incorporating ecosystem services into both risk reduction strategies and insurance offerings.
- Collaborate closely with the BSP on how the IC can take on leadership on its Philippines Sustainable Finance Roadmap (2022).
- Co-create products that the insurers can easily adopt in the market that does not need licensing, such as the “Buhay, Bahay, Kabuhayan” product. Create samples for carbon offset insurance, forecast-based insurance, climate and disaster risk insurance.
- Provide guidance and roadmap on product design, business and financing models, and distribution and marketing that considers the unique characteristics of ecosystem services and their impact on risk reduction and risk transfer.
- Activate engagements with the Sustainable Insurance Forum to stay informed about emerging best practices in the insurance industry globally and adapt regulations accordingly.
- Facilitate public-private partnerships to jointly develop and promote insurance products that integrate EbA.
- Capacitate human resources on Natural Capital Accounting (NCA), a tool that measures changes in the stock of natural capital and integrates the value of ecosystem services into accounting and reporting systems for a given region or ecosystem and its impact to risk/loss reduction.



Insurance companies

Role: Provide insurance products and risk management services.

Recommendations:

- **Product Innovation:** Innovate insurance products that cover risks associated with NbS and EbA.
- **Data Sharing:** Collaborate with stakeholders to share relevant data for risk assessment and policy formulation.
- Advocate for policy reforms and collaborate with development agencies through working groups.
- Support open-source training resources (natural capital valuations) on EbA insurance solutions.
- Invest in regional/local pilots in partnership with cooperatives and government agencies.



Multilateral organizations

Role: Provide technical assistance and mobilize funding

Recommendations:

- Continue to provide detailed guidelines outlining best practices, methodologies, and standards for integrating EbA into climate finance and insurance policies.
- Drive public-private partnerships and offer opportunities for blended financing.
- Facilitate public-private partnerships by bringing together government entities, the insurance industry, NGOs, and other stakeholders.
- Consolidate and integrate efforts that have similar objectives.
- Establish a TWG for shaping a business mode/case for EbA and climate finance and insurance.



Cooperative Development Authority (CDA)

Role: Regulates and promotes the development of cooperatives

Recommendations:

- Require or encourage cooperatives to allocate training funds to educate members about sustainable and nature-based practices for their members. This fund supports the development of members' skills and knowledge related to environmentally friendly and resilient cooperative activities. Currently, the CDA requires cooperatives to spend no more than 10% of its net surplus on training and capacity development of its staff and members.
- The CDA also requires cooperatives to allocate funds for community development and this can be used to invest in projects that utilize NbS for adaptation or to support agricultural practices that are resilient to climate change - both can be linked with the climate insurance and finance that the cooperative insurance or credit cooperatives can develop.



Insurance associations

Role: Mobilizes the insurance companies (example: PIRA, Philippine Life Insurance Association, Inc. or PLIA)

Recommendations:

- Advocate for a review of licensing requirements, particularly in the context of climate risk finance and insurance, technological innovations, and partnerships for product distribution.
- Collaborate with the IC, CDA and BSP to develop and implement educational programs that enhance the understanding of risk management, climate risk finance, and insurance literacy among consumers. This can include workshops, seminars, and awareness campaigns.
- Build a business case on EbAs or NbS, such as the work that PIRA is doing with Earth Security.
- Encourage the involvement of international investors, reinsurers, and alternative risk transfer mechanisms (insurance pools).
- Share best practices within the insurance industry regarding the development and implementation of insurance products that support EbA adaptation.



Local government units

Role: Implement policies at the local level.

Recommendations:

- Implement and adapt national policies to local contexts, considering the unique characteristics of different regions.
- Integrate EbA and NbS in the local planning instruments and adaptation programmes.
- Engage local communities in policy discussions and implementation.



Cooperatives

Role: Cooperative organizations often involve community-based enterprises.

Recommendations:

- Facilitate community engagement and represent the interests of cooperative members in policy discussions.
- Advocate for policies that support sustainable and nature-based initiatives within cooperatives.
- Proactively identify pilot projects/regions to test efficacy and scalability of EbA insurance solutions with partners like GIZ.
- Coordinate with others to create an inventory of existing projects and products to enable EbA solutions.



Banko Sentral ng Pilipinas

Role: Regulates and supervises financial institutions

Recommendations:

- Introduce policies that incentivize banks and financial institutions to invest in green and sustainable projects by offering preferential interest rates or regulatory benefits for loans granted to environmentally friendly initiatives.
- Facilitate collaborative platforms involving banks, insurance companies, asset management firms, and other financial institutions to share knowledge, best practices, and coordinate efforts in promoting and financing NbS.
- Establish implementing guidelines that require financial institutions to assess and disclose their exposure to climate-related risks in their portfolios, encouraging the integration of environmental risk assessments into their overall risk management frameworks.
- Require financial institutions to disclose the environmental impact of their investments, loans, and insurance underwriting activities, promoting transparency and accountability in their contributions to sustainability and climate-related initiatives.
- Organize training programs and workshops for financial professionals to enhance their understanding of climate risks, sustainability principles, and the integration of NbS into financial products. This can help build the capacity of the financial sector to navigate sustainability challenges.
- Explore becoming a signatory to international agreements or initiatives, such as the [Network for Greening the Financial System](#) (NGFS) or the Principles for Responsible Banking, demonstrating a commitment to global sustainability goals and aligning domestic policies with international best practices.

XII. Key Performance Indicators (KPIs) to Measuring Success in EbA or NbIS Projects

Identifying Key Performance Indicators is essential and crucial to meet the goals of the NbS or EbA project. Philippine insurers and stakeholders can measure success using the following metrics:



Financial KPIs:

1. **Return on Investment (ROI):** Evaluate the profitability of a NbIS project by comparing financial returns to the investments made.
2. **Risk Adjusted Return:** Estimates the risks associated with NbIS projects and adjust projections to reflect the overall risk-return profile.
3. **Premium growth:** Measures the growth of NbIS insurance products over time.
4. **Loss Ratio:** Measures the ratio of incurred losses to earned premiums.
5. **Combined Ratio:** Provide comprehensive view of the project's underwriting profitability.
6. **Underwriting Profit:** Estimates the profit derived from underwriting activities.



Environment-Financial Metrics:

1. **Return on Environment (ROE):** Evaluates the project's environmental benefits against investment value.
2. **Natural Capital Valuation:** Provides monetary value to ecosystem services provided by the NbIS project.
3. **Social Return ROI (SROI):** Measures the social and environmental impacts of the NbIS project apart from financial returns.
4. **Return on Biodiversity (ROB):** Assesses the projects impact on local and regional biodiversity against the investment value.
5. **Carbon Sequestering:** Measures the projects ability to capture, store carbon dioxide, and issue carbon credits in domestic and international exchanges.
6. **Flood Risk Reduction:** Estimates project's ability to reduce flood risks.
7. **Green Bond Index Performance:** Tracks the bond indices to measure performance and investor sentiment.
8. **Climate Risk Index:** Measures indicators such as vulnerability and exposure to climate risk.



Social Metrics:

1. **Alignment with 2030 Sustainability Goals:** Assesses how NbIS projects align with 2023 SDG goals.
2. **Environmental, Social, and Governance (ESG) Performance:** Tracks the overall ESG score for issuers and benefactors, including their commitment to sustainability.
3. **Number of Lives Protected:** Measures the number of communities benefiting from adaptation and mitigation projects.
4. **Capacity Building:** Tracks community education, training programs, and knowledge transfer.



Policy and Government Metrics:

1. **Policy implementation:** Monitor regulatory compliance supporting nature-based insurance products and solutions.
2. **Funding Allocation:** Evaluate budgeted needs focused on NbIS products and assess the financial commitments across LGUs.
3. **Insurance uptake:** Track the coverage of NbIS insurance for individuals and businesses.
4. **Risk Reduction Goals:** Track progress towards government/international goals related to the reduction of risks through NbIS.
5. **Climate Adaptation Plans:** Ensure NbS are integrated into broader adaptation plans, especially with agencies overseeing the insurance industry.
6. **Data Availability:** Develop platforms for sharing data between government agencies, insurers and private sector players for accessing climate risk modelling.
7. **Nature-based Indicators:** Create standardized metrics and indicators to track health of eco systems supported by NbIS.
8. **Public Private Partnerships:** Measure the number and impact of government and private sector participation in to co-create effective NbIS solutions.

XIII. COP28 Highlights and Latest Developments in Climate and Environmental Action in Southeast Asia

1. The Philippines has secured a board seat in the Loss and Damage Fund, which was officially launched at the 28th United Nations Climate Change Conference (COP28) in Dubai, United Arab Emirates (UAE). This provides the country the opportunity to actively influence the decision-making process concerning fund recipients and access.
2. Philippines joined the Blue Carbon Action Partnership of the World Economic Forum (WEF). The collaboration aims to manage the rehabilitation and protection of coastal ecosystems such as mangroves and seagrasses, with a goal to capture 700 billion metric tons of carbon.
3. The Philippines participated in the Second Regional and Global Consultations on Nature-based Solutions on 9-13 October 2023 at the UN Office in Nairobi. As part of the intergovernmental effort, the Philippines shared insights and best practices on how countries can best use NbS to protect, conserve, restore and sustainably manage natural and modified ecosystems that address challenges such as climate change, disaster risk reduction, biodiversity loss and food security.
4. Indonesia pledges to achieve net-zero emissions by 2060 through an effective and inclusive transition. PT Sarana Multi Infrastruktur (SMI) and the United Nations Office for Project Services (UNOPS)-supported Southeast Asia Energy Transition Partnership (ETP) announced a strategic partnership to accelerate Indonesia's energy transition towards net zero emissions. The partnership will act as intermediaries to facilitate green infrastructure investment and identify effective energy transition mechanisms.
5. Indonesia's sovereign wealth fund, the Indonesia Investment Authority (INA) teamed up with global climate change advisory and investment firm Pollination to explore nature-based solution investments, as Indonesia seeks to ramp up carbon credit trading. The memorandum of understanding (MOU) highlighted identifying investment opportunities and developing nature-based projects, which aim to conserve, protect and restore vital ecosystems such as rainforests, peatlands and mangroves.
6. Indonesian launched the country's first carbon emission credit trading, with the aim of creating a market to fund cuts in greenhouse gas emissions and become a major participant in the global carbon trade. Indonesia will also adopt international standards and accelerate work to get mutual recognition from markets abroad to be able to offer its carbon credits to foreign buyer.

XIV. Conclusion

The Philippines - A Potential Leader in EbA and NbS Implementation

The Philippines is uniquely positioned to become a global leader in implementing Nature-based Solutions (NbS) for climate resilience and disaster risk reduction. Rich biodiversity, supportive policy frameworks, and growing interest from public and private sectors create a fertile ground for NbS innovation. However, unlocking this potential requires addressing key challenges:

- **Limited Awareness and Fragmented Implementation:** Gaps exist in stakeholder knowledge, data collection methods, and policy coherence across agencies. Capacity building programs, standardized data collection, and streamlined regulations can bridge these gaps.
- **Financing Constraints:** Innovative blended finance solutions are needed to complement public funding and attract private sector investment.
- **Community Engagement:** Equitable participation throughout the NbS project cycle is crucial for long-term sustainability. Empowering local communities and incorporating their traditional knowledge is essential.

Despite these challenges, the Philippines has a strong foundation for success:

- **Proactive Stance:** The Philippines' leadership in community-based initiatives lays a solid groundwork for resilience building.
- **Technological Advancements:** Advancements in remote sensing, data analytics, and climate modelling can enhance NbS project design, monitoring, and risk assessment.
- **International Collaboration:** Partnerships offer access to technical assistance and funding, accelerating NbS development.
- **Experience in Inclusive Insurance:** The Philippines' experience in developing inclusive insurance can inspire the exploration of innovative approaches.

Successfully scaling NbS in the Philippines requires a multi-pronged approach:

- **Accurate Natural Asset Valuation:** A holistic assessment of natural assets goes beyond just economic benefits. Tools like the NCA Roadmap and frameworks like the UN SEEA can be leveraged for this purpose.
- **Sustainable Premium Funding:** A blended finance approach involving public, private, philanthropic, and community contributions is crucial for long-term financial sustainability.
- **Comprehensive Risk Assessment and Streamlined Payouts:** Robust risk assessments coupled with parametric insurance triggered by pre-defined environmental factors (e.g., wind speed) can ensure rapid pay-outs and minimize post-disaster downtime.
- **Leveraging Existing Distribution Channels:** Utilizing established channels like Microfinance Institutions (MFIs) fosters widespread education and product innovation, allowing NbS to reach more Filipinos.
- **Investing in Capacity Building:** Building technical expertise and risk assessment capabilities across stakeholders (insurance professionals, policymakers, and environmental experts) is crucial.
- **Supportive Policy Frameworks:** Government support for streamlined policies and regulations is essential for fostering collaboration and attracting private sector involvement.

Sustaining NbS requires innovative financial instruments and strategic partnerships:

- **Carbon Offsets:** Utilizing ecosystem preservation for carbon trading allows insurers to offer risk cover and invest in carbon removal projects.
- **Natural Capital Bonds (NCBs):** These bonds offer funding for ecosystem restoration projects, necessitating green bond issuance with government support.
- **Catastrophe Bonds (Cat-bonds):** These high-yield debt instruments can finance insurance for natural disasters, reducing financial risks for insurers.

Pilots and small-scale initiatives serve as low-risk entry points to test these instruments and engage stakeholders. Identifying practical funding sources and securing stakeholder participation are crucial for successful NbS implementation.

By addressing challenges, leveraging opportunities, and fostering collaboration, the Philippines can become a leader in EbA and NbS implementation. Its success story can inspire other developing nations to embrace NbS as a powerful tool for building resilience and achieving environmental and economic prosperity.

XV. Appendices

Appendix 1: Focus Group Discussion Outcomes

As part of this study, we invited a smaller group of stakeholders to participate in a focus group discussion aimed at understanding the entry points, challenges, and opportunities for scaling EbA solutions in the Philippines. Below is a summary of key areas where stakeholders provided their inputs.


- **Market Sizing:** Private insurers seek to understand the market size for EbA products to allocate resources effectively. Recognizing the economic value of natural assets would expedite product development.
- **Funding:** Stakeholders unanimously agreed that funding is a major barrier to initiating new pilots. Cooperatives highlighted a lack of support from re-insurers, resulting in them shouldering all the risk. Difficulty in obtaining funds from existing resources like the People's Survival Fund was also surfaced. Stakeholders suggested proactive funding, consolidating government funds, and collaborating with international grant bodies and agencies to maximize project impact.
- **Visibility:** While there are pilot projects in the Philippines, more efforts are needed to raise visibility. Creating an inventory of ongoing projects, such as mangrove restoration and reforestation, would showcase scale and attract investment, especially from international investors.
- **Government Support:** Stakeholders from both local government and private institutions emphasized the need for regulators to provide clearer policies to scale these solutions. Government bodies and regulators need to set-up a cross-agency group to enable collaboration as each agency is working in silos.

Governments are the steward of natural assets and provide funding for risk protection and management which may include insurance solution. However, the COA (audit) and GPPB (government procurement) rules are barrier for government to source solutions from the private insurance industry.

But while waiting for the long process of policy reform, business partnership between GSIS and PIRA/insurance providers through co-insurance/insurance consortium arrangement with GSIS fronting the insurance policy could be shorter process. The IC should however broker the negotiation with the GSIS and with the DILG/LGUs.

References

1. Stakeholder interviews conducted between November 2023 and April 2024
2. March 2024: Focus Group Discussion organized by PIRA and GIZ
3. April 2024: Webinar organized by PIRA and GIZ
4. Images: [Canva](#)
5. [IKI: Ecosystem-based Adaptation and Insurance: Success, Challenges and Opportunities](#)
6. [GIZ: Using ecosystem services to adapt to climate change](#)
7. [International Union for Conservation of Nature \(IUCN\)](#)
8. [Climate Adapt: Emerging lessons for mainstreaming ecosystem-based adaptation: strategic entry points and processes](#)
9. [Conservation International](#)
10. [AXA Climate Blue Finance](#)
11. [Swiss Re Nature Based Solutions](#)
12. [The Nature Conservancy: Insuring Natural Capital to Protect Ecosystems and Communities](#)
13. [United Nations Global Compact: Nature-Based Solutions to Address Climate Change](#)
14. [UNEP: Ecosystem-based adaptation](#)
15. [UNEP: Why protecting and restoring blue carbon ecosystems matters](#)
16. [InsuResilience](#)
17. [Global Market Insights](#)
18. [Statista: Carbon Offset Markets](#)
19. [The Insurer](#)
20. [Research Gate](#)
21. [Bloomberg Research](#)
22. [Climate Bonds Initiative](#)
23. [UNFCC](#)
24. [World Economic Forum](#)
25. [International Carbon Action Partnership](#)
26. [The Business Times](#)
27. [Kita Earth](#)
28. [Ping An](#)
29. [We2Sure](#)
30. ADB. (2020). NBS ADB.
31. ADB Strategy 2030. (2018). Achieving a Prosperous, Inclusive, Resilient and Sustainable Asia and the Pacific.
32. Dasgupta, P. (2021). The economics of biodiversity: The Dasgupta Review
33. IPBES. (2019). Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
34. Munich Re. (2017). Hurricanes cause record losses in 2017.
35. Swiss Re. (2020). Biodiversity and Ecosystem Services A business case for re/insurance.
36. Swiss Re. (2020). Protecting and Enabling Nature-Based Solutions.
37. The Global Commission on Adaptation and WRI. (2020)
38. WEF. (2020c). New Nature Economy Report II The Future of Nature and Business.
39. World Economic Forum. (2020). The Global Risks Report 2020 15th Edition.
40. WWF. (2020). Living Planet Report 2020 - Bending the curve of biodiversity loss.
41. WWF. (2020b). Mangroves Threats.
42. TNC. (2020). Guide on how to insure a natural asset.
43. UNEP FI. (2019). Underwriting environmental, social and governance risks in non-life insurance business
44. Unterberger , C., & Olschewski, R. (2020). Determining the insurance value of ecosystems: A discrete choice study on natural hazard protection by forests.



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