# Financing Nature's Adaptive Capacity

*Insights from financial vehicles in the nature and adaptation space*

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CLIMATE POLICY INITIATIVE

iCS instituto CLIMA e SOCIEDADE

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CPI is an analysis and advisory organization with deep expertise in finance and policy. Our mission is to help governments, businesses, and financial institutions drive economic growth while addressing climate change. CPI has offices in Brazil, India, Indonesia, South Africa, the United Kingdom, and the United States.

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# EXECUTIVE SUMMARY

**Nature-based solutions (NbS) are inherently aligned with climate adaptation.** NbS offer cost-effective, locally grounded approaches that enhance ecosystem resilience while protecting communities from climate change impacts. While failure to invest in critical ecosystems poses significant economic and societal risks, investing in nature's adaptive capacity means investing in long-term resilience, reducing vulnerability to climate risks, and delivering co-benefits such as improved livelihoods and biodiversity conservation, as well as enhanced economic growth.

**However, both NbS and adaptation and resilience (A&R) efforts remain critically underfunded,** hindering the scale and speed needed to build resilience across ecosystems and communities. Current nature finance flows are not sufficient to cover global needs. Annual global flows amount to just USD 200 billion, one-third of what is required to meet climate, biodiversity, and land degradation goals by 2030 (UNEP 2022). Similarly, adaptation in developing countries faces an annual funding gap of USD 194 billion to USD 366 billion, roughly 10 to 18 times higher than current funding levels (UNDRR et al. 2024). Some of the shared challenges to financing NbS and A&R include difficulties in quantifying outcomes, leading to investor uncertainty regarding returns; identifying an investment-ready pipeline; and communicating value due to associated long-term, non-monetary benefits.

**This report examines five case studies of innovative mechanisms designed to mobilize private capital into adaptive NbS across the world** through desk research and close interviews with the managers or investment directors of the funds**.** The cases, which include *Forest Carbon, Acumen Resilient Agriculture Fund, Landbanking Group, Impact Earth*, and *Wildfire Resilience Insurance*, provide insights into how NbS projects and investments are increasingly recognized as adaptation investments as these two spaces converge. The findings from these case studies are not exhaustive, but rather provide some lessons and challenges for scaling finance for nature-based adaptation through the design of financial vehicles, including:

(i) Impact measurement is a key challenge for nature and adaptation finance with bottlenecks being (1) the complexity of measuring outcomes in a changing climate; (2) the integration of highly localized impacts; and (3) a lack of strong metrics that capture nature and adaptation impact.

(ii) NbS projects that provide adaptation benefits can have reliable cashflows, however it is critical to understand the incentives for businesses and projects to invest in adaptive and resilient NbS systems.

(iii) Carbon credits are a well-established way to finance NbS, but pricing and valuation must evolve to incorporate broader environmental and social benefits beyond carbon alone.

(iv) New regulatory standards can help drive A&R interventions related to NbS, but there is a risk of market leakage, as producers who do not comply with stricter standards may shift to markets with weaker regulatory requirements.

(v) To build momentum and public support for financing Nbs for adaptation, actors must make the case that investing in activities that prevent future costs (rather than generate immediate cash flows) delivers long-term economic, financial, and social value for the communities and stakeholders involved.

As the impacts of climate change intensify, the convergence of NbS and A&R finance represents a critical opportunity — not just to protect ecosystems and vulnerable communities, but to reshape how we value, fund, and implement long-term resilience strategies. The case studies in this report illustrate that it is possible to unlock private capital for nature and adaptation, but doing so at scale requires targeted action across three fronts: **designing finance mechanisms intentionally for adaptation outcomes, developing credible and consistent impact metrics, and aligning incentives to shift behavior and investment.**

Looking ahead, stakeholders across sectors, from governments and financial institutions to project developers and communities, must work collaboratively to mainstream NbS for adaptation. This means not only closing the finance gap, but also shifting mindsets – from reactive to preventive, from short-term gains to long-term value, and from siloed approaches to integrated, systemic solutions. While a comprehensive analysis of systemic solutions is beyond the scope of this report, broader enabling conditions for nature and adaptation investments also means reforming the current **development finance architecture to support wholistic, large-scale interventions that reflect the interconnected nature of climate, ecosystems, and communities**, while also **leveraging global frameworks that hold significant potential to scale up adaptation and nature finance by setting shared priorities and aligning incentives.**

With the right enabling conditions, finance in support of nature's adaptive capacities can accelerate, building climate-resilient ecosystems, economies, and societies that are equipped to thrive in an uncertain future.

# TABLE OF CONTENTS

# 1. INTRODUCTION

## 1.1 THE LINKS BETWEEN ADAPTATION, RESILIENCE, AND NATURE

**Given the speed of human and climate-driven ecosystem decline, financing nature's adaptive capacity is increasingly critical.** The increasing physical risks from climate change are reflected in the accelerated loss of nature and biodiversity. Driven by habitat destruction from infrastructure and agriculture, pollution, over-exploitation, invasive species, and climate change itself, the current rate of biodiversity loss is faster than at any other point in human history (UNEP 2023). Without immediate intervention, the rate of biodiversity loss could lead to the collapse of crucial ecosystem services such as wild pollination and the supply of food and timber, resulting in a projected global loss of USD 2.7 trillion by 2030 (UNEP 2023). Nature projects are uniquely positioned to deliver adaptation and resilience and build biodiversity. One of the core reasons for this is nature's dual benefits— nature can deliver on mitigation, adaptation, and biodiversity simultaneously.

This collapse could undermine the many essential benefits ecosystems provide to society and the economy. For instance, mangrove ecosystems are estimated to protect more than 6 million people from annual flooding and prevent USD 24 billion in losses of productive assets each year. Their global value now exceeds USD 547 billion, reflecting their variety of contributions, including protecting against coastal erosion, reducing flood risk, and creating jobs and supporting livelihoods through fisheries (World Bank Group 2022).

In addition to the environmental and economic benefits, nature and adaptation have essential social benefits as well. Local communities are at the core of nature and adaptation, often acting as the stewards of natural resources. For instance, indigenous people, an estimated 6% of the global population, manage over 38 million square kilometers of land globally, which includes 40% of all protected areas (WHO, 2025). Their leadership and knowledge on how to manage nature in ways that ensure ecosystem and community resilience is a critical component of building nature's adaptive capacity.

**Climate change is rapidly transforming global ecosystems, affecting both their health and functioning.** Grasslands and savannas are experiencing increasing woody vegetation coverage due to climate change, which is expected to decrease biodiversity and water availability, and alter ecosystem services such as wood provision and livestock grazing (Parmesan et al. 2022). Increased rainfall and temperatures, along with prolonged droughts, are expected in tropical forests, causing more fires and species extinction risk (Parmesan et al. 2022). With the rising temperatures and increasing drought, forests that are critical to regional weather patterns and the global climate, such as the Amazon, are at risk of hitting tipping points in which they would undergo transformation into degraded savannahs—severely limiting the ability of communities which rely on the Amazon to adapt. Table 1 describes some of the climate risks and impacts that different ecosystems are currently experiencing. These shifts raise concerns over what future ecosystems will look like, their overall vulnerability, and their long-term ability to sustain the vital services they provide today.

**Table 1:** Examples of climate risks and impacts on specific ecosystems

| Ecosystem | Climate Risk / Impact |
|---|---|
| Mountain and forest | Drought, soil erosion, increased precipitation and erratic rainfall |
| Agriculture | Shift in seasons, increased temperatures and drought, and increased precipitation |
| Urban | Extreme heat events, flooding |
| Marine and coastal | Storm surges, cyclones, sea level rise, salinization, and temperature increase |

***Source:*** *Lo et al., 2022*

**Nature and adaptation are closely linked, with nature contributing to adaptation outcomes through provision of ecosystem services**. Despite the growing pressures, nature and its ecosystem services continue to play a vital role in supporting adaptation and resilience (A&R)[1] (The Royal Society 2019). Ecosystem-based adaptation strategies, for instance, leverage nature-based solutions (NbS) and ecosystem services to protect vulnerable communities from extreme weather events while also ensuring that ecosystems continue to provide important benefits.

NbS are increasingly recognized as the most cost-effective approaches to strengthening climate resilience while delivering benefits for ecosystems and livelihoods (Center for Global Commons 2023; The Royal Society 2019). NbS are also projected to be able to save USD 104 billion in adaptation costs by 2030 and USD 393 billion by 2050 by reducing the intensity of climate change and weather-related hazards by at least 26% (IFRC 2022) Examples include urban parks designed to manage flooding, restoration of coastal wetlands to prevent erosion, reforestation and land rehabilitation to stabilize terrain and reduce landslide risks, and watershed management to secure water quality and availability for utilities (The Royal Society 2019). When paired with traditional infrastructure in green-grey approaches, NbS can amplify development benefits, reduce lifecycle costs, contribute to carbon sequestration, and improve environmental outcomes. Table 2 details types of NbS and their adaptation and resilience outcomes.

**Table 2:** Example NbS Solution Set

| Type of NbS | Adaptation and Resilience Outcome |
|---|---|
| Watershed and wetland management | Improvement in water storage capacity |
| Forest and pasture restoration | Erosion prevention |
| Sustainable dryland and livestock management | Adaptation to higher temperatures |
| Ecosystem restoration and agroforestry | Improved water storage capacity and flood risk reduction |
| Wetland and peatland conservation and restoration | Flood risk reduction, water filtration |
| River basin restoration | Improved water provision and water storage capacity |

1 For the purpose of this publication, adaptation refers to the *adjustment of human systems to actual or anticipated impacts of climate change through changes in behavior, practices, skills, and knowledge to* address effects over varying timeframes, while resilience is the *ability of human or natural systems to withstand, cope with, and recover from external shocks while maintaining core functions.* Source: Glossary — IPCC Special Report on the Ocean and Cryosphere in a Changing Climate

| Type of NbS | Adaptation and Resilience Outcome |
|---|---|
| Mangrove restoration and coastal protection | Avoided costs, reduced vulnerability, economic benefits, and improved ecosystem health, storm surge protection |
| Coral reef conservation and restoration | Storm surge protection |

***Source:*** *Lo et al., 2022*

**Adaptation efforts also support healthy ecosystems, which in turn, strengthens their resiliency and adaptive capacity.** Supporting nature's adaptive capacity is crucial, as some ecoystems are already seeing a decline in resiliency. Up to 29% of terrestrial and 24% of marine ecosystems globally show symptoms of resilience loss (Rocha 2025). Adaptation interventions can help protect nature by reducing economic pressures that drive environmental degradation and by making ecosystems healthier and more resilient through approaches like agroforestry, improved climate and weather data, and other ecosystem-based adaptation measures. In addition, many of the incremental measures needed for climate adaptation naturally align with nature-based solutions, creating opportunities for adaptation–nature "win wins."

## 1.2 THE FINANCING GAP FOR NATURE AND A&R

Financing the adaptive capacity and resilience of natural ecosystems and communities is critical for their long-term stability and the services they provide.

**Current nature finance flows are not sufficient to cover all nature finance needs**. The financial flows amount to just USD 200 billion, which is only one-third of what is required to meet climate, biodiversity, and land degradation goals by 2030 (UNEP 2023). Governments remain the primary source of this funding, contributing 82% of the total (UNEP 2023).

**Given the current financing gap for nature, closing it will require substantial increases from both public and private sources.** Although the private sector could grow 15% by 2050, surpassing USD 100 billion per year by 2030 (almost three times the current levels), public investments will remain crucial, with government spending needing to increase from USD 165 billion today to USD 359 billion by 2025, and further to USD 439 billion by 2030 (UNEP 2023). The need to increase available financing is particularly notable given that "nature-negative"[2] investments are over 30 times larger than financing for nature-based solutions, and they must be rapidly reduced if we are to achieve global biodiversity goals (UNEP 2023).

**Adaptation and resilience finance, which should be accelerating to keep pace with escalating impacts, remains insufficient,** despite clear knowledge of the necessary measures, their

2 For the purpose of this publication, the term "nature-negative" refers to finance flows from public and private sources that have a direct negative impact on nature (UNEP 2023).

benefits, and the regions where they are needed the most. Currently, less than 10% of tracked climate finance is directed toward adaptation, leaving developing countries with an annual adaptation finance gap of USD 194 billion to USD 366 billion, roughly 10 to 18 times higher than current funding levels. This gap is projected to rise to USD 315 billion to USD 565 billion by 2050 (UNDRR et al. 2024). According to research by the Climate Investment Funds, the Caribbean, Latin America, and South Asia face the largest adaptation finance gaps. Among adaptation needs, coastal protection has the most significant shortfall, with an estimated annual gap of approximately USD 26 billion projected through 2050 (World Bank Group 2021).

## 1.3 BARRIERS TO FINANCING NATURE AND A&R

NbS and adaptation finance face shared challenges that limit the scale and effectiveness of investments into these critical areas. Common barriers include difficulties in measuring outcomes, lack of standardized metrics, limited private sector engagement, and insufficient investment project pipelines. Both NbS and A&R often rely on public or concessional finance due to limited direct revenue generation and long-term, non-monetary benefits.

The barriers to financing nature-based solutions include:

1. **Limited familarity of NbS among investors:** The spread of NbS outside of academia and the environmental community has been limited. Awareness of investing in NbS is increasing, yet knowledge of and technical familiarity with designing projects and investing in this space is low compared to other areas of climate finance.
2. **Pipeline and deal origination challenges**: There is a limited pipeline of investment-ready, bankable NbS projects. This is due to the small ticket size of many projects (e.g., bioeconomy, mangrove restoration), making due diligence relatively expensive. There is also a shortage of locally-led business models capable of delivering high-integrity environmental results and attracting commercial capital. Existing perverse incentives coupled with limited access to or familiarity with sustainable alternatives mean that communities rely on nature-degrading activities for their livelihoods, further complicating efforts to identify and develop viable NbS projects.
3. **Lack of standardization of transactions**: The majority of nature transactions are currently bespoke and highly tailored to specific contexts, meaning that investors and project developers must treat each project on a case-by-case basis. Each project often has unique characteristics (such as geography, ecosystem type, community engagement models, and revenue streams), which makes it difficult to apply uniform financing structures. This lack of standardization results in higher transction costs and longer deal timelines. Standardization of projects and financing, whether through standardized term sheets and due diligence templates, metrics for impact, risk sharing mechanisms, and performance benchmarks, can help to aggregate projects, develop replicable investment products, and build NbS as an asset class and reach a wider range of investors.
4. **Unclear ROI on NbS:** Return on investment (ROI) on NbS investments is often not as straightforward as in other spaces due to long time frames, perceived risks, indirect or non-monetary benefits, and limited market mechanisms and revenue streams. This makes it difficult for investors to assess financial viability. Many agroforestry and restoration projects also require long-term horizons for ecosystems to regenerate, often creating a mismatch

between the shorter-term returns expected by commercial investors. Some of the high perceived and actual risks for private investors include:

- Country and currency risks: Many high-potential NbS are in emerging markets, which are perceived as riskier. Currency volatility is a significant concern.
- Credit risk: Lending to small cooperatives, SMEs, and communities often involves unsecured loans due to a lack of collateralizable assets.
- Complexity and coordination costs: Forging the necessary local partnerships and engaging multiple stakeholders (beneficiaries, implementers, capital providers) is time-consuming and resource-intensive, creating a barrier to replication and scale.

5. **Complexity in quantifying and disseminating results and benefits:** Data limitations due to the variability of ecosystems, lack of standardized measurement frameworks, and difficulty in monetizing nature benefits hamper effective communication of NbS outcomes to investors and stakeholders. In addition, fund managers supporting these projects may have limited technical experience and familiarity with complexities related to NbS sectors, which can further complicate efforts to accurately report and monitor impact.
6. **Absence of a generally accepted taxonomy for nature and adaptation**: Sustainable finance taxonomies vary from country to country, with varied approaches to nature, adaptation, and resilience. Countries' taxonomies often include different sectors, definitions of green/sustainable/climate, and have different intended use cases (tracking flows vs. attracting investment). These varied taxonomies with limited interoperability pose structural challenges to attracting more investment, as investors may be confused by the number of taxonomies and creates transactions costs.
7. **Limited government incentives:** Governments provide uneven incentives and regulatory structures to promote investment into nature, with few taking steps to incentivize nature-positive actions. Governments may disincentivize investment into this area through subsidies or incentives for harmful activities. Currently, environmentally harmful government subsidies total USD 1.8 trillion a year (Business for Nature, 2022). However, some governments have developed incentive programs to encourage investments into nature— such as Brazil's agriculture focused CRS and FIAGRO intiatives. Nevertheless, more adoption of fiscal policies and other regulations that change the incentive structure for status-quo investments is needed.

The barriers to financing adaptation include:

1. **Investor unfamiliarity with adaptation:** Investors often have limited experience with adaptation investments, leading them to perceive these investments as riskier.
2. **Sector-specific risks:** The sectors encompassed by adaptation investments – such as insurance, agriculture, land use, water, and SME lending – are perceived as high-risk due to the nature of their operations.
3. **Returns volatility:** A significant concern is the potential instability of returns from adaptation investments, which can be affected by volatility in commodity markets (e.g., fisheries or agriculture), sectoral structures (e.g., water), or repayment issues from borrowers.

4. **Business model risks:** Some adaptation investment business models carry structural risks, such as insurance models that encounter basis risk and depend heavily on government support.
5. **Investment time horizons:** Certain adaptation investments – including nature-based solutions and agriculture – may have delayed returns or results, posing a challenge for investors.
6. **Lack of data and information:** There is an information gap, including data on exposure to climate change risk and vulnerability mapping for specific locations, hindering informed investment decisions.
7. **Perception of a limited pipeline of bankable projects:** The absence of standardized taxonomies for adaptation leads to investor uncertainty about what constitutes adaptation, complicating resource allocation and pipeline development (CPI 2024).

**Despite these barriers, there is a growing opportunity to align nature financing and adaptation financing, especially as the global climate agenda increasingly recognizes the role of healthy ecosystems in building resilience.** NbS offer cost-effective ways to reduce climate vulnerabilities while delivering biodiversity and carbon sequestration benefits. This convergence allows for the mobilization of diverse funding sources, including climate adaptation funds, biodiversity finance, and private sector investment seeking environmental, social, and governance outcomes. By designing integrated projects that deliver both adaptation and nature benefits, countries can unlock larger, more diversified financial flows to support climate-resilient development.

In addition to the case studies examined in this report, there is a growing pool of initaitives and financial vehicles that demonstrate the potential for aligning climate adaptation efforts with nature-based financing. For instance, Barbados' "debt-for-climate resilience" swap, the first of its kind, offers an example of freeing up sovereign ability to invest in resilience and nature conservation and restoration projects.[3] In Brazil, Amazonia Viva (launched by Natura, VERT, and Funbio and developed with support from the Global Innovation Lab for Climate Finance) has completed its second loan cycle, raising BRL 26.5 million (USD 4.88 million) to support local communities involved in the bioeconomy in the Amazon; the model combines the provision of credit and grant capital with capacity building (an Enabling Conditions Facility model) which has allowed Brazil's Amazonia Viva mechanism to achieve a 100% repayment rate across 15 cooperatives that previously had trouble accessing finance from traditional financial institutions.[4]

Building on an understanding of the barriers to financing nature-related adaptation, this report presents case studies that showcase how different financial approaches are being used to close the financing gap at the nexus of nature and adaptation. It highlights key insights from five cases – *Acumen Resilient Agriculture Fund, Forest Carbon, Impact Earth, Landbanking Group, and Wildfire Resilience Insurance* – with an analysis of each model and its relevance to financing nature's adaptive capacity.

3 IDB | Barbados Launched the World's First Debt-for-Climate-Resilience Operation
4 2021 Lab Alum Amazonia Viva raises BRL 26.5M to boost Amazon bioeconomy | The Global Innovation Lab for Climate Finance; Amazônia Sustainable Supply Chains Mechanism | The Global Innovation Lab for Climate Finance

# 2. KEY INSIGHTS

The chosen case studies demonstrate innovative ways to unlock capital for nature-based adaptation, while also revealing the structural and practical barriers that need to be addressed to scale these solutions. This section summarizes key insights from the cases, highlighting key opportunities, challenges, and needs for the scaling up of nature and adaptation financing.

1. **Physical climate impacts on natural ecosystems, which are happening more quickly and severely than anticipated, are causing the nature and adaptation finance spaces to converge. Although natural assets are inherently resilient, this resiliency itself is being undermined by climate change, causing actors to move from considering physical climate risk as just part of ESG strategies to integrating it holistically into their NbS investments and projects.**

   Ecosystem services and NbS are increasingly recognized as essential to A&R, supporting a range of outcomes including the hardening of the built environment, disaster preparedness, and diversification of income. Ecosystem services play a critical role in the A&R of biomes, communities, and markets, including water purification/supply, soil quality/nutrients, storm surge/flooding protection, and more. The case studies examined in this report underscore that A&R and NbS are now seen as mutually reinforcing strategies, given the high interdependence between the two.

   Also receiving increasing attention is the importance of A&R to well-functioning ecosystem services and NbS. The case studies repeatedly highlight the real and accelerating impact of physical climate risks on nature projects, natural ecosystems, biodiversity, and agri-food systems (including heat, drought, flooding, wildfires). A&R measures are needed to help natural ecosystems withstand and recover from climate shocks and cope with climate change impacts. Certain sectors are more likely to see the linkages between adaptation and nature more clearly, such as the agrifood systems sector, where climate impacts on nature have direct consequences on the sector's assets. The 2024 cocoa harvest has become a stark warning for companies and investors reliant on agricultural supply chains, as climate change–driven drought and pests caused severe crop losses, pushing production well below expectations and triggering a sharp rise in cocoa prices. This example, among others, demonstrates the risks and material impact of nature's ability to be resilient to climate change.

   However, the resiliency of NbS is being undermined by the increasing severity and frequency of climate shocks. For instance, some case-study interviewees noted that certain agroforestry practices turned out to be less resilient to drought or wildfire than anticipated. As such, simply investing in NbS does not necessarily mean investing in resilient systems. Investors must look for investments that are intentional and specific on how their interventions will enhance resilience. For example, investors could look for projects that are selective about what types of species are being used for reforestation projects or designed with stronger buffer zones to create more barriers against wildfire.

   While the convergence between nature and adaptation finance offers opportunities to increase finance towards both, these spaces face similar challenges, which can impede investment. Namely, nature and adaptation finance both experience long investment

timelines prior to cashflow generation, perceptions of limited or volatile cashflows, and limited mainstream investor familiarity within the space. This creates a risk that nature-based solutions for adaptation could be perceived as doubly risky, potentially hampering increased financing flows.

2. **Impact measurement is a key challenge for nature and adaptation finance, with main bottlenecks being (1) the complexity of measuring outcomes in a changing climate; (2) the integration of highly localized impacts; and (3) a lack of strong metrics that capture nature and adaptation impact.**

   These measurement challenges are specifically important for impact-focused investors that are interested in knowing how the NbS being financed contribute to more climate resilient ecosystems and communities.

   *Measurement Challenge 1: Non-static baselines*

   With climate shocks becoming more frequent and severe, the historical baselines for ecosystems are now shifting quickly - often within the lifecycle of an investment or project. This volatility makes it increasingly challenging for funds and investors to assess the outcomes of resilience interventions. Moreover, measuring resilience impact can be further complicated by external factors such as inflation, supply chain disruptions, and geopolitics, which can obscure the true effect of resilience interventions, particularly around resilient livelihoods.

   Moving forward, indicators of success in nature-based adaptation and resilience efforts may include maintaining stable outcomes and reducing variability, instead of reaching targets around improvements. Funders and actors in the impact measurement space must align on what successful adaptation and resilience looks like, particularly as the climate becomes increasingly variable. They must consider what it means to be resilient in the face of mounting shocks, especially for nature-dependent sectors that are highly exposed to physical climate risk. By aligning on some of these questions and thinking through how to handle shifting baselines, impact monitoring can move toward more actionable measurements of nature-based adaptation and resilience interventions.

   *Measurement Challenge 2: Translating intricate science into practical and actionable metrics*

   Nature-based solutions, adaptation, and resilience outcomes are all highly localized. An intervention can be adaptive in one community and maladaptive in another. As such, the type and amount of adaptation and resilience benefits of a nature-based intervention is highly dependent on the location and its ecosystem characteristics. This context-dependency complicates the task of impact measurement, as it can be difficult to generalize impacts, even between similar interventions in similar ecosystems.

   Moreover, given the intricacies related to ecosystem services and their numerous potential impacts on resilience, it can be difficult to quantify exactly how much an increase in biodiversity leads to an increase in ecosystem services, as well as how much those services strengthen the resilience of a given ecosystem or community.

The Landbanking Group's Landler Platform includes metrics that track carbon stocks, biodiversity, soil quality and water health to allow companies to quantify the current state of their natural capital and identify climate risks, along with actionable data and interventions to address these risks.

*Measurement Challenge 3: Measuring social and ecological impact*

Measuring the impact of NbS for A&R requires both social and ecological impact indicators that are difficult to measure. Many resilience impacts are challenging to quantify—particularly those around community resilience. For instance, how do we quantify something like community agency? Stakeholders from the case studies expressed difficulty in finding tools that integrate both social and ecological impacts meaningfully, and mentioned the need for better metrics that:

i. Capture the efficacy and efficiency of resilience interventions

ii. Reflect reduced risk exposure, even if outcomes aren't "positive" in the traditional sense

iii. Integrate moving baseline logic to account for escalating climate risks

iv. Understand economic resilience of communities over time (post-project). In particular, there is a desire to better understand how market access and participation can reduce vulnerability to climate shocks.

v. Integrate longer-term metrics and measurement across different ecosystem types and compare across different types of ecosystems

Impact Earth is developing a Resilience Risk Score in partnership with CIAT to pilot the integration of scientific measures of resilience into their investment process, impact management, and ESG strategies.

Given the complexity of metrics and the costs of measurement, many projects and investments take a tiered approach to measurement, with smaller projects using basic metrics and simple verification, while longer and more technically complex projects and investments adopting an expanded suite of metrics, including remote sensing and field data collection.

Another solution to this challenge is to integrate quantitative and qualitative impact measurement methods. Many of the cases examined use qualitative surveys and interviews to capture farmers' and communities' perspectives on how nature and resilience investments have affected their climate resilience. A notable player in this space is 60 Decibels, which

conducts phone surveys to assess perceived resilience among project participants. These insights help investors determine whether interventions are contextually relevant, valued by beneficiaries, and directly contribute to resilience.

By collaborating with 60 Decibels, ARAF is able to understand the impact its investments are having on the ground. The qualitative insight allows ARAF to subsequently design targeted TA interventions to strengthen the resilience of high-risk and vulnerable farmers within its portfolio supply chains.

Qualitative findings also serve to validate quantitative indicators and reveal dimensions that quantitative metrics alone may miss. However, this approach has limitations, including self-reporting bias, where respondents may overstate the impacts, as well as the resource intensity associated with triangulating and analyzing data effectively.

3. **NbS for adaptation can provide reliable cashflows, however it is critical to understand the incentives for businesses and projects to invest in adaptive and resilient NbS practices and systems.**

   From the cases in this report, the central question around cashflows is not whether there are enough to support investment in these activities, but what the incentives will be for portfolio businesses and projects to take on additional costs associated with adaptive and resilient NbS.

   *Cashflow Insight 1: Due to the high upfront costs of investing in A&R and NbS, companies and projects may be hesitant to invest money, especially when these initiatives are in the early stages and must compete with other business and financial priorities.*

   A key issue highlighted is the need to shift portfolio companies and project implementers from viewing climate risk and ESG solely through a compliance or risk reduction lens to recognizing the strategic value of resilience and nature in sustaining and creating business value. Many still take a reactive approach to resilience (i.e. prioritizing it only after a climate shock has occurred) rather than investing proactively. This hesitancy is driven by several factors: the high upfront cost of resilience interventions (even when NbS may be more cost effective), uncertainty about their effectiveness or necessity, and the tradeoffs with other business priorities. The challenge is particularly acute for early-stage businesses, which often face intense pressure to minimize costs not directly linked to short-term revenue or fundraising, making long-term resilience investments harder to justify.

   For investors and funders, it is essential to reframe the perceived tradeoffs between financial performance and climate resilience and instead demonstrate the value that resilience brings to long-term business viability. The case studies underscore the importance of making a clear

business case for resilience to portfolio companies – for instance, showing that practices like intercropping can increase yields by a certain percentage, thereby boosting procurement volumes and resulting in revenue growth. Fund managers and investors can encourage portfolio companies to align their financial goals with nature-based adaptation and resilience efforts to support this shift. In addition, investments in technical assistance (TA), principally to support the integration of A&R strategies into the portfolio's business models, is critical.

*Cashflow Insight 2: While product offtake agreements are a crucial tool for increasing the bankability of NbS for adaptation investments, off-takers are hesitant to take on climate risk or pay to incentivize resilience.*

Offtake agreements are a well-established mechanism for de-risking investments by ensuring a reliable and predictable cashflow. These agreements specify the volume to be procured and set a price, offering certainty to both buyers and investors. They are particularly valuable in sectors with more perceived risks, such as agriculture and the bioeconomy, where they can help mitigate price and market volatility, enhancing the financial viability of projects.

The case studies reveal that most offtake agreements do not currently embed climate risks into the contracts, limiting incentives and support for suppliers to invest in A&R. For example, if a producer fails to fulfill an offtake agreement due to a climate shock, this is currently often treated as non-compliance, rather than as a consequence of a shared risk. However, there are emerging opportunities for proactive off-takers to incentivize or require resilience measures. Just as some offtake agreements now include supplier commitments around Scope 3 emissions, similar clauses can address climate risk, promote shared risk structures, and encourage or mandate long-term resilience investments by producers.

*Cashflow Insight 3: While incentives around traceability, organic, or certified products may encourage some to adopt NbS for A&R, these incentives remain too limited in scale and value to drive widespread investment in resilience.*

Traceability premiums and certifications such as the Rainforest Alliance, Fairtrade, FSC, and organic labels enable companies to access higher prices for products by meeting standards related to sustainability, labor, community engagement, and climate action. When the premiums are passed on to smallholder farmers, they can serve as a powerful incentive for adopting regenerative practices and NbS. As such, certifications offer a market-based pathway to promote the integration of nature and resilience measures into supply chains.

However, there are significant limitations to how far these premiums and certifications can drive investment into nature-based adaptation and resilience. First, companies must be able to track and verify compliance with sustainability standards, an often complex and costly process, especially in smallholder dominated value chains. If standards are not met (for example, if pesticides are used, etc.) companies will need to absorb the costs. Additionally, local markets are generally more limited in the ability to offer price premiums for certifications, meaning that these incentives are primarily relevant for export-oriented supply chains. This creates a high burden for companies sourcing from local communities, who may lack the infrastructure for meeting certification requirements. As a result, while certification can be a useful tool, it remains insufficient alone to catalyze widespread investment in resilient NbS practices.

*Cashflow Insight 4: Other notable bankable models for resilient, NbS-focused companies and projects include vertically integrated businesses and those offering bundled products and services.*

Vertically integrated companies reduce investment risk in more uncertain sectors by managing the entire value chain, from production and processing to transport and export, thus minimizing risks and costs associated with fragmented supply chains. Meanwhile, bundled services are an especially effective model for adaptive NbS, as they combine multiple revenue streams and appeal to a broader customer base. This approach is particularly valuable for resilience products like insurance, which may have limited standalone appeal in emerging markets but become more attractive when offered alongside other products or services, such as inputs like seeds or fertilizers.

4. **Carbon credits are an additional and complementary revenue stream for NbS, but pricing and valuation must evolve to incorporate broader environmental and social benefits beyond carbon alone.**

   While carbon finance can support adaptation and resilience by providing diversified revenue sources, new methodologies are needed to better capture adaptation co-benefits and implement stronger safeguards and monitoring that value resilience outcomes. Verra's Climate, Community, and Biodiversity (CCB) Standards' Gold-Level certification, for instance, provides some foundation into doing this (see box). The case studies demonstrate that integrating adaptation and resilience into all carbon projects is increasingly critical. This is partly because projects must be adaptive and resilient to physical climate risks that threaten the health of the forests and, therefore, the permanence of carbon credits.

   Moreover, the community-benefit sharing element of carbon credits plays an important role in promoting NbS for adaptation by helping reduce the vulnerability of local communities. Although buyers of carbon credits are interested in community benefits and resilience, they are rarely willing to pay significant premiums for them. This can create financial constraints as project developers lack compensation for the additional costs of robust A&R measures and community benefits sharing.

Forest Carbon's approach to community-benefit sharing pioneers community-owned forest projects and access to markets as a way to build real resilience for local communities on the ground. By also ensuring that projects are certified under leading international standards such as Verra's CCB, Forest Carbon signals that its carbon projects offer adaptation and resilience co-benefits as well.

**Verra Climate, Community, and Biodiversity (CCB) Standards**

Verra's CCB Standards provide third-party verification that a project delivers tangible benefits across climate, community and biodiversity dimensions. Within this framework, the "Gold Level" certification is awarded to projects that demonstrate exceptional outcomes in at least one of the CCB categories. To qualify for Gold Level certification for climate adaptation, a project must actively support communities and ecosystems in adapting to the impacts of climate change and demonstrate that adaptation strategies are being effectively implemented. These strategies can include:

- Livelihoods diversification to reduce dependence on climate-sensitive resources
- Strengthening local institutions, community organizations, and social safety nets
- Maintaining key ecosystem services such as water regulation, soil fertility, pollination, and pest control
- Enhancing habitat connectivity to support species migration and ecosystem resilience across different habitat and climate zones

To achieve Verra's CCB Gold Level certification for adaptation, projects must:

- Identify climate risks and potential land use changes resulting from those risks
- Demonstrate that climate risks are likely to impact local communities or the conservation status of biodiversity within or near the project area
- Describe measures needed and taken to help communities and biodiversity adapt to climate impacts
- Include monitoring indicators that track adaptation benefits for communities and/or biodiversity
- Show that these actions effectively contribute to climate adaptation and include an evaluation of their impact by affected communities.

The adaptation-focused Gold Level standard is well aligned with best practices in resilience planning, requiring that projects identify risks, link those risks to specific interventions, and measure progress over time. However, the CCB standard has limitations in scalability and uptake, as adaptation is one of four optional pathways to achieving the Gold Level, rather than being required for all CCB certifications. As a result, many project developers may choose alternative Gold categories, based on their context, project design, or familiarity with other certification requirements.

5. **New regulatory standards and voluntary frameworks can help drive A&R interventions related to NbS, but there is a risk of market leakage for restrictive regulations, as producers who do not comply with stricter standards may shift to markets with weaker regulatory requirements. Additional enabling and incentive-based regulations are also needed.**

   Regulations and market-led voluntary frameworks have the potential to contribute to financing nature's adaptive capacity whether through restrictive regulations, such as the EU

Deforestation Regulation (EUDR) that stipulates what investors cannot invest in, as well as enabling regulations that create incentives for investing into nature and adaptation. Both types of regulations can shift capital flows in ways that benefit nature and resilience.

Regulatory frameworks (such as EUDR) and market-led voluntary frameworks (such as the Taskforce on Nature-related Financial Disclosures or TNDF) are essential to streamlining climate and nature-related risk, and are prompting companies and corporates to internalize nature-related risks, thereby also increasing investor demand for NbS. In response, companies have built internal teams with specialized skills (geospatial analysis, sustainability reporting) to not only meet compliance obligations but also enhance their institutional capacity to work with nature-related data and strategies, often leading to broader integration of nature considerations across the companies' operations. For example, EUDR compliance requires detailed knowledge of deforestation-free sourcing, which in turn drives investment into NbS, traceability infrastructure, and enhanced due diligence (often passed down to suppliers).

However, regulation alone is not sufficient to scale NbS investment or address physical climate risks to nature. While large corporations (particularly those selling into Europe and other highly regulated markets) may have both the resources and incentives to comply, others may choose to shift their sales to less regulated regions to avoid the costs and complexities of compliance This creates a risk of market leakage and uneven progress across regions and sectors.

Enabling regulations can also work to scale investment into NbS and resilience by providing incentives that direct investment towards asset classes that enable scaled investment into nature and resilience. Brazil's regulatory environment provides examples of how incentives for agricultural investments can be used to encourage investments into resilient NbS. For instance, Brazil's Agribusiness Production Chain Investment Fund (FIAGRO) structure offers tax exemptions for individual investments into funds that invest into agribusiness. This structure has raised R$45 billion (~USD 8.5 billion) since 2021. While not explicitly promoting investment into NbS and resilience, the legal structure and incentives have been used to set up funds focused on regenerative agriculture and has overcome some of the barriers to NbS and adaptation as there is a lower cost of capital, a wider range of interested investors because of the tax incentives, and the regulated structure reduces perceived risk. For instance, the Kawa Fund, which is structured as a FIAGRO, is able to promote investment into agroforestry practices in Brazil, with the goal of reaching R$1 billion (USD 200 million) by 2030.

6. **To build momentum and public support for financing Nbs for adaptation, actors across the investment spectrum must make the case that investing in activities that prevent future costs (rather than generate immediate cash flows) delivers long-term economic, financial, and social value for the communities and stakeholders involved.**

   While avoided costs are not direct cashflows (and therefore difficult to incorporate into traditional investment decision-making), they represent a critical component of the value proposition of A&R. Many NbS for A&R reduce long-term costs by mitigating the damages from climate risks—yet these benefits are often underappreciated because they are long-term and preventative rather than immediate. As such, strategic communication around avoided

costs, along with mechanisms to distribute those benefits, is essential to building broader support for financing NbS and A&R.

For companies, whether corporates or smaller private firms, making the business case for investments into NbS for adaptation and resilience requires a longer-term view that considers future risk exposure and business continuity. Activist investors and board members can play a pivotal role in driving these conversations by reframing NbS as part of corporate risk management and value preservation. The use of financial risk metrics or climate value at risk estimates, which can ultimately also influence risk-return calculations and guide investments into the space, can also be used at the portfolio level.

For governments, taxpayers and the general public, it is equally important to clearly articulate the economic and social returns of investing in resilience. One tangible example is the insurance sector, where property owners who invest in NbS could receive lower premiums or expanded coverage. These visible, immediate benefits help the communities recognize the value of resilience, making them more likely to support private and public spending on NbS for adaptation. Ultimately, strong communication about the benefits of adaptation and resilience, and sharing of cost-savings is crucial to growing public support for these interventions.

By integrating NbS into insurance pricing and underwriting models, Wildfire Resilience Insurance allows communities to gain clearer insights into the value of NbS and their role in resilience and reducing risk. This can translate into tangible benefits such as continued access to lower insurance premiums. This, in turn, can drive support for A&R spending.

## LOOKING FORWARD

The key insights demonstrate how financing NbS for A&R requires more than just additional capital. Instead, it's about directing finance toward solutions that are resilient, measurable, and scalable. The following priorities stand out: **(i) intentional design, (ii) robust metrics, (iii) incentives that drive action.** In addition, innovative financial structures and investable models that encourage private sector engagement and communication, as well as community benefit-sharing models, offer much potential to scale effective nature-based adaptation. For instance, enhancing the role of insurance in forest and climate adaptation finance is critical to de-risk investments and improve resilience against growing climate-related losses. Insurance instruments—such as parametric insurance or forest-risk coverage—can provide financial buffers for communities and investors, incentivize better land management practices, and facilitate faster recovery post-disaster. The case studies that follow highlight where these solutions are

already being applied, as well as where further innovation and scaling are needed to address the urgency of climate impacts.

**However, while the case studies demonstrate how A&R can be integrated into individual projects and investments, there is an urgent need to scale these efforts through landscape-level approaches, stronger accountability frameworks, and institutional reform.** Although A&R actions at the company or project level are valuable, they are insufficient on their own. Coordinated action is required at broader scales, across governments, landscapes, and global frameworks, because the resilience of nature and its ecosystem services are public goods that transcend individual boundaries.

To unlock greater flows of adaptation and nature finance, **the development finance architecture must be fundamentally reshaped to support systematic, large-scale interventions that reflect the interconnected nature of climate, ecosystems, and communities.** Leveraging blended finance and public-private partnerships will be essential to closing persistent financing gaps. Climate-resilient debt instruments with natural disaster clauses (such as state-contingent repayments) can also help vulnerable countries maintain fiscal stability after extreme events. At the same time, multilateral development bank reform is crucial to scaling adaptation finance, through standardized adaptation KPIs, streamlined co-financing, and more flexible, country-led approaches. Vertical climate and environmental funds, along with national development banks, play a pivotal role in supporting early-stage, high-impact adaptation solutions, particularly in underfinanced markets. Strengthening their mandates and aligning them with national climate and biodiversity goals can help close financing gaps and build a pipeline of investable, high-integrity nature-based projects.

Furthermore, **global frameworks hold significant potential to scale up adaptation and nature finance by setting shared priorities, aligning incentives, and mobilizing capital**. COP30 in Brazil is a critical moment to translate commitments into implementable actions, while the Paris Agreement and upcoming New Collective Quantified Goal (NCQG) provide a chance to correct the imbalance between mitigation and adaptation finance, with stronger inclusion of NbS. The Circle of Finance Ministers COP30 report[5] (see Annex 1 for specific recommendations related to adaptation and nature), as well as the Baku-Belém Roadmap offer guidance for scaling adaptation and nature finance, providing practical and political direction for embedding adaptation and nature into mainstream financial systems. The COP27 Sharm El-Sheikh Adaptation Agenda offers measurable targets and aims to close the USD $366 billion annual adaptation finance gap. Other international Conference of the Parties (COP) conventions such as the Convention on Biological Diversity and the Convention on the Law of the Sea are also reinforcing the need for investments into these spaces.

Together, these coordinated actions can unlock the full potential of nature-based adaptation, delivering resilient, measurable, and scalable solutions to address the urgent challenges posed by climate change and strengthen nature's adaptive capacity.

5 Report of the COP30 Circle of Finance Ministers launched during IMF and World Bank meetings

# 3. CASE STUDIES

Five initiatives were analyzed for the purposes of this report:

(1) Impact Earth's Amazon Bidoviersity Fund (ABF) and Tropical Resilience Fund (TREF) (Brazil and scaling to other Latin American countries and Southeast Asia)

(2) Acumen Resilient Agriculture Fund (Africa)

(3) Landbanking Group's Landler Platform (Global with pilots in South Africa, Brazil, Europe)

(4) Forest Carbon (Southeast Asia)

(5) Wildfire Resilience Insurance (California, USA)

Each of the case studies highlight different approaches to how vehicles targeting nature-based solutions are also increasingly addressing nature's adaptative capacity and resilience in an effort to ensure long-term sustainability. It is important to note that these case studies are just a sample of the wide range of other valuable examples from around the world that demonstrate innovative approaches to financing nature-based adaptation (see Annex 2 for a table of other related examples).

# IMPACT EARTH

| | |
|---|---|
| **Classification** | Debt fund |
| **Nature-based solutions themes** | Forests; Bioeconomy; Regenerative agriculture |
| **Physical climate hazards** | Drought; Extreme heat/wildfires; Soil health/erosion |
| **Early/key investors** | USAID, DFC, BNDES, Soros Economic Development Fund |
| **Geography** | Latin America, SE Asia |
| **Key A&R finance barriers addressed** | Smaller ticket sizes by offering flexible finance instruments; need for local currency lending by domiciling in local country/denominated in part in local currency; early-stage patient capital for nature-firms |

## CONTEXT

Tropical biomes contain the majority of the world's biodiversity and provide critical ecosystem services that support food security, clean water, livelihoods, and cultural heritage for communities and ecosystems alike. However, these ecosystems are at risk due to climate change and unsustainable land use practices. Currently 20% of the Amazon has been deforested and 50% of Southeast Asia's tropical forests have been lost in the past 50 years. This is impacting food systems and communities, and without adequate A&R measures integrated into nature and other investments, supply chains could be majorly disrupted, and forests' abilities to sequester carbon and provide ecosystem services will similarly be diminished. Impact Earth's funds finance sustainable land use and livelihoods, while working to reduce supply chain disruption and support resilience by proactively incorporating physical climate risks in all stages of investments.

## MECHANICS AND OVERVIEW OF APPROACH

Impact Earth is an investment advisor that specializes in investing in NbS opportunities in emerging markets (i.e. nature projects and business ventures). They currently advise the **Amazon Biodiversity Fund (ABF)** and are developing their second fund, the **Tropical Resilience Fund (TREF)**. The ABF is a BRL 250 million (USD 50 million) closed-end fund, denominated in Brazilian real to facilitate local currency investments. It provides venture financing to early-stage, scalable enterprises and projects that promote biodiversity and support sustainable livelihoods in Brazil's Legal Amazon. Investors include CIAT, the Soros Economic Development Fund, and BNDES, with DFC providing a portfolio guarantee. ABF deploys a range of mezzanine debt instruments, including profit-sharing loans, mezzanine, and convertible debt, across four verticals: conservation, restoration, and community livelihoods; smallholder value chains; sustainable agriculture; and innovation in technology, finance, and services. Portfolio projects include REDD+ and Voluntary Carbon Market initiatives, coffee and cacao agroforestry, and value-added processing of non-timber forest products (NTFPs), with the objective of reducing deforestation threats by replacing unsustainable practices with those that keep forests standing.

TREF is designed to be a USD 100 million fund, investing in Latin America (Brazil and Peru) and Southeast Asia (Indonesia and Cambodia). While the core of TREF's investment thesis will be similar to that of ABF, the key difference will be that *TREF will integrate resilience into its investment approach at all stages, from assessing the climate risks and vulnerabilities of opportunities during origination* to dynamically managing climate risk through Resilience Action Roadmaps.

## ADAPTATION AND RESILIENCE APPROACH

### PROACTIVE INTEGRATION OF A&R INTO ALL STAGES OF THE INVESTMENT PROCESS

Impact Earth is applying key learnings from the deployment of ABF to directly inform how they integrate resilience into their nature-focused investment thesis for TREF. Climate events disrupted some of the ABF investees, causing crop losses, transportation delays, and unanticipated infrastructure needs.

In response, Impact Earth is aiming through TREF to provide ad-hoc funding and technical solutions to further enhance the resilience of investees. This includes the introduction of Resilience Action Roadmaps, alongside Environmental and Social Action Plans, ensuring climate risks are assessed during due diligence and continuously monitored. These tools enable adaptive management, help structure risk assessment and mitigation, and act as live documents which are updated as new risks emerge. The roadmaps aim to demonstrate how actions are maintaining or enhancing system stability while reducing exposure to climate risks. They also focus on minimizing variability in outcomes, ensuring resilience systems remain flexible and capable of absorbing shocks without significantly disrupting progress.

Technical capacity, adaptive technologies, and early warning systems in the field and in portfolio companies' operations are also vital to TREF's proactive risk management. As a core component of its resilience roadmaps, the Fund will also encourage the use of adaptive technologies such as irrigation, fire monitoring systems, and soil health tech.

Moreover, strengthening resilience requires engagement at a broader level to ensure alignment between investors and portfolio companies. For instance, flexible funding is essential to responding to climate shocks.

By aligning climate risk, actions undertaken by companies, and designing resilience roadmaps for each investment, TREF will go beyond reactive risk management to support system resilience and deliver real protection against climate shocks

### DEVELOPMENT OF A RESILIENCE TOOL TO INTEGRATE SCIENCE-BASED MEASUREMENT INTO A&R

As part of its impact measurement strategy, Impact Earth is co-developing a resilience scorecard tool with CIAT to scientifically assess how investments improve the resilience of investees. For TREF, this tool will verify whether the actions in the Resilience Action Roadmaps are truly strengthening resilience on the ground. with the partnership with CIAT builds confidence in the approach, as well as transparency in how scores are developed and measured. The scorecard also offers a look into the potential of such a tool to fill in gaps related to A&R measurements and bridge adaptation financing needs.

> "And the idea when bringing resilience to the forefront of the new fund is to be proactive. You don't need to wait the event to happen and then think how can I mitigate this for the next year or so but thinking beforehand analyzing the risks."
> — **Impact Earth Investment Manager**

# ACUMEN RESILIENT AGRICULTURE FUND (ARAF)

| | |
|---|---|
| **Classification** | Venture Capital Fund |
| **Nature-based solutions themes** | Climate resilience and adaptation for smallholder farmers; Food security improvement |
| **Physical climate hazards** | Erratic rainfall and drought; Rising temperatures; Flooding and heavy storms; Pests and disease outbreaks; Land and soil degradation |
| **Early/ key investors** | GCF, FMO, Soros Economic Development Fund, Proparco, CIFF, Ikea Foundation, Global Social Impact Investments |
| **Geography** | ARAF I: Kenya, Uganda, Tanzania, Nigeria, Ghana<br>ARAF II: Kenya, Uganda, Tanzania, Nigeria, Ghana, Morocco, Egypt, Côte d'Ivoire |
| **Key A&R finance barriers addressed** | Sector risk & volatility, investment time horizon addressed via equity investments enabled by blended finance; perception of limited bankability addressed by TA to help companies reach exit |

## CONTEXT

Traditional investors often perceive early-stage African agribusinesses as risky investments due to the combined challenges of their operating context. In addition, climate change is threatening the lives and livelihoods of smallholder farmers across the continent by breaking down agricultural value chains. Farmers face drought, flooding, erosion, and extreme heat, all of which can impact their yields, and they lack access to financing or technical assistance that would incentivize resilience building practices. This increasing exposure to physical climate change shocks is leading farmers to suffer losses, and ultimately risks an unreliable supply chain, as companies may lose sourcing partners. For economies dependent on agricultural sectors and planning for export-oriented growth, the effect of climate shocks on raw material supply is posing an increasingly acute problem.

## MECHANICS AND OVERVIEW OF APPROACH

The Acumen Resilient Agriculture Fund (ARAF) is a USD 58 million blended finance equity fund, managed by Acumen and anchored by GCF. With equity ticket sizes of up to USD 4 million, ARAF invests in agri-SMEs across Africa that operate at the intersection of smallholder farming and climate smart technologies. The fund is currently fully deployed and in the process of exiting its portfolio of 13 companies across diverse value chains, ranging from horticulture to poultry and aquaculture. The fund targets businesses where climate adaptation directly strengthens supply chains and supports financial returns, usually by generating increased and consistent supply.

Many of ARAF's portfolio companies deliver bundled climate-adaptation solutions to smallholders including climate-smart inputs (drought-tolerant seeds, disease-resistant varieties, solar irrigation); agronomic training (improved soil and water management, crop diversification, organic inputs, rotational practices); climate information services (farm-level early warning systems; localized advisory on weather and planting); and digital tools that guide climate-resilient planting decisions or optimize input usage.

In addition to providing financing to agri-SMEs that enhance the commercial viability and climate resilience of smallholders, ARAF also invests in aggregator platforms that provide extension services and technical assistance, digital platforms that provide access to market and information to farmers, and innovative financial solutions that allow smallholders to access financial products. The suite of support provided to ARAF portfolio companies includes ESG support; business development; risk management and compliance; and farmer training (including on A&R in agriculture).

## ADAPTATION AND RESILIENCE APPROACH

### USING QUALITATIVE ANALYSIS TO ASSESS RESILIENCE IMPACT

Acknowledging that resilience can be challenging to measure quantitatively, ARAF was an early mover in using qualitative survey analysis to measure resilience levels. ARAF's approach to measuring resilience is directly linked with the feedback mechanism portfolio companies have created for farmers. To hear directly from farming communities, the Fund partners with 60 Decibels, a third-party impact measurement firm, to conduct detailed phone surveys every two years to assess farmers' own perceptions of their level of resilience as well as their understanding of agricultural practices that build resilience.

The survey assesses the following metrics:

- **Knowledge:** What farmers know about sustainable practices (e.g., intercropping, organic fertilizers, soil testing).
- **Behavior:** Whether they are implementing these practices.
- **Resilience:** How they cope with climate shocks (i.e. drought/ flood adaptation).
- **Financial Well-being:** Income levels, savings, and poverty indicators.

Based on responses, farmers are categorized into four resilience levels:

- **Resilient:** Knows and applies practices
- **Emerging:** Knows but applies inconsistently
- **Vulnerable:** Knows but does not apply
- **Risky:** Unaware of practices

This reporting and analysis of survey results allows ARAF to subsequently design targeted TA interventions to strengthen the resilience of high-risk and vulnerable farmers within its portfolio supply chains.

While surveys offer valuable insights into perceived resilience, ARAF recognizes their limitations in measuring adaptation. There can be uncertainties from self-reported bias, especially if farmers have close ties to the companies they supply and overstate the support they have received. Additionally, external factors, such as inflation or supply chain disruptions, can mask the true impact of resilience efforts (i.e. yield drop despite knowledge gains, etc.) To complement surveys, ARAF collects quantitative data from portfolio companies, such as yield levels, offtake volumes, and other production metrics. While ARAF has not yet had the opportunity to triangulate this data with the qualitative survey results, they aim to do so to better attribute impact to their portfolio companies.

### TECHNICAL ASSISTANCE TO BUILD RESILIENCE THROUGH ENHANCED AGRICULTURAL PRACTICES

ARAF's technical assistance (TA) facility is one of its key levers to promote A&R for its portfolio companies and the smallholder farmers that they source from. The farmer training on climate resilient agricultural practices supported by the TA facility has been an important tool to not only support companies to adapt to climate change, but to also see the value creation enabled by A&R measures. It allows companies to recognize how resilient practices support long-term business viability: farmers that are resilient to climate shocks are more likely to have stable yields, and therefore provide the companies a consistent supply, even in the context of climate shocks

To date, the TA facility has supported companies in delivering farmer training, training-of-trainers, and upskilling on climate resilience, including a wide range of regenerative practices (e.g. intercropping, , soil testing, water management, etc). It also provides targeted TA to address specific challenges, including adoption of nature-based solutions and supply chain traceability to improve offerings to smallholder farmers, including building capacity on ESG matters and conducting E&S audits. The TA is designed to be actionable and long-term, with the goal of building farmer resilience to climate change, which in turn strengthens ARAF's portfolio companies.

By making a stronger financial case for investing in A&R, ARAF hopes to increase company engagement in building adaptive capacity, resilience and NbS integration among smallholder farmers.

> "Our TA facility... is based on helping to remedy some of those issues that we see [in the surveys]. We'll discover that farmers know about intercropping, but they don't do it. So then we'll dig in... and develop an intervention that makes financial sense for the farmer."
> **— ARAF Investment Director**

# THE LANDBANKING GROUP

| | |
|---|---|
| **Classification** | Natural capital finance; Tech/MRV platform |
| **Nature-based solutions themes** | Agroforestry; Regenerative agriculture; Avoided forest conversion; Forestry technology; Ag-tech |
| **Physical climate hazards** | Extreme weather mitigation; Drought / Floods; Land degradation; Fungal disease spread |
| **Early/key investors** | Planet A Ventures, BonVenture, Vanagon |
| **Geography** | Global with active pilots in South Africa, Brazil, Europe |
| **Key A&R finance barriers addressed** | Challenge in measuring and costing benefits of A&R by offering science-backed measurement; financialization of outcomes and standardized reporting |

## CONTEXT

Depletion of natural resources poses growing risks to businesses and communities that depend on agricultural or raw material supply chains. Although nature functions as critical infrastructure for economies, a major barrier to increased investment in its preservation is the lack of reliable technology to monitor, value, and contract natural capital outcomes. Many multinational companies are now exploring ways to build resilience into their supply chains, particularly by protecting ecosystems that support their suppliers. However, most still struggle to quantify the value of preserved natural assets and their role in reducing supply chain vulnerability to future shocks. The Landbanking Group's Landler Platform defines ecological dimensions, uses a mix of remote sensing, and translates natural capital into assets on the balance sheet to help companies understand which parts of their supply chain are most at risk and the appropriate interventions, as well.

## MECHANICS AND OVERVIEW OF APPROACH

The Landbanking Group operates the Landler Platform, a digital marketplace and management system for natural capital transactions. It connects ecosystem services providers (such as farmers and land stewards) with outcome-based funders (including corporations and financial institutions). Focused exclusively on non-extractive capital, the platform enables direct investment into natural assets like natural biodiversity, carbon, soil, and water through Nature Equity. To build trust and enhance transparency between investors and land stewards, the Land Banking Group's Landler Platform delivers three concrete benefits:

i. Monitoring technology: Biophysical metrics track ecological outcomes including carbon sequestration, water retention, and biodiversity recovery via remote sensing, machine learning, and local sampling. In parallel, natural capital accounting uses a "biophysical twin" to align with international accounting standards, enabling verifiable, scalable, and comparable measurements of nature-related outcomes.

ii. Contract structuring: The Platform helps companies structure meaningful investment in conservation, adaptation, and resilience. Through performance-based contracts, land stewards are financially incentivized to implement practices such as regenerative agriculture, that lead to verifiable improvements in natural capital. The Landbanking Group's valuation and contracting model is designed to comply with IAS 38, allowing natural capital to be recognized as an intangible asset on balance sheets. This enables the economic value of resilient land management to be measured, verified, and accounted for using robust tracking tools.

iii. Transparent and accessible valuation via technology: The value of these contracts is derived from measurable nature-positive outcomes or ecological metrics such as harvest yields, carbon sequestration, water retention or biological regeneration. Through the Platform, corporates, financial institutions, and farmers can simultaneously visualize, monitor and interpret natural capital data, facilitating transparent negotiations and alignment on which adaptation strategies are best suited to ensure sustainable land use.

## ADAPTATION AND RESILIENCE APPROACH

### REVEALING THE VALUE OF NATURE FOR INCREASED A&R

The Landbanking Group's metrics tracking carbon stocks, biodiversity, soil quality, and water health allow companies to quantify the current state of their natural capital, and identifying risks related to climate volatility. These measurements offer actionable data and tools that companies can demonstrate improve supply chain resilience, reduce the cost of capital, and secure more favorable insurance terms. Ritter Sport, a German chocolate maker committed to sustainable, high-quality cocoa tackled the climate-induced risks on its cocoa supply chain by addressing crop failures via the Landler platform. By offering location specific climate risk analysis at the sourcing location of the company's key ingredients, Landler identified high-risk regions. Ritter Sport is now able to generate an informed long-term plan to prepare for future risks like drought, temperature changes, and extreme weather. The detailed risk indicators assessed through advanced Earth observation technology and AI models included rainfall patterns, flood, and bushfire risks.

### INNOVATIONS IN MRV

Advanced measurement technologies including satellite imagery, remote sensing, and on-ground data, enable corporates and their accountants to precisely define and monitor assets over time. Nonetheless, Landler tackles more complex challenges, like translating natural capital into ecosystem services and A&R efforts. For instance, determining the optimal locations to plant trees or restore wetlands to maximize the adaptive benefits for nearby farmland remains a significant scientific and planning challenge. The platform supports land stewards in making informed and strategic land management decisions—such as where to plant trees, restore wetlands, or build hedgerows— to enhance resilience against climate risks like flooding and extreme heat. The platform's approach to MRV continues to be refined to generate trustworthy and meaningful linkages between the functionality of nature and the services it provides.

### COLLECTIVE ACTION OVER COMPETITION

To address the collective action challenge faced when various corporates and stakeholders are invested in the same landscape, the platform facilitates landscape level collaboration whereby companies jointly manage shared risks on a pre-competitive basis. Critically, this empowers farmers to coordinate water management practices or to create connected wildlife corridors that boost biodiversity.

Additionally, platforms like Landler are contributing to a stronger ecosystem that can provide a single source of truth which bridges the gap between scientific measurement, access to finance, and policy making.

**Landbanking Group's Simplified Process for Executing Contracts**

| Step 1: Identify the risk | Step 2: Prescribe Nature-based Solutions | Step 3: Finalize contractual terms | Step 4: Verify |
|---|---|---|---|
| The Landbanking Group leverages its technology to determine climate risks. Corporates identify how economic value of adaptation can be quantified, and added to balance sheets. | The Landbanking Group advises which nature-based solutions, such as improvement of landscape diversity, need to be improved to mitigate the risks identified. | Land stewards are subsequently incentivized to achieve and maintain agreed upon improvements in natural capital metrics.<br>Contracts grant the corporate buyer or outcome-based funder the rights to a specific, measured result. | Payment is triggered based on contracts when the Landbanking Group can measure and verify that adaptation practices have increased natural capital. |

# FOREST CARBON

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|---|---|
| **Classification** | Carbon project developer |
| **Nature-based solutions themes** | Peatland restoration; Mangrove conservation |
| **Physical climate hazards** | Peatland wildfires |
| **Early/key investors** | AXA, UBS, Saratoga, Nestle, and Chanel |
| **Geography** | Southeast Asia |
| **Key A&R finance barriers addressed** | Perception of limited cashflows addressed via use of carbon finance and clear revenue paths |

## CONTEXT

Two key challenges facing the carbon credit markets are a misalignment between climate finance flows and scientific priorities and growing concerns over carbon credit quality. Currently, most capital is directed towards restoration and carbon removals while the protection of intact ecosystems, which is scientifically the most urgent priority, receives less attention and funding. This imbalance risks accelerating biodiversity loss and irreversible ecosystem degradation, thus losing vital ecosystems services provided by standing landscapes. At the same time, the voluntary carbon market faces skepticism due to inconsistent standards and questions around credit integrity. Forest Carbon tackles these challenges by delivering projects that emphasize both conservation and restoration while ensuring independently verified credits are of the highest quality, and designed to maximize climate, community, and biodiversity benefits.

## MECHANICS AND OVERVIEW OF APPROACH

Forest Carbon is a carbon project developer specializing in the design, implementation, and management of high-integrity nature-based carbon projects, primarily focused on peatlands and wetland forests in Southeast Asia. To date, Forest Carbon has issued more than 4.1 million carbon credits, protected approximately 437,000 hectares of land, supported over 22,000 local beneficiaries, and enabled the return of more than 100 trigger species.

Forest Carbon oversees the entire carbon project lifecycle from feasibility assessments and ecosystem restoration to certification and credit issuance. The process begins with identifying and acquiring viable landscapes suitable for long-term restoration or conservation. Once secured, the company deploys interventions such as peatland rewetting, dam construction, and tree planting to restore degraded ecosystems and protect vulnerable forests.

Forest Carbon employs advanced technology to monitor progress across its projects, using AI-enhanced dashboards, mobile applications, and remote sensing to support rigorous Measurement, Reporting, and Verification (MRV). Following this process, projects are certified under leading international standards such as Verra's VCS, the Climate, Community & Biodiversity Standards (CCB), and ART TREES.

Once certified, these initiatives produce high-quality carbon credits that are purchased by corporate buyers seeking trustworthy offsets with measurable outcomes. Beyond representing emissions reductions or removals, the credits also generate co-benefits by protecting biodiversity, strengthening ecosystem resilience, and enhancing local livelihoods. Flagship projects such as the Sumatra Merang Peatland Project showcase this integrated model, delivering meaningful climate impact while fostering community engagement and ecological restoration. In doing so, Forest Carbon bridges the gap between finance and science while creating lasting value for investors, communities, and ecosystems alike.

## ADAPTATION AND RESILIENCE APPROACH

### CONSERVATION AS AN ADAPTATION STRATEGY

For Forest Carbon, conserving standing forests and natural ecosystems is critical for supporting both ecological resilience and the adaptive capacity for the communities they work with. Unlike NbS such as reforestation, which can take decades to deliver comparable benefits, protecting existing ecosystems preserves mature, complex ecological networks and the essential services they provide, such as of water purification, soil nutrients, and biodiversity. This translates into adaptation and resilience results earlier on, as the ecosystems services are already present and functioning in intact, healthy forests versus restoration or new growth which may have longer time horizons.

In the face of economic losses due to accelerating biodiversity loss and degraded ecosystems, there is a need for buyers, corporates, and others to value nature more holistically, beyond just carbon sequestration. This includes recognizing the crucial role of adaptation and conservation. For example, there is a need to be able to value the ecosystem services that old growth forests and standing forests offer, beyond trends towards prioritizing ARR and carbon removals.

### BUILDING RESILIENT COMMUNITIES AND ADAPTIVE CAPACITY

In traditional carbon projects, community benefit sharing is often a small percentage of the revenues —after investors have been repaid, communities often get less than 10% of the revenues from these projects, which isn't enough to build their resilience and adaptive capacity. Forest Carbon moves beyond this traditional community benefit-sharing approach by pioneering community-owned forest projects as a more structural approach to resilience. In South Sumatra, Forest Carbon launched a 5,000-hectare peatland restoration project that is fully owned and managed by the local community, with Forest Carbon providing technical expertise and market access.

Additionally, meaningful adaptation requires channeling financial flows into local communities to fund essentials such as clean water systems, healthcare, and education. Forest Carbon enables employees to complete high school diplomas and pursue higher education, tackling barriers that often exclude local people from jobs in forestry and conservation. From their perspective, education is one of the most effective resilience investments, empowering communities to participate in and benefit from climate-resilient livelihoods.

### WATER AT THE CORE OF FOREST CARBON'S APPROACH TO RESILIENCE

Forest Carbon places water management at the core of its peatland projects, recognizing that protecting watersheds and water resources is crucial for A&R given the vital ecosystem services water provides for life, nature, and agriculture. Rewetting the peatland reduces the climate hazard of fires, leading to an improvement in resilience and permanence of the projects. An essential aspect of this work is water purification, achieved by conserving peatlands and preventing their conversion into palm oil or pulp and paper plantations, which would otherwise pollute and degrade the peatlands. In addition, as Forest Carbon's conservation efforts focus on sustainable hydrology management, they also emphasize peatland rewetting. Forest Carbon relies heavily on MRV to manage its peatland rewetting. This involves daily measurements on key strategic areas, which feeds into a dashboard so that they are aware of the water table levels. This allows Forest Carbon to adapt when water table levels are low by focusing its rewetting efforts on these areas. It also allows Forest Carbon's projects to be more resilient, as they are aware of where the dry peatlands are and can respond more quickly to those areas after a lightning strike to limit damages from wildfires, etc.

One example is the Sumatra Merang Peatland Project: the peat dome functions like a giant sponge, regulating water flows that sustain both ecosystems and surrounding communities. By maintaining higher water tables and preventing drainage, the company reduces the risk of peat fires, while also supporting irrigation for nearby plantations, securing clean water supplies, and safeguarding wildlife habitats.

"The best strategy for community benefit sharing is actually to give indigenous people direct access to environmental markets... that's how you actually build resilience."— **Forest Carbon Co-Founder**

# WILDFIRE RESILIENCE INSURANCE

| | |
|---|---|
| **Classification** | Insurance |
| **Nature-based solutions theme** | Forestry |
| **Physical climate hazard** | Wildfires |
| **Relevant stakeholders** | WTW, TNC, UC Berkely CLEE, Tahoe Donner, Globe Underwriting |
| **Geography** | USA |
| **Key A&R finance barriers addressed** | Challenges in pricing/paying for avoided costs by offering more transparency and integrating risk mitigation measures that ultimately reduce losses |

## CONTEXT

Over the past five years, hundreds of thousands of homeowners in California have had their insurance non-renewed due to escalating wildfire risks. As a result, California's FAIR Plan, a state-created association of insurers for those unable to secure traditional private insurance, has seen a dramatic surge in policies due to wildfire risk-driven non-renewals, with residential policies increasing by 123% and commercial policies by 161% between 2020 and 2024. Wildfire Resilience Insurance addresses price increases and non-renewals by integrating the risk reduction benefits of ecological forestry practices (tree thinning, planned fires, etc.) into the models that insurers use to not only price insurance but to also decide whether to underwrite certain properties.

## MECHANICS AND OVERVIEW OF APPROACH

In 2020, The Nature Conservancy (TNC) and Willis Towers Watson (WTW) began collaborating to demonstrate how wildfire risk reduction from ecological forestry could result in increased and maintained access to insurance and lower premiums in the U.S. By using models that insurers use for both pricing and underwriting purposes, TNC and WTW were able to show that incorporating wildfire risk reductions into pricing and underwriting for both indemnity and parametric insurance could reduce average annual losses between 20-40% and lead to premium reductions of up to 40%.

In collaboration, the Center for Law, Energy, and the Environment (CLEE) at UC Berkeley, TNC, and WTW structured a USD 2.5 million parametric insurance policy for Tahoe Donner Association, a 7,000 acre (over 2,800 hectares) private homeowners association in California that has been implementing ecological forestry for decades. Data available from previous wildfires in Tahoe Donner allowed TNC and WTW to approach Globe Underwriting, an insurer with expertise in forestry, to issue a parametric insurance product for Tahoe Donner's open spaces, covering 1,345 acres (544 hectares) of Tahoe Donner's forested and recreation land, with a 39% lower premium and 89% lower deductible than would have been the case without nature-based forest management. The parametric product is triggered based on acres burned, with the maximum payout equivalent to the cost of an average year of ecological forest management. This structure, in the case of a wildfire, allows Tahoe Donner to cover the costs of responding to a fire, such as bringing in heavy equipment and crews to remove trees or do erosion control. In this way, the insurance premium is a strong ROI, as Tahoe Donner would have to cover those costs regardless.

TNC, CLEE, and WTW hope to scale the Wildfire Resilience insurance pilot by engaging with other homeowners' associations and large property owners now that the initial insurance product has been piloted. They hope that by showing proof of concept, other property owners and insurers will be more inclined to integrate NbS into their pricing and underwriting models, improving the availability and cost of insurance, as well as the uptake of ecological forestry and other NbS practices.

## ADAPTATION AND RESILIENCE APPROACH

### INSURANCE AS A PRICE SIGNAL TO DRIVE SUPPORT FOR A&R AND NbS

Insurance acts as a powerful price signal and tool to illustrate the value of A&R and NbS to the public, helping to build broader support. There is a strong link between the availability of insurance and public backing for A&R: individuals are less likely to support adaptation investments if they cannot insure their property, and vice versa. The case of ecological forestry and wildfire risk demonstrates how policy can shape public perception and support for NbS. In California, the Department of Insurance included regulations requiring catastrophe (CAT) models used for pricing to account for mitigation efforts at the property, community, and landscape level, explicitly including forest treatments and NbS approaches to flood resilience.

By integrating NbS into insurance pricing and underwriting models, communities gain clearer insights into the value of NbS and their role in resilience and reducing risk. This can translate into tangible benefits such as continued access to insurance lower premiums. This, in turn, can drive stronger public support for adaptation and resilience spending, underscoring the importance of subnational policy, particularly in the United States where insurance is regulated at the state level.

### BUILDING TRUST WITHIN MULTI-STAKEHOLDER COLLABORATIONS TO DRIVE RESILIENCE

The success of the Wildfire Resilience Insurance pilot was built on strong collaboration, trust, and commitment among a diverse group of stakeholders. Key partners included TNC, a respected global nonprofit; WTW, a leading commercial insurance broker; CLEE at UC Berkeley, serving as the academic partner; Tahoe Donner Association, a proactive and strategically positioned homeowners' association; and Globe Underwriting, a specialist insurance intermediary. This collaboration was vital given the local context at the time, which was marked by limited transparency in the insurance industry. WTW contributed deep technical expertise and a strong market reputation—both critical during the complex process of modelling wildfire risk reduction. TNC and UC Berkeley played essential roles in stakeholder education and engagement, ensuring that all parties understood the science and value behind the product. Meanwhile, Globe Underwriting was a natural fit as the managing agent, with in-house forestry expertise that enabled them to fully grasp the modelling and effectively underwrite the policy. Strong working relationships and clear communication channels were established to align stakeholder priorities and ensure cohesive progress throughout the pilot.

> "What really matters … and why we engaged in this is that the insurance conundrum in California with wildfire is challenging because there's not a lot of transparency on the insurer side as far as what data or information that they are using to drop people from insurance or raise rates. As part of this project, we were able to get them to put in writing that we have a quantifiable risk. They were able to take into account the work that we've done to mitigate that risk and then give us a reduction in the premium. And long term, we hope that this premium reduction would be able to be transferred from our open spaces to homes, structures, and communities."

# 4. CONCLUSION

Closing the finance gap for NbS is not only an environmental imperative but also a strategic investment in long-term economic and social resilience. Nature-based solutions are inherently aligned with climate adaptation. They offer cost-effective, locally grounded approaches that enhance ecosysem resilience while protecting communities from climate change impacts. Yet both NbS and A&R efforts remain critically underfunded, with significant financing gaps hindering the scale and speed needed to build resilience ecosystems and communities.

The five case studies examined in this report present valuable insights into nature's role in adaptation, and how barriers can be overcome to increase finance flowing to the nexus of NbS and adaptation. Nature and A&R finance is increasingly converging, driven by the acceleration of the physical impacts of climate change on ecosystems, as well as a shift from ESG-focused nature risk management to proactive integration of A&R in NbS investments.

A major challenge remains the measurement of impact, complicated by the dynamic nature of climate outcomes, localized effects, and the absence of robust metrics that fully capture adaptation and nature-related outcomes. Moreover, while some NbS adaptation investments can offer consistent cash flows, understanding the right incentives for businesses to adopt resilient activities is essential. Carbon credits continue to be a key financing tool for NbS, but pricing mechanisms must evolve to reflect wider environmental and social co-benefits. Lastly, regulatory standards are critical to scaling nature-based adaptation and resilience, particularly through incentives and taxonomies.

Closing the financing gap will also require broader enabling conditions. This includes a shift from reactive to preventive approaches, and from prioritizing short-term gains to recognizing long-term value. It will require re-designing structural incentives across policy, financial, and institutional systems. While a comprehensive analysis of systemic solutions is beyond the scope of this report, it is important to acknowledge the need for deeper reforms, such as overhauling the current development finance architecture and leveraging global frameworks to set shared priorities and align incentives that can scale adaptation and nature finance.

Ultimately, building broad support for NbS adaptation investments requires clearly communicating the long-term economic and social value of investing in resilience-building activities. While significant work remains, growing interest and emerging mechanisms, such as those featured in these case studies, demonstrate the expanding potential to invest in nature's adaptive capacity, unlocking long-term resilience and value for both ecosystems and communities.

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# ANNEX

## ANNEX 1: SELECT RECOMMENDATIONS RELATED TO NATURE AND ADAPTATION FROM THE COP30 CIRCLE OF FINANCE MINISTERS REPORT

### PRIORITY 1: SCALING UP CONCESSIONAL FINANCE AND OPTIMIZING CLIMATE FUNDS

**R1.1. Scale up climate finance to developing countries, in line with the commitments under the UNFCCC, the Paris Agreement and the NCQG, with developed country Parties taking the lead on the new goal of at least USD 300 billion per year by 2035 to developing countries for climate action** [short to medium term]

- Ensure delivery of bilateral climate finance in line with the NCQG commitments, and enhance effectiveness, including through improvements in access and tracking progress of both financial flows and impact, aiming to achieve a balance between adaptation and mitigation, considering country-driven strategies, and the needs and priorities of developing countries.
- Scale up adaptation finance, with particular attention to the specific needs of poor and vulnerable countries.
- Protect and enhance support for multilateral concessional channels, including the funds serving the Financial Mechanism of the Convention and the Paris Agreement (such as the GCF, GEF, and Adaptation Fund), as well as other relevant instruments such as Internation al Development Association (IDA), Africa Development Fund (ADF), the Climate Investment Funds (CIF) and others.
- Improve access to concessional finance and technical assistance for adaptation and climate resilience, for countries with greater climate vulnerability, such as LDCs and SIDS, through public and grant-based resources and highly concessional finance.

### PRIORITY 2: REFORMING MDBS TO SCALE UP SUSTAINABLE FINANCE

**R2.1 MDBs should be recognized and supported as a key pillar of long-term public finance for sustainable development** [short to medium term]

- Ensure that MDB long-term lending remains central to financing adaptation, resilience, and public infrastructure that cannot be delivered by private markets alone, while maintaining affordability and predictability.
- Acknowledge natural capital as a strategic asset class for long-term public finance, by encouraging MDBs to systematically integrate nature-based solutions into climate and infrastructure portfolios, and to design instruments that catalyze co-benefits for resilience, biodiversity, and inclusive prosperity.

**R2.3 MDBs should maintain strong support for climate adaptation by prioritizing concessional resources and mainstreaming adaptation finance alongside mitigation efforts** [short term]

- Ensure that adaptation finance remains a core pillar of MDB climate strategies and project pipelines – supporting resilience-building features, disaster risk reduction, and ecosystem-based adaptation.
- Prioritize concessional funding to mitigate risks and catalyze adaptation projects that deliver critical social and economic benefits but often lack commercial viability.
- Expand the definition of adaptation to better capture the full spectrum of development efforts that contribute to climate and nature resilience—recognizing the strong linkages between adaptation and broader economic development.
    - Better incentivize all MDB development spending to systematically integrate climate and nature risk, particularly by identifying and capturing Type 1 and Type 2 resilience results in project design and monitoring. Review and improve the joint MDB methodology to tracking adaptation finance.
- Deepen support for upstream reforms and the creation of enabling environments that foster sustainable development and attract greater private investment into adaptation sectors.
- Accelerate delivery of the MDB Joint Nature Statement (COP26), translating high-level commitments into concrete financing programs and measurable outcomes

## PRIORITY 3: BOOSTING DOMESTIC CAPACITY AND INVESTMENT FRAMEWORKS FOR CLIMATE FINANCE, INCLUDING COUNTRY PLATFORMS

**R3.1 International Organizations should help governments mainstream climate, nature and just transition objectives into planning and investment frameworks, respecting na tional needs and priorities** [short term]

- Support the alignment of ambitious investment programs with NDCs/NAPs/LTS-LEDS/NBSAPs; clarify climate mandates (including Ministry of Finance and Central Bank roles); expand staffing and public-investment capacity; and establish effective inter-ministerial, cross-sectoral, and ministerial-level coordination mechanisms to build pipelines of climate-aligned projects.
- Support Ministries of Finance to build their capacity to actively shape climate policy and drive investment, including through mainstreaming climate risks and opportunities into macro fore casting, modelling, and budget processes.

**R3.6 Interested developing countries can undertake country platforms (CPs) to address individual country priorities** [short term]

- Governments and technical partners can use CPs to mainstream resilience and adaptation across planning and investment by embedding resilience into national plans, policies, programs and project pipelines and by considering adaptation and resilience in CPs investment pipeline development and project preparation.

## PRIORITY 4: DEVELOPING SCALABLE AND INNOVATIVE FINANCIAL SOLUTIONS FOR PRIVATE CAPITAL MOBILIZATION

**R4.4 PDBs, DFIs, MDBs, ministries, and regulatory bodies should coordinate to develop and scale innovative climate, nature and resilience-focused financial instruments** [short to medium term]

- Develop dedicated nature and resilience finance mechanisms through climate funds or blend ed finance structures that leverage public funds and attract private investment for nature-based solutions, biodiversity, urban adaptation, and resilience-focused vehicles, especially in vulnerable and SIDS countries.
- Scale nature-positive models by leveraging expertise, networks, and funds to ensure success of innovative instruments as proof of concept for attracting institutional investors to nature-positive investments.
- Strengthen enabling regulatory environments by coordinating action around regulations that impact on private investment, in areas such as land tenure, land use regulations, sanitary standards for bioeconomy products, and building codes.
- Promote policy dialogue to identify barriers that hinder diffusion of technology and investment in resilient infrastructure while ensuring proper mitigation of social and environmental risks.
- Develop mechanisms to facilitate technology transfer and reduce costs, partnerships, or intellectual property reforms; notes conspicuous absence of leveraging developed nations' strengths in technology transfer.
- Integrate nature and resilience into financial frameworks by enabling businesses and governments to view natural capital as a vital driver of long-term resilience and value creation:
    - Improve coordination between ministries of environment and finance, MDBs/PDBs, and standard-setting bodies to promote interoperability of high integrity carbon markets.
    - Promote adoption of sustainability disclosure frameworks
    - Ensure the adoption of safeguards protecting local communities and indigenous peoples.

**R4.5 PDBs, MDBs, DFIs, local financial institutions, and institutional investors should collaborate to expand the investor base and unlock diversified sources of capital for climate investments** [short to medium term]

- Engage the broader financial ecosystem by partnering with insurers, sovereign wealth funds, pension funds, family offices, philanthropy, and impact investors to co-create innovative financial instruments and expand participation in climate investments.
- Develop tailored insurance solutions by collaborating with the insurance industry and insurance commissioners to design innovative products that close the protection gap, including:

- Micro-insurance, pre-arranged finance, and parametric products.
- Performance risk coverage and resilience incentives through reduced premiums
- Deploying insurance assets toward investments in resilience and adaptation.
- Parametric insurance for ecosystem-based adaptation.

**R4.6 Ministries of finance and of environment, central banks, capital markets regulating agencies, and private financial institutions should work together to improve the availability and quality of decision-useful data** [short to medium term]

- Share comprehensive climate and policy data including:
  - Climate risks, projections, scenarios, physical climate risks, and hazard mapping.
  - Environmental performance data, vulnerable asset inventories, and climate-related policies and regulations.
  - Fiscal planning data, policy changes, private investment flows, and carbon markets.

## PRIORITY 5: STRENGTHENING REGULATORY APPROACHES FOR CLIMATE FINANCE

**I5.D.3 Continue to encourage climate-informed credit rating approaches by Credit Rating Agencies, while maintaining their independence** [short to medium term]

- Support the incorporation of climate-related risk and investment considerations into sovereign ratings, leveraging tools such as climate-smart DSAs developed by the IMF and World Bank.
- Invite analysis and, where appropriate, recognition of the positive impact of credible, science-aligned corporate transition plans and climate adaptation, resilience and nature-related investments in LICs on their long-term creditworthiness.
- Promote transparency in data and methodologies of corporate credit ratings, enabling improved comparison when transition plans are demonstrably on track, thereby supporting more stable sovereign risk profiles in climate-sensitive sectors

**I5.F.1 Finance ministers, supervisors, and market conduct regulators could voluntarily seek interoperability in their taxonomies - preserving national priorities - supporting interoperability across taxonomies, consistent with Paris goals and science, to facilitate cross-border capital flows while respecting domestic mandates enabling a Paris- and science-aligned global taxonomy framework that supports EMDEs' access to sustainable finance** [short to medium term]

- Develop voluntary high-level "taxonomy interoperability principles" that are recognized as core guidance for setting definitions on what are green, sustainable, transition, and resilience-aligned activities, while respecting domestic approaches.

**I5.G.1 Regulators and carbon market authorities could work towards enhanced interoperability and consistency of MRV protocols and accounting standards to enable integration of carbon markets across jurisdictions** [short to medium term]

- Establish standardized, reliable high-integrity MRV (Monitoring, Reporting, and Verification) protocols that accommodate sectoral, technological, and geographical differences and tier methodologies per emissions output.
- Advance the use of robust carbon accounting principles based on scientifically reliable, trans parent, and accurate level data enable consistent quantification of emission reductions and removals.

**I5.G.4 Climate finance providers and carbon market authorities could ensure fair benefit distribution and institutional support for developing countries** [short to medium term]

- Establish dedicated technical and financial assistance windows to support capacity building, verification institutions, legal readiness, and MRV infrastructure.
- Ensure rights holders—including Indigenous Peoples and local communities—are recognized and empowered to control and benefit from their carbon rights in voluntary carbon markets.
- When appropriate, develop transparent practical, enforceable benefit-sharing principles for carbon market transactions.

# ANNEX 2: ILLUSTRATIVE TABLE OF OTHER FINANCIAL VEHICLES TARGETING NATURE-BASED ADAPTATION AROUND THE WORLD

| Name | Geography | Actors Involved |
|---|---|---|
| **Amazon Food&Forest** | Brazil | Impact Bank, TNC |
| **Bahamas Debt for Nature Swap** | Bahamas | The Bahamas, TNC, IDB, Standard Chartered |
| **Barbados Debt for Climate Resilience Swap** | Barbados | Barbados, IDB, EIB, CBIC |
| **Blue Natural Capital Financing Facility** | Global | IUCN, Luxembourg, UBS |
| **Industrial Bank of China Carbon Sink Loan** | China | China Industrial Bank |
| **Amazonia Viva (Living Amazon Mechanism)** | Brazil | Natura, VERT, FUNBIO |
| **Project Gaia** | Global | MUFG, FinDev Canada |
| **Restoration Insurance Service Company (RISCO)** | Southeast Asia | Conservation International, Swiss Re |
| **One Acre Ventures** | Africa | One Acre Fund |
| **Tropical Asia Forest Fund** | Southeast Asia | New Forests |

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